southco®

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HANDBOOK 59

Engineered Access Solutions

FIRST TOUCH - First Impression

In today's intensely competitive market place, aesthetics and ergonomics combine with functionality to drive the ultimate purchasing decision. The smallest details like hinges and latches play a part in the initial user reaction that cannot be overlooked or underestimated. The way they perform, look and feel can influence your customers' long-term perceptions of your company and its products.

Southco's distinctive human touch point solutions are important components of products that people interact with - every day, all over the world. Locks, latches, hinges, handles - all are touch points that help enhance the end-users' perceptions of your products. They ensure a positive first impression while never overlooking the importance of optimum safety and secure operations.

As we continue to develop innovative products, Southco maintains a strong conviction to building a better, more sustainable future. Our commitment and progress towards "green manufacturing" is greater than ever, as we strive to continually refine our processes, filter our waste and ensure full compliance with environmental standards.

COMPRESS IT

SEAL IT

For over 100 years, Southco has helped customers solve and overcome engineering challenges and our passion, vision and focus today is to help customers differentiate their products' engineered touch points.

Southco is a leading global supplier with real global reach. With more than 3000 employees in over 20 countries, together with sales, distribution, engineering and customer service centers in over 30 countries and 14 manufacturing sites - Southco can support you wherever you are in the world.

INNOVATION BY Southco

Southco has a comprehensive range of innovative latching solutions for all your application requirements. Different color or finish? No problem. Custom driver recesses and restricted access features? We will provide the ultimate solutions - because delivering customized engineered access solutions is what we do.

Innovative Technologies

Southco is passionate about driving innovation and creating added value for our customers with state-of-the-art technologies including electronic access and positioning technology solutions that seamlessly integrate into your application requirements.

SECURE IT

POSITION IT

CONTROL IT

Operational Excellence

Southco is a lean and agile organization with streamlined processes to respond efficiently to our customers' short- and long-term challenges, anywhere in the world.

SOUTHCO® touch points are designed and developed under systems that meet the requirements of the most stringent quality and environmental standards including ISO/TS16949, ISO9001:2000, ISO14001 and AS9100.

Product Directory

Concealed, controlled, secure access
Vandal resistant
Remote monitoring and operation

Electronic Access Solutions Pages 22 - 33

Eliminate noise and rattle
Compress gaskets to provide environmental or EMI/RFI sealing
Many key and tool access options

Compression Latches Pages 34 - 79

90˚ Cam rotation
Fixed and adjustable grip options
Adaptable to multi-point latching

Cam Latches and Swinghandles Pages 80 - 113

Simply push the door to close
Visible and concealed styles
Variety of operating methods

Push-to-Close Latches Pages 114 - 179

Multiple access control styles
Flexible key code options
Broad range of sizes

Cam Locks and Lock Cores Pages 180 - 195

Draw Latches Pages 196 - 239

- For co-planar and off-plane applications
- Wide variety of sizes and styles
- Draw panels tightly together to eliminate rattles and compress gaskets

Multi-Point Latching Systems Pages 240 - 265

- A single user touch point operates multiple latching points
- Available for indoor and outdoor enclosures

DZUS® Quarter-Turn Fasteners & Fast Lead Screws Pages 266 - 339

- Provide fast access
- Suited for high-frequency, repeat access applications
- Captive to the panel; no lost hardware
- Numerous types and styles

LOCKWELL® Quick-Release Pins & Quick Access Fasteners Pages 340 - 357

- Remain firmly installed until released by mechanical actuation
- Ergonomic handles for easy use
- Quick installation and removal of components

Captive Screws Pages 358 - 398

- Wide variety of styles
- Standard machine screw threads in both metric & imperial sizes
- Captive to the panel

INFO CLIC *www.southco.com*

Product Directory

Inject-Eject Mechanisms Pages 399 - 415

Assist in consistent engagement or removal of electronic modules

Options: tool access, secondary catch, flush, various inject/eject forces

Hinges & Position Control Devices Pages 416 - 469

Provides added functionality
- position control
- removal capability

Concealed and surface mount

Inserts, Standoffs & Assembly Fasteners Pages 470 - 480

Suitable for electronics, commercial and industrial applications

Wide variety of fastening solutions including: bushings, standoffs, rack attach, rivets, cable clamps

Handles & Pulls Pages 481 - 491

Fast, easy installation

Concealed and low profile styles

Marine Hardware Pages 492 - 493

Suitable for cabin or entry door and deck applications

Provide performance, design and styling

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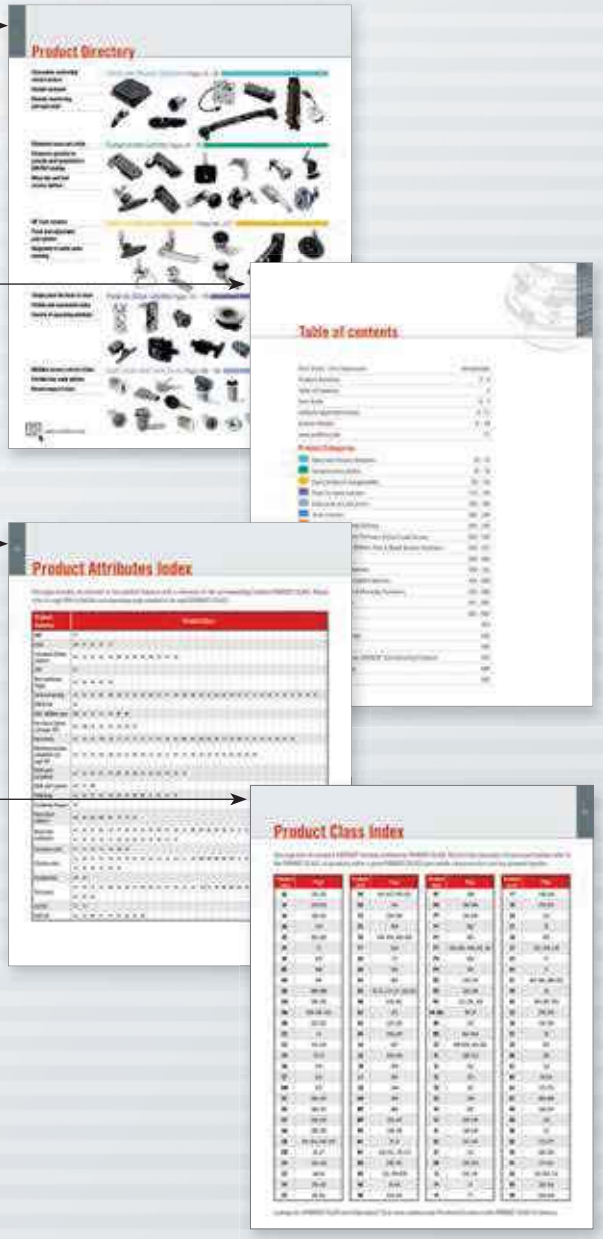
Southco Handbook - User Guide

Southco´s broad range of Access Hardware solutions is grouped into 15 color-coded sections by product category. Most of the sections are introduced by a comprehensive selection guide, providing a convenient overview of relevant options for individual applications.

The following four indices help you find what you are looking for:

- **Pages 2 - 4** The Product Directory provides a pictorial overview of all key product lines.
- **Page 5** At-a-glance summary of Southco´s product categories.
- **Page 498** The Product Attributes Index lists key product features and applicable products.
- **Page 499** The Product Class Index directs you to product pages based on the part number.

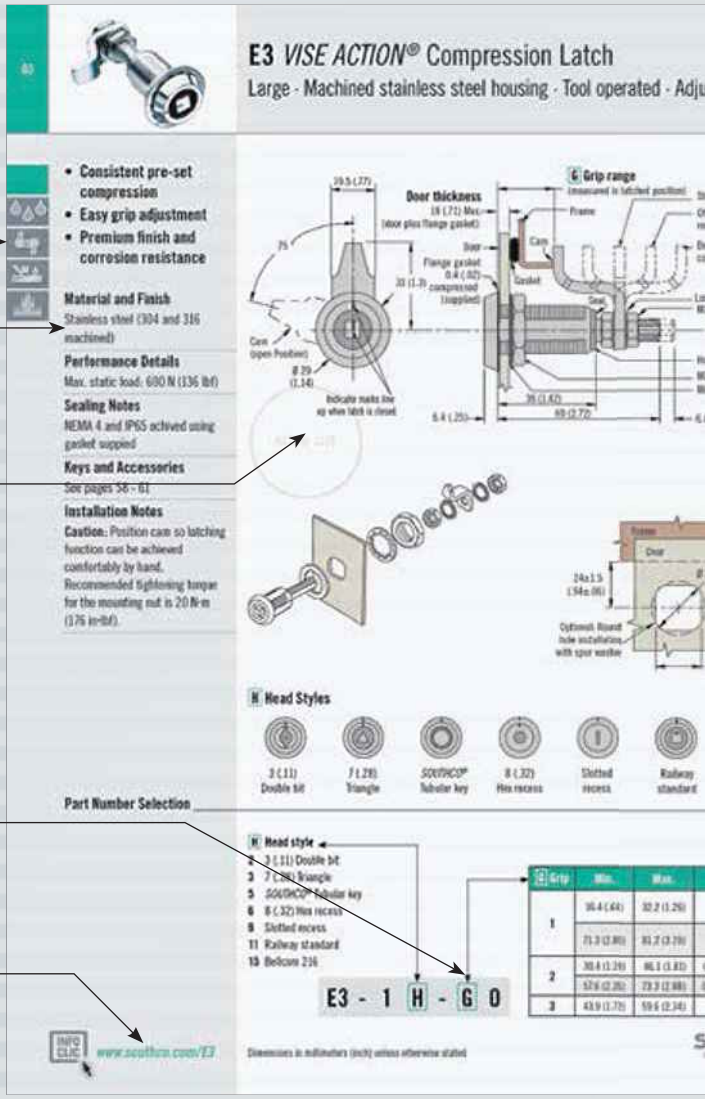


A glossary of all *SOUTHCO®* terms is on page 495.

Please refer to www.southco.com/hb2009 for updates to this Handbook.

Each technical product page includes key product data as well as value-added tools.

- **Icons** representing key product features.
- Product information such as material, installation instructions and sealing notes.
- Drawings illustrating the actual size of the product.
- Part numbers.
- A specific web location is referenced for additional product information.



Icons
Key product features are highlighted with distinctive icons.

Key-Locking | Key-Choice System | NEMA / IP Rated | Multi-Point Capability | Padlockable | Stainless Steel | Vibration Resistant

Distinctive capabilities from Southco

Proven supplier

Through our vast global presence, technical sales force and engineering experts, Southco seeks to understand the needs of its customers and meets the demanding standards of a multitude of industries.

Total Program Management

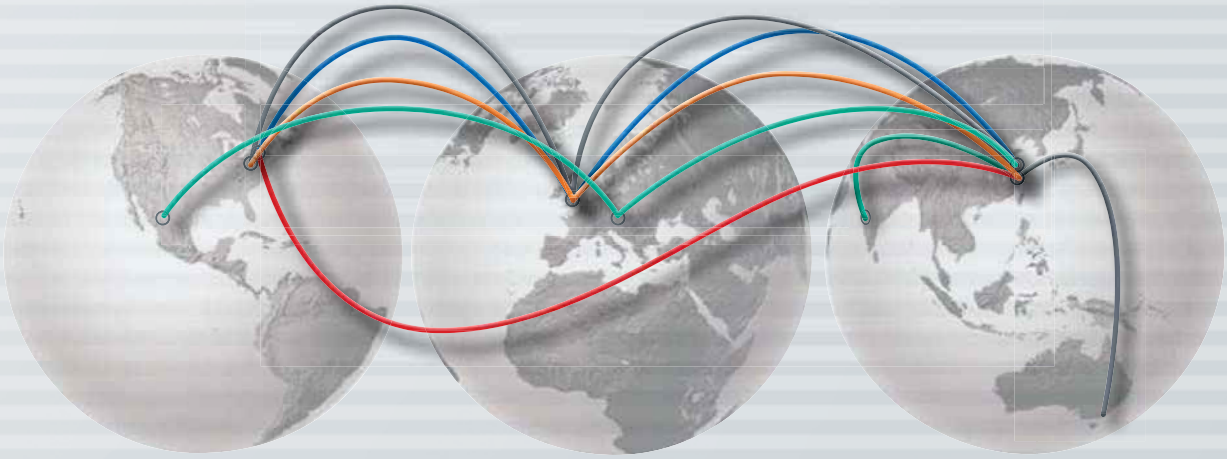
Southco offers a Total Program Management process that seamlessly integrates into your processes.

- **Ensures product availability by streamlining response times**
- **Guarantees consistency by providing a seamless flow of information**
- **Our in-house design and product evaluation tools include FEA, rapid prototyping, failure analysis and mold flow analysis capability**

Safety & Security

SOUTHCO® quality products ensure a positive first impression while providing optimum safety and secure operations. For more than 60 years, Southco has been advancing the state of secure access hardware design. Innovative designs offer unprecedented freedom for configuring and managing key code and security access capabilities.

Southco's operational capabilities and geographic reach provide our customers throughout the world with a rapid and cost-effective responsiveness.



Operational Excellence

Southco´s global operational reach is enhanced by the highest industry standards.

Our strategically located centers of operational excellence meet the supply chain needs of our customers.

- INJECTION MOLDING
- DIE-CASTING
- METAL FORMING & TURNING
- DISTRIBUTION NETWORK
- GLOBAL ASSEMBLY NETWORK

Proven supplier to a world of industries

Southco's strong customer connectivity is a result of the passion and expertise in our four strategic business units serving industries such as:

- TRUCK
- OFF-HIGHWAY
- AUTOMOTIVE
- BUS & COACH
- AEROSPACE
- RAILWAY
- CONSUMER ELECTRONICS
- ENTERPRISE HARDWARE
- ENCLOSURES
- SELF-SERVICE
- MEDICAL
- LIGHTING
- MACHINERY
- HVAC
- MARINE
- CARAVAN

Southco's strategic business units

- Transportation
- Enclosures, Enterprise Hardware and Consumer Electronics
- Marine and Recreational Vehicles
- Distribution and Diversified Markets

TRUCK · OFF-HIGHWAY · AUTOMOTIVE · BUS & COACH · AEROSPACE · RAILWAY · CONSUMER ELECTRONICS · ENTERP

Innovative solutions that satisfy the diverse needs of industry specific applications and meet the requirements of many industry standards.

- Secure latching solutions help optimize safety, durability and performance
- Electronic access solutions that seamlessly integrate into your product offering remote control and monitoring of *SOUTHCO®* products
- Constant-torque position control hinges offer smooth operation, giving a feeling of precision and quality
- Quick-access latches and fasteners help minimize maintenance costs
- Versatile actuation styles and key codes for increased entry control flexibility and maintenance-friendly access
- Environmental sealing suitable for NEMA and IP applications
- Corrosion-resistant compression latches that reduce vibration and noise, and ensure durability under harsh environmental conditions

Southco Today:

Serves 70,000+ customers worldwide, in more than 70 countries. Over 3,000 talented employees (including over 100 Engineering Key Account Managers) designing, producing and selling over 100,000 items.

SOUTHCO® Contact Details - Overview

Searching for the best solution for your application?

For customer service or technical assistance, please contact the *SOUTHCO®* support center nearest you or contact our local Technical Account Manager or Authorized Distributor to arrange a visit:

SOUTHCO® Contact Details - Americas

SOUTHCO® Contact Details - Europe

SOUTHCO® Contact Details - Asia Pacific

Global Corporate Headquarters & Customer and Technical Support Center

P.O. Box 0116 · 210 North Brinton Lake Road
Concordville · PA 19331-0116, USA
Tel: (1) 610 459 4000 · Fax: (1) 610 459 4012
Canada Tel: (1) 905 855 0309
Mexico Tel: (1) 877 821 0666

Europe Customer and Technical Support Center

Touch Point · Wainwright Road
Warndon · Worcester · WR4 9FA · UK
Tel: (44) (0) 1905 346722 · Fax: +44 (0) 1905 346723

Asia Customer and Technical Support Center

24/F, Tower 2 · Evergain Plaza · 88 Container Port Road
Kwai Chung · NT Hong Kong
Tel: (852) 3127 1503 · Fax: + (852) 3127 1541

Australia Customer Service and Distribution Center

International Trade Park · 3 Aviation Place
Tullamarine · Victoria 3043 · Australia
Tel: (61) 03 9330 5000 · Fax: (61) 03 9330 5099

India Customer Service and Technical Support Center

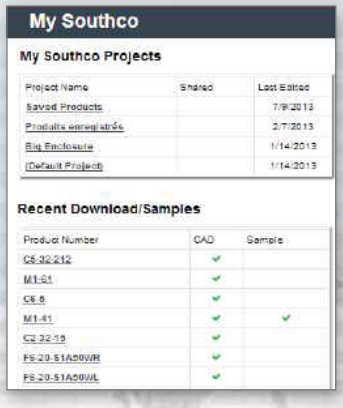
Plot A-6/5 · Ranjangaon Industrial
Taluka Shirur · Pune 412208 · India
Tel: (91) (21) 3867 0577 & 0539 Fax: (91) (21) 3867 0541

www.southco.com

Southco's award-winning website makes it easy to access helpful, up-to-date information -24/7

- Get instant access to product technical data sheets, trade drawings, and pdf literature downloads
- Request product samples on-line and download CAD files in over 20 native CAD formats
- Use our numerous on-line product configurators to help make selecting the ideal product for your application fast and simple
- View timely details and product specs on all new product introductions
- Place and track orders, check product availability and get pricing information anytime
- Gain quick access to contact information for reaching Southco's global sales representatives and authorized distributors across the world
- Customize your web experience using *MY SOUTHCO* to tailor your visits by your industry and/or individual needs, create histories of sample requests and CAD downloads, develop, save and track your specific projects and share this information with your colleagues.

MY SOUTHCO



PRODUCT CONFIGURATOR

CAD DOWNLOADS

NEW PRODUCTS

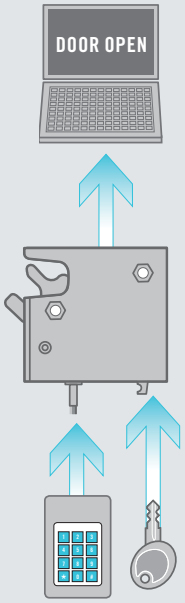
Southco's passion for new product innovation has built industry's broadest line of engineered access hardware. This section contains our most recent solutions to modern design challenges.

R4-EM Outdoor Electronic Rotary Latch

Electronic access

The R4-EM Electronic Rotary Latch with sealed actuator and plated-steel or stainless steel outer body construction provides a versatile electromechanical latch solution for outdoor and corrosive environments. Add a 12-24 Volt DC power supply and any access control device for a secure, concealed electronic access solution. The internal micro-switch options provide an output signal to remotely monitor latch status and control external systems.

- **Push-to-close, electronic release**
- **Versatile rotary mechanism**
- **Motor actuator sealed against water and dust ingress to IP56**
- **High strength plated-steel and stainless steel options**
- **Concealed latching**
- **Microprocessor control**
- **Delayed re-lock functionality**
- **Minimal power draw**
- **Optional internal micro-switch for latch status**
- **Simple mechanical over-ride**



Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/R4-EM

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R4-EM Outdoor Electronic Rotary Latch

Electronic access

Material & Finish

Mechanism
Housing, Cam, Trigger, Pins: Zinc Nickel plated steel or stainless steel
Springs: 300 Series stainless steel
Electronic Actuator
Housing: PC/ABS
Bellows, Wire Seal: Silicone
Perimeter Seal: Buna
Cams: Acetal
Grommet: Santoprene

Electrical Specifications

Recommended Operating Voltage: 12 to 24 Volt DC
Typical Operating Current (average at no load): Less then 600mA at 12 VDC
Input Signal Current Draw: 25mA MAX at 24 VDC
Micro-switch Rating: 3A MAX at 12VDC

Wire Color Code / Connector Pin Assignment:

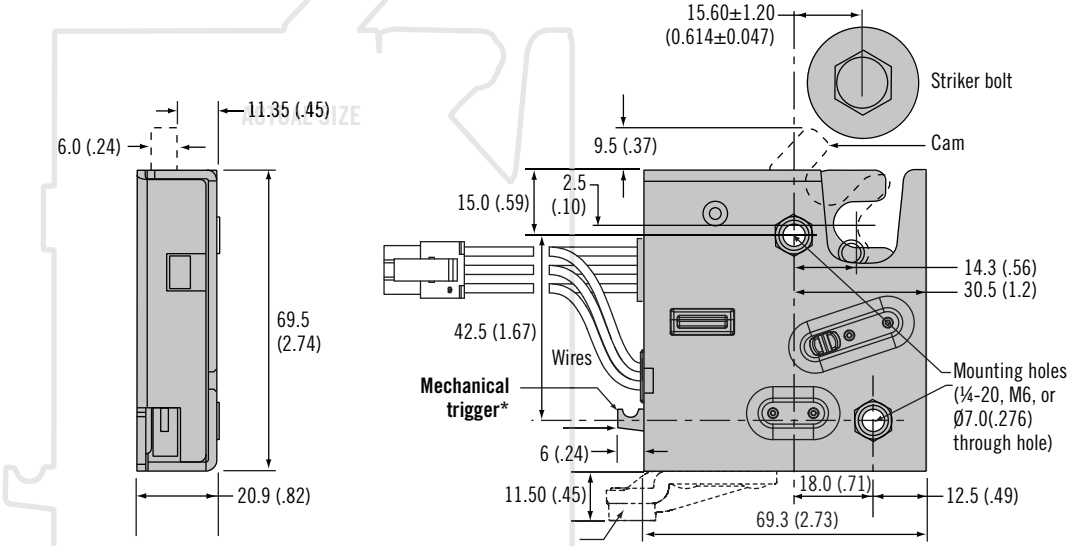
PIN 1: Brown: Ground (-)
PIN 2: Red: Power 12 to 24 Volts DC
PIN 3: Orange: Control Signal 12 to 24 Volts DC
PIN 4 Black: Microswitch Common
PIN 5 Blue: Microswitch N.O. Contact
PIN 6 Grey: Microswitch N.C. Contact

Contact Southco for mate connector and wire harness options

Notes

For mechanical release actuators and cables contact Southco

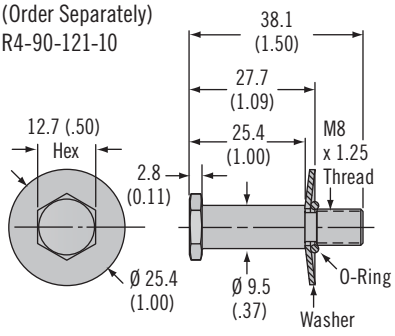
Side trigger Version



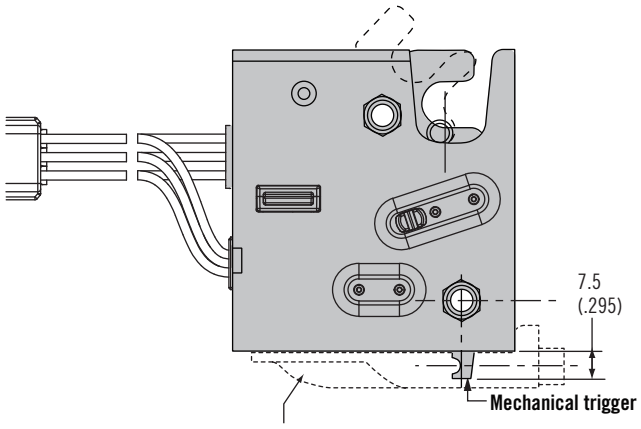
Mechanical over-ride cable mounting bracket kit for side trigger latch (R4-EM-52).
Contact Southco for mechanical over-ride solutions

Striker Bolt

(Order Separately)
R4-90-121-10

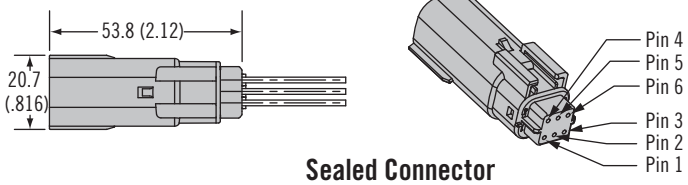


Rear trigger Version



Mechanical over-ride cable mounting bracket kit for rear trigger latch(R4-EM-87).
Contact Southco for mechanical over-ride solutions.

Connector Options



Sealed Connector

Non-sealed Connector

No Connector

Other options available. For complete details on variety, part numbers, installation and specification, go to
INFO CLIC
www.southco.com/R4-EM

Dimensions in millimeters (inch) unless otherwise stated

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Part Number Selection

T **Trigger Style**
7 Delayed Relock, Side Trigger
R7 Delayed Relock, Rear Trigger

B **Base Mounting Style**
1 1/4-20 Threaded Mounting
2 M6 Threaded Mounting
3 Thru Hole Mounting

A **Alternate Configurations**
None Light Cam Spring
2 Strong (Kick Out) Cam Spring

R4-EM - T B A - 1 S C - P M

C **Connector Options**
1 Non-sealed Connector
2 No Connector (Stripped and Tinned)
3 Sealed Connector

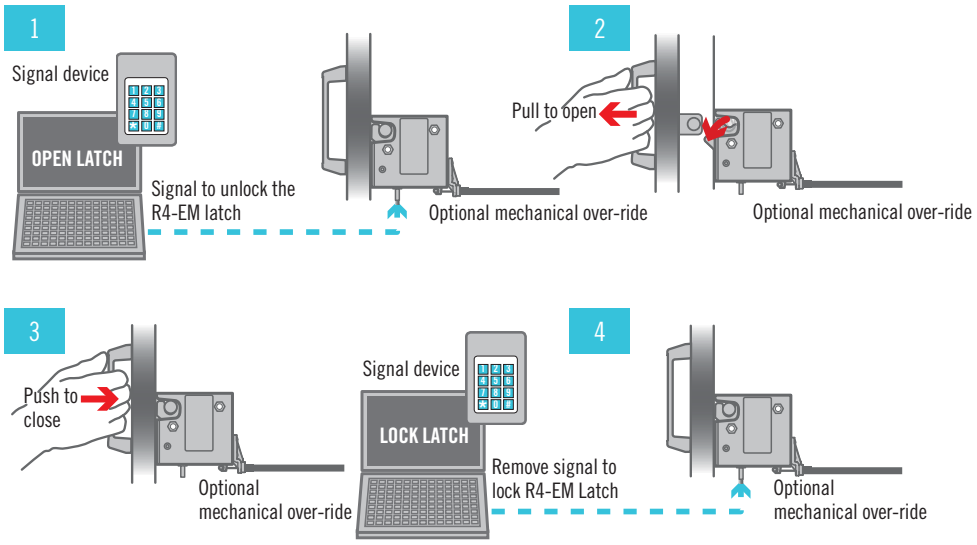
P **Packaging Options**
None Individually Packaged
1 Bulk Packaged

M **Material Options**
None Steel, Zinc-Nickel Plated
B Stainless Steel, Passivated

S **Switch Options**
3 No Switch
6 Single Switch (Cam Only)

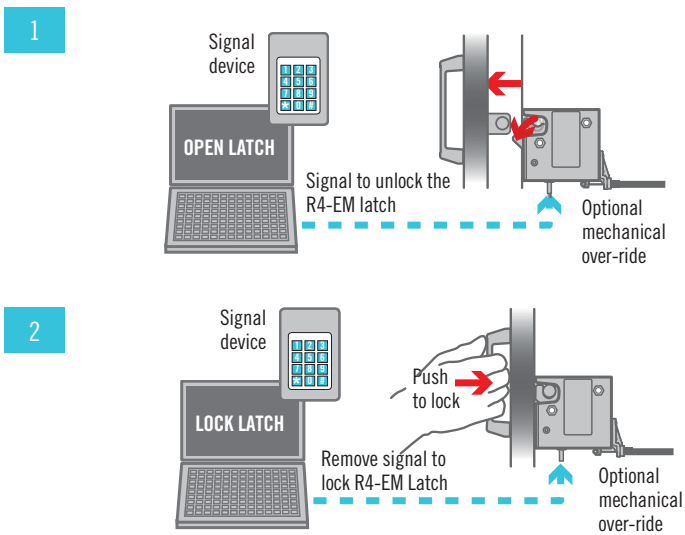
Operation - Light Cam Spring

1. The signal unlocks the R4-EM latch leaving a biased closed door in the closed position. The unlock time is controlled by the access control device.
2. Manually pull door/striker free from R4-EM latch.
3. Manually push door closed. Striker will rotate cam to closed position, however latch will remain unlocked and can be re-opened as long as signal is present.
4. After accessing the door, the signal can be removed to re-lock the R4-EM. This can be done with the door in the open or closed position.



Operation - Strong Cam Spring

1. The signal unlocks the R4-EM latch and releases the spring loaded cam which rotates out to push a lightweight door open. The unlock time is controlled by the access control device.
2. Push door closed to engage striker after unlock time has expired. Striker will rotate cam to closed position.

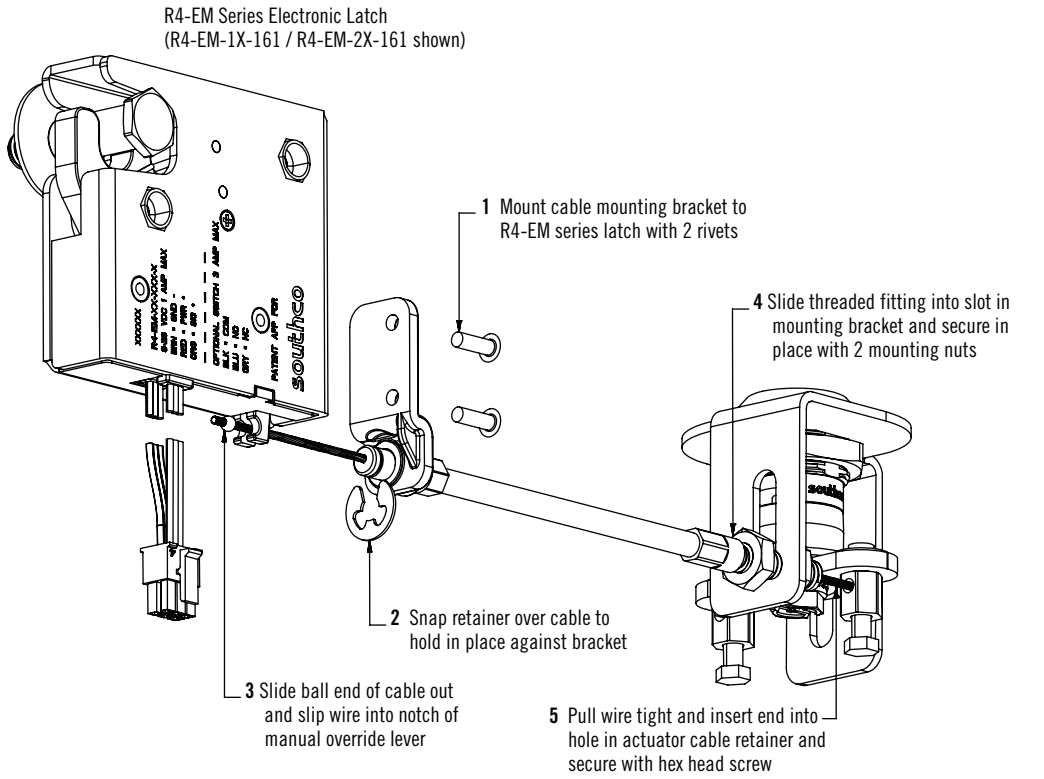


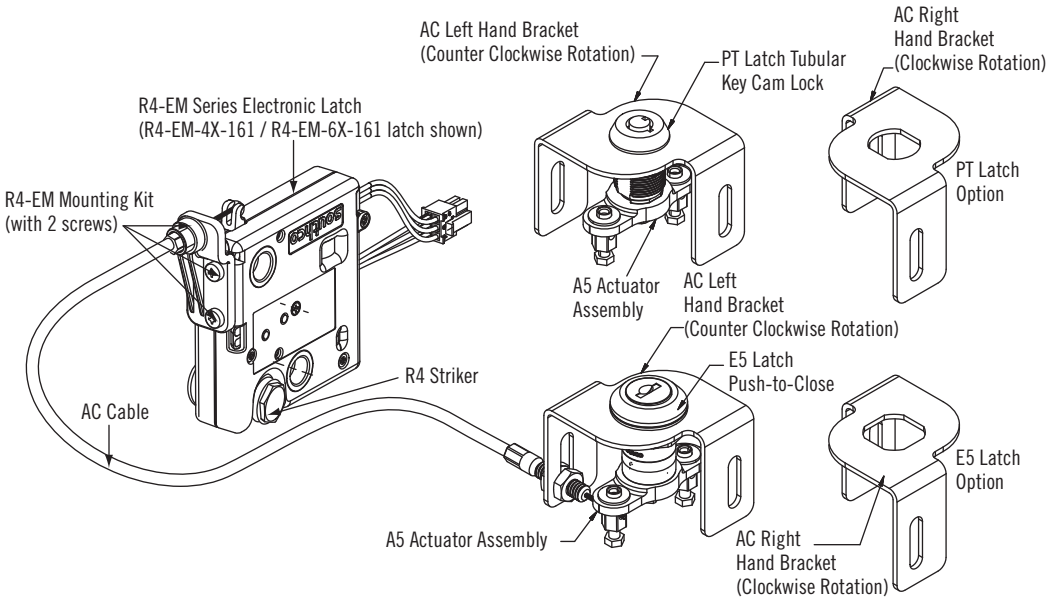
R4-EM Mechanical Override System

- **Adapts to any standard Southco R4-EM Electronic Rotary Latch**
- **Choose from flat key or tubular key cam latch for remote key lock**
- **Simple installation with multiple adjustments and customized cable lengths to suit any application.**
- **Accommodates clockwise or counter clockwise key rotation for latch release**

Southco now offers a standard solution for remote mechanical actuation of the R4-EM Electronic Rotary Latch. The cable based solution provides a simple means of mechanically releasing the electronic lock in the event of electrical power loss providing fully redundant access.

Installation





Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/R4-EMR*

Dimensions in millimeters (inch) unless otherwise stated

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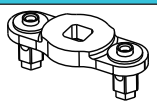
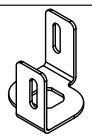
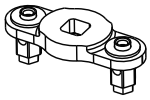
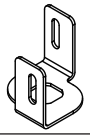
AC Cable Assembly

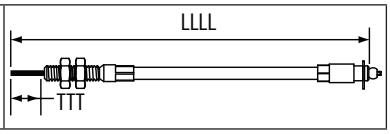
How to Order

Step 1 Select mechanical override lock and corresponding AC actuator assembly and AC cable bracket

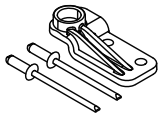
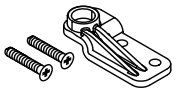
	Description	Part Number	
E5 Latch Push-to-Close assembly See drawing J-E5-53-A	A5 Actuator	A5-99-136	
	AND		
	AC Cable Bracket (Clockwise Rotation)	AC-0-49617-11-R	
	OR		
	AC Cable Bracket (Counter Clockwise Rotation)	AC-0-49617-11-L	

	Description	Part Number	
PT Latch Tubular Key cam Lock See drawing J-PT-1	A5 Actuator	A5-99-157	
	AND		
	AC Cable Bracket (Clockwise Rotation)	AC-0-49618-11-R	
	OR		
	AC Cable Bracket (Counter Clockwise Rotation)	AC-0-49618-11-L	

Step 2 Determine mechanical cable length required

Mechanical Cable See drawing J-AC-C	AC-C0H0-4-LLLL-TTT	LLLL - Length from behind ball end to end of cable TTT - Raw cable extension portion of LLLL length	

Step 3 Order mechanical over ride bracket (one per R4-EM latch)

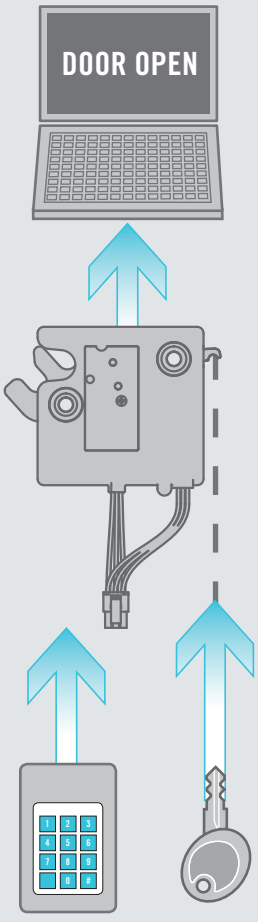
Mechanical Override Bracket for R4-EM-1X and R4-EM-2X versions See drawing J-R4-EM-52	R4-EM-52	
Mechanical Override Bracket for R4-Em-4X and R4-EM-6X versions. See drawing J-R4-EM-72	R4-EM-72	

R4 EM Light Duty Electronic Rotary Latch

Electronic access

The R4-EM Light Duty Electronic Rotary Latch provides a simple, versatile electromechanical latch solution for a variety of applications. Add a 12-24 Volt DC power supply and any access control device to the R4-EM for a secure, concealed electronic access solution. The optional internal microswitch provides an output signal to remotely monitor latch status or control external systems. The Light Duty R4-EM provides a 65% weight savings over the standard steel housing version.

- **Auto re-lock and delayed re-lock version**
- **Push-to-close, electronic release**
- **Versatile rotary mechanism**
- **Concealed latching**
- **Microprocessor control**
- **Minimal power draw**
- **Simple mechanical over-ride**
- **Optional internal microswitch for latch open/close output signal**



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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/R4-EML

R4 EM Light Duty Electronic Rotary Latch

Electronic access

Material & Finish

Housings: PC/ABS
Cam: Glass Filled Nylon
Trigger: PBT
Springs: Stainless Steel
Pins: Steel, zinc plated

Electrical Specifications

Recommended Operating Voltage: 12 to 24 VDC
Typical Operating Current (average at no load): Less than 600mA at 12VDC
Input Signal Current Draw: 25mA Max
**Optional microswitch closes upon latch closure
Microswitch Rating: 3A Max at 12 VDC

Wire Color Code / Connector Pin Assignment:

PIN 1: Brown: Ground (-)
PIN 2: Red: Power 8 to 26 Volts DC
PIN 3: Orange: Control Signal 8 to 12 Volts DC (Contact Southco for Higher Voltage Requirements)
PIN 4 Black: Microswitch Common
PIN 5 Blue: Microswitch N.O. Contact
PIN 6 Grey: Microswitch N.C. Contact

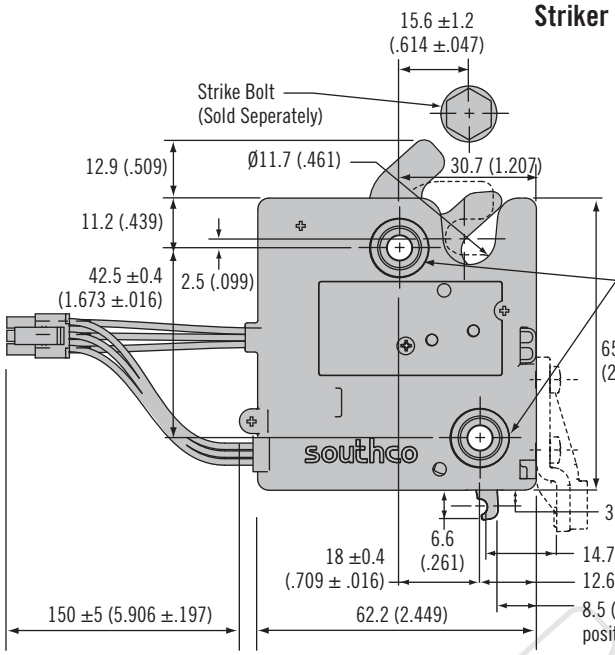
Wire Length: 150mm (5.90) with connector

Contact Southco for mate connector and wire harness

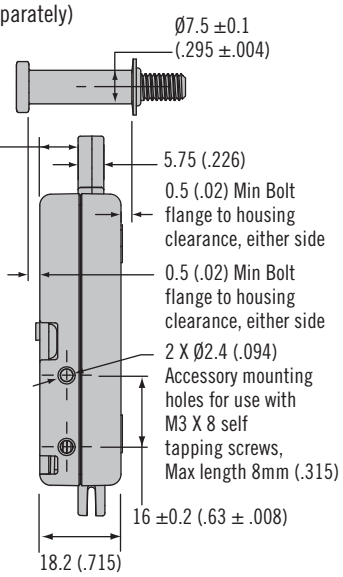
Notes

For mechanical release actuators and cables contact Southco

Parts are shipped individually boxed. For bulk packaging add -1 to the end of the part number (40 per box)

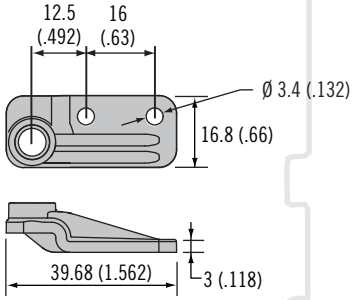


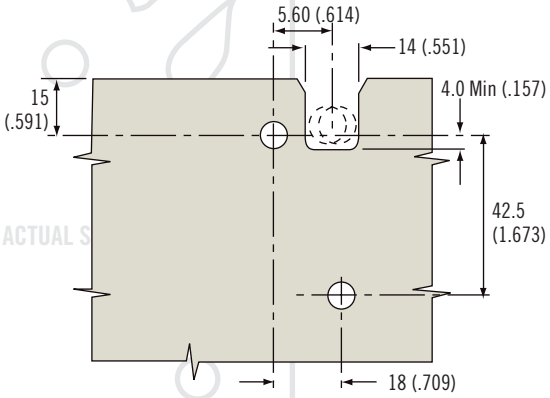
Striker Bolt (order separately)



Mounting Kit Screws Included

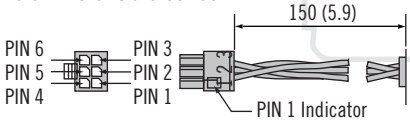
(Part Number R4-EM-72)





Latch Connector

Molex Microfit 3.0 series



Available without connector with 430mm (16.9in) length wires (stripped and tinned). Contact Southco for details.

R4-EM Light Duty Latch Part Number		
	No Microswitch	**With Microswitch**
	With connector	With connector
Ø 5.5 (.22) Thru hole mounting	R4-EM-**X**3-131	R4-EM-**X**3-161
M5 Threaded mounting	R4-EM-**X**4-131	R4-EM-**X**4-161
10-24 Threaded mounting	R4-EM-**X**5-131	R4-EM-**X**5-161
Striker Bolt Part Number		
Striker bolt	R4-90-511-20	

X=4 for Auto Re-lock version
X=6 for Delayed Re-lock version

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/R4-EML

Dimensions in millimeters (inch) unless otherwise stated

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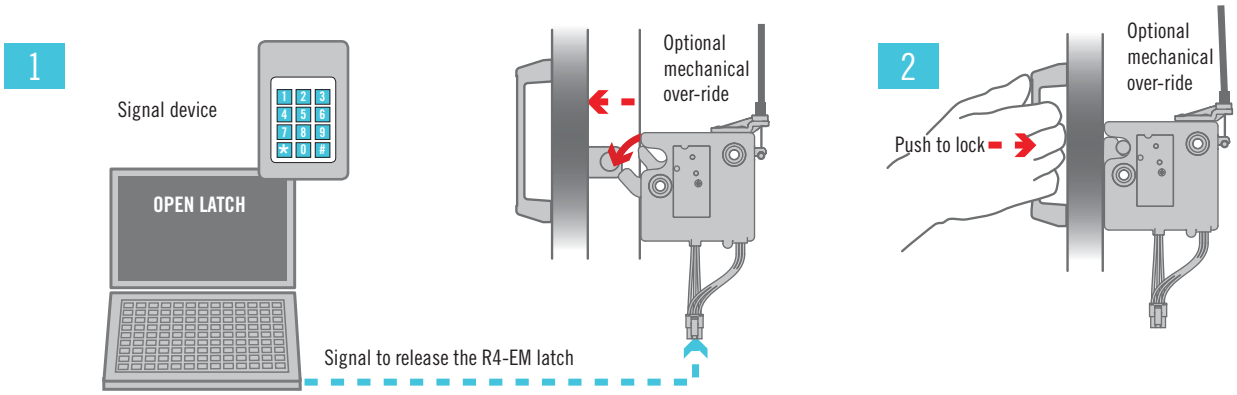
Operation

Auto Re-lock Version

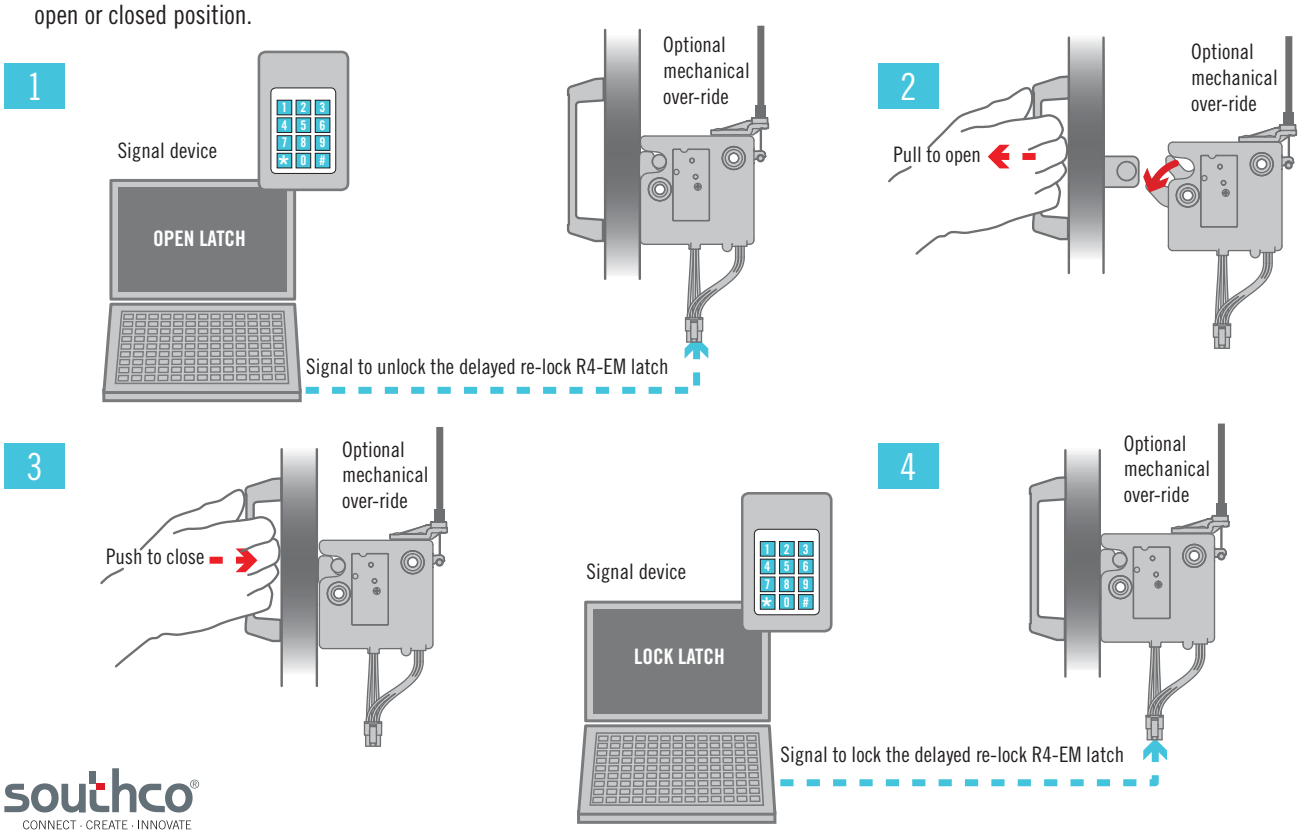
1. The signal momentarily unlocks and releases the spring loaded cam which rotates out to push a lightweight door open. The latch then immediately returns to the locked state ready to re-lock upon closing
2. Push door closed to engage striker with the R4-EM latch



Delayed Re-Lock R4EM

Use the Delayed re-lock version for heavier doors that will not kick open or where remote lock/unlock manual door opening is preferred over a pop open style.

1. The signal unlocks the R4-EM latch leaving a biased closed door in the closed position.
2. Manually pull door/striker free from R4-EM latch
3. Manually push door closed. Striker will rotate cam to closed position, however latch will remain unlocked and can be re-opened as long as signal is present
4. After accessing the door, the signal can be removed to re-lock the R4-EM. This can be done with the door in the open or closed position.



H3-EM Electronic Locking Swinghandle

- **Remote lock and unlock**
- **Momentary or continuous lock actuation**
- **Local monitoring with multi-color LED indicator**
- **Lock status outputs provided for remote monitoring**
- **Industry standard 25x150mm panel prep**
- **Integral key lock for manual over-ride**
- **Options for combined electronic lock and RFID card reader**
- **Reader recognizes existing employee RFID cards**

The H3-EM Electronic Locking Swinghandle provides intelligent electronic locking and monitoring capabilities with or without RFID card reader. The RFID module output can be connected to a standalone controller or to any networked access control system for remote control, monitoring and reporting.

1. Standalone Electronic Locking Swinghandle

Combine with any access control device to extend your access control down to the rack.

H3-EM Electronic Locking Swinghandle

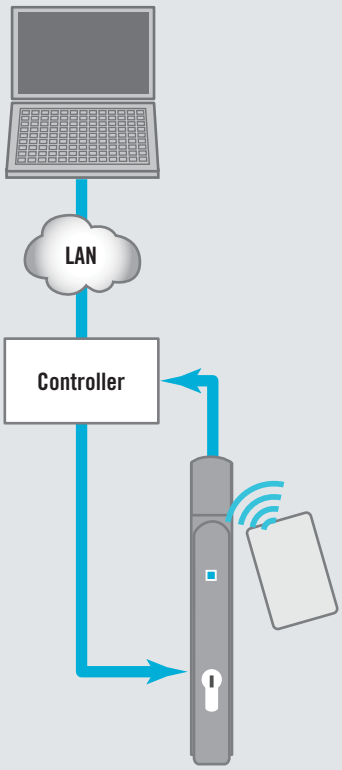
EA-KC2 Membrane Key Pad Controller

2. Standalone Electronic Locking Swinghandle with Integrated Card Reader

Combine with Southco's EA-P1 controller for a simple standalone cabinet level access control without software or network integration.

H3-EM Electronic Locking Swinghandle with Integrated Card Reader

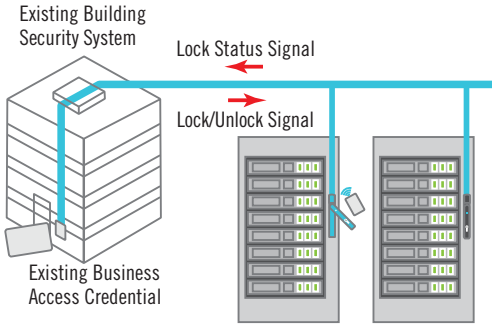
EA-P1 Prox Reader



3. Integrate with Building Security

Connect the H3-EM serial output with an existing building security system to control and monitor access from the building entry down to the cabinet level without having to install a separate reader on the enclosure door.

H3-EM Electronic Locking Swinghandle with Integrated Card Reader

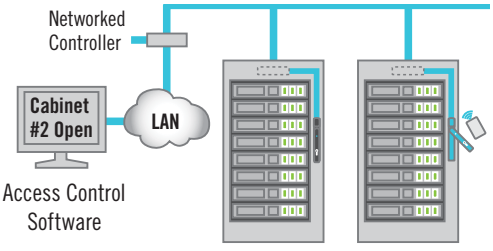


4. Independent Fully Networked Access Control System

H3-EM can be supplied as part of a fully networked, IP based cabinet access control system. Contact Southco for details

H3-EM Electronic Locking Swinghandle with Integrated Card Reader

Networked Access Control System



Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/H3EM*

Dimensions in millimeters (inch) unless otherwise stated

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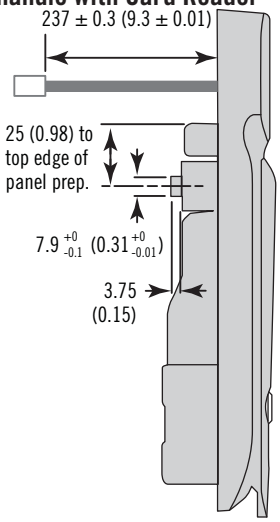
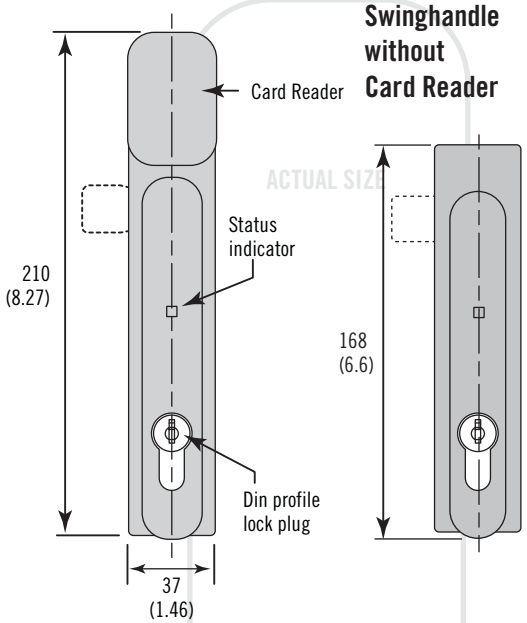
H3-EM Electronic Locking Swinghandle

Swinghandle with Card Reader

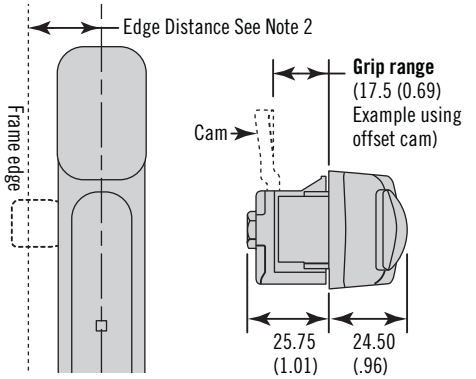




Swinghandle without Card Reader

Edge Distance

For cam length of 38mm (1.5) - Edge Distance of 30mm (1.2)
For cam length of 45mm (1.8) - Edge Distance of 37mm (1.5)



Cam Part Number (Order separately)		
Grip	Cam length (1) 38 (1.5)	Cam length (2) 45 (1.77)
15.5 (.61)	E5-6710	-
17.5 (.69)	E5-6711	-
19.5 (.77)	E5-6712	E5-6112
21.5 (.85)	E5-6713	E5-6113
23.5 (.93)	E5-6714	E5-6114

Other additional offsets:
(1) See Southco Drawings J-E5-67-A & J-E5-67-B
(2) See Southco Drawings J-E5-61-A & J-E5-61-B

Electronic Swinghandle Part Number Selection

H3 - EM - 6 R - L 00 -10***

R Card Reader type
- **0** Without Card Reader
- **7** MIFARE® Classic with Wiegand Data Output *
- **8** HID 125kHz RFID with Wiegand Data Output **
- **9** HID 125kHz RFID with RS232 Data Output **

L Lock style
- **1** High Security DIN Lock
- **2** Key Code CH-751
- **3** Key code RS001
  (Multiple RS Key Codes Available)

Card Part Numbers

EA-C2-021-9	(HID 125kHz, 26bit, 1.8 (0.07) thick**
EA-C2-021	(HID 125kHz, 26 bit, 1.8 (0.07) thick, no logo)**
EA-C3-101-9	(MIFARE® Classic, 4B CSN, 0.8 (0.03) thick)*
EA-C3-101	(MIFARE® Classic, 4B CSN, 0.8 (0.03) thick, no logo)*

Contact Southco for Custom Color/Logo Options

Material & Finish

Glass Filled Nylon, PC/ABS (UL94-V0)

Shaft, rotation limiter: Die-cast zinc, bright sealer

Electronic Swinghandle

Recommended operating voltage:
12VDC to 24VDC

Typical operating current:
Less than 200mA at 12VDC
Peak / stall operating current: 1 Amp
Standby current: 50mA Max
Output Signal: 100mA Max load

Card Reader Module

Supply voltage: 12VDC to 24VDC
Operating current: 60mA Max

To Order:

1 Select required Electronic Swinghandle part number using selection guide.

2 Select cam part number using cam part number table.

3 For multi-point applications, select optional gear box / rod adaptors or actuator plate.

4 Select optional wire harness.

5 Order cards as needed.

For standalone systems order Southco EA-P1-010 controller.

Contact Southco for details on ordering networked systems.

Note:

***Remove '-10' for latch without Southco Logo

* MIFARE and MIFARE Classic are trademarks of NXP B.V.

** HID is a registered trademark of HID Global

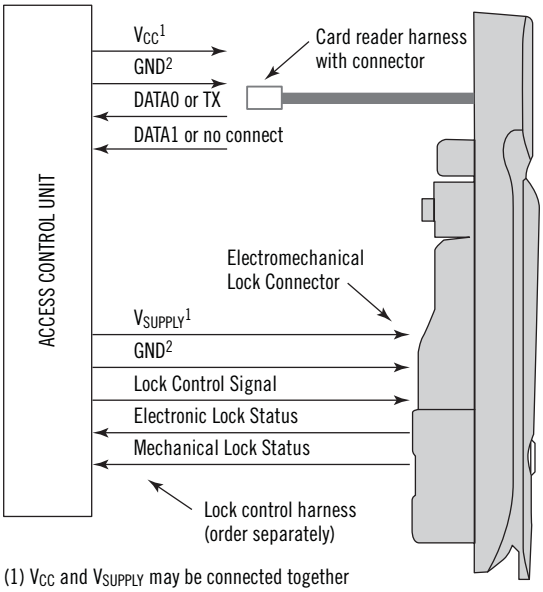
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/H3EM**

Dimensions in millimeters (inch) unless otherwise stated

H3-EM Electronic Locking Swinghandle

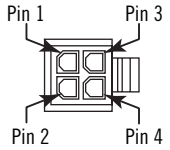
Connection Diagram



(1) V_{CC} and V_{SUPPLY} may be connected together
(2) EML and Card reader must use a common GND

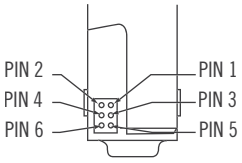
Connector Pin Assignment

Card Reader Module (Molex Micro Fit 3.0 Series)



PIN 1: Ground (Black wire)
PIN 2: Power (VCC) (Red wire)
PIN 3: DATA0 or TX (Green wire)
PIN 4: DATA1 or no connect (White wire)
* See latch operating instructions for specifics)

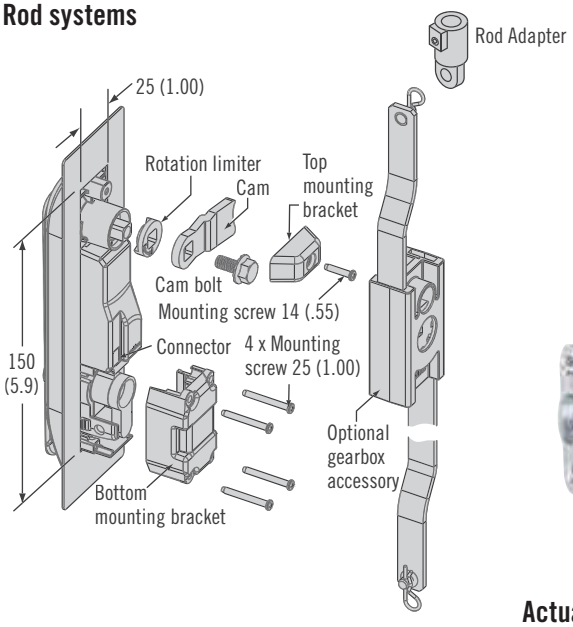
Electronic Swinghandle (Hirose DF11 Series)



PIN 1: Ground
PIN 2: Power (Vsupply)
PIN 3: Not Used
PIN 4: Control signal
PIN 5: Electronic lock status output
PIN 6: Mechanical lock status output

5 Meter Wire Harnesses (order separately)	
Part Number	Description
EA-W01-500*	From Swinghandle to Stripped and Tinned End
EA-W23-502*	From RS-232 Output Card Reader to Stripped and Tinned End
EA-W23-503*	From Wiegand Output Card Reader to Stripped and Tinned End
EA-W23-503-83*	From Wiegand Output Card Reader to EA-P1-01X (Pin/Prox Controller)
EA-W01-23-507*	From Swinghandle and Card Reader to Stripped and Tinned End
EA-W01-23-507-03*	From Swinghandle and Card Reader to Hirose 8-Pin Connector
*Contact Southco for other lengths	

Rod systems



Actuator Plate

Rod System Part Numbers (order separately)*	
H3-61-55-33	Left Hand Gearbox (CCW to open)
H3-61-56-33	Right Hand Gearbox (CW to open)
A5-92-201-31	Rod Adapter
A5-90-101-11	Actuator Plate

* For multi-point systems, select either the right or left hand gear box part number and rod adaptor (2 per door) part numbers or the actuator plate part number from table, then visit www.southco.com/A5 for rod selection.

Dimensions in millimeters (inch) unless otherwise stated

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www.southco.com/H3EM

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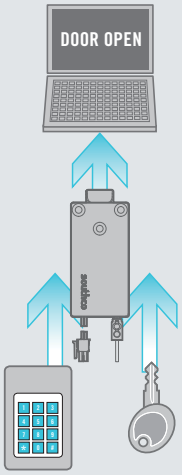
EM-05 Miniature Electronic Keeper

Electronic access

- **Simple transition from mechanical to electronic access**
- **“Push-to-close” convenience for any application – retrofit or new installation**
- **Front mount and side mount versions**
- **Concealed latching**
- **Microprocessor controlled gear motor**
- **Minimal power draw**
- **Simple mechanical override**
- **Optional internal microswitch for latch open/close output signal**
- **Wide operating voltage range (8-26 VDC)**
- **Accepts signals from any electronic actuation source**
- **Single or multi-point latching**
- **Works with a variety of door mounted mechanical latches**



Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EM-05*

The EM-05 Miniature Electronic Keeper provides a simple, versatile electromechanical latch solution for a variety of applications. Add a 12-24 Volt DC power supply and any access control device to the EM-05 for a secure, concealed electronic access solution. The optional internal microswitch provides an output signal to remotely monitor latch status or control external systems.

Front mount configuration for low profile applications.

Alternate latch bolt configuration for side mount applications.

Convenient mechanical override feature for manual release in case of power failure. Contact Southco for manual release cables.

Dimensions in millimeters (inch) unless otherwise stated

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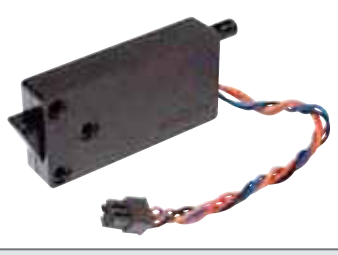
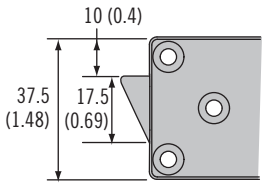
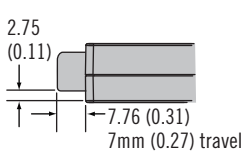
EM-05 Miniature Electronic Keeper

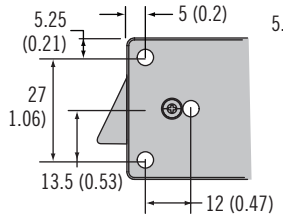
Electronic access



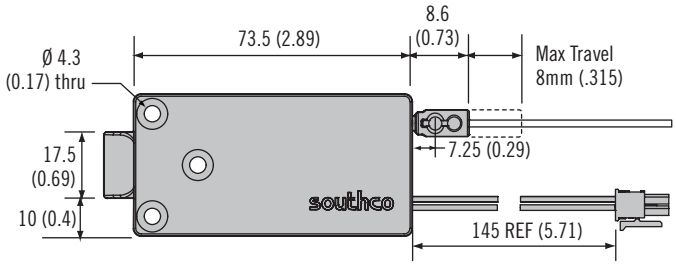
Side Mount

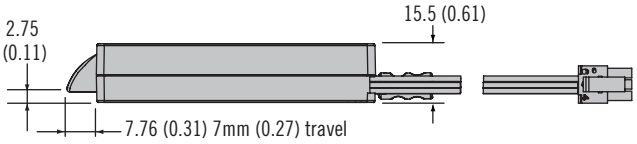


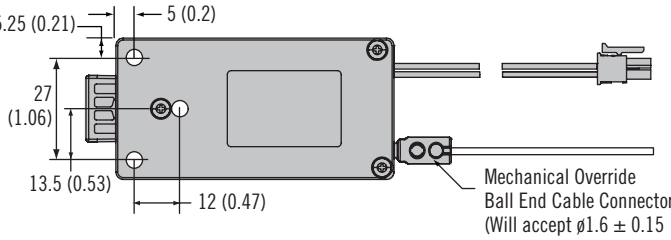




Front Mount

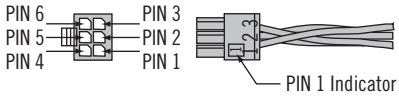






Latch Connector

Molex Microfit 3.0 series



Material & Finish

Enclosure & Latch Bolt:
Thermoplastic
Housing Assembly Screws:
Steel, Zinc Plate

Electrical Specifications

Recommended Operating Voltage:
12 - 24 VDC

Typical Operating Current:
Less than 600mA at 12 VDC

Control Input

Retracted Position: 12-24 VDC
The latch bolt will remain retracted for as long as the signal is present or a minimum of 1 second.
Input Signal Current: 25mA Max at 24 VDC

Extended Position: 0 VDC

Wire Color Code / Connector Pin Assignment:

PIN 1 Brown: Ground (-)
PIN 2 Red: Power 8 to 26 VDC
PIN 3 Orange: Control Signal 8 to 26 VDC
PIN 4 Black: Microswitch Common
PIN 5 Blue: Microswitch N.O. Contact
PIN 6: None

MINIATURE ELECTRONIC KEEPER PART NUMBERS				
Type	With Mechanical Override		Without Mechanical Override	
	With Switch	Without Switch	With Switch	Without Switch
Front Mount Latch Bolt	EM-05-11-111	EM-05-11-101*	EM-05-11-110	EM-05-11-100
Side Mount Latch Bolt	EM-05-21-111	EM-05-21-101*	EM-05-21-110	EM-05-21-100

* For Mechanical Version of Front Mount Style order part number EM-05-11-001
* For Mechanical Version of Side Mount Style order part number EM-05-21-001
(Mechanical version does not include drive motor or electronics)

Dimensions in millimeters (inch) unless otherwise stated

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Global Corporate Headquarters and Americas Customer Service & Technical Support Center
Concordville, PA – USA · Tel: (1) 610-459-4000 · Fax: (1) 610-459-4012

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EM-05

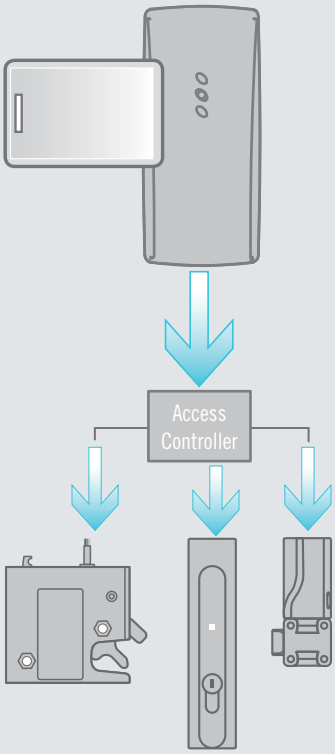
© Southco EM-05 NA 11-10

EA-P3 125kHz Proximity Reader

Electronic access

- **Non-contact proximity based access control**
- **Reads HID compatible 125kHz prox cards**
- **Standard 26 bit Wiegand output**
- **Integrated LED status indicator**
- **Compact, low profile design**
- **Simple, 3 hole installation**
- **Sealed weather resistant design**

The new Southco EA-P3 Proximity Reader provides convenient, secure, non-contact access control in a compact easy to use design. The EA-P3 reads HID 125 kHz prox cards or tags and produces a standard 26 bit Wiegand output common to most access control systems. The reader can be combined with the Southco EA-P1 Pin/Prox reader for a complete access control system, or combined with any existing 26 bit Wiegand based access controller to add additional keyless entry points to existing security systems.



Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EA-P3

HID is a registered trademark of HID Global

Dimensions in millimeters (inch) unless otherwise stated

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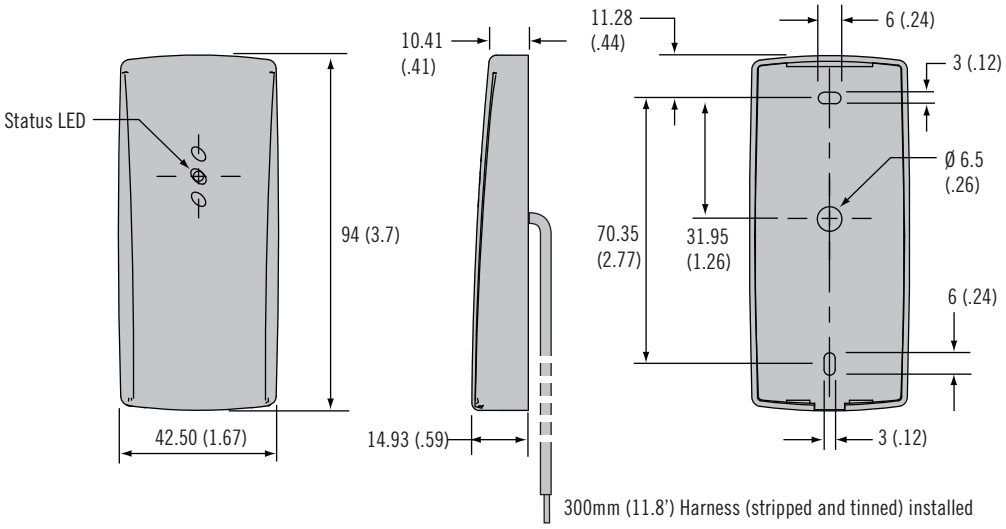
EA-P3 125kHz Proximity Reader

Electronic access



Material & Finish

ABS Plastic

Electrical Specifications

Supply Voltage: 12VDC +/- 10%

Operating Current: 60 mA MAX (No Attached Devices)

Operating Temperature: -15 to 55 ^{0}C

Operating Humidity: 20-90% RH, No condensation

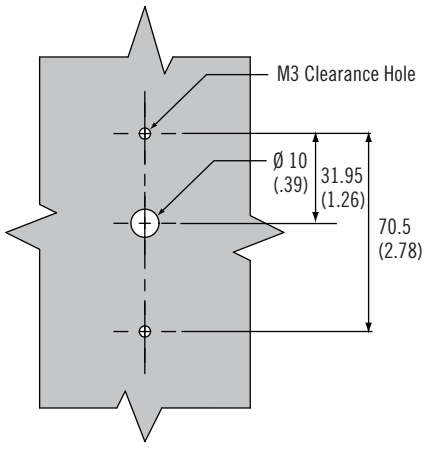
Transmit Frequency: 125kHz (FSK)

Read Range: Up to 10cm

26 Bit Wiegand Output

Reader will convert the user card ID to 26 bit Wiegand format

Panel Preparation



Wire Harness Legend	
Wire Color	Function
Red	VCC (12VDC)
Black	GND
White	Data 1
Green	Data 0
Yellow	GND
Brown	No Function
Orange	No Function
Blue	No Function

Part Number Selection	
EA-P3-101-1	Proximity Reader (Gray Enclosure*)
EA-C2-021	Proximity Card (No Logo*)

* Contact Southco for Custom Color and Logo Options

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-P3*

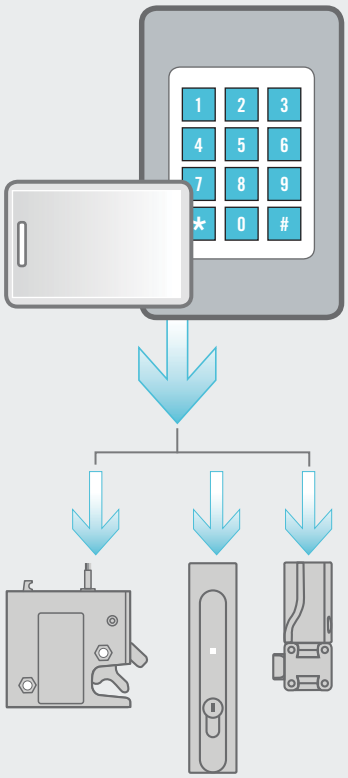
© Southco EA-P3 NA 10-11

EA-P1 Series PIN/Prox Access Controller

Electronic access

- **Simple card/PIN programming**
- **LED indicator and audible feedback for programming and lock status**
- **Up to 9,999 cards per controller**
- **Non-volatile memory retains data after power is removed**
- **Programmable door release time and alarm time**
- **For use with EA-C1 series prox cards**
- **Custom color and logo options**

Southco's self-contained PIN/Prox controllers provide basic PIN/Prox access control with the flexibility to use PIN only, Prox only, or both PIN and Prox for added convenience and security. Simply supply 12 volt DC power and connect the output to any *SOUTHCO®* electromechanical latch for a complete electronic access solution. Enter a valid PIN or present a programmed prox card to the controller to produce an actuation signal.



Additional Features

Lockout output provides alarm output after multiple failed access attempts, programmable from 1-99 attempts.

Tamper switch provides output if controller is removed from mounted surface.

Auxiliary input allows for additional remote input signal to open lock for programmed time.

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-P1*

Dimensions in millimeters (inch) unless otherwise stated

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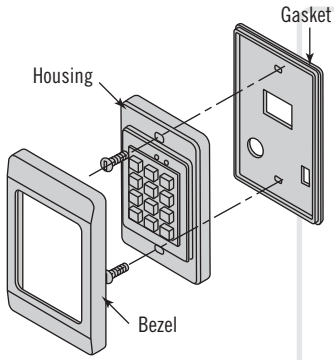
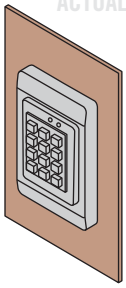
EA-P1 Series PIN/Prox Access Controller

Electronic access

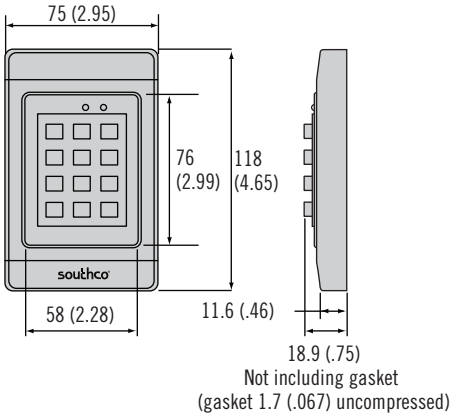
Mounting



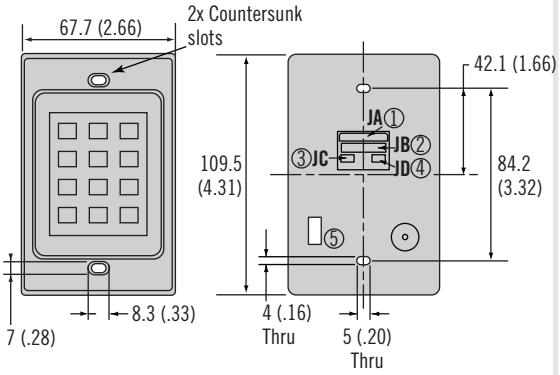
ACTUAL SIZE



Bezel Attached



Without Bezel



Connector Details

(Note: Mating connectors with approximately 160mm (6.3) of wiring, stripped and tinned provided with controller).

JA (Blue)
Door access

1 (Red)	←	+12 VDC
2 (Black)	←	Ground
3 (Brown)	→	NO
4 (Orange)	←	COM
5 (Yellow)	→	NC
6 (Green)	←	Auxiliary input
7 (Blue)	←	X
8 (Purple)	←	X
9 (Grey)	←	X

Relay Output A (Max. 2A / 30 VDC)

JC (Blue)
Tamper switch output

J (Blue)	→	NC
K (Green)	→	NO
L (Yellow)	←	COM

JB (White)
Lockout alarm output

E (Green)	→	Lockout alarm output (NO)	Relay Output B
F (Blue)	←	Lockout alarm output (COM)	(Max. 2A / 30 VDC)

JD (White)
External Wiegand Reader

1 (Red)	→	+12VDC
2 (Yellow)	←	Data1
3 (Green)	←	Data0
4 (Black)	→	Ground

C **Color**
1 - White
2 - Cool Gray
0 - Black

L **Omit** - No Logo
9 - Southco Logo

EA - P1 - 01 C - L

Proximity card: EA - C1 - 011 (contact Southco for custom color and logo options)

Dimensions in millimeters (inch) unless otherwise stated

Material & Finish

Polycarbonate and ABS Plastic

Electrical Specifications

PIN Code Length:
Programmable 1 to 8 digits

Monitoring Inputs: Auxiliary, case tampering

Typical Maximum Read Range:
10cm (depending on installation)

Frequency of Operation: 125kHz (EM), others available upon request

Modes of Operation:
* Card-only
* PIN or card
* PIN and card
* Bypass

Power: 12 VDC 80mA in standby, 105mA working current (typical)

Operating Temperature: 0-50 °C

Operating Humidity: 20-90% RH, no condensation

Connectors:

Connector with approximately 160mm (6.3) of wiring, stripped and tinned provided with controller

1. JA Door access connector (blue 9-pin)
2. JB Lockout alarm connector (white 8-pin)
3. JC Tamper switch output connector (blue 3-pin)
4. JD Wiegand reader connector (white 4-pin)
5. Tamper switch

Part Number Selection

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-P1*

© Southco EA-P1 NA 09-09

EA-R01 RF Controller

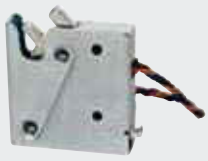
Electronic access

- **Durable, water-proof construction**
- **Dual sequenced output outputs minimize battery drain**
- **Fused 30 Amp outputs accommodate multiple latches**
- **Auxiliary light/horn output for visual/audible lock confirmation**
- **Labeled connections for easy setup**
- **Simple transmitter programming**
- **Integrate with any Southco Electromechanical latch solution**

Southco's EA-R01 series RF Controller provides peace of mind security with convenient and timesaving one touch remote locking and unlocking of multiple access points. With sealed electronics, high load capacity and simple installation, the controller is designed specifically for the environmental and storage needs of specialty vehicles, marine craft, recreational vehicles, off highway, and heavy duty trucks.

Recommended Southco EML solutions

R4-EM Electronic Rotary Latch



EM-99-124 Actuator

R4-99-308 Paddle Latch

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-R01*

Dimensions in millimeters (inch) unless otherwise stated

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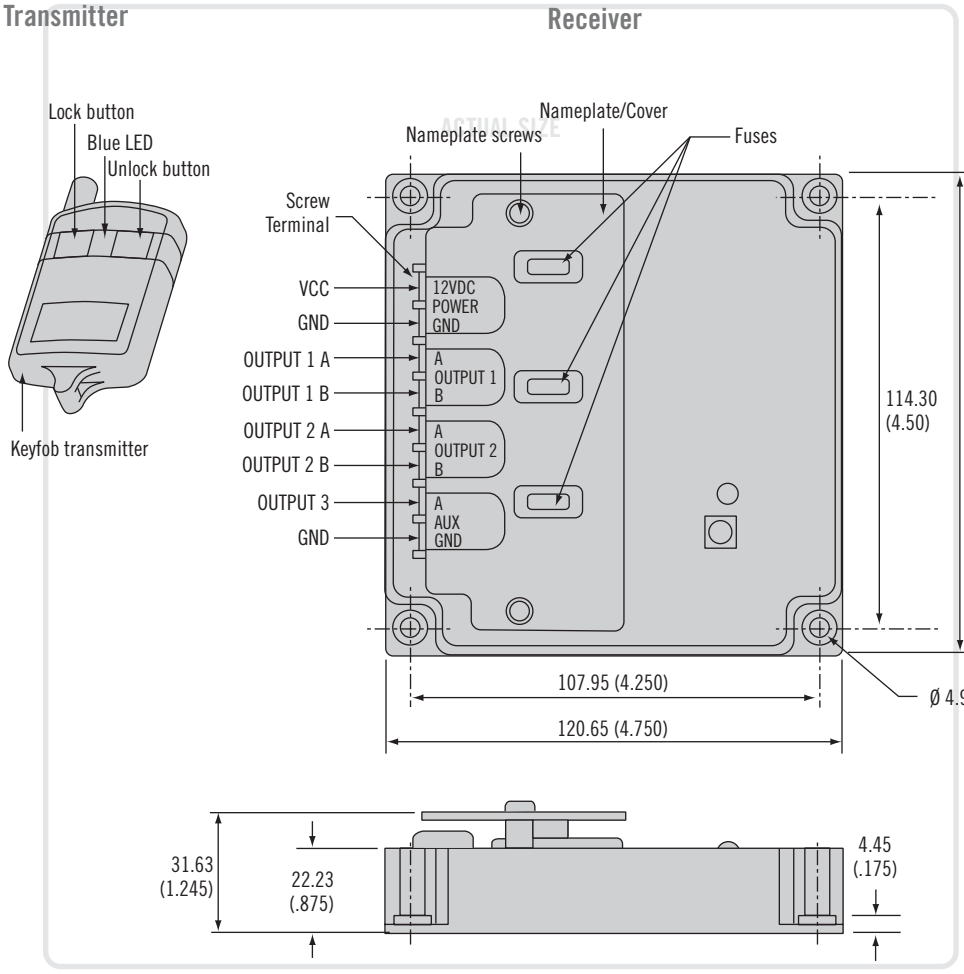
EA-R01 RF Controller

Electronic access



RF Controller Kit Part Number: EA-R01
Includes 1 receiver (EA-R01-201) and 2 transmitters (EA-R01-101)

Operation

Shipped with two pre-programmed transmitters

Press transmitter "UNLOCK" button Controller will produce a 12VDC pulse for 200ms on output 1 terminal A, followed by a 300ms pause followed by a 200ms 12VDC pulse on output 2, terminal A

After another 300ms pause, the controller will produce two 400ms pulses separated by a 200ms pause on the auxiliary light/horn output

Press transmitter "LOCK" button Controller will produce a 12VDC pulse for 200ms on output 1 terminal B, followed by a 300ms pause followed by a 200 ms 12VDC pulse on output 2, terminal B

After another 300ms pause, the controller will produce one 400ms pulse on the auxiliary light/horn output

Simple push-button learn feature with LED feedback for enrolling transmitters. Note: EA-R01 shipped with 2 pre-programmed transmitters

Specifications

Receiver Power: 12VDC (± 25%)
Receiver Idle Current: ≤10mA
Receiver Operating Current: ≤30A momentary
Receiver Outputs: Output 1 & 2: 30A polarity reversing relays
Aux Output: 30A single pole relay
Operating Range: up to 30.4m (100 ft)

Operating Frequency: 340MHz
Coding Type: Fixed Code
Enclosure Rating: IP67
Transmitter Power: Type 23 12VDC battery
Receiver output fuses 15A Littelfuse 297 Series Mini® Fast-Acting automotive blade fuse or equivalent.

Connection Details

All electrical connections are made via screw terminals accessible by removing 2 screws and name plate

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-R01*

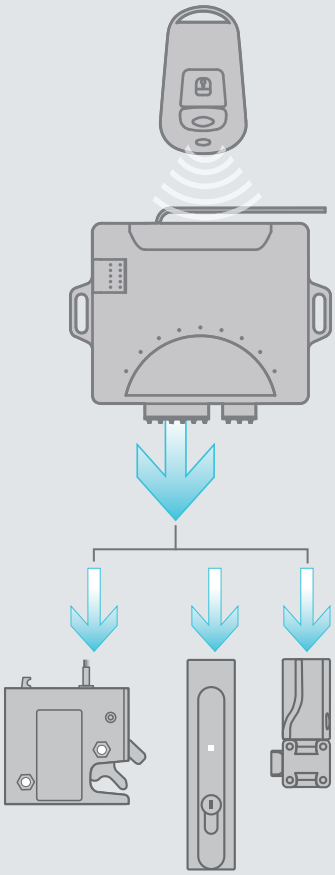
© Southco EA-R01 NA 02-10

EA-R02 RF Remote Control System

Electronic access

- **Secure, convenient, wireless remote lock actuation**
- **Quick installation and setup**
- **Economical and compact package**
- **Proven 433 MHz radio frequency technology**
- **Up to 4 transmitters per receiver**
- **18 meter (60 feet) unobstructed open air operating range**
- **Auxiliary output for horn/ light indicator output**

Southco's new EA-R02 RF Remote Control System enables remote actuation of Southco electronic locks in a basic, economical package. The EA-R02 uses a palm-size radio frequency (RF) transmitter for remote locking and unlocking of electronic locks. The keyless system consists of a receiver, two key fob style transmitters and interconnecting wire harness. The unit provides precious peace of mind with the added security and convenience that mechanical keys cannot deliver. A simple push of a button can wirelessly control multiple locks for convenient remote control. Setup and installation are both quick and easy for a smooth transition from mechanical to electronic access.



Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-R02*

Dimensions in millimeters (inch) unless otherwise stated

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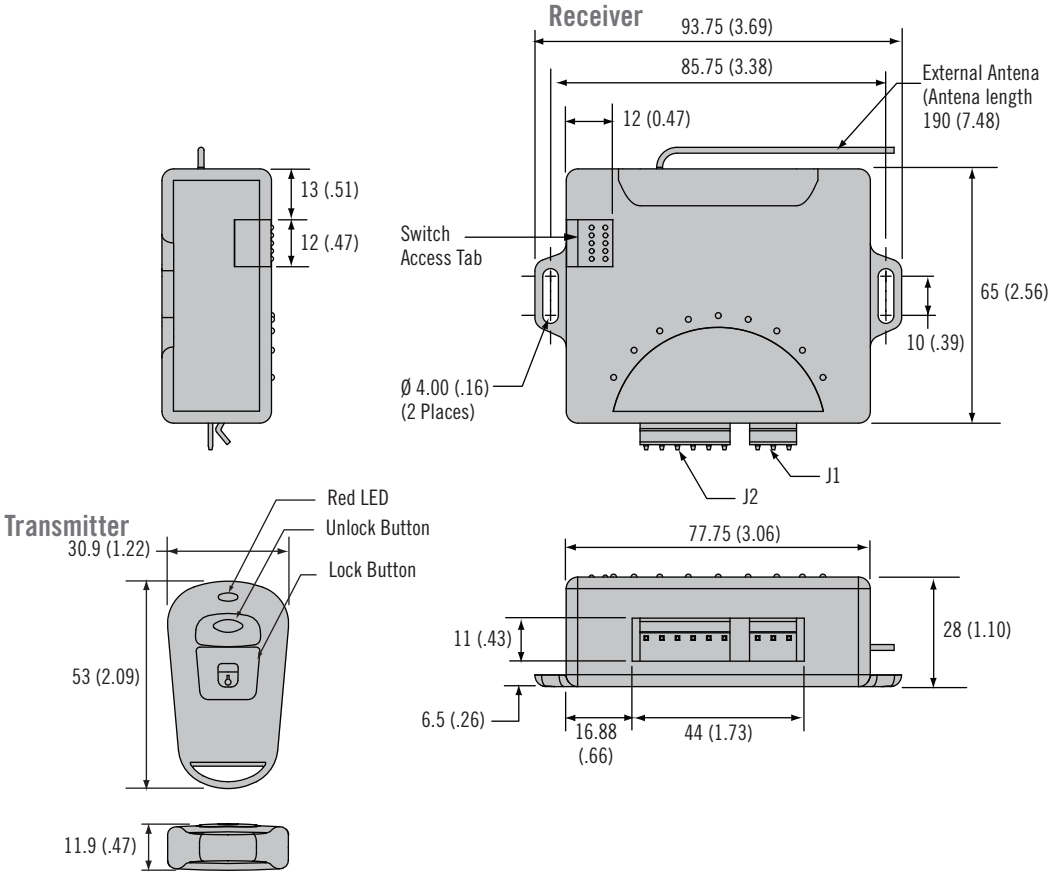
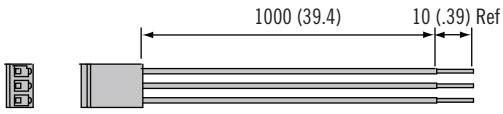
EA-R02 RF Remote Control System

Electronic access

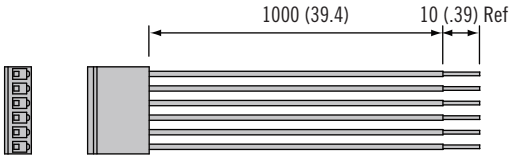


Power Supply and Auxiliary Output Wire Harness (J1)



Pin	Wire Color	Description
1	RED	VCC (+12VDC Power Supply Input)
2	BLACK	GND (Ground)
3	YELLOW	Auxiliary Output (Vout = VCC)

LOCK & UNLOCK Relay Wire Harness (J2)



Pin	Wire Color	Description
1	BLUE/BLACK	LOCK Relay – Normally Closed (typically connect to GND)
2	BLUE	LOCK Relay – Common (typically connect to latch)
3	BLUE/RED	LOCK Relay – Normally Open (typically connect to VCC)
4	GREEN/BLACK	UNLOCK Relay – Normally Closed (typically connect to GND)
5	GREEN	UNLOCK Relay – Common (typically connect to latch)
6	GREEN/RED	UNLOCK Relay – Normally Open (typically connect to VCC)

RF Remote Control System Part Number: EA-R02
Includes 1 Receiver, 2 Keyfobs, 1 Pair Power/Auxiliary and Lock/Unlock Relay Connector Wire Harnesses and Operating Instructions

Dimensions in millimeters (inch) unless otherwise stated

Material & Finish

ABS Plastic

Electrical Specifications

Receiver Power: 12VDC (±10%)

Receiver Standby Current: 10mA MAX, No Attached Devices

Receiver Operating Current: 100mA MAX, No Attached Devices

Receiver Outputs: Three Form C Relays, Rated 15A at 14VDC

Receiver Lock/Unlock Output Pulse Duration: 250ms or 10 sec (Selectable)

Receiver Operating Temperature: -20 to 80 ^{0}C

Operation

Operating Range: Up to 60 Feet / 18 Meters (Open Air)

Operating Frequency: 433.92MHz

Coding Type: Fixed Code (24-Bit)

Transmitter Power: Type CR2016 3VDC Battery
(Qty 2 per transmitter)

Switch Access Tab
Switch 1 - Used to enroll transmitters
Switch 2 - Used to set LOCK and UNLOCK pulse duration

CE

Note:

Individual components can be ordered separately. Contact Southco for information.

Other options available. For complete details on variety, part numbers, installation and specification, go to

www.southco.com/EA-R02

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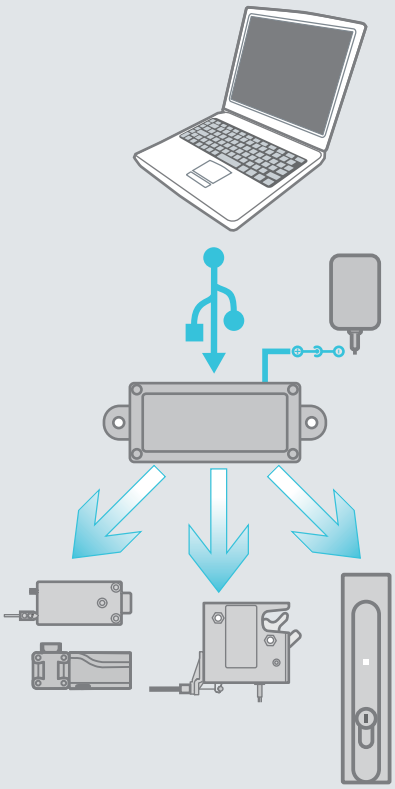
© Southco EA-R02 NA 01-12

EA-A06 USB Controller

Electronic access

- **Allows computer controlled electro-mechanical latch operation via USB port**
- **14 Independent latch inputs / outputs**
- **Simple programming commands / easy program interface**
- **Integrate with any Southco electro-mechanical latch solution**
- **Plug and Play**
- **Labeled connections for easy set up**

Southco's USB Controller allows for the independent control of up to 14 different electrical devices from an existing computer. With a set of simple software commands, control and monitor connected devices via USB port. Output signals from connected locks can be captured for audit trail reporting.



The USB Controller benefits a variety of industrial applications

Medical

Self Service

Server Access

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EA-A06

Dimensions in millimeters (inch) unless otherwise stated

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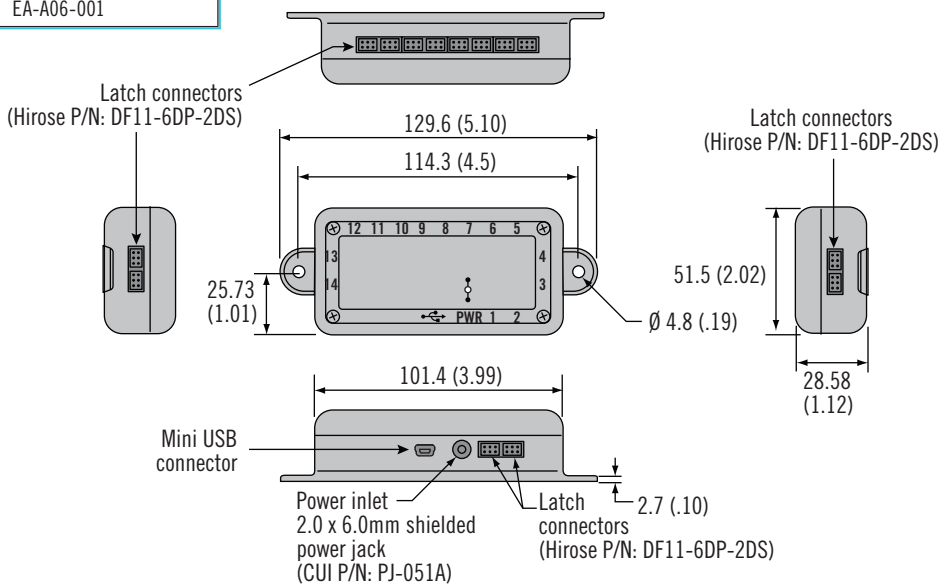
EA-A06 USB Controller

Electronic access

Controller Assembly

Part Number
EA-A06-001



1 Meter USB Cable (Included)

EA-A02-002
Power Supply

Wire Harness Options		
Part Number	Length	Connects to
EA-W01-200*	2 Meters	Stripped and Tinned
EA-W20-201-01*	2 Meters	
EA-W20-201-01*	2 Meters	
EA-W01-200-01*	2 Meters	
EA-W02-203-01*	2 Meters	

*Contact Southco For Custom Lengths

Plug Adapters

Part Number	Description	Function
EA-A02-002**	Power Supply with NA 2-Pin	
EA-A02-002 & EA-A02-002-2	Power Supply with Euro 2-Pin	
EA-A02-002 & EA-A02-002-3	Power Supply with UK 3 Pin	
EA-A02-002 & EA-A02-002-4	Power supply with SAA 2-Pin	

**EA-A02-002-1 NA 2-PIN included with EA-A02-002 Power Supply.

Material & Finish

Controller Housing – ABS
(UL94-5VA Flammability Rating)

Electrical Specifications

Operating Voltage: 12-24 VDC
Do Not Exceed Max Latch Voltage
Max Output Per Latch: 2 Amps

How to Order

1. Order one Controller with USB Cable: EA-A06-001
2. Order Southco Power Supply EA-A02-002 and select the appropriate plug adapter if needed

3. Use latch wire harness options table to select cable to accommodate Southco electromechanical latches

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EA-A06

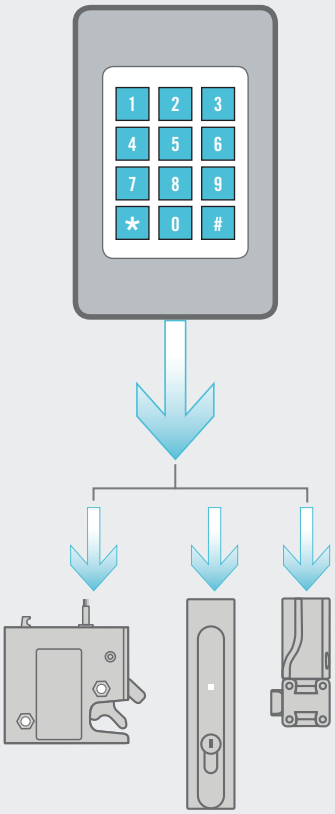
© Southco EA-A06 792NA 02-12

EA-K1 Series Keypad Access Controller

Electronic access

- **Single & 2-door**
- **Simple PIN programming**
- **LED indicator and audible feedback for programming and lock status**
- **Programmable PIN length supports up to 90,000,000 combinations**
- **Non-volatile memory retains data after power is removed**
- **Programmable door release time**
- **Surface or rear mount**
- **Custom color and logo options**

Southco's self-contained keypad controllers provide basic PIN access control without the need to carry physical credentials. Simply supply 12 volt DC power and connect the output to any *SOUTHCO®* electromechanical latch for a complete electronic access solution. Now available with output for 2 doors.



Additional Features

Lockout output provides alarm output after multiple failed access code attempts, programmable from 1-9 attempts. (1-door controller only)

Tamper switch provides output if keypad is removed from mounted surface.

Auxiliary input allows for additional remote input signal to open lock for programmed time.

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-K1*

Dimensions in millimeters (inch) unless otherwise stated

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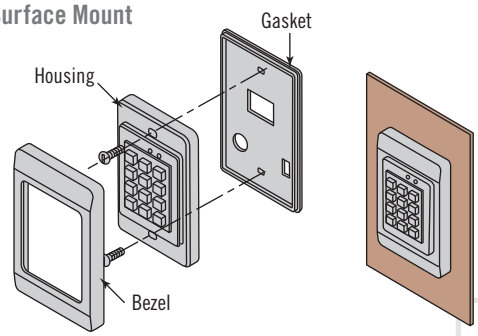
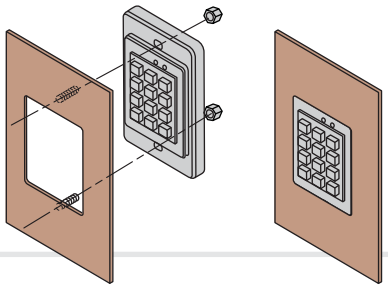
EA-K1 Series Keypad Access Controller

Electronic access

Surface Mount

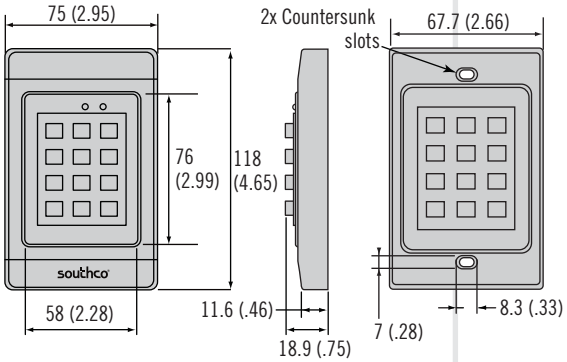


Rear Mount

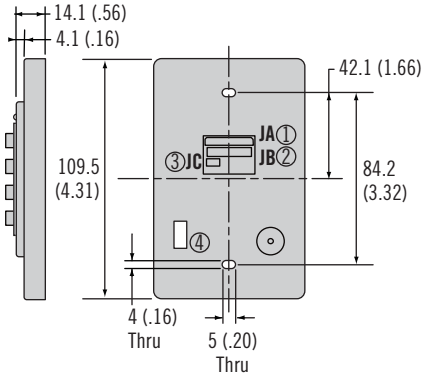


ACTUAL SIZE

Bezel Attached



Without Bezel



Connector Details

(Note: Mating connectors with approximately 160mm (6.3) of wiring, stripped and tinned provided with keypad).

JA (Blue)
For door access

9 (Red)	←	+12 VDC
8 (Black)	←	Ground
7 (Brown)	←	NO
6 (Orange)	→	COM
5 (Yellow)	→	NC
4 (Green)	←	Auxiliary input
3 (Blue)	←	X
2 (Purple)	←	Auxiliary input
1 (Grey)	←	X

Relay output A (Max. 2A / 30 VDC)

JC (Blue)
tamper switch output

3 (Blue)	→	NC
2 (Green)	→	NO
1 (Yellow)	←	COM

JB (White)
Lockout alarm output (1-door controller)
Door 2 access (2-door controller)

4 (Green)	←	(NO)	Relay output B
3 (Blue)	→	(COM)	(Max. 2A / 30 VDC)

Material & Finish

Polycarbonate and ABS Plastic

Electrical Specifications

Access Code Length:
Programmable
4 to 8 digits (1-door controller),
5 to 8 digits (2-door controller)

Monitoring Inputs: Auxiliary, case tampering

Power:12 VDC 25mA in standby, 55mA working current (typical)

Operating Temperature: 0-50 °C

Operating Humidity: 20-90% RH, no condensation

Connectors:

Connector with approx. 160mm (6.3) of wiring, stripped and tinned provided with keypad

1. JA Door access connector (blue 9-pin)
2. JB Lockout alarm connector (1-door controller) Door 2 access connector (2-door controller) (white 8-pin)
3. JC Tamper switch output connector (blue 3-pin)
4. Tamper switch

Part Number Selection

EA - K1 - 0 D 0 - L

D **Doors**
1 - 1 Door controller
2 - 2 Door controller

Standard Color: Black with Black Keys

L **Omit** - No Logo
9 - Southco Logo

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EA-K1

© Southco EA-K1 NA 08-10

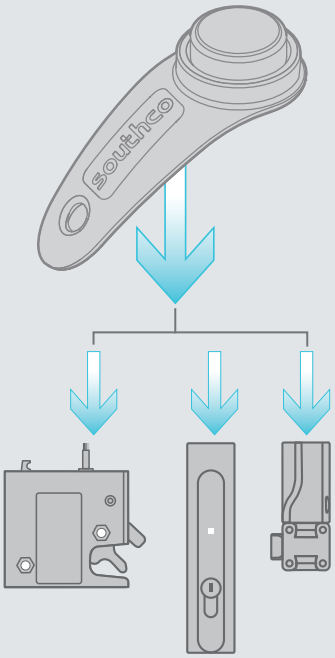
EA Electronic Key System

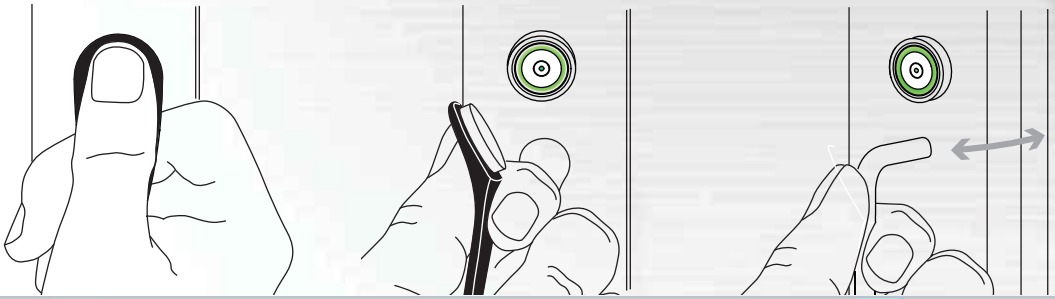
Electronic access

- **Simplified one-touch key management and lock actuation**
- **Minimal power consumption ideal for battery powered applications**
- **Simple, software-free installation**
- **Keyfobs available with custom colors and logos**
- **LED provides visual feedback for programming and access status**
- **Sealed, stainless steel, electronic key construction for durability**
- **High security with trillions of possible key codes**
- **Programmable access time**

The new *SOUTHCO®* Electronic Key System provides an efficient, user-friendly solution for key management issues. The compact iButton® based system requires no software and allows users to easily set up, modify, add and delete access privileges with the touch of a button. A user need only touch the electronic key to the reader to authenticate the key and receive access.

The Electronic Key System can operate any Southco electromechanical lock and is especially well suited for applications that require the distribution of multiple keys to individuals with varying access privileges across multiple access points – an arduous undertaking with mechanical keys.





TOUCH ACCESS STATUS OPEN

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com*

Dimensions in millimeters (inch) unless otherwise stated

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EA Electronic Key System Kit

Electronic access

Part Number: EA-B90 includes the following:
3 electronic keys (red, black, gray)
1 reader assembly
1 controller
1 power wire harness

How to Order

Order part number EA-B90 for complete kit **OR** order components separately:
1 controller per system
1 reader per system
1 electronic key for use as supervisor key and up to 15 keys for user access
1 Southco power harness (optional)

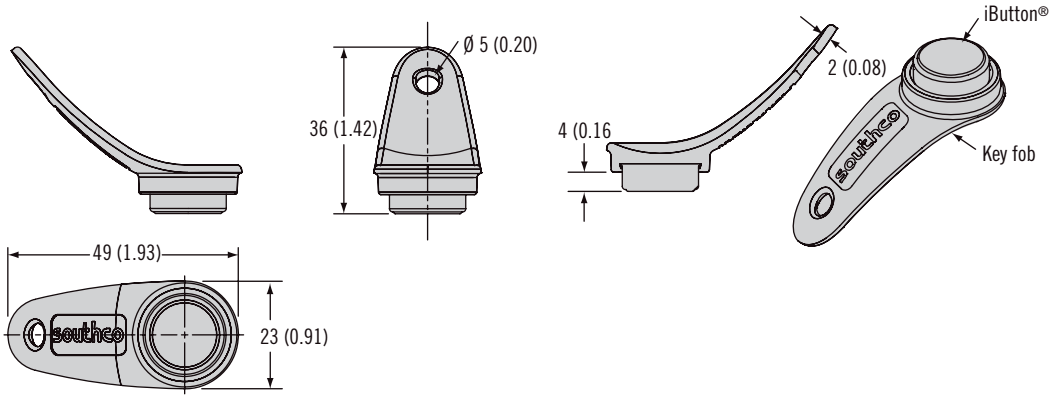
Part Number:

EA-B90

INFO CLIC www.southco.com

EA Electronic Key Assembly

Electronic access



Material & Finish

iButton® Key Fob: Acetal (color see table) and Stainless Steel

RoHS Compliant

Part Number Selection

EA - B10 - 11 - EE

EE Color see table

EE	Color
01	Red
07	Black
09	Grey

"Other colors available upon request.
Contact Southco for details."

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Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com

EA Electronic Key Controller Assembly

Electronic access

Material & Finish

Enclosure: ABS V-0 rated
RoHS Compliant

Electrical Specifications:

Supply Voltage: 12VDC ± 10%

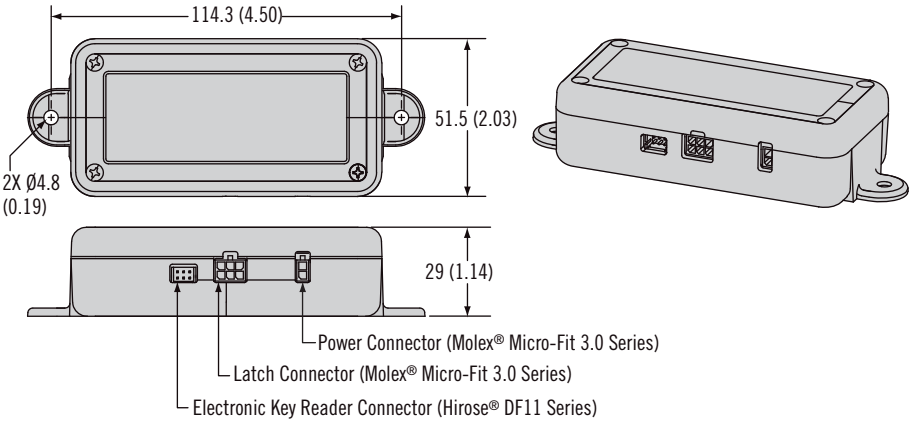
Quiescent Current: 100µA (max)

Operating Current: 35mA (max)

Latch Command Output Signal Rating: 2A Max

Part Number:

EA-B20-112



Part Number	Length
EA-W22-100	1 m (39.37)
EA-W22-200	2 m (78.74)

Optional power wire harness

INFO CLIC www.southco.com

EA Electronic Key Reader Assembly

Electronic access

Material & Finish

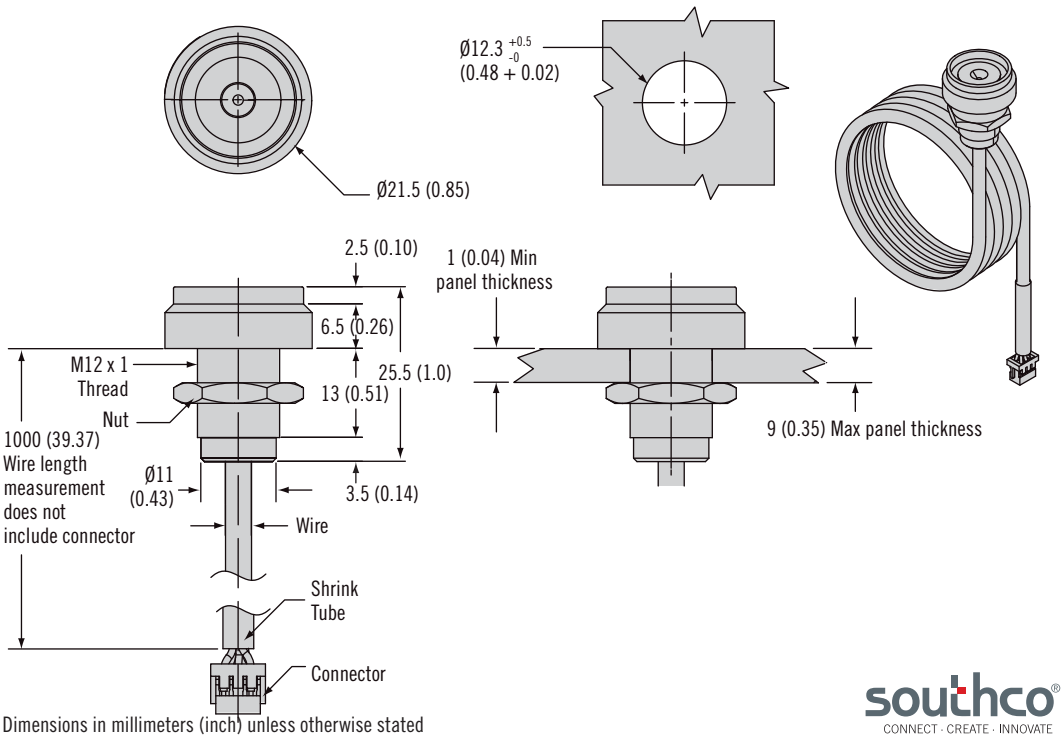
RoHS Compliant
Polyacetal plastic and chrome plated steel

Installation

Prepare panel as shown.
Remove nut.
Slip assembly through hole, threaded on nut.
Plug connector into electronic key reader connector on controller assembly

Part Number:

EA-B30-117



Dimensions in millimeters (inch) unless otherwise stated

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A system is comprised of..

... an electronic key

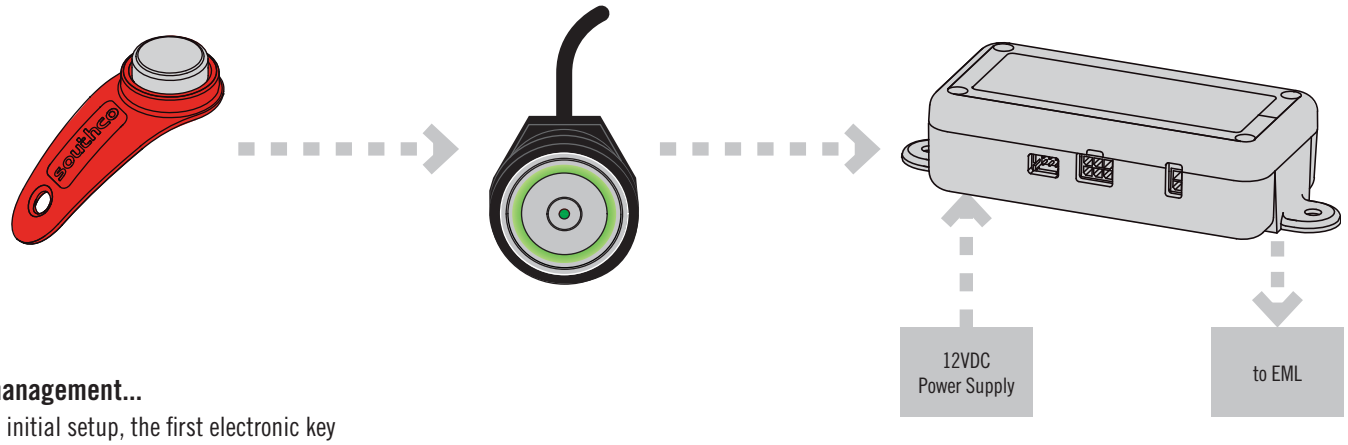
- 64 bit unique, unalterable user ID
- IC enclosed in sealed, stainless steel housing
- encapsulated in customizable fob

... an electronic key reader

- receptacle to transmit the user ID to the controller
- integrated LEDs for programming and read status

... a controller

- validates user ID against enrolled codes
- provides output to electronic lock based on ID validation



Key management...

During initial setup, the first electronic key enrolled becomes the programming key.

Touch the programming key to the reader to enter programming mode to add or delete keys.

- The reader will indicate the controller is in programming mode
- An unprogrammed key presented to the probe while in program mode is added to the system (up to 15 keys per system)
- A programmed key presented to the probe while in program mode will be deleted from the system

Touch the programming key to the reader again to exit programming mode.

Normal operation...

An electronic key is momentarily touched to the reader.

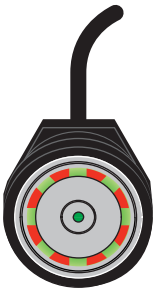
The reader includes a bi-color LED indicator to provide feedback status to the user.

The controller authenticates the electronic key and either grants or denies access.

If access is granted, the controller produces an output signal to operate the electronic lock.

Reader LED turns amber (programming mode)

Reader LED turns green (enrolled key)



Reader LED flashes green/red (unenrolled key)

iButton® is a registered trademark of Maxim Integrated Products, Inc.

Dimensions in millimeters (inch) unless otherwise stated

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INFO CLIC

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/EA-B90

© Southco EA-B NA 01-10

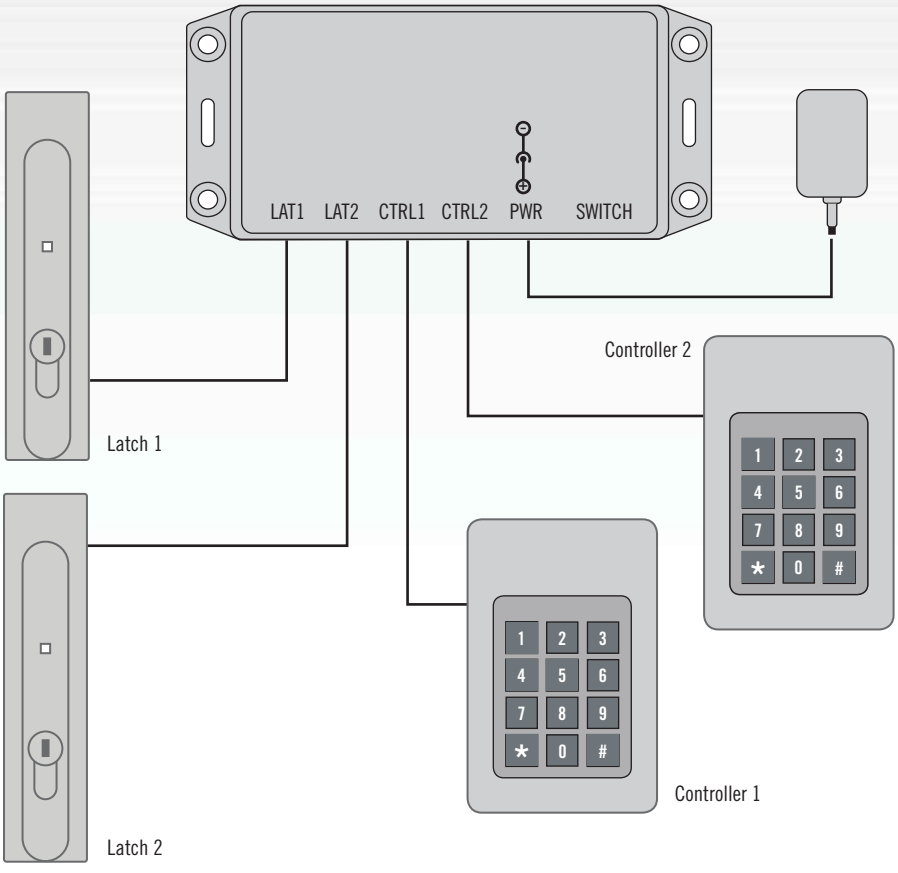
EA - Junction Box

Electronic access

- **Accommodates 2 access control devices and 2 electromechanical latches**
- **Labeled connections for simple setup**
- **Convenient centralized connection for system power**
- **Switches allow for any combination of access control to latch**
- **Use with any Southco access control to electromechanical latch combination**
- **Order Junction Box, cables and power supply separately**

The Southco EA-A01 series Junction Box provides a convenient interconnect point for the components that make up a typical electronic access solution: the access control device, the electromechanical latch and the system power. The Junction Box provides a centralized interconnect to simplify cable routing and to provide for the optimum access to cable connectors. Use the Junction Box to operate up to 2 electromechanical latches via up to 2 access control devices. Switches allow for configuration of any access control device to electromechanical latch combination. Use with any combination of Southco access control device and electromechanical latch.

Junction Box EA-A01-001



Dimensions in millimeters (inch) unless otherwise stated

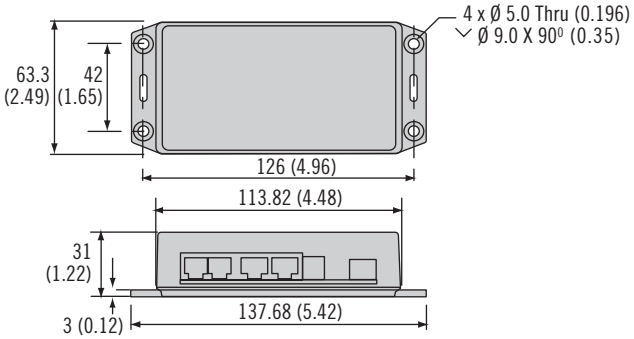
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-A01*

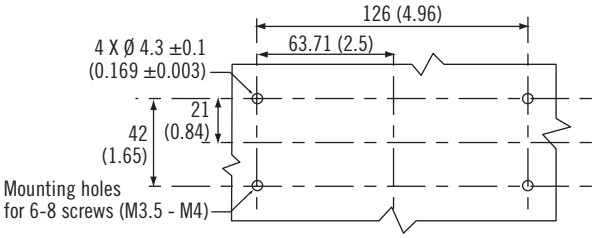
EA - Junction Box

Electronic access

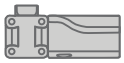
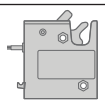
Part Number
EA-A01-001



Panel Preparation



Accessories Listing

Part Number	Description	Function	
EA-W02-503-51*	5 Meter wire harness -RJ12 to Hirose 4 Pin DF11-4DS-2C	Connects Junction Box to EM-10-XX-XXX Electronic Keeper	
EA-W20-501-51*	5 Meter wire harness -RJ12 to Molex 43020-0601	Connects Junction Box to R4-EM-XX-XXX Electronic Rotary Latch	
EA-W01-500-51*	5 Meter wire harness -RJ12 to Hirose 6 Pin DF11-6DS-2C	Connects Junction Box to H3-EM-60-100 Electronic Swing Handle	
EA-W52-506*	5 Meter wire harness -RJ45 to stripped and tinned end	Connects Junction Box to Customer Application	
EA-W52-506-80*	5 Meter wire harness -RJ45 to JA connector A2506H-09	Connects Junction Box to EA-K1 and EA-P1 Series Access Controllers	
EA-A02-002**	Power supply with NA 2-Pin	Supplies Power to System	
EA-A02-002 & EA-A02-002-2	Power supply with EURO 2-Pin	Supplies Power to System	
EA-A02-002 & EA-A02-002-3	Power supply with UK 3-Pin	Supplies Power to System	
EA-A02-002 & EA-A02-002-4	Power supply with SAA 2-Pin	Supplies Power to System	

*Contact Southco for custom lengths
** EA-A02-002 comes with EA-A02-002-1 NA 2-PIN

Material and Finish

RoHs Compliant
housing: ABS
PCB: FR4

Specifications

Operating Voltage: 12-24V
Max. Current: 1.5A

Mating Connectors

LAT1 & LAT2: Plug, Modular, 6P6C (RJ12)

CTRL1 & CTRL2: Plug, Modular, 8P6C (RJ45)

PWR: Plug, Barrel, 2.1mm 1D, 5.5mm 0D

Individually Shipped in ESD Bag

Connection Details

Recommended Mounting Hardware: M3.5 - M4.5 (Do not over tighten)

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/EA-A01*

© Southco EA-A01 NA 08-10

EA-KC2 Series Membrane Keypad Access Controller

Electronic access

- **Simplified, secure access management**
- **Attractive, customizable membrane style keypad**
- **Programmable to accommodate multiple access arrangements**
- **Direct integration with electronic locks**
- **Controls up to two compartments independently**
- **Sleep mode for minimal power draw**
- **Up to 120 user codes**
- **LED indicators for keypad status & programming**

The Membrane Keypad Access Controller simplifies access management with keyless entry in a self-contained unit. Designed to accommodate industrial equipment needs, the Membrane Keypad is easily customized and can be simply adhered to a door or frame. The remote controller can be mounted anywhere inside a cabinet and provides two outputs for independent control of two separate compartments. Flexible and easy to use, it can be customized to accommodate any look, shape or feel.

The Membrane Keypad benefits a variety of industrial applications

Self Service

Medical Storage

Server Racks

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EA-KC2

Dimensions in millimeters (inch) unless otherwise stated

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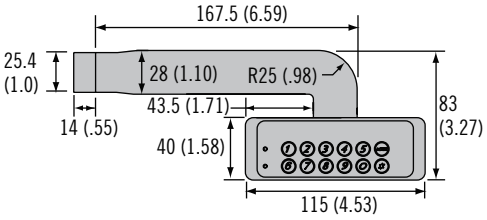
EA-KC2 Series Keypad Access Controller

Electronic access

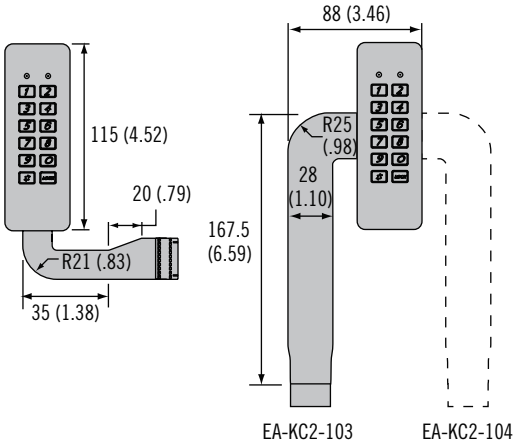
Horizontal Key Pad

Part Number EA-KC2-101



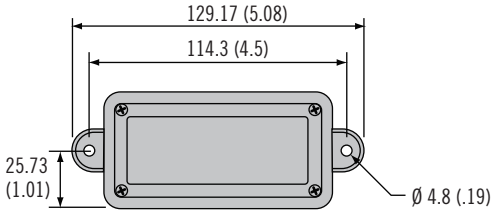
Vertical Key Pad

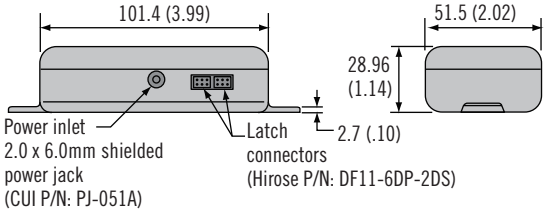
Part Number EA-KC2-102, EA-KC2-103 & EA-KC2-104

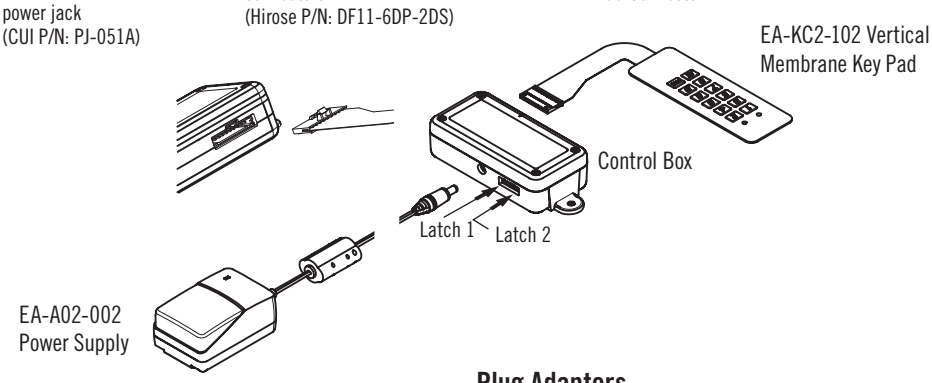


Controller Assembly

Part Number EA-KC2-201







LATCH WIRE HARNESS OPTIONS		
Part Number	Description	
EA-W01-200*	2 Meter Wire Harness Stripped and Tinned	
EA-W20-201-01*	2 Meter Wire Harness to Connect Membrane Controller to Miniature Electronic Keeper (EM-05-XX-XXX)and/or Electronic Rotary Latch (R4-EM-XX-XXX)	
EA-W01-200-01*	2 Meter Wire Harness to Connect Membrane Controller to Electronic Swing Handle(H3-EM-XX-XXX)	

*Contact Southco For Custom Lengths

Plug Adapters

Part Number	Description	Function
EA-A02-002**	Power Supply with NA 2-Pin	
EA-A02-002 & EA-A02-002-2	Power Supply with Euro 2-Pin	
EA-A02-002 & EA-A02-002-3	Power Supply with UK 3 Pin	
EA-A02-002 & EA-A02-002-4	Power supply with SAA 2-Pin	

**EA-A02-002-1 NA 2-PIN included with EA-A02-002 Power Supply.

Material & Finish

Membrane Key Pads with Tactile Keys - Textured Polyester Film with PSA Tape for Mounting on Backside
Controller Housing - ABS
Controller Circuit Board - FR4

Electrical Specifications

Supply Voltage: 12-24 VDC
Stand By Current: 30µA
Operating Current: 10mA (Typical)
MAX Total Output: 4 Amps (2 Amps per Output)

How to Order

1. Order one controller EA-KC2-201
2. Order standard Southco membrane EA-KC2-101, EA-KC2-102, EA-KC2-103 & EA-KC2-104. Contact Southco for custom membrane keypad design.
3. Order Southco Power Supply EA-A02-002 and select the appropriate plug adapter if needed.

4. Use latch wire harness options table to select cable to accommodate Southco EML

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/EA-KC2

© Southco EA-KC2 683NA 04-12

N2 Compression Latch

Lift & turn series · Folding T-handle · Medium flush cup style · Adjustable grip

- **Heavy-duty performance**
- **Flush profile when latched**
- **Easy grip adjustment**
- **Ergonomic and intuitive operation**

Material and Finish

Stainless steel, aluminum, black powder coated and plated steel

Performance Details

Max. static load: 2000 N (450 lbf)

Installation Notes

1. Insert latch and tighten 4 M6 mounting nuts. Max. tightening torque 7.2 N•m (63.7 in•lbf)
2. With latch in closed position, adjust M12 lock nuts to position cam at correct grip. Max. tightening torque: 20 N•m (177 in•lbf)

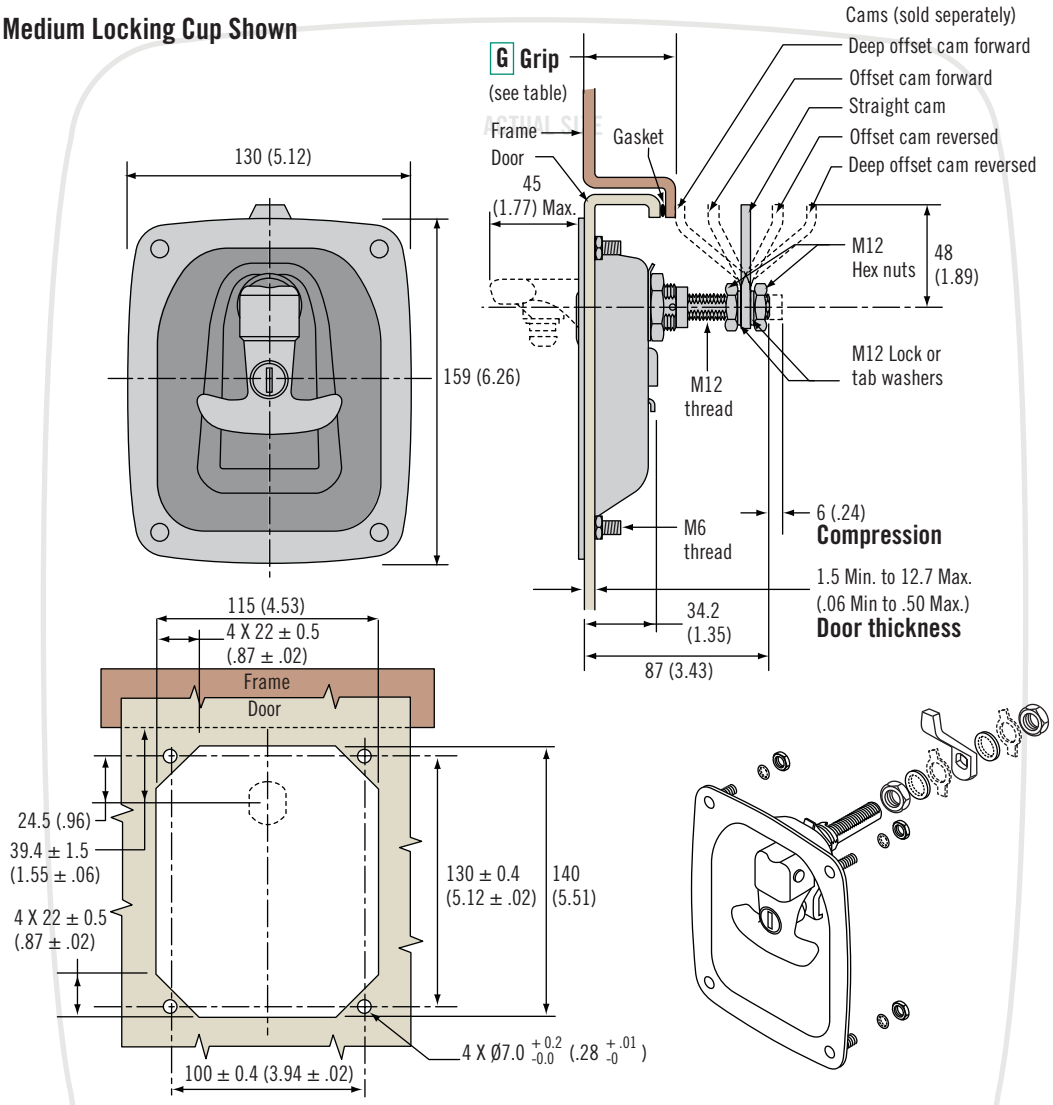
Key Part Numbers

Overmolded key CH751:
Single: PK-10-10-05
Pair: PK-10-01-05

Flat key
Pair: PK-10-01

Custom keys available. Contact Southco for details

Medium Locking Cup Shown



Overmolded Keys

Key CH751

Flat Keys

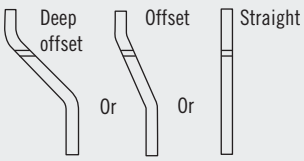
Key CH751

Part Number Selection

Order both parts separately

Choose latch body style

Choose cam (see table)



Cam Part Number Table (order separately)			
Part Number	G Grip		Cam Type
	Min.	Max.	
N2-21-101-12	28 (1.10)	43 (1.69)	Deep offset cam, forward
	88 (3.46)	104 (4.09)	Deep offset cam, reversed
N2-21-102-12	43 (1.69)	58 (2.28)	Offset cam, forward
	73 (2.87)	88 (3.46)	Offset cam, reversed
N2-21-103-12	58 (2.28)	73 (2.87)	Straight

L Locking style
0 Non-locking
1 Key-locking keyed alike CH751 (2 flat keys supplied)

Latch part number (no cam)

N2 - 2 - 50 L - 01 - 5

Dimensions in millimeters (inch) unless otherwise stated

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INFO CLIC www.southco.com/N2

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N2 Compression Latch

Lift & turn series · Stainless Steel · Folding T-handle
Flush cup style · Adjustable grip

- **Heavy-duty performance**
- **Flush profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

Stainless steel

Performance Details

Max. static load: 1800 N (405 lbf)

Installation Notes

1. Insert latch and tighten 4 mounting nuts.
2. With latch in closed position, adjust jam nuts to position cam at correct grip. Recommended tightening torque: 20-25 N•m (177-221 in•lbf)
3 If using M12 cam tab washer, after cam is adjusted to correct grip, bend both tabs over the M12 nut.

Keys

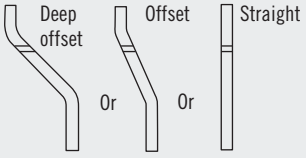
Key-locking keyed alike CH751 (2 keys supplied)

Part Number Selection

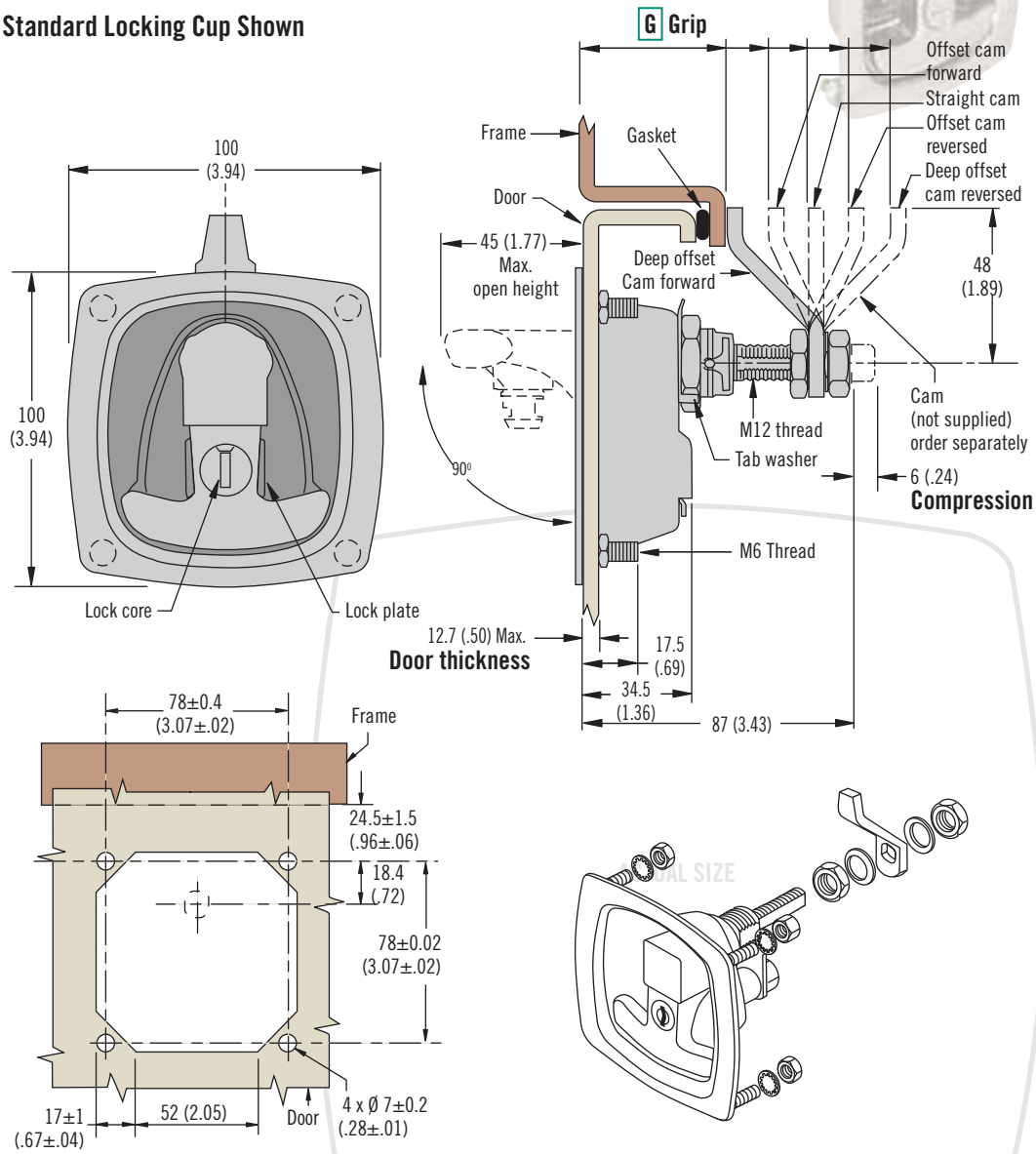
Order both parts separately

Choose latch body style

Choose cam (see table)



Standard Locking Cup Shown



Cam Part Number Table (order separately)			
Part Number	G Grip		Cam Type
	Min.	Max.	
N2-21-101-24	28 (1.10)	43 (1.69)	Deep offset cam, forward
	88 (3.46)	104 (4.09)	Deep offset cam, reversed
N2-21-102-24	43 (1.69)	58 (2.28)	Offset cam, forward
	73 (2.87)	88 (3.46)	Offset cam, reversed
N2-21-103-24	58 (2.28)	73 (2.87)	Straight

L Locking style

0 Non-locking

1 Key-locking keyed alike CH751 (2 keys supplied)

Latch part number (no cam)

N2 - 2 - 30 L - 01 - 20

Other options available. For complete details on variety, part numbers, installation and specification, go to

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Dimensions in millimeters (inch) unless otherwise stated

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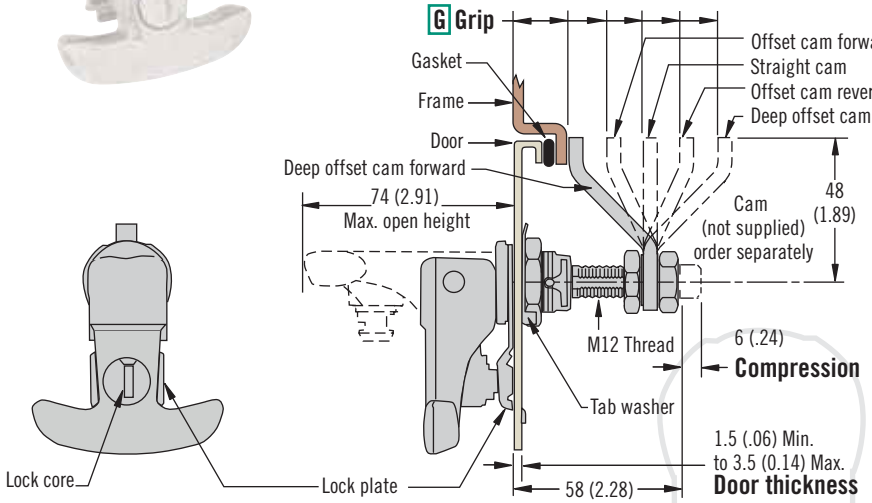
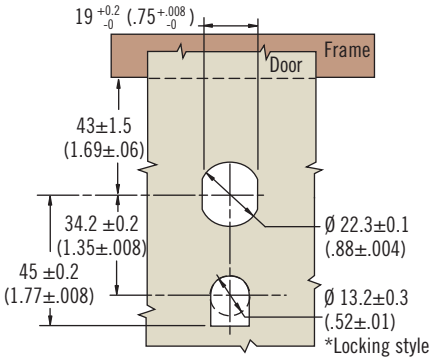
N2 Compression Latch

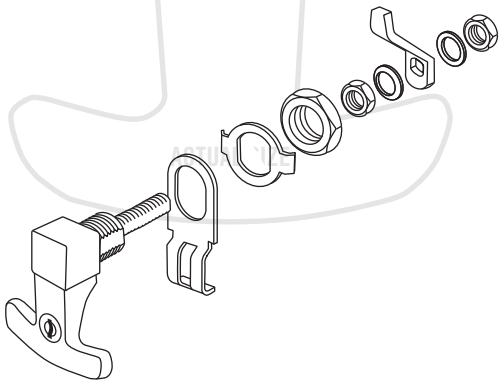
Lift & turn series · · Stainless Steel · Folding T-handle

No cup style · Adjustable grip

Locking Shown







- **Heavy-duty performance**
- **Low profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

Stainless steel

Performance Details

Max. static load: 1800 N (405 lbf)

Installation Notes

1. Insert latch and tighten mounting nut.
2. Bend tab washer over mounting nut.
3. With latch in closed position, adjust jam nuts to position cam at correct grip. Recommended tightening 20-25 N•m (177-221 in•lbf)
4 If using M12 cam tab washer, after cam is adjusted to correct grip, bend both tabs over the M12 nut.

Keys

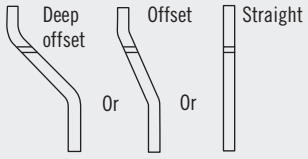
Key-locking keyed alike
CH751 (2 keys supplied)

Part Number Selection

Order both parts separately

Choose latch body style

Choose cam (see table)



L Locking style
0 Non-locking
1 Key-locking keyed alike CH751 (2 keys supplied)

Latch part number (no cam)

N2 - 2 - 10 L - 01 - 20

Cam Part Number Table (order separately)			
Part Number	G Grip		Cam Type
	Min.	Max.	
N2-21-101-24	2.5 (.10)	15 (.59)	Deep offset cam, forward
	60 (2.36)	75 (2.95)	Deep offset cam, reversed
N2-21-102-24	15 (.59)	30 (1.18)	Offset cam, forward
	45 (1.77)	60 (2.36)	Offset cam, reversed
N2-21-103-24	30 (1.18)	45 (1.77)	Straight

Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/N2**

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© Southco N2SS 717NA 11-10

C5 Compression Latch

Large · Sealed lever latch

- **Low profile when latched**
- **Easy grip adjustment**
- **Push button actuation**

Material and Finish

Zinc alloy, black powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 445 N (100 lbf)

Sealing Notes

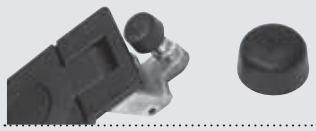
NEMA 4/IP-65 sealing is achieved by using optional flange gasket and sealing the mounting screw threads

Accessories

Dust cover:
(add 2.2 (.086) to door thickness)
Part number: C5-0-34682

Flange Gasket:
(add 0.8 (0.03) to door thickness)
Part number: C5-82

Rubber Bumper:
Part Number: C5-25-301-82



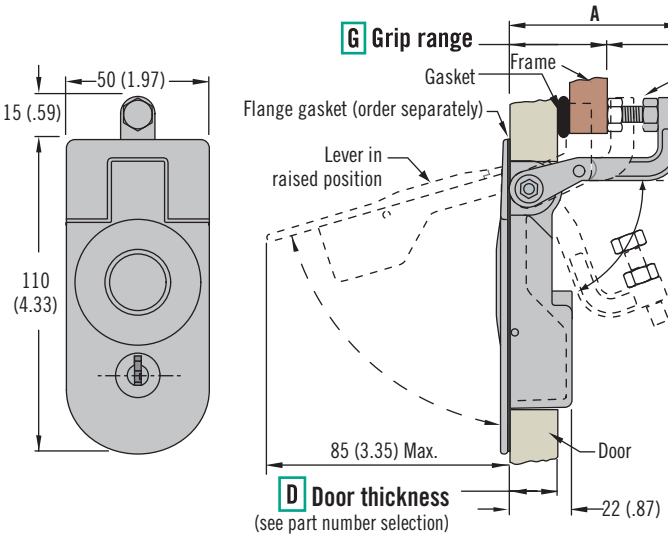
Keys

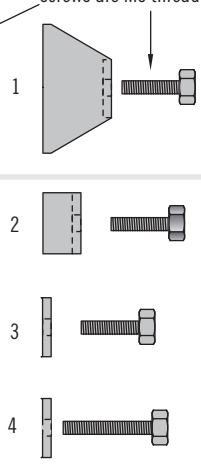
See www.southco.com

Part Number Selection

Notes

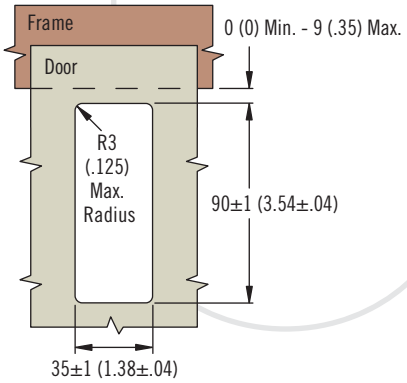
For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System refer to our latest Handbook or on www.southco.com





Brackets to Suit Door Thickness

ACTUAL SIZE



L Lock styles

Key access	4 (.16) Hex recess	No.2 Phillips recess	Railway standard

C5 - L D - G F - P

L Lock style
1 Non-locking
2 Locking without dust shutter, keyed alike CH751 (two flat keys supplied)
3 Locking with dust shutter, keyed alike CH751 (two flat keys supplied)
4 4 (.16) Hex recess
5 No. 2 Phillips recess
6 Railway standard
9 Locking without lock core (see www.southco.com for lock core options)

D Door thickness
1 1 - 11 (.04 - .43)
2 11 - 21 (.43 - .83)
3 21 - 31 (.83 - 1.22)
4 31 - 41 (1.22 - 1.61)

F Finish
5 Black powder coated
12 Chrome plated

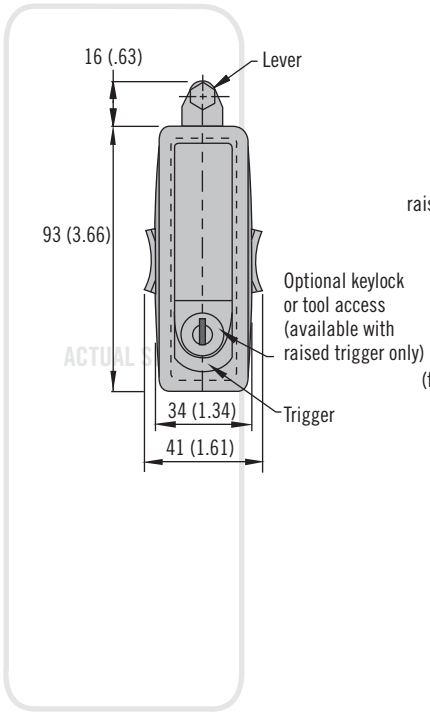
P Packaging option
3 Latches are sold layer packed
Omit for individually packaged latches

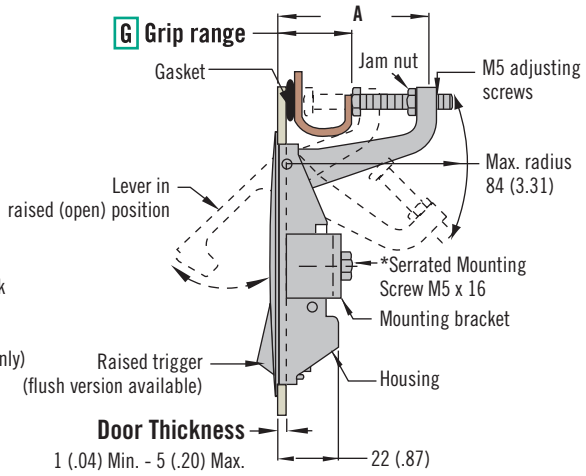
G Grip Range			A
1	1 - 14 (.04 - .55)	Door thickness option 1 and 2 only	29 (1.14)
2	14 - 29 (.55 - 1.14)	Door thickness option 1, 2 and 3 only	44 (1.73)
3	29 - 45 (1.14 - 1.77)		60 (2.36)
4	45 - 57 (1.77 - 2.25)		72 (2.84)

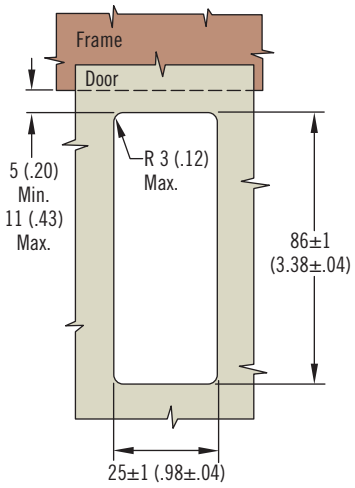
Dimensions in millimeters (inch) unless otherwise stated

C2 Compression Latch

Lever latch







L Lock Styles

Key-locking keyed CH751 | 4 (.16) Hex recess | No2 Phillips recess | 7mm (.27) recess | Rail Standard

- **Low profile when latched**
- **Easy grip adjustment**
- **Push button actuation**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 200 N (45 lbf)

Installation Notes

* Serrated Mounting Screw M5 x 16. For door thickness greater than 5 (.20) calculate screw length using the following formula:
Door thickness + 12 (.47)

Accessories

Rubber Bumper:
Part Number: C2-25-301-82

Keys

See www.southco.com

Part Number Selection Notes

For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System refer to our latest Handbook or on www.southco.com

L Lock style

1 Non-locking raised trigger
2 Key-locking raised trigger keyed CH751 (two flat keys supplied)
3 Flush trigger non-locking
4 4 (.16) Hex recess raised trigger
10 No. 2 Phillips raised trigger
11 7mm Square
13 Locking without lock core (see www.southco.com for lock core options)
14 Railway standard

F Finish

1 Textured chrome
5 Black powder coated

P Packaging option

3 Latches are sold layer packed
Omit for individually packaged latches.

C2 - 3 G - L F - P

G Grip Range		A
2	1 - 24 (.04 - .95)	35 (1.38)
3	23 - 46 (.91 - 1.81)	57 (2.24)

Dimensions in millimeters (inch) unless otherwise stated

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INFO CLIC www.southco.com/C2

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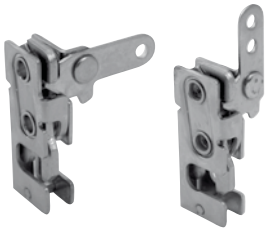


R4 Push-to-Close Latch

Rotary latch · Stainless Steel · Mini · Concealed · Single stage

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**

Material and Finish

304 Stainless Steel

Performance Details

Average ultimate load:
4000N (900 lbf)

Accessories

Striker bolt

Cables and retainer clips

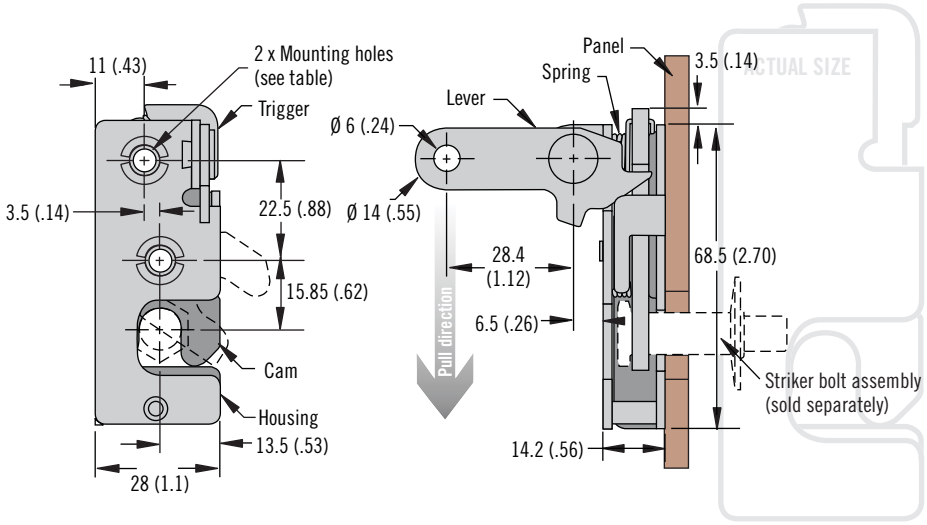
Part Number

See table

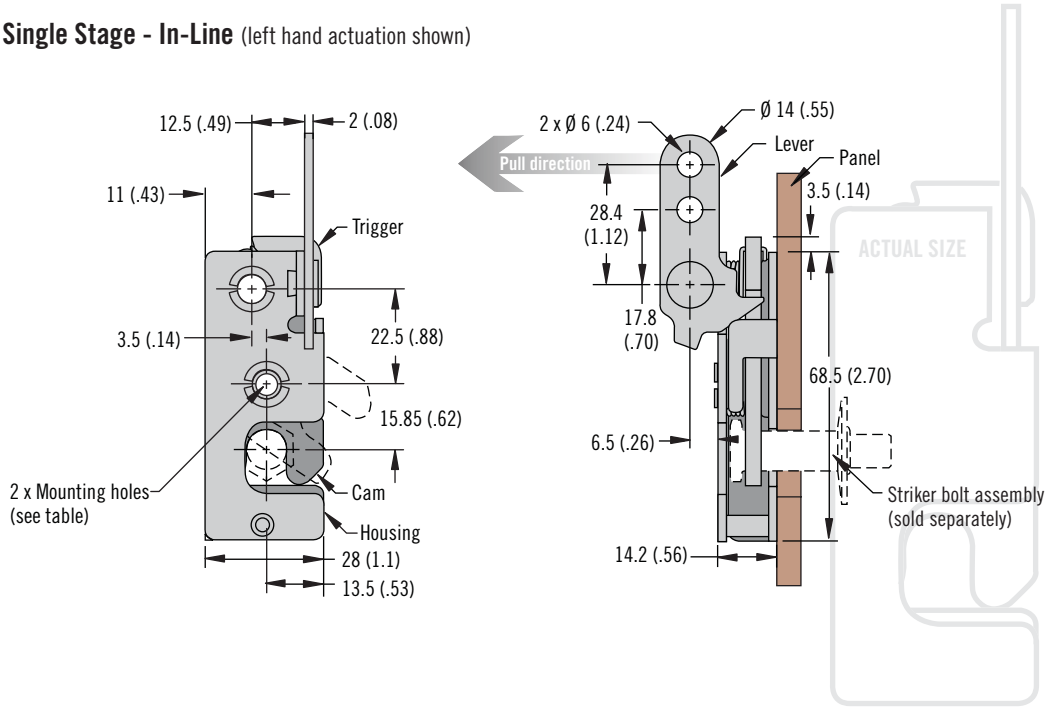
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/R4*

Single Stage - Perpendicular (left hand actuation shown)



Single Stage - In-Line (left hand actuation shown)



Mounting Style	Panel Hole	Part Number			
		Perpendicular		In-Line	
		Left hand actuation	Right hand actuation	Left hand actuation	Right hand actuation
Ø 7.2 (.283) Thru	Ø 7.6 (.299)	R4-10-20-101-20	R4-10-10-101-20	R4-10-20-201-20	R4-10-10-201-20
1/4-20 Thread	Ø 6.8 (.268)	R4-10-21-101-20	R4-10-11-101-20	R4-10-21-201-20	R4-10-11-201-20
M6 X 1 Thread	Ø 6.4 (.252)	R4-10-22-101-20	R4-10-12-101-20	R4-10-22-201-20	R4-10-12-201-20

Dimensions in millimeters (inch) unless otherwise stated

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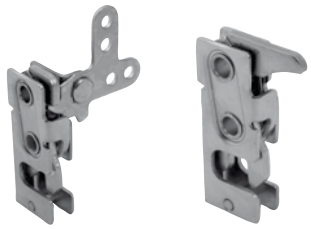
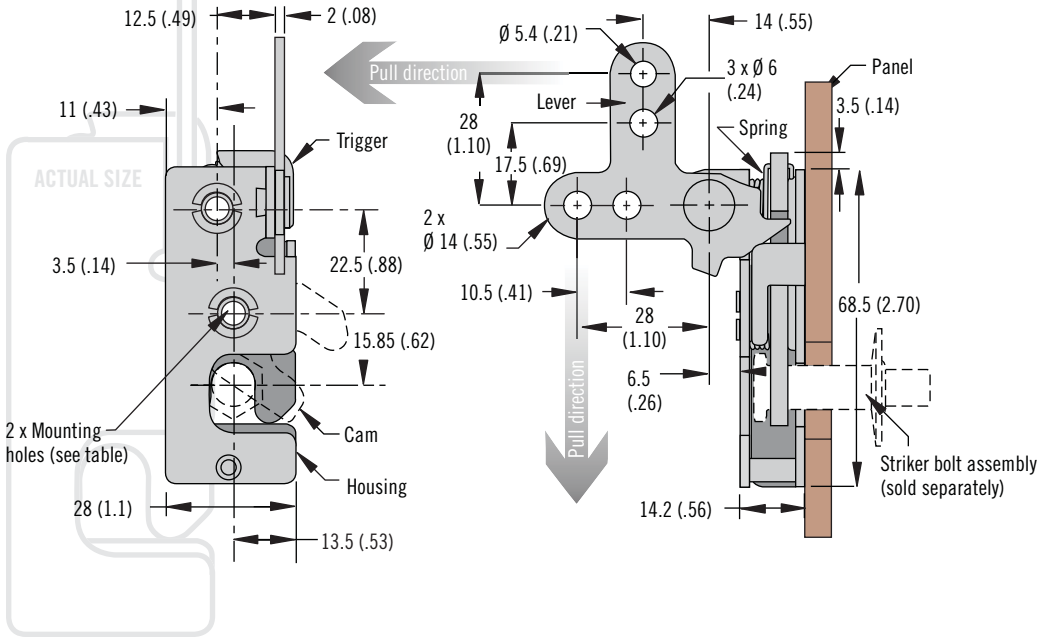
R4 Push-to-Close Latch

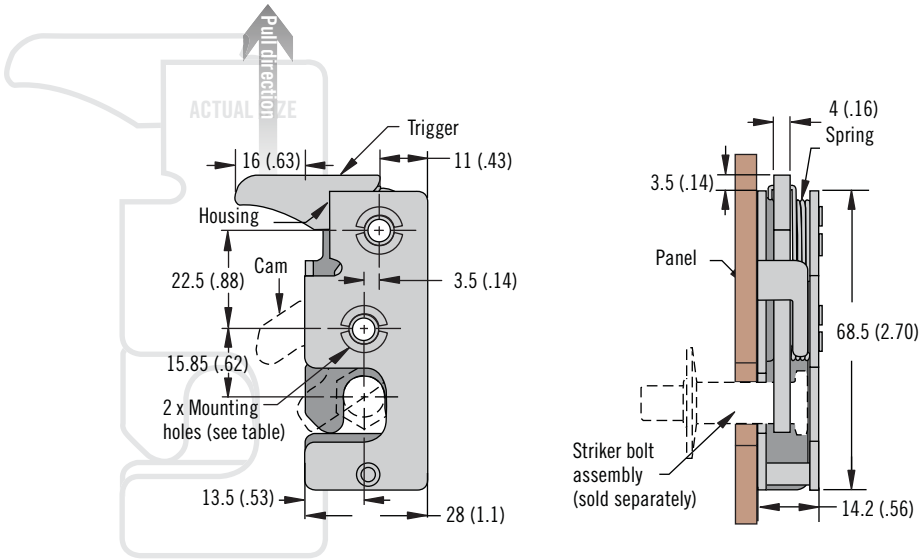
Rotary latch · Stainless Steel · Mini · Concealed · Single stage



Single Stage - Two Point (left hand actuation shown)



Single Stage - Hand Actuation



Mounting Style	Panel Hole	Part Number		
		Two Point		Hand Actuation
		Left hand actuation	Right hand actuation	
Ø 7.2 (.283) Thru	Ø 7.6 (.299)	R4-10-20-301-20	R4-10-10-301-20	R4-10-10-401-20
1/4-20 Thread	Ø 6.8 (.268)	R4-10-21-301-20	R4-10-11-301-20	R4-10-11-401-20
M6 X 1 Thread	Ø 6.4 (.252)	R4-10-22-301-20	R4-10-12-301-20	R4-10-12-401-20

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**

Material and Finish

304 Stainless Steel

Performance Details

Average ultimate load:
4000N (900 lbf)

Accessories

Striker bolt

Cables and retainer clips

Part Number

See table

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/R4*

Dimensions in millimeters (inch) unless otherwise stated

R4 Push-to-Close Latch

Rotary latch · Stainless Steel · Mini · Concealed · Single stage

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**

Material and Finish

304 Stainless Steel

Performance Details

Average ultimate load:
4000N (900 lbf)

Accessories

Striker bolt

Cables and retainer clips

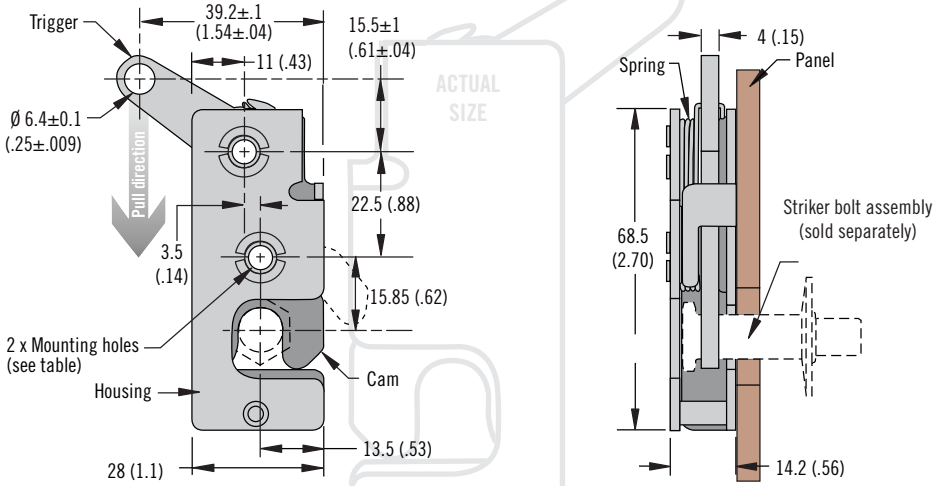
Part Number

See table

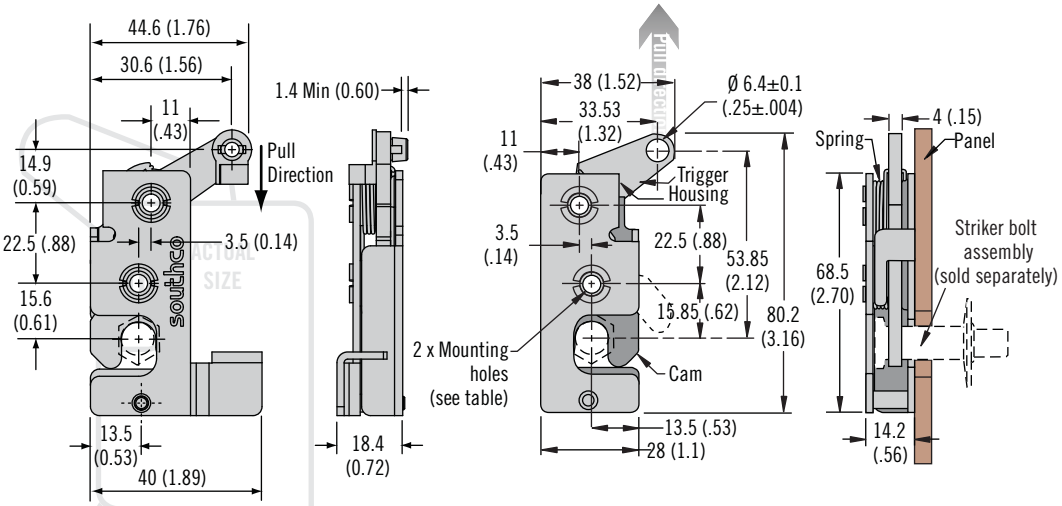
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/R4*

Single Stage - Bottom (left hand actuation shown)



Single Stage - Top (left hand actuation shown)



Mounting Style	Panel Hole	Attached Cable Mounting Bracket Part Number	
		Bottom	
		Left hand actuation	Right hand actuation
7.2 (.283) Thru	7.6 (.299)	R4-10-20-502-20	R4-10-10-502-20
1/4 - 20 Thread	6.8 (.268)	R4-10-21-502-20	R4-10-11-502-20
M6 X 1 Thread	6.4 (.252)	R4-10-22-502-20	R4-10-12-502-20

Mounting Style	Panel Hole	Part Number			
		Bottom		Top	
		Left hand actuation	Right hand actuation	Left hand actuation	Right hand actuation
Ø 7.2 (.283) Thru	Ø 7.6 (.299)	R4-10-20-501-20	R4-10-10-501-20	R4-10-20-601-20	R4-10-10-601-20
1/4-20 Thread	Ø 6.8 (.268)	R4-10-21-501-20	R4-10-11-501-20	R4-10-21-601-20	R4-10-11-601-20
M6 X 1 Thread	Ø 6.4 (.252)	R4-10-22-501-20	R4-10-12-501-20	R4-10-22-601-20	R4-10-12-601-20

Dimensions in millimeters (inch) unless otherwise stated

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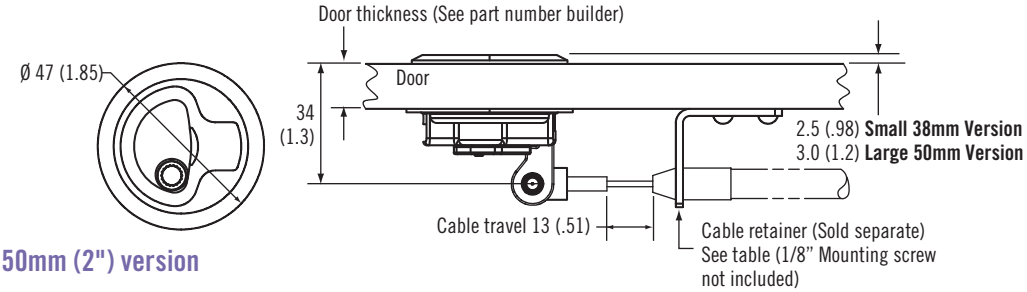
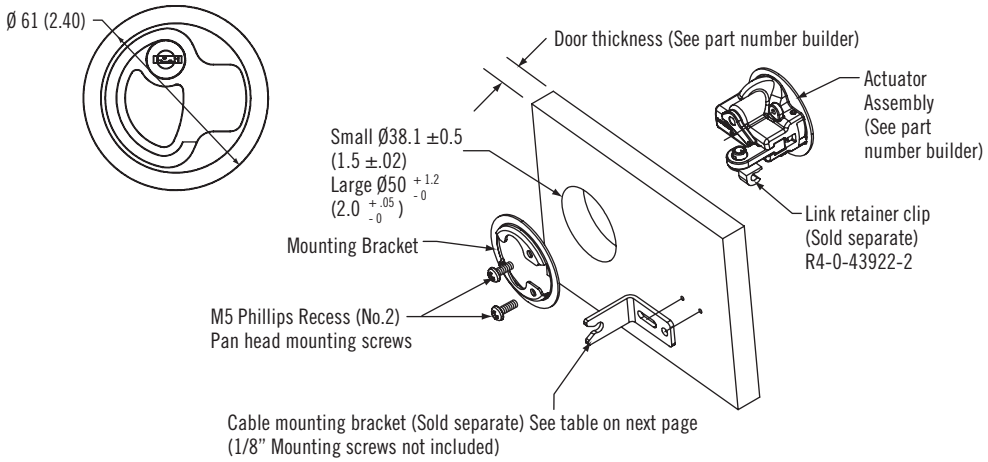
AC Single Point Actuators

Stainless Steel · M1 Style Actuator

38mm (1 1/2") version



50mm (2") version



50mm (2") version

AC - M1 - L P - 8

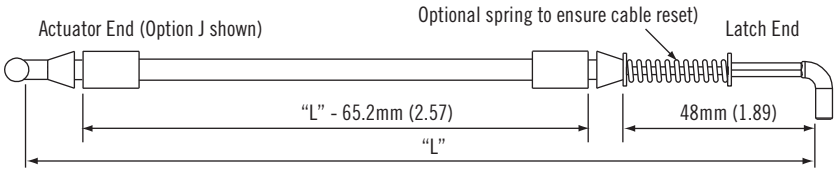
38mm (1 1/2") version: (suits 9mm (3/8") or 12mm (1/2") panels):

AC - M1 - 15 - L 1 - 8

L Lock style
- **4** Locking (2 keys supplied)
- **6** Non-locking
- **7** Key-locking keyed alike S008 (2 overmoulded keys supplied (only available for 50mm 2" version)

P Panel thickness
- **2** 9mm (3/8")
- **3** 12mm (1/2")

AC Cables



A Actuator fitting
- **J** Stainless barrel fitting to suit push-button and paddle actuators
- **K** Stainless "L" fitting to suit R4 latch and AC-M1 actuators

S Spring option
- **0** No Spring
- **1** With Spring (latch end only)

AC - C A K S - 3 - LLLL - 048

L Length in mm
e.g. 0610 = 610 mm = 2'

Dimensions in millimeters (inch) unless otherwise stated

- **Single, round-hole installation**
- **Locking style restricts access**
- **Premium finish and corrosion resistance**

Material and Finish

Latch: 316 grade stainless steel and bright polished
Spacer: Nylon, black
Contact Southco for other finishes

Performance Details

Max. static load: 545 N (122 lbf)

Accessories (Small)

Spacer: M1-510-96-1
One key supplied per latch for additional keys order M7-88-9121324-S

Mounting screws: M1-510-96-4

Accessories (Large)

For lock style 4
Key (pair)
Part number: M1-546

For lock style 7
Overmolded key S008 (pair)
Part number:
M1-525-39-S008

Cables

Constructed from marine grade stainless materials, the cable is suitable for multiple bends and can be further customized upon request, Contact Southco for details.
An in-built spring prevents unintentional actuation by vibration.

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/R4*

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R4 Push-to-Close Latch

Striker bolt · Stainless Steel · Mini · Installation

- **Striker bolt for R4-10 series rotary latch**

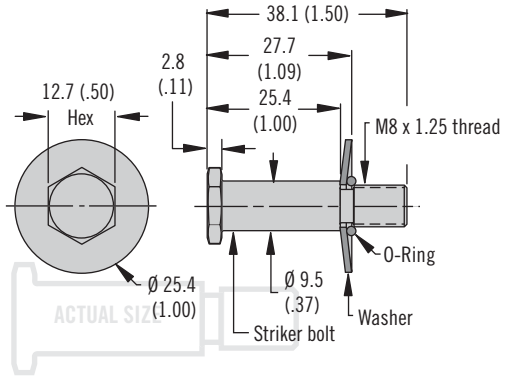
Material and Finish

304 Stainless Steel

Part Number

See table

Striker Bolt Assembly (sold separately)

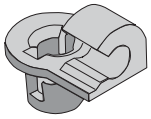


Striker Bolt Part Number
R4-90-121-20

Retainer clip (sold separately)

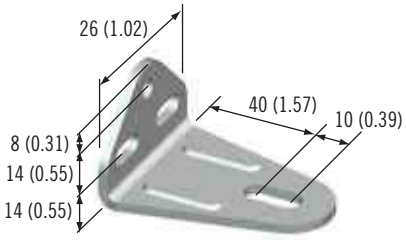
Secures cable to AC-M1 actuator

Part Number: R4-0-43922-2

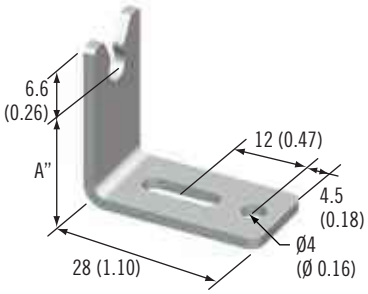


Striker 90° Mounting Bracket (sold separately)

Part Number: R4-0-50114

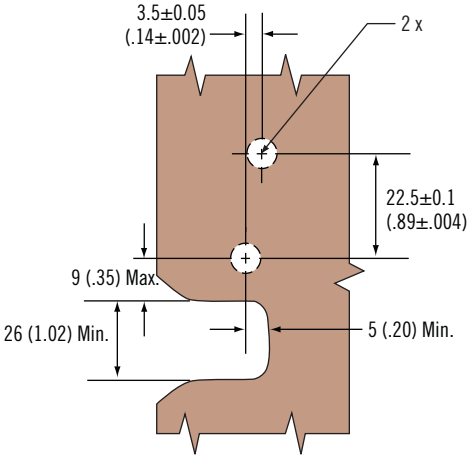


Cable Mounting Bracket (sold separately). For use with AC-M1 actuators

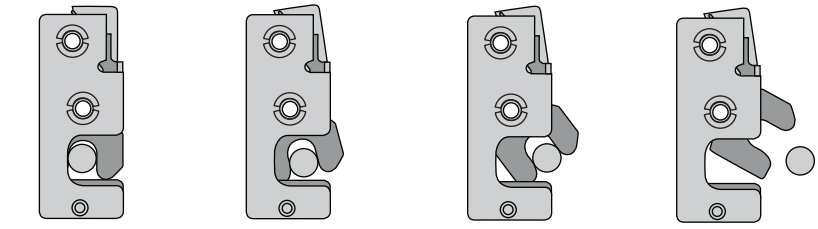


Part Number	A	Panel thickness
R4-0-50253-1	25mm (0.98)	9mm (0.35)
R4-0-50253-2	22mm (0.86)	12mm (0.47)

Panel Preperation



Operation



Latched position ⟷ Unlatched position

Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

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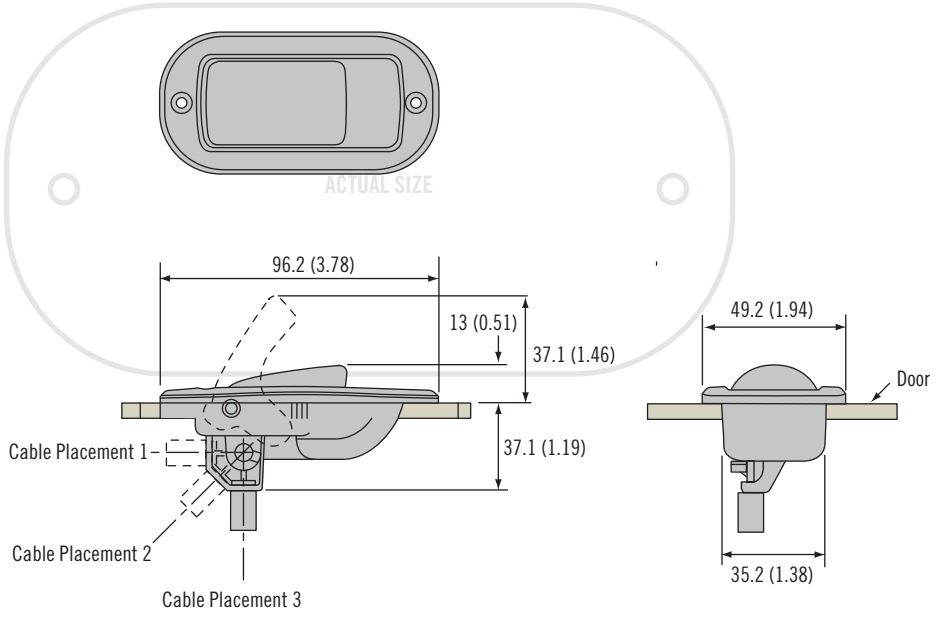
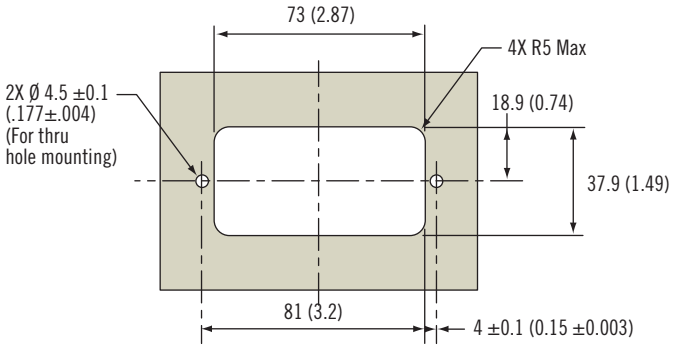
AC-75 Single Point Actuator

Paddle





- **Front mount installation**
- **Three cable mounting options**
- **Low Profile**
- **Robust Material**

Material and Finish

Paddle and housing:
Aluminum, black powder coated

Part Number
AC-75-101-11

Cable Orientation	Panel Thickness	Cable Travel
Placement 1	12.5 (.49) max.	11.1 (.44)
Placement 2	16 (.63) max.	13.2 (.52)
Placement 3	16 (.63) max.	13.2 (.52)

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

www.southco.com/AC

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AC-30 Multi Point Actuator

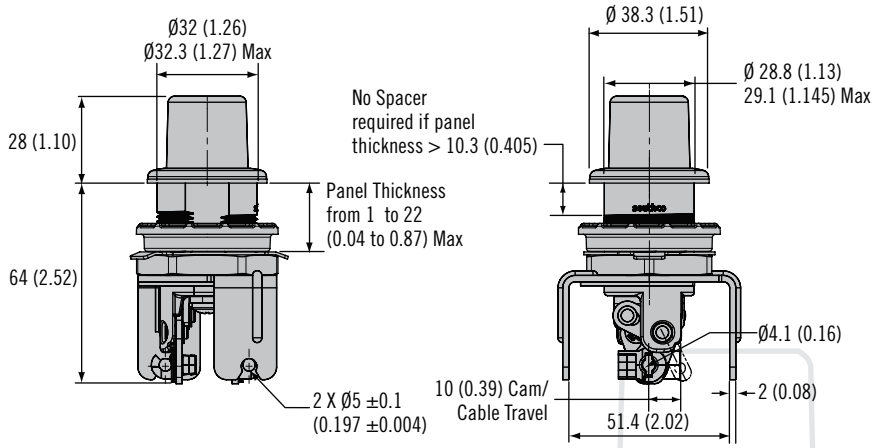
Push-Button

- **Single or multi-point actuation capability**
- **Accommodates wide panel thickness**
- **Multiple key code options**
- **Single hole install**

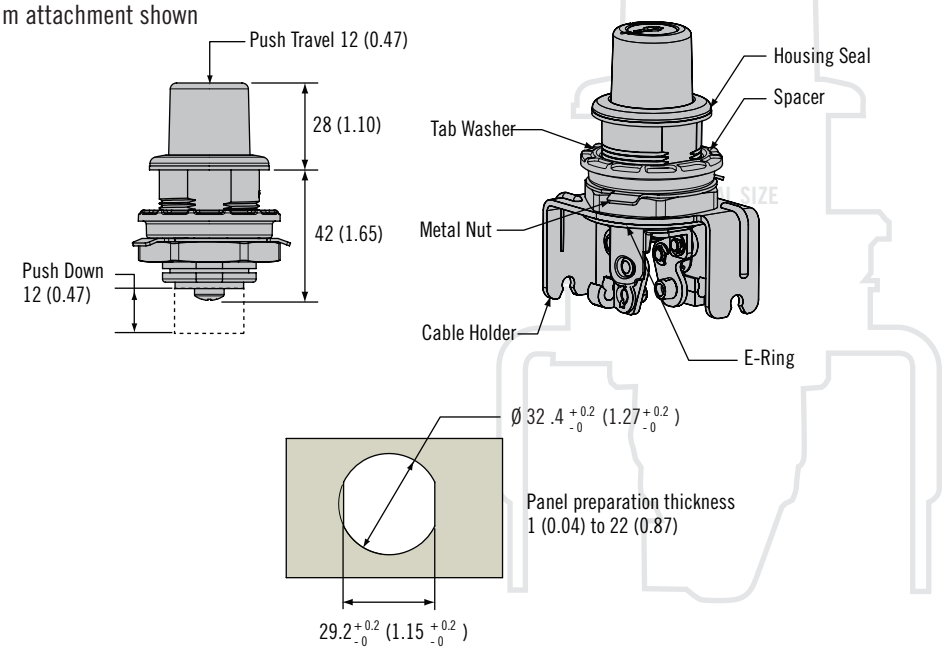
Material and Finish

Button: Nylon
Housing: Zinc or Stainless Steel
Lock Plug: Zinc
Cam, Washer, Rivet:
Stainless Steel, Passivated

With cam attachment shown



Without cam attachment shown



Part Number Selection

E **End Style**
1 With Cam attached
3 Without Cam attached

H **Housing Material**
1 Zinc with black powder coat
3 Stainless steel with black powder coat

B **Button Material**
1 Nylon with black molding

AC - 30 - E L M - H B - KC

KC **Key Codes**
(Omit for locking options 1,2,4 and 5)
KD10 Keyed differently (10 codes)
MK10 Master keyed, keyed differently

L **Locking Option**
1 Reversible key (No keys - R001)
2 Reversible key (2 keys included - R001)
3 Reversible key (Multiple key codes - 2 keys included)
4 Standard key (No keys - CH751)
5 Standard key (2 keys included - CH751)
6 Standard key (Multiple key codes - 2 keys included)

M **Mounting Method**
1 With spacer mounting (must have if glass panel)
2 Without spacer mounting

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/AC*

Dimensions in millimeters (inch) unless otherwise stated

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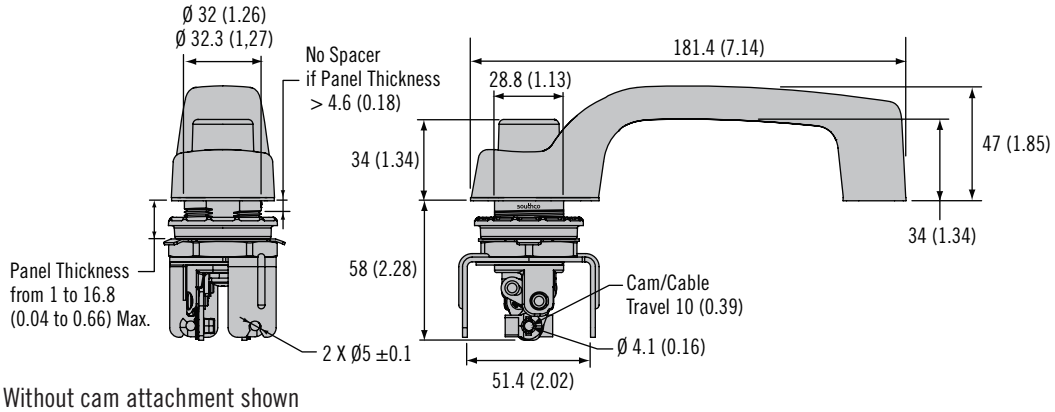
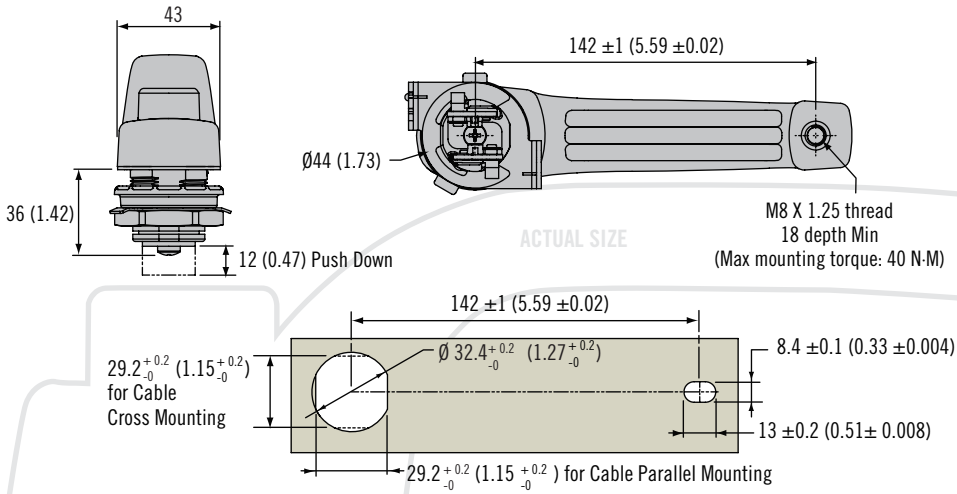
AC-40 Multi Point Actuator

Push-Button Handle

With cam attachment shown



Without cam attachment shown



- **Single or multi-point actuation capability**
- **Accommodates wide panel thickness**
- **Multiple key code options**
- **Easy Grip**

Material and Finish

Button: Nylon
Housing: Zinc Die Cast or Stainless Steel
Lock Plug: Zinc Die Cast
Cam, Washer, Rivet: Stainless Steel, Passivated

Part Number Selection

E **End Style**
1 With Cam attached
3 Without Cam attached

H **Handle Material**
1 Black GF nylon with zinc housing insert
2 Black GF nylon with stainless steel housing insert

B **Button Material**
1 Nylon with black molding

AC - 40 - E L M - H B - KC

KC **Key Codes**
(Omit for locking options 1,2,4 and 5)
KD10 Keyed differently (10 codes)
MK10 Master keyed, keyed differently

L **Locking Option**
1 Reversible key (No keys - R001)
2 Reversible key (2 keys included - R001)
3 Reversible key (Multiple key codes - 2 keys included)
4 Standard key (No keys - CH751)
5 Standard key (2 keys included - CH751)
6 Standard key (Multiple key codes - 2 keys included)

M **Mounting Method**
1 Cable parallel (or no cable), with spacer mounting (must have if glass panel)
2 Cable parallel (or no cable), without spacer mounting
3 Cable cross with spacer mounting (must have if glass panel)
4 Cable cross without spacer mounting

Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

www.southco.com/AC

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© Southco AC-30/40 752NA 05-11

H3 Swinghandle System

Plastic · Large · Non-sealed

- **Lightweight Glass filled nylon swinghandle system UL94-V0 rated**
- **DIN profile locking options**
- **Push or turn to close versions available**

Material and Finish

Handle: Glass filled nylon
Cam: Steel, zinc plated

Performance Details

Max. static load: 250 N (56 lbf)

Keys

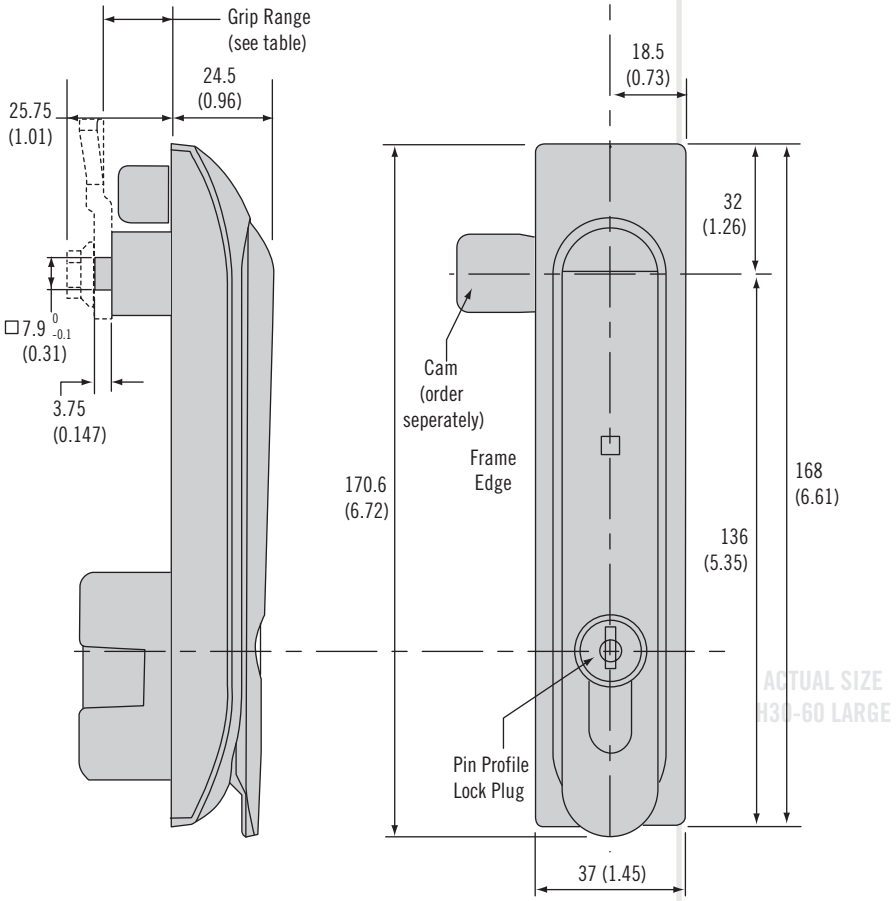
Handbook Page 98
Visit www.southco.com

Notes

Electromechanical swinghandle available see pages 30 - 31 of the Southco handbook or visit www.southco.com

For metal version visit pages 260-262 of the Southco handbook or visit www.southco.com

H3 Plastic Swinghandle



Part Number Selection

For single point:
Order latch and cam separately

For multi-point order:
Latch and cam
Linear actuator and rod adaptors
Rods
Rod guides

Note

*2 keys supplied

Latch Part Number (no cam)

T Style
65 Push to close handle
66 Turn to close handle

H3 - T - 5 L - 0 7 1

L Lock style
21 Locking DIN profile keyed alike CH751*
22 Locking DIN profile keyed alike 300*
23 Locking DIN profile keyed alike 333*
70 DIN profile 3 mm Double-bit
71 DIN profile 5 mm Double-bit
72 DIN profile Bellcore 216
73 DIN Profile Bellcore Hex-Pin Recess
77 DIN profile 8 mm triangle

Cam Part Number Table

GRIP	PART NO. (LENGTH = 38mm)	PART NO. (LENGTH = 45mm)
15.5	E5-6710	E5-6110
17.5	E5-6711	E5-6111
19.5	E5-6712	E5-6112
21.5	E5-6713	E5-6113
23.5	E5-6714	E5-6114
OTHER	Please contact Southco	

INFO CLIC www.southco.com/H3

Dimensions in millimeters (inch) unless otherwise stated

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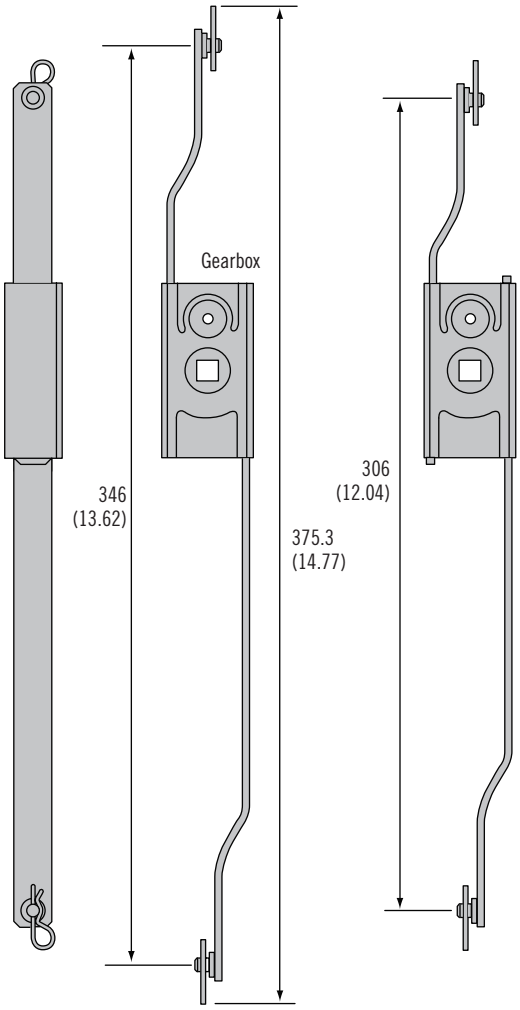
H3 Linear Actuators

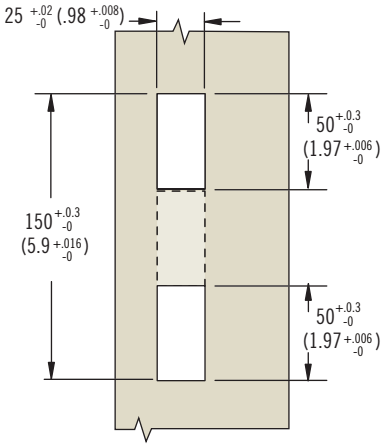
Linear actuators and rod adaptor for plastic H3 swinghandle system

Linear Actuator

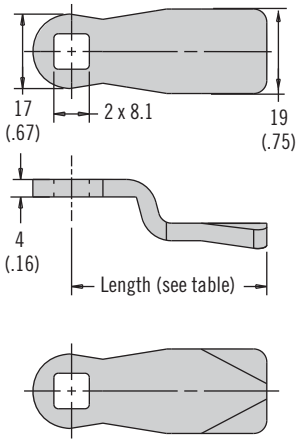
(Right Hand Mounting shown)



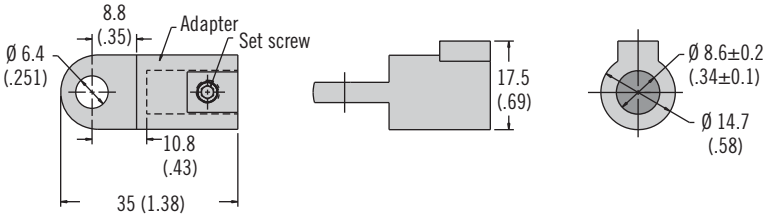
Panel Preparation



Cam



Rod Adaptor



Part Number	
Linear actuator right hand mounting	H3-61-56-33
Linear actuator left hand mounting	H3-61-55-33
Rod adaptor	A5-92-201-31

- **Linear actuator for Plastic H3 swinghandles**
- **Linear rod travel for limited space**
- **Suitable for left and right hand applications**
- **Left and Right hand Actuators can be disassembled and reassembled in the opposite hand if required**

Material and Finish

Zinc alloy and steel, zinc plated

To Select Linear actuator and Rod Adaptor:

For use with H3-65 and H3-66 swinghandles. Order linear actuator and rod adaptors separately (1 actuator and 2 adaptors required per latch)

Accessories

Replacement rod adaptor retainer pin part number: H3-0-44778-01

Part Number

Linear actuator and rod adaptors see table

For multi-point order: Latch
Cam (if 3 point latching required)
Linear actuator and rod adaptor (see table)
Rods, Rod guides
visit www.southco.com/H3

Dimensions in millimeters (inch) unless otherwise stated

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Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/H3*

© Southco H3 696NA 11-10

A5 Flat Rod Systems

Rods, Guides, Adapters and Keepers

- **Compatible with standard Southco latches, providing a variety of operating styles**
- **Flat rod finish complies with Telcordia® GR-487**
- **Mid Roller system allows latching outside of gasketed area**

Material and Finish

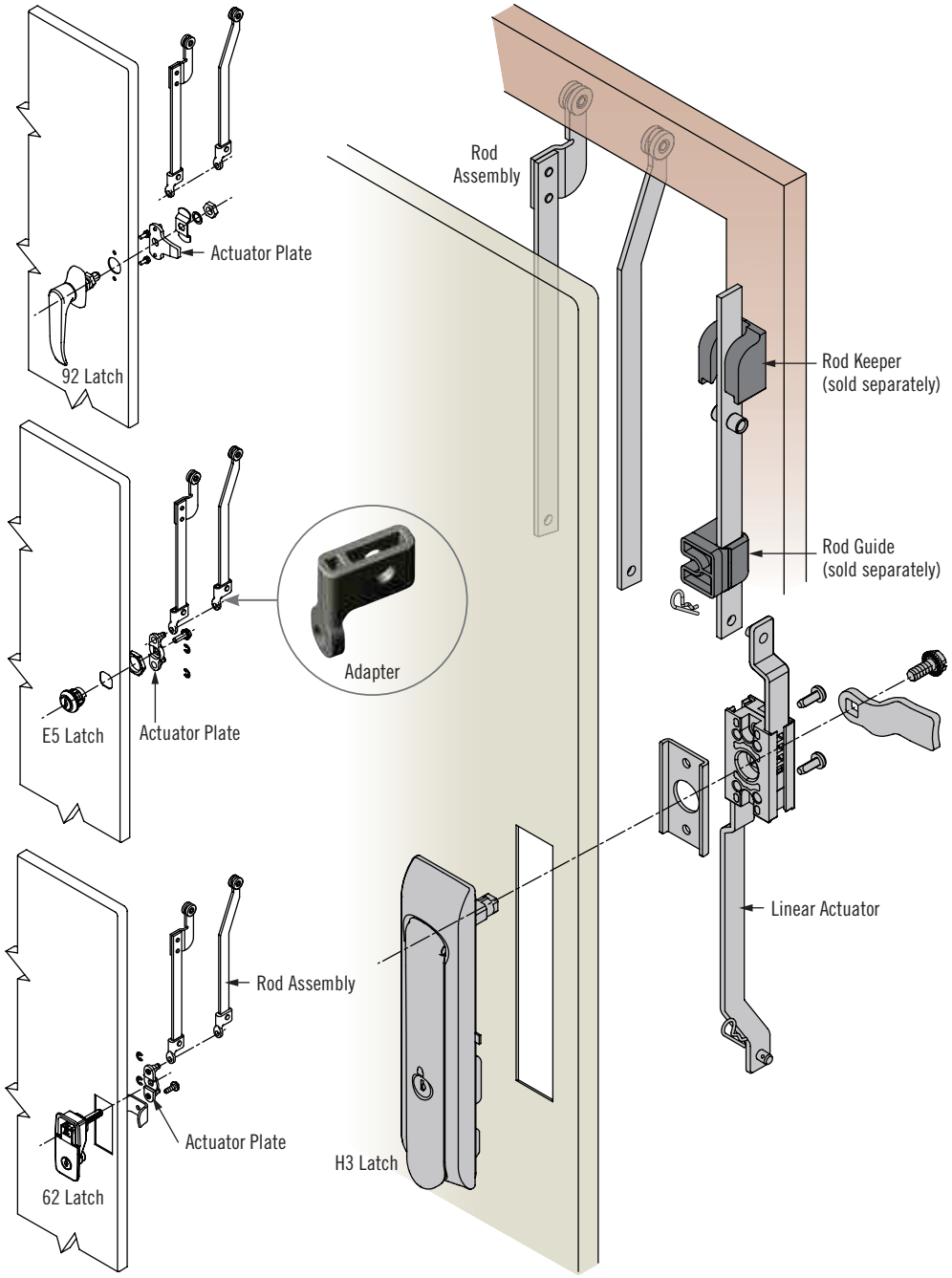
Rods: Steel zinc nickel plated
Rod rollers: Stainless Steel or Glass-filled nylon, black
Rod guides: Glass-filled nylon, black
Flat rod keeper: Zinc alloy, black powder coated

To select correct assembly:

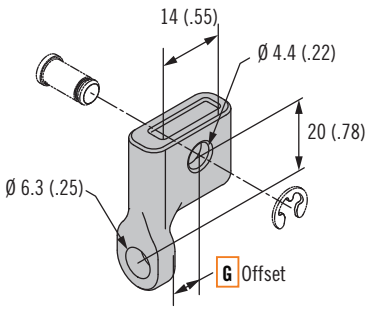
1. Determine rod style and length desired
2. Choose actuator plate or linear actuator to match latch family
3. Choose adapter to match latch family
4. Refer to www.southco.com for additional details on offset and lengths

Note

Important: Adapters are used with A5-F30 and A5-F50 Rods only.



Adapter



Latch Family	H3	92	E5	62
Adapter Type A	Adapter 1	Adapter 2	Adapter 3	Adapter 4
Offset G	3.25 (.13)	7.8 (.31)	17.25 (.68)	-7.55 (-.30)

Other options available. For complete details on variety, part numbers, installation and specification, go to
INFO CLIC *www.southco.com/A5*

Dimensions in millimeters (inch) unless otherwise stated

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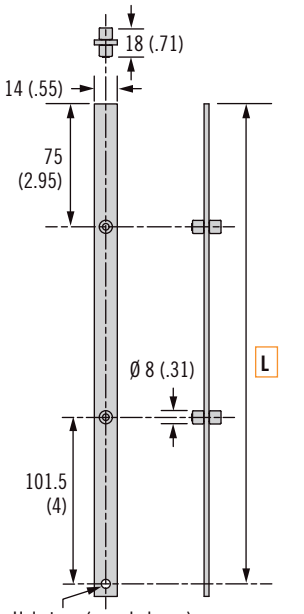
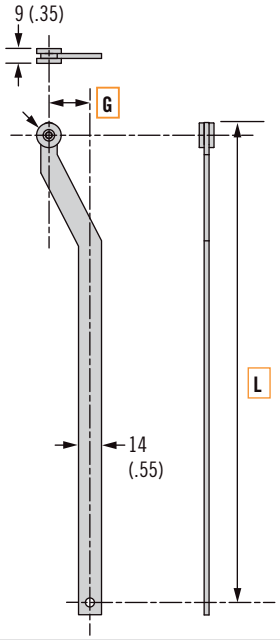
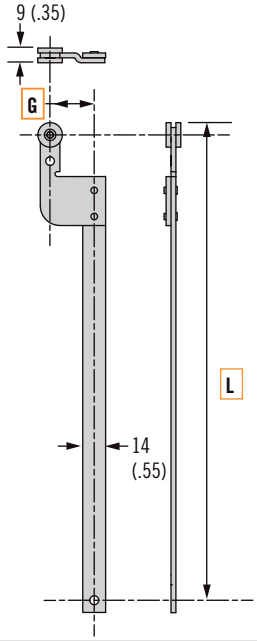
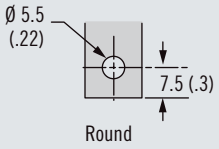
A5 Flat Rod Systems
Rods, Guides and Keepers

F20 Mid Roller	F30 Offset with Roller	F50 Offset Plate with Roller
		
Hole type (round shown) See end views for additional hole types	Important: Adapters are used with F30 and F50 Rods only.	

- **Modular actuators to suit multiple latch families using A5 flat rods**

Standard Hole Detail



Others available upon request

Square

Lantern

Rod Assembly Part Number

R **Rod Style**
- **2** Mid roller (offset **G** must be **00**)
- **3** Offset with roller end
- **5** Offset Plate with roller end

L **Length (mm)**
0200 - 1200

A5 - F R A - L A - G - 77

A **Adapter Type**
- **0** None (H3 with linear actuator)
- **1** Adapter - 3.25mm (0.13) (H3 Latches)
- **2** Adapter - 7.8 (0.31) Offset (92 Latches)
- **3** Adapter - 17.25 (0.68) Offset (E5 Latches)
- **4** Adapter - -7.55 (-0.30) Offset (Medium 62 Latches)

G **Offset Distance (mm)**
00, 20, 25 - (For Rod Style 3)
13, 16, 21, 27 - (For Rod Style 5)

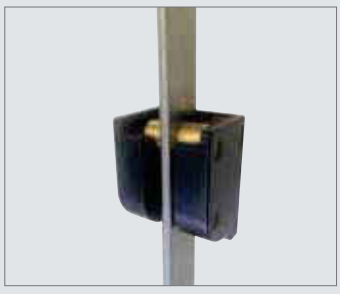
Flat Rod Actuator Plate Part Number

Operating Latch Families	E5-5	E5-6	E5-9	H3-50	H3-60	62 Series M8 threaded shaft	92 Series M10 threaded shaft	
Actuator Plate Part Number	A5-90-102-11					A5-90-303-11	A5-90-401-11	A5-90-501-11
Adapter Type **A**	**A** = 3			**A** = 1		**A** = 4	**A** = 2	

Adapters are used with round hole type rods only.

Mid Roller
Rod Guide A5-F90-71

Rod Keeper A5-F80-69



Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/A5**

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47-SM Captive Screws

Styled knob series · Surface Mount Technology (SMT) Style

- **For installation to PC Board material utilizing surface mount technology**
- **Smooth knob meets UL-1950**
- **Designed for hand operation**
- **Spring ejected**
- **Variety of sizes, recesses**

Material and Finish

Ferrule: Steel, Tin plated

Knob:
Aluminum, natural

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Internal spring: 300 series stainless steel passivated

Plug: Silicone rubber

Installation Notes

Visit www.southco.com for additional installation guidelines

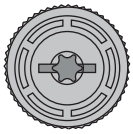
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle.

Part Number

See table

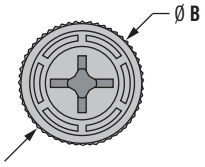
Recess Styles

TORX® / Slot Combination

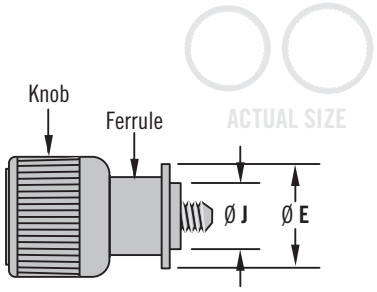


T10 *TORX®* / Slot Combination (M3,4-40)
T15 *TORX®* / Slot (6-32)

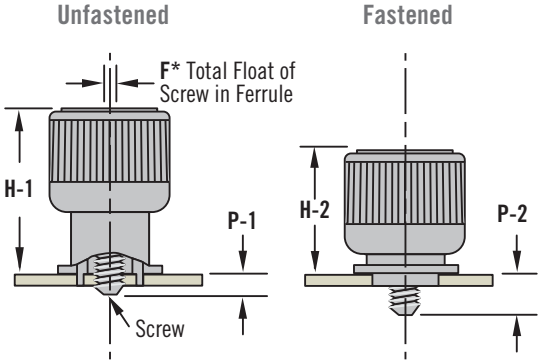
Phillips / Slot Combination



No. 1 Phillips / Slot Recess (M3,4-40)
No. 2 Phillips / Slot Recess (6-32)

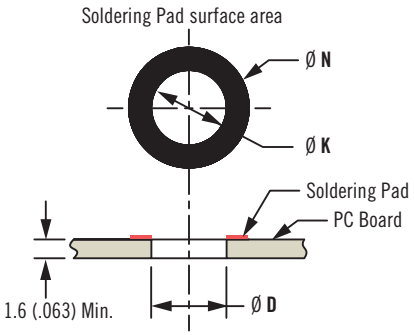


Knob Height and Screw Projection



F* Value represents float in unfastened position
Notes: P-1, P-2 Screw Projection measured from the top side of panel

PC Board Preparation



47 Captive Screws
Styled knob series - SMT Style

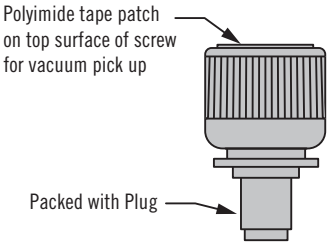
Part Number

Specify Package
Indicate package option with last digit of the part number

Example

47-SM-1311-K-R: Reel Package (as shown in table)
47-SM-1311-K-T: Tray Package

Screw as Shipped in Reel Pack or Tray Pack



Thread Size	Part Number (Reel package shown)				H-1	H-2	P-1	P-2	ØB	ØJ	ØE	F*	Ø K	Ø N	Panel Preparation
	Knurled Head		Smooth Head												
	Phillips / Slotted	*TORX®* / Slotted	Phillips / Slotted	*TORX®* / Slotted											Ø D
M3 x 0.5	47-SM-3311-K-R	47-SM-3411-K-R	47-SM-3311-N-R	47-SM-3411-N-R	11.4 (.45)	8.4 (.33)	1.4 (.05)	4.4 (.17)	10.7 (.42)	5.5 (.217)	7.6 (.30)	0.7 (.03)	5.6 (.22)	8.6 (.34)	5.6 +0.08/-0 (.220 +.003/-.000)
	47-SM-3321-K-R	47-SM-3421-K-R	47-SM-3321-N-R	47-SM-3421-N-R			2.2 (.09)	5.2 (.20)							
4-40	47-SM-1311-K-R	47-SM-1411-K-R	47-SM-1311-N-R	47-SM-1411-N-R			1.4 (.05)	4.4 (.17)							
	47-SM-1321-K-R	47-SM-1421-K-R	47-SM-1321-N-R	47-SM-1421-N-R			2.2 (.09)	5.2 (.20)							
6-32	47-SM-2311-K-R	47-SM-2411-K-R	47-SM-2311-N-R	47-SM-2411-N-R	15.5 (.61)	10.7 (.42)	0.8 (.03)	5.6 (.22)	11.4 (.45)	6.2 (.244)	8.1 (.32)	0.7 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0 (.252 +.003/-.000)
	47-SM-2321-K-R	47-SM-2421-K-R	47-SM-2321-N-R	47-SM-2421-N-R			2.3 (.09)	7.1 (.28)							

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/47

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Dimensions in millimeters (inch) unless otherwise stated

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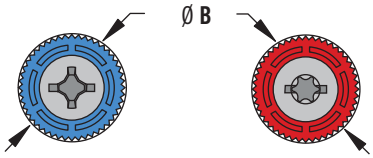
4C-SM Captive Screws

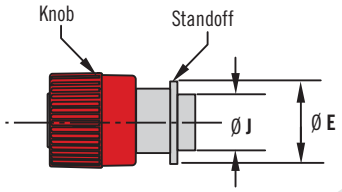
Prism series · Surface Mount Technology (SMT) Style

Recess Styles



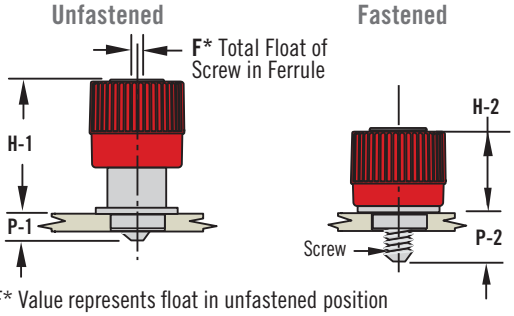
No. 2 Phillips Recess (M3,4-40)
No. 2 Phillips / Slot Recess (6-32)

T10 *TORX®* / Slot Combination (M3,4-40)
T15 *TORX®* / Slot Combination (6-32)



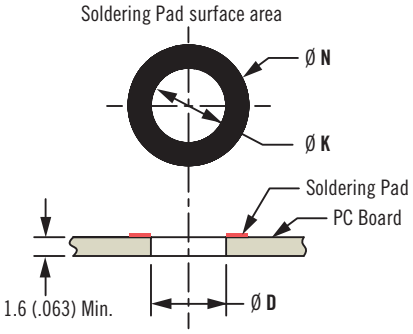
ACTUAL SIZE

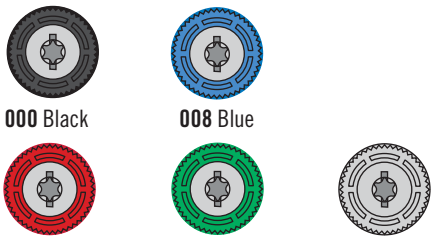
Knob Height and Screw Projection



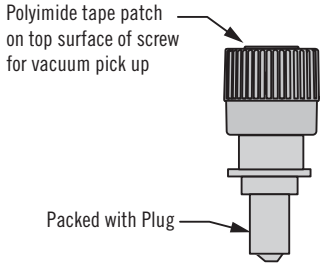
F* Value represents float in unfastened position
Notes: P-1, P-2 Screw Projection measured from the top side of panel

PC Board Preparation





Screw as Shipped in Reel Pack or Tray Pack



4C Captive Screws
Prism series - SMT Style

Part Number
Specify Package
Indicate package option with last digit of the part number

Example
4C-SM-1111-N000-**R**, Reel Package (as shown in table)
4C-SM-1111-N000-**T**, Tray Package

Part Number
Specify Color
To indicate Color, change the three digits of the part number indicated below

Example
4C-SM-1111-K**000**-R, black
4C-SM-1111-K**008**-R, blue

- **For installation to PC Board material utilizing surface mount technology**
- **Designate access points with color**
- **Color match captive screws to your industrial design**
- **High strength screw for use with high torque drivers**

Material and Finish

Standoff: Steel, Tin plated

Knob: High heat resistant plastic

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Internal spring: 300 series stainless steel passivated

Plug: Silicone rubber

Installation Notes

Visit www.southco.com for additional installation guidelines

To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle.

Part Number

See table

Thread Size	Part Number (Reel package shown)				H-1	H-2	P-1	P-2	Ø B	Ø J	Ø E	F*	Ø K	Ø N	Panel Preparation Ø D
	Knurled Head		Smooth Head												
	Phillips	*TORX®* / Slotted	Phillips	TORX® / Slotted											
M3 x 0.5	4C-SM-3111-K000-R	4C-SM-3411-K000-R	4C-SM-3111-K000-R	4C-SM-3411-N000-R	10.8 (.43)	8.6 (.34)	1.5 (.06)	3.7 (.15)	9.7 (.38)	5.5 (.217)	7.6 (.30)	0.7 (.03)	5.6 (.22)	8.6 (.34)	5.6 +0.08/-0 (.220 +.003/-.000)
	4C-SM-3121-K000-R	4C-SM-3421-K000-R	4C-SM-3121-K000-R	4C-SM-3421-N000-R			3.3 (.13)	5.5 (.22)							
4-40	4C-SM-1111-K000-R	4C-SM-1411-K000-R	4C-SM-1411-N000-R	4C-SM-1411-N000-R			1.5 (.06)	3.7 (.15)							
	4C-SM-1121-K000-R	4C-SM-1421-K000-R	4C-SM-1421-N000-R	4C-SM-1421-N000-R			3.3 (.13)	5.5 (.22)							
	Phillips / Slotted	*TORX®*/Slotted	Phillips / Slotted	*TORX®*/Slotted											
6-32	4C-SM-2311-K000-R	4C-SM-2411-K000-R	4C-SM-2311-N000-R	4C-SM-2411-N000-R	16.3 (.64)	11.7 (.46)	0.1 (.004)	4.6 (.18)	11.4 (.45)	6.2 (.244)	8.1 (.32)	0.8 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0 (.252 +.003/-.000)
	4C-SM-2321-K000-R	4C-SM-2421-K000-R	4C-SM-2321-N000-R	4C-SM-2421-N000-R			1.8 (0.7)	6.1 (.24)							

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Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/4C**

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52-SM Captive Screws

Miniature series · Surface Mount Technology (SMT) Style

- **For installation to PC Board material utilizing surface mount technology**
- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Internal spring: 300 series stainless steel, passivated

Standoff: Steel, Tin plated

Plug: Silicone rubber

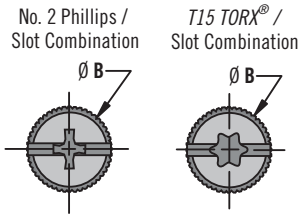
Installation Notes

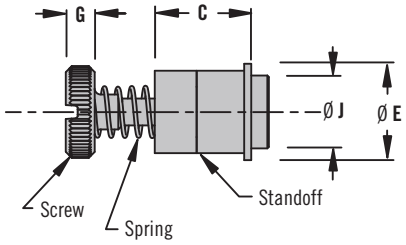
Visit www.southco.com for additional installation guidelines

Part Number

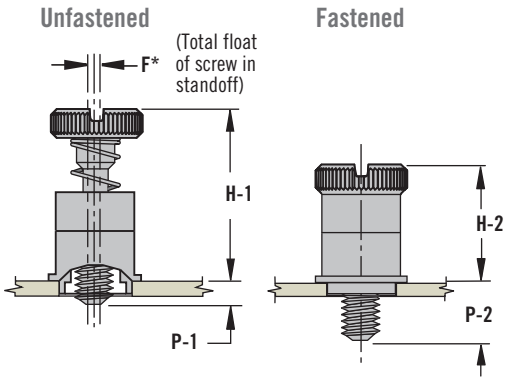
See table

Recess Styles



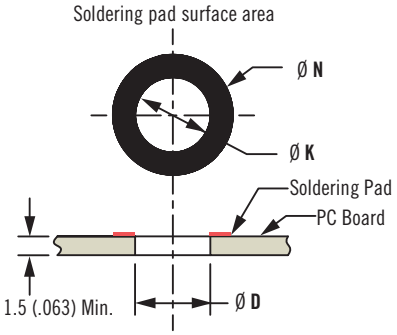


Screw Height and Screw Projection

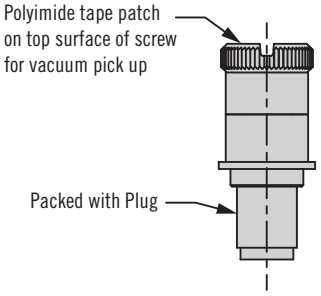


* Value represents float in unfastened position
Notes: P-1, P-2 Screw Projection measured from the top side of panel

PC Board Preparation



Screw as Shipped in Reel Pack or Tray Pack



52 Captive Screws
Minature Series - SMT Style

Part Number

Specify Package
Indicate package option with last digit of the part number

Example

52-SM-1311-K-R: Reel Package (as shown in table)
52-SM-1311-K-T: Tray Package

Thread Size	Part Number (Reel package shown)				H-1	H-2	P-1	P-2	Ø B Knurled Head	Ø B Smooth Head	Ø J	Ø E	C	G	F*	Ø K	Ø N	Panel Preparation Ø D
	Knurled Head		Smooth Head															
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted														
M3 x 0.5	52-SM-3311-K-R	52-SM-3411-K-R	52-SM-3311-N-R	52-SM-3411-N-R	14 (.55)	9.6 (.38)	0.8 (.03)	5.3 (.21)	7 (.28)	6.8 (.27)	5.5 (.217)	7.6 (.30)	7 (.28)	2.5 (.1)	0.5 (.02)	5.6 (.22)	8.6 (.34)	5.6 +0.08/-0 (.220 +.003/-.000)
	52-SM-3321-K-R	52-SM-3421-K-R	52-SM-3321-N-R	52-SM-3421-N-R			2.3 (.09)	6.8 (.27)										
4-40	52-SM-1311-K-R	52-SM-1411-K-R	52-SM-1311-N-R	52-SM-1411-N-R	14 (.55)	9.6 (.38)	0.8 (.03)	5.3 (.21)	7 (.28)	6.8 (.27)	5.5 (.217)	7.6 (.30)	7 (.28)	2.5 (.1)	0.5 (.02)			5.6 +0.08/-0 (.220 +.003/-.000)
	52-SM-1321-K-R	52-SM-1421-K-R	52-SM-1321-N-R	52-SM-1421-N-R			2.3 (.09)	6.8 (.27)										
6-32	52-SM-2311-K-R	52-SM-2411-K-R	52-SM-2311-N-R	52-SM-2411-N-R	15.7 (.62)	10.7 (.42)	0.7 (.028)	5.8 (.23)	7.9 (.31)	7.6 (.30)	6.2 (.244)	8.1 (.32)	8.1 (.32)	2.5 (.1)	0.8 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0 (.252 +.003/-.000)
	52-SM-2321-K-R	52-SM-2421-K-R	52-SM-2321-N-R	52-SM-2421-N-R			2.2 (.087)	7.4 (.29)										

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/52

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Dimensions in millimeters (inch) unless otherwise stated

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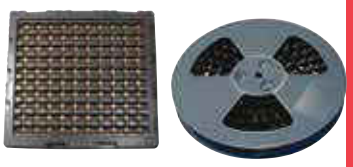
Installation Guidelines



Southco Surface Mounted Technology (SMT) Captive Screws include installation and packaging features for installation onto PC Boards during the Reflow Process as a surface mounted device (SMD).

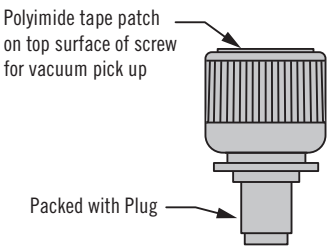
SMT product installation is offered on these Southco Captive Screws for 4-40, 6-32 and M3 thread sizes:

- **47 Styled Knob Series**
- **4C Prism Series**
- **52 Miniature Series**

Installation Features

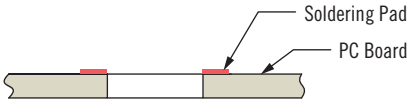
Each Southco SMT style captive screw includes a polymide patch covering the screw head tool recess allowing for vacuum pick up during placement on the PC Board. The screw threads are protected from excess solder during the reflow process by a plug pre-assembled to the screw by Southco. The patch and plug are then removed after the final cool down phase.

Screw as Shipped in Reel or Tray Pack



Preparing the PC Board to accept SMT Captive Screws

- See literature for optimum soldering pad surface area for the specific Southco Captive Screw being utilized



Packaging Features/Options

- Tray Pack
- Reel Pack

Tray Pack

Reel Pack

Reflow Process

- Reflow of Solder
  - Pre-heat
  - Soak
  - Reflow
  - Cooling
- Cleaning
  - Remove excess solder paste

Dimensions in millimeters (inch) unless otherwise stated

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52 Captive Screws

Miniature series · Flare-in style

- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff: Aluminum natural

Installation tool: Hardened carbon steel, zinc plated, chromate, plus sealer

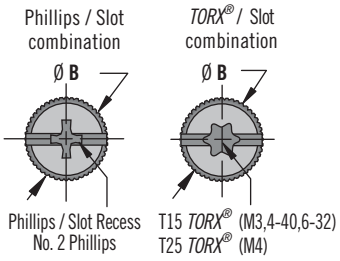
Installation Notes

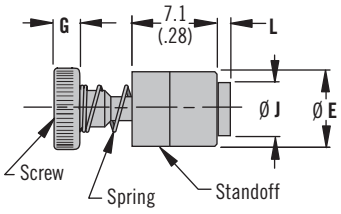
1. Prepare panel as shown
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool

Part Number

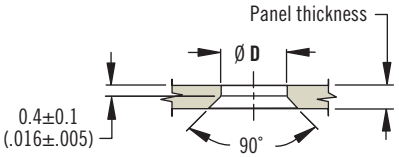
See table

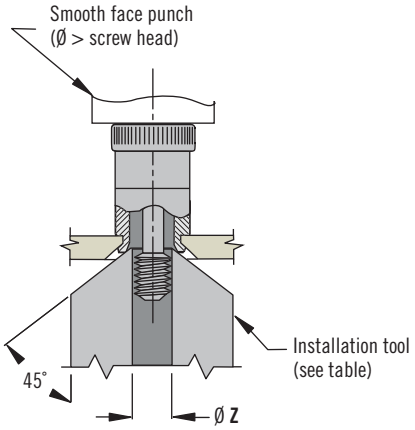
Recess Styles



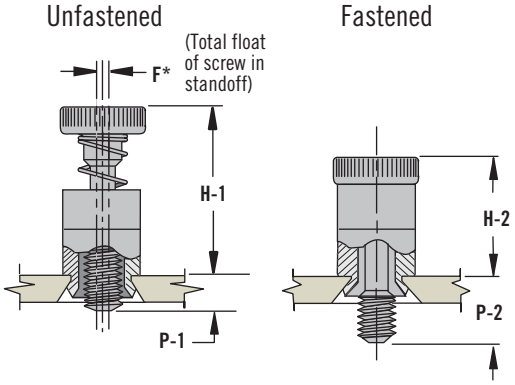


ACTUAL SIZE





Screw Height and Screw Projection



F* - Value represents float in unfastened position
Notes: P-1, P-2 measured from the top side of panel

Thread Size	Panel Thickness		Part Number				H-1	Ø B	H-2	Ø J	Ø E	L	G	F	P-1	P-2	Panel Preparation		Tool Part No.
			Knurled Head		Smooth Head												Ø D	Ø Z	
	Min.	Max.	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted													
4-40	0.8 (.031)	2.4 (.094)	52-19-11-4	52-17-11-4	52-1A-11-4	52-18-11-4	14 (.55)	7 (.28)	9.6 (.38)	4.6 (.183)	6.2 (.245)	1 (.041)	2.5 (.1)	0.5 (.018)	0.8 (.031)	5.3 (.21)	$4.75^{+0.08}_{-0}$ ($.187^{+.003}_{-0}$)	3 (.120)	47-104
6-32	1.5 (.058)	3.2 (.125)	52-29-21-4	52-27-21-4	52-2A-21-4	52-28-21-4	15 (.59)	8 (.31)	9.6 (.38)	5.3 (.209)	7 (.28)	1.8 (.07)	2.5 (.1)	0.7 (.028)	1.8 (.07)	6.8 (.27)	$5.41^{+0.08}_{-0}$ ($.213^{+.003}_{-0}$)	3.6 (.141)	47-106
M3 x 0.5	0.8 (.031)	2.4 (.094)	52-39-11-4	52-37-11-4	52-3A-11-4	52-38-11-4	14 (.55)	7 (.28)	9.6 (.38)	4.6 (.183)	6.2 (.245)	1 (.041)	2.5 (.1)	0.6 (.023)	0.8 (.031)	5.3 (.21)	$4.75^{+0.08}_{-0}$ ($.187^{+.003}_{-0}$)	3 (.120)	47-104
M4 x 0.7	1.5 (.058)	3.2 (.125)	52-49-21-4	52-47-21-4	52-4A-21-4	52-48-21-4	15.2 (.60)	9.4 (.37)	10.1 (.40)	6.7 (.26)	8.7 (.34)	1.8 (.07)	3 (.12)	0.7 (.028)	1.8 (.07)	6.8 (.27)	$6.76^{+0.1}_{-0}$ ($.266^{+.005}_{-0}$)	4.2 (.166)	47-108

Note: Subtract 0.25 (.01) from **Ø B** for smooth head style.

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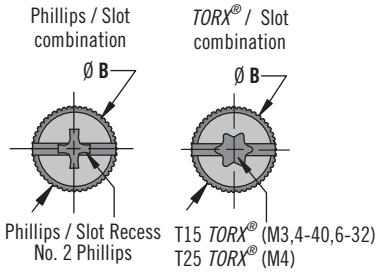
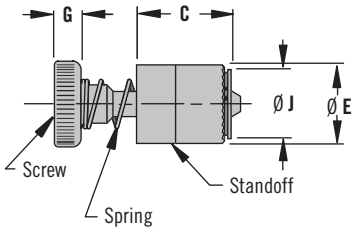
Dimensions in millimeters (inch) unless otherwise stated

52 Captive Screws

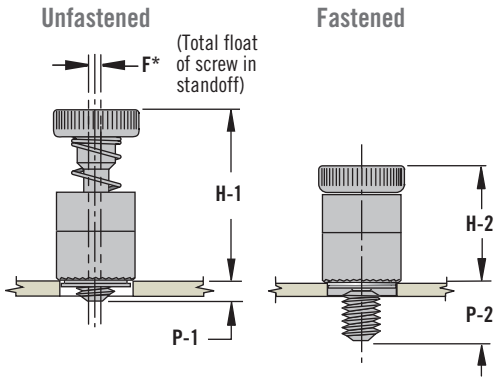
Miniature series · Press-in style

Recess Styles

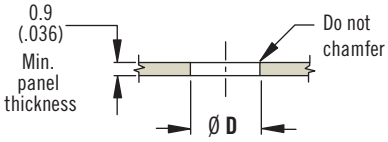




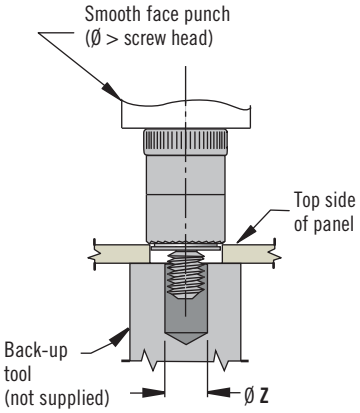
Screw Height and Screw Projection



F* Value represents float in unfastened position
Notes: P-1, P-2 measured from the top side of panel



Notes: Recommended minimum distance from edge of panel to centerline of hole is 1.5 x Ø X for press-in version.



Visit www.southco.com for additional installation guidelines

- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff: Carbon steel, zinc plated, chromate, plus sealer

Installation Notes

For use in most aluminum or in low carbon steels that are 1/4 hard or softer. Visit www.southco.com for more information.

Part Number

See table

Thread Size	Part Number				H-1	Ø B	H-2	Ø J	Ø E	C	G	F*	P-1	P-2	Panel Preparation	
	Knurled Head		Smooth Head												Ø D	Ø Z
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted												
4-40	52-19-51-4	52-17-51-4	52-1A-51-4	52-18-51-4	14 (.55)	7 (.28)	9.6 (.38)	5.5 (.217)	6.4 (.25)	7.9 (.31)	2.5 (.1)	0.5 (.018)	0.9 (.036)	5.3 (.21)	$5.56\ ^{+0.08}_{-0}$ ($.219\ ^{+.003}_{-0}$)	3 (.120)
	52-19-53-4	52-17-53-4	52-1A-53-4	52-18-53-4									2.5 (.1)	6.8 (.27)		
6-32	52-29-51-4	52-27-51-4	52-2A-51-4	52-28-51-4	15.5 (.61)	8 (.31)	10.4 (.41)	6.3 (.247)	7 (.28)	8.6 (.34)	2.5 (.1)	0.7 (.028)	0.9 (.036)	6.1 (.24)	$6.35\ ^{+0.08}_{-0.00}$ ($.250\ ^{+.003}_{-.000}$)	3.7 (.144)
	52-29-53-4	52-27-53-4	52-2A-53-4	52-28-53-4									2.5 (.1)	7.6 (.30)		
M3 X 0.5	52-39-51-4	52-37-51-4	52-3A-51-4	52-38-51-4	14 (.55)	7 (.28)	9.6 (.38)	5.5 (.217)	6.4 (.25)	7.9 (.31)	2.5 (.1)	0.6 (.023)	0.9 (.036)	5.3 (.21)	$5.56\ ^{+0.08}_{-0}$ ($.219\ ^{+.003}_{-0}$)	3.2 (.126)
	52-39-53-4	52-37-53-4	52-3A-53-4	52-38-53-4									2.5 (.1)	6.8 (.27)		
M4 X 0.7	52-49-51-4	52-47-51-4	52-4A-51-4	52-48-51-4	16 (.63)	9.4 (.37)	10.8 (.43)	7.9 (.31)	8.7 (.34)	8.6 (.34)	3 (.12)	0.7 (.028)	0.9 (.036)	6.1 (.24)	$8\ ^{+0}_{-0.08}$ ($.315\ ^{+0}_{-.003}$)	4.4 (.173)
	52-49-53-4	52-47-53-4	52-4A-53-4	52-48-53-4									2.5 (.1)	7.6 (.30)		

Note: Subtract 0.25 (.01) from **Ø B** for smooth head style.

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Dimensions in millimeters (inch) unless otherwise stated

52 Overmold Captive Screws

Miniature series · Flare-in style

- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**
- **Designate access points with color**
- **Color match captive screws to your industrial design**

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff: Aluminum natural

Knob: PC/ABS

Installation tool: Hardened carbon steel, zinc plated, chromate, plus sealer

Performance Details

Flamability Rating: UL94-V0

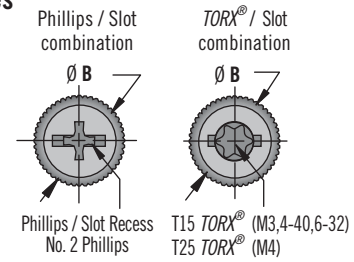
Installation Notes

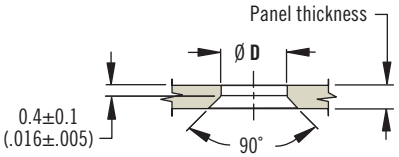
1. Prepare panel as shown
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool

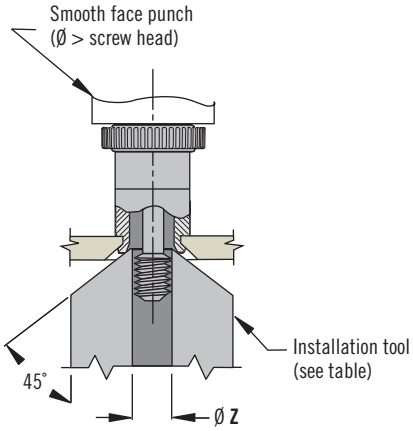
Part Number

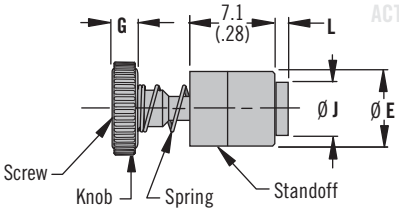
See table

Recess Styles*



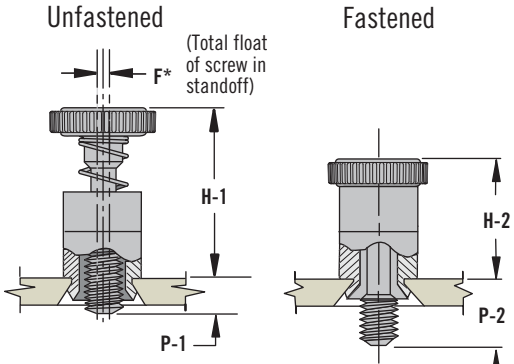






ACTUAL SIZE

Knob Height and Screw Projection



F* - Value represents float in unfastened position
Notes: P-1, P-2 measured from the top side of panel

000 Black (shown in table)

008 Blue

012 Purple

013 Red

014 Green

Your color contact Southco

Specifying Color: To indicate color, change the last three digits of the part number
Example: 52-11-11-4-000 Black, 52-11-11-4-013 Red

Thread Size	Panel Thickness		Part Number				H-1	B Knurled Head	B Smooth Head	H-2	Ø J	Ø E	L	G	F	P-1	P-2	Panel Preparation		Tool Part No.
			Knurled Head		Smooth Head													Ø D	Ø Z	
	Min.	Max.	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted														
4-40	0.8 (.031)	2.4 (.094)	52-11-11-4-000 *	52-15-11-4-000 *	52-13-11-4-000 *	52-16-11-4-000 *	14 (.55)	8.1 (.32)	7.8 (.31)	9.6 (.38)	4.6 (.183)	6.2 (.245)	1 (.041)	2.5 (.1)	0.5 (.018)	0.8 (.031)	5.3 (.21)	4.75 $^{+0.08}_{-0}$ ($.187^{+.003}_{-0}$)	3 (.120)	47-104
6-32	1.5 (.058)	3.2 (.125)	52-29-21-4-000	52-27-21-4-000	52-2A-21-4-000	52-28-21-4-000	15 (.59)	8.8 (.35)	8.5 (.33)	9.6 (.38)	5.3 (.209)	7 (.28)	1.8 (.07)	2.5 (.1)	0.7 (.028)	1.8 (.07)	6.8 (.27)	5.41 $^{+0.08}_{-0}$ ($.213^{+.003}_{-0}$)	3.6 (.141)	47-106
M3 x 0.5	0.8 (.031)	2.4 (.094)	52-31-11-4-000 *	52-35-11-4-000*	52-33-11-4-000 *	52-36-11-4-000*	14 (.55)	8.1 (.32)	7.8 (.31)	9.6 (.38)	4.6 (.183)	6.2 (.245)	1 (.041)	2.5 (.1)	0.6 (.023)	0.8 (.031)	5.3 (.21)	4.75 $^{+0.08}_{-0}$ ($.187^{+.003}_{-0}$)	3 (.120)	47-104
M4 x 0.7	1.5 (.058)	3.2 (.125)	52-49-21-4-000	52-45-21-4-000 *	52-4A-21-4-000	52-46-21-4-000 *	15.2 (.60)	10.3 (.41)	10 (.39)	10 (.40)	6.7 (.26)	8.7 (.34)	1.8 (.07)	3 (.12)	0.7 (.028)	1.8 (.07)	6.8 (.27)	6.76 $^{+0.1}_{-0}$ ($.266^{+.005}_{-0}$)	4.2 (.166)	47-108

*Part Numbers not available with combination head styles; Phillips or TORX® only

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

INFO CLIC www.southco.com/52

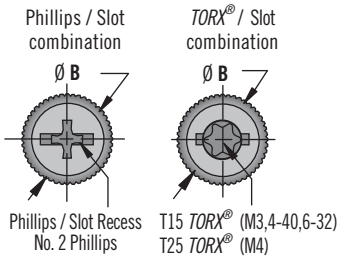
Dimensions in millimeters (inch) unless otherwise stated

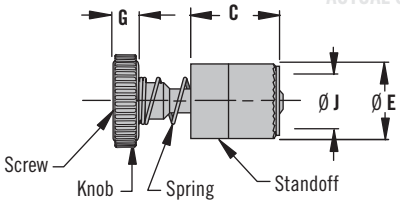
southco® CONNECT · CREATE · INNOVATE

52 Overmold Captive Screws

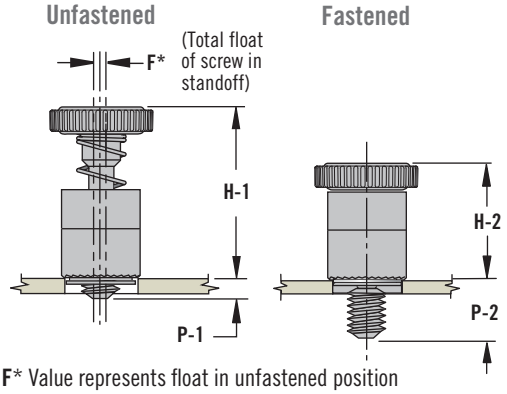
Miniature series · Press-in style

Recess Styles*

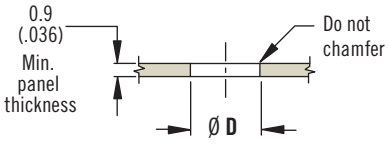




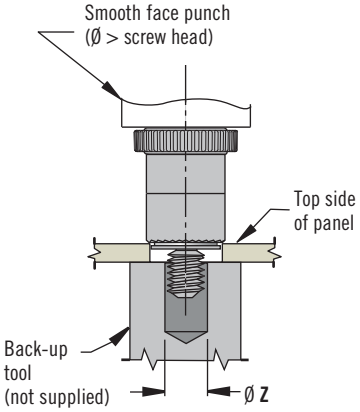
Knob Height and Screw Projection

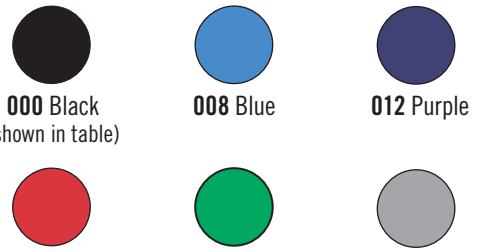


F* Value represents float in unfastened position
Notes: P-1, P-2 measured from the top side of panel



Notes: Recommended minimum distance from edge of panel to centerline of hole is 1.5 x Ø X for press-in version.





Specifying Color: To indicate color, change the last three digits of the part number
Example: 52-11-11-4-000 Black, 52-11-11-4-013 Red

Visit www.southco.com for additional installation guidelines

- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**
- **Designate access points with color**
- **Color match captive screws to your industrial design**

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff: Carbon steel, zinc plated, chromate, plus sealer

Knob: PC/ABS

Performance Details

Flamability Rating: UL94-V0

Installation Notes

For use in most aluminum or in low carbon steels that are 1/4 hard or softer. Visit www.southco.com for more information.

Part Number

See table

Thread Size	Part Number				H-1	B Knurled Head	B Smooth Head	H-2	Ø J	Ø E	C	G	F*	P-1	P-2	Panel Preparation	
	Knurled Head		Smooth Head													Ø D	Ø Z
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted													
4-40	52-11-51-4-000*	52-15-51-4-000*	52-13-51-4-000*	52-16-51-4-000*	14 (.55)	8.1 (.32)	7.8 (.31)	9.6 (.38)	5.5 (.217)	6.4 (.25)	7.9 (.31)	2.5 (.1)	0.5 (.018)	0.9 (.036)	5.3 (.21)	5.56 $^{+0.08}_{-0}$ (.219 $^{+0}_{-.003}$)	3 (.120)
	52-11-53-4-000*	52-15-53-4-000*	52-13-53-4-000*	52-16-53-4-000*										2.5 (.1)	6.8 (.27)		
6-32	52-29-51-4-000	52-27-51-4-000	52-2A-51-4-000	52-28-51-4-000	15.5 (.61)	8.8 (.35)	8.5 (.33)	10.4 (.41)	6.3 (.247)	7 (.28)	8.6 (.34)	2.5 (.1)	0.7 (.028)	0.9 (.036)	6.1 (.24)	6.35 $^{+0.03}_{-0.00}$ (.250 $^{+0}_{-.003}$)	3.7 (.144)
	52-29-53-4-000	52-27-53-4-000	52-2A-53-4-000	52-28-53-4-000										2.5 (.1)	7.6 (.30)		
M3 X 0.5	52-31-51-4-000*	52-35-51-4-000*	52-33-51-4-000*	52-36-51-4-000*	14 (.55)	8.1 (.32)	7.8 (.31)	9.6 (.38)	5.5 (.217)	6.4 (.25)	7.9 (.31)	2.5 (.1)	0.6 (.023)	0.9 (.036)	5.3 (.21)	5.56 $^{+0.08}_{-0}$ (.219 $^{+.003}_{-.000}$)	3.2 (.126)
	52-31-53-4-000*	52-35-53-4-000*	52-33-53-4-000*	52-36-53-4-000*										2.5 (.1)	6.8 (.27)		
M4 X 0.7	52-49-51-4-000	52-45-51-4-000*	52-4A-51-4-000	52-46-51-4-000*	16 (.63)	10.3 (.41)	10 (.39)	10.8 (.43)	7.9 (.31)	8.7 (.34)	8.6 (.34)	3 (.12)	0.7 (.028)	0.9 (.036)	6.1 (.24)	8 $^{+0}_{-0.08}$ (.315 $^{+0}_{-.003}$)	4.4 (.173)
	52-49-53-4-000	52-45-53-4-000*	52-4A-53-4-000	52-46-53-4-000*										2.5 (.1)	7.7 (.30)		

Note:*Part Numbers not available with combination head styles; Phillips or TORX® only

TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

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INFO CLIC www.southco.com/52

© Southco 52 NA 07-12

P7 ATCA Inject / Eject Mechanism

Captive Screws • ATCA Compliant Series

- **M3 thread**
- **No. 2 Phillips recess**
- **Color match available**

Material and Finish

Screw, ferrule and internal spring stainless steel, knob aluminum or PC/ABS

Performance Details

Flammability rating: UL94-V0
ATCA R3.0 compliant screw

Installation Notes

Please refer to installation drawings on www.southco.com for reference on dimensions **B***, Ø **D*** and Ø **Z***

F* indicates maximum float in the unfastened position

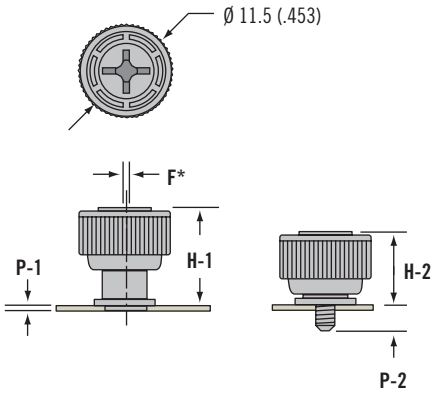
Part Number

See table

Specifying Color:
To indicate color, change the last three digits of the part number.
Example:
47-99-945-1P0-K000, black

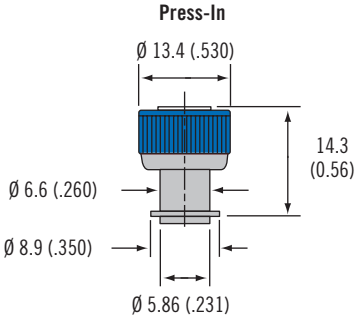
47-99-945-1P0-K013, red

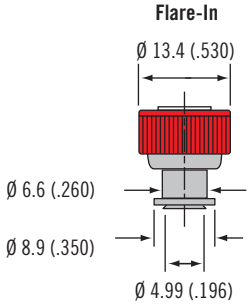
Metal Version

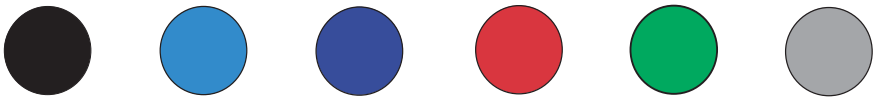


ATCA
ACTUAL SIZE

Overmolded Version





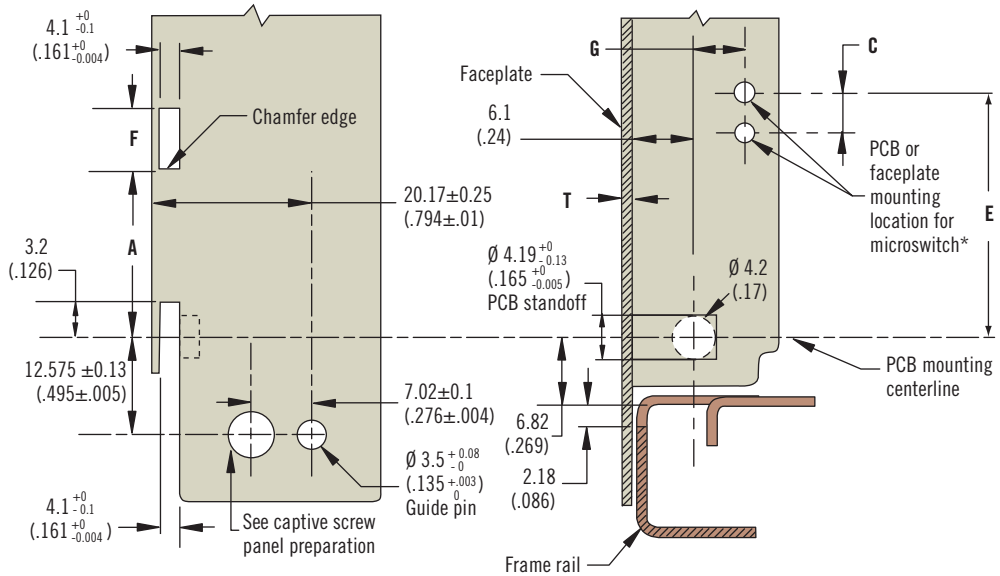


000 Black | 008 Blue | 012 Purple | 013 Red | 014 Green | Your color (contact Southco)

Series	Installation Method	Panel Thickness			Part Number	H-1	H-2	P-1	P-2	F*	Panel Preparation	
		A Min.	A Max.	B*	No. 2 Phillips						Ø D*	Ø Z*
ATCA compliant (Metal Version)	Press-in	0.9 (.036)	~	~	47-99-945-1P0	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.95 ±0.04 (.234±.002)	$3.2^{+0.2}_{-0.1}$ ($.125^{+.008}_{-.004}$)
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	$5.1^{+0.1}_{0}$ ($.20^{+.004}_{0}$)	$3.0^{+0.1}_{0}$ ($.118^{+.004}_{.000}$)
ATCA compliant (Overmolded Version)	Press-in	0.9 (.036)	~	~	47-99-945-1P0-K000	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.95 ±0.04 (.234±.002)	$3.2^{+0.2}_{-0.1}$ ($.125^{+.008}_{-.004}$)
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1-K000	14.3 (.56)	10.1 (.40)	1.0 (.039)	5.0 (.20)	1 (.039)	$5.1^{+0.1}_{0}$ ($.20^{+.004}_{0}$)	$3.0^{+0.1}_{0}$ ($.118^{+.004}_{.000}$)

P7 ATCA Inject / Eject Mechanism

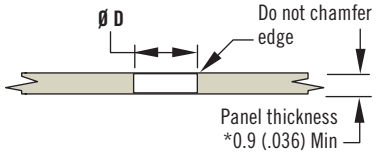
Faceplate panel preparation (with PCB mounting tab fabrication)

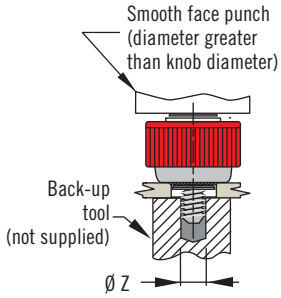


Switch Styles	Part Number	A	F	C	G	E	T
Lever	P7-A-513-11	22 (.866)	7.5 (.296)	4 (.16)	25.4 (1.0)	5.2 (.2)	0.8 - 1.5 (.031 - .059)
	P7-A-523-11	21.7 (.85)	7.8 (.31)				2 - 2.5 (.078 - .098)
Plunger	P7-A-533-11	20.2 (.795)	9 (.354)	3 (.12)	20.4 (.8)	1.9 (.07)	0.8 - 1.5 (.031 - .059)
	P7-A-543-11						2 - 2.5 (.078 - .098)

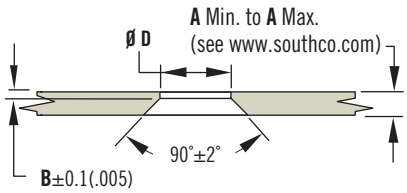
Captive Screw Panel Preparation and Installation (see www.souchco.com for selection of captive screws)

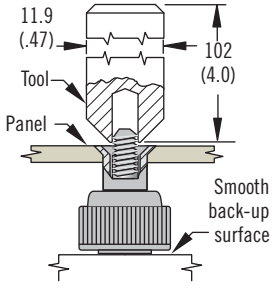
Press-In





Flare-In





Flare-In Tool Part Number (M3 Thread Size)
47-104

Dimensions in millimeters (inch) unless otherwise stated

Installation Notes

Select ejector, guide pin and mounting screw part number.

Select captive screw best suited to your application.

Notes

Faceplates generally require two ejectors, two captive screws, two mounting screws and two guide pins.

*Microswitch lever style operation ITT MD002 or plunger style operation ITT SD002

See www.southco.com for ejector selection

Installation Notes

See www.southco.com for **B, Ø D** and **Ø Z** dimensions.

Press-in:

1. Prepare panel as shown, do not chamfer edge.
2. Place standoff into installation hole.
3. Provide solid back-up behind hole with clearance hole for screw.
4. Press part into panel. Punch must not touch plastic knob during installation.

Recommended minimum distance from the panel edge to the centerline of the installation hole is 1.5 x Ø D. * For panels thinner than 0.9 (.036) contact Southco.

Flare-in

1. Prepare panel as shown.
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool. Installation force depends on screw size.
3. Punch cannot touch plastic during installation.

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INFO CLIC www.southco.com/P7

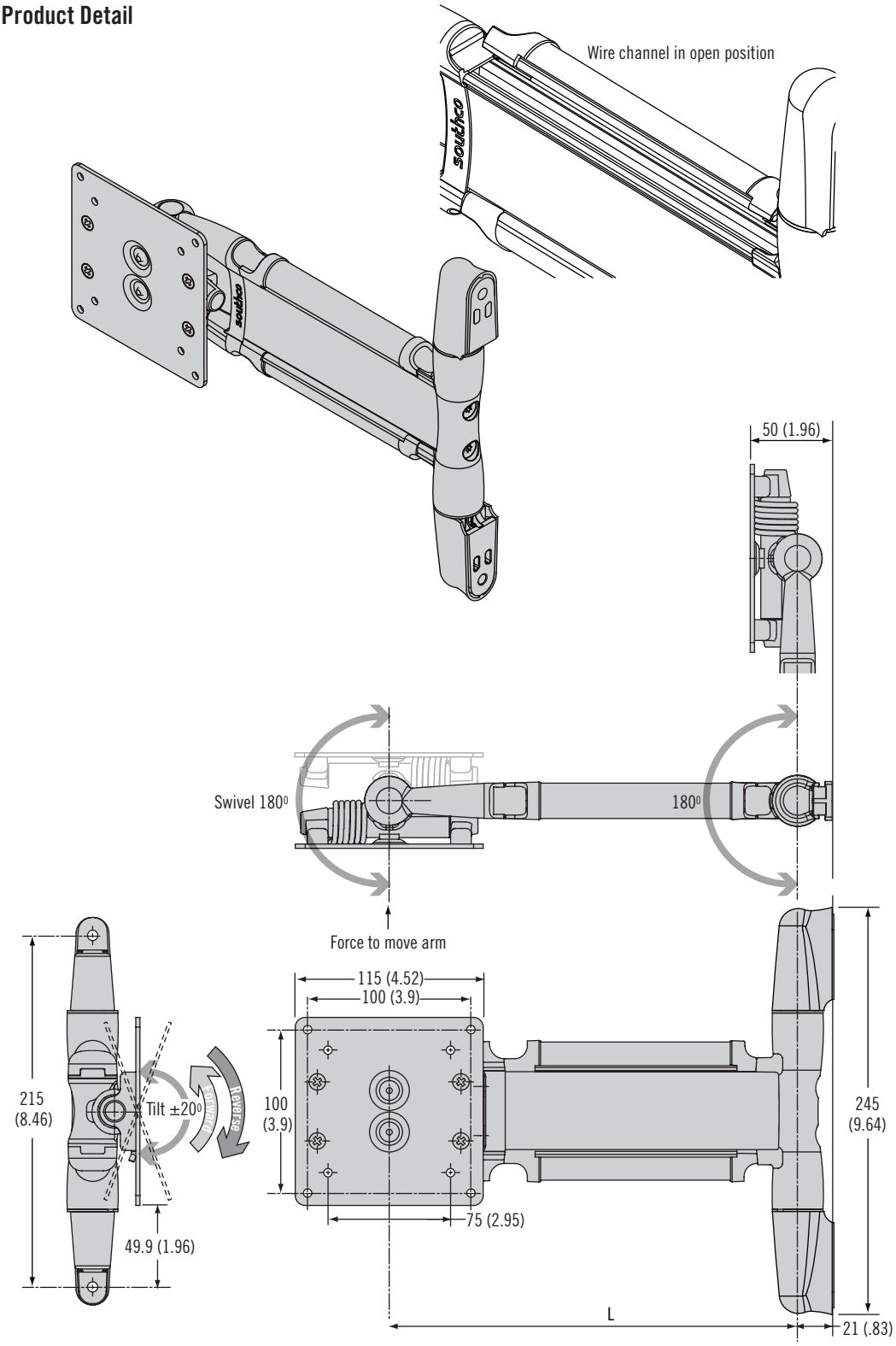
© Southco ATCA 846NA 11-12

AV Series Dynamic Mounting Arm

Tilt, Swivel and Swing

- **Intuitive grab and move operation enhances the user experience**
  No knobs or tools required to reposition the display
  Precise control of operating effort ensures ideal “feel” and eliminates “drift”
  Holds securely, even in applications with dynamic loading
- **Low profile in the stowed position**
  Folds to within 50 mm of the wall
- **Snap-open channels simplify wire management**
  Easy display installation and replacement
- **Factory assembled and ready for use**

Product Detail



VESA MIS-D, 100, C

INFO CLIC www.southco.com/AV

Dimensions in millimeters (inch) unless otherwise stated

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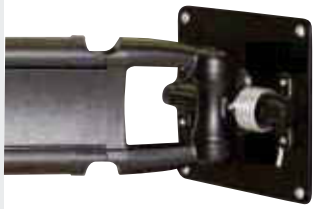
AV Series Dynamic Mounting Arm

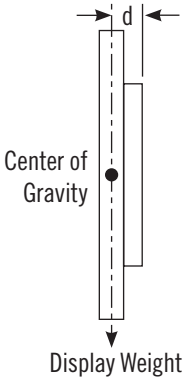
Tilt, Swivel and Swing



Specification and Selection

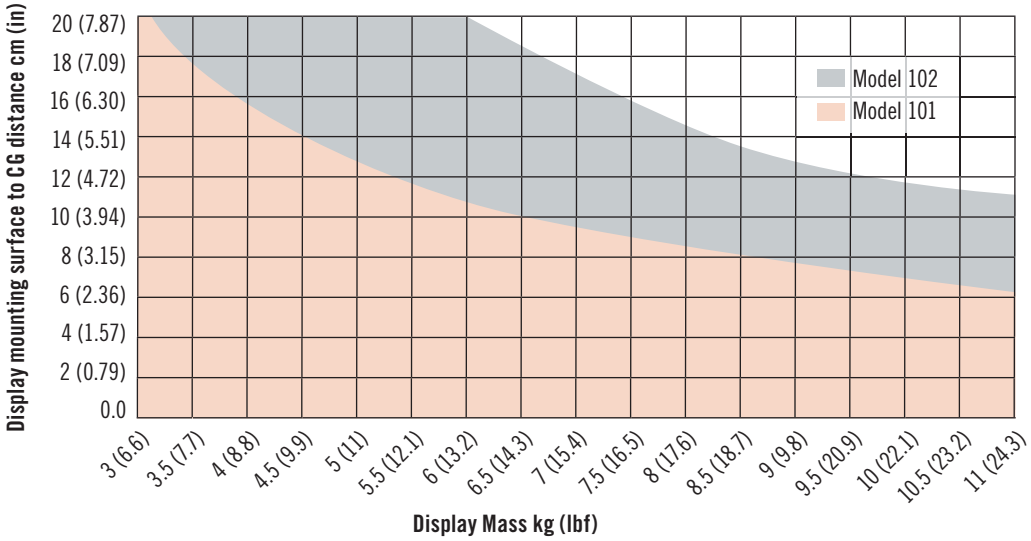
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101 or 102).



Step 3

Complete part number by selecting length and color options below.

K	Length (L)	Average ultimate load
15	150 (5.9)	2000 (450)
25	250 (9.8)	1200 (270)
35	350 (13.8)	850 (190)
45	450 (17.7)	660 (150)

Model S	Force to move arm N (lb)	Tilt Torque N•m (in lbf)		Swivel Torque
		Reverse	Forward	
101	22.2 (5)	7.9 (70)	1.13 (10)	2.3 (20)
102	33.8 (7.6)	15.4 (136)	2.26 (20)	3.4 (30)

F	Color
50	Black
76	White

AV - D30 - K A S - F

- **Smooth operation enhances the user experience**
- **Adjust the display without knobs or tools**
- **Holds securely in every position**

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Max. dynamic working load:
Model 101: 66N (15 lbf)
Model 102: 98N (22 lbf)
Average ultimate load: See table

Part Number

See table

Part Number Example

AV-D30-25A101-50 = Dynamic mounting arm, Model 101, 250mm Length, black

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Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/AV

AV Series Dynamic Mounting Arm

Tilt, Swivel and Swing

- **Smooth operation enhances the user experience**
- **Adjust the display without knobs or tools**
- **Holds securely in every position**

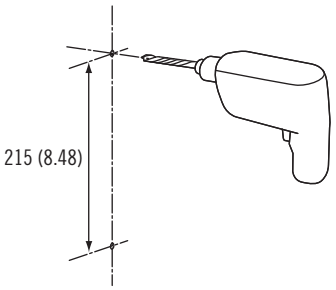
Installation

1. Determine desired mounting location
2. Mark upper and lower mounting holes. For ideal hole location, mark upper hole first, then use a plumb line to ensure vertical orientation between the upper and lower holes
   a. For thru-bolt installation, drill or punch holes as indicated on trade drawing and install using 1/4-20 or M6 screws.
   b. For installation in wood studs, drill a 3/16 inch pilot hole and install using a 1/4 inch lag bolt. Do not over tighten.
   c. For compliant mounting surfaces (gypsum board, etc.) use optional wall plate, sold separately.

Caution: Because of the wide variety of available wall materials, it is the installer's responsibility to ensure that the materials, and structure to which the arm is mounted, and the hardware selected will provide adequate support.

3. Slide on mounting hardware covers and attach display using manufacturer's recommended hardware.
4. Route wiring as needed

1



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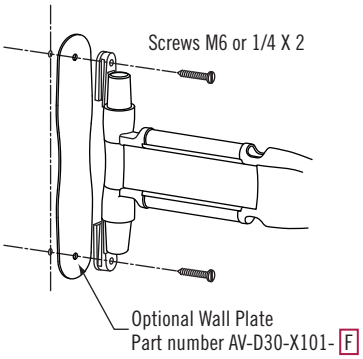

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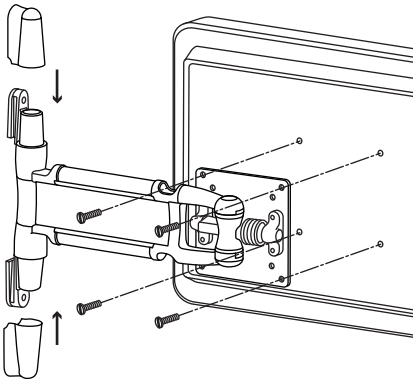

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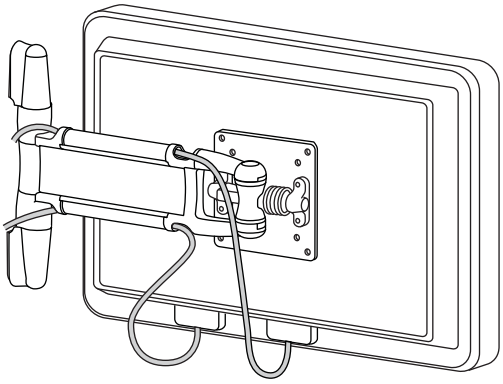

For complete installation and operation instructions please consult the product manual included in every package or available to download from www.southco.com

Dimensions in millimeters (inch) unless otherwise stated

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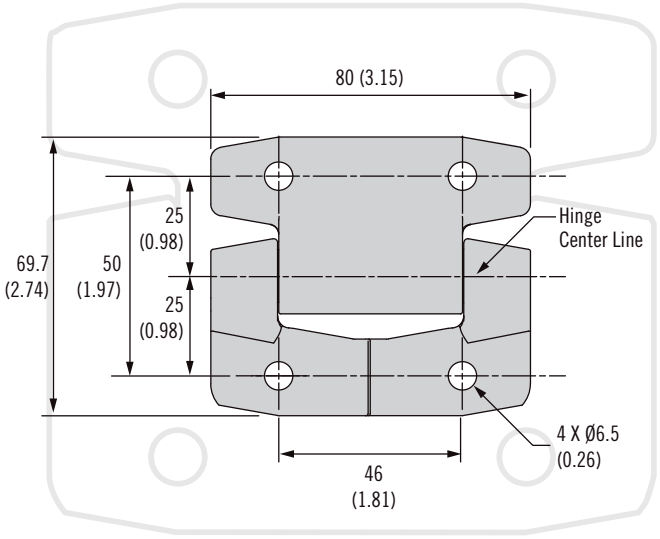
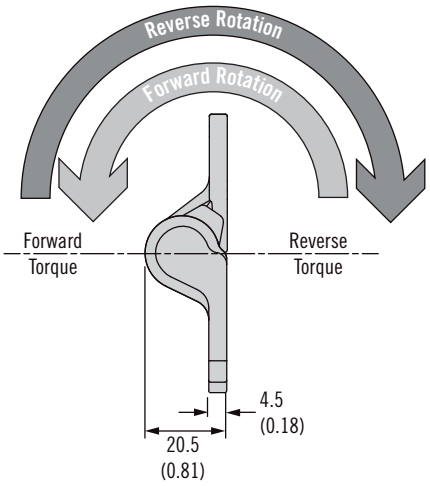
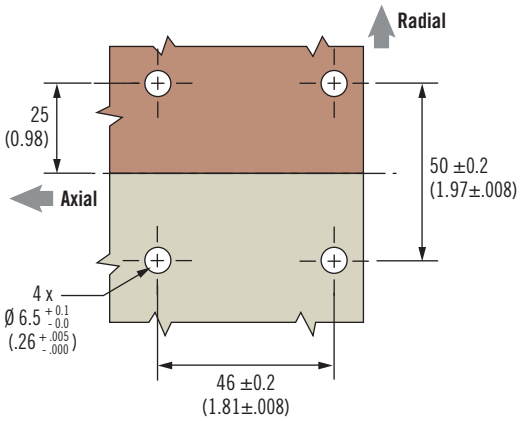
E6 Hinge

Position control · Constant torque · Heavy Duty







- **Holds in every position**
- **No adjustment required**
- **Long cycle life**

Material and Finish

Aluminum alloy, black powder coated

Performance Details

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Radial load:
Max. static load: 2,000 N (450 lbf)
Average ultimate load:
12,800 N (2,875 lbf)

Axial load:
Max. static load: 500 N (110 lbf)
Average ultimate load:
10,800 N (2,425 lbf)

Part Number

See table

Symmetric

Part Number	Symmetric Torque N·m (in·lbf)
E6-10-620S-50	2.3 (20.0)
E6-10-635S-50	3.9 (35.0)
E6-10-650S-50	5.7 (50.0)
E6-10-665S-50	7.3 (65.0)
E6-10-680S-50	9.0 (80.0)

Asymmetric

Part Number	Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
E6-10-620F-50	2.3 (20.0)	1.7 (14.9)
E6-10-635F-50	3.9 (35.0)	3.0 (26.7)
E6-10-650F-50	5.7 (50.0)	4.0 (35.7)
E6-10-665F-50	7.3 (65.0)	5.4 (47.5)
E6-10-680F-50	9.0 (80.0)	6.7 (59.4)
E6-10-695F-50	10.7 (95.0)	7.8 (68.9)
E6-10-6110F-50	12.4 (110.0)	9.0 (79.8)
E6-10-620R-50	1.7 (14.9)	2.3 (20.0)
E6-10-635R-50	3.0 (26.7)	3.9 (35.0)
E6-10-650R-50	4.0 (35.7)	5.7 (50.0)
E6-10-665R-50	5.4 (47.5)	7.3 (65.0)
E6-10-680R-50	6.7 (59.4)	9.0 (80.0)
E6-10-695R-50	7.8 (68.9)	10.7 (95.0)
E6-10-6110R-50	9.0 (79.8)	12.4 (110.0)

Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/E6*

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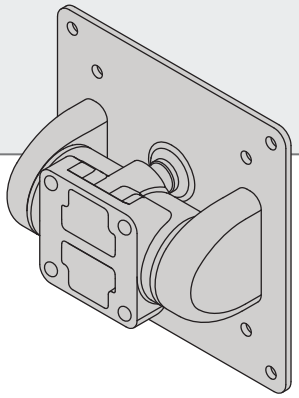
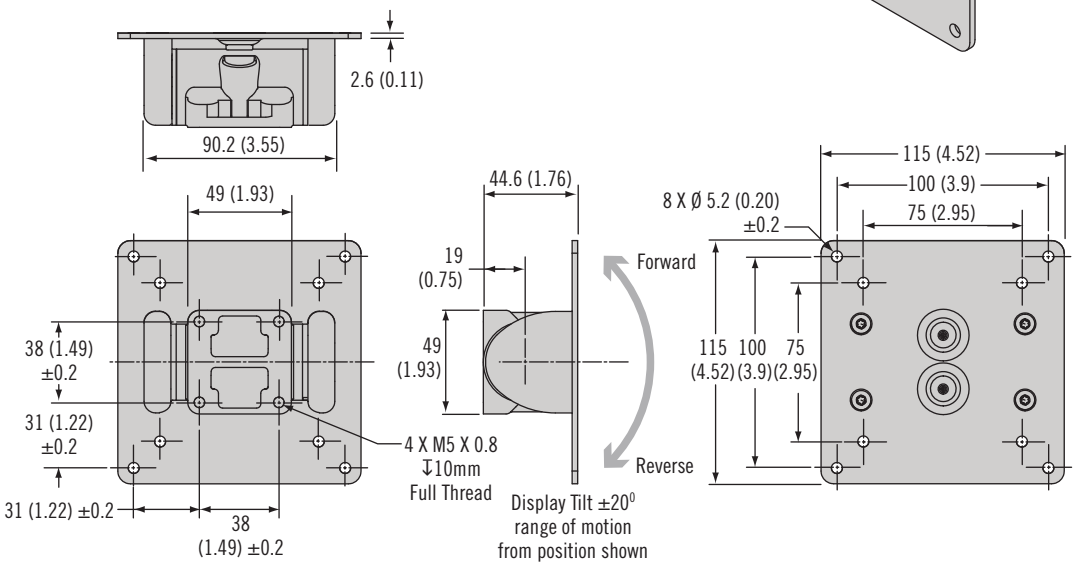
AV Series Dynamic Mount

Tilt



- **Intuitive grab and move operation enhances the user experience**
  - No knobs or tools required to reposition the display
  - Precise control of operating effort ensures ideal “feel”
  - Holds securely, even in applications with dynamic loading
- **Consistent repeatable operation**
- **Fully enclosed for optimum cleanability**

Product Detail



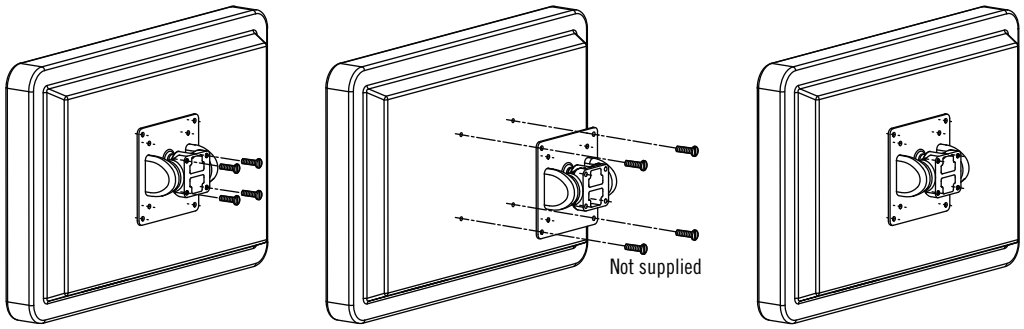
Installation

1. Determine desired mounting location
2. Attach using M5 X 0.8 screws as shown

Caution: Because of the wide variety of available wall materials, it is the installer’s responsibility to ensure that the materials, and structure to which the tilt mount is fastened will provide adequate support.

3. Attach display using manufacturer’s recommended hardware

Installation



VESA MOUNTING COMPLIANT

VESA MIS-D, 100, C

INFO CLIC www.southco.com/AV

Dimensions in millimeters (inch) unless otherwise stated

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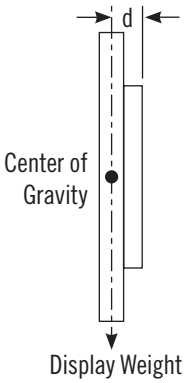
AV Series Dynamic Mount

Tilt

Specification and Selection

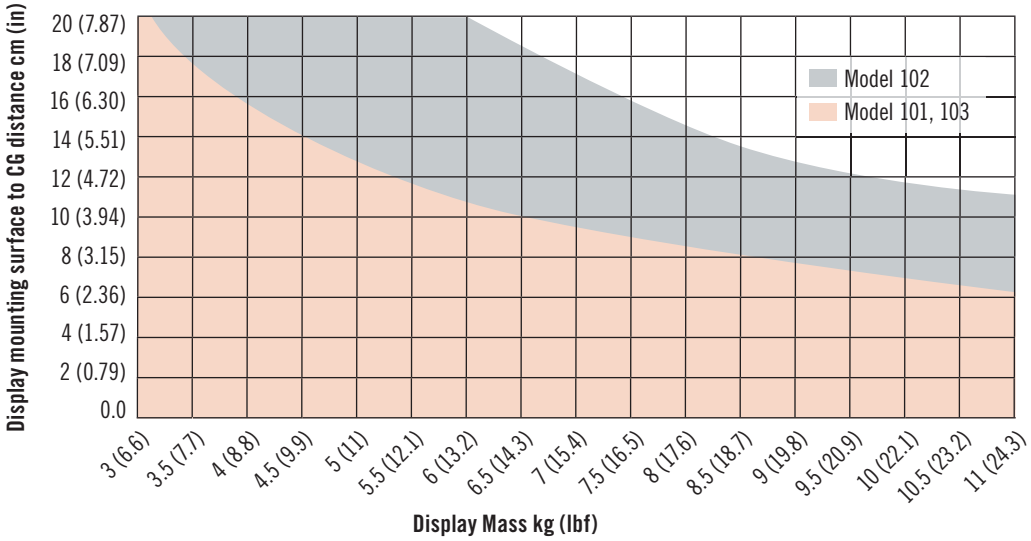
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting model and color options below.

Model S	Tilt Torque N•m (in lbf)	
	Reverse	Forward
101	7.9 (70)	2.2 (19.5)
102	15.4 (136)	2.26 (20)
103	8.6 (76)	6 (53)

F	Color
50	Black
76	White

AV - D30 - 5T S - F

For complete installation and operation instructions please consult the product manual included in every package or available to download from www.southco.com

Dimensions in millimeters (inch) unless otherwise stated

- **Smooth operation enhances the user experience**
- **Adjust the display without knobs or tools**
- **Holds securely**

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Max. dynamic working load:
Model 101 and 103: 70N (15.7lbf)
Model 102: 100N (22.5lbf)
Average ultimate load: 1845N (414.8lbf)

Part Number

See table

Part Number Example

AV-D30-5T101-50 = Dynamic tilt mount, Model 101, black

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INFO CLIC *www.southco.com/AV*

AV Series Dynamic Mount

Tilt and Swivel

- **Intuitive grab and move operation enhances the user experience**
  No knobs or tools required to reposition the display
  Precise control of operating effort ensures ideal “feel” and eliminates “drift”
  Holds securely, even in applications with dynamic loading
- **Consistent repeatable operation**
- **Factory assembled and ready for use**

Installation

1. Determine desired mounting location
2. Attach using M6 X 1 screws as shown

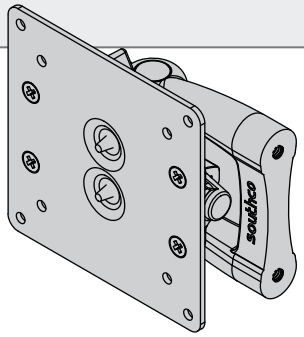
Caution: Because of the wide variety of available wall materials, it is the installer’s responsibility to ensure that the materials, and structure to which the arm is mounted, and the hardware selected will provide adequate support.

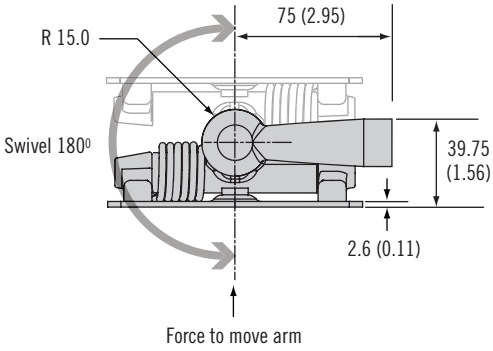
3. Attach display using manufacturer’s recommended hardware
4. Remove and recycle the shipping clip

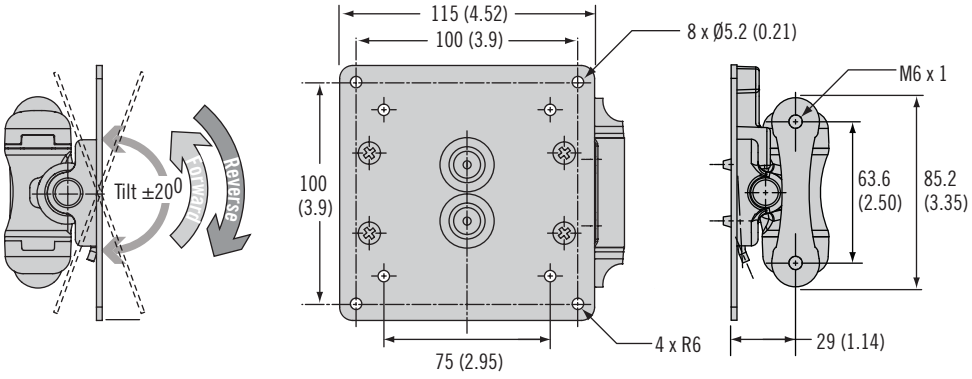
VESA MIS-D, 100, C

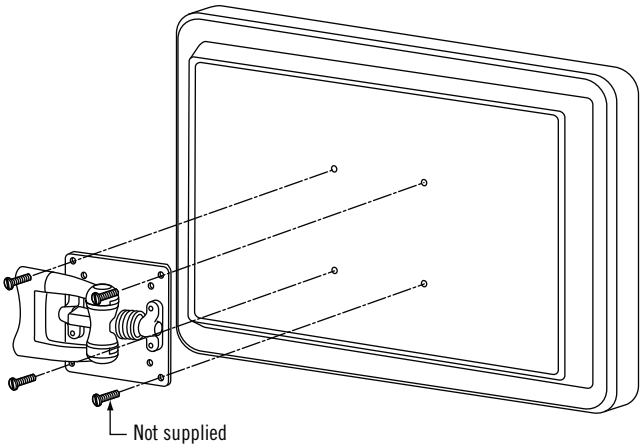
INFO CLIC www.southco.com/AV

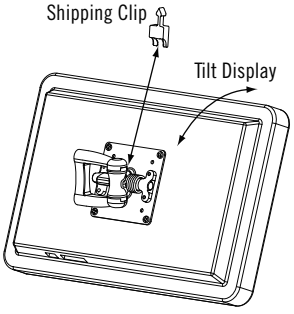
Product Detail











Dimensions in millimeters (inch) unless otherwise stated

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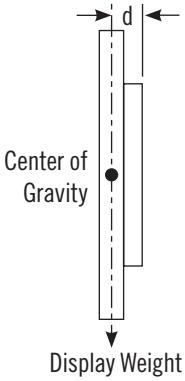
AV Series Dynamic Mount

Tilt and Swivel

Specification and Selection

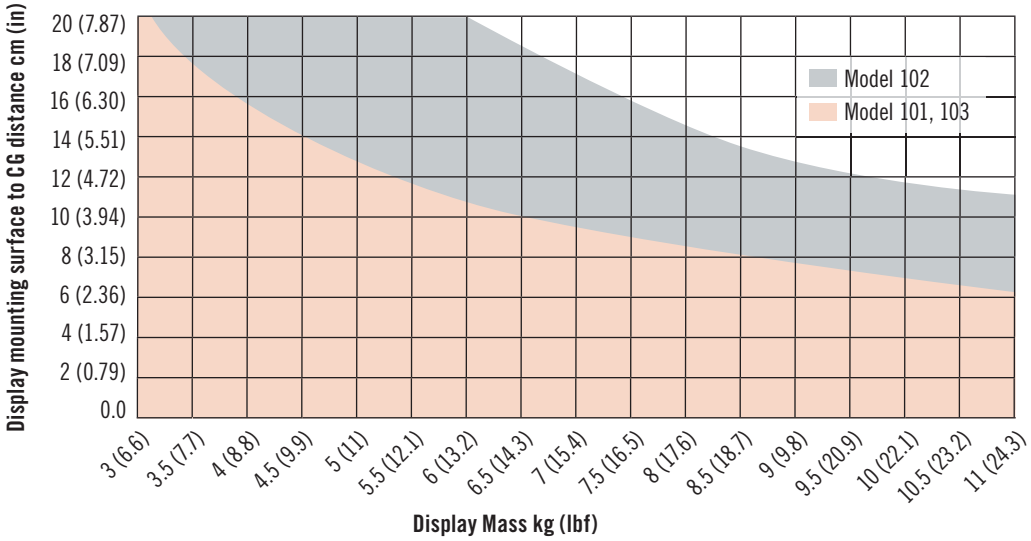
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting model and color options below.

Model S	Tilt Torque N•m (in lbf)		Swivel Torque
	Reverse	Forward	
101	7.9 (70)	1.13 (10)	2.3 (20)
102	15.4 (136)	2.26 (20)	3.4 (30)
103	8.6 (76)	6 (53)	3.4 (30)

F	Color
50	Black
76	White

AV - D30 - 7K S - F

For complete installation and operation instructions please consult the product manual included in every package or available to download from www.southco.com

Dimensions in millimeters (inch) unless otherwise stated

- **Smooth operation enhances the user experience**
- **Adjust the display without knobs or tools**
- **Holds securely in every position**

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Max. dynamic working load:
Model 101 and 103: 66N (15 lbf)
Model 102: 98N (22 lbf)
Average ultimate load: 178 N (450 lbf)

Part Number

See table

Part Number Example

AV-D30-7K101-50 = Dynamic mounting arm, Model 101, black

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INFO CLIC *www.southco.com/AV*

P2 Flush Pull - Lockable

Low profile · Lift or pull · Single hole mount

- **Snap-in installation**
- **Lockable**
- **Lock core included or sold separately**
- **Cam sold separately**

Material and Finish

Pull: ABS plastic, black

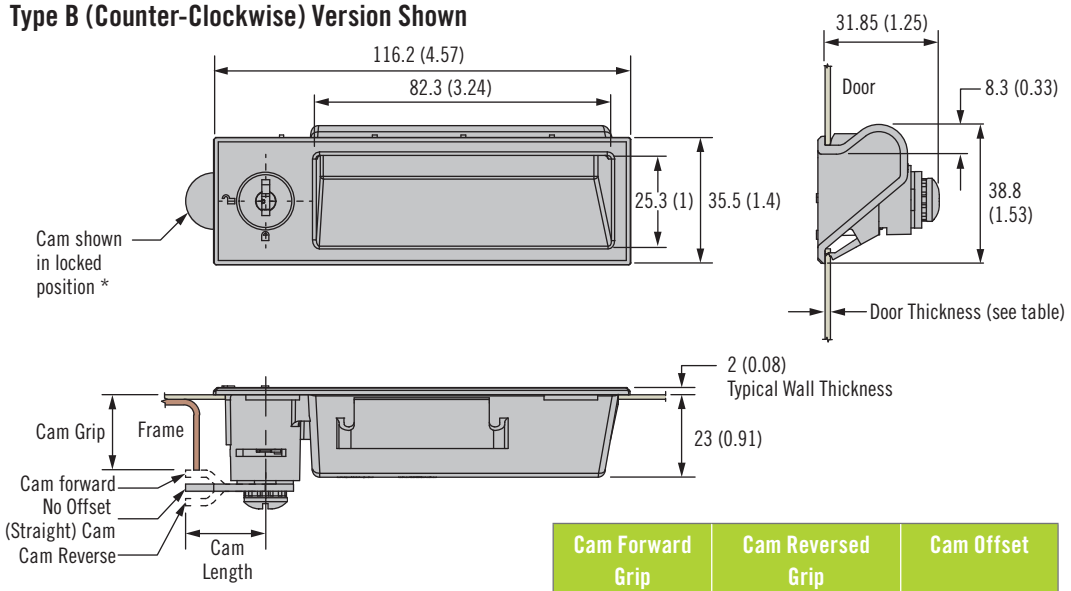
Lock parts:
Zinc alloy powder coated,
Brass, Steel zinc plated, Buna-N

Flammability Rating
UL94-HB or UL94-V0

Notes

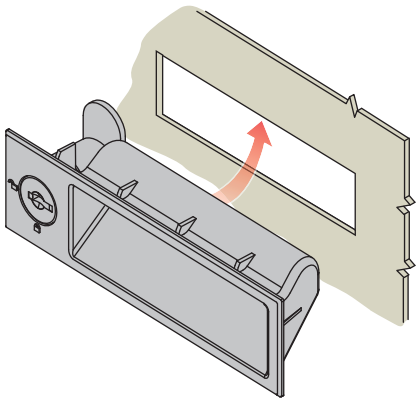
"For pulls without lock core,lock core sold separately, see page 183.
"Cam sold separately. See our handbook page 191 or www.southco.com."

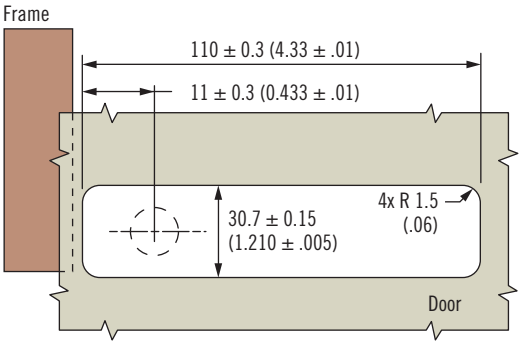
Type B (Counter-Clockwise) Version Shown



Cam Forward Grip	Cam Reversed Grip	Cam Offset
25 (0.98)	25 (0.98)	No Offset
21.8 (0.86)	28.2 (1.11)	3.2 (1.25)
18.6 (0.73)	31.4 (1.24)	6.4 (.250)
15.5 (0.61)	34.5 (1.36)	9.5 (.375)

* Cam Ordered Separately
For Cam Part Numbers and options see our handbook page 191 or www.southco.com





Part Number Selection

(*Cam Ordered Separately)

D Door Thickness Range
1 1.0 (.040) - 1.4 (.055)
2 1.4 (.055) - 1.8 (.070)
3 1.8 (.070) - 2.1 (.085)
4 2.1 (.085) - 2.5 (.100)

M Material
1 UL94-V0 PC/ABS
2 UL94-HB ABS

P2 - 4 D M - R L

R Rotation
1 Type A (Clockwise)
2 Type B (Counter-Clockwise)

L Lock Style
2 With lock core, keyed alike CH751 (with two flat keys supplied)
9 Without lock core (See our handbook page 183 or visit www.southco.com)

Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/P2

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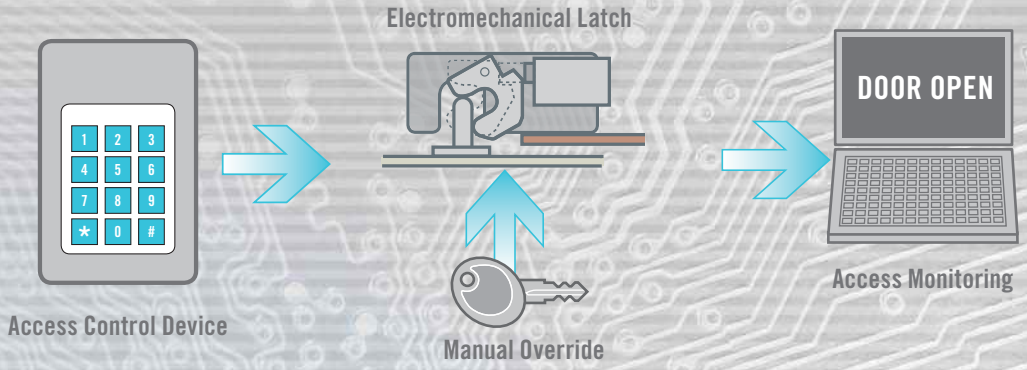
ELECTRONIC ACCESS

SOUTHCO® Electronic Access Solutions

Over 60 years of innovative engineered access solutions now combined with electronic actuation for remote control and monitoring of *SOUTHCO®* products.

- **Taking engineering access hardware to an entirely new level**
  - **Increased security**
  - **Improved access management**
  - **System integration**
  - **Industrial design**

Electronic Access System



The Electronic Access System is comprised of an Access Control Device which signals the Electromechanical Latch to actuate. The Electromechanical Latch then produces an output signal to indicate latch status. A Manual Override actuates the latch in the absence of electric power.

Access Control

SOUTHCO® electromechanical latch and lock solutions can be remotely operated by a variety of **access control options** such as electronic keys, keypads, RF proximity readers, RF key fobs, biometrics and custom switches.

Electromechanical Latching

Southco's primary focus is the **electromechanical latching or locking device**, the most critical element of the electronic access system. Southco has combined electronics with our extensive knowledge of mechanical access solutions to create a set of innovative electromechanical latch and lock solutions.

Manual Override

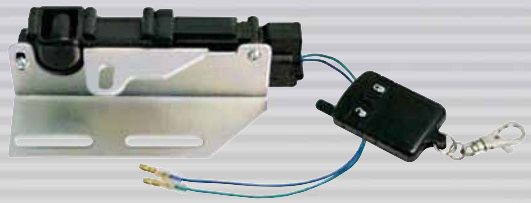
Many electronic access control systems require an override system to provide access when power is unavailable. Southco can provide creative **mechanical and electrical override solutions** based on our extensive portfolio of mechanical access solutions.

Custom Electronic Access Solutions

Custom Solutions

Southco has developed a variety of custom electronic access solutions for a broad range of industries from Automotive, Truck, Bus and RV to Medical and Electronic Enclosures.

Self contained, battery operated solutions



Custom Actuators

Automotive Solutions

Custom Swinghandles

Integrated Systems

Custom Switches

INFO CLIC

Electromechanical Latches (EML)

The most important element of a good electronic access solution is the electromechanical latch or lock mechanism. The quality of the system, regardless of the extent of front-end electronics and software, is based on the ability of the EML to efficiently secure the door to the frame. It is for this reason that Southco focuses on the EML components. The electromechanical latch or lock can be broken down into 3 important design elements.

- Efficient mechanism
- Optimum electromechanical actuator
- Electronic control

Efficient Mechanisms

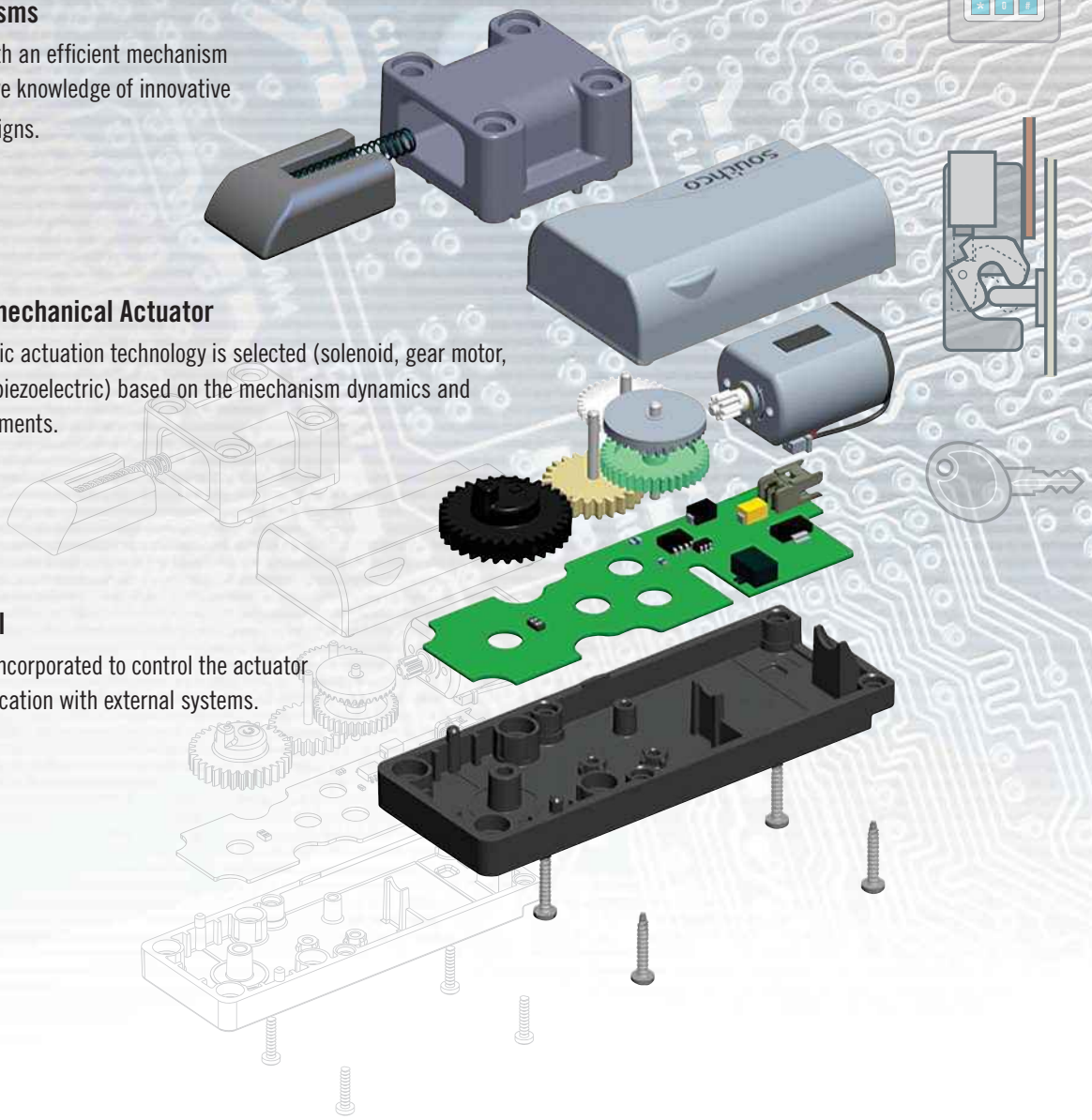
The design begins with an efficient mechanism based on our extensive knowledge of innovative mechanical latch designs.

Optimum Electromechanical Actuator

The optimum electronic actuation technology is selected (solenoid, gear motor, shape memory alloy, piezoelectric) based on the mechanism dynamics and overall design requirements.

Electronic Control

Electronics are then incorporated to control the actuator and provide communication with external systems.



EM Electronic Keeper

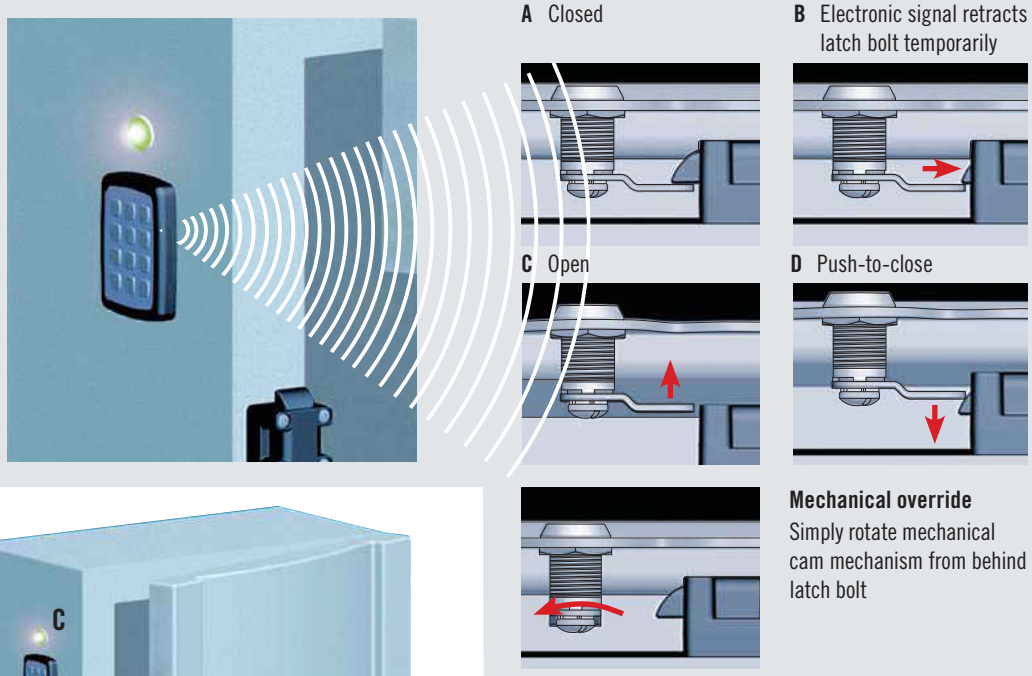
Electronic strike

Upgrade any manual latching system to electronic access by replacing the fixed keeper component with the electronically controlled Electronic Keeper. The versatile Electronic Keeper fits a variety of applications with multiple mounting configurations and simple installation and operation.

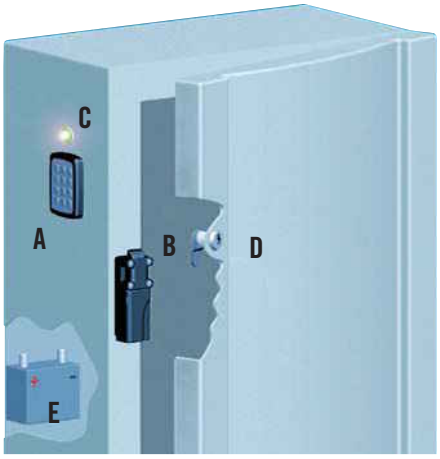
- 12 and 24 Volt available
- Simple transition from mechanical to electronic access
- "Push-to-close" convenience for any application – retrofit or new installation
- Accepts signals from any electronic actuation source
- Frame-side mounting simplifies wiring
- Single or multi-point latching
- Permits remote monitoring, audit trails and alarming
- Works with a variety of door mounted mechanical latches

Every Electronic Keeper installation works on these same basic principles:

Electronic Actuation



Mechanical override
Simply rotate mechanical cam mechanism from behind latch bolt



A. Electronic access control device
- Electronic access controller generates standard 12-24 V output signal upon receipt of valid credentials

B. Electronic Keeper electromechanical latch

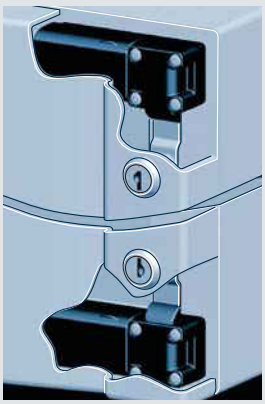
C Optional position feedback signal

D. Mechanical latch
- Key-locking latch can be unlocked to provide controlled access as a manual override

E. Power supply

Installation Options

1 Center orientation

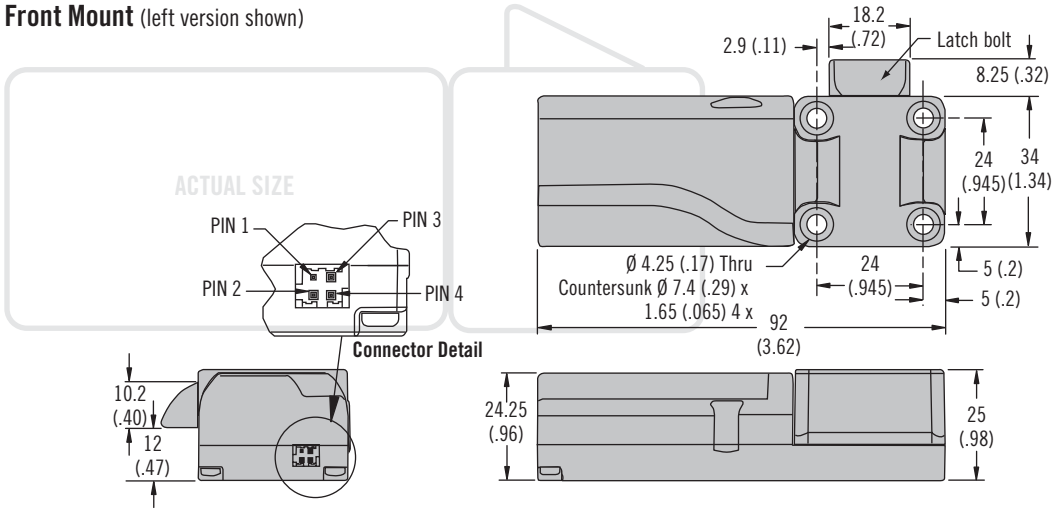


2 Left or right orientation

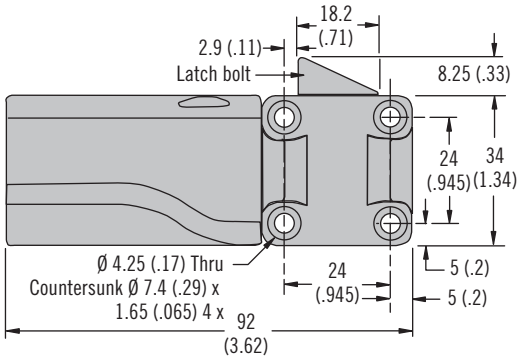
3 Side mount (left version shown)

Dimensions in millimeters (inch) unless otherwise stated

Front Mount (left version shown)

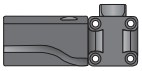
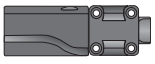
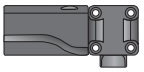


Side Mount (left version shown)



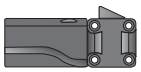
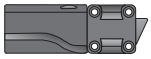
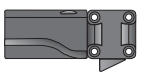
Wire harness and connector

Part Number	
Wire Harness with Mate Connector (order separately)	Length
EM-10-40	300 (11.81)
EM-10-41	1000 (39.37)
EM-10-42	2000 (78.74)

VDC	PART NUMBERS	Front Mount Version
12VDC 24VDC	EM-10-13-310 EM-10-13-410	Left 
12VDC 24VDC	EM-10-11-310 EM-10-11-410	Center 
12VDC 24VDC	EM-10-12-310 EM-10-12-410	Right 

Rotation Kit

Part Number	
Rotation Kit * (order separately)	EM-10-32-85

VDC	PART NUMBERS	Side Mount Version
12VDC 24VDC	EM-10-23-310 EM-10-23-410	Left 
12VDC 24VDC	EM-10-21-310 EM-10-21-410	Center 
12VDC 24VDC	EM-10-32-310 EM-10-32-410	Right 

Material & Finish

Enclosure & latch bolt: Thermoplastic
Housing assembly screws: Steel, zinc plated

Electrical Specifications

Recommended operating voltage: 12-24 Volt DC
Other voltages available, contact Southco for details.
No load operating current: 200 mA @ 12-24 V
Peak stall / current: 1 A

Control Input

Retracted Position: 12-24 Volt DC
The latch bolt will remain retracted for as long as the signal is present or a minimum of 1 second.
Input Signal Current: 25 mA
Extended Position: 0 VDC

Output Signal

Output Signal Rating: 450 mA Max. load
Output will turn on when latch bolt is in retracted position. Output slow flashes On/Off when latch error occurs.
No signal at latch bolt extended position.

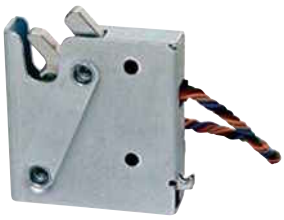
Connector

PIN 1: Control input signal
PIN 2: Power (+)
PIN 3: Output signal
PIN 4: Ground (-)
Mate connector not included, order separately.

The Electronic Keeper is provided with a specific latch bolt orientation (Left, Right or Center). Latch bolt direction can be re-oriented using the appropriate replacement gear from the *optional rotation kit.

Part Number

See table

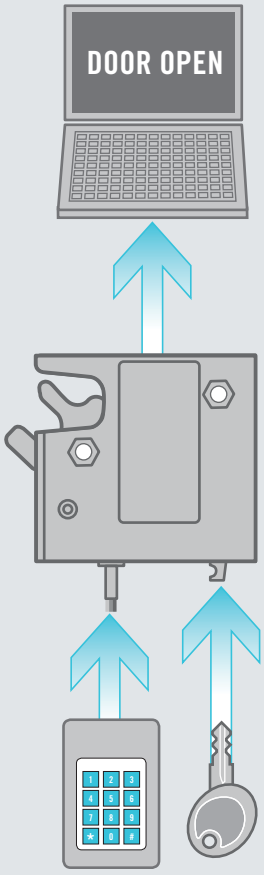


R4 EM Electronic Rotary Latch

Electronic access

- **Push-to-close, electronic release**
- **Versatile rotary mechanism**
- **Concealed latching**
- **Microprocessor control**
- **High strength**
- **Minimal power draw**
- **Simple mechanical override**
- **Optional internal microswitch for latch open/close output signal**

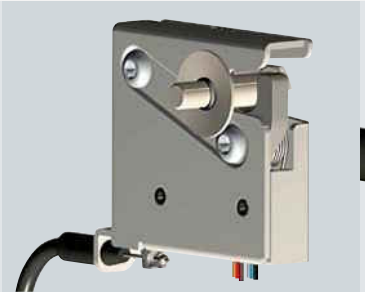
The R4-EM Electronic Rotary Latch provides a simple, versatile electromechanical latch solution for a variety of applications. Add an 12-24 Volt DC power supply and any access control device to the R4-EM for a secure, concealed electronic access solution. The optional internal microswitch provides an output signal to remotely monitor latch status or control external systems.

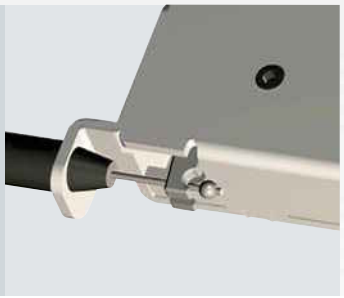


The efficient DC gear motor driven system releases the rotary cam under heavy loads with minimal power consumption.

The proven rotary mechanism provides push-to-close convenience and a secure closure.

Convenient mechanical override feature for manual release in case of power failure. Contact Southco for manual release cables and mounting brackets.





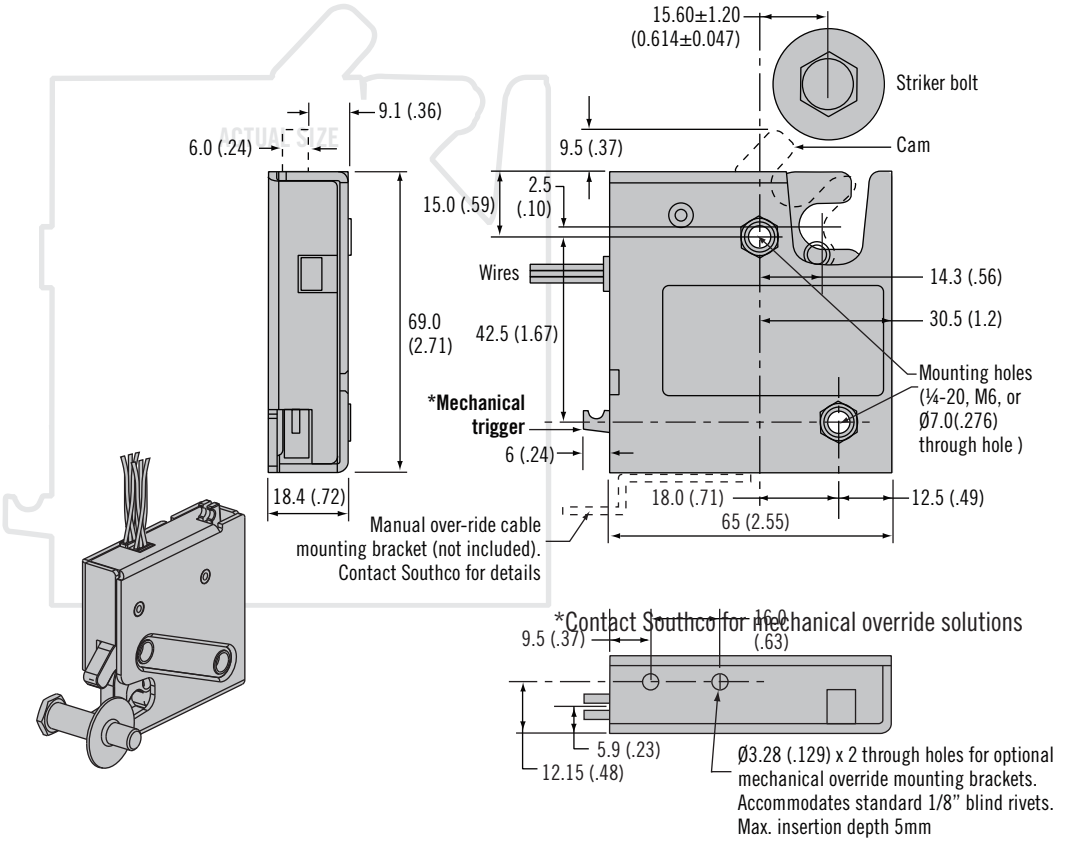
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/R4EM

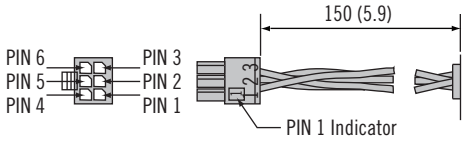
Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

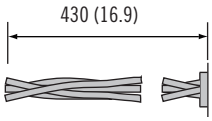


Optional Latch Connector

Molex Microfit 3.0 series

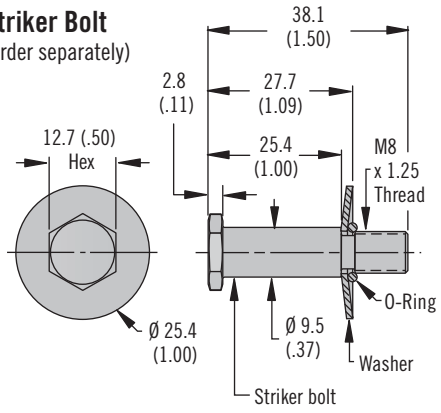


Without connector



Striker Bolt

(order separately)



Latch Part Number				
Type	No Microswitch**		With Microswitch**	
	With connector	Without connector	With connector	Without connector
1/4 - 20 Threaded mounting	R4-EM-X1-131	R4-EM-X1-132	R4-EM-X1-161	R4-EM-X1-162
M6 Threaded mounting	R4-EM-X2-131	R4-EM-X2-132	R4-EM-X2-161	R4-EM-X2-162
Ø 7.0 (.27) Thru hole mounting	R4-EM-X3-131	R4-EM-X3-132	R4-EM-X3-161	R4-EM-X3-162
Striker Bolt Part Number				
Striker bolt	R4-90-121-10			

X=1 for Auto Re-lock version
X=2 for Delayed Re-lock version

Material & Finish

Mechanism
Housing: Steel, zinc plated
Cam, trigger: Steel, zinc plated
Springs: 300 Series stainless steel
Pins: Steel, zinc plated

Electronic Actuator:
Housing: PC/ABS
Cam / follower: Acetal

Electrical Specifications

Recommended Operating Voltage: 12 to 24 Volt DC
Typical Operating Current: Less than 500mA at 12 VDC
Peak/Stall Operating Current: 1 A
Standby Current: 185uA
Input Signal Current Draw: 25mA
**Optional microswitch closes upon latch closure
Microswitch Rating: 3A at 12VDC Max.

Wire Color Code / Connector Pin Assignment:

PIN 1: Brown: Ground (-)
PIN 2: Red: Power 8 to 26 Volts DC
PIN 3: Orange: Control Signal 8 to 26 Volts DC
PIN 4 Black: Microswitch Common
PIN 5 Blue: Microswitch N.O. Contact
PIN 6 Grey: Microswitch N.C. Contact

Wire Length: 150mm with connector, 430mm without connector

Contact Southco for mate connector and wire harness

Notes

For mechanical release actuators and cables contact Southco

Parts are shipped individually boxed. For bulk packaging add -1 to the end of the part number

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/R4EM

Dimensions in millimeters (inch) unless otherwise stated

H3 Electronic Locking Swinghandle

Electronic access

- **Remote lock and unlock**
- **Single or multi-point**
- **Low power, gear motor driven mechanism**
- **Momentary or continuous lock actuation**
- **High Security DIN lock manual override**
- **Directly integrates with industry standard rack monitoring and access control systems**
- **Fits industry standard panel preparations**
- **Integrated sensors detect lock and latch status for network control, monitoring and alarm functions**
- **Accommodates both left and right doors**

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/H3EM*

Electronic locking swinghandle provides the functionality of a manual latching system with the added benefit of electronic locking for access control.

Alternatively, the Electronic Swinghandle can provide access control to networked rack control and monitoring systems for addressable remote access control over the internet.

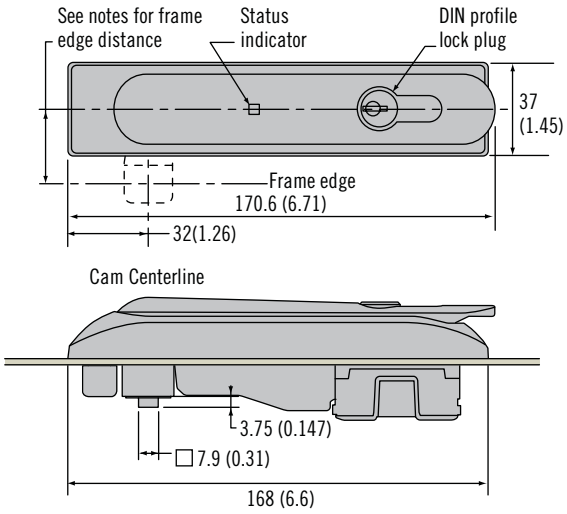
The *SOUTHCO®* Electronic Locking Swinghandle can be combined with any access control device for a basic self contained electronic access solution.

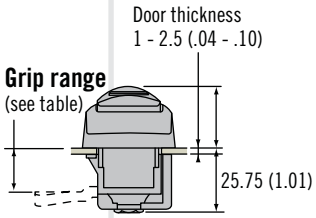
1 A blue LED indicates a locked and closed latch.

2 The LED changes to a flashing blue and magenta when the lock mechanism is electrically unlocked.

3 Once unlocked, the handle can be manually released to open the door. The handle can be re-locked electronically.

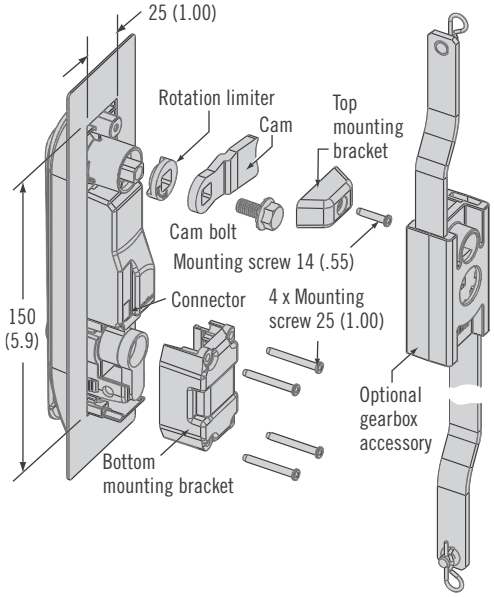
4 The DIN lock mechanical override will also produce an unlock signal for local and remote monitoring of manual over-ride.



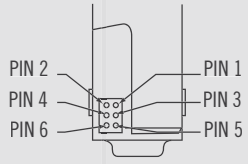


ACTUAL SIZE

Swinghandle Part Number
H3-EM-60-100



Connector Detail



Wire Harness Connector

Cam Part Number		
Grip	Cam length 38 (1,5)	Cam length 45 (1.77)
15.5 (.61)	E5-6710	-
17.5 (.69)	E5-6711	-
19.5 (.77)	E5-6712	-
21.5 (.85)	E5-6713	-
23.5 (.93)	E5-6714	E5-6114
Other	Please contact Southco	

Gear Box Part Number	
H3-61-55-33	Left Hand
H3-61-56-33	Right Hand

Wire Harness with Mate connector (order separately)	
Part Number	Length
EA-W01-100	1000 (39.4)
EA-W01-200	2000 (78.7)

Material & Finish

H3-EM Swinghandle
Housing, handle, mounting bracket: Glass-filled nylon, black
Shaft, rotation limiter: Die-cast zinc, bright sealer

Electrical Specifications

Recommended operating voltage: 12V to 24 VDC
Typical operating current: Less than 50mA at 12 VDC
Peak / stall operating current: 1 A
Standby current: 25mA Typical
Output signal rating: 200mA Max. load

Connector Pin Assignment

PIN 1: Ground (-)
PIN 2: Power (+)
PIN 3: Not Used
PIN 4: Control signal
PIN 5: Lock slide position output
PIN 6: Lock cam position output

Mating Connector Detail

Hirose Electric Co. Ltd.
Part number DF11-6DS-2C

Crimp socket
Part number DF11-Series
Crimping contact for socket
24 AWG wire minimum recommended

Notes

For grip ranges 15.5 - 21.5 (.61 - .85) Max. cam length of 38 (1.5). Frame edge distance of 30 (1.18)

For grip ranges greater than 21.5 (.85) Max. cam length of 45 (1.77). Frame edge distance of 37 (1.46)

For multi-point systems, see pages 264-265, for rod system selection

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/H3EM

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Dimensions in millimeters (inch) unless otherwise stated

EA Electronic Access Control

Access control devices can be based on ...

... Something you have
(Key, token)

... Something you know
(Pin number)

... Something that is you
(Fingerprint)

The versatility of the electronic interface

Options for generating an electronic signal to release a locking mechanism, to energize a latch, or to drive a motor, include remote actuation as well as direct actuation at the physical point of the mechanical interface. The specific solution you choose will depend on a variety of circumstances – how you want to monitor or maintain access control, your need to balance convenience and security, how you choose to distribute access capabilities, and how often you need to revise or update your security arrangements.

Southco's iButton® electronic key system provides secure access control with an intuitive one touch actuation.

- Eliminates key management issues – keys are easily programmed as needed
- Simply touch probe with programming key to enter programming mode to add or delete user keys
- Lock/unlock signal produced by simply touching valid iButton® key to probe
- Programmable output timing
- 280 trillion possible key codes – no duplication
- Sleep mode for minimal current draw
- LED's integrated with probe for programming and lock status feedback
- Controls all *SOUTHCO®* electromechanical locks and latches
- For additional details, go to www.southco.com

System Part Number EA-B90
System includes 1 Probe, 1 Controller, and 1 Wire Harness.

Custom logos and fob design options

iButton® is a registered trademark of Maxim Integrated Products, Inc.

Southco's self contained keypad controllers provide simple PIN access control without the need to carry physical credentials.

- Simple PIN programming
- LED indicator and audible alarm for programming and lock status
- Custom logos and housing design options
- Flush, surface and rear mount options
- 2 x 6 and 3 x 4 button layouts
- Controls all *SOUTHCO®* electromechanical latches
- For additional details go to www.southco.com

EA-K3-033

EA-K1-011-9

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com

Southco's RFID Proximity Readers provide secure contactless access control.

- Simple card programming procedure
- LED indicator and audible alarm for programming and lock status
- Reader accommodates up to 9999 users
- Card-only, Card and PIN, Card or PIN access modes
- Controls all *SOUTHCO®* electromechanical latches
- For additional details, go to www.southco.com

EA-P1-011-9

EA-C1-011

Southco's RF key fob controller provides convenient remote control of multiple electronic locks and latches.

- Dual sequenced 30 Amp output relays minimize load on batteries
- Potted waterproof construction
- 100 ft range
- Fused outputs
- Light/Horn output for lock/unlock feedback
- 9-15VDC Operating Voltage
- Simple transmitter programming
- Ships with one receiver and 2 transmitters
- For additional details, go to www.southco.com

Receiver Transmitter

EA-R01

Southco can provide custom switch solutions to meet your industrial design requirements for access control. Contact Southco for more information.

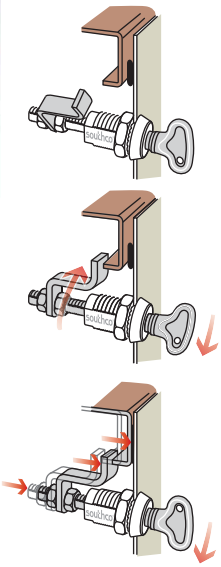
- Integrated electronics
- Handles, pulls with integrated switches
- Backlit switches

Contact Southco to discuss additional access control requirements.

COMPRESSION LATCHES

VISE ACTION® Latches

Pages 38 - 61



Reduce or eliminate noise and rattle, or compress gaskets for environmental or EMI / RFI sealing. A wide variety of compression latch styles include many secure key and tool access options.

An extensive line of premium latches built around the unique *SOUTHCO® VISE ACTION®* mechanism that provides both cam engagement and vibration-dampening compression with a continuous half-turn motion. New access styles, new materials and finish options, and expanded installation styles make this the most versatile compression latch solution.

- Up to 6.4 mm (.25 ") compression
- Over-center action resists accidental opening
- Numerous hand, tool and key actuation styles
- Extensive range of body & installation styles
- Sealed versions to meet NEMA / IP standards

E3

E3

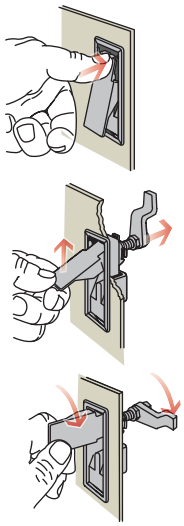
E3

E3

E3

Lift and Turn

Pages 62 - 71



Simply lift handle to release compression, then turn handle 90˚ to open. Larger profile latches provide ample hand grip to unlatch and manipulate larger doors. Flush mounted and miniature styles for better aesthetics or where space is limited. Available in a wide range of materials and finishes.

- Convenience of latch and handle in one
- Choices of pre-set pull-up compression
- Includes stylish flush mount options

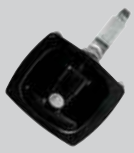
M1

62

62

62

62

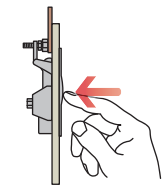

N2

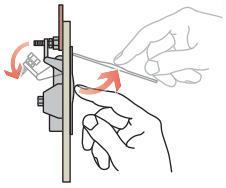
Lever

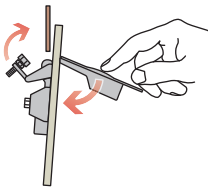
Page 72 - 75

This compression latch family includes a wide range of low profile and flush lever latch solutions, some with push-button handle release for stylized enclosures ranging from transit storage compartments to electronics cabinetry. Also includes heavy-duty latches for compressing and prying open gasketed doors in industrial strength applications such as refrigerated storage.

- Latch and handle capability in one assembly
- Over-center models provide secure closure plus opening leverage
- Accommodates a wide range of grip dimensions
- Includes stylish flush mount options
- Sealed versions to meet NEMA / IP standards
- Several tool and key access versions







A7

C2

C5

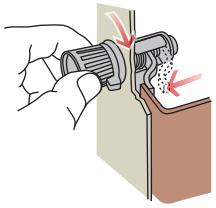
C5

Self-Adjusting

Pages 76 - 78

SOUTHCO® self-adjusting latches provide user controlled compression adjustment during each actuation. They are available in a range of styles from miniature versions to larger sizes for heavier duty applications, ranging from construction equipment to industrial enclosures. They also provide some of the quickest, most economical, and easiest to access compression solutions for quietening small access doors in vibration-prone sheet metal applications ranging from HVAC equipment to fan-cooled electronics enclosures.

- User-controlled compression
- Adjusts easily for grip setting or dimensional variations in cabinets
- Numerous actuation styles
- Accommodates a wide range of grip dimensions



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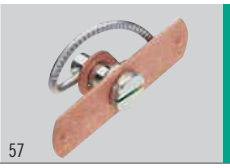

57

Compression Latches

Selection guide

Use this selection guide to choose the right compression latch for your application

- Key-Locking Available
- Key-Choice System
- NEMA / IP Rated
- Multi-Point Latching
- Padlockable
- Stainless Steel
- Vibration Resistant

		Product class	MATERIAL: Stainless Steel	MATERIAL: Zinc and Steel	INSTALLATION: Round Hole Install	INSTALLATION: Flush / Low Profile	INSTALLATION: Max. Door Thickness
VISE ACTION© LATCHES PAGES 38 - 61		E3 Large	✔	✔	✔ Use spur washer	✔	18 (.71)
		E3 Small	✔	✔		✔	13 (.50)
		E3 Large 3 Hole		✔	✔	✔	4 (.16)
LIFT AND TURN PAGES 62 - 71		N2	✔	✔		✔	12.7 (.50)
		62 Flush		✔		✔	3 - 6 (.13 - .25)
		62 Handle		✔			5 - 6 (.19 - .24)
		M1	✔		✔	✔	2 - 22.5 (.08 - .89)
LEVER PAGES 72 - 75		C5 Large		✔		✔	1 - 41 (.04 - 1.61)
		C5 Small		✔		✔	11 (.43)
		C2		✔		✔	1 - 5 (.04 - .20)
		A7		✔			Surface mount
SELF-ADJUSTING PAGES 76 - 78		27, 48	✔	✔		✔	4.8 (.19)
		16		✔			2.4 (.09)
		43, 44, 14	✔	✔	✔	✔	Rear mount
		57	✔	✔	✔	✔	Rear mount

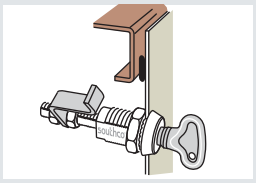
INFO CLIC www.southco.com

Dimensions in millimeters (inch) unless otherwise stated

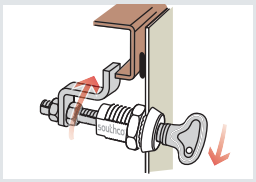
PERFORMANCE					OPTIONS				
NEMA / IP Rated	Vibration Resistant	Load Rating	Compression	Grip Range	Key-Locking	Tool Access	Key-Choice System	Padlockable	Multi-Point Latching
✔	✔	300 - 600 N (67 - 136 lbf)	6.4 (.25)	11.4 - 81.2 (.45 - 3.20)	✔	✔		✔	✔
✔	✔	330 - 356 N (75 - 80 lbf)	4 (.17)	3.2 - 28.6 (.13 - 1.13)		✔			
	✔	450 N (100 lbf)	6.4 (.25)	7.9 - 76.2 (.31 - 3.00)	✔	✔			✔
	✔	1000 N (225 lbf)	6 (.24)	3.5 - 104 (.14 - 4.1)	✔				✔
	✔	220 - 1250 N (50 - 280 lbf)	2 - 5.5 (.06 - .22)	4.5 - 111 (.17 - 4.38)	✔	✔	✔		✔
	✔	220 - 670 N (50 - 150 lbf)	3 - 5 (.11 - .19)	0 - 55 (0 - 2.16)					✔
✔	✔	350 - 1010 N (78 - 227 lbf)	4 - 5 (.16 - .2)	10 - 88 (.39 - 3.47)	✔				✔
✔	✔	445 N (100 lbf)	User defined	1 - 57 (.04 - 2.25)	✔	✔	✔		
	✔	170 - 290 N (40 - 65 lbf)	User defined	1 - 30 (.04 - 1.18)	✔				
	✔	1100 N (250 lbf)	User defined	1 - 46 (.04 - 1.81)	✔	✔	✔		
	✔	2200 N (500 lbf)	9.5 (.38)	Surface mount flush	✔				
	✔	155 N (35 lbf)	User defined	0.8 - 22.2 (.03 - .88)		✔			
	✔	135 - 335 N (30 - 75 lbf)	User defined	1.6 - 20.6 (.06 - 0.81)					
	✔	330 - 670 N (75 - 150 lbf)	User defined	3.2 - 42.9 (.13 - 1.69)		✔			
	✔	13.4 - 137 N (3 - 31 lbf)	User defined	1.2 - 14.3 (.05 - .56)		✔			

E3 *VISE ACTION®* Compression Latch

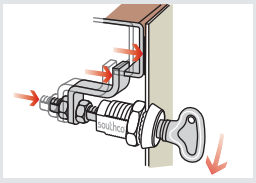
Overview



First 90⁰ turn:
Cam rotates behind frame



*The door is now **latched** against opening*



*Then as you complete the half-turn motion, the shaft and cam compress to pull the door snugly against the frame or gasket into the **locked** position*

Versatility and simplicity in action

Every *SOUTHCO® VISE ACTION®* Series latch solution starts with the single-turn latching and compressing action that is built into each model. At the heart of it all is our *VISE ACTION®* design that has proven itself in millions of installations.

Product features

- **Suitable for a wide range of load configurations**
- **Excellent corrosion resistance**
- **Durable and reliable operation**
- **Multiple size, material and access configurations**
- **Compression achieved with minimal manual torque**
- **Suitable for NEMA4 / IP65 applications**

Match material and finish options for style and functionality requirements

Variety of materials and finishes to complement your application.
Die-cast zinc latch bodies standard finishes:

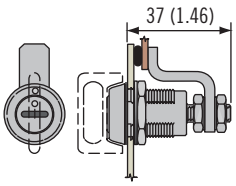
Chrome plated | Black powder coated | Silver powder coated

Stainless steel latch bodies are made by metal injection molding or precise machining.

Select one of these four housing styles to fit your access requirements

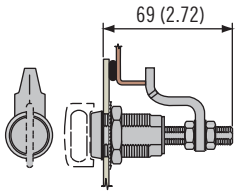
A series of basic housing styles of the *VISE ACTION®* compression latch have been developed to meet specific door configuration and mounting requirements - for depth, thickness, strength, grip dimension, and surface protrusion.

- **Right and left hand actuation**
- **Optional pre-assembled cam for quick installation**
- **Wide choice of accessories**



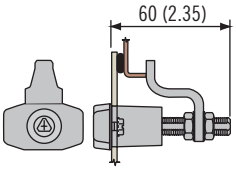
Small

- Optimum compression for use in confined space applications



Large

- Largest choice of head styles
- Max. grip range in door to frame spacing
- Minimal protrusion style available



3-Hole Mount

- Simplified round-hole mounting
- Suitable for thick, soft or weak panels

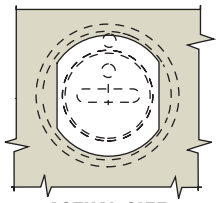
Dimensions in millimeters (inch) unless otherwise stated

Choose from a wide range of head styles to fit your application and industry requirements

- **Convenient hand operated knob or T-handle styles for easy repetitive access**
- **Tool operated for restricted access, flush mount or low profile clearances, and industry specific standards or requirements**
- **Key operated for added security**

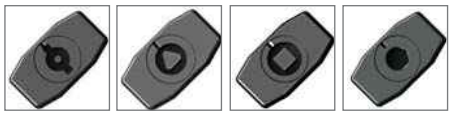
Small single hole door preparation

Slotted recess | 4 (.16) Hex recess | Knob style | Tubular key operated style



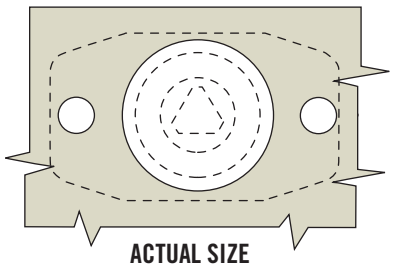
ACTUAL SIZE

3-Hole body door preparation



3 (.11) Double bit | 7 (.28) Triangle | 7 (.28) Square | 8 (.32) Hex recess

SOUTHCO® Tubular key | T-handle key-locking | T-handle non-locking



ACTUAL SIZE

Large single hole body door preparation

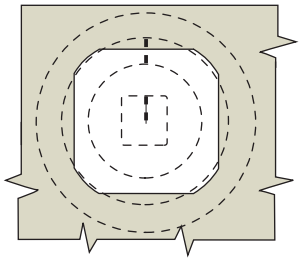
3 (.11) Double bit | 5 (.19) Double bit | 7 (.28) Triangle | 8 (.32) Triangle

8 (.32) Hex recess | 7 (.28) Square | 8 (.32) Square | Railway standard

SOUTHCO® Tubular key | Slotted recess | Bellcore 216 | Bellcore electronics

T-handle locking | T-handle non-locking | Wing knob locking | Wing knob non-locking

Knob style

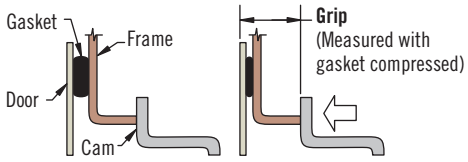


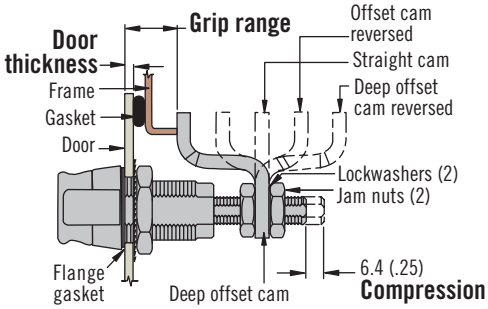
ACTUAL SIZE

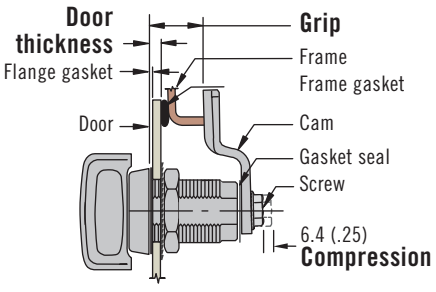
Determine your grip options for a perfect fit

Grip dimension is an important consideration in compression latch applications involving gaskets for environmental or RFI sealing.

For gasketed doors:







Adjustable cam designs

- Maximum flexibility in tolerance or gasket compression
- Cam choice to suit a broad range of grip dimensions

Fixed cam designs

- Precise fit and minimum internal protrusion
- Wide cam selection for accurate grip dimension

Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch

Large · Machined stainless steel housing · Tool operated · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Premium finish and corrosion resistance**

Material and Finish

Stainless steel (304 and 316 machined)

Performance Details

Max. static load: 600 N (136 lbf)

Sealing Notes

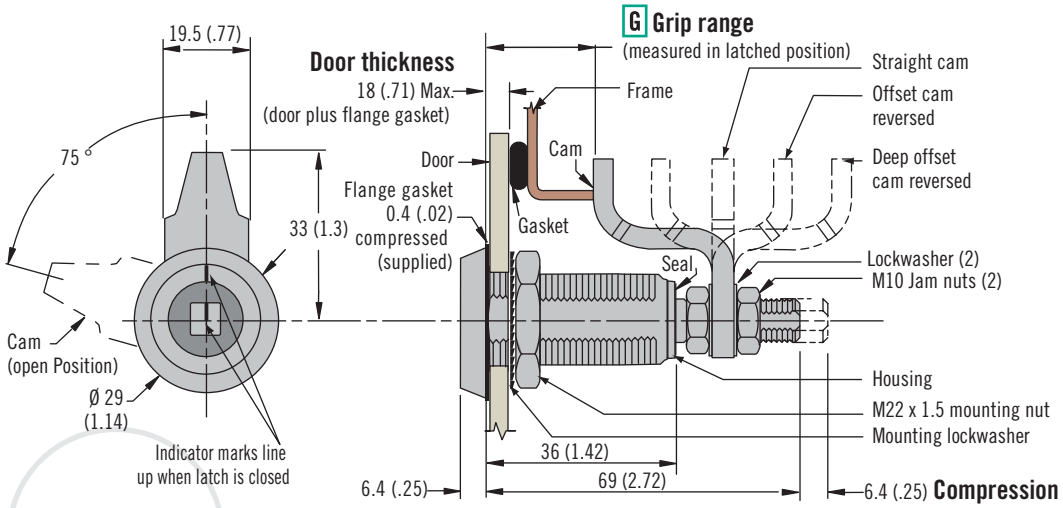
NEMA 4 and IP65 achieved using gasket supplied

Keys and Accessories

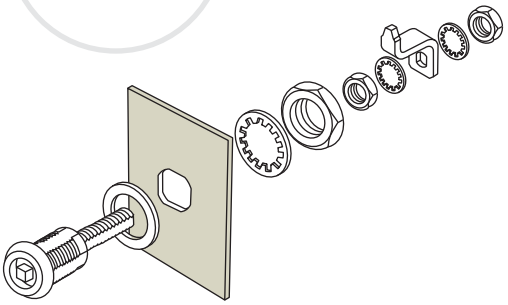
See pages 58 - 61

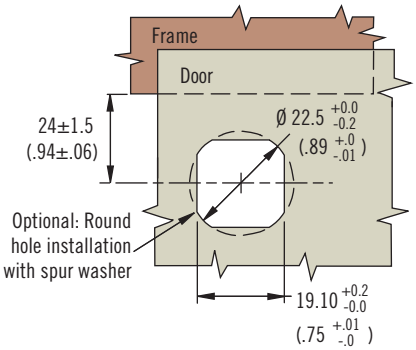
Installation Notes

Caution: Position cam so latching function can be achieved comfortably by hand. Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

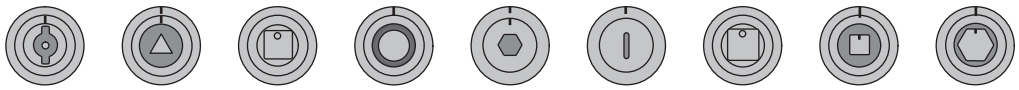


ACTUAL SIZE





H Head Styles



3 (.11) Double bit	7 (.28) Triangle	7 (.28) Square	*SOUTHCO®* Tubular key	8 (.32) Hex recess	Slotted recess	8 (.32) Square	Railway standard	Bellcore 216

Part Number Selection

H Head style

- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **5** *SOUTHCO®* Tubular key
- **6** 8 (.32) Hex recess
- **9** Slotted recess
- **10** 8 (.32) Square
- **11** Railway standard
- **15** Bellcore 216

G Grip	Min.	Max.	Cam Type
1	16.4 (.64)	32.2 (1.26)	Deep offset cam, forward
	71.3 (2.80)	81.2 (3.19)	Deep offset cam, reversed
2	30.4 (1.19)	46.1 (1.81)	Offset cam, forward
	57.6 (2.26)	73.3 (2.88)	Offset cam, reversed
3	43.9 (1.72)	59.6 (2.34)	Straight cam

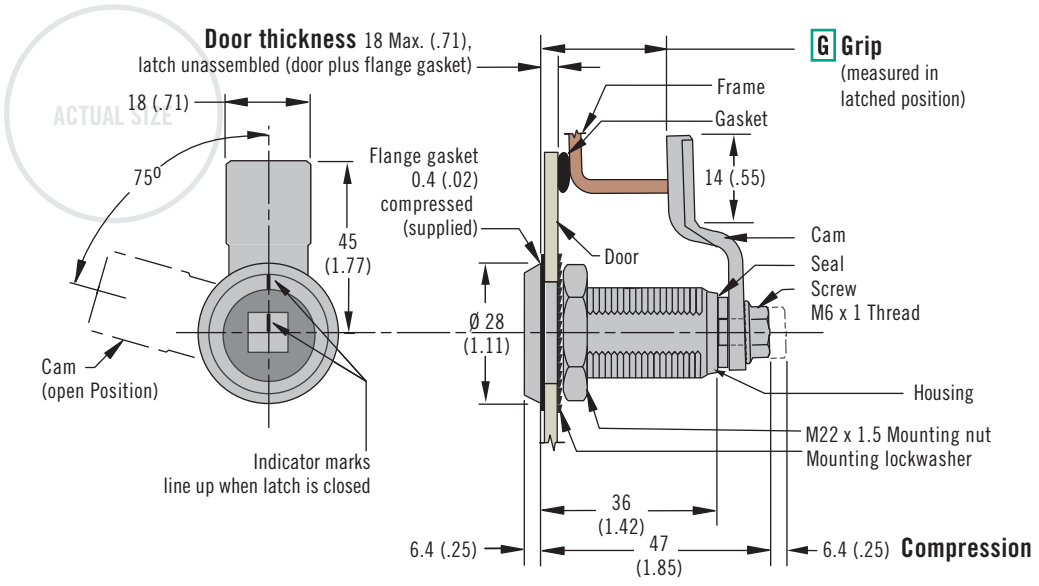
E3 - 1 H - G 0

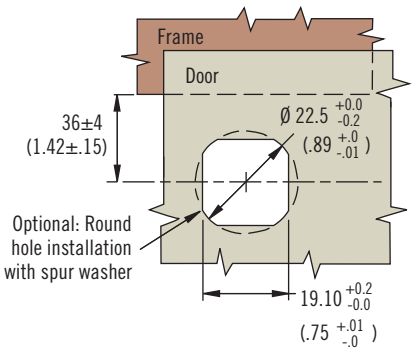
INFO CLIC *www.southco.com/E3*

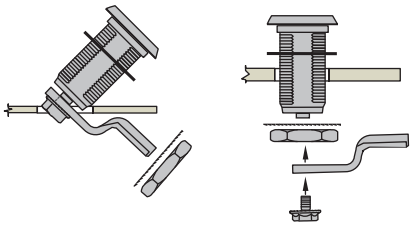
Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch

Large · Machined stainless steel housing · Tool operated · Fixed grip







A Assembled installation

A Unassembled installation

- **Consistent pre-set compression**
- **Premium finish and corrosion resistance**
- **Reduced internal protrusion**

Material and Finish

Stainless steel (304 and 316 machined)

Performance Details

Max. static load: 450 N (102 lbf)

Sealing Notes

NEMA 4 and IP65 achieved using gasket supplied

Keys and Accessories

See pages 58 - 61

Installation Notes

Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw is 10 N·m (88 in·lbf)

Part Number Selection

Select grip from table, if your grip is between two options choose smaller.

H Head style

- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **5** *SOUTHCO®* Tubular key
- **6** 8 (.32) Hex recess
- **9** Slotted recess
- **10** 8 (.32) Square
- **11** Railway standard
- **15** Bellcore 216

E3 - A H - G 0

A Assembly status

- **10** Assembled
- **12** Unassembled

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
20 (.79)	00	1 (.04)	30 (1.18)	05	7 (.28)	40 (1.57)	10	7 (.28)	50 (1.97)	15	7 (.28)
22 (.87)	01	2 (.08)	32.5 (1.28)	06		42 (1.65)	11		52 (2.05)	16	
24 (.94)	02	4 (.16)	34 (1.34)	07		44 (1.73)	12		54 (2.13)	17	
26 (1.02)	03	5 (.20)	36 (1.42)	08		46 (1.81)	13		56 (2.20)	18	
28 (1.10)	04	6 (.24)	38 (1.50)	09		48 (1.89)	14		58 (2.28)	19	

E3 *VISE ACTION®* Compression Latch

Large · Metal injection molding stainless steel housing · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Tool or hand operated**

Material and Finish

Stainless steel 316 and 304

Performance Details

Max. static load: 556 N (125 lbf)

Sealing Notes

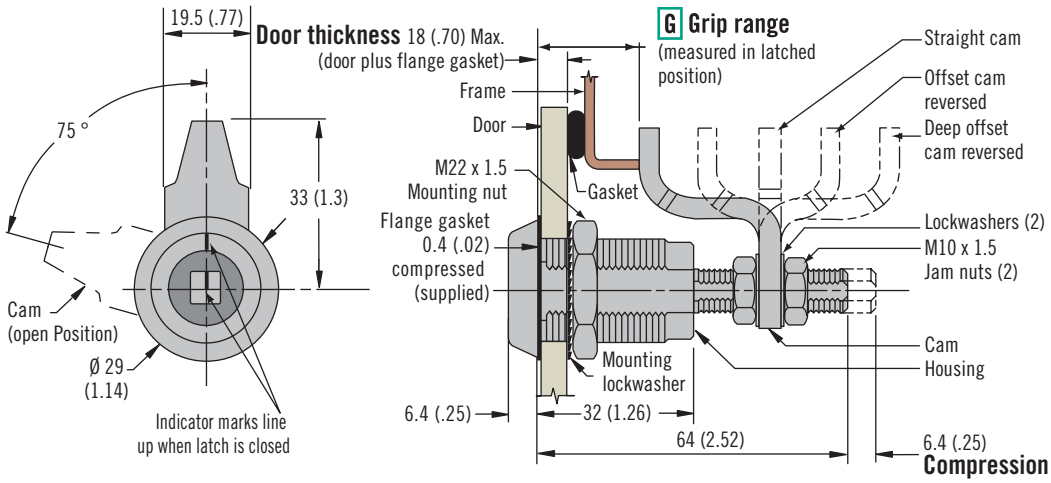
NEMA 4 and IP65 achieved using gasket supplied

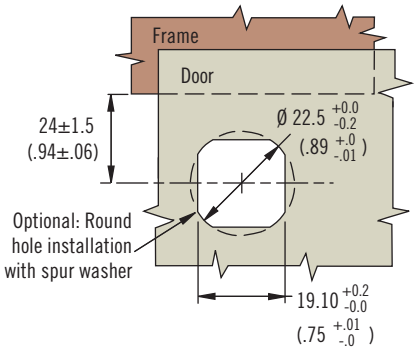
Installation Notes

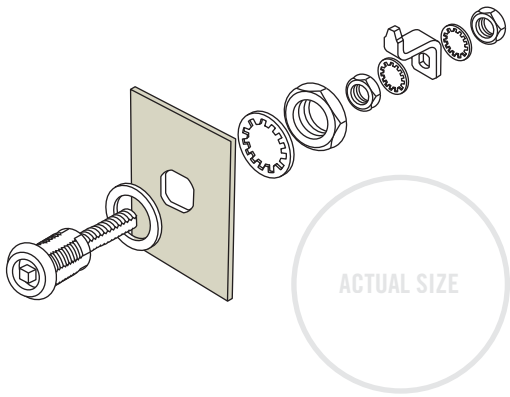
Caution: Position cam so latching function can be achieved comfortably by hand. Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

Keys and Accessories

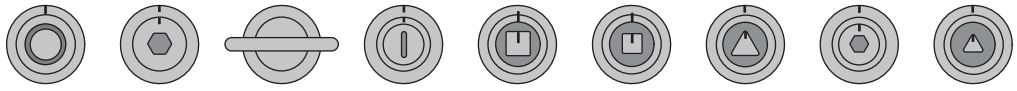
See pages 58 - 61







H Head Styles



SOUTHCO® Tubular key	8 (.32) Hex recess	Knob	Slotted recess	8 (.32) Square	Railway standard	8 (.32) Triangle	3/8" Hex recess	7 (.28) Tapered triangle

Part Number Selection

H Head style

- **5** *SOUTHCO®* Tubular key
- **6** 8 (.32) Hex recess
- **7** Knob
- **9** Slotted recess
- **10** 8 (.32) Square
- **11** Railway standard
- **20** 8 (.32) Triangle
- **37** 3/8" Hex recess
- **39** 7 (.28) Tapered triangle

G Grip	Min.	Max.	Cam Type
1	11.4 (.45)	27.2 (1.07)	Deep offset cam, forward
	66.3 (2.61)	76.2 (3.00)	Deep offset cam, reversed
2	25.4 (1.00)	41.1 (1.62)	Offset cam, forward
	52.6 (2.07)	68.3 (2.69)	Offset cam, reversed
3	38.9 (1.53)	54.6 (2.15)	Straight cam

E3 - 1 H - G F

F Finish

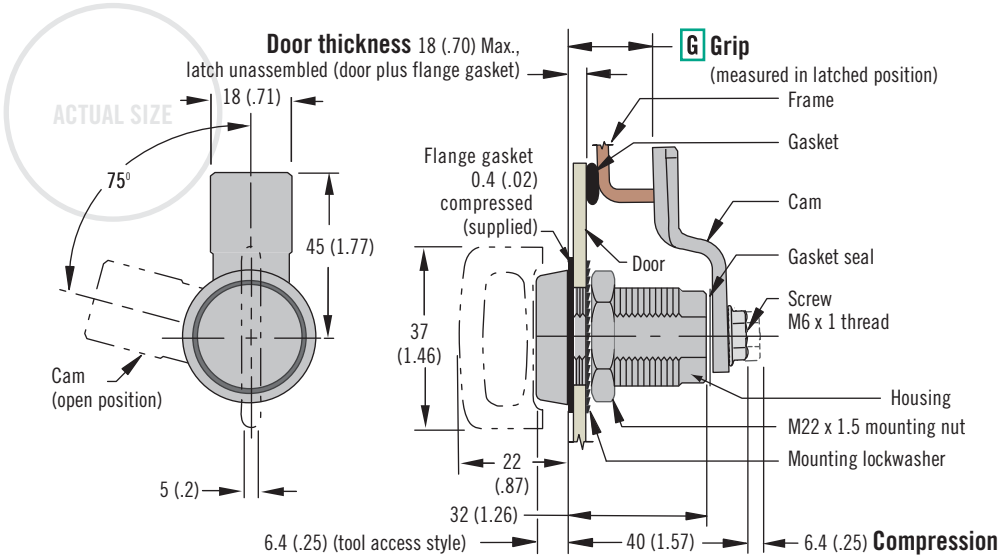
- **2** Electropolished
- **12** Electropolished and hand buffed (bright)

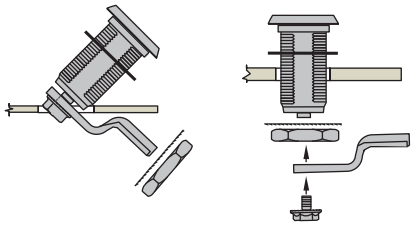
INFO CLIC www.southco.com/E3

Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch

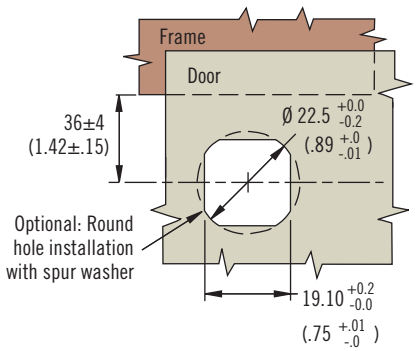
Large · Metal injection molding stainless steel housing· Fixed grip





A Assembled Installation

A Unassembled Installation



- **Consistent pre-set compression**
- **Tool or hand operated**
- **Reduced internal protrusion**

Material and Finish

Stainless steel 316 and 304

Performance Details

Max. static load: 445 N (100 lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Installation Notes

Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw in 10 N·m (88 in·lbf)

Keys and Accessories

See pages 58 - 61

Part Number Selection

Select grip from table, if your grip is between two options choose smaller.

H Head style

- **5** *SOUTHCO®* Tubular key
- **6** 8 (.32) Hex recess
- **7** Knob
- **9** Slotted recess
- **10** 8 (.32) Square
- **11** Railway standard
- **20** 8 (.32) triangle
- **37** 3/8" Hex recess
- **39** 7 (.28) Tapered triangle

F Finish

- **2** Electropolished
- **12** Electropolished and hand buffed (bright)

E3 - A H - G F

A Assembly status

- **10** Assembled
- **12** Unassembled

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
15 (.59)	00	Use unassembled	25 (.98)	05	5 (.20)	35 (1.38)	10	7 (.28)	45 (1.77)	15	7 (.28)
17 (.67)	01	Use unassembled	27 (1.06)	06	6 (.24)	37 (1.46)	11		47 (1.85)	16	
19 (.75)	02	1 (.04)	29 (1.14)	07	7 (.28)	39 (1.53)	12		49 (1.93)	17	
21 (.83)	03	2 (.08)	31 (1.22)	08		41 (1.61)	13		51 (2.01)	18	
23 (.91)	04	4 (.16)	33 (1.30)	09		43 (1.69)	14		53 (2.09)	19	

E3 *VISE ACTION®* Compression Latch

Small · Metal injection molding stainless steel housing · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Tool or hand operated**
- **Reduced dimensions**

Material and Finish

Stainless steel 316 and 304

Performance Details

Max. static load: 356 N (80 lbf)

Sealing Notes

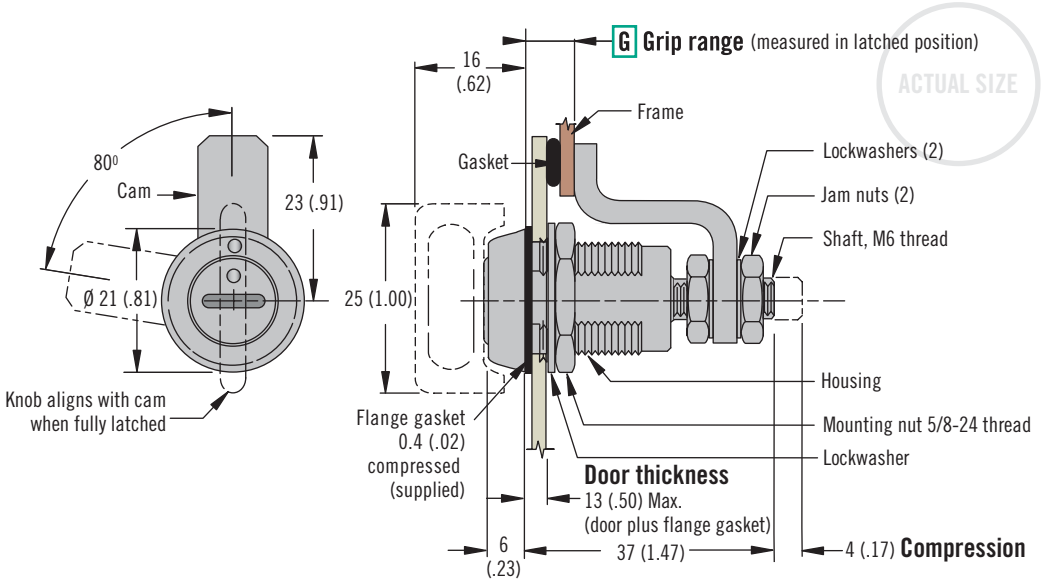
NEMA 4 / IP65 achieved using gasket supplied

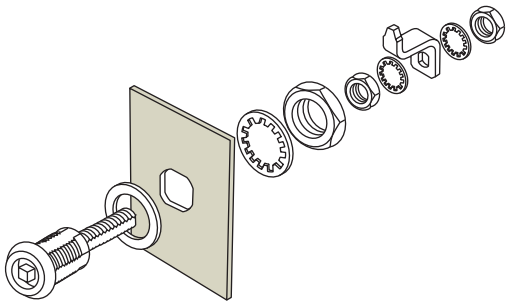
Installation Notes

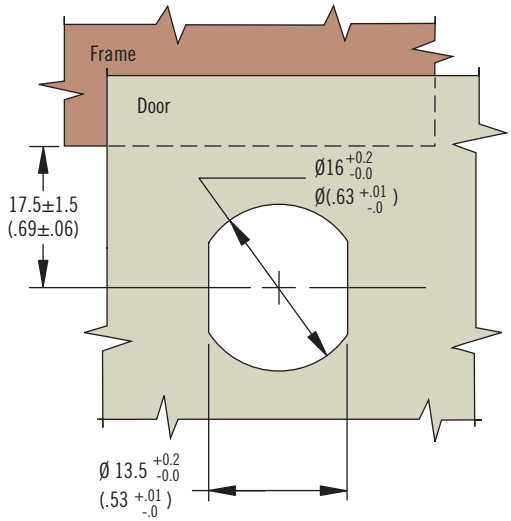
Caution: Position cam so latching function can be achieved comfortably by hand.

Accessories

See pages 58 - 61







H Head Styles

SOUTHCO® Tubular key	4 (.16) Hex recess	Knob style	Slotted recess

Part Number Selection

H Head style

- **5** *SOUTHCO®* Tubular key
- **6** Hex recess
- **7** Knob style
- **9** Slotted recess

E3 - 5 H - G 2

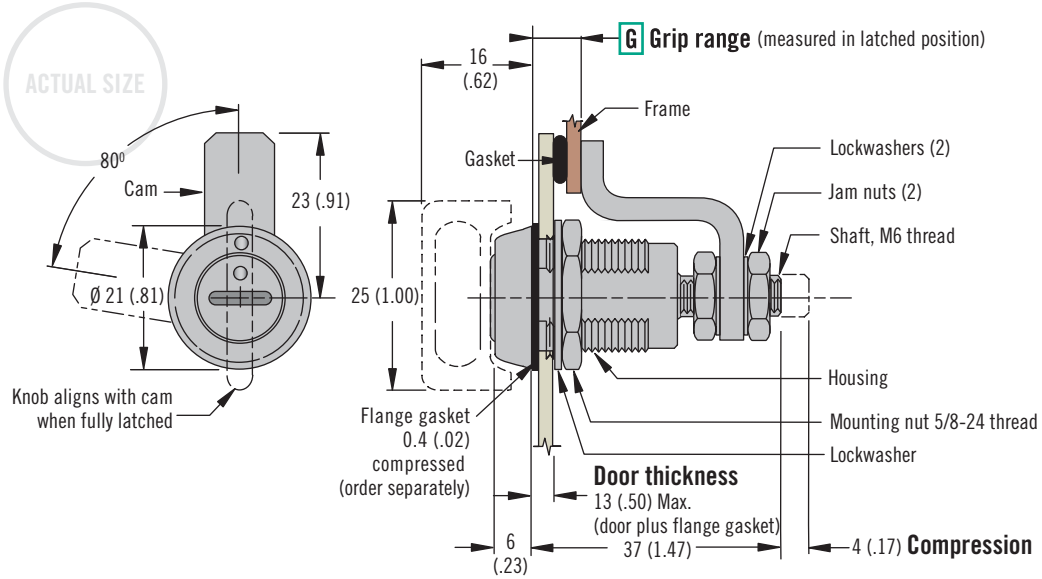
G Grip	Min.	Max.
1	3.2 (.13)	6.4 (.25)
2	6.4 (.25)	9.5 (.37)
3	9.5 (.37)	12.7 (.50)
4	12.7 (.50)	15.9 (.63)
5	15.9 (.63)	19 (.75)
6	19 (.75)	22.2 (.87)
7	22.2 (.87)	25.4 (1)
8	25.4 (1)	28.6 (1.13)

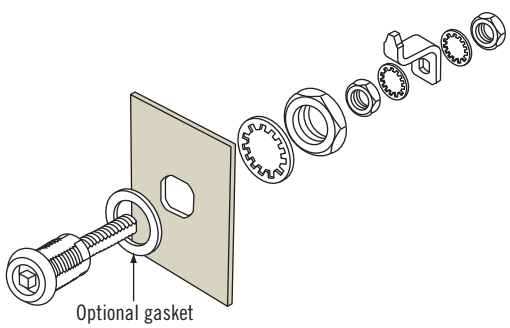
INFO CLIC *www.southco.com/E3*

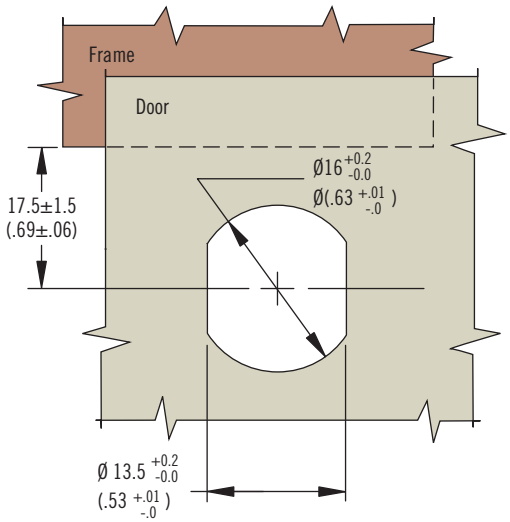
Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch

Small · Zinc and plated steel · Adjustable grip







H Head Styles

SOUTHCO® Tubular key | 4 (.16) Hex recess | Knob style | Slotted recess

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Tool or hand operated**
- **Reduced dimensions**

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Max. static load: 330 N (75 lbf)

Sealing Notes

NEMA 4 / IP65 sealing is achieved by using optional flange gasket. Flange gasket part number: E3-0-30268-02

Installation Notes

Caution: Position cam so latching function can be achieved comfortably by hand.

Accessories

See pages 58 - 61

Part Number Selection

H Head style
- **5** *SOUTHCO®* Tubular key
- **6** Hex recess
- **7** Knob style
- **9** Slotted recess

E3 - 5 H - G F

F Finish
- **1** Chrome plated
- **5** Black powder coated
- **7** Silver powder coated

G Grip	Min.	Max.
1	3.2 (.13)	6.4 (.25)
2	6.4 (.25)	9.5 (.37)
3	9.5 (.37)	12.7 (.50)
4	12.7 (.50)	15.9 (.63)
5	15.9 (.63)	19 (.75)
6	19 (.75)	22.2 (.87)
7	22.2 (.87)	25.4 (1)
8	25.4 (1)	28.6 (1.13)

Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch

Large · Zinc and plated steel · Tool operated · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Tool operated for security**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 450 N (100 lbf)

Sealing Notes

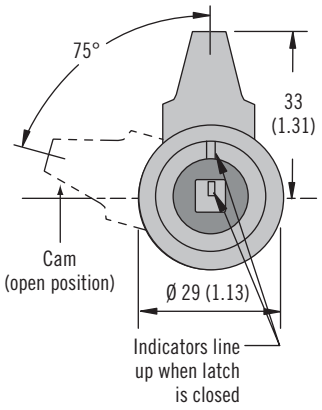
NEMA 4 / IP65 sealing is achieved by using optional flange gasket. Flange gasket part number: E5-17

Installation Notes

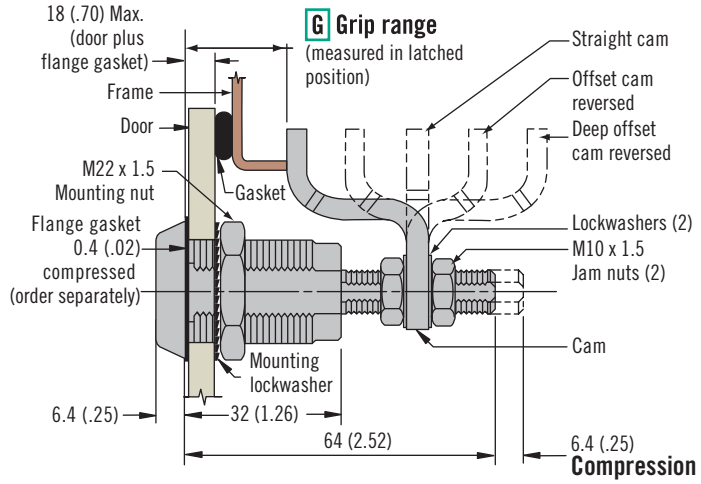
Caution: Position cam so latching function can be achieved comfortably by hand. Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

Keys and Accessories

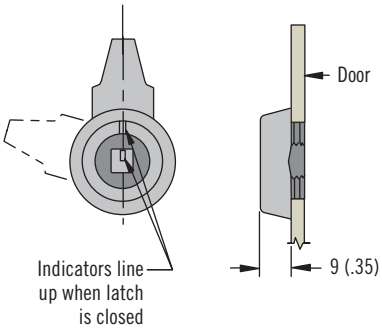
See pages 58 - 61



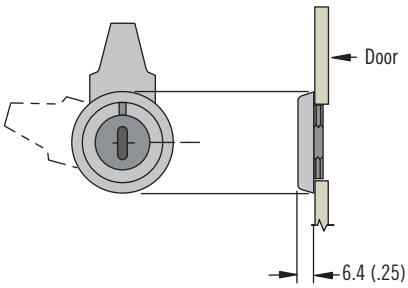
Door thickness

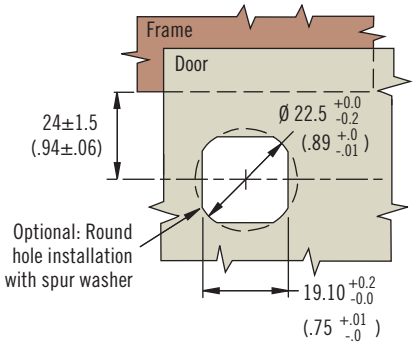


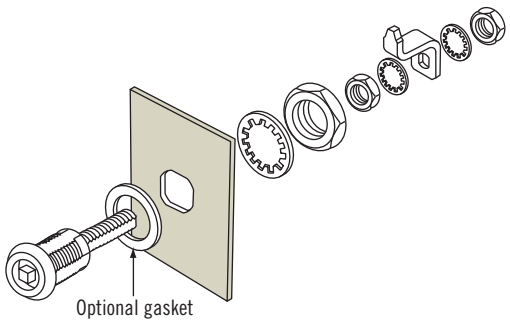
Railway Standard - Bellcore 216



All Other Head Styles (slotted recess shown)







ACTUAL SIZE

INFO CLIC www.southco.com/E3

Dimensions in millimeters (inch) unless otherwise stated

H Head Styles (other head styles available)

3 (.11) Double bit | 7 (.28) Triangle | 7 (.28) Square | *SOUTHCO®* Tubular key | 8 (.32) Hex recess | Slotted recess

8 (.32) Square driver | Railway standard | Bellcore 216 | Bellcore electronics | 8 (.32) Triangle | 5 (.19) Double bit

Part Number Selection

E3 - 1 H - G F

F Finish
- **1** Chrome plated
- **5** Black powder coated
- **7** Silver powder coated

H Head style
- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **5** *SOUTHCO®* Tubular key
- **6** 8 (.32) Hex recess
- **9** Slotted recess
- **10** 8 (.32) Square driver
- **11** Railway standard
- **15** Bellcore 216
- **16** Bellcore electronics
- **20** 8 (.32) Triangle
- **48** 5 (.19) Double bit

G Grip	Min.	Max.	Cam Type
1	11.4 (.45)	27.2 (1.07)	Deep offset cam, forward
	66.3 (2.61)	76.2 (3.00)	Deep offset cam, reversed
2	25.4 (1)	41.1 (1.62)	Offset cam, forward
	52.6 (2.07)	68.3 (2.69)	Offset cam, reversed
3	38.9 (1.53)	54.6 (2.15)	Straight cam

E3 *VISE ACTION®* Compression Latch

Large · Zinc and plated steel · Hand operated · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Hand operated**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 450 N (100 lbf)

Sealing Notes

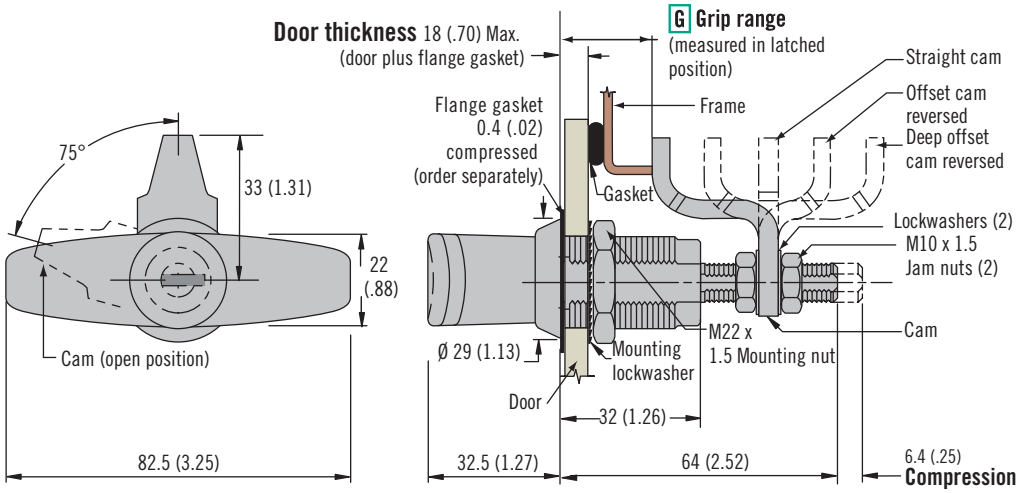
NEMA 4 / IP65 sealing is achieved by using optional flange gasket.
Flange gasket part number: E5-17

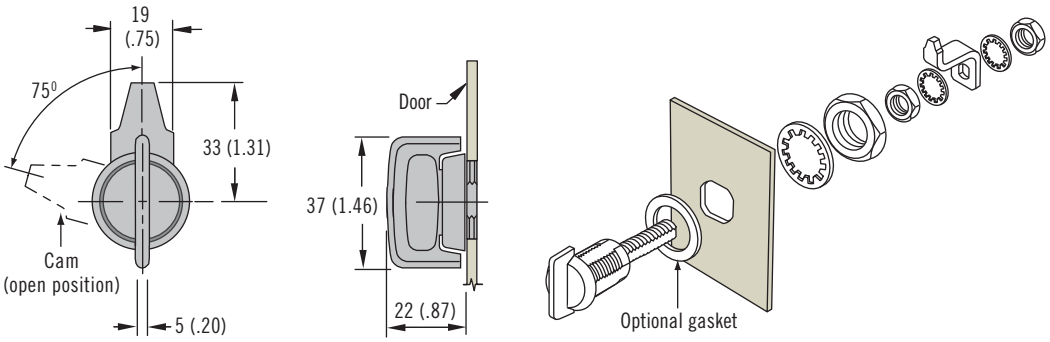
Installation Notes

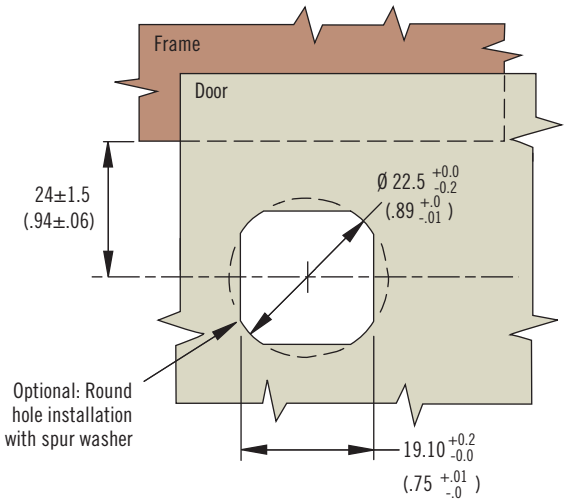
Caution: Position cam so latching function can be achieved comfortably by hand.
Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

Keys and Accessories

Key CH751 page 58
Washers and sleeve nut see page 60







ACTUAL SIZE

INFO CLIC www.southco.com/E3

Dimensions in millimeters (inch) unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

H Head Styles

Standard knob

T-handle, key-locking

T-handle, non-locking

Part Number Selection

E3 - 1 H - G F

F Finish
- **1** Chrome plated
- **5** Black powder coated
- **7** Silver powder coated

H Head style
- **1** T-handle, non-locking
- **7** Standard knob
- **8** T-Handle, key-locking keyed CH751 (two flat keys supplied)

G Grip	Min.	Max.	Cam Type
1	11.4 (.45)	27.2 (1.07)	Deep offset cam, forward
	66.3 (2.61)	76.2 (3.00)	Deep offset cam, reversed
2	25.4 (1)	41.1 (1.62)	Offset cam, forward
	52.6 (2.07)	68.3 (2.69)	Offset cam, reversed
3	38.9 (1.53)	54.6 (2.15)	Straight cam

E3 *VISE ACTION®* Compression Latch

Large · Zinc and plated steel · Tool operated · Fixed grip

- **Consistent pre-set compression**
- **Quick install**
- **Reduced internal protrusion**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel plated

Performance Details

Max. static load: 300 N (67 lbf)

Sealing Notes

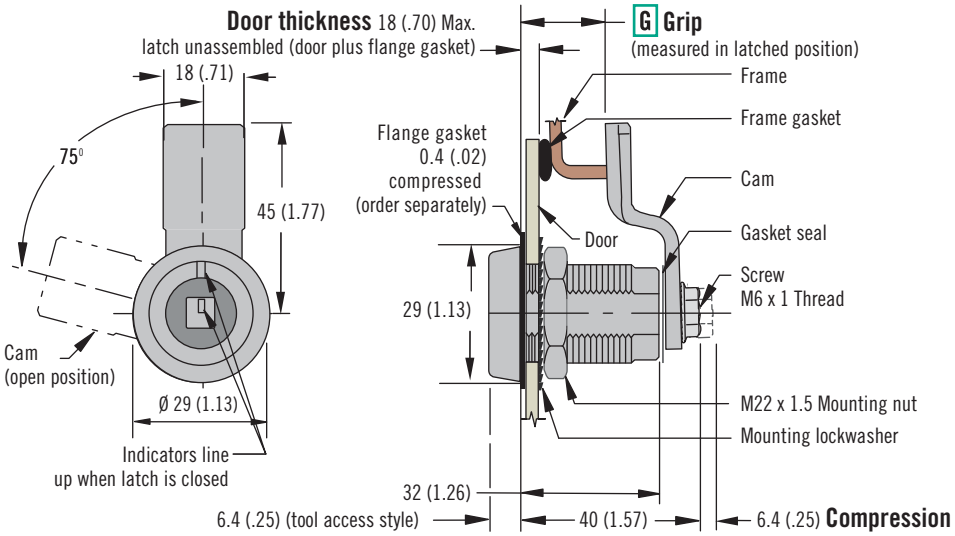
NEMA 4 / IP65 sealing is achieved by using optional flange gasket. Flange gasket part number: E5-17

Installation Notes

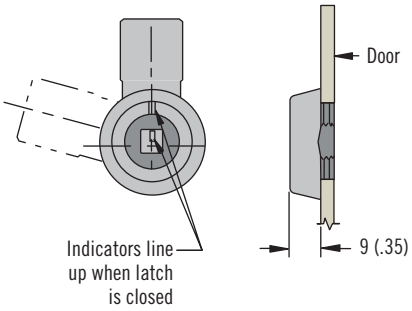
Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw in 10 N·m (88 in·lbf)

Keys and Accessories

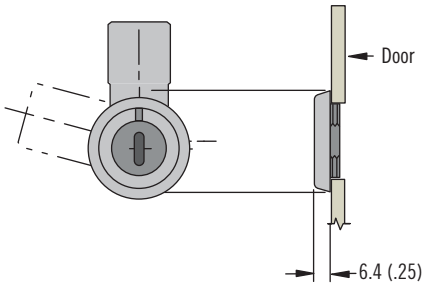
See pages 58 - 61

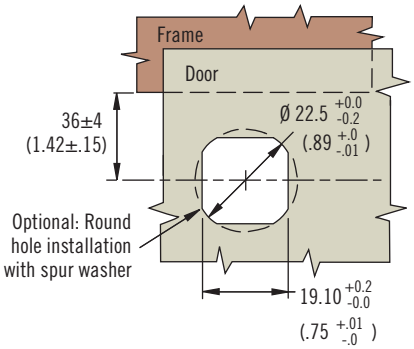


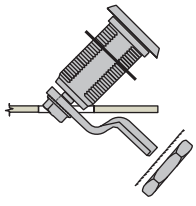
Railway Standard - Bellcore 216



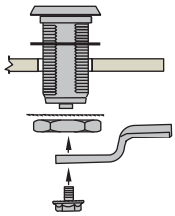
All Other Head Styles (slotted recess shown)







A Assembled Installation



A Unassembled Installation

ACTUAL SIZE

INFO CLIC www.southco.com/E3

Dimensions in millimeters (inch) unless otherwise stated

H Head Styles

3 (.11) Double bit | 7 (.28) Triangle | 7 (.28) Square | *SOUTHCO®* Tubular key | 8 (.32) Hex recess | Slotted recess

8 (.32) Square driver | Railway standard | Bellcore 216 | Bellcore electronics | 8 (.32) Triangle | 5 (.19) Double bit

Part Number Selection

H Head style
- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **5** *SOUTHCO®* Tubular key
- **6** 8 (.32) Hex recess
- **9** Slotted recess
- **10** 8 (.32) Square driver
- **11** Railway standard
- **15** Bellcore 216
- **16** Bellcore electronics
- **20** 8 (.32) Triangle
- **48** 5 (.19) Double bit

F Finish
- **1** Chrome plated
- **5** Black powder coated
- **7** Silver powder coated

E3 - A H - G F

A Assembly status
- **10** Assembled
- **12** Unassembled

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
15 (.59)	00	Use unassembled	25 (.98)	05	5 (.20)	35 (1.38)	10	7 (.28)	45 (1.77)	15	7 (.28)
17 (.67)	01	Use unassembled	27 (1.06)	06	6 (.24)	37 (1.46)	11		47 (1.85)	16	
19 (.75)	02	1 (.04)	29 (1.14)	07	7 (.28)	39 (1.53)	12		49 (1.93)	17	
21 (.83)	03	2 (.08)	31 (1.22)	08		41 (1.61)	13		51 (2.01)	18	
23 (.91)	04	4 (.16)	33 (1.30)	09		43 (1.69)	14		53 (2.09)	19	

E3 *VISE ACTION®* Compression Latch

Large · Zinc and plated steel · Hand operated · Fixed grip

- **Consistent pre-set compression**
- **Quick install**
- **Reduced internal protrusion**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 300 N (67 lbf)

Sealing Notes

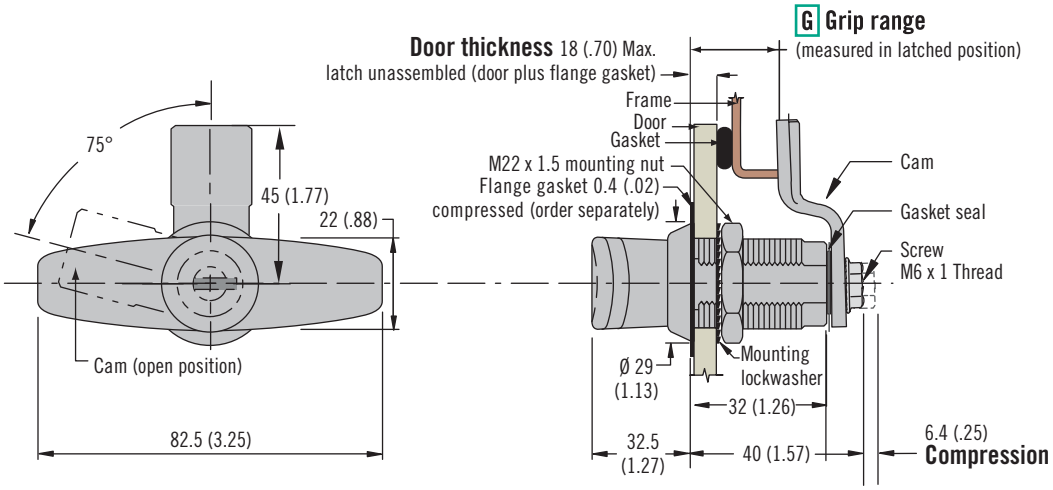
NEMA 4 / IP65 sealing is achieved by using optional flange gasket. Flange gasket part number: E5-17

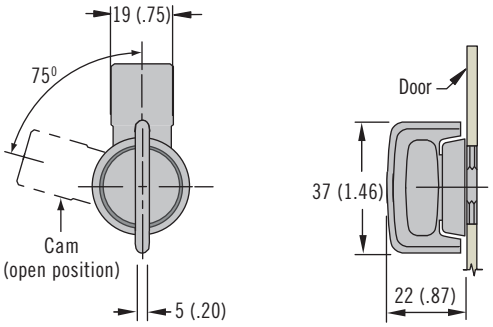
Installation Notes

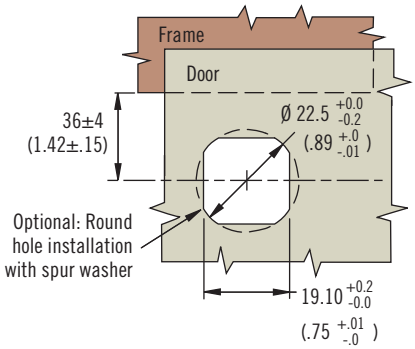
Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw in 10 N·m (88 in·lbf)

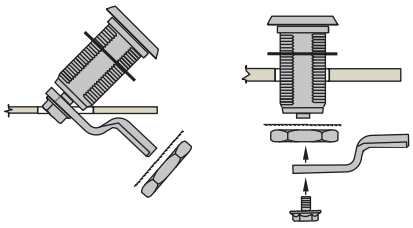
Keys and Accessories

Key CH751 page 58
Washers and sleeve nut see page 60









A Assembled Installation

A Unassembled Installation

Dimensions in millimeters (inch) unless otherwise stated

H Head Styles

Standard knob

T-handle, key-locking

T-handle, non-locking

Part Number Selection

H Head style
- **1** T-handle, non-locking
- **7** Standard knob
- **8** T-Handle, key-locking keyed CH751 (two flat keys supplied)

F Finish
- **1** Chrome plated
- **5** Black powder coated
- **7** Silver powder coated

E3 - A H - G F

A Assembly status
- **10** Assembled
- **12** Unassembled

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
15 (.59)	00	Use unassembled	25 (.98)	05	5 (.20)	35 (1.38)	10	7 (.28)	45 (1.77)	15	7 (.28)
17 (.67)	01	Use unassembled	27 (1.06)	06	6 (.24)	37 (1.46)	11		47 (1.85)	16	
19 (.75)	02	1 (.04)	29 (1.14)	07	7 (.28)	39 (1.53)	12		49 (1.93)	17	
21 (.83)	03	2 (.08)	31 (1.22)	08		41 (1.61)	13		51 (2.01)	18	
23 (.91)	04	4 (.16)	33 (1.30)	09		43 (1.69)	14		53 (2.09)	19	

E3 *VISE ACTION®* Compression Latch

Large · Zinc and plated steel · Wing knob · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Multiple key codes**

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Max. static load: 450 N (100 lbf)

Sealing Notes

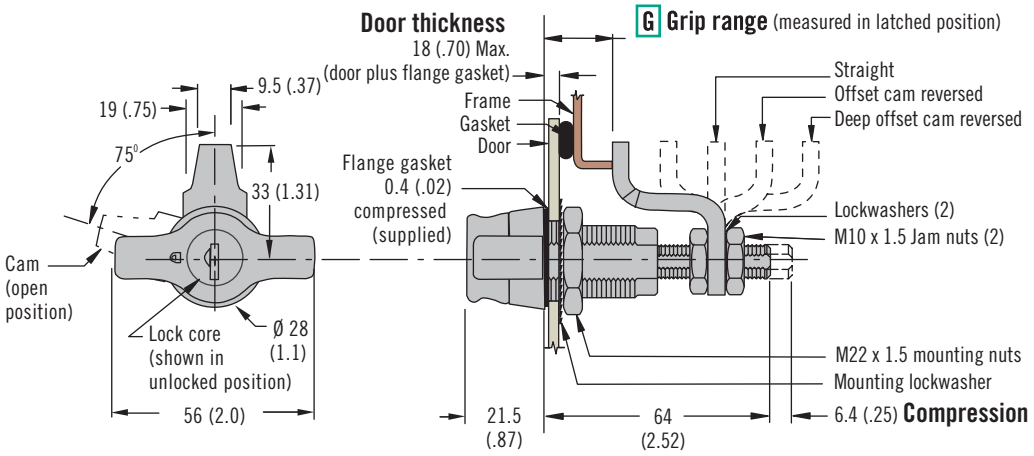
NEMA 4 / IP65 sealing is achieved by using gasket supplied.

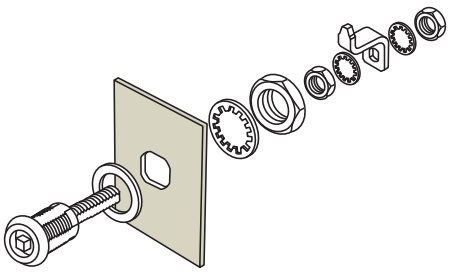
Installation Notes

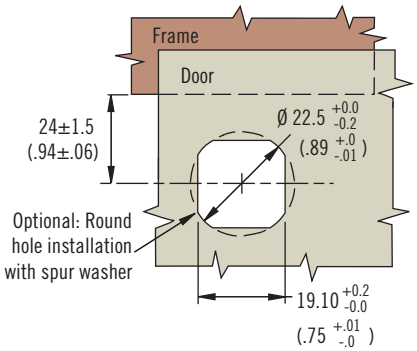
Caution: Position cam so latching function can be achieved comfortably by hand. Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

Keys and Accessories

Key CH751 page 58
Key R001 page 58
Washers and sleeve nut see page 60







L Lock Styles

Wing knob, non-locking

Wing knob, key-locking, keyed CH751

Wing knob, key-locking, shuttered, keyed R001

Part Number Selection

L Lock style
- **50** Wing knob, non-locking
- **51** Wing knob, key-locking, keyed CH751 (1 overmolded key supplied)
- **58** Wing knob, key-locking, keyed R001 (1 overmolded key supplied)

E3 - 1 L - G 5

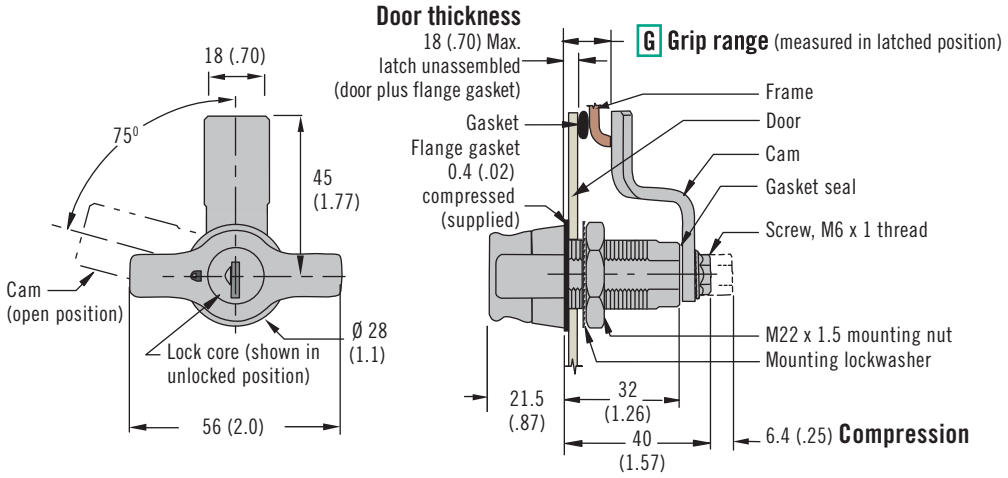
G Grip	Min.	Max.	Cam Type
1	11.4 (.45)	27.2 (1.07)	Deep offset cam, forward
	66.3 (2.61)	76.2 (3.00)	Deep offset cam, reversed
2	25.4 (1)	41.1 (1.62)	Offset cam, forward
	52.6 (2.07)	68.3 (2.69)	Offset cam, reversed
3	38.9 (1.53)	54.6 (2.15)	Straight cam

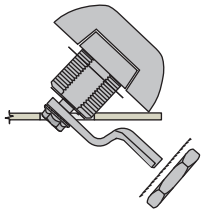
Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch

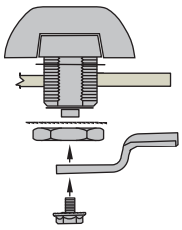
Large · Zinc and plated steel · Wing knob · Fixed grip

- **Consistent pre-set compression**
- **Minimal internal protrusion**
- **Multiple key codes**

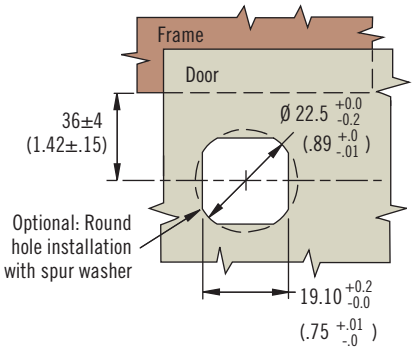




A Assembled Installation



A Unassembled Installation



ACTUAL SIZE

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Max. static load: 300 N (67 lbf)

Sealing Notes

NEMA 4 / IP65 sealing is achieved by using gasket supplied.

Installation Notes

Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw in 10 N·m (88 in·lbf)

Keys and Accessories

Key CH751 page 58
Key R001 page 58
Washers and sleeve nut see page 60

Part Number Selection

A Assembly status
10 Assembled
12 Unassembled

L Lock style
50 Wing knob, non-locking
51 Wing knob, locking, keyed CH751 (1 overmolded key supplied)
58 Wing knob, locking, keyed R001 (1 overmolded key supplied)

E3 - A L - G 5

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
15 (.59)	00	Use unassembled	25 (.98)	05	5 (.20)	35 (1.38)	10	7 (.28)	45 (1.77)	15	7 (.28)
17 (.67)	01	Use unassembled	27 (1.06)	06	6 (.24)	37 (1.46)	11		47 (1.85)	16	
19 (.75)	02	1 (.04)	29 (1.14)	07	7 (.28)	39 (1.53)	12		49 (1.93)	17	
21 (.83)	03	2 (.08)	31 (1.22)	08		41 (1.61)	13		51 (2.01)	18	
23 (.91)	04	4 (.16)	33 (1.30)	09		43 (1.69)	14		53 (2.09)	19	

E3 *VISE ACTION®* Compression Latch

Large · Zinc and plated steel · Tool & hand operated
Three hole mount · Adjustable grip

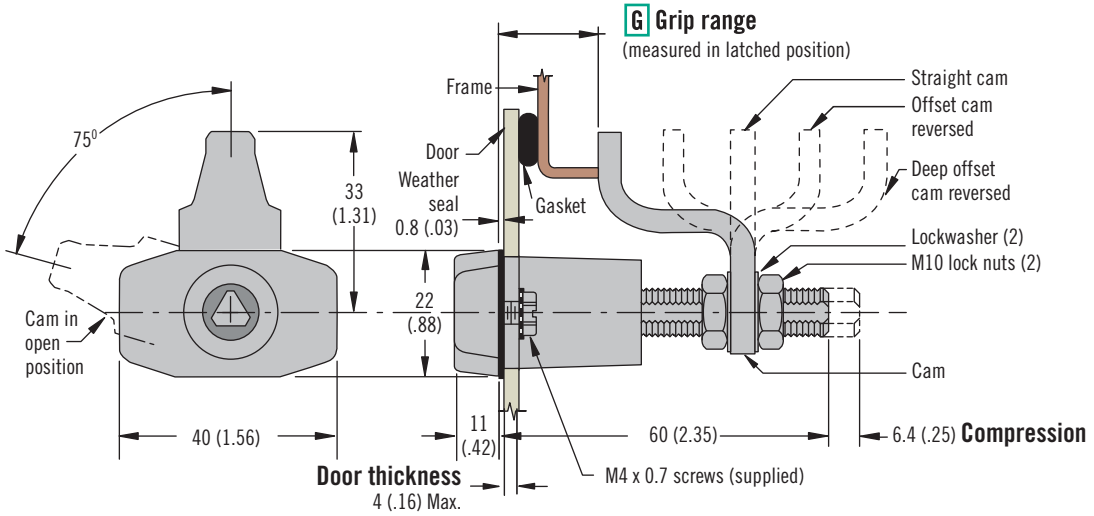
- **Consistent pre-set compression**
- **Easy grip adjustment**

Material and Finish
Zinc alloy, powder coated or chrome plated and steel, zinc plated

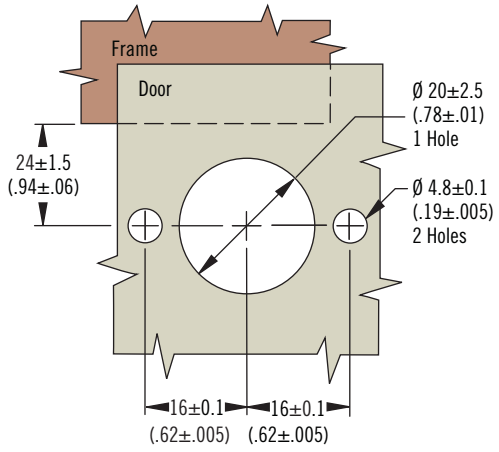
Performance Details
Max. static load: 450 N (100 lbf)

Installation Notes
For door thickness greater than 4 (.16) calculate screw length using the following formula:
Door thickness + 6 (.24)

Keys and Accessories
Pages 58 - 61



ACTUAL SIZE

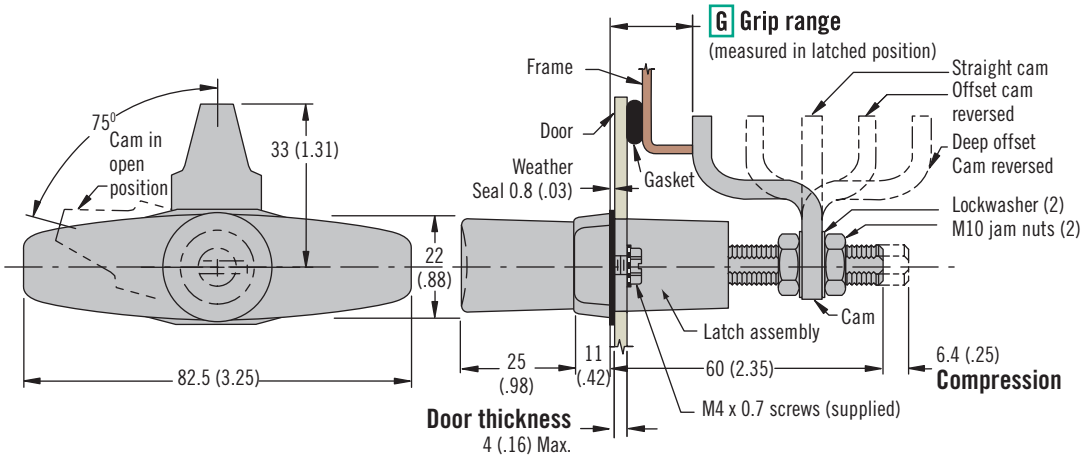


H Head Styles

3 (.11) Double bit	7 (.28) Triangle	7 (.28) Square	8 (.32) Hex recess	*SOUTHCO®* Tubular key	T-handle, key-locking	T-handle, non-locking

INFO CLIC www.southco.com/E3

Dimensions in millimeters (inch) unless otherwise stated



Part Number Selection

H Head style
- **1** T-handle non-locking
- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **5** *SOUTHCO*® Tubular key
- **6** 8 (.32) Hex recess
- **8** T-Handle locking keyed CH751 (two flat keys supplied)

E3 - 3 H - G F

F Finish
- **1** Chrome plated
- **5** Black powder coated
- **7** Silver powder coated

G Grip	Min.	Max.	Cam Type
1	7.9 (.31)	23.6 (.93)	Deep offset cam, forward
	62.7 (2.47)	76.2 (3.00)	Deep offset cam, reversed
2	21.8 (.86)	37.3 (1.47)	Offset cam, forward
	49 (1.93)	64.8 (2.55)	Offset cam, reversed
3	35.3 (1.39)	51 (2.00)	Straight cam

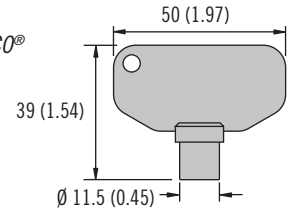
E3 *VISE ACTION®* Compression Latch Accessories

Keys

Material and Finish
Steel, zinc plated

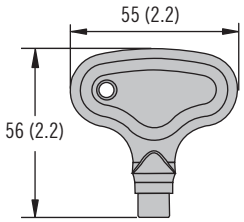
Part Number
Steel tubular key (order separately)
Small E3 latches: E3-26-819-15
Large E3 latches: E3-5-15

Keys - Steel
For latches with *SOUTHCO®*
Tubular key head styles



Material and Finish
Zinc alloy or nylon

Keys - Zinc or Nylon

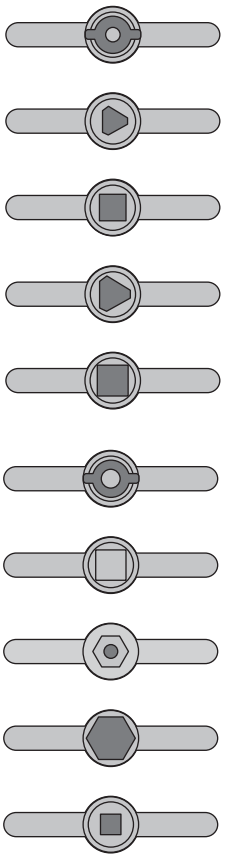


H Head style
- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **7** 8 (.32) Triangle
- **8** 8 (.32) Square recess
- **9** 5 (.19) Double bit (nylon only)
- **10** 8 (.32) Square male (zinc only)
- **11** Bellcore electronics
- **12** Bellcore 216 (zinc only)
- **24** 6(.24) Square recess (nylon only)

F Finish
- **1** Plated zinc
- **2** Natural zinc
- **3** Nylon black

E3 - H - F

Key Styles



- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **7** 8 (.32) Triangle
- **8** 8 (.32) Square recess
- **9** 5 (.19) Double bit
- **10** 8 (.32) Square male
- **11** Bellcore electronics
- **12** Bellcore 216
- **24** 6 (.24) Square recess

Part Number
Overmolded key CH751:
Single: PK-10-10-05
Pair: PK-10-01-05

Overmolded key R001:
Single: PK-10-10-05-KR001
Pair: PK-10-01-05-KR001

Flat key
Pair: PK-10-01

Overmolded Keys
Key CH751

Key R001

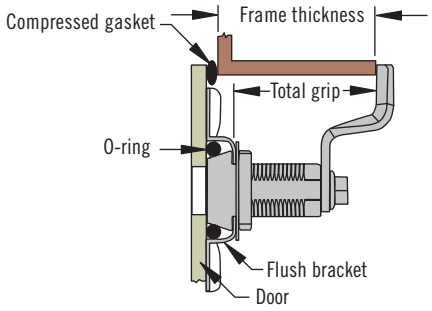
Flat Keys
Key CH751

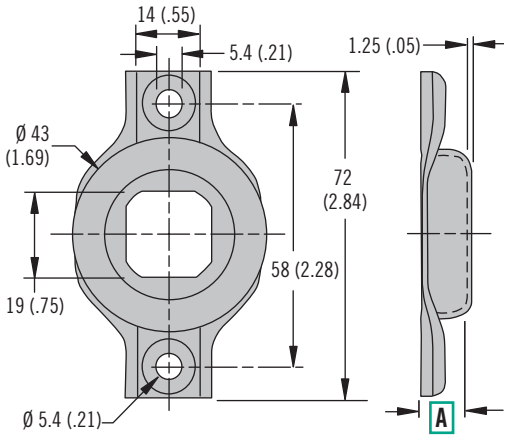
INFO CLIC www.southco.com/E3

Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch Accessories

Fixed bracket for flush mounting



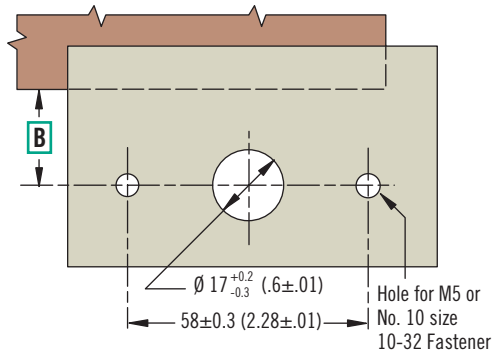


A	Part Number	Material
6.6	E3-77-251-12	Galvanized steel
*9.3	E3-77-252-12	Galvanized steel
6.6	E3-77-251-24	304 Stainless steel
*9.3	E3-77-252-24	304 Stainless steel
* For use with Railway standard or Bellcore 216 style only		

To calculate the **Total Grip,** use the following formula:
Frame Thickness + Compressed Gasket - A.
Use this **Total Grip** with the appropriate E3 tables in the *SOUTHCO®* Handbook to determine cam type.

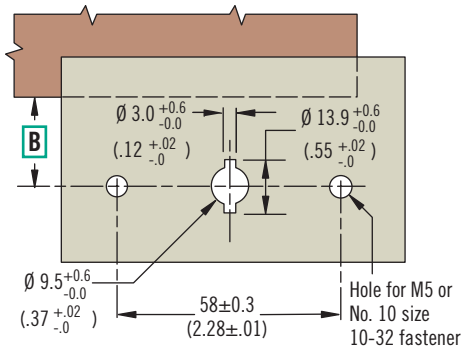
Door preparation

For B dimensions:
Large adjustable grip 24±1.5 (.94±.06)
Fixed grip 36±4 (1.42±.15)

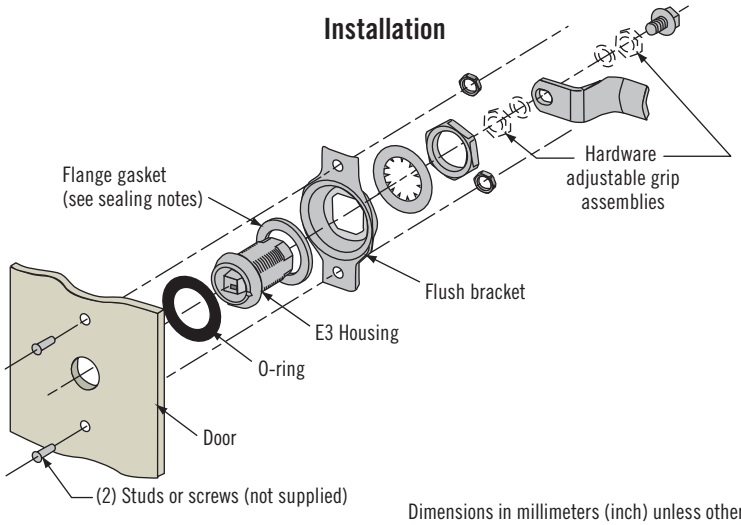


Double bit (key retained style)

Key can only be removed in the latch closed position.



Installation



Material and Finish

Stainless steel or galvanized steel with rubber o-ring

Sealing Notes

Environmental sealing is achieved by using latch with flange gasket (optional or included with latch see pages 40 -55) and sealing the mounting screw threads.

Notes

For use with large single hole mount tool operated E3 *VISE ACTION®* compression latches, see pages 40 - 43, 46 - 47 and 50 - 51

Dimensions in millimeters (inch) unless otherwise stated

E3 *VISE ACTION®* Compression Latch Accessories

Sealing & spur washers · Sealing covers · Sleeve nut

Material and Finish

Sealing washers: Neoprene, natural
Spur washer: Steel, zinc plated
Sealing cover: Thermoplastic elastomer, black

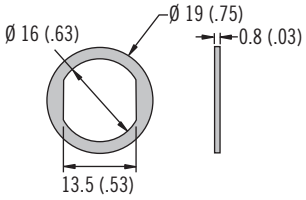
Notes

Spur washer provides for round hole installation in wood and similar materials of low density

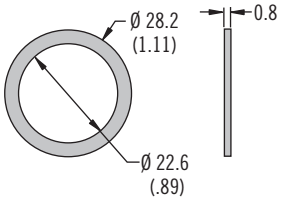
Sealing cover cannot be used with Railway standard or Bellcore 216 styles

Sealing Washers

Small

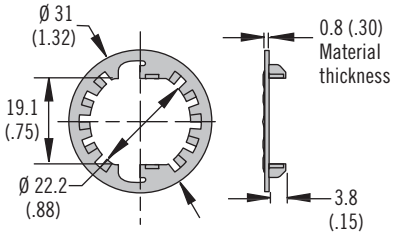


Large

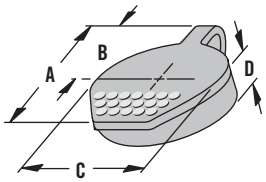


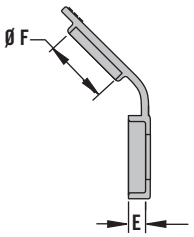
Spur Washer

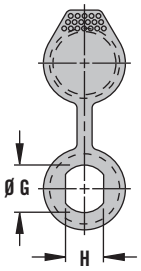
Large

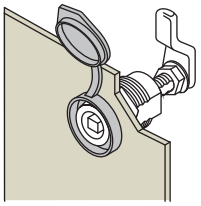


Sealing Cover









Latch Installation Hole Size		Dimensions					
Ø G	Distance across flat H	A	B	Ø C	D	E	Ø F
16 (.63)	13.5 (.53)	40 (1.58)	20 (.85)	29 (1.13)	10.5 (.42)	6.1 (.24)	22.3 (.88)
22.5 (.88)	19.6 (.77)	47 (1.84)	28 (1.09)	35 (1.38)	11.7 (.46)	6.9 (.27)	28.7 (1.13)

Part Number

See table

Type	Part Number	Adjustment Formula
Sealing washer small	E3-0-30268-02	Add 0.4 (.02) to door thickness
Sealing washer large	E5-17	Add 0.4 (.02) to door thickness
Spur washer large	90-6-875	Add 0.8 (.03) to door thickness
Sealing cover small	90-1	Add 2.3 (.09) to door thickness
Sealing cover large	90-3	Add 2.3 (.09) to door thickness

Material and Finish

Zinc alloy

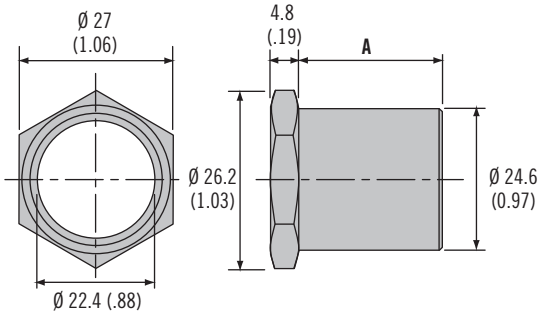
Installation Notes

For use in double skin doors. Produce standard panel cutout in outer door and for the inner door produce 25 (.98) hole for sleeve nut.

Part Number

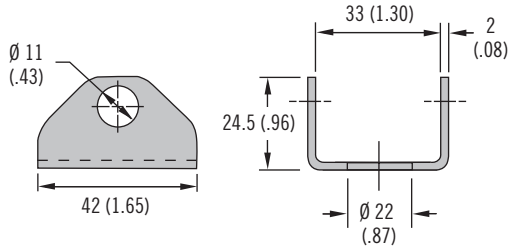
See table

Sleeve Nut M22 Thread (for large E3 only)

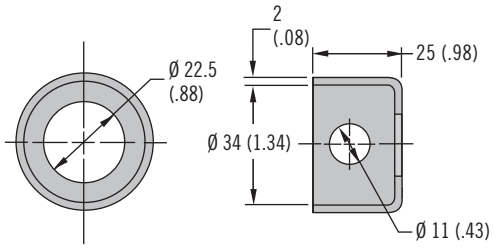


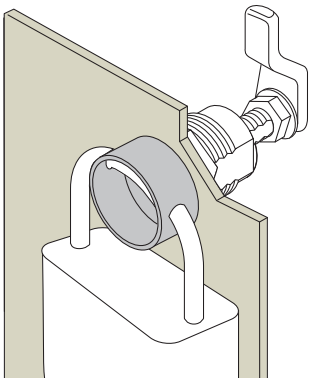
A	Part Number
12.7 (.50)	E3-34-263-36
25 (.98)	E3-34-264-36

Padlock Bracket (Square)

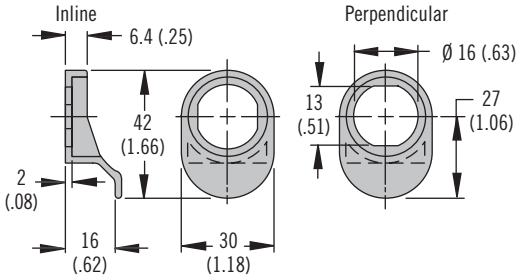


Padlock Bracket (Round)

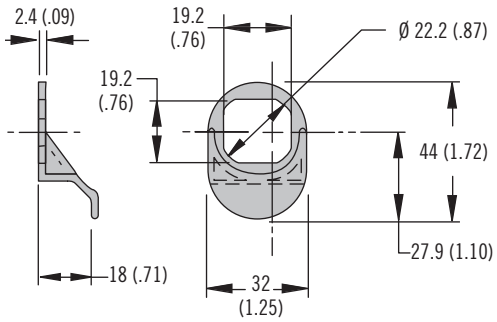




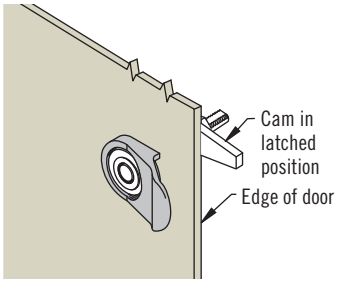
Pull Tab (Small)



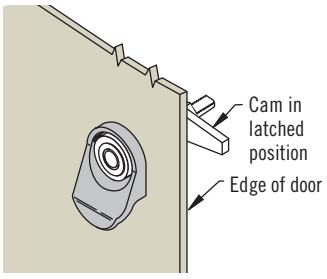
Pull Tab (Large)



Pull tab in-line with cam



Pull tap perpendicular to cam



Type	Part Number	Adjustment Formula
Padlock bracket square	E3-77-101-31	Add 2 (.08) to door thickness
Padlock bracket round	E3-77-102-31	Add 2 (.08) to door thickness
Pull tab small - In-line	E3-27-61	Add 2 (.08) to door thickness
Pull tab small - Perpendicular	E3-27-62	Add 2 (.08) to door thickness
Pull tab large	E3-27-1	Add 2.4 (.09) to door thickness

Material and Finish

Padlock bracket: Stainless steel, black powder coated
Pull tab: Nylon, black

Sealing Notes

To provide sealing use two flange gaskets and add compressed thickness of each flange gasket and bracket thickness to your door thickness.

Notes

Padlock bracket: For large size single hole mount tool operated only

Only unassembled styles can be used with round padlock bracket

Part Number

See table

N2 Compression Latch

Lift & turn series · Folding T-handle · Flush cup style · Adjustable grip

- **Heavy-duty performance**
- **Flush profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

Stainless steel, aluminum, black powder coated and plated steel

Performance Details

Max. static load: 1000 N (225 lbf)

Installation Notes

1. Insert latch and tighten 4 mounting nuts.
2. With latch in closed position, adjust jam nuts to position cam at correct grip. Max. tightening torque: 20 N•m (177 in•lbf)

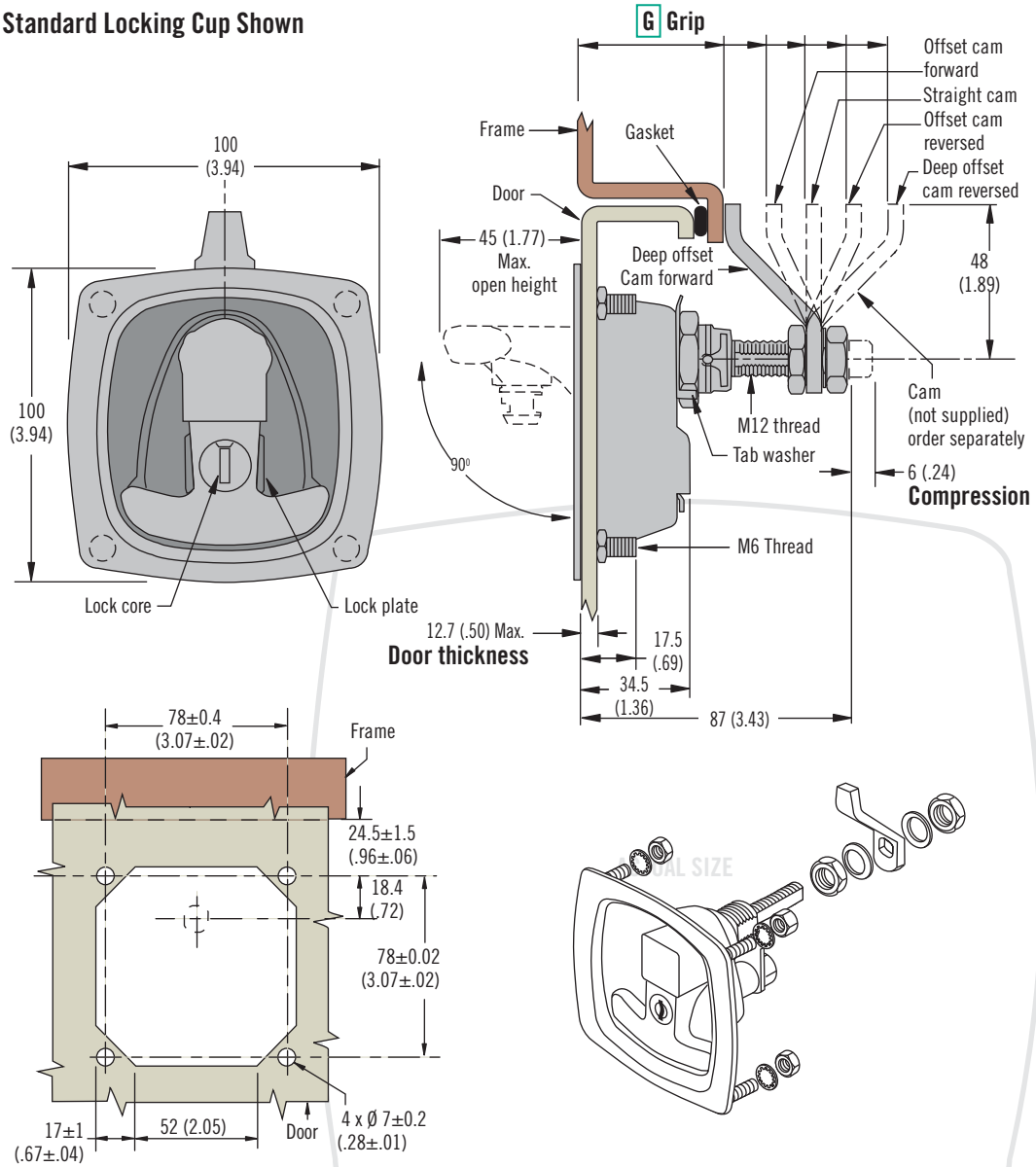
Keys

See page 58

Notes

N2 product family:
See opposite page for details

Standard Locking Cup Shown

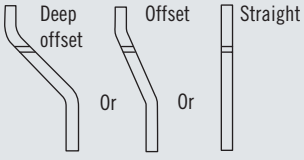


Part Number Selection

Order both parts separately

Choose latch body style

Choose cam (see table)



Cam Part Number Table (order separately)			
Part Number	G Grip		Cam Type
	Min.	Max.	
N2-21-101-12	28 (1.10)	43 (1.69)	Deep offset cam, forward
	88 (3.46)	104 (4.09)	Deep offset cam, reversed
N2-21-102-12	43 (1.69)	58 (2.28)	Offset cam, forward
	73 (2.87)	88 (3.46)	Offset cam, reversed
N2-21-103-12	58 (2.28)	73 (2.87)	Straight

L Locking style

0 Non-locking

1 Key-locking keyed alike CH751 (2 keys supplied)

Latch part number (no cam)

N2 - 2 - 30 L - 01 - 5

INFO CLIC www.southco.com/N2

Dimensions in millimeters (inch) unless otherwise stated

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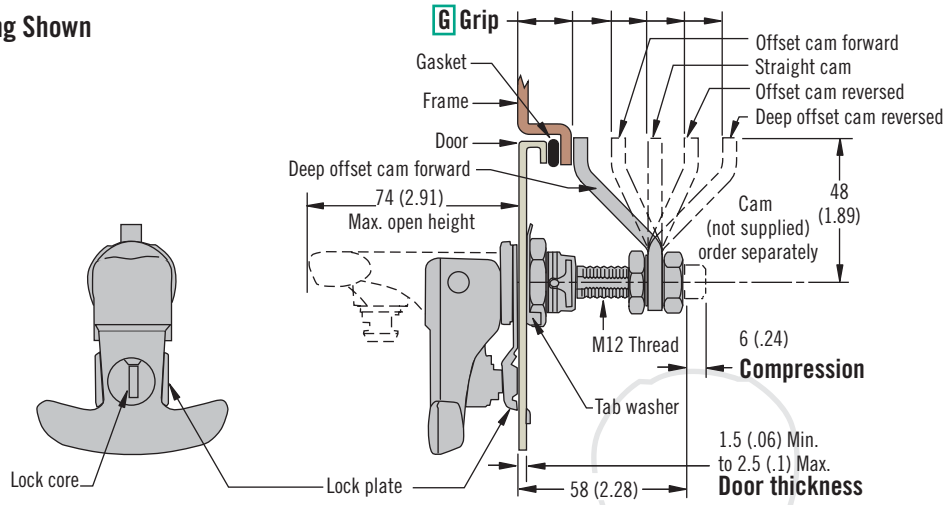
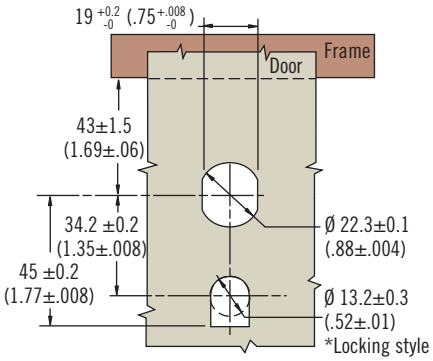
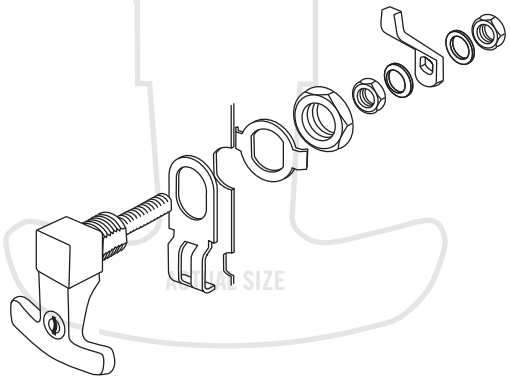
N2 Compression Latch

Lift & turn series · Folding T-handle · No cup style · Adjustable grip

Locking Shown







- **Heavy-duty performance**
- **Low profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

Stainless steel, aluminum, black powder coated and plated steel

Performance Details

Max. static load: 1000 N (225 lbf)

Installation Notes

1. Insert latch and tighten mounting nut.
2. Bend tab washer over mounting nut.
3. With latch in closed position, adjust jam nuts to position cam at correct grip. Max. tightening torque: 20 N·m (177 in·lbf)

Keys

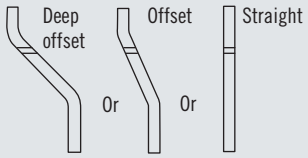
See page 58

Part Number Selection

Order both parts separately

Choose latch body style

Choose cam (see table)



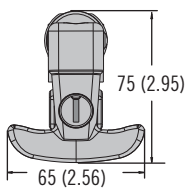
L Locking style
- **0** Non-locking
- **1** Key-locking keyed alike CH751 (2 keys supplied)

Latch part number (no cam)

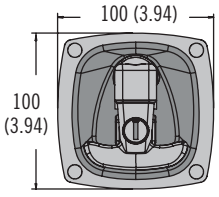
N2 - 2 - 10 L - 01 - 5

Cam Part Number Table (order separately)			
Part Number	G Grip		Cam Type
	Min.	Max.	
N2-21-101-12	2.5 (.10)	15 (.59)	Deep offset cam, forward
	60 (2.36)	75 (2.95)	Deep offset cam, reversed
N2-21-102-12	15 (.59)	30 (1.18)	Offset cam, forward
	45 (1.77)	60 (2.36)	Offset cam, reversed
N2-21-103-12	30 (1.18)	45 (1.77)	Straight

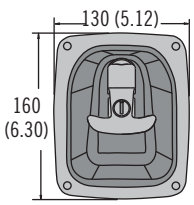
N2 Product Family



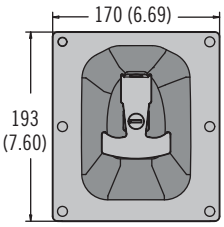
No Cup Style



Standard Cup



Medium Cup



Large Cup

Notes

Other styles available
Custom colors and keycodes
Contact Southco for details

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Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/N2

62 Compression Latch

Small · Lift & turn series · Flush style · Adjustable grip

- **Low profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 220N (50 lbf)

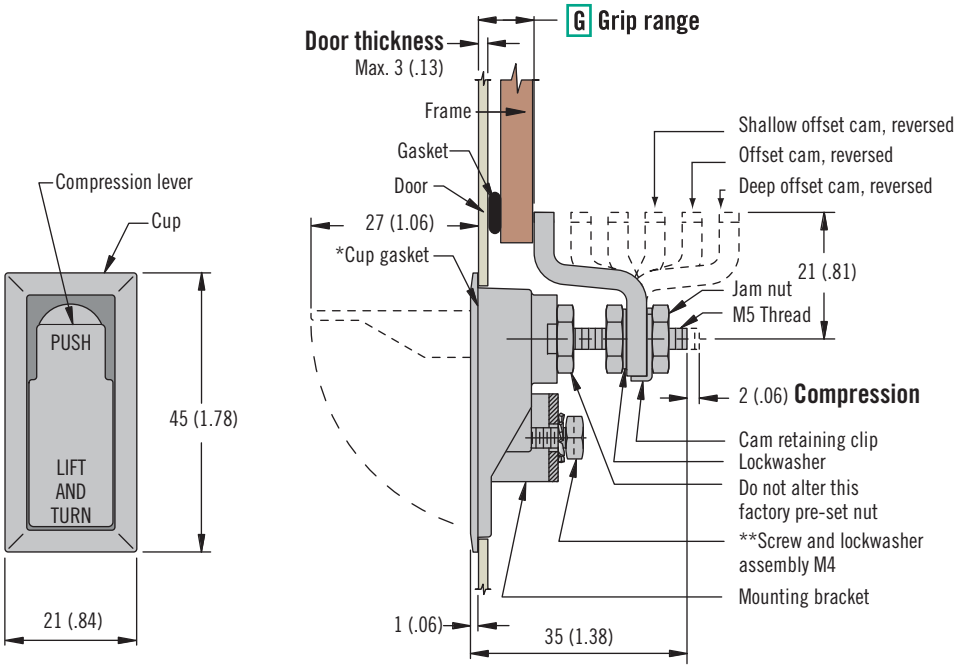
Sealing Notes

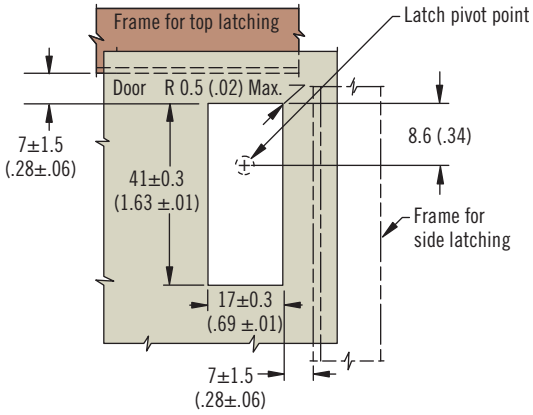
*Environmental sealing is achieved by using dust and moisture sealed option and sealing the mounting screw threads.

Installation Notes

**Screw and lockwasher assembly M4 x 10. For door thickness greater than 3 (.11) calculate screw length using the following formula: Door thickness + 7 (.28)

***Add 0.4 (.02) to door thickness when using cup gasket





ACTUAL SIZE

Part Number Selection

62 - 7 S - G F

S Sealing option
- **0** No Gasket
- **4** Gasket Included see *sealing and ***installation notes

F Finish
- **1** Polished chrome
- **2** Brushed chrome
- **5** Black powder coated

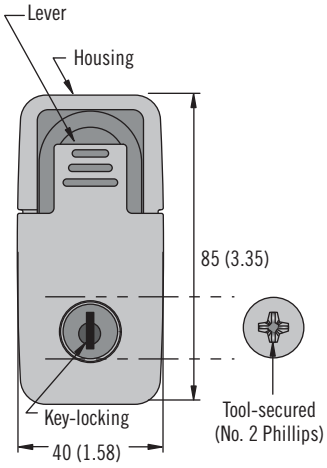
G Grip	Min.	Max.	Cam Type
1	4.5 (.17)	10.5 (.41)	Deep offset cam, forward
	34.5 (1.35)	40.5 (1.59)	Deep offset cam, reversed
2	10.5 (.41)	16.5 (.65)	Offset cam forward
	28.5 (1.12)	34.5 (1.35)	Offset cam reverse
3	16.5 (.65)	22.5 (.88)	Shallow offset cam, forward
	22.5 (.88)	28.5 (1.12)	Shallow offset cam, reversed

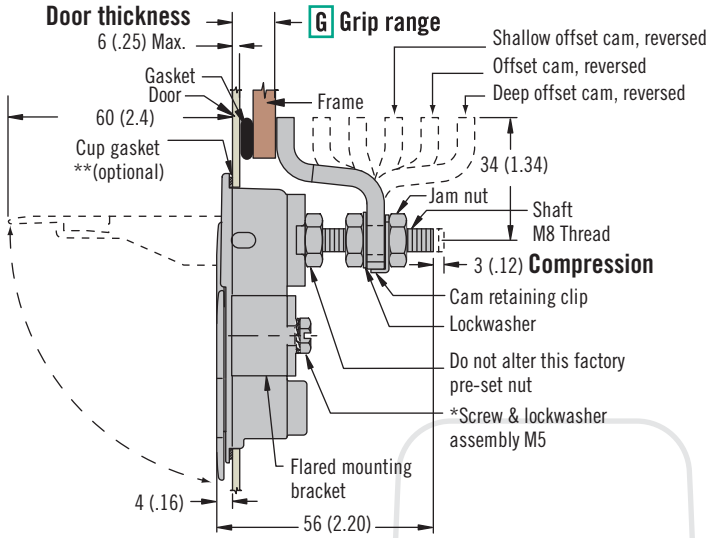
Dimensions in millimeters (inch) unless otherwise stated

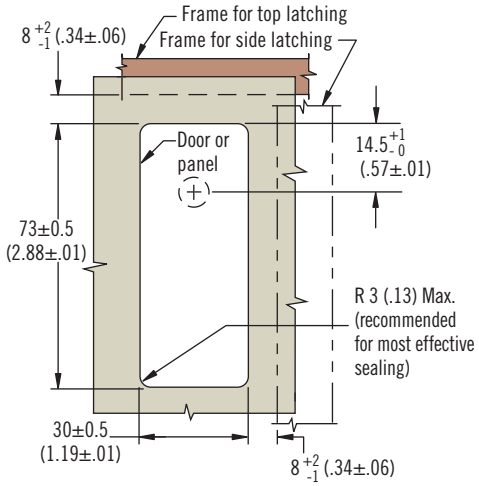
62 Compression Latch

Medium · Lift & turn series · Flush style · Adjustable grip

- **Low profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**







ACTUAL SIZE

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 440 N (100 lbf)

Sealing Notes

Environmental sealing is achieved by using a cup gasket and sealing the mounting screw threads.

Installation Notes

*Screw and lockwasher assembly M5 x 16. For door thickness greater than 6 (.25) calculate screw length using the following formula: Door thickness + 10 (.39)

**Add 0.4 (.02) to door thickness when using cup gasket

Accessories

Cup gasket:
Part number: 62-973-431

Keys

See page 58

Notes

For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see pages 182 - 183

Part Number Selection

62 - 4 L - G F 1 - P

L Lock style
- **0** Non-locking
- **2** Key-locking without dust shutter keyed alike CH751
- **3** Tool secured No. 2 Phillips
- **21** Locking without lock core (order separately see pages 182 - 183)

P Packaging option
- **3** Layer packed
- **2** Individually packed

F Finish
- **0** Textured chrome
- **1** Polished chrome
- **5** Black powder coated

G Grip	Min.	Max.	Cam Type
1	6 (.23)	16 (.63)	Deep offset cam, forward
	56 (2.20)	66 (2.59)	Deep offset cam, reversed
2	16 (.63)	26 (1.02)	Offset cam forward
	46 (1.81)	56 (2.20)	Offset cam reverse
3	26 (1.02)	36 (1.41)	Shallow offset cam, forward
	36 (1.41)	46 (1.81)	Shallow offset cam, reversed

62 Compression Latch

Large · Lift & turn series · Flush style · Adjustable grip

- **Low profile when latched**
- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

Zinc alloy, chrome brushed and steel, zinc plated

Performance Details

Max. static load: 1250 N (280 lbf)

Installation Notes

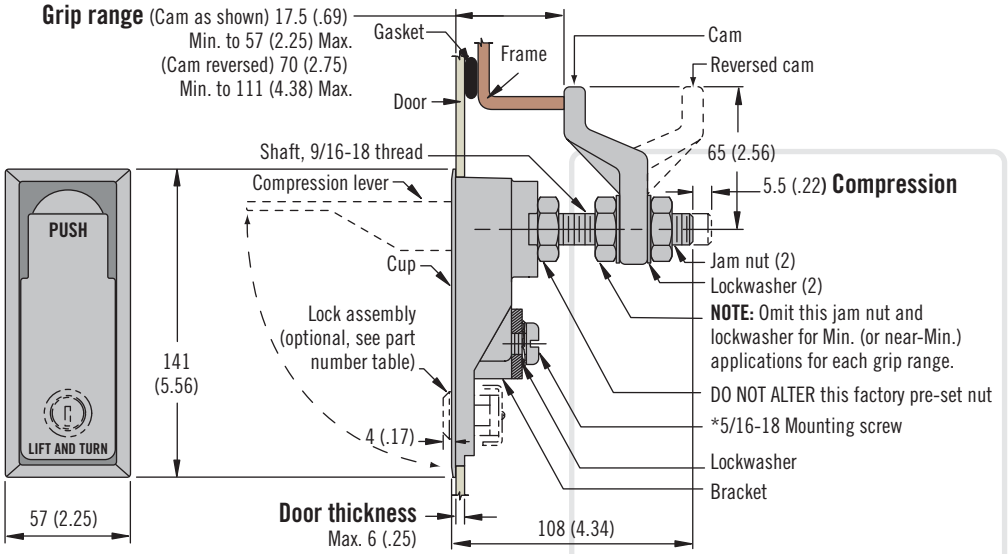
*Screw and lockwasher assembly 5/16-18UNC x 3/4.
For door thickness greater than 6 (.25) calculate screw length using the following formula:
Door thickness + 7 (.28)

Accessories

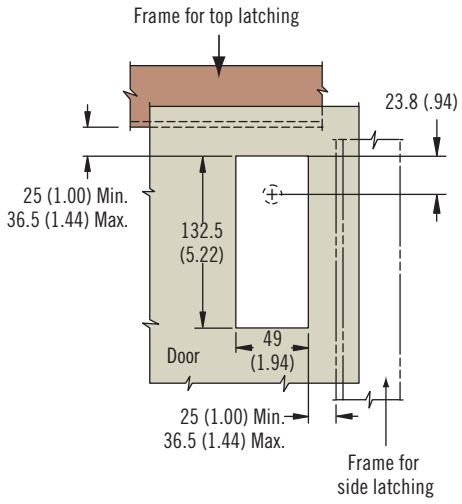
Actuator for three point locking assembly (order separately)
Part number: 62-19-501-15

Keys

See page 58



ACTUAL SIZE



Part Number Selection

H **Head style**
0 Non-locking
1 Key-locking keyed alike CH751 (two flat keys supplied)

62 - 10 - 8H1 - 20

Dimensions in millimeters (inch) unless otherwise stated

62 Compression Latch

Miniature · Lift & turn series · Handle style · Adjustable grip

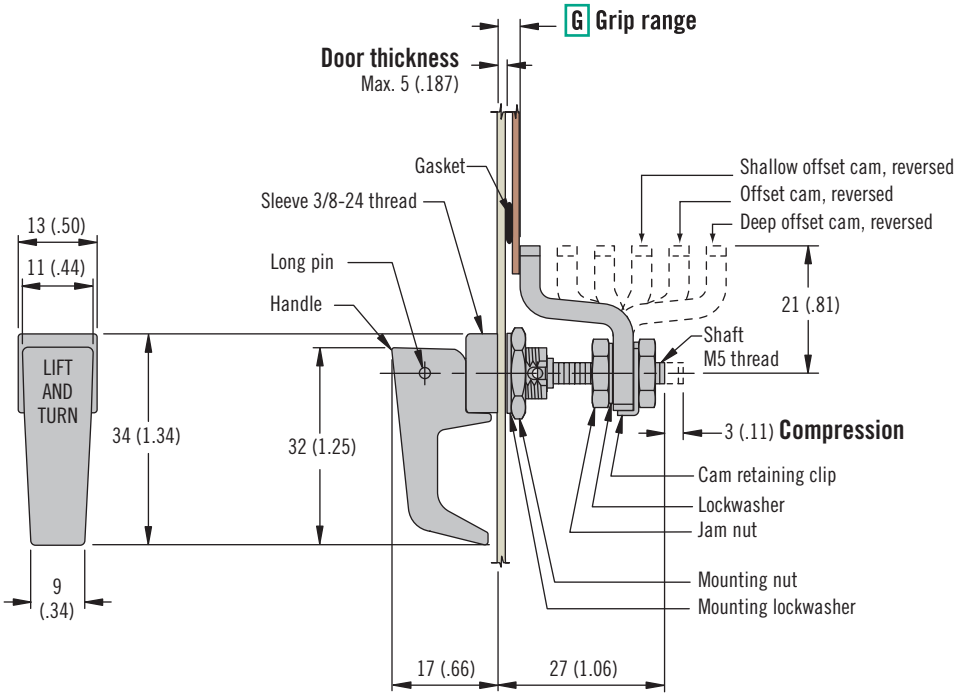
- **Easy grip adjustment**
- **Intuitive operation**

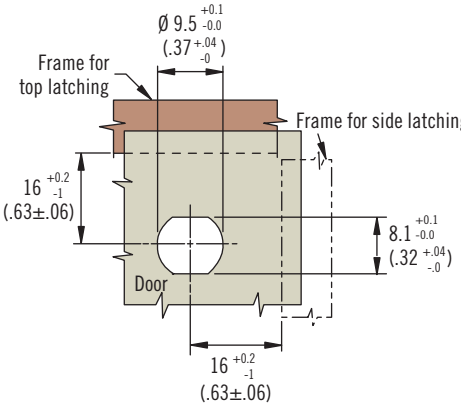
Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 220 N (50 lbf)





ACTUAL SIZE

Part Number Selection

62 - 20 - G F

F Finish

1 Polished chrome

5 Black powder coated

G Grip	Min.	Max.	Cam Type
1	0 (0)	4 (.16)	Deep offset cam, forward
	28 (1.10)	34 (1.34)	Deep offset cam, reversed
2	4 (.16)	10 (.39)	Offset cam, forward
	22 (.87)	28 (1.10)	Offset cam, reverse
3	10 (.39)	16 (.63)	Shallow offset cam, forward
	16 (.63)	22 (.87)	Shallow offset cam, reversed

Dimensions in millimeters (inch) unless otherwise stated

62 Compression Latch

Small · Lift & turn series · Handle style · Adjustable grip

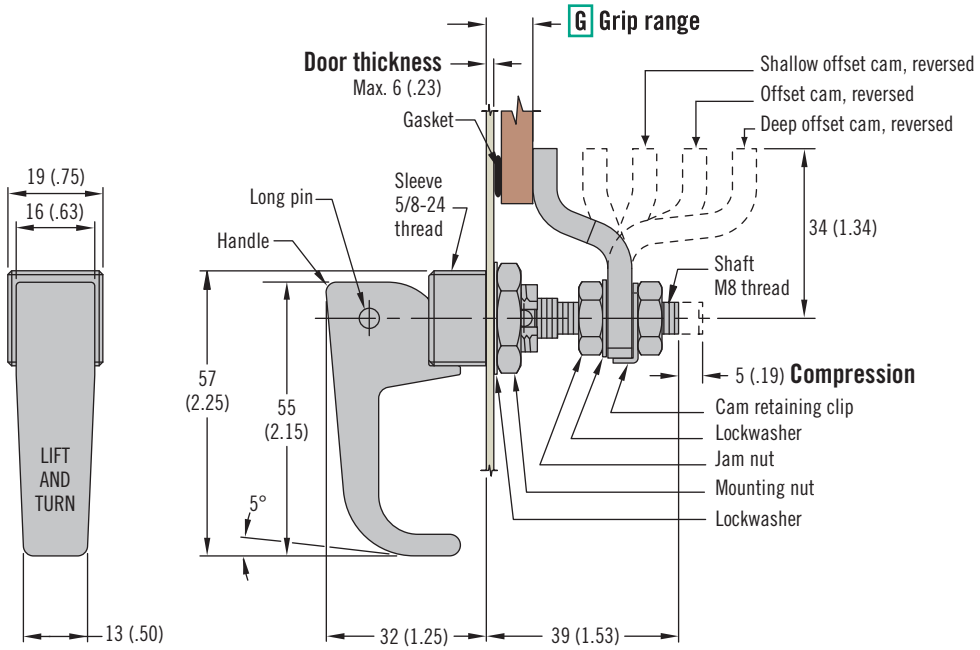
- **Easy grip adjustment**
- **Intuitive operation**

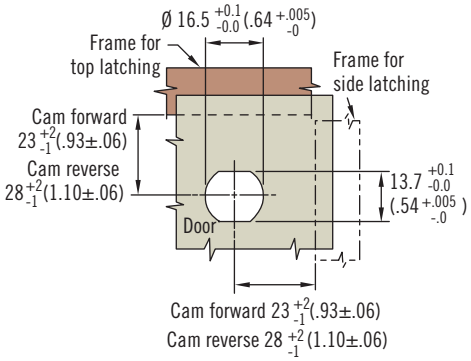
Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 550 N (125 lbf)





ACTUAL SIZE

Part Number Selection

62 - 10 - G F

F Finish

1 Polished chrome
2 Brushed chrome
3 Natural with chemical protective film
5 Black powder coated

G Grip	Min.	Max.	Cam Type
1	42 (1.66)	52 (2.05)	Deep offset cam, forward
2	2 (.08)	12 (.47)	Offset cam, forward
	32 (1.25)	42 (1.66)	Offset cam, reversed
3	12 (.47)	22 (.87)	Shallow offset cam, forward
	22 (.87)	32 (1.25)	Shallow offset cam, reversed

INFO CLIC www.southco.com/62

Dimensions in millimeters (inch) unless otherwise stated

62 Compression Latch

Medium · Lift & turn series · Handle style · Adjustable grip

- **Easy grip adjustment**
- **Intuitive operation**

Material and Finish

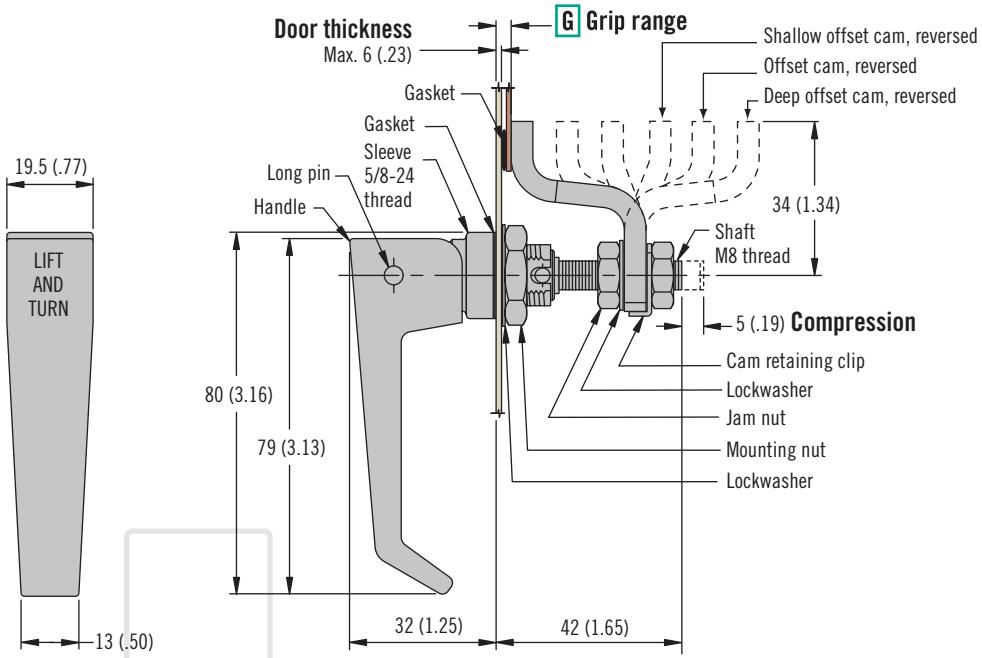
Zinc alloy, powder coated or chrome plated and steel, zinc plated

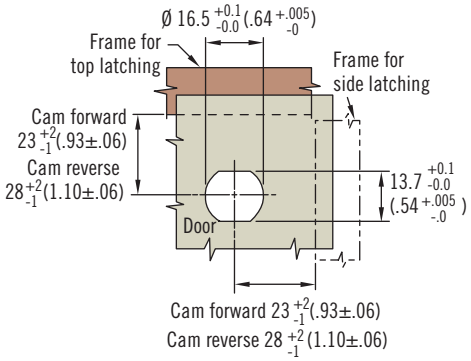
Performance Details

Max. static load: 670 N (150 lbf)

Notes

Larger sizes available, visit www.southco.com/62





Part Number Selection

62 - 30 - G F

F Finish

1 Polished chrome
2 Brushed chrome
5 Black powder coated

G Grip	Min.	Max.	Cam Type
1	0 (0)	5 (.20)	Deep offset cam, forward
	45 (1.77)	55 (2.16)	Deep offset cam, reversed
2	5 (.20)	15 (.59)	Offset cam, forward
	35 (1.37)	45 (1.77)	Offset cam, reversed
3	15 (.59)	25 (.98)	Shallow forward
	25 (.98)	35 (1.37)	Shallow reversed

Dimensions in millimeters (inch) unless otherwise stated

M1 20 Series Compression Latch

Medium · Cast 316 stainless steel · Lift & turn · Adjustable grip

- **Consistent pre-set compression**
- **Easy grip adjustment**
- **Flush round hole install**

Material and Finish

Cast 316 grade stainless steel

Performance Details

Short cam
Max. static load: 460 N (103 lbf)

Long cam
Max. static load: 350 N (78 lbf)

Sealing Notes

NEMA 4/IP-66 sealing is achieved by using supplied flange gasket

Keys

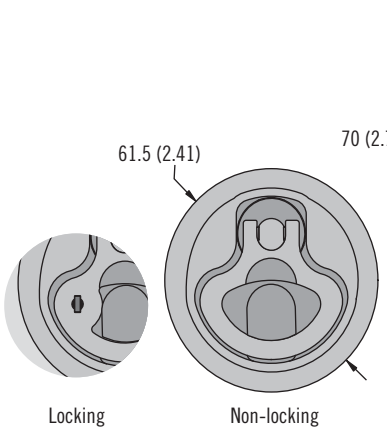
Lock style 8
Part number: M1-546

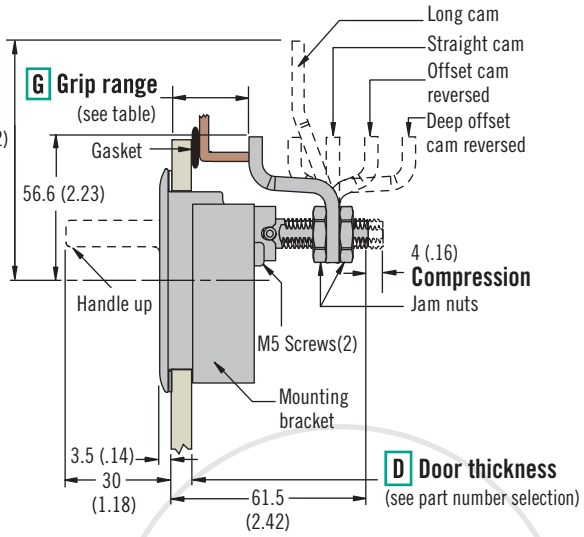
Lock style 9

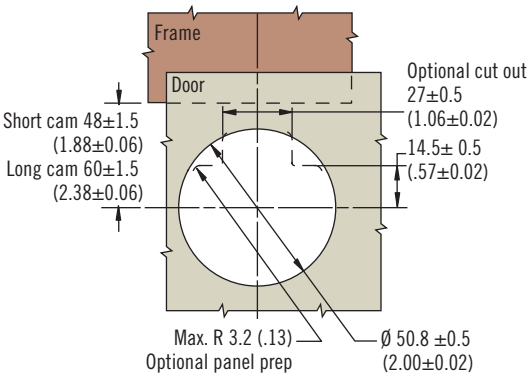
Part number: M1-525-39-S008

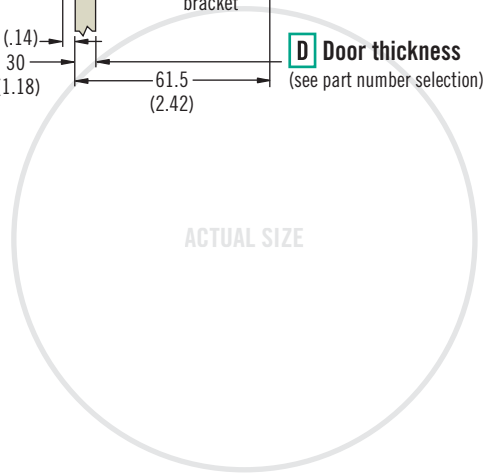
Part Number Selection

See page 151 for complimentary styled push to close version









L Lock style

- **3** Non-locking
- **8** Locking (2 keys supplied)
- **9** Key-locking keyed alike S008 (2 overmolded keys supplied)

M1 - 20 - L D - G 8

D	Door Thickness	Grip Adjustment Value
1	2 - 12 (.075 - .475)	19 (.75)
2	12 - 22.5 (.475 - .885)	9 (.35)
3	18.5 - 29 (.73 - 1.14)	2.5 (.10)

G Grip Range		
Short cam		
5	21 - 28 (.83 - 1.10)	Deep offset forward
4	27 - 40 (1.06 - 1.57)	Offset forward
3	39 - 52 (2.01 - 2.52)	Straight
4	51 - 64 (2.01 - 2.52)	Offset reversed
5	63 - 76 (2.48 - 3.00)	Deep offset reversed
Long cam		
8	21 - 28 (.83 - 1.10)	Deep offset forward
7	27 - 40 (1.06 - 1.57)	Offset forward
6	39 - 52 (2.01 - 2.52)	Straight
7	51 - 64 (2.01 - 2.52)	Offset reversed
8	63 - 76 (2.48 - 3.00)	Deep offset reversed

Note

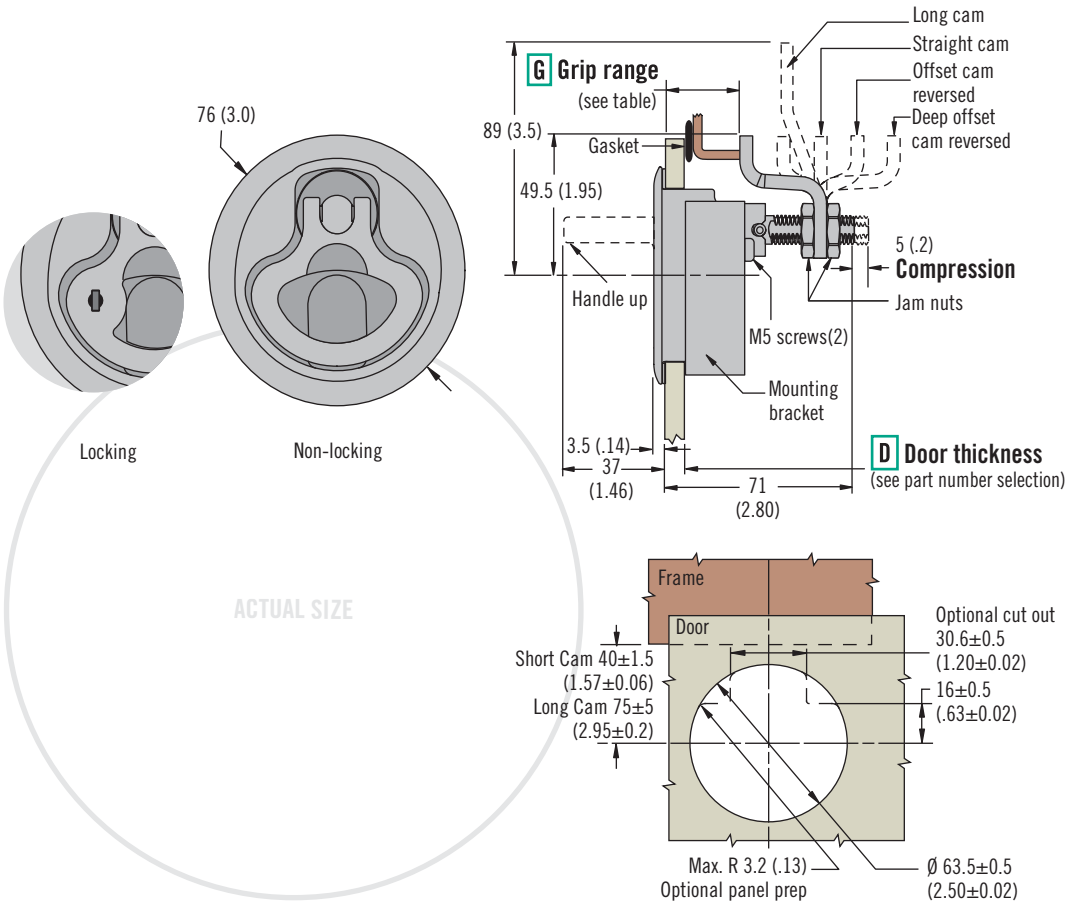
All grips of 35 (1.38) or below, highlighted in ▭, in the table above, are potentially a function of door thickness and may not always be achievable, depending on actual door thickness used. In this range of grips, the minimum achievable grip will be limited to actual door thickness + grip adjustment value, or the minimum values shown in the table, whichever is greater.

Examples:
For a door thickness of 4 mm, the minimum achievable grip is 23 and is achieved with a deep offset cam in the forward position. (4 + 19 = 23)

For a door thickness of 20 mm, the minimum achievable grip is 29 and is achieved with an offset cam in the forward position. (20 + 9 = 29)

M1 25 Series Compression Latch

Large · Cast 316 stainless steel · Lift & turn · Adjustable grip



- **Consistent pre-set compression**
- **Easy grip adjustment**

Material and Finish

Stainless steel cast 316 grade

Performance Details

Short cam
Max. static load: 1010 N (227 lbf)

Long cam
Max. static load: 350 N (78 lbf)

Sealing Notes

NEMA 4/IP-66 sealing is achieved by using supplied flange gasket

Keys

Lock style 8
Part number: M1-546

Lock style 9

Part number: M1-525-39-S008

Part Number Selection

See page 152 for complimentary styled push to close version

L Lock style

- **3** Non-locking
- **8** Locking (2 keys supplied)
- **9** Key-locking keyed alike S008 (2 overmolded keys supplied)

M1 - 25 - L D - G 8

D	Door Thickness	Grip Adjustment Value
1	2 - 12 (.075 - .475)	21.5 (.85)
2	12 - 22.5 (.475 - .885)	11.5 (.45)
3	18.5 - 29 (.73 - 1.14)	4 (.12)

G Grip Range		
Short cam		
5	23.5 - 35 (.92 - 1.38)	Deep offset forward
4	34 - 48 (1.34 - 1.89)	Offset forward
3	47 - 61 (1.85 - 2.40)	Straight
4	60 - 75 (2.36 - 2.95)	Offset reversed
5	74 - 88 (2.91 - 3.47)	Deep offset reversed
Long cam		
8	23.5 - 35 (.92 - 1.38)	Deep offset forward
7	34 - 48 (1.34 - 1.89)	Offset forward
6	47 - 61 (1.85 - 2.40)	Straight
7	60 - 75 (2.36 - 2.95)	Offset reversed
8	74 - 88 (2.91 - 3.47)	Deep offset reversed

Note

All grips of 33.5 (1.32) or below, highlighted in ▭, in the table above, are potentially a function of door thickness and may not always be achievable, depending on actual door thickness used. In this range of grips, the minimum achievable grip will be limited to actual door thickness + grip adjustment value, or the minimum values shown in the table, whichever is greater.

Examples:

For a door thickness of 4 mm, the minimum achievable grip is 25.5 and is achieved with a deep offset cam in the forward position. (4 + 21.5 = 25.5)

For a door thickness of 20 mm, the minimum achievable grip is 31.5 and is achieved with a deep offset cam in the forward position. (20 + 11.5 = 31.5)

C5 Compression Latch

Large · Sealed lever latch

- **Low profile when latched**
- **Easy grip adjustment**
- **Push button actuation**

Material and Finish

Zinc alloy, black powder coated and steel, zinc plated

Performance Details

Max. static load: 445 N (100 lbf)

Sealing Notes

NEMA 4/IP-65 sealing is achieved by using optional flange gasket and sealing the mounting screw threads

Accessories

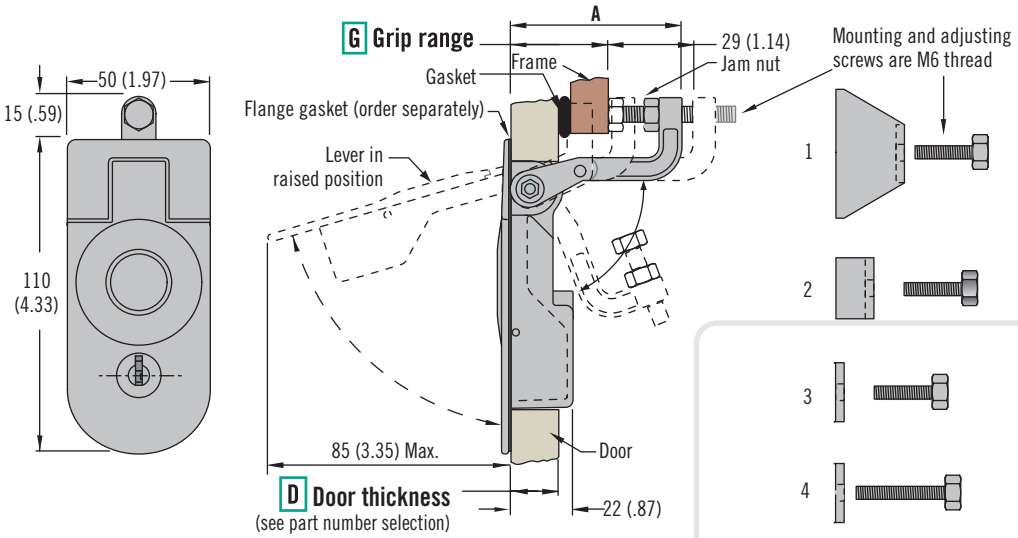
Dust cover:
(add 2.2 (.086) to door thickness)
Part number: C5-0-34682
Flange Gasket:
(add 0.8 (0.03) to door thickness)
Part number: C5-82

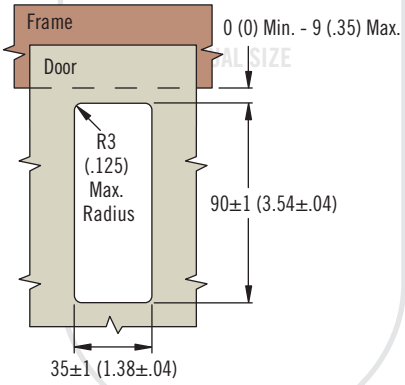
Keys

See page 58

Notes

For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 - 183





L Lock styles

Key access | 4 (.16) Hex recess | No.2 Phillips recess | Railway standard

Part Number Selection

C5 - L D - G 5 - P

L Lock style
1 Non-locking
2 Locking without dust shutter, keyed alike CH751 (two flat keys supplied)
3 Locking with dust shutter, keyed alike CH751 (two flat keys supplied)
9 Locking without lock core (order separately see pages 182 - 183)
4 4 (.16) Hex recess
5 No. 2 Phillips recess
6 Railway standard

D Door thickness
1 1 - 11 (.04 - .43)
2 11 - 21 (.43 - .83)
3 21 - 31 (.83 - 1.22)
4 31 - 41 (1.22 - 1.61)

P Packaging option
3 Latches are sold layer packed
Omit for individually packaged latches

G Grip Range			A
1	1 - 14 (.04 - .55)	Door thickness option 1 and 2 only	29 (1.14)
2	14 - 29 (.55 - 1.14)	Door thickness option 1, 2 and 3 only	44 (1.73)
3	29 - 45 (1.14 - 1.77)		60 (2.36)
4	45 - 57 (1.77 - 2.25)		72 (2.84)

Dimensions in millimeters (inch) unless otherwise stated

INFO CLICK www.southco.com/C5

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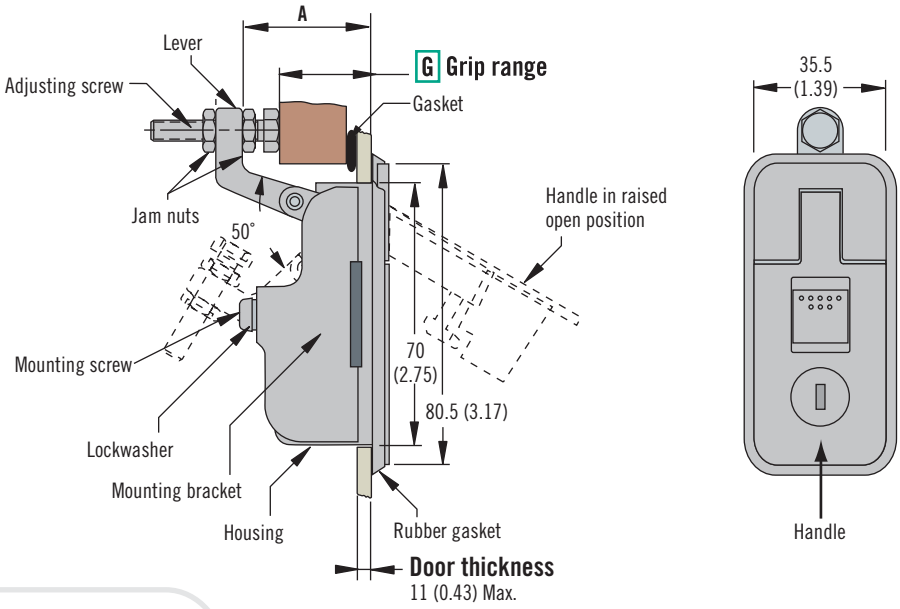
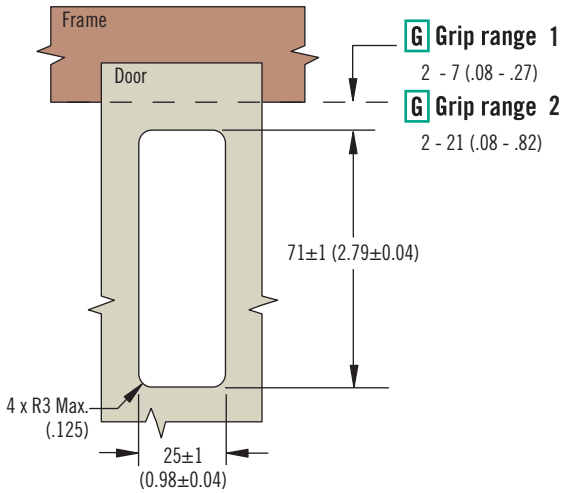
C5 Compression Latch

Small · Sealed lever latch



ACTUAL SIZE



- **Low profile when latched**
- **Easy grip adjustment**
- **Push button actuation**

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Max. static load:
Grip 1 - 25 (.04 - .98):
290 N (65 lbf)
Grip 15 - 30 (.59 - 1.18):
170 N (40 lbf)

Sealing Notes

Environmental sealing is achieved by sealing the mounting screw threads

Keys

See page 58

Part Number Selection

C5 - M - L 1 - G F

F Finish
- **5** Black powder coated
- **12** Chrome plated

L Lock style
- **1** Non-locking
- **3** Key-locking with dust shutter, keyed alike CH751 (two flat keys supplied)

	G Grip Range	A
1	1 - 25 (.04 - .98)	36.5 (1.44)
2	15 - 30 (.59 - 1.18)	40.0 (1.57)

Dimensions in millimeters (inch) unless otherwise stated

C2 Compression Latch

Lever latch

- **Low profile when latched**
- **Easy grip adjustment**
- **Push button actuation**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 200 N (45 lbf)

Installation Notes

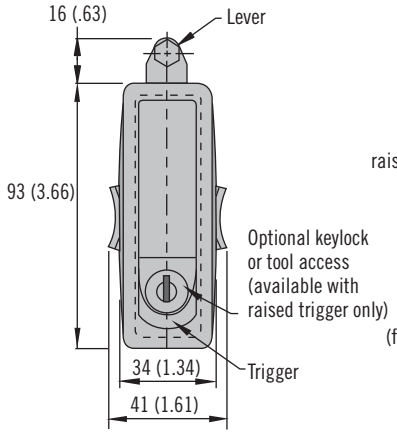
* Serrated Mounting Screw M5 x 16. For door thickness greater than 5 (.20) calculate screw length using the following formula: Door thickness + 12 (.47)

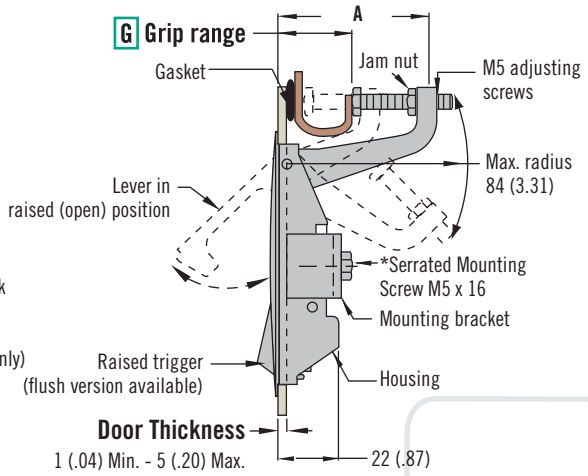
Keys

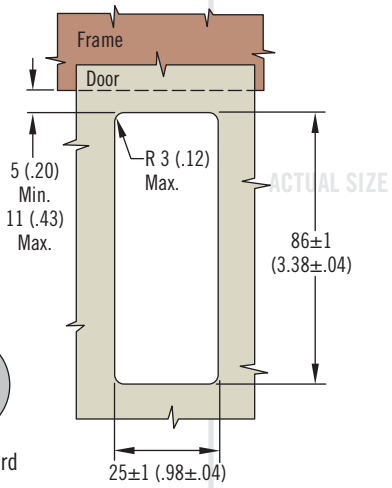
See page 58

Notes

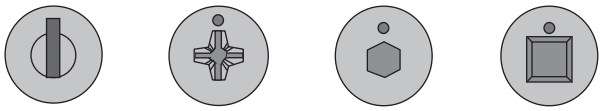
For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 - 183







L Lock Styles



Key-locking keyed CH751 | No2 Phillips recess | 4 (.16) Hex recess | Rail Standard

Part Number Selection

L Lock style

- **1** Non-locking raised trigger
- **2** Key-locking raised trigger keyed CH751 (two flat keys supplied)
- **3** Flush trigger non-locking
- **4** 4 (.16) Hex recess raised trigger
- **10** No. 2 Phillips raised trigger
- **13** Locking without lock core (see pages 182 - 183 for lock core options)
- **14** Railway standard

C2 - 3 G - L F - P

F Finish

- **1** Textured chrome
- **5** Black powder coated

P Packaging option

- **3** Latches are sold layer packed. Omit for individually packaged latches.

G Grip Range		A
2	1 - 24 (.04 - .95)	35 (1.38)
3	23 - 46 (.91 - 1.81)	57 (2.24)

INFO CLIC www.southco.com/C2

Dimensions in millimeters (inch) unless otherwise stated

A7 Compression Latch

Lever latch · Over-center action

- **Intuitive operation**
- **Built in leverage helps open stuck doors**
- **Consistent gasket compression**

Material and Finish

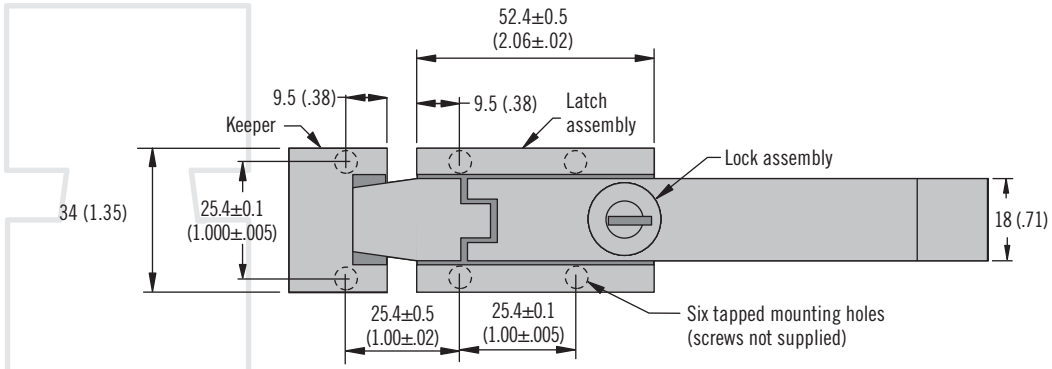
Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

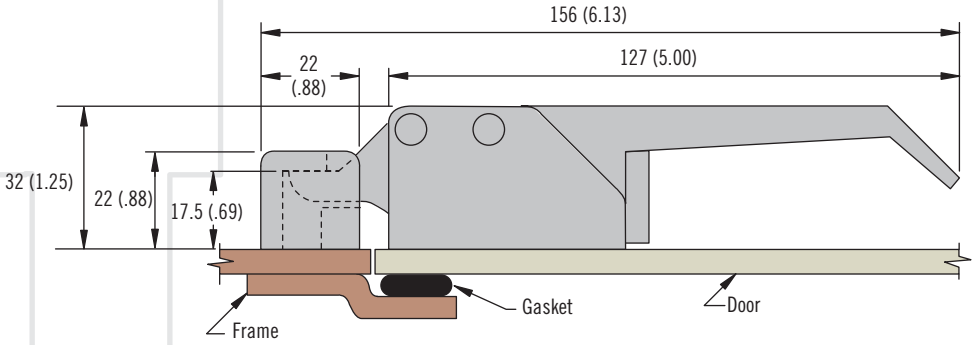
Max. static load: 2200 N (500 lbf)

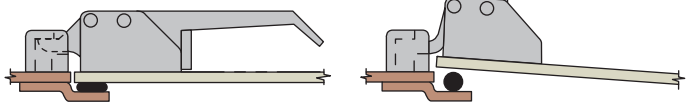
Keys

See page 58

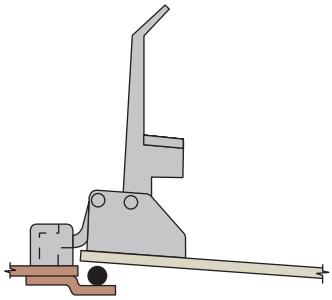


ACTUAL SIZE





Latched 9.5 (.38) **compression**



Mechanical ejection 7.9 (.31)

Part Number Selection

L **Lock Style**
- **1** Non-locking
- **2** Key-locking keyed alike CH751 (two flat keys supplied)

F **Finish**
- **20** Black powder coated
- **30** Chrome plated
- **75** Satin silver coated

A7 - 1 0 - 3 T L - F

T **Tapped mounting**
- **0** Tapped mounting hole 10-32UNC x .38 deep
- **5** Tapped mounting hole M5 x 0.8 x 9.5 deep

27 · 48 · Compression Latches

Self-adjusting · Single hole mount

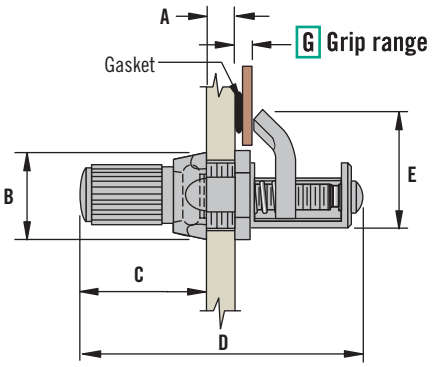
- **Two sizes available**
- **Easy grip adjustment**
- **Multiple head styles**

Material and Finish

Steel, zinc plated or stainless steel

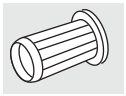
Performance Details

27 Working load: 155 N (35 lbf)
48 Working load: 220 N (50 lbf)

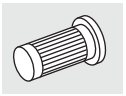


Size	A	B	C	D	E
27 Series Miniature	4.8 (.19) Max.	10.3 (.41) Max.	17.5 (.69) Max.	31.8 (1.25)	13.9 (.55)
48 Series Small	4.8 (.19) Max.	21 (.81) Max.	19 (.75) Max.	44 (1.73)	25.3 (.99)

Nylon knob



Knurled



Slotted

Hex recess

Phillips recess

27 Series · Miniature

Material	G Grip Range		Knurled	Slotted	Hex Recess	Nylon Knob
	Min.	Max.				
Steel	0.8 (.03)	7.1 (.28)	27-99-123-10 *	27-10-501-10 *	27-10-701-10 *	27-10-311-10 *
Stainless steel	0.8 (.03)	7.1 (.28)	27-99-123-20 *	27-10-501-20 *	27-10-701-20 *	27-10-311-20 *

* all part numbers shown are for clockwise rotation. For specification and ordering details visit: www.southco.com/27

48 Series · Small

Material	G Grip Range		Nylon Knob	Slotted	Hex Recess	Phillips Recess
	Min.	Max.				
Steel	2.4 (.09)	9.5 (.38)	48-10-401-10	48-11-R	48-81-R	48-91-R
Steel	8.7 (.34)	15.9 (.63)	48-10-402-10	48-12-R	48-82-R	48-92-R
Steel	15.1 (.59)	22.2 (.88)	48-10-403-10	48-13-R	48-83-R	48-93-R

For specification and ordering details visit: www.southco.com/48

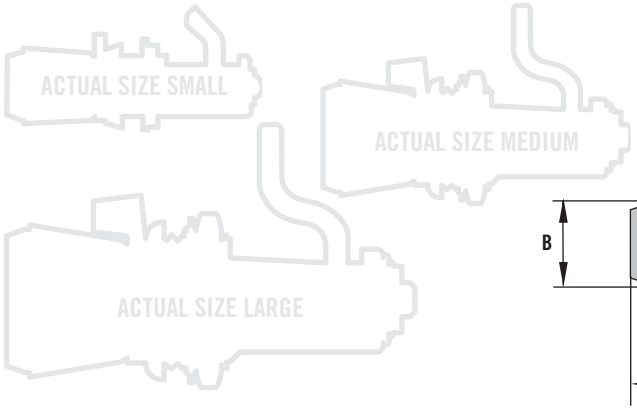
Other options available. For complete details on variety, part numbers, installation and specification, go to

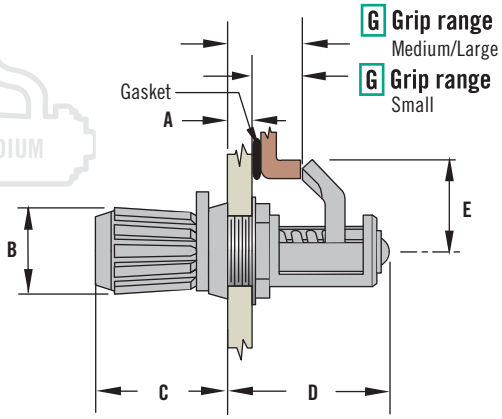
INFO CLIC *www.southco.com/27*
www.southco.com/48

Dimensions in millimeters (inch) unless otherwise stated

16 Compression Latch

Self-adjusting · Cam indicator · Knob actuated · Single hole mount





Size	G Grip Range		Part Number
	Min.	Max.	
Small	3.2 (.12)	10.3 (.41)	16-10-511-16
Medium	1.6 (.06)	8.7 (.34)	16-10-411-14
	7.1 (.28)	14.3 (.56)	16-10-412-14
Large	1.6 (.06)	12.7 (.50)	16-10-311-14
	9.5 (.37)	20.6 (.81)	16-10-312-14

Size	A. Max.	B	C	D	E
Small	2.4 (.09)	9.9 (.39)	15.5 (.61)	18.3 (.72)	10 (.40)
Medium	2.4 (.09)	13.5 (.53)	17.3 (.68)	23.4 (.92)	19 (.75)
Large	4.8 (.190)	19 (.75)	21.8 (.86)	32.9 (1.3)	23 (.91)

- **Three sizes available**
- **Easy grip adjustment**

Material and Finish

Steel, zinc plated

Performance Details

Small: Working load: 135 N (30 lbf)

Medium: Working load: 220 N (50 lbf)

Large: Working load: 335 N (75 lbf)

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/16

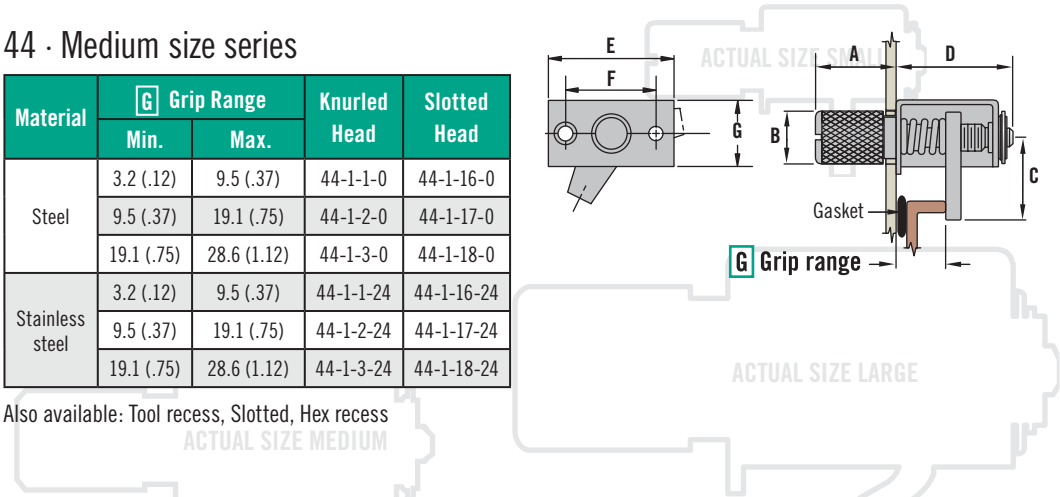
43 · 44 · 14 Compression Latches

Self-adjusting · Three hole mount

44 · Medium size series

Material	G Grip Range		Knurled Head	Slotted Head
	Min.	Max.		
Steel	3.2 (.12)	9.5 (.37)	44-1-1-0	44-1-16-0
	9.5 (.37)	19.1 (.75)	44-1-2-0	44-1-17-0
	19.1 (.75)	28.6 (1.12)	44-1-3-0	44-1-18-0
Stainless steel	3.2 (.12)	9.5 (.37)	44-1-1-24	44-1-16-24
	9.5 (.37)	19.1 (.75)	44-1-2-24	44-1-17-24
	19.1 (.75)	28.6 (1.12)	44-1-3-24	44-1-18-24

Also available: Tool recess, Slotted, Hex recess



Size	A	B	C	D	E	F	G
Small 43	15.1 (.59)	8.9 (.35)	15.9 (.63)	22.2 (.88)	28.6 (1.13)	20.6 (.81)	13.9 (.55)
Medium 44	23.8 (.94)	14.6 (.57)	25.4 (1.0)	32.1 (1.27)	44.5 (1.75)	31.8 (1.25)	22.2 (.88)
Large 14	28.6 (1.13)	22.7 (.90)	34 (1.34)	44.5 (1.75)	63.5 (2.5)	47.6 (1.87)	33.3 (1.31)

- **Three sizes available**
- **Three hole installation**
- **Easy grip adjustment**

Material and Finish

Steel, zinc plated or stainless steel

Performance Details

Working Load:

43 Small: 330 N (75 lbf)

44 Medium: 490 N (110 lbf)

14 Large: 670 N (150 lbf)

Other options available. For complete details on variety, part numbers, installation and specification, go to

www.southco.com/43

www.southco.com/44

www.southco.com/14

INFO CLIC

Dimensions in millimeters (inch) unless otherwise stated

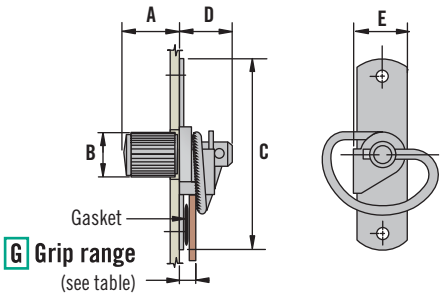
57 Compression Latch

Self-adjusting · Spring latch series

- **Four sizes available**
- **Three hole installation**
- **Accommodates grip variances**

Material and Finish

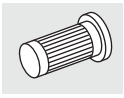
Steel, zinc plated or stainless steel



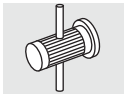
Size	A	B	C	D	E
Miniature	11.9 (.47) Max.	13.5 (.53) Max.	27 (1.06)	7.5 (.03)	8.5 (.33)
Small	15.1 (.59) Max.	14.7 (.58) Max.	39.7 (1.56)	11.1 (.44)	11.6 (.46)
Medium	19.1 (.75) Max.	24.1 (.95) Max.	58.7 (2.31)	17.5 (.69)	17.5 (.69)
Large	26.2 (1.03) Max.	28.2 (1.11) Max.	88.9 (3.5)	25 (.98)	26.2 (1.03)

Nylon knob

Knurled



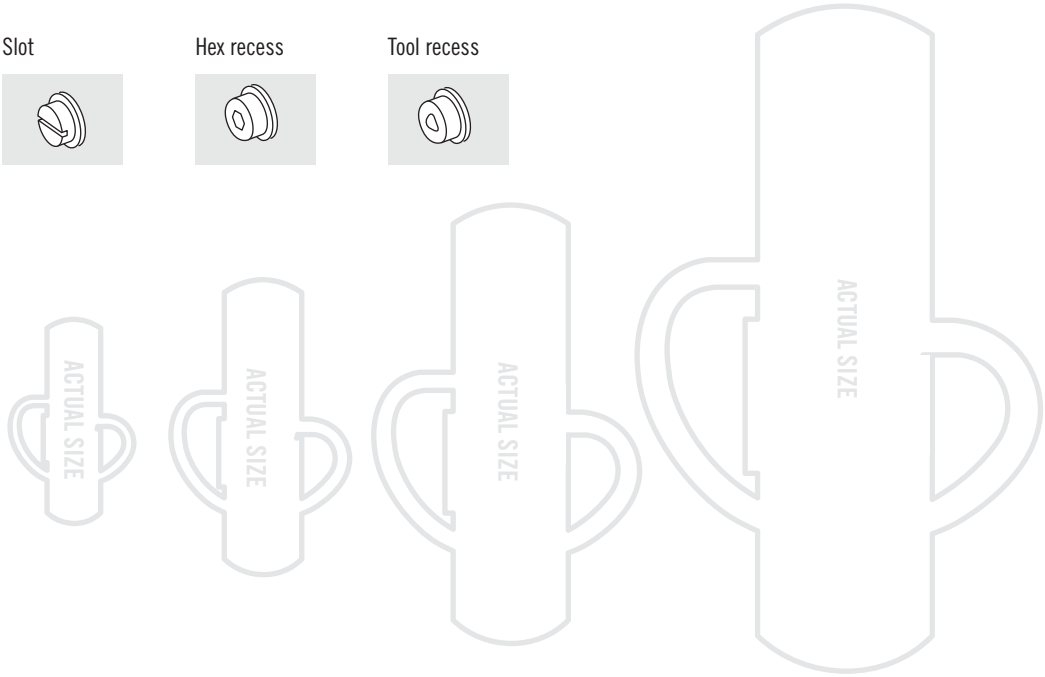
T-bar



Slot

Hex recess

Tool recess



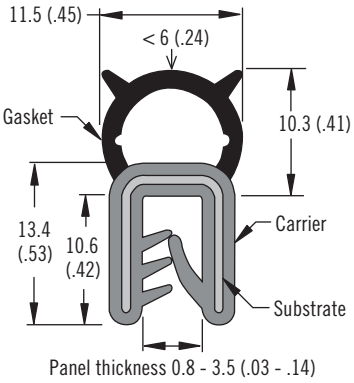
57 Series

Size	G Grip Range		Knurled	Slotted	Nylon Knob
	Min.	Max.			
Mini	1.2 (.05)	4.3 (.17)	57-20-201-10	57-20-101-10	57-20-401-10
Small	1.2 (.05)	6.4 (.25)	57-30-201-10	57-30-101-10	57-30-401-10
Medium	1.6 (.06)	9.5 (.38)	57-10-201-10	57-10-101-10	57-10-401-10
Medium (stainless)	1.6 (.06)	9.5 (.38)	57-10-201-40	57-10-101-40	~
Large	2.4 (.09)	14.3 (.56)	~	57-40-101-10	57-40-401-10

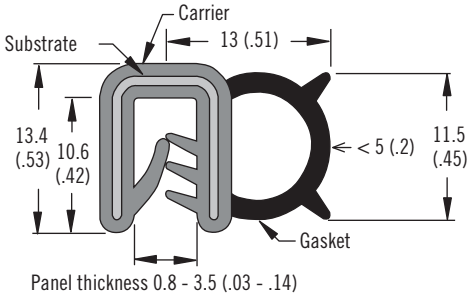
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/57*

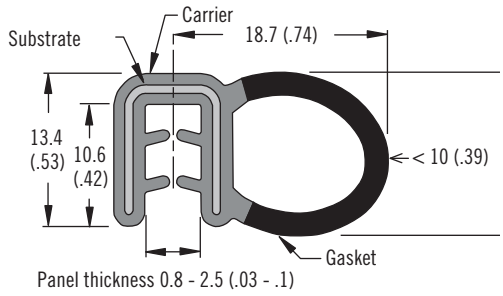
Dimensions in millimeters (inch) unless otherwise stated



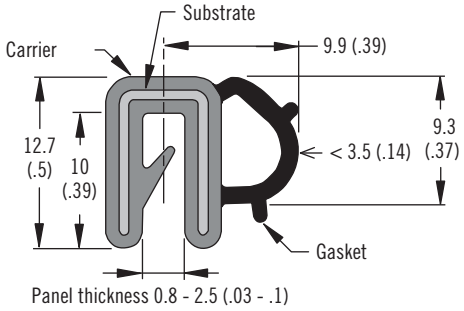
Part Number	Coil Length Meters (Feet)
GA-007-82-M500	50 (164)



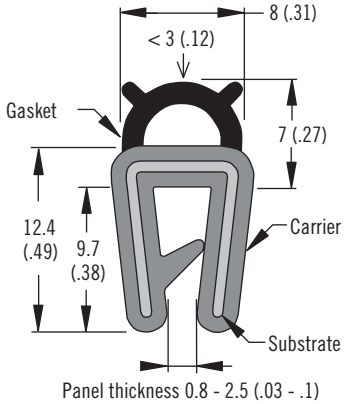
Part Number	Coil Length Meters (Feet)
GA-202-82-M500	50 (164)



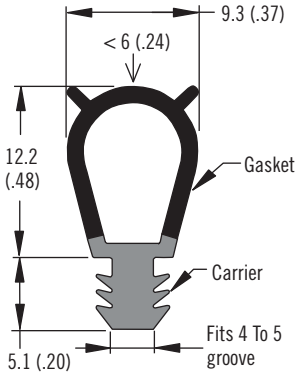
Part Number	Coil Length Meters (Feet)
GA-204-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-206-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-209-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-704-81-M500	50 (164)

- **Broad application range**
- **Multiple industry standard profiles**
- **Clip-on or groove mount**

Material and Finish

Gasket: EPDM Sponge, black
Carrier: 70 Durometer EPDM, black
Substrate: Steel wire

Performance Details

Flammability Rating: UL94-HB

Notes

Max. recommended compression: see "<" symbol in drawings

Other profiles available

CAM LATCHES & SWINGHANDLES

Fixed Grip

Page 86 - 101

SOUTHCO® fixed grip cam latches offer the most flexible and versatile latch solution thanks to their modular design. Their 90° cam rotation provides quick, easy actuation that is also readily adaptable to multi-point latching. Combining three basic components in material, finish or geometry make them suitable for a wide range of applications.

- Cost effective, easy to configure and install
- Numerous hand, key and tool actuation styles
- Wide material choice
- Provide defined grip
- Sealed versions to meet NEMA / IP standards

E5

E5

E5

E5

E5

E5

E5

Adjustable Grip

Page 102 - 111

Multiple models of *SOUTHCO®* adjustable grip cam latches use threaded cams, jam nuts, or set screws to provide adjustment over a generous grip range. Their 90° cam rotation provides quick, easy actuation that is also readily adaptable to multi-point latching. This enables end-users to compensate for material or fabrication variances in order to satisfy design specifications. It also provides the opportunity for field adjustment of grip dimensions to compensate for wear or misalignment.

- User controls grip adjustment
- One latch fits many applications, minimizing latch inventory requirements
- Wide range of mounting and actuation styles

69

61

24

01

68

68

92

Get the convenience of a swinghandle latch combined with exceptional versatility for single or multi-point latching. Many grip and security options are available. Durable latches are suitable for enclosures of all sizes.

Multi-point latching rods are available in rod-roller and standard tapered-end style. DIN lock cores and standard *SOUTHCO®* PK lock cores offer multiple key code options with hundreds of standard key codes and custom key code options.

Swinghandle for Single-Point Latching

Page 112 - 113

Cam Latches and Swinghandles

Selection guide

Use this selection guide to choose the right cam latch for your application

- Key-Locking Available
- Key-Choice System
- NEMA / IP Rated
- Multi-Point Latching
- Padlockable
- Stainless Steel
- Vibration Resistant

		Product Class	MATERIAL: Stainless Steel	Zinc and Steel	Plastic
FIXED GRIP PAGES 86 - 97		E5	✔	✔	✔
		E5		✔	
ADJUSTABLE GRIP PAGES 102 - 111		92		✔	
		68		✔	
		01		✔	
		24		✔	
		69		✔	
		61		✔	✔
SWINGHANDLES PAGE 112 - 113		H3-50		✔	
		H3-60		✔	

INFO CLIC www.southco.com

Dimensions in millimeters (inch) unless otherwise stated

INSTALLATION			PERFORMANCE				ACCESS STYLE				
Round Hole Install	Flush / Low Profile	Max. Door Thickness	NEMA / IP Rated	Vibration Resistant	Max. Working Load	Grip Range	Key-Locking	Tool Operable	Key-Choice System	Padlockable	Multi-Point Capable
	✔	14 (.55)	✔	✔	300 - 670 N (67 - 150 lbf)	2 - 44 (.08 - 1.73)	✔	✔	✔	✔	✔
✔	✔	3.2 (.13)			330 N (74 lbf)	22.7 - 36.7 (.89 - 1.44)	✔		✔		✔
✔		3 (.12) With screws supplied			200 - 400 N (45 - 90 lbf)	16 - 44.5 (.63 - 1.75)	✔				✔
✔		3.2 (.13)			890 - 1300 N (200 - 300 lbf)	0 - 57 (0 - 2.25)					✔
	✔	9.5 (.38)			160 - 220 N (35-50 lbf)	0 - 28.6 (0) - 1.13)	✔				✔
	✔	7.9 (.31)			445 - 2670 N (100 - 600 lbf)	17.5 - 62 (.69 - 2.44)	✔				✔
		12.7 (.50)		✔	44 - 330 N (10 - 75 lbf)	3.2 - 61.9 (.13 - 2.44)					
✔	✔	50 (1.97)			110 N (25 lbf)	4 - 70 (.16 - 2.75)		✔			
	✔	3.2 (.13)	✔		250 N (56 lbf)	10.3 - 40.3 (.41 - 1.59)	✔	✔		✔	✔
	✔	3.2 (.13)	✔		250 N (56 lbf)	10.3 - 40.3 (.41 - 1.59)	✔	✔		✔	✔

Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latches

Overview

Modularity and simplicity in action

The *SOUTHCO*® E5 cam latch is a highly modular and easy to configure solution, suitable for a wide range of applications. By changing any of the three basic components (access style driver, latch body or cam) in either geometry or material, the E5 can be easily adjusted to suit most applications.

Product features

- **Cost effective, easy to design and install**
- **Multiple material and access options to suit multiple needs**
- **Sealed to meet NEMA 4 / IP65 standards**
- **Corrosion-resistant materials available**
- **Highly modular and configurable**

Match material and finish options for style and functionality requirements

A variety of materials and finishes to complement your application.
Die-cast zinc latch bodies standard finishes:

Chrome plated

Black powder coated

Corrosion resistant materials available

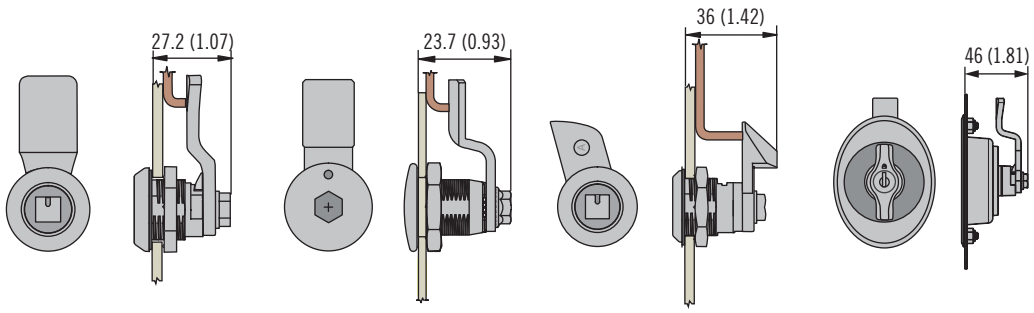
316 Stainless steel

Glass-filled nylon, black

304 Stainless steel

Select one of these four styles to fit your access requirements

There are four basic E5 styles to meet specific door configuration and mounting requirements in terms of design, depth, surface protrusion and operation style.



E5 Standard
Industry standard, highly modular and configurable options in a wide choice of materials, finishes and access styles.
(See pages 86 - 89, 92 - 95)

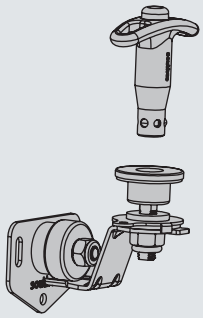
E5 Low Profile
Stylish, low profile design. Tool and hand operated access styles in zinc alloy chrome plated or black powder coated.
(See page 88)

E5 Push-to-Close
Standard E5 with the added functionality of a spring-loaded cam or actuator for single or multi-point operation. Provides quicker turn-to-open, push-to-close action. (See pages 96 - 97)

E5 Flush Cup Wing Knob
Stylish oval cup design. Provides a clean, flush outer surface. Ideal for multi-point actuation of large doors in aesthetically pleasing applications.
(See pages 90 -91)

E5 Removable handle version

- **Dual handle / key function**
- **Flush installation**
- **Premium finish and corrosion resistance**



See www.southco.com/e5a for details

INFO CLIC *www.southco.com*

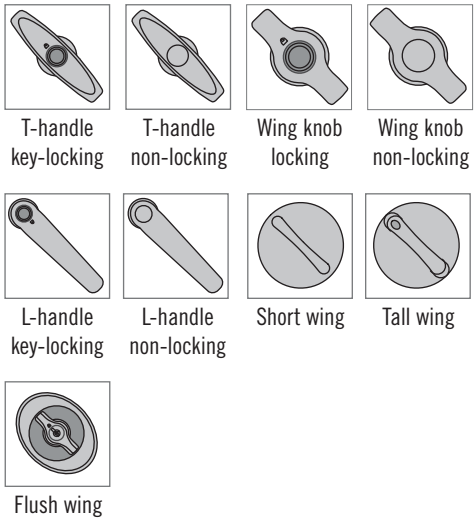
Dimensions in millimeters (inch) unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

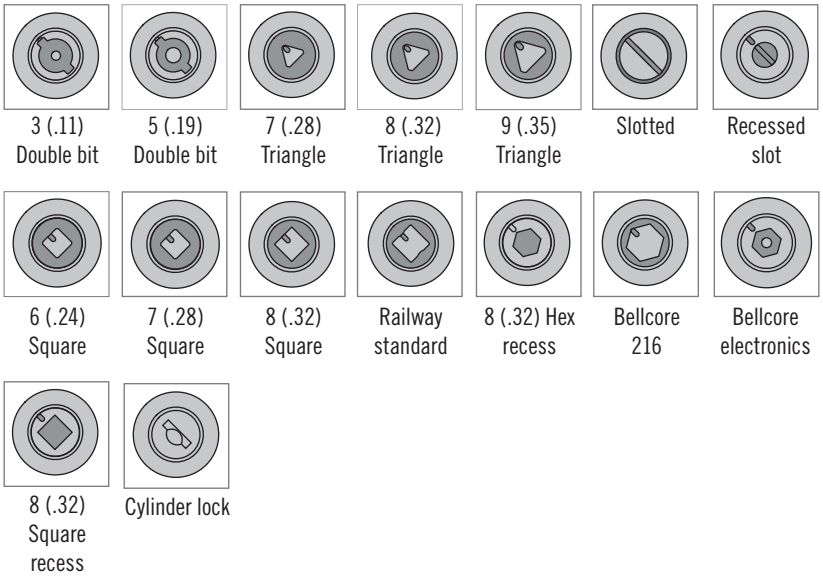
Choose from a wide range of operating styles to fit application and industry requirements.

- **Convenient hand-operated wing knob, T and L-handle styles for easy hand access**
- **Tool operated for restricted access, flush-mount or low-profile clearances, and industry-specifc standards**
- **Key operated for added security**

Hand operable

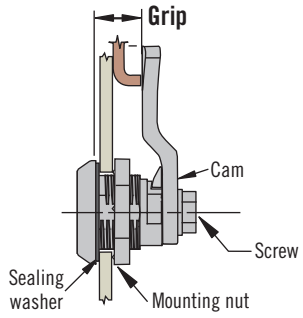


Tool / key operable



Determine your grip options for a perfect fit

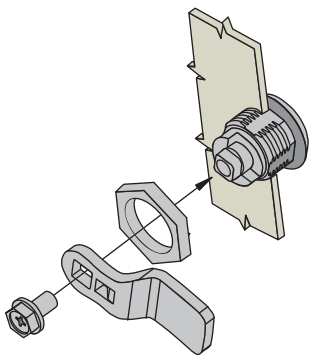
(Total grip includes the dimensions of all elements in-between the mounting surface of the latch and the latch's contact surface on the frame - including door thickness, compressed seals and gaskets, accessories, frame offset, etc.)



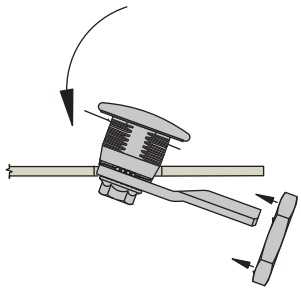
Selecting the right cam for the E5 is easy once the total grip is known. Southco provides a wide selection of standard cams in many grip increments, and special ones like hook and push-to-close cams. Standard cams provide vibration resistance and grip variation tolerance.

Installation

Some *SOUTHCO®* E5 latches are shipped latch and cam separately and some completely pre-assembled. See product pages for details.



E5 Standard
Latch and cam shipped separately.



E5 Low Profile
Latch and cam shipped pre-assembled.

Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch

Stainless steel · Tool operated · Fixed grip

- **Single hole install**
- **Latched / unlatched indicator**

Material and Finish

Stainless steel, 304 or 316 grade

Performance Details

Max. static load:
304 Stainless steel 550 N (124 lbf)
316 Stainless steel 670 N (150 lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

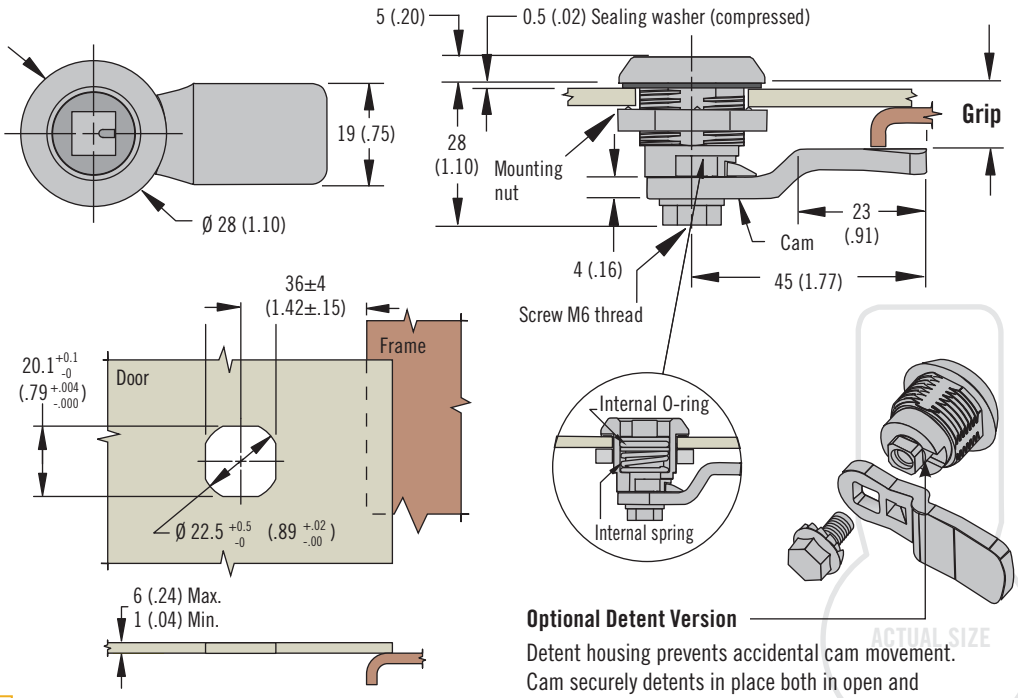
Installation Notes

Mounting nut:
Max. tightening torque:
20 N·m (177 in·lbf)

Screw Max. tightening torque
10 N·m (90 in·lbf)

Keys and Accessories

See page 98 - 101



Optional Detent Version

Detent housing prevents accidental cam movement. Cam securely detents in place both in open and closed positions.

H Head Styles

Part Number Selection

Order latch and cam separately

Latch Part Number (no cam)

E5 - B - H M - UU1

B Body
- **6** Normal housing
- **32** Detented housing

H Head style
- **00** Slotted
- **01** 8 (.32) Hex recess
- **02** 7 (.28) Triangle
- **03** 8 (.32) Triangle
- **04** 7 (.28) Square
- **05** 8 (.32) Square
- **06** 3 (.11) Double bit
- **07** 5 (.19) Double bit
- **13** Bellcore 216
- **22** Railway standard

M Material
- **24** 304 Stainless steel
- **27** 316 Stainless steel

Cam Part Number Table (order separately from latch)

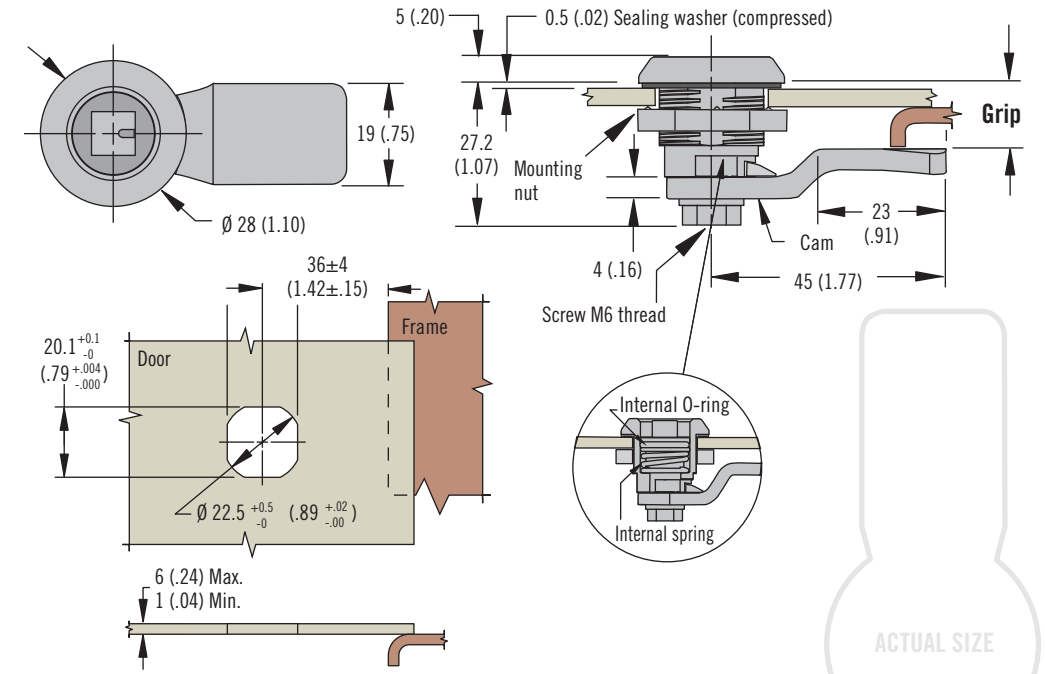
Grip +2(.08) - 0 (.00)	Part Number 304 Stainless steel	Part Number 316 Stainless steel	Grip +2(.08) - 0 (.00)	Part Number 304 Stainless steel	Part Number 316 Stainless steel	Grip +2(.08) - 0 (.00)	Part Number 304 Stainless steel	Part Number 316 Stainless steel	Grip +2(.08) - 0 (.00)	Part Number 304 Stainless steel	Part Number 316 Stainless steel
4 (.16)	E5-8003	E5-9003	14 (.55)	E5-8008	E5-9008	24 (.94)	E5-8013	E5-9013	34 (1.34)	E5-8018	E5-9018
6 (.24)	E5-8004	E5-9004	16 (.63)	E5-8009	E5-9009	26 (1.02)	E5-8014	E5-9014	36 (1.42)	E5-8019	E5-9019
8 (.31)	E5-8005	E5-9005	18 (.71)	E5-8010	E5-9010	28 (1.10)	E5-8015	E5-9015	38 (1.50)	E5-8020	E5-9020
10 (.39)	E5-8006	E5-9006	20 (.79)	E5-8011	E5-9011	30 (1.18)	E5-8016	E5-9016	40 (1.57)	E5-8021	E5-9021
12 (.47)	E5-8007	E5-9007	22 (.87)	E5-8012	E5-9012	32 (1.25)	E5-8017	E5-9017	42 (1.65)	E5-8022	E5-9022

Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch

Zinc · Tool operated · Fixed grip

- **Single hole install**
- **Latched / unlatched indicator**



Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 330 N (74 lbf)

Installation Notes

Mounting nut:
Max. tightening torque:
10 N·m (88 in·lbf)

Screw Max. tightening torque:
5 N·m (45 in·lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

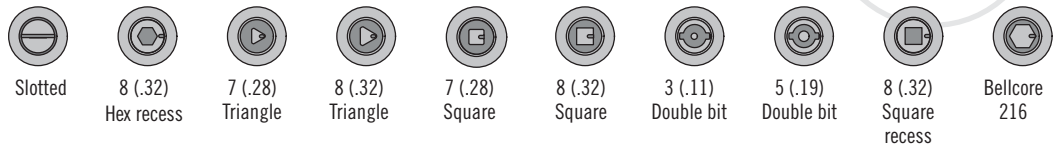
Keys and Accessories

See pages 98 - 101

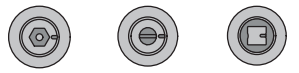
Notes

Suitable for push-to-close action
see pages 96 - 97

H Head Styles



Slotted · 8 (.32) Hex recess · 7 (.28) Triangle · 8 (.32) Triangle · 7 (.28) Square · 8 (.32) Square · 3 (.11) Double bit · 5 (.19) Double bit · 8 (.32) Square recess · Bellcore 216



Bellcore electronics · Recessed slot (tamper resistant) · Railway standard

Part Number Selection

Order latch and cam separately

Latch Part Number (no cam)

E5 - 6 - H F - UU1

H Head style
- **00** Slotted
- **01** 8 (.32) Hex recess
- **02** 7 (.28) Triangle
- **03** 8 (.32) Triangle
- **04** 7 (.28) Square
- **05** 8 (.32) Square
- **06** 3 (.11) Double bit
- **07** 5 (.19) Double bit
- **08** 8 (.32) Square recess
- **13** Bellcore 216
- **19** Bellcore electronics
- **21** Recessed slot (tamper resistant)
- **22** Railway standard

F Finish
- **2** Bright chrome
- **5** Black powder coated

Cam Part Number Table (order separately from latch)

Grip +2(.08) - 0 (.00)	Part Number	Grip +2(.08) - 0 (.00)	Part Number	Grip +2(.08) - 0 (.00)	Part Number	Grip +2(.08) - 0 (.00)	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022

E5 Cam Latch Low Profile

Zinc · Tool or hand operated · Fixed grip

- **Single hole install**
- **Latched / unlatched indicator**
- **Shipped fully assembled**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

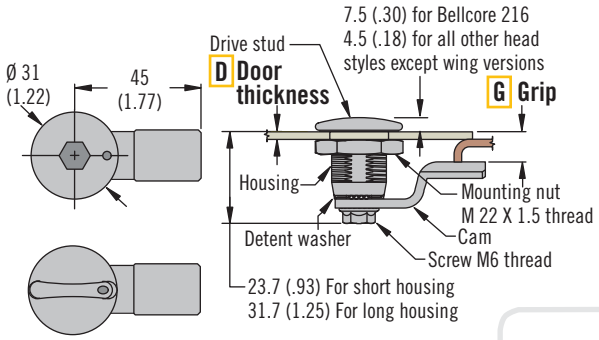
Max. static load: 330 N (74 lbf)

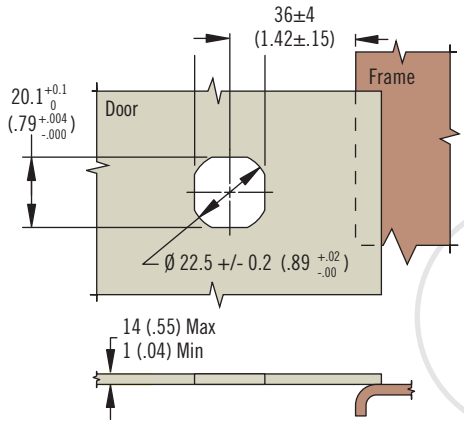
Installation Notes

Mounting nut
Max. tightening torque:
10 N·m (88 in·lbf)

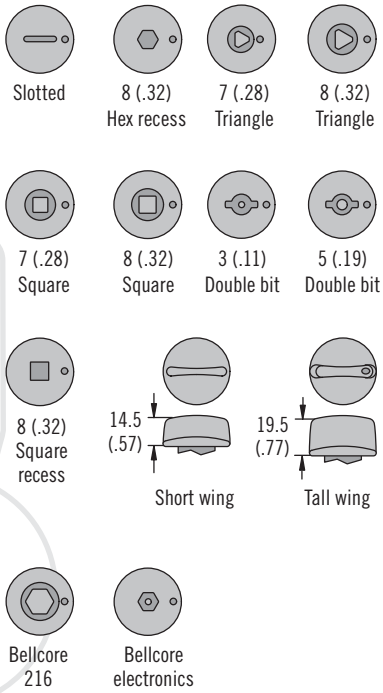
Keys and Accessories

See pages 98 - 101





H Head Styles



Part Number Selection

Latch is shipped fully assembled

For door thicknesses
1 - 6 (.039 - .236) grip must exceed door thickness range by 4 (.157) for assembled installation

When sealing option is selected add 0.4 (.02) to grip calculation to accommodate sealing washer

H Head style

- **00** Slotted
- **01** 8 (.32) Hex recess
- **02** 7 (.28) Triangle
- **03** 8 (.32) Triangle
- **04** 7 (.28) Square
- **05** 8 (.32) Square
- **06** 3 (.11) Double bit
- **07** 5 (.19) Double bit
- **08** 8 (.32) Square recess
- **11** Short wing
- **12** Tall wing
- **13** Bellcore 216
- **19** Bellcore Electronics

F Finish

- **1** Textured chrome
- **5** Black powder coated

S Sealing option

- **0** No o-ring or external seal
- **1** O-ring and external seal to meet NEMA 4/IP65 standards

E5 - D - H F - G S

D Door thickness range

- **1** 1 - 6 (.039 - .236) (short housing supplied)
- **2** 1 - 14 (.039 - (.551) (long housing supplied)

G Grip table

G	Grip		G	Grip		G	Grip		G	Grip	
	Short housing	Long housing		Short housing	Long housing		Short housing	Long housing		Short housing	Long housing
00	Do not use	6 (.24)	05	8 (.31)	16 (.63)	10	18 (.71)	26 (1.02)	15	28 (1.10)	36 (1.42)
01	Do not use	8 (.31)	06	10 (.39)	18 (.71)	11	20 (.79)	28 (1.10)	16	30 (1.18)	38 (1.50)
02	2 (.08)	10 (.39)	07	12 (.47)	20 (.79)	12	22 (.87)	30 (1.18)	17	32 (1.25)	40 (1.57)
03	4 (.16)	12 (.47)	08	14 (.55)	22 (.87)	13	24 (.94)	32 (1.25)	18	34 (1.34)	42 (1.65)
04	6 (.24)	14 (.55)	09	16 (.63)	24 (.94)	14	26 (1.02)	34 (1.34)	19	36 (1.42)	44 (1.73)

If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

E5 Cam Latch

Glass-filled nylon · Tool operated · Fixed grip

- **Single hole install**
- **Latched / unlatched indicator**

Material and Finish

Glass-filled nylon and steel, zinc plated

Performance Details

Max. static load: 300 N (67 lbf)

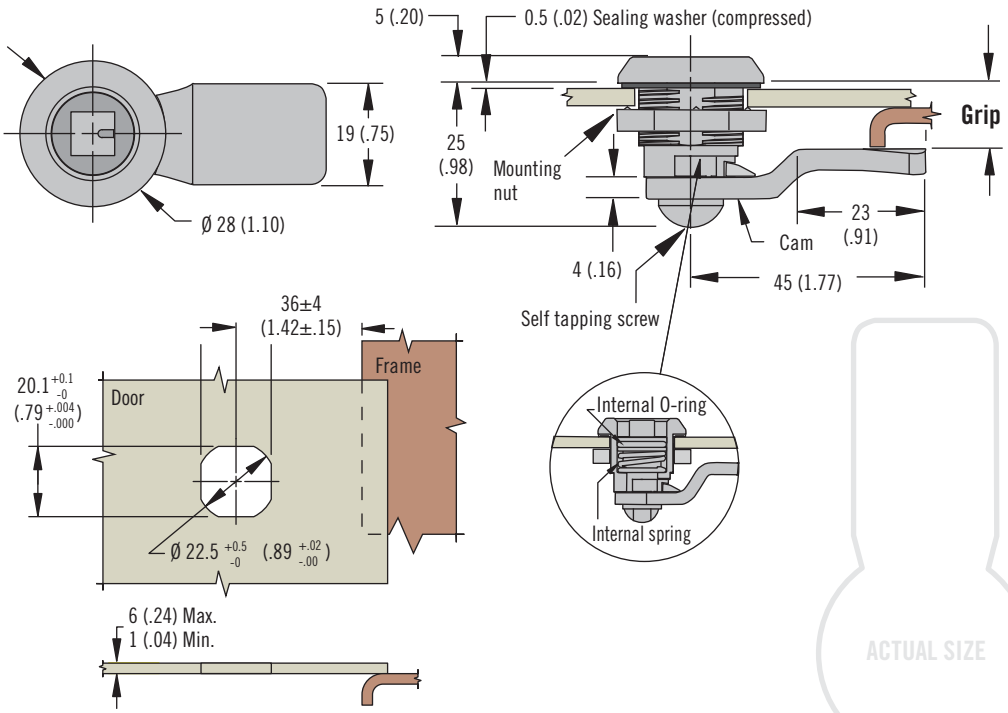
Installation Notes

Mounting nut:
Max. tightening torque:
4.25 N·m (38 in·lbf)

Screw Max. tightening torque:
3.1 N·m (27 in·lbf)

Keys and Accessories

See pages 98 - 101



H Head Styles

Slotted	7 (.28) Triangle	8 (.32) Triangle	7 (.28) Square	8 (.32) Square	3 (.11) Double bit	5 (.19) Double bit	6 (.24) Square	9 (.35) Triangle

Part Number Selection

Order latch and cam separately

Latch Part Number
(no cam)

E5 - 6 - H 3 - UU1

H Head style
00 Slotted
02 7 (.28) Triangle
03 8 (.32) Triangle
04 7 (.28) Square
05 8 (.32) Square
06 3 (.11) Double bit
07 5 (.19) Double bit
14 6 (.24) Square
15 9 (.35) Triangle

Cam Part Number Table (order separately from latch)

Grip +2(.08) - 0 (.00)	Part Number	Grip +2(.08) - 0 (.00)	Part Number	Grip +2(.08) - 0 (.00)	Part Number	Grip +2(.08) - 0 (.00)	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022

Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/E5

E5 Cam Latch

Zinc · Flush cup wing style · Hand operated · Fixed grip

- **Low profile**
- **Multiple key code options**

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Max. static load: 330 N (74 lbf)

Installation Notes

Mounting nuts 10-24 UNC (supplied) max. tightening torque: 3 N·m (25 in·lbf)

Screw max. tightening torque: 10 N·m (90 in·lbf)

Keys

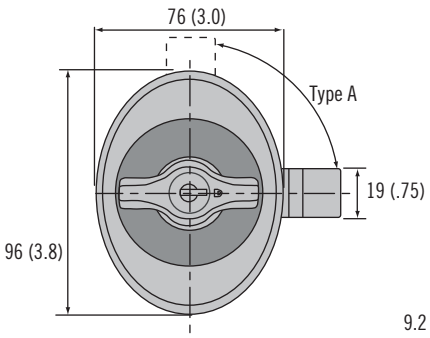
See page 98

Notes

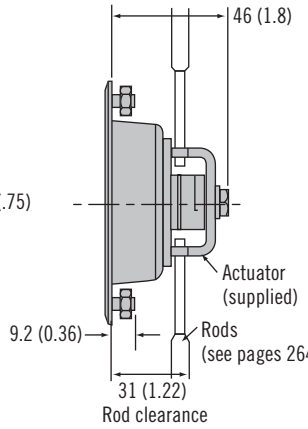
Two point push-to-close action: Internal spring causes return of wing knob and actuator to original latched position when wing knob is released after opening. Ideal for use with cables and rotary latches.

For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see pages 182 - 183

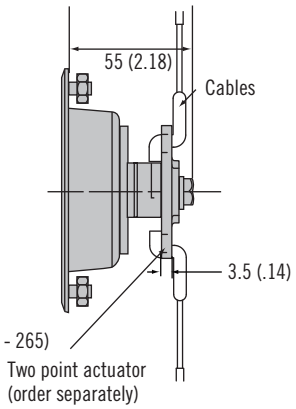
Single Point

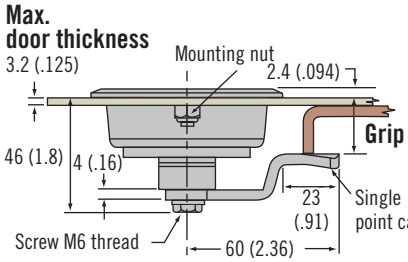


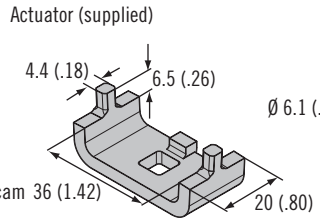
Two Point (for use with rods)

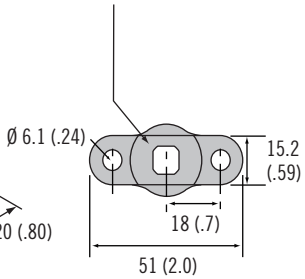


Two Point Push-to-Close Action (spring-loaded)

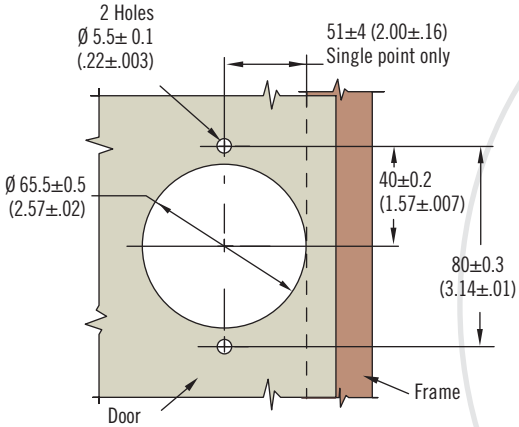








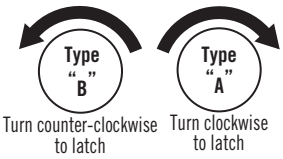
Type A (reverse frame for type B)



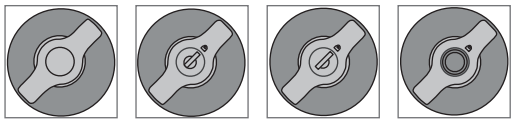
ACTUAL SIZE

Dimensions in millimeters (inch) unless otherwise stated

R Rotation



L Lock Styles



Non-locking | Key-locking key code CH751 | Key-locking key code R001 | Key-locking (order lock core separately)

Latch Part Number (no cam)

E5- 9 R - L 5 - A S - 1 K

S Sealing option
- **0** Non-sealing (when A = TR or TL)
- **1** Sealed (when A = UU or RR)

K Key options
- **0** No keys supplied (order separately)
- **3** 1 Overmolded key supplied

R Rotation
- **1** Type A clockwise to latch
- **2** Type B counter-clockwise to latch

A Assembly status
- **UU** Single point order cam separately
- **RR** Two point (for use with rods) - actuator supplied
- **TR** Type A two point push-to-close (order actuator separately)
- **TL** Type B two point push-to-close (order actuator separately)

L Lock Style
- **30** Non-locking (omit last 2 digits from part number)
- **31** Key-locking black lock core keyed alike CH751
- **32** Key-locking stainless steel scalp and shuttered lock core keyed alike R001
- **33** Without lock core (omit last 2 digits from part number) Order lock core separately, see pages 182 - 183

Cam Part Number Table (order separately from latch)			
Grip	Part Number	Grip	Part Number
22.7 (.89)	E5-6603	30.7 (1.21)	E5-6607
24.7 (.97)	E5-6604	32.7 (1.29)	E5-6608
26.7 (1.05)	E5-6605	34.7 (1.37)	E5-6609
28.7 (1.13)	E5-6606	36.7 (1.44)	E5-6610

If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated

Part Number Selection

Single point
Order latch and cam separately

Two point (for use with rods)
Order latch only
(two point actuator supplied)

Two point push-to-close action (spring loaded)
Order latch and actuator separately.
Actuator part number A5-91-201-11, see page 99 for details.
To be used with *SOUTHCO®* R4 rotary series latches and cables see pages 120 - 131.

E5 Cam Latch

Zinc · L-handle · Hand operated · Fixed grip

- **Single hole install**
- **Multiple key codes**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 330 N (74 lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Installation Notes

Mounting nut: Max. tightening torque: 10 N·m (88 in·lbf)

Screw max. tightening torque: 10 N·m (90 in·lbf)

Keys

See page 98

Notes

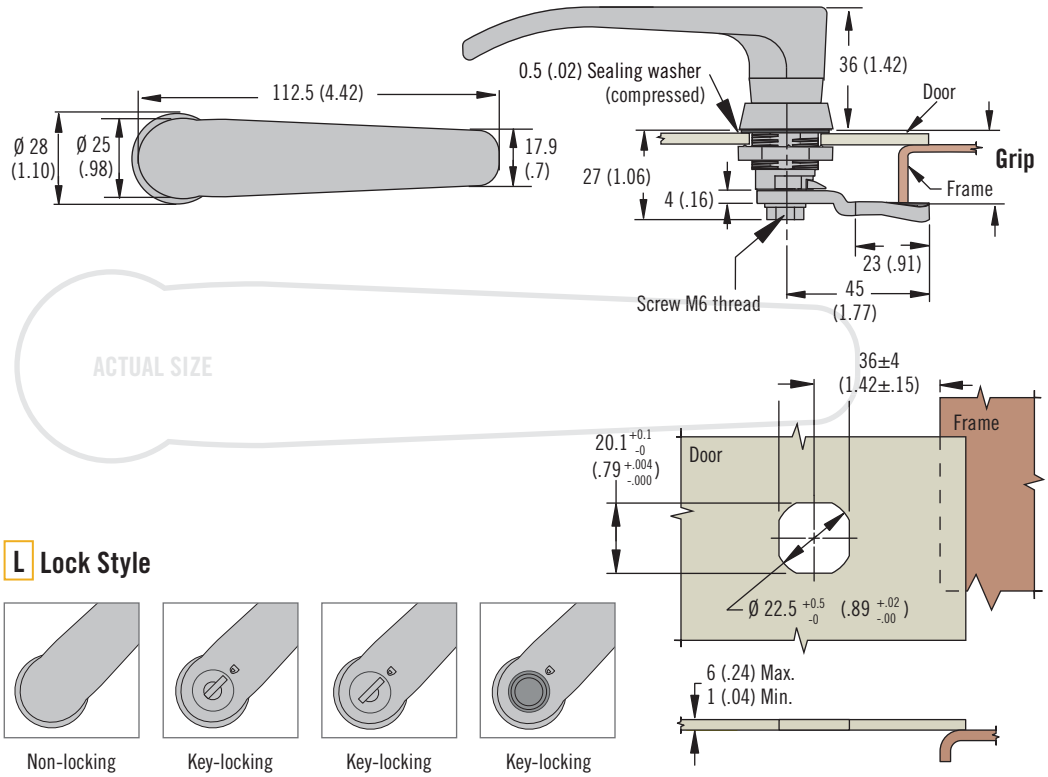
Suitable for push-to-close action see pages 96 - 97

For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 - 183

For adjustable grip versions see pages 102 - 103

Part Number Selection

Order latch and cam separately



L Lock Style

Non-locking | Key-locking Key code CH751 | Key-locking Key code R001 | Key-locking (order lock core separately)

Latch Part Number

(no cam)

E5 - 9 - L F - UU1 - 1 K

F Finish

- **2** Bright chrome
- **5** Black powder coated

L Lock style

- **70** Non-locking (omit last two digits of part number)
- **71** Keyed CH751 (lock core finish matches handle finish)
- **72** Keyed R001 (stainless steel scalp shuttered)
- **73** Without lock core (omit last two digits of part number)

Order lock core separately, see pages 182 - 183

K Key options

- **0** No keys supplied (order separately)
- **3** 1 Overmolded key supplied

Cam Part Number Table (order separately from latch)

Grip	Part Number	Grip	Part Number	Grip	Part Number	Grip	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022

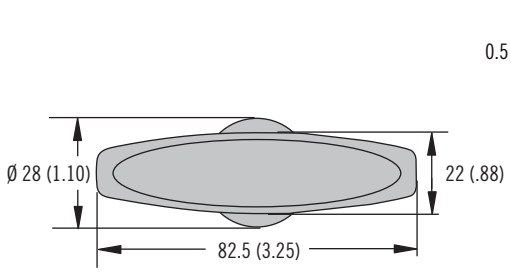
If grip falls between two choices, use the smaller option

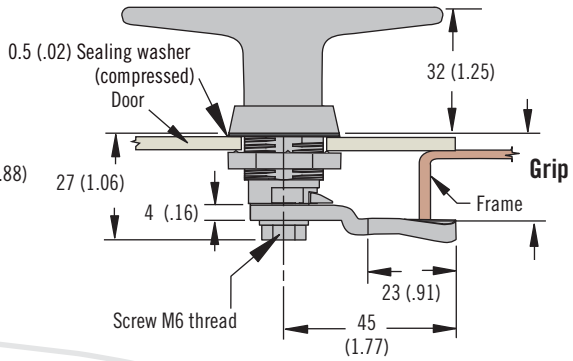
Dimensions in millimeters (inch) unless otherwise stated

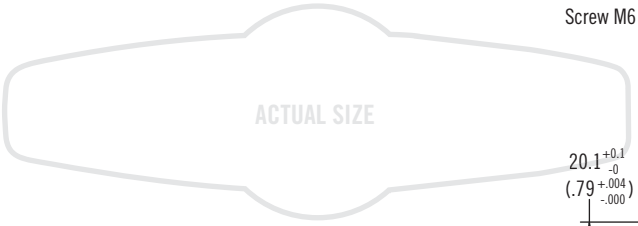
E5 Cam Latch

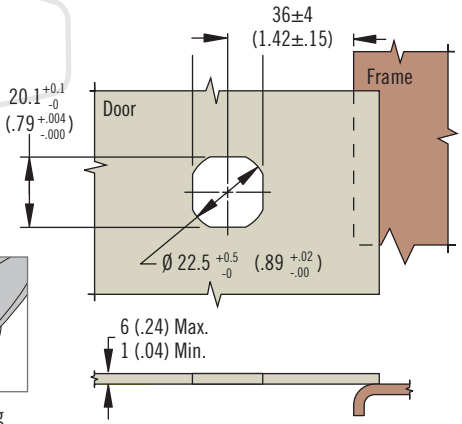
Zinc · T-handle · Hand operated · Fixed grip

- **Single hole install**
- **Multiple key codes**

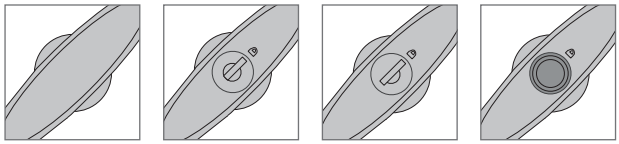








L Lock Style



Non-locking | Key-locking key code CH751 | Key-locking key code R001 | Key-locking (order lock core separately)

Latch Part Number
(no cam)

E5 - 9 - L F - UU1 - 1 K

F Finish
- **2** Bright chrome
- **5** Black powder coated

L Lock style
- **60** Non-locking (omit last two digits of part number)
- **61** Keyed CH751 (lock core finish matches handle finish)
- **62** Keyed R001 (stainless steel scalp shuttered)
- **63** Without lock core (omit last two digits of part number)
  Order lock core separately, see page 182 - 183

K Key options
- **0** No keys supplied (order separately)
- **3** 1 Overmolded key supplied

Cam Part Number Table (order separately from latch)							
Grip	**Part Number**	**Grip**	**Part Number**	**Grip**	**Part Number**	**Grip**	**Part Number**
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022

If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated

Material and Finish
Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details
Max. static load: 330 N (74 lbf)

Sealing Notes
NEMA 4 / IP65 achieved using gasket supplied

Installation Notes
Mounting nut:
Max. tightening torque:
10 N·m (88 in·lbf)

Screw:
Max. tightening torque:
10 N·m (90 in·lbf)

Keys
See page 98

Notes
Suitable for push-to-close action
see pages 96 - 97

For adjustable grip versions see pages 102 - 103

For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 - 183

Part Number Selection
Order latch and cam separately

E5 Cam Latch

Zinc · Wing style · Padlockable wing style · Fixed grip

- **Single hole install**
- **Multiple key codes**

Material and Finish

Wing: Zinc alloy, black powder coated and steel, zinc plated

Padlockable wing: Zinc alloy, chrome plated and steel, zinc plated

Performance Details

Max. static load: 330 N (74 lbf)

Sealing Notes

Wing style sealed to meet NEMA4 / IP65 standards

Installation Notes

Mounting nut max. tightening torque: 10 N·m (88 in·lbf)

Screw Max. tightening torque: 5 N·m (45 in·lbf)

Keys

See page 98

Notes

Wing style suitable for push-to-close action see pages 96 - 97

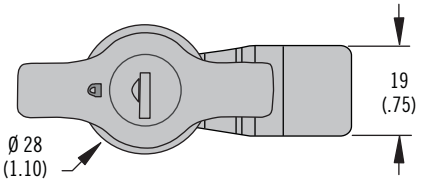
For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 - 183

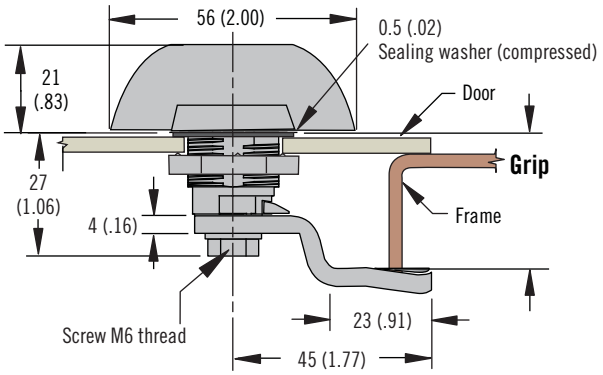
Part Number Selection

Order latch and cam separately

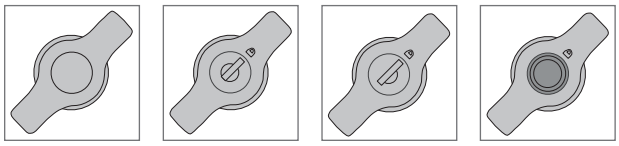
Cam part number see table page 95

Wing





L Lock Styles



Non-locking | Key-locking key code CH751 | Key-locking key code R001 | Key-locking lock core (order separately)

ACTUAL SIZE

Latch Part Number (no cam)

E5 - 9 - L 5 - UU1 - 1 K

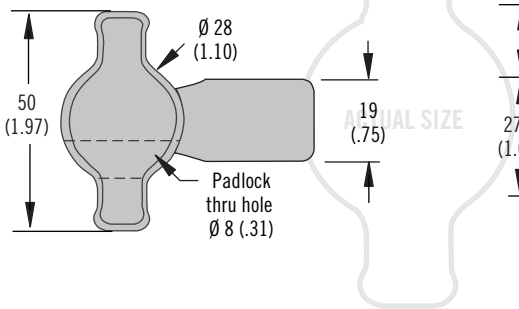
K Key options

- **0** No keys supplied (order separately)
- **3** 1 Overmolded key supplied

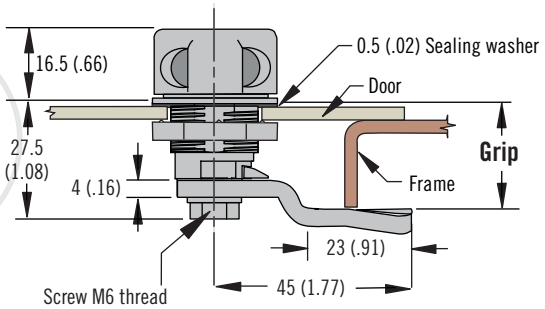
L Lock style

- **30** Non-locking (omit last two digits of part number)
- **31** Key-locking black lock core keyed alike CH751
- **32** Key-locking stainless steel scalp and shuttered lock core keyed alike R001
- **33** Without lock core (omit last two digits of part number)
  Order lock core separately, see pages 182 - 183

Padlockable Wing



ACTUAL SIZE



Part Number Selection

Order latch and cam separately

Cam part number see table page 95

R Rotation

- **1** Type B counter-clockwise to latch
- **2** Type A clockwise to latch

Latch Part Number (no cam)

E5 - 31 - 5 R 2 - UU0

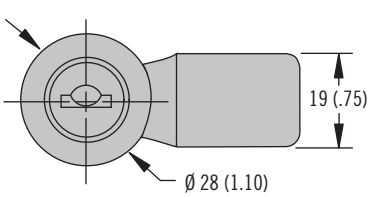
INFO CLIC www.southco.com/E5

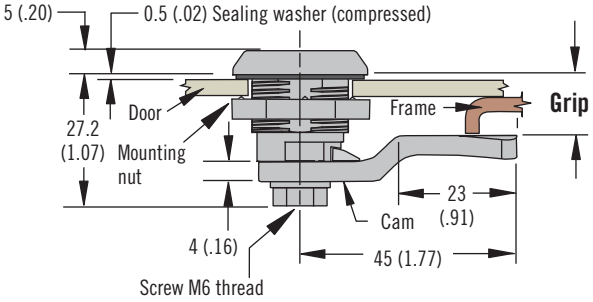
Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch

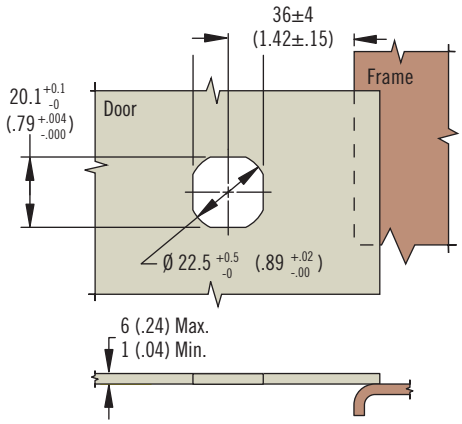
Zinc · Cylinder lock · Fixed grip

Cylinder Lock





ACTUAL SIZE



- **Single hole install**
- **Latched / unlatched indicator**

Material and Finish

Zinc alloy, powder coated and steel, zinc plated
Scalp stainless steel

Performance Details

Max. static load: 330 N (74 lbf)

Installation Notes

Mounting nut max. tightening torque: 10 N·m (88 in·lbf)

Screw Max. tightening torque: 5 N·m (45 in·lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Keys and Accessories

See pages 98 - 101

Notes

Suitable for push-to-close action
see pages 96 - 97

Part Number Selection

Order latch and cam separately

F **Finish**
2 Bright Chrome
5 Black powder coated

K **Key options CH751**
0 No keys supplied (order separately)
2 2 Flat keys supplied

Latch Part Number
(no cam)

E5 - 5 - 40 F - UU1 - 1 K

Cam Part Number Table (order separately from latch)							
Grip	**Part Number**	**Grip**	**Part Number**	**Grip**	**Part Number**	**Grip**	**Part Number**
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022

If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch

Zinc · Push-to-close · Hand, key or tool operated · Single and two point

- **Single hole installation**
- **Latched / unlatched indicator**
- **Push-to-close action**

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Max. static load: 330 N (74 lbf)

Installation Notes

Mounting nut max. tightening torque: 10 N·m (88 in·lbf)

Screw Max. tightening torque: 5 N·m (45 in·lbf) for two point actuator only

Keys and Accessories

See pages 98 - 101

Notes

Single Point: Push-to-close action in unlocked position only or key inserted (cylinder lock)

Two Point: Order actuator separately

For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 - 183

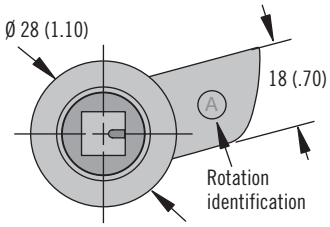
Actuator Part Number

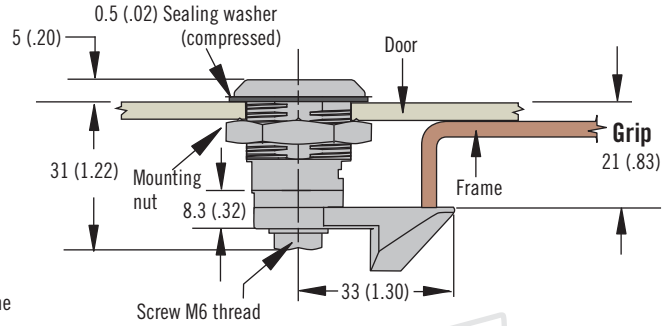
A5-91-201-11, see page 99 for details

Two point to be used with *SOUTHCO®* R4 rotary series latches and cables see page 120 - 131

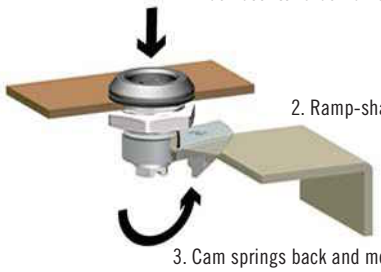
Two point push to close action: Internal spring causes return of driver and actuator to original latched position when driver is released after opening. Ideal for use with cables and rotary latches.

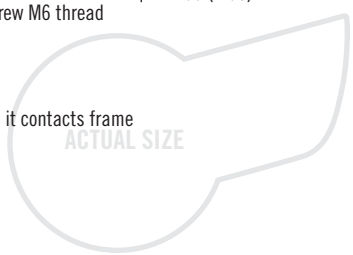
Single Point Spring-Loaded (Type A tool operated shown)



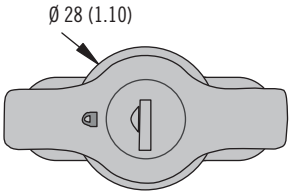


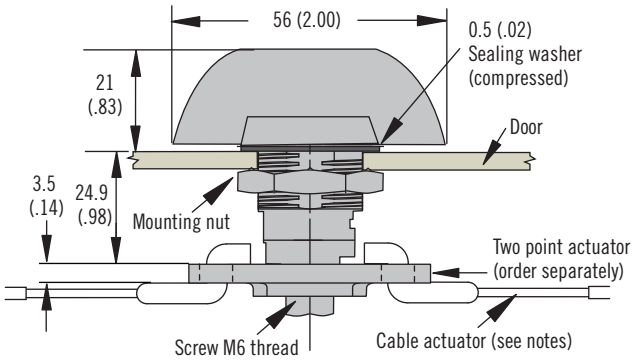
Operation



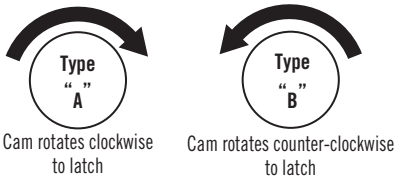


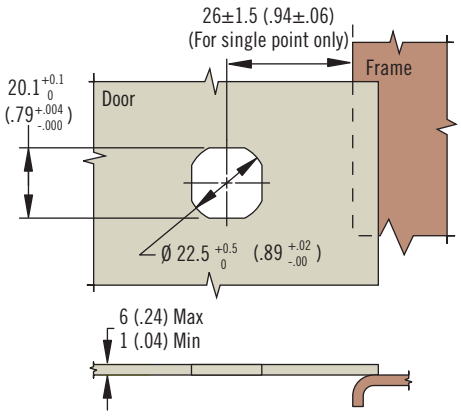
Two Point Spring-Loaded (Type A hand operated shown)



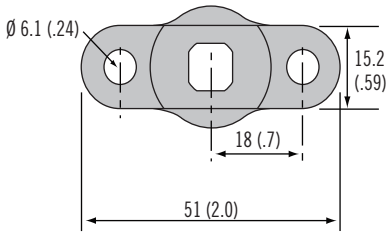


R Rotation





Two Point Actuator



Dimensions in millimeters (inch) unless otherwise stated

Hand / Key Operated

Part Number Selection

Latch supplied fully assembled

F Finish
- **2** Bright chrome (not available for wing type)
- **5** Black powder coated

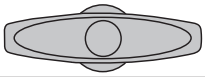
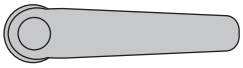
T Type
- **5** Cylinder lock keyed alike CH751
- **9** Wing / T-handle / L-handle

R Rotation
- **51** Type A single point (for visual identification cam stamped A or B)
- **52** Type B single point (for visual identification cam stamped A or B)
- **TR** Type A two point (order actuator separately)
- **TL** Type B two point (order actuator separately)

K Key options
- **0** No keys supplied (order separately)
- **3** 1 Overmolded key supplied

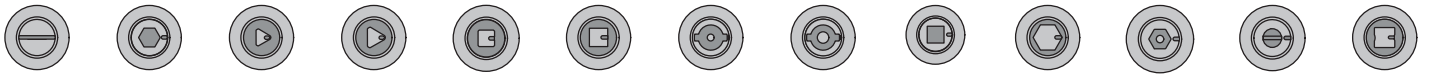
E5 - T - LF - R0 - 1K

L

Lock style	T = 5	T = 9		
				
	Cylinder Lock	Wing	T-handle	L-handle
Non-locking (omit last two digits of part number)	~	30	60	70
Keyed CH751 (lock core finish matches handle finish)	~	31	61	71
Keyed CH751 (stainless steel scalp shuttered)	40	~	~	~
Keyed R001 reversible (stainless steel scalp shuttered)	~	32	62	72
Without lock core (omit last two digits of part number) (to be ordered separately see pages 182 - 183)	~	33	63	73

Tool Operated

H Head Styles



Slotted | 8 (.32) Hex recess | 7 (.28) Triangle | 8 (.32) Triangle | 7 (.28) Square | 8 (.32) Square | 3 (.11) Double bit | 5 (.19) Double bit | 8 (.32) Square recess | Bellcore 216 | Bellcore electronics | Recessed slot (tamper resistant) | Railway standard

Part Number Selection

Latch supplied fully assembled

F Finish
- **2** Bright chrome
- **5** Black powder coated

E5 - 6 - HF - R 0

H Head style
- **00** Slotted
- **01** 8 (.32) Hex recess
- **02** 7 (.28) Triangle
- **03** 8 (.32) Triangle
- **04** 7 (.28) Square
- **05** 8 (.32) Square
- **06** 3 (.11) Double bit
- **07** 5 (.19) Double bit
- **08** 8 (.32) Square recess
- **13** Bellcore 216
- **19** Bellcore electronics
- **21** Recessed slot (tamper resistant)
- **22** Railway standard

R Rotation
- **51** Type A single point (for visual identification cam stamped A or B)
- **52** Type B single point (for visual identification cam stamped A or B)
- **TR** Type A two point (order actuator separately)
- **TL** Type B two point (order actuator separately)

E5 Cam Latch Accessories

Keys

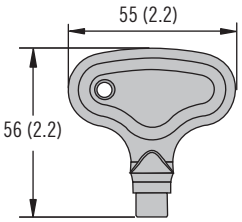
Material and Finish

Tool key: Zinc alloy or nylon

Overmolded key: Brass plated and ABS plastic black

Flat key: Brass plated

Keys Zinc or Nylon



H Head style

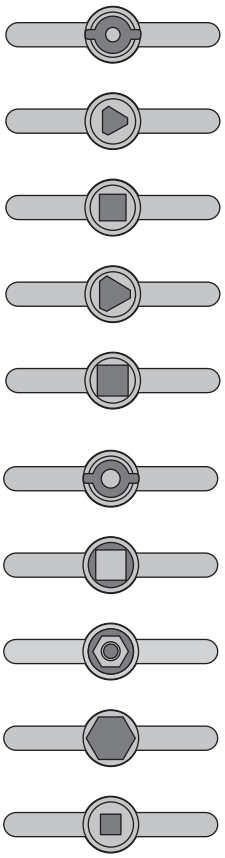
- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **7** 8 (.32) Triangle
- **8** 8 (.32) Square recess
- **9** 5 (.19) Double bit (nylon only)
- **10** 8 (.32) Square male (zinc only)
- **11** Bellcore electronics
- **12** Bellcore 216 (zinc only)
- **24** 6 (.24) Square recess (nylon only)

F Finish

- **1** Plated zinc
- **2** Natural zinc
- **3** Nylon, black

E3 - H - F

Key Styles



- **2** 3 (.11) Double bit
- **3** 7 (.28) Triangle
- **4** 7 (.28) Square
- **7** 8 (.32) Triangle
- **8** 8 (.32) Square recess
- **9** 5 (.19) Double bit
- **10** 8 (.32) Square male
- **11** Bellcore electronics
- **12** Bellcore 216
- **24** 6 (.24) Square recess

Part Number

Overmolded key CH751:
Single: PK-10-10-05
Pair: PK-10-01-05

Overmolded key R001:
Single: PK-10-10-05-KR001
Pair: PK-10-01-05-KR001

Flat key
Pair: PK-10-01

Overmolded Keys

Key CH751

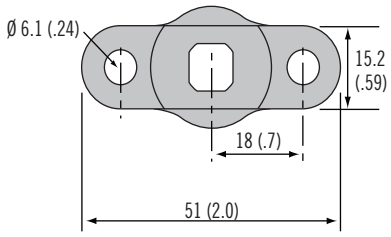
Key R001

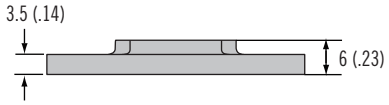
Flat Keys

Key CH751

Dimensions in millimeters (inch) unless otherwise stated

Multi-Point Actuator





Part Number
A5-91-201-11

Material and Finish

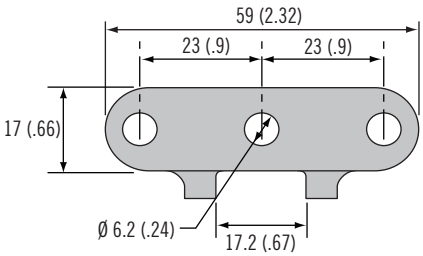
Zinc alloy

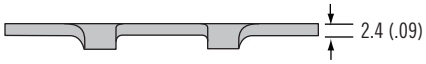
Notes

2-Point Actuator plate (for multi-point see pages 264 - 265 for rods) (not recommended for key-locking)

Not to be used with low profile E5

Multi-Point Actuator - Low Profile





Part Number
A8-4-01-03

Material and Finish

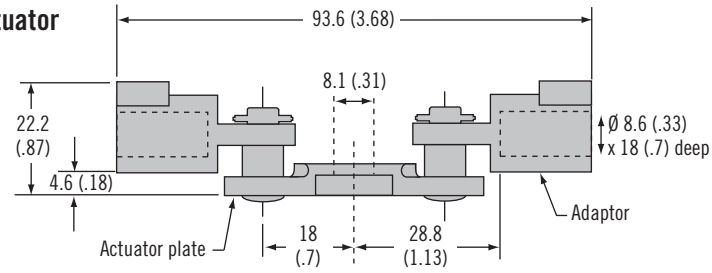
Steel plated

Notes

Actuator plate (for multi-point see pages 264 - 265 for rods)

For use with all E5 latches

Multi-Point Actuator



Part Number
A5-90-101-11

Material and Finish

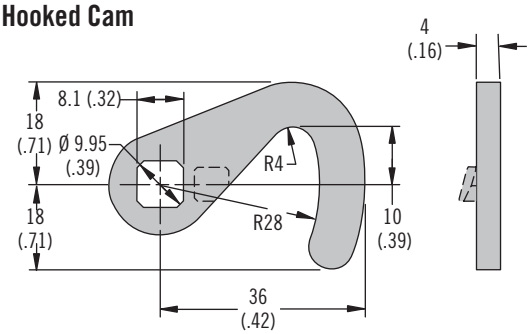
Zinc alloy and steel, zinc plated

Notes

Actuator plate (for multi-point see pages 264 - 265 for rods)

Not to be used with low profile E5

Hooked Cam



Hooked Cam Part Number	
E5-6200	No stop
E5-6210	Stop for clockwise rotation
E5-6220	Stop for counter-clockwise rotation

Material and Finish

Steel plated

Notes

Not to be used with low profile E5

E5 Cam Latch Accessories

Sealing washer · Sealing cover

Material and Finish

Sealing washer: Neoprene natural

Sealing cover: Thermoplastic elastomer, black

Installation Notes

To provide sealing: use two sealing washers and add compressed thickness of each washer and accessory thickness to your door thickness range.

Notes

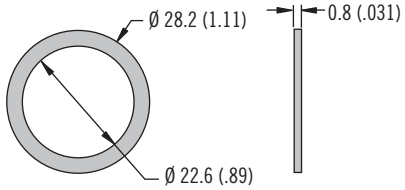
Sealing washer for use with all E5 products

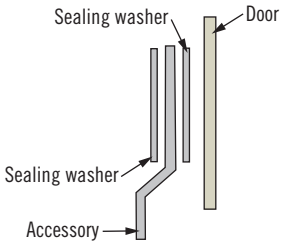
Sealing cover for use with tool operated and cylinder lock E5 only

Part Number

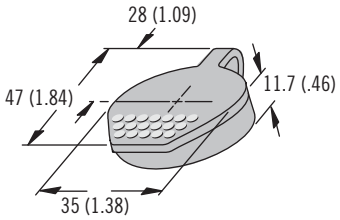
See table

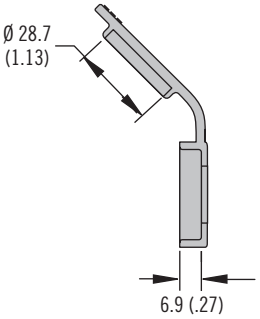
Sealing Washer

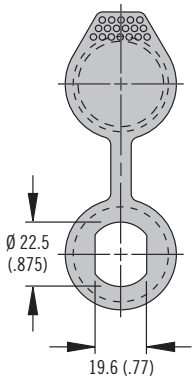


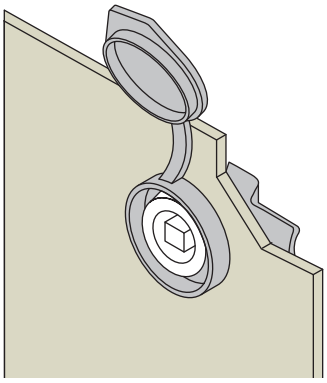


Sealing Cover





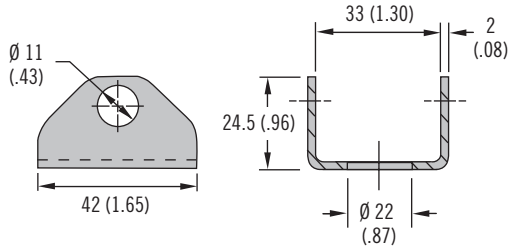




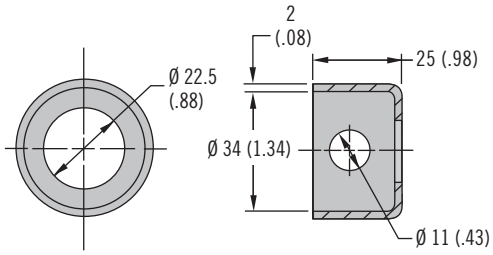
Type	Part Number	Adjustment Formula
Sealing washer	E5-17	Add 0.4 (0.02) compressed height to door thickness range
Sealing cover	90-3	Add 2.3 (.090) to door thickness range

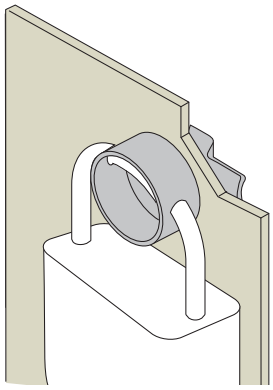
Dimensions in millimeters (inch) unless otherwise stated

Padlock Bracket (Square)

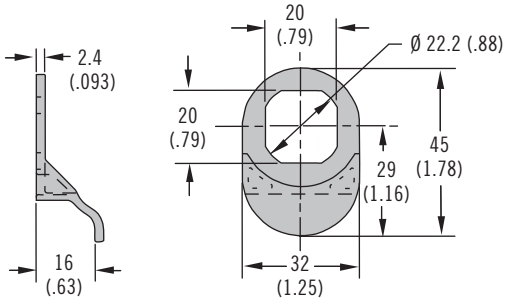


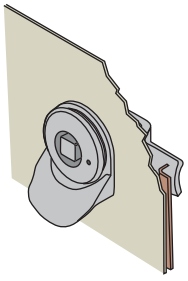
Padlock Bracket (Round)



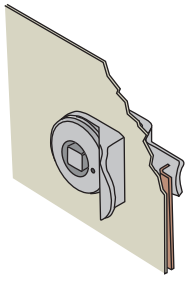


Pull Tab





Shown perpendicular to latch and cam



Shown in-line with latch and cam

Material and Finish

Padlock bracket: Stainless steel, black powder coated

Pull tab: Nylon, black

Installation Notes

To provide sealing: use two sealing washers and add compressed thickness of each washer and accessory thickness to your **door thickness range**.

Notes

Padlock brackets and pull tabs for use with tool operated and cylinder lock E5 only

Type	Part Number	Adjustment Formula
Padlock bracket square	E3-77-101-31	Add 2 (.08) to door thickness range
Padlock bracket round	E3-77-102-31	Add 2 (.08) to door thickness range
Pull tab	E5-18	Add 2.4 (.093) to door thickness range

Part Number

See table

92 Cam Latch

T and L-Handle · Adjustable grip

- **Round hole install**
- **Detents in open and closed position**

Material and Finish

Zinc alloy and steel, zinc plated

Performance Details

Max. static load:
Short cam 400 N (90 lbf)
Long cam 200 N (45 lbf)

Installation Notes

Screw and lockwasher assembly M4 x 10 (supplied).
For door thickness range > 3.0 (.12) calculate screw length using the following formula:
Door thickness range + 7.00 (.28)

Keys

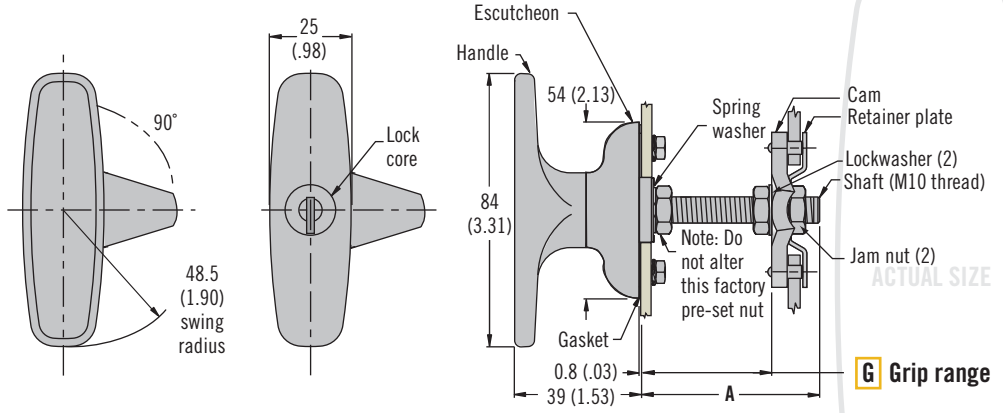
See page 98

Notes

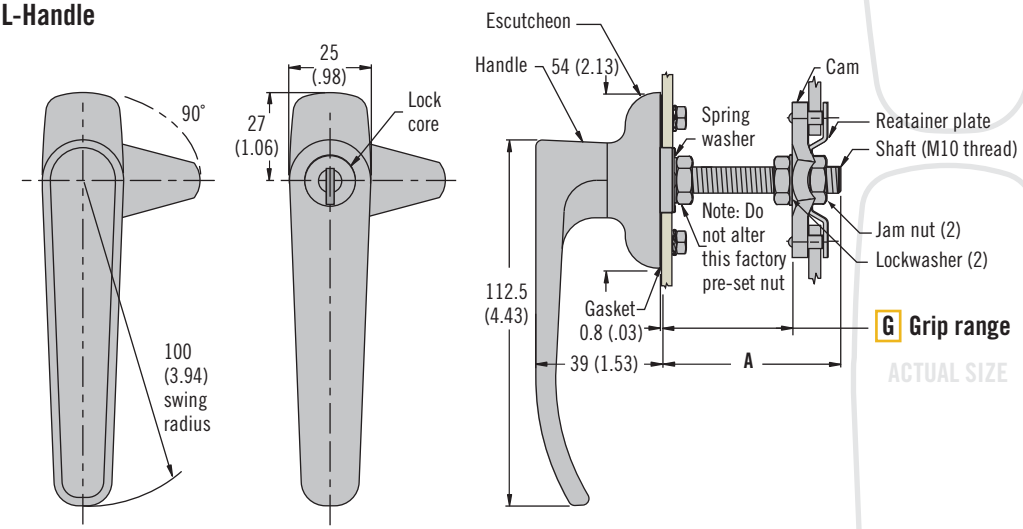
For fixed grip versions see pages 92 - 93

For version with 8 (.32) square shaft see page 111

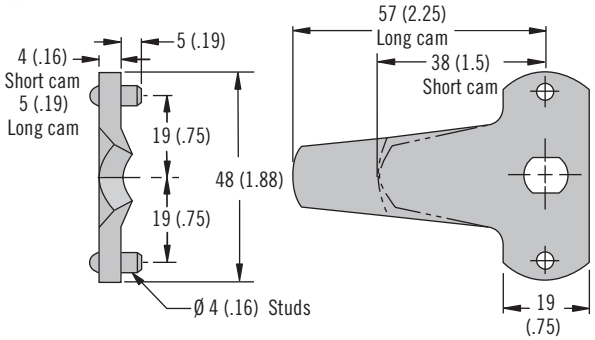
T-Handle



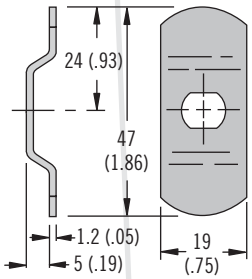
L-Handle



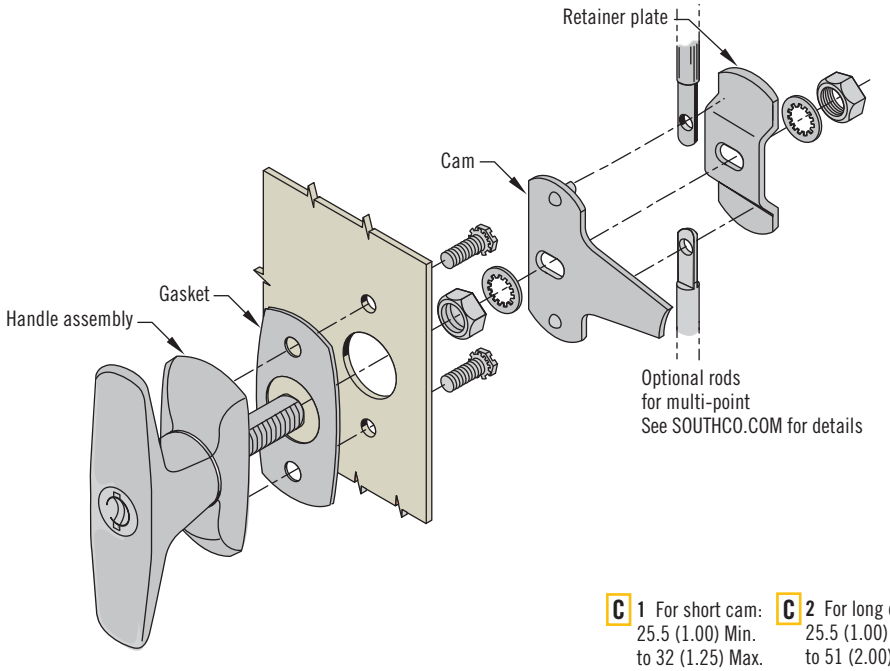
Cam (supplied)

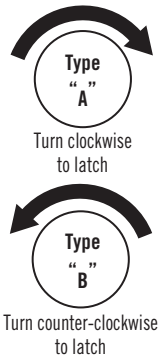


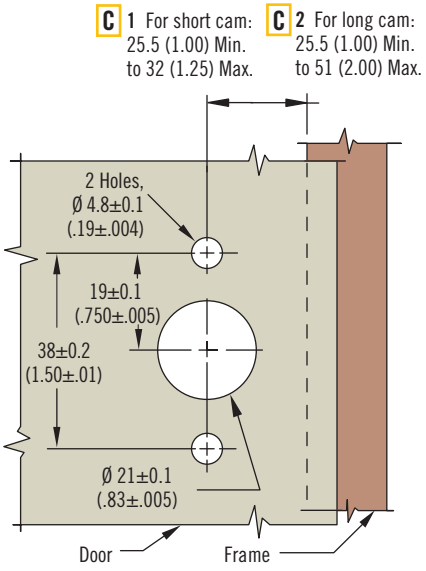
Retainer Plate (supplied)



Dimensions in millimeters (inch) unless otherwise stated







Part Number Selection

R Rotation
1 Type A clockwise to latch
2 Type B counter-clockwise to latch

F Finish
1 Bright chrome
5 Black powder coated

C Cam
1 Short 38 (1.5)
2 Long 57 (2.25)

92 - L R - F G C

L Lock style
1 T-handle non-locking
2 T-handle key-locking CH751 (two keys supplied)
3 L-handle non-locking
4 L-handle key-locking CH751 (two keys supplied)

G Grip	Min.	Max.	A
1	16 (.63)	19 (.75)	32 (1.25)
2		32 (1.25)	44.5 (1.75)
3		44.5 (1.75)	57.5 (2.25)

68 Cam Latch

Small · T-Handle · Adjustable grip

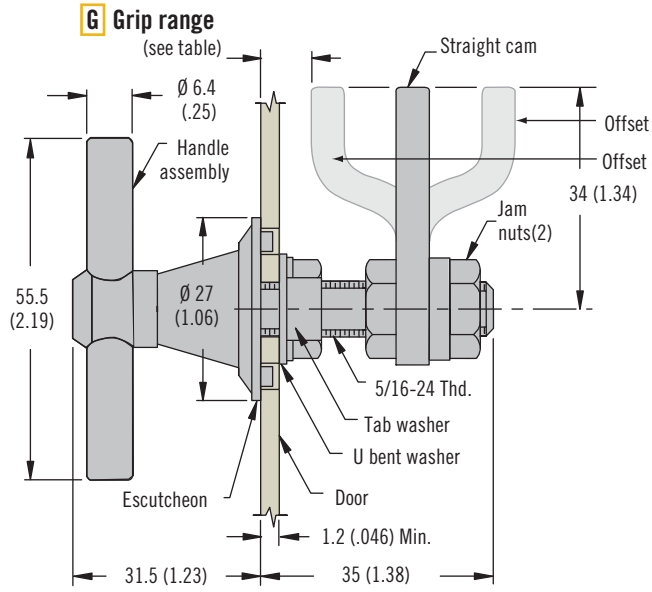
- **Robust design**

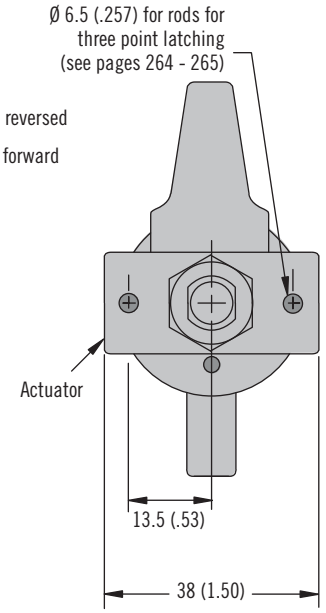
Material and Finish

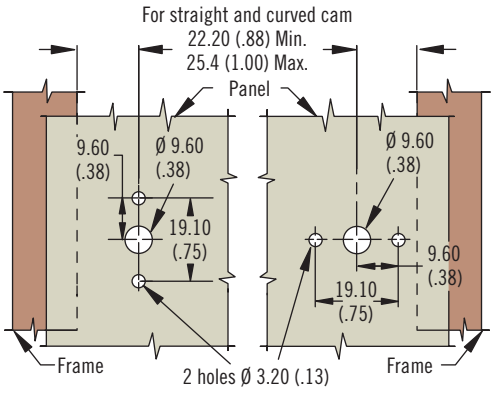
Zinc alloy and steel, zinc plated

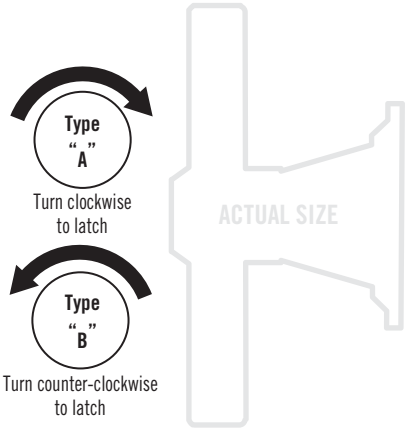
Performance Details

Max. static load: 1100 N (250 lbf)









Part Number Selection

68 - 50 - 30 G - F

G Grip	Min.	Max.	Cam Type
1	0 (0)	12.7 (.50)	Offset cam forward position
	25.4 (1.00)	38 (1.50)	Offset cam reversed position
2	12.7 (.50)	25.4 (1.00)	Straight cam

F Finish

10 Chemical protective film

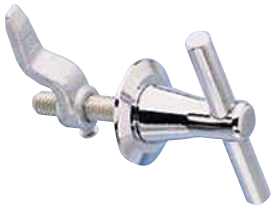
20 Chrome plated

INFO CLIC www.southco.com/68

Dimensions in millimeters (inch) unless otherwise stated

68 Cam Latch

Medium · T-Handle · Adjustable grip



- **Robust design**
- **Optional internal actuation**

Material and Finish

Zinc alloy and steel, zinc plated

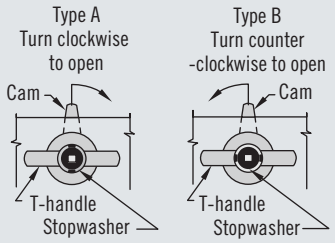
Performance Details

Max. static load: 1100 N (250 lbf)

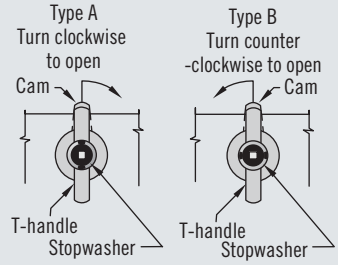
Installation Notes

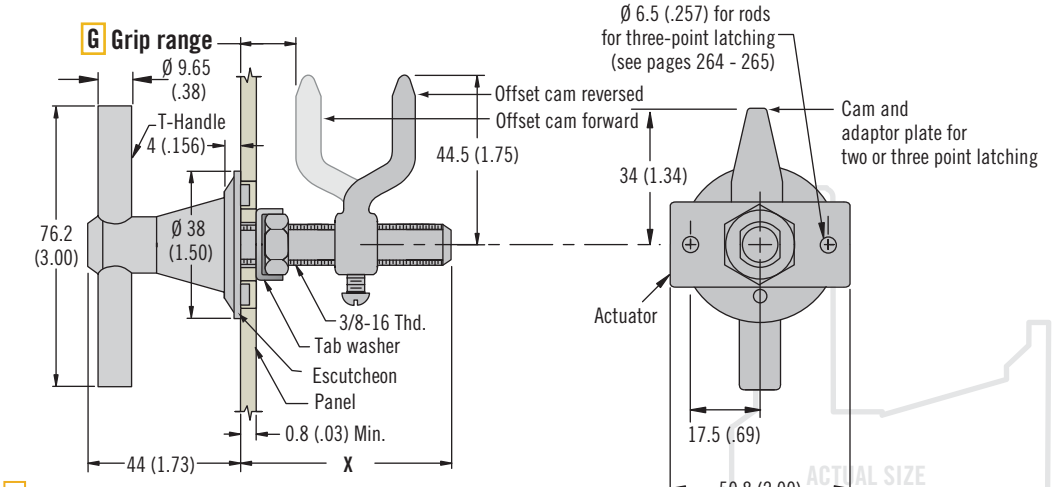
T-handle orientation and operation:

1. Handle parallel to the edge of door

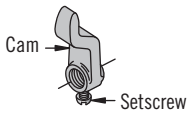


2. Handle perpendicular to edge of door

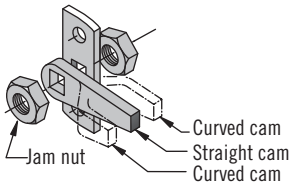


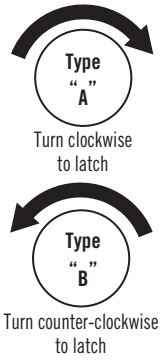


A Single point

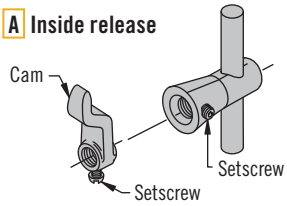


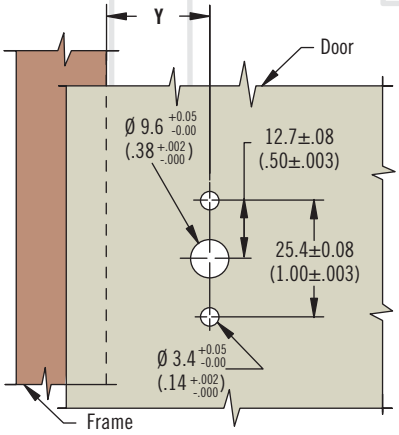
A Three point





A Inside release





Part Number Selection

A Assembly
1 Single point
3 Three point
4 Inside release

F Finish
10 Zinc plate bright chromate
20 Chrome plated

68 - 10 - A 0 G - F

Assembly	G Grip	Grip Range Min.	Grip Range Max.	X	Y	Cam Type
Single point	1	3.2 (.13)	25.4 (1.00)	46.4 (1.83)	31.8±3.2 (1.25±.13)	Offset cam forward position
		25.4 (1.00)	50.8 (2.00)			Offset cam reversed position
Three point	1	1.6 (.06)	19.8 (.78)		28.6±1.6 (1.13±.06)	Offset cam forward position
		14.3 (.56)	32.5 (1.28)			Offset cam reversed position
	2	27 (1.06)	45.2 (1.78)			Straight cam
Inside release	1	3.2 (.13)	25.4 (1.00)	65 (2.56)	31.8±3.2 (1.25±.13)	Offset cam forward position
		25.4 (1.00)	50.8 (2.00)			Offset cam reversed position

68 Cam Latch

Medium · Folding bail handle · Adjustable grip

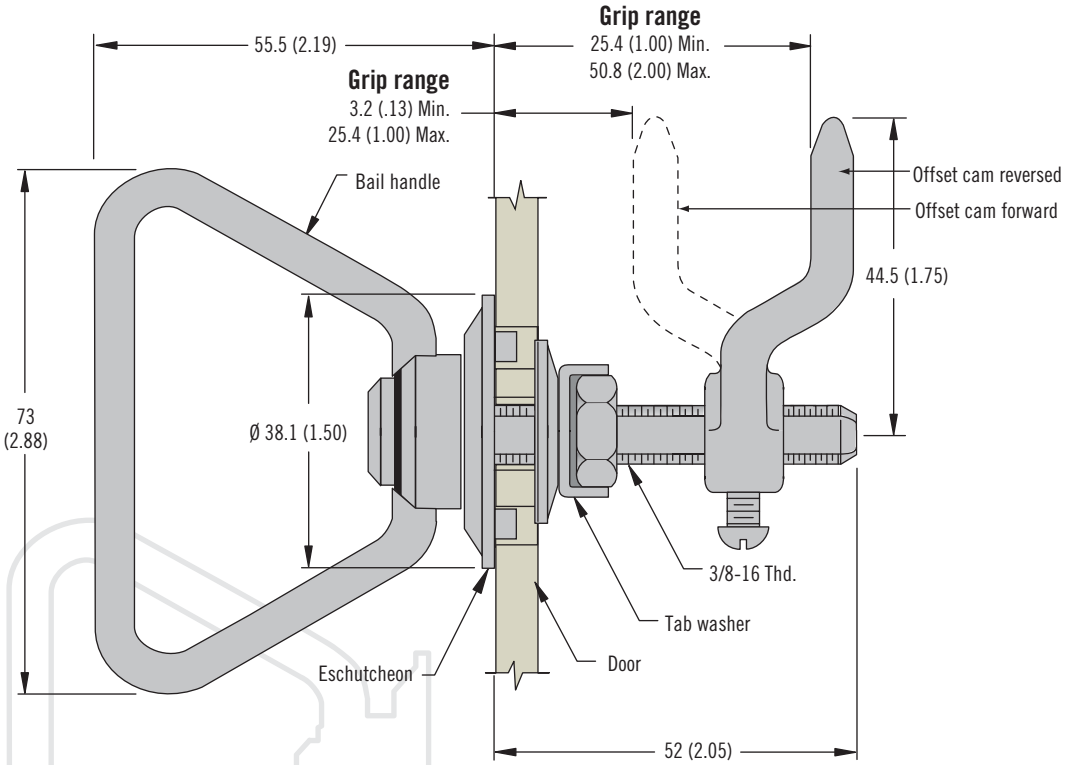
- **Robust design**
- **90° rotation**

Material and Finish

Zinc alloy and steel, zinc plated

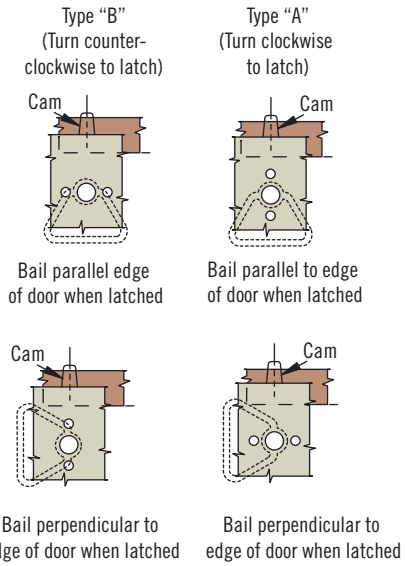
Performance Details

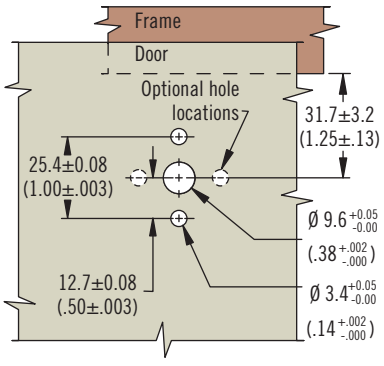
Max. static load 890 N (200 lbf)

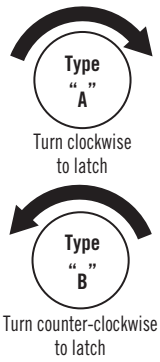


Bail Handle Orientation and Operation

(Shown in latched position)







Part Number Selection

68 - 20 - 101 - F

F **Finish**
10 Zinc plate bright chromate
20 Chrome plated

INFO CLIC www.southco.com/68

Dimensions in millimeters (inch) unless otherwise stated

68 Cam Latch

Large · T-Handle · Adjustable grip

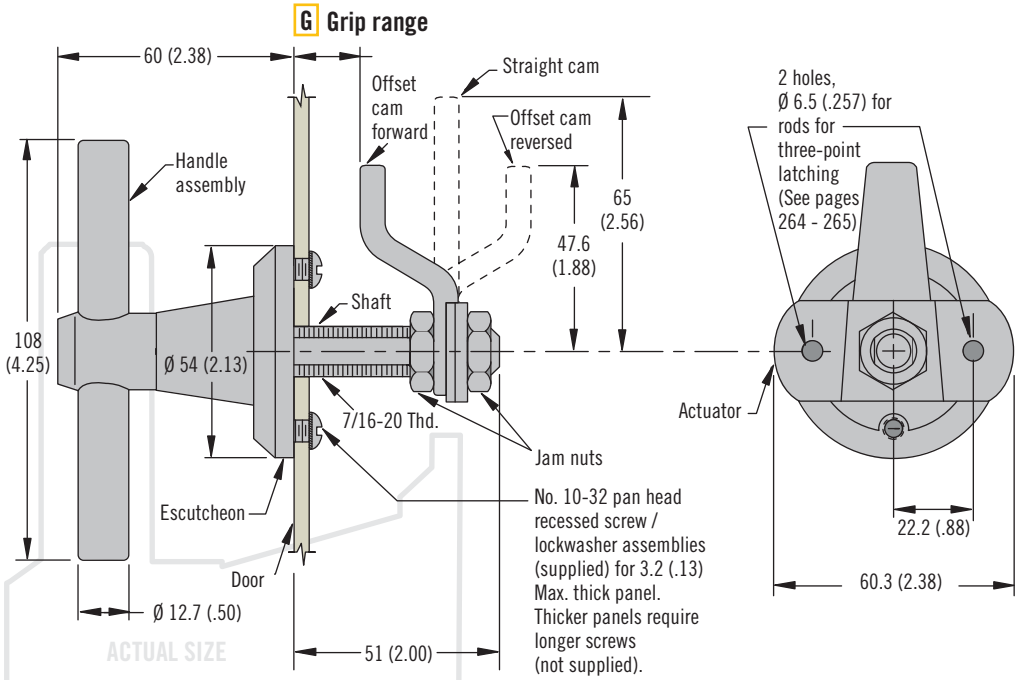
- **Robust construction**
- **90° movement**

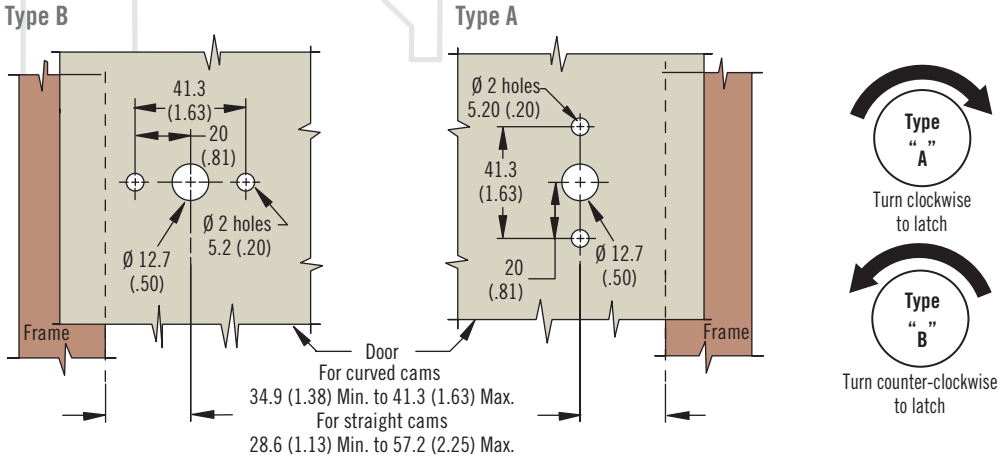
Material and Finish

Zinc alloy and steel, zinc plated

Performance Details

Max. static load 1300 N (1300 lbf)





Part Number Selection

68 - 70 - 30 G - F

F Finish

10 Chemical protective film

20 Chrome plated

G Grip	Min.	Max.	Cam Type
1	0 (0)	19 (.75)	Offset cam forward position
	6.4 (.25)	38 (1.50)	Offset cam reversed position
2	25.4 (1.00)	57 (2.25)	Straight cam

01 Cam Latch

Small · Flush handle · Cup style · Adjustable grip

- **Low profile design**

Material and Finish

ABS, zinc and steel, zinc plated

Performance Details

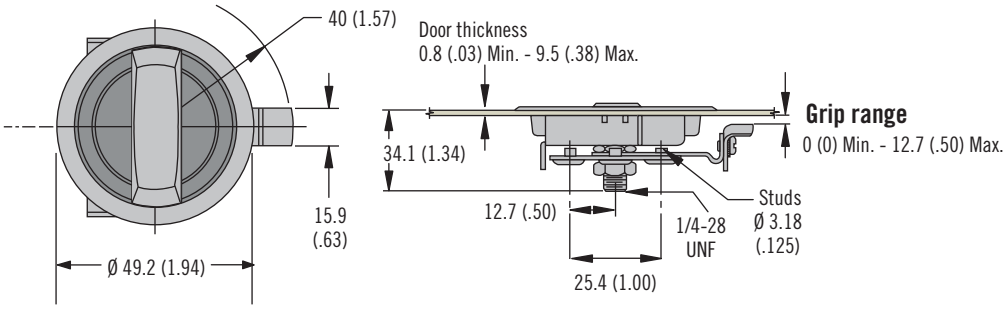
Max. static load: 160 N (35 lbf)

Flammability rating: UL94-HB

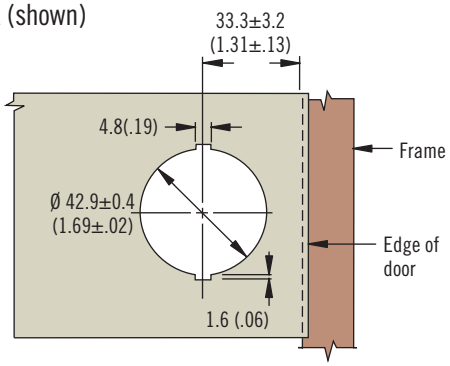
Notes

For multi-point latching options see pages 244 - 245

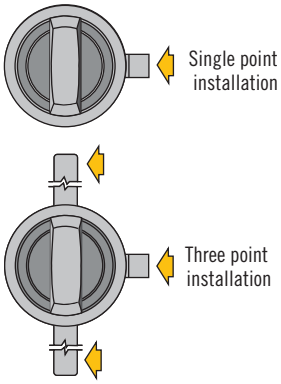
For fixed grip version see pages 90 - 91



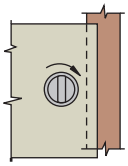
Type A (shown)



ACTUAL SIZE

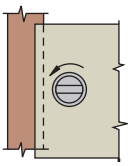


Type A Assemblies (Turn handle clockwise to latch)



Handle shown **parallel** to edge of door when latched

Type B Assemblies (Turn handle counter-clockwise to latch)



Handle shown **perpendicular** to edge of door when latched

• Mounted on either type A or B doors.
Choose horizontal or vertical closed position of handle

Part Number Selection

01 - 10 - 40 R - F

F **Finish**

10 Bright chrome

65 Black

R **Rotation**

1 Type B counter-clockwise to latch for parallel installation

2 Type B counter-clockwise to latch for perpendicular installation

1 Type A clockwise to latch for perpendicular installation

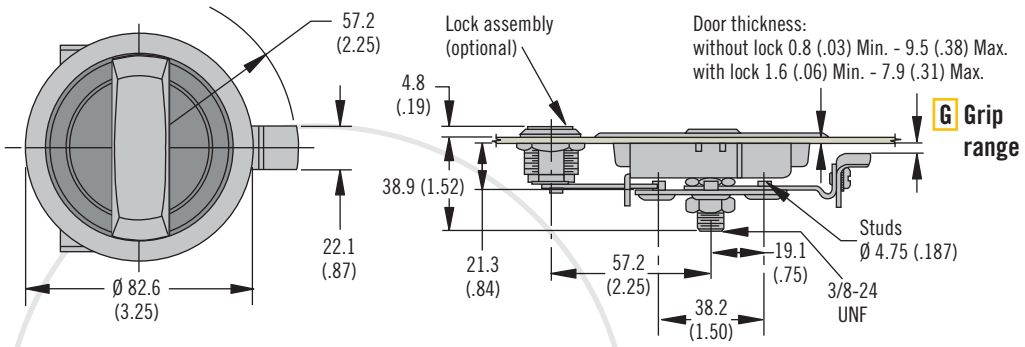
2 Type A clockwise to latch for parallel installation

INFO CLIC www.southco.com/01

Dimensions in millimeters (inch) unless otherwise stated

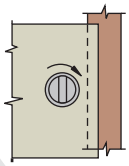
01 Cam Latch

Medium · Flush and bail handle · Cup style · Adjustable grip



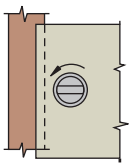
Type A (shown)

Type A Assemblies (Turn handle clockwise to latch)



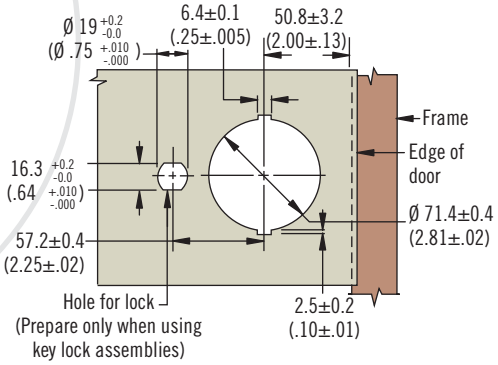
Handle shown **parallel** to edge of door when latched

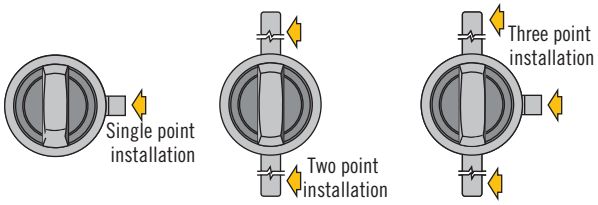
Type B Assemblies (Turn handle counter-clockwise to latch)



Handle shown **perpendicular** to edge of door when latched

• Mounted on either type A or B doors.
Choose horizontal or vertical closed position of handle





- **Low profile design**

Material and Finish

ABS, zinc and steel, zinc plated

Performance Details

Max. static load: 220 N (50 lbf)

Flammability rating UL94-HB

Keys

See page 98

Notes

For multi-point latching options see pages 244 - 245

For fixed grip version see pages 90 - 91

Part Number Selection

L Lock style

1 Non-locking flat handle
2 Non-locking folding bail handle
3 Locking flat handle keyed alike CH751 (two keys supplied)
4 Locking folding bail handle keyed alike CH751 (two keys supplied)

01 - L 3 - G F

F Finish

1 Bright chrome
5 Black (flat handle only)

G Grip	Grip Range	Type A	Type B	Cam Type
1	0 - 12.7 (0 - .50)	Perpendicular	Parallel	Single or three point latching
2	0 - 12.7 (0 - .50)	Parallel	Perpendicular	Single or three point latching
3	12.7 - 28.6 (.50 - 1.13)	Perpendicular	Parallel	Single or three point latching
4	12.7 - 28.6 (.50 - 1.13)	Parallel	Perpendicular	Single or three point latching
5	Two point only	Perpendicular	Parallel	Two point only
6	Two point only	Parallel	Perpendicular	Two point only

24 Cam Latch

Flush T-handle · Adjustable grip

- **Concealed mounting type**

Material and Finish

Zinc and steel, zinc plated or stainless steel

Performance Details

Max. static load: 445 N (100 lbf)

Installation Notes

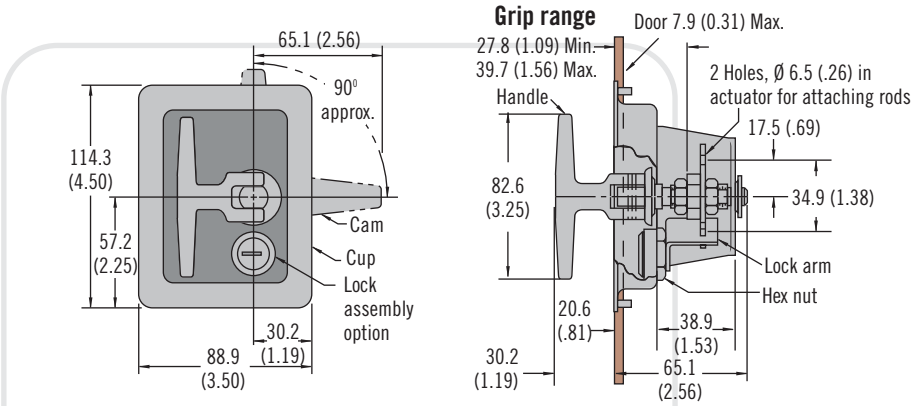
Max. tightening torque of mounting nuts not to exceed 2.8 N·m (25 in·lbf)

Keys

See page 98

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/24*



Part Number		
Style	With Mounting Studs	
	Cup and bracket polished stainless steel. Handle zinc chrome plated	Cup and bracket steel dacrotized. Handle zinc dacrotized
	Type A	Type A
Locking keyed alike CH751 supplied	24-20-812-35	24-20-812-10
Non-locking	24-20-302-35	24-20-302-10
Non-locking environmentally sealed	24-20-312-35	24-20-312-10

69 Cam Latch

Arrowhead · Detent design · Adjustable grip

- **Single hole install**
- **Detented design**
- **Adjustable grip**

Material and Finish

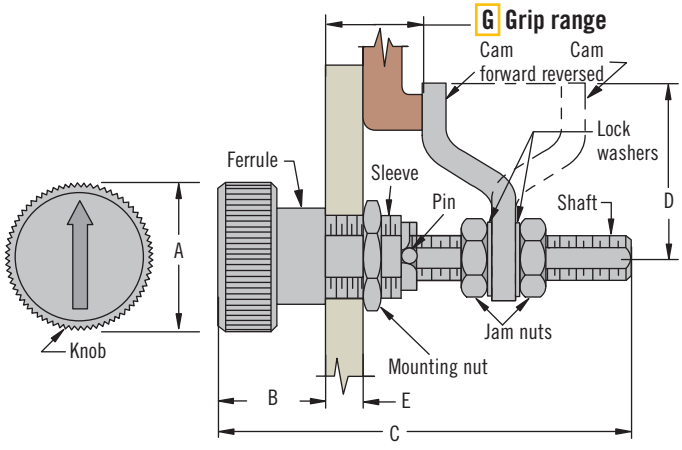
Nylon and steel, zinc plated

Performance Details

Small working load: 44 N (10 lbf)
Medium working load:
220 N (50 lbf)
Large working load 330 N: (75 lbf)

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/69*



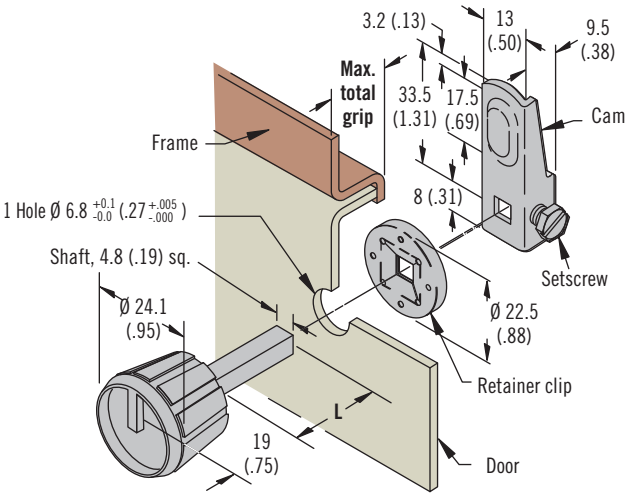
Size	Part Number	G Grip range		A	B	C	D	E
		Min.	Max.					
Small	69-10-301-11	4 (.16)	28.2 (1.11)	12.7 (.50)	12.7 (.50) Max.	38.1 (1.50)	13.5 (.53)	4.75 (.188)
Medium	69-10-401-11	3.2 (.13)	33.3 (1.31)	19.1 (.75)	17.5 (.69) Max.	47.5 (1.87)	15.9 (.63)	6.35 (.25)
Large	69-10-501-11	4.8 (.19)	61.9 (2.44)	28.6 (1.13)	25.4 (1) Max.	79.2 (3.12)	34.1 (1.34)	12.7 (.50)

Dimensions in millimeters (inch) unless otherwise stated

61 Cam Latch

Universal cabinet series · Adjustable grip

Knob Style



ACTUAL SIZE

Max. Total Grip	Shaft Length L	Assembly Part number
12.5 (.50)	25.5 (1.00)	61-10-102-11
25 (1.00)	38 (1.50)	61-10-104-11
44.5 (1.75)	57 (2.25)	61-10-107-11

- **Single hole installation**
- **Accommodates wide grip ranges**

Material and Finish

Nylon and steel, zinc plated

Performance Details

Max. static load: 110 N (25 lbf)

Notes

Knob style shown. Additional L-handle and flush slotted styles available

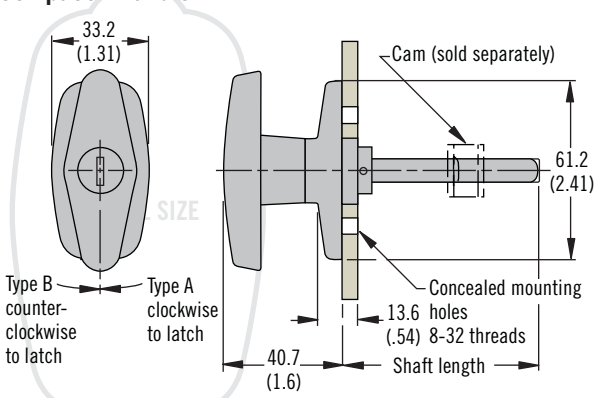
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/61*

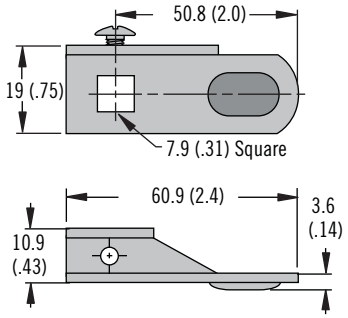
92 Cam Latch

T, Compact-T and L-handle · Adjustable grip

Compact T-handle



Cam



Finish	Shaft Length	Locking Compact-T Part Number	
		Type A	Type B
Black	38.1 (1.5)	92-61-113-50	92-61-213-50
	50.8 (2.0)	92-61-114-50	92-61-214-50
	63.5 (2.5)	92-61-115-50	92-61-215-50

Cam Part Number
92-24-203-12

Compact T-handle style shown. T and L-handle style available. Locking and non-locking.

- **Easy cam adjustments**

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Max. static load: 150 N (34 lbf)

Notes

Black and chrome finish available

For versions with threaded shaft see pages 102 - 103.

For fixed grip versions see pages 92 - 93.

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/92*

Dimensions in millimeters (inch) unless otherwise stated

H3 Swinghandle

Medium / large · Sealed / non-sealed

- **Zinc alloy swinghandle system**
- **Multiple locking options; including DIN profile**
- **Indoor/outdoor version**
- **Available for medium (125mm x 25mm) and large (150mm x 25mm) door cutout**

Material and Finish

Handle: Zinc alloy, black powder coated or satin chrome plated
Cam: Steel, zinc plated

Performance Details

Max. static load: 250 N (56 lbf)

Sealing Notes

Sealed version meets NEMA4 / IP66 water intrusion standards

Keys

See page 98

Multi-Point Systems

See pages 260 - 265

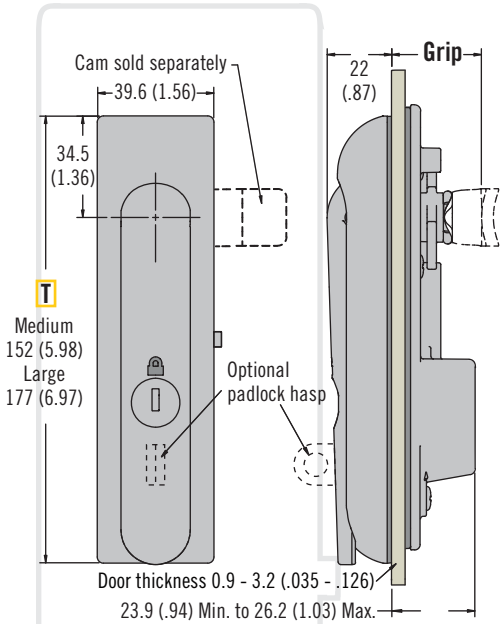
Notes

*For dimension details of DIN lock version, please contact Southco

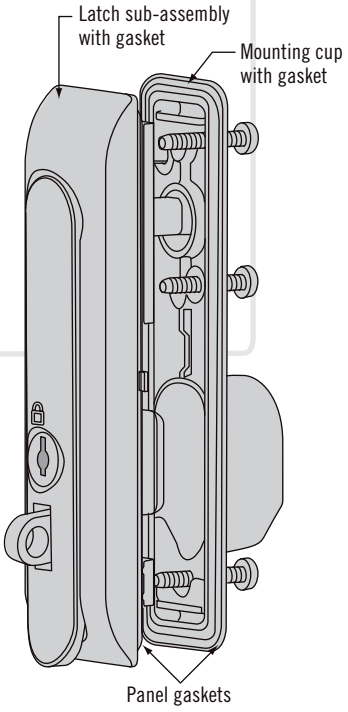
Product available to meet Telcordia GR-487 contact Southco for details

Electromechanical swinghandle available see pages 30 - 31

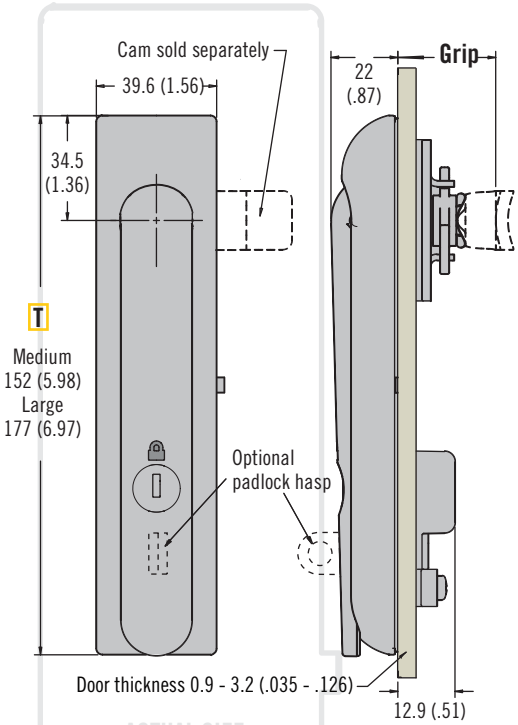
Sealed (H3-50 medium shown)
(H3-60 large available part number selection)



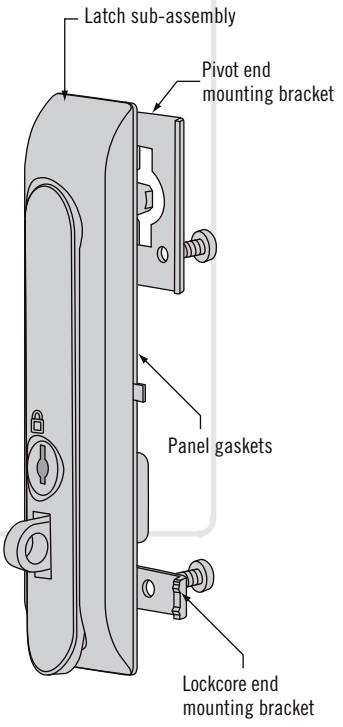
ACTUAL SIZE
H3-50 MEDIUM



Non-Sealed (H3-60 large shown)
(H3-50 medium available part number selection)



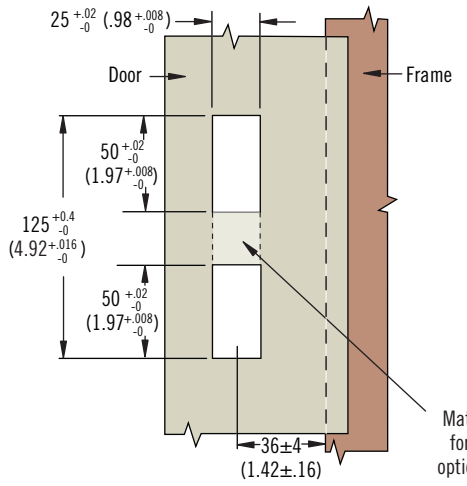
ACTUAL SIZE
H30-60 LARGE



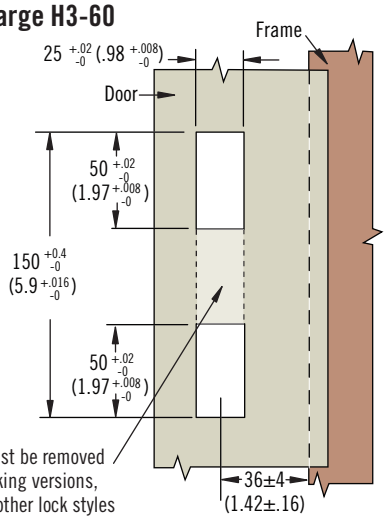
INFO CLIC www.southco.com/H3

Dimensions in millimeters (inch) unless otherwise stated

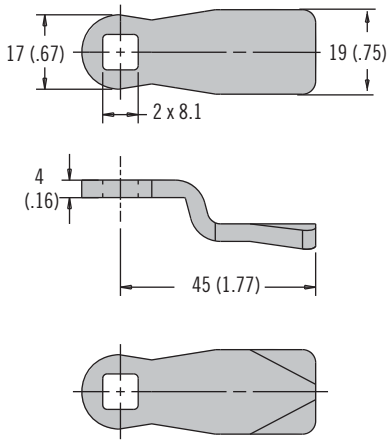
Medium H3-50



Large H3-60



Cam Part Number Table For Use As Single Point Or With Actuator Plate (order separately from latch)			
Grip	Part Number	Grip	Part Number
10.3 (.41)	E5-6107	26.3 (1.04)	E5-6115
12.3 (.48)	E5-6108	28.3 (1.11)	E5-6116
14.3 (.56)	E5-6109	30.3 (1.19)	E5-6117
16.3 (.64)	E5-6110	32.3 (1.27)	E5-6118
18.3 (.72)	E5-6111	34.3 (1.35)	E5-6119
20.3 (.80)	E5-6112	36.3 (1.43)	E5-6120
22.3 (.88)	E5-6113	38.3 (1.51)	E5-6121
24.3 (.96)	E5-6114	40.3 (1.59)	E5-6122



Latch Part Number (no cam)

H3 - T - A L - S F

T Size
- **50** Medium - 152 (5.98) height
- **60** Large - 177 (6.97) height

A Actuator style
- **3** No padlock hasp for use as single point or with actuator plate (see page 263)
- 4 With padlock hasp for use as single point or with actuator plate (see page 263)

For linear actuator version (see pages 260 - 261)

S Sealing option
- **0** Non-sealed
- **1** Sealed

F Finish
- **44** Satin chrome
- **50** Black powder coated

L Lock style
- **00** Locking DIN profile (no lock supplied)
- **01** Locking keyed alike CH751*
- **02** Locking keyed alike 300*
- **03** Locking keyed alike 333*
- **20** Non-locking with detent
- **21** Locking DIN profile keyed alike CH751*
- **22** Locking DIN profile keyed alike 300*
- **23** Locking DIN profile keyed alike 333*
- **40** 3 mm Double-bit
- **41** 5 mm Double-bit
- **42** Bellcore 216
- **43** Bellcore Hex-Pin Recess
- **47** 8 mm triangle
- **70** DIN profile 3 mm Double-bit
- **71** DIN profile 5 mm Double-bit
- **72** DIN profile Bellcore 216
- **73** DIN Profile Bellcore Hex-Pin Recess
- **77** DIN profile 8 mm triangle

Part Number Selection

For single point:
Order latch and cam separately

For multi-point:
1. Order latch and cam separately
2. Order multi-point system accessories (linear actuator or actuator plate, rod, rod guide) if 3 point latching required
see pages 260 - 265

For linear actuator version
see pages 260 - 262

Note

Actuator style A options 1 and 2
see pages 260 -262

*2 Overmolded keys supplied

Dimensions in millimeters (inch) unless otherwise stated

PUSH-TO-CLOSE LATCHES

Concealed Latches

Pages 116 - 149

Push-to-close latches simply slam closed, with no secondary steps required for latching. Concealed latches mount inside the enclosure to hide latch points for aesthetic or security reasons.

- Compact plastic latches provide economical solutions for small door applications
- Adjustable keeper brackets provide flexibility for accurate alignment
- Available in magnetic or mechanical latching

Southco also offers the R4-EM electronic rotary latch, a simple, versatile electromechanical latch solution for a variety of applications. For more information see pages 28 - 29 in the ELECTRONIC ACCESS SECTION.

R4

C3

02

MT

E2

E4

A4

Visible Latches

Pages 150 - 179

Match the strength and cost requirements of your push-to-close latch application with a variety of actuation styles - including slide, push-to-open, or pull-handle styles. Visible mounting styles provide both the actuation capability and a convenient handgrip for opening the door.

- Non-locking and locking styles available
- Variety of size, design, and convenient actuation options
- Snap-in installation styles reduce installed cost
- Numerous corrosion resistant designs

M1

MP

A3

93

64

R3

Push-to-Close Latches

Selection guide · Concealed

Use this selection guide to choose the right Push-to-Close Latches for your application

Multi-Point Capable

Padlockable

Stainless Steel

CONCEALED - PAGES 122 - 149

	Product Class	MATERIAL: Stainless Steel	MATERIAL: Zinc Alloy and Steel	MATERIAL: Plastic	PERFORMANCE: Accommodates Misalignment
	R4		✔		✔
	AC			✔	
	C3			✔	
	E2		✔	✔	✔
	A4		✔		✔
	E4			✔	
	02		✔	✔	✔
	T9			✔	
	MT			✔	
	MT			✔	
	MT	✔			
	60			✔	

Dimensions in millimeters (inch) unless otherwise stated

INSTALLATION		OPENING ACTION		ACCESS STYLE		
Round Hole	Snap-In	Pull	Push	Padlockable	Internal Release	Multi-Point Capable
		✔	✔		✔	✔
		✔	✔		✔	✔
	✔	✔			✔	
			✔		✔	✔
			✔			
	✔		✔			
✔	✔	✔			✔	
		✔			✔	
		✔				
		✔			✔	
✔		✔	✔	✔	✔	
	✔		✔			

Push-to-Close Latches

Selection guide · Visible

Use this selection guide to choose the right Push-to-Close Latches for your application

Key-Locking Available

Key-Choice System

Multi-Point Capable

Stainless Steel

VISIBLE - PAGES 148 - 179

	Product Class	MATERIAL: Stainless Steel	MATERIAL: Zinc Alloy and Steel	MATERIAL: Plastic	PERFORMANCE: Working Load	PERFORMANCE: Grip Range
	M1	✔		✔	270 - 835 N (60 - 187 lbf)	20 - 32 (.75 - 1.25)
	MP	✔		✔	270 N (60 lbf)	20 - 26 (.79 - 1.03)
	M1			✔	310 N (70 lbf)	27 - 35 (1.06 - 1.38)
	MP		✔	✔	15 N (3.5 lbf)	35 (1.38)
	A3			✔	25 - 220 N (5 - 50 lbf)	2.54 - 6.4 (.10 - .25)
	93		✔	✔	330 - 560 N (75 - 125 lbf)	20 - 25 (.81 - 1.0)
	R3		✔		560 N (125 lbf)	15 (.59)
	R3		✔		560 N (125 lbf)	16.5 (.65)
	R4			✔	290 N (65 lbf)	41.7 (1.64)
	M1			✔	135 - 500 N (30 - 112 lbf)	6.4 - 24.8 (.25 - .98)
	80			✔	90 N (20 lbf)	6 (.24)
	64	✔	✔		55 - 2700 N (12 - 607 lbf)	1.2 - 37.9 (.05 - 1.49)

Dimensions in millimeters (inch) unless otherwise stated

INSTALLATION			OPENING ACTION					ACCESS STYLE			
Round Hole Install	Flush / Low Profile	Snap-In	Lift	Turn	Slide	Pull	Push	Key-Locking	Key-Choice System	Internal Release	Multi-Point capable
✔	✔		✔					✔		✔	
✔	✔		✔					✔		✔	
✔	✔			✔		✔	✔				
	✔					✔	✔				
	✔	✔			✔			✔			
	✔			✔			✔	✔			
	✔		✔					✔	✔	✔	✔
	✔		✔					✔		✔	
	✔		✔					✔			
	✔		✔				✔	✔			
	✔	✔					✔				
	✔		✔					✔		✔	✔

Push-to-Close Latches

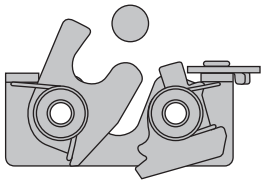
Rotary latches overview

Southco offers a complete line of rotary latches, actuators and cables across a range of sizes and strengths for direct, remote or multi-point actuation.
Our complete system makes the specification of all components easy for our customers and offers a broad range of benefits:

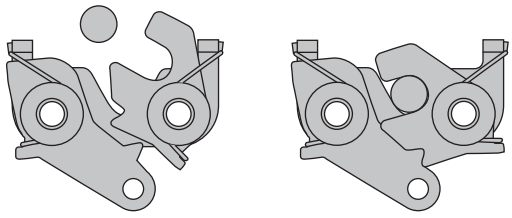
- **The FMVSS-206 compliant heavy-duty rotary latches are suitable for passenger entry doors**
- **The double rotor feature of the R4-50 heavy-duty latch accommodates misalignment between the latch and striker bolt**
- **The hardened steel cam and trigger assemblies promote long-term, reliable performance even in applications that will endure harsh environments**
- **The two-stage engagement provides positive latching at very low closing forces even when the door is not fully closed**

Rotary Latch Styles

Single Rotor

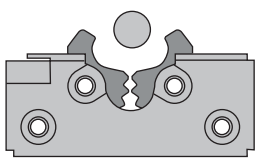


Single Stage

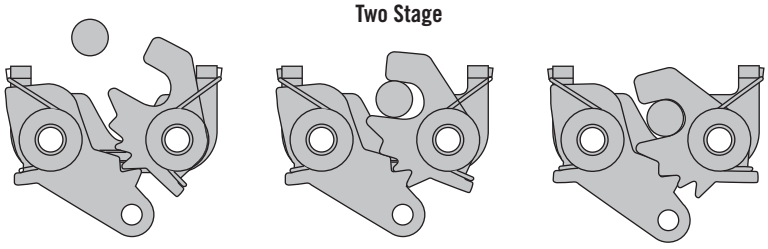


Unlatched Position | Fully Latched Position

Double Rotor



Two Stage



Unlatched Position | Secondary Latched Position | Fully Latched Position

Dimensions in millimeters (inch) unless otherwise stated

Rotary Latches		Product Family	Load Rating	Single or Double Rotor	Single or Two Stage	Features	Applications	Industries	Page
Non- FMVSS Compliant		R4-10	Light-duty	Single rotor	Single stage	Compact, flexible actuation styles, light-duty, economical	Engine covers, baggage doors, access panels, tool boxes	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment, enclosures	122 - 125
		R4-20	Medium-duty	Single rotor	Single and two stage	Compact, flexible actuation styles, medium-duty, economical	Engine covers, baggage doors, access panels, tool boxes	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment, enclosures	128
FMVSS Compliant		R4-30	Heavy-duty	Single rotor	Two stage	Significant accommodation for misalignment between the latch and keeper, heavy-duty	Entry doors, engine covers baggage doors, large access panels	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment	126 - 127
		R4-50	Heavy-duty	Double rotor	Two stage	Maximum accommodation for misalignment between the latch and keeper, heavy-duty	Entry doors, engine covers, baggage doors, large access panels	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment	129

Actuators		Product Family	Description	Electronic Access Capable See pages 22 - 33	Sealed / Non-Sealed	Locking / Non-Locking	Recommended Rotary Latch	Page
Single Point		AC-60	T-handle cable actuator		Non-sealed	Non-locking	R4-10, R4-20, R4-30	130
		AC-70	Paddle cable actuator		Non-sealed	Non-locking	R4-10, R4-20, R4-30	130
		AC-80	Push-button cable actuator		Non-sealed	Non-locking	R4-10, R4-20, R4-30	131
Multi- Point		AC-10	Lever entry actuator	✔	Sealed	Locking	All	132
		AC-20	Paddle entry actuator	✔	Sealed	Locking	All	132
		AC-30	Push-button entry actuator	✔	Sealed	Locking	All	132
		AC-40	Push-button handle entry actuator	✔	Sealed	Locking	All	132
		R3-20	Push-to-close latch		Sealed	Locking	All	166 - 167
		64-40	Paddle actuator		Non-sealed	Locking	R4-10, R4-20, R4-30	178
		E5	Push-to-close, two point		Non-sealed	Non-locking / Locking	R4-10, R4-20, R4-30	90-91, 96-97

R4 Push-to-Close Latch

Rotary latch · Mini · Concealed · Single stage

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate load:
4600 N (1100 lbf)

Installation Notes

See page 125

Accessories

Striker bolt see page 125

Cables and retainer clips
see page 131

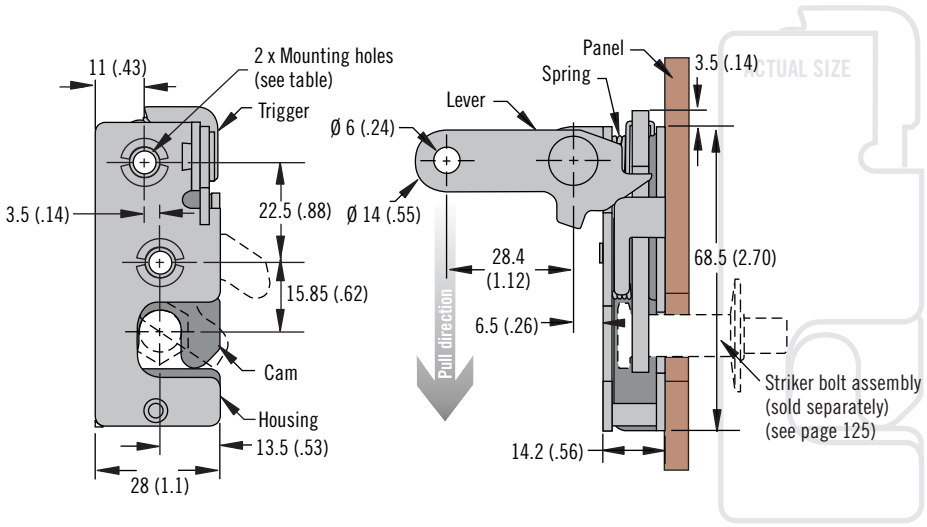
Notes

Electromechanical rotary latch available see pages 28 - 29

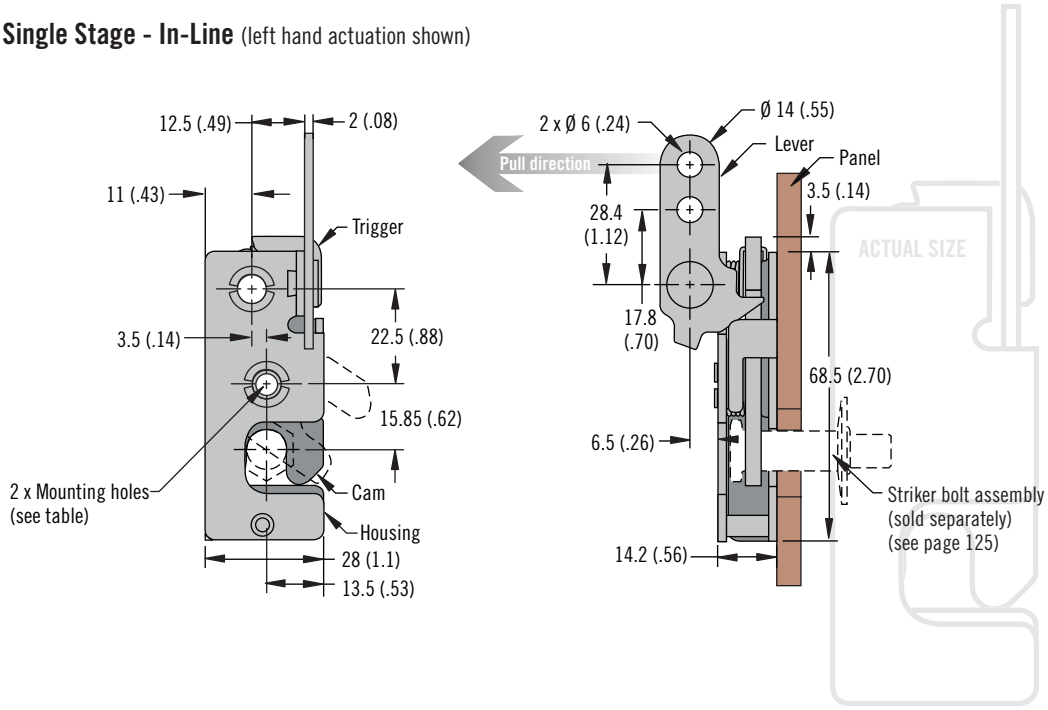
Part Number

See table

Single Stage - Perpendicular (left hand actuation shown)



Single Stage - In-Line (left hand actuation shown)



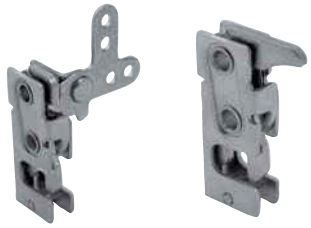
Mounting Style	Panel Hole	Part Number			
		Perpendicular		In-Line	
		Left hand actuation	Right hand actuation	Left hand actuation	Right hand actuation
Ø 7.2 (.283) Thru	Ø 7.6 (.299)	R4-10-20-101-10	R4-10-10-101-10	R4-10-20-201-10	R4-10-10-201-10
1/4-20 Thread	Ø 6.8 (.268)	R4-10-21-101-10	R4-10-11-101-10	R4-10-21-201-10	R4-10-11-201-10
M6 X 1 Thread	Ø 6.4 (.252)	R4-10-22-101-10	R4-10-12-101-10	R4-10-22-201-10	R4-10-12-201-10

INFO CLIC www.southco.com/R4

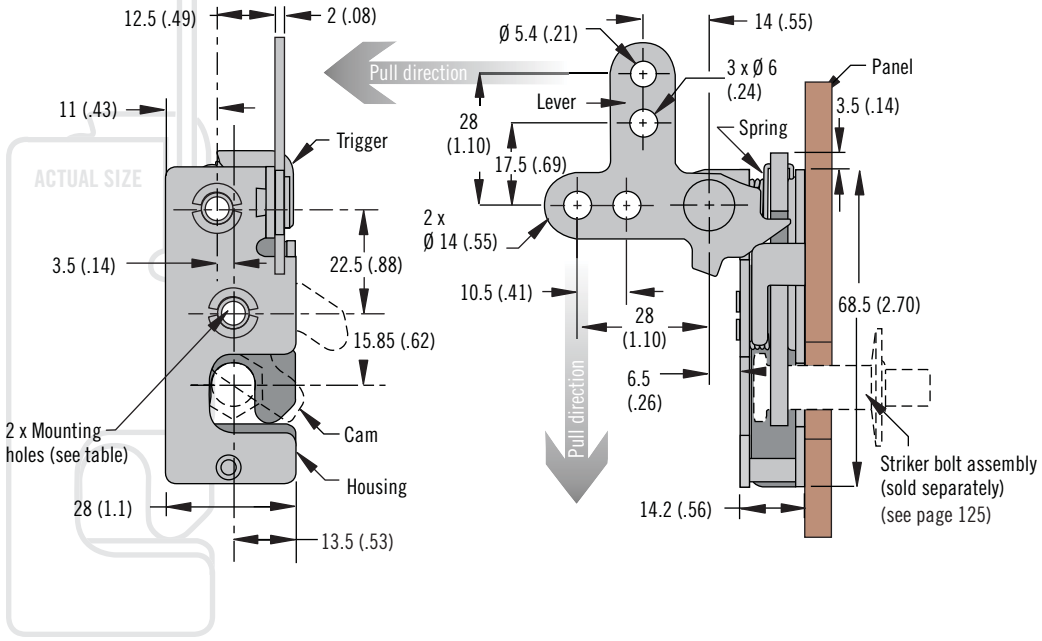
Dimensions in millimeters (inch) unless otherwise stated

R4 Push-to-Close Latch

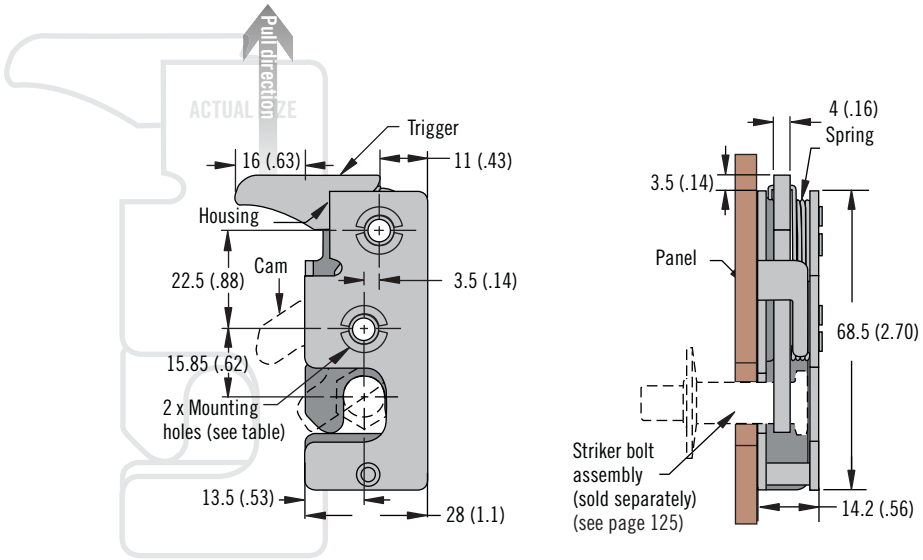
Rotary latch · Mini · Concealed · Single stage



Single Stage - Two Point (left hand actuation shown)



Single Stage - Hand Actuation



Mounting Style	Panel Hole	Part Number		
		Two Point		Hand Actuation
		Left hand actuation	Right hand actuation	
Ø 7.2 (.283) Thru	Ø 7.6 (.299)	R4-10-20-301-10	R4-10-10-301-10	R4-10-10-401-10
1/4-20 Thread	Ø 6.8 (.268)	R4-10-21-301-10	R4-10-11-301-10	R4-10-11-401-10
M6 X 1 Thread	Ø 6.4 (.252)	R4-10-22-301-10	R4-10-12-301-10	R4-10-12-401-10

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate load:
4600 N (1100 lbf)

Installation Notes

See page 125

Accessories

Striker bolt see page 125

Cables and retainer clips see page 131

Notes

Electromechanical rotary latch available see pages 28 - 29

Part Number

See table

R4 Push-to-Close Latch

Rotary latch · Mini · Concealed · Single stage

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate load:
4600 N (1100 lbf)

Installation Notes

See page 125

Accessories

Striker bolt see page 125

Cables and retainer clips
see page 131

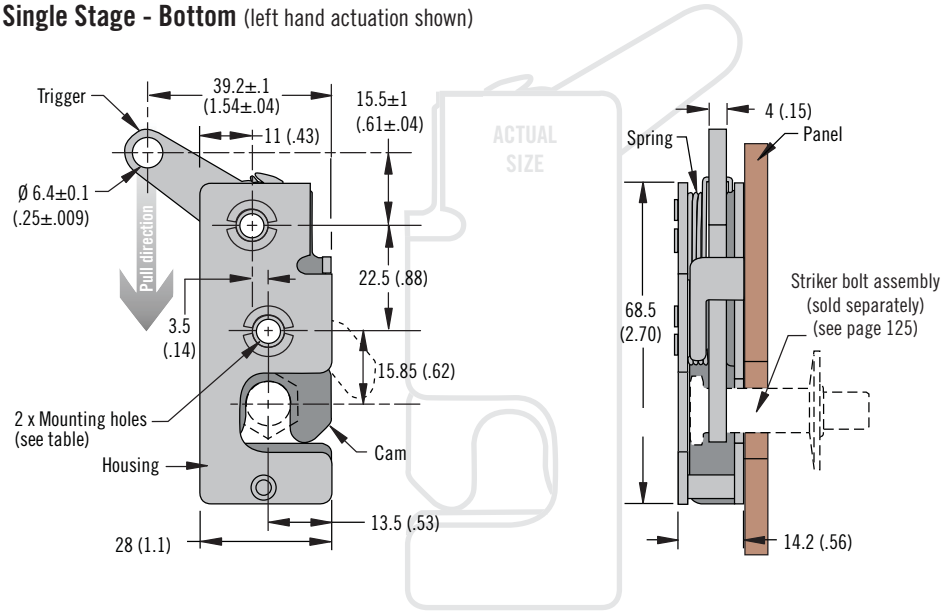
Notes

Electromechanical rotary latch available see pages 28 - 29

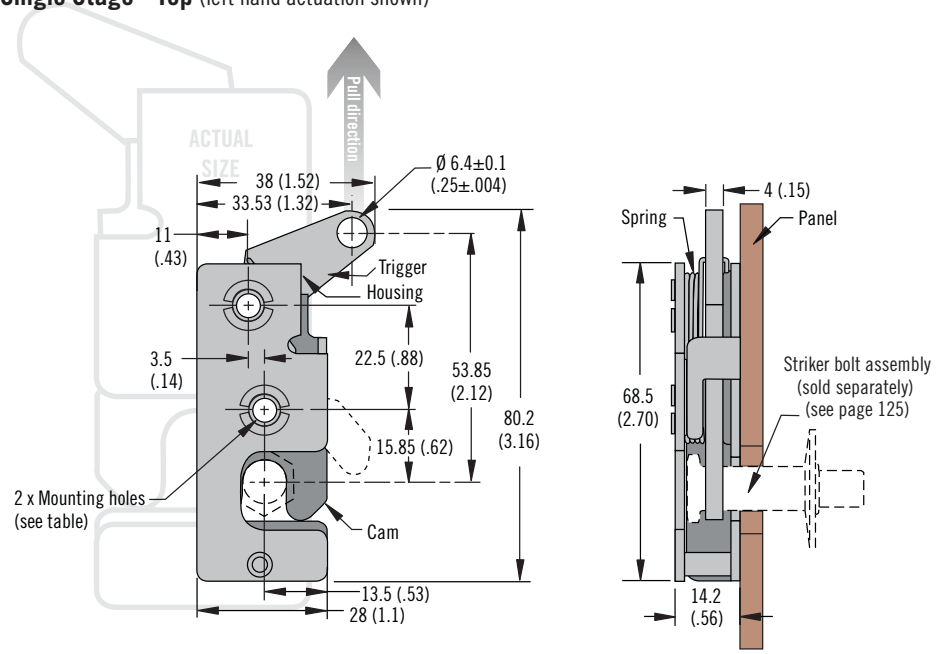
Part Number

See table

Single Stage - Bottom (left hand actuation shown)



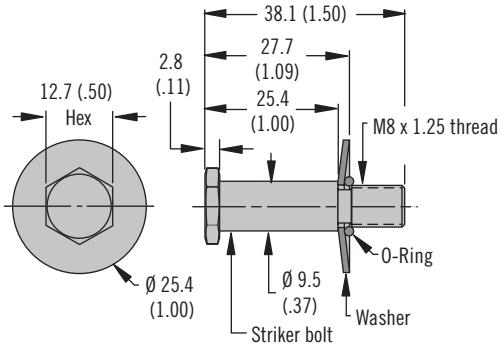
Single Stage - Top (left hand actuation shown)



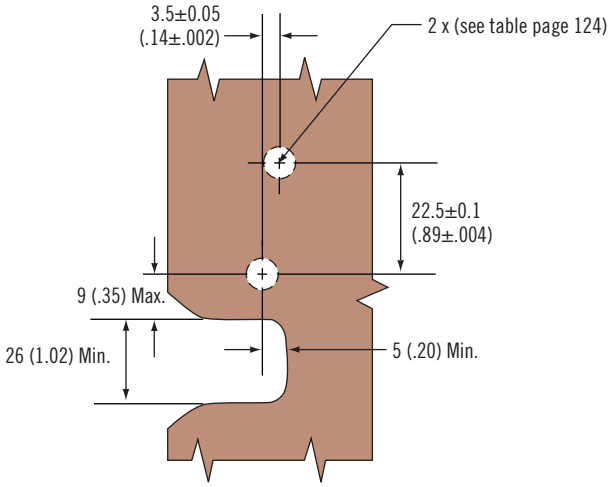
Mounting Style	Panel Hole	Part Number			
		Bottom		Top	
		Left hand actuation	Right hand actuation	Left hand actuation	Right hand actuation
Ø 7.2 (.283) Thru	Ø 7.6 (.299)	R4-10-20-501-10	R4-10-10-501-10	R4-10-20-601-10	R4-10-10-601-10
1/4-20 Thread	Ø 6.8 (.268)	R4-10-21-501-10	R4-10-11-501-10	R4-10-21-601-10	R4-10-11-601-10
M6 X 1 Thread	Ø 6.4 (.252)	R4-10-22-501-10	R4-10-12-501-10	R4-10-22-601-10	R4-10-12-601-10

Dimensions in millimeters (inch) unless otherwise stated

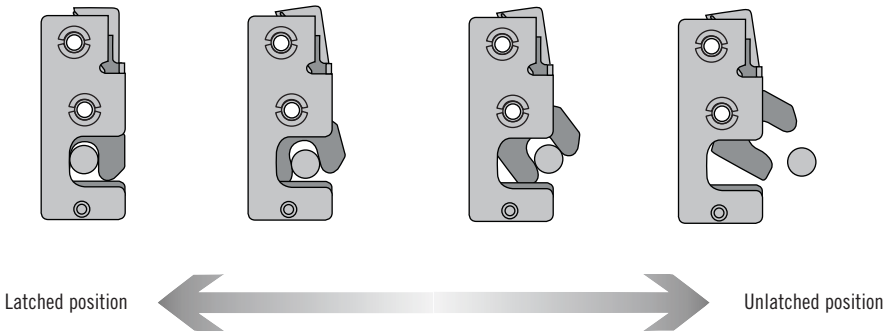
Striker Bolt Assembly (sold separately)



Striker Bolt Part Number
R4-90-121-10



Operation



- **Striker bolt for R4-10 series rotary latch**

Material and Finish
Steel, zinc plated

Notes
Electromechanical rotary latch available see pages 28 - 29

Part Number
See table

R4 Push-to-Close Latch

Rotary latch · Large · Concealed · Two stage

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**
- **FMVSS 206 compliant**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate load:
10675 N (2400) as shown
14230 N (3200 lbf) with support bracket. Contact Southco for more information

Installation Notes

See page 127

Accessories

Striker bolt see page 127

Cables and retainer clips see page 131

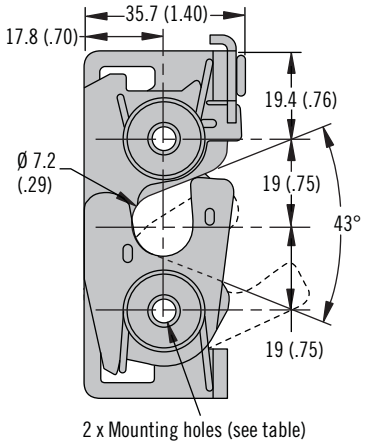
Notes

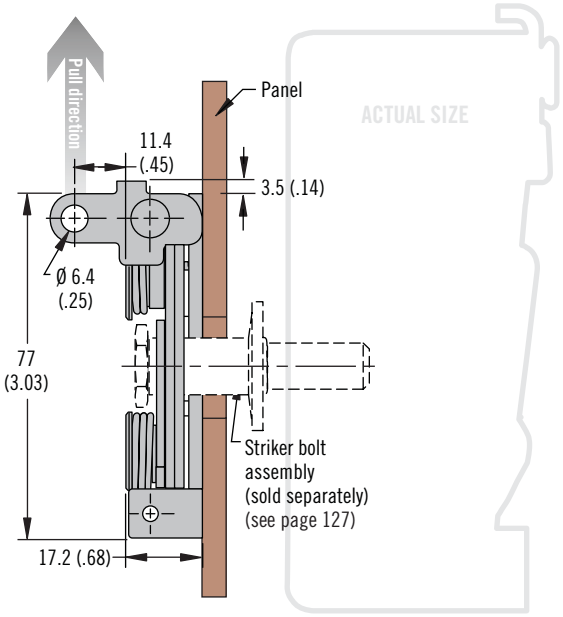
Electromechanical rotary latch available see pages 28 - 29

Part Number

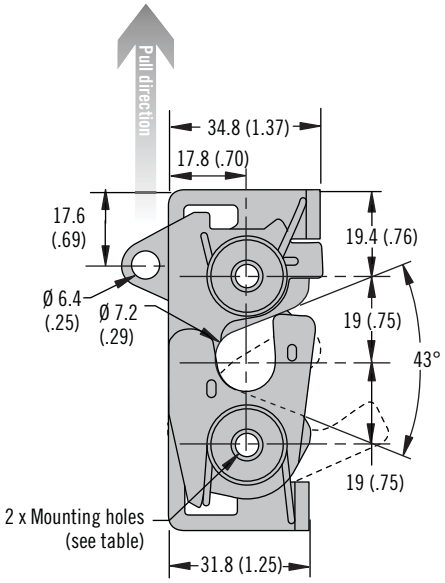
See table

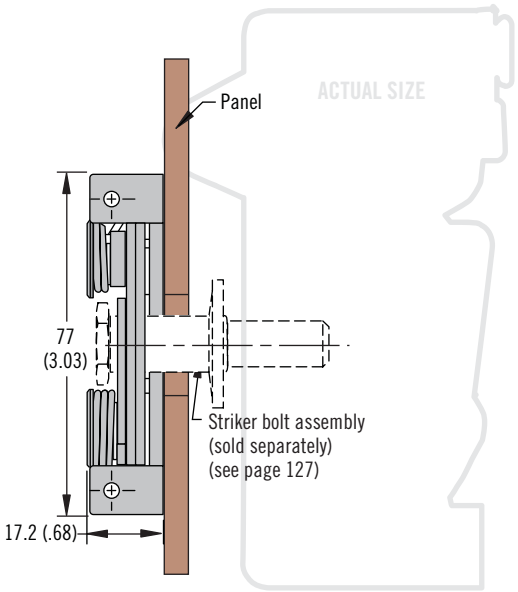
Two Stage - Perpendicular (left hand actuation shown)





Two Stage - Bottom (left hand actuation shown)





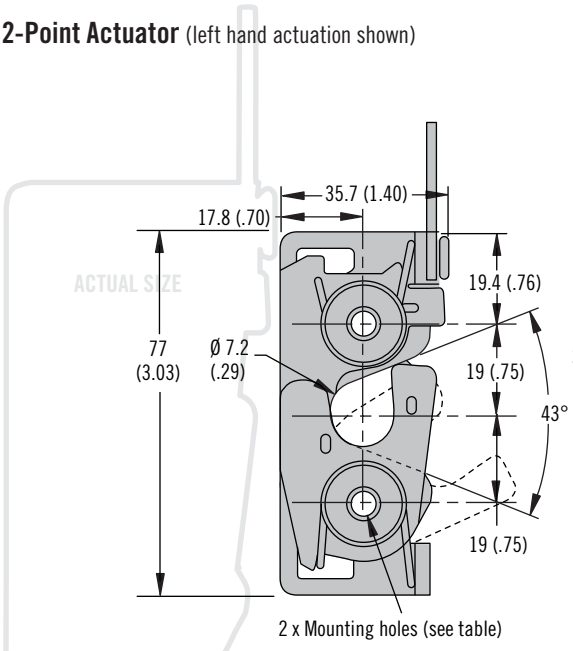
Mounting Style	Part Number			
	Perpendicular		Bottom	
	Left hand actuation	Right hand actuation	Left hand actuation	Right hand actuation
Ø 6.7 (.265) Thru	R4-30-40-101-10	R4-30-30-101-10	R4-30-40-501-10	R4-30-30-501-10
1/4-20 Thread	R4-30-41-101-10	R4-30-31-101-10	R4-30-41-501-10	R4-30-31-501-10
M6 x 1 Thread	R4-30-42-101-10	R4-30-32-101-10	R4-30-42-501-10	R4-30-32-501-10

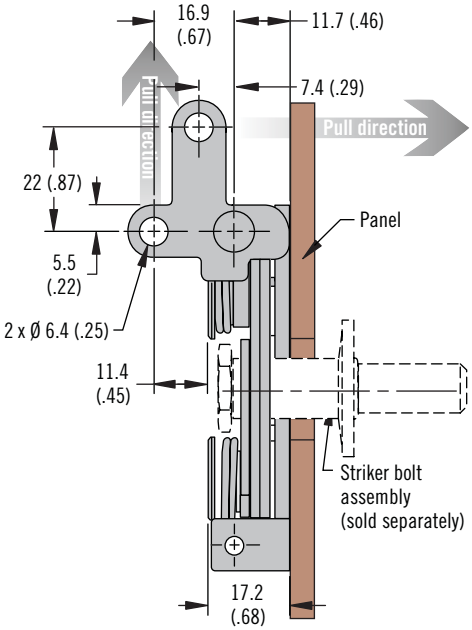
Dimensions in millimeters (inch) unless otherwise stated

R4 Push-to-Close Latch

Rotary latch · Large · Concealed · Two stage

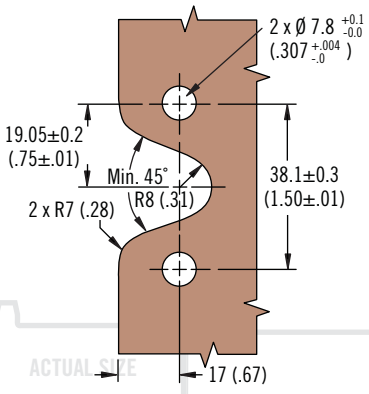
2-Point Actuator (left hand actuation shown)

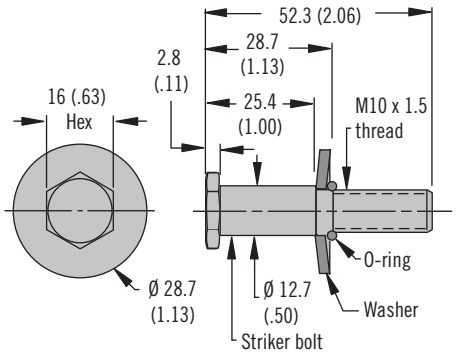




Mounting Hole	Part Number Left Hand Actuation	Part Number Right Hand Actuation
Ø 6.7 (.265) Thru	R4-30-40-301-10	R4-30-30-301-10
1/4-20 Thread	R4-30-41-301-10	R4-30-31-301-10
M6 X 1 Thread	R4-30-42-301-10	R4-30-32-301-10

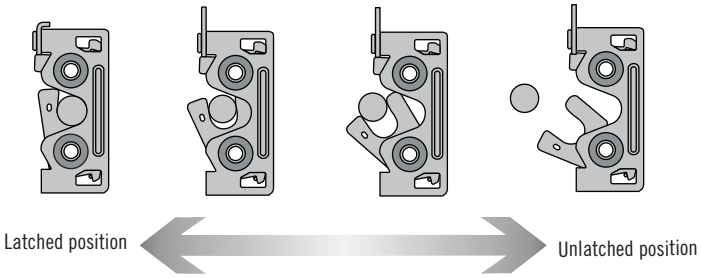
Striker Bolt Assembly (sold separately)





Striker Bolt Part Number
R4-90-321-10

Operation



- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**
- **FMVSS 206 compliant**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate load:
10675 N (2400) as shown
14230 N (3200 lbf) with support bracket. Contact Southco for more information

Accessories

Cables and retainer clips
see page 131

Notes

Electromechanical rotary latch available see pages 28 - 29

Part Number

See table

- **Striker bolt for R4-30 series rotary latch**

Material and Finish

Steel, zinc plated

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

R4 Push-to-Close Latch

Rotary latch · Medium · Concealed · Single and two stage

- **Single or multi-point latch capability**
- **Compatible with wide array of Actuators**

Material and Finish

Steel, zinc plated

Accessories

Cables and retainer clips
see page 131

Notes

Electromechanical rotary latch available see pages 28 - 29

For panel preparation visit www.southco.com/R4

Part Number

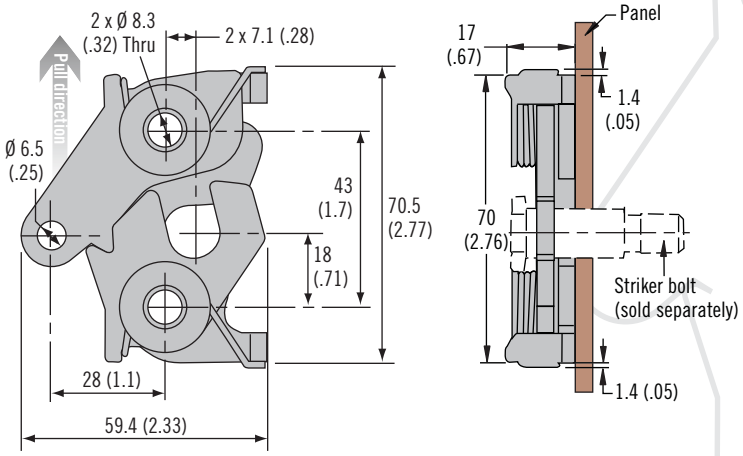
See table

Order latch and striker separately

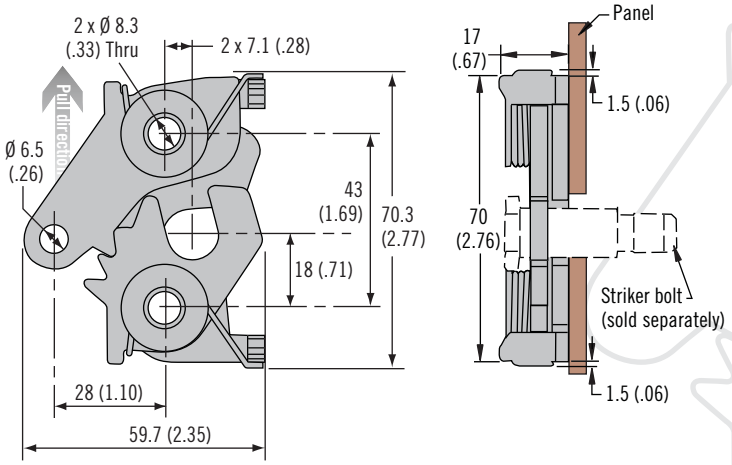
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/R4*

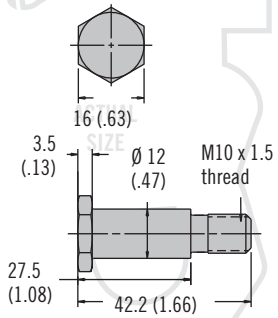
Single Stage (left hand actuation shown)



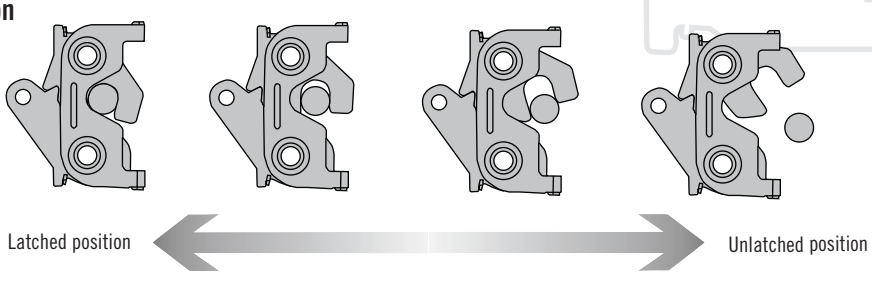
Two Stage (left hand actuation shown)



Striker Bolt (sold separately)



Operation



Position	Part Number		
	Left Hand Actuation	Right Hand Actuation	Striker Bolt
Single stage	R4-20-20-501-10	R4-20-10-501-10	R4-91-231-10
Two stage	R4-20-40-501-10	R4-20-30-501-10	

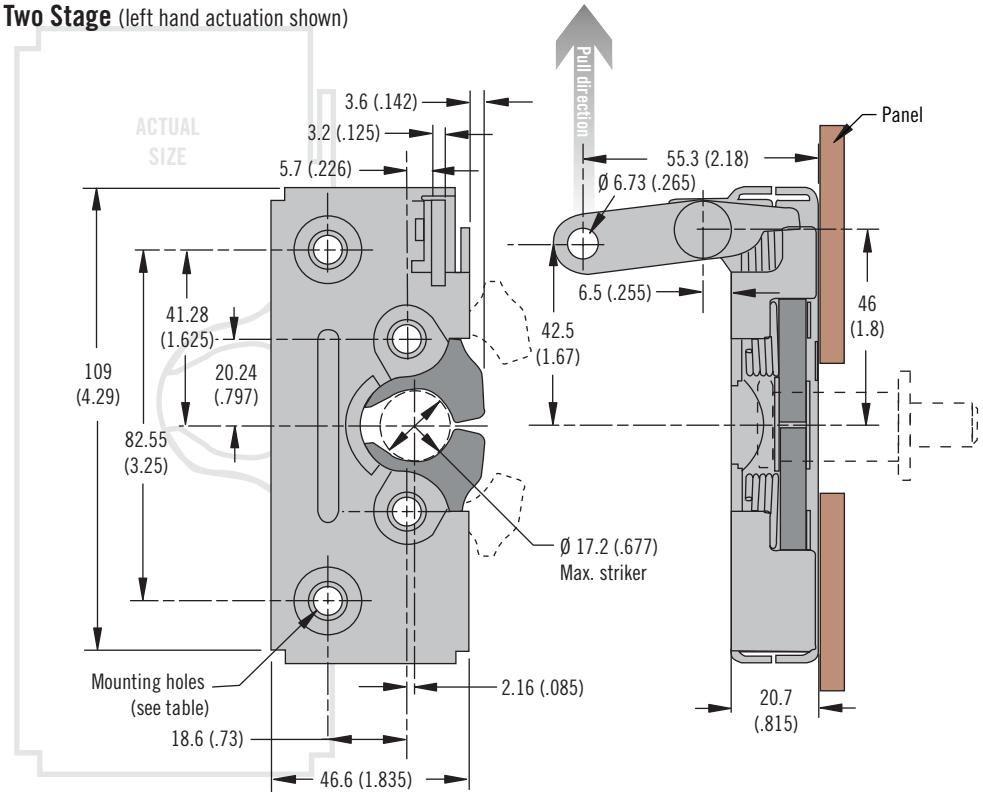
Dimensions in millimeters (inch) unless otherwise stated

R4 Push-to-Close Latch

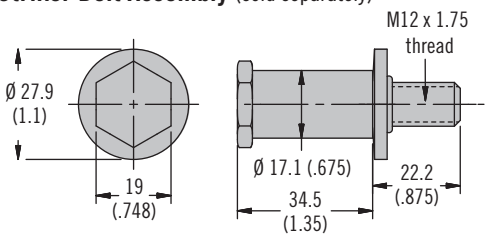
Rotary latch · Heavy-duty · Two stage

- **Single or multi-point latch capability**
- **Compatible with wide array of actuators**
- **FMVSS 206 compliant**

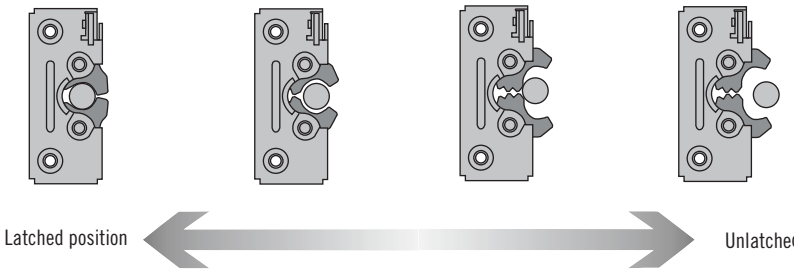
Two Stage (left hand actuation shown)



Striker Bolt Assembly (sold separately)



Operation



Mounting Style	Part Number		
	Left Hand Actuation	Right Hand Actuation	Striker Bolt
Ø 7.2 (.283) Thru	R4-50-40-101-10	R4-50-30-101-10	R4-90-441-10
1/4-20 Thread	R4-50-41-101-10	R4-50-31-101-10	
M6 X 1 Thread	R4-50-42-101-10	R4-50-32-101-10	

Material and Finish

Steel, zinc plated

Accessories

Cables and retainer clips
see page 131

Notes

Electromechanical rotary latch available see pages 28 - 29

For panel preparation visit www.southco.com/R4

Part Number

See table

Order latch and striker bolt separately

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/R4

Dimensions in millimeters (inch) unless otherwise stated

AC Single Point Actuator

T-handle

- **Surface mount installation**
- **Generous grip area**
- **Pull to activate**

Material and Finish

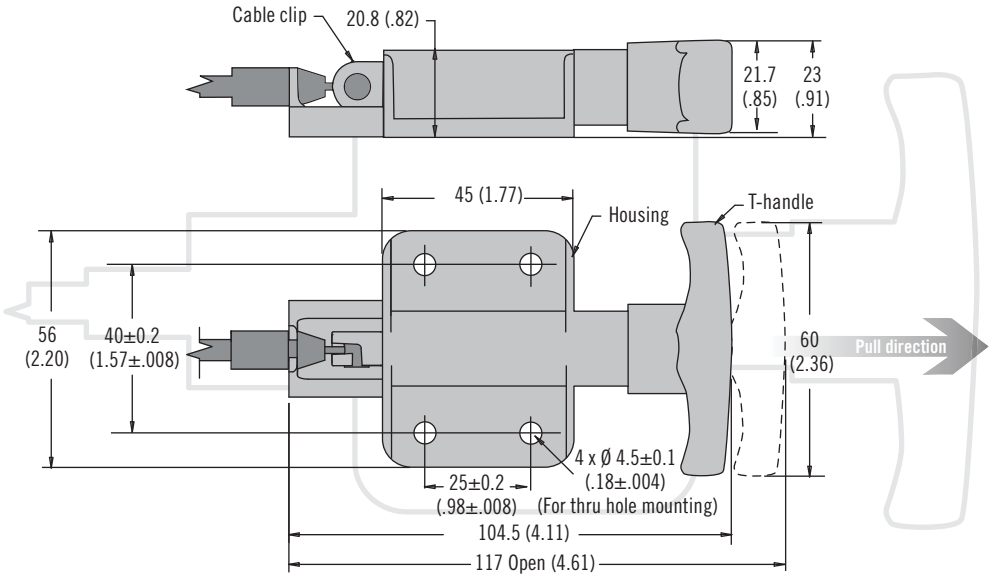
Housing: PC/ABS, black
T-handle and slide:
33% glass-filled nylon, black
Clip: acetal, black
Spring: Stainless steel, passivated

Part Number

See table

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/AC*



Part Number
AC-60-101-11

AC Single Point Actuator

Paddle

- **Front mount installation**
- **Flush**
- **Two cable mounting options**

Material and Finish

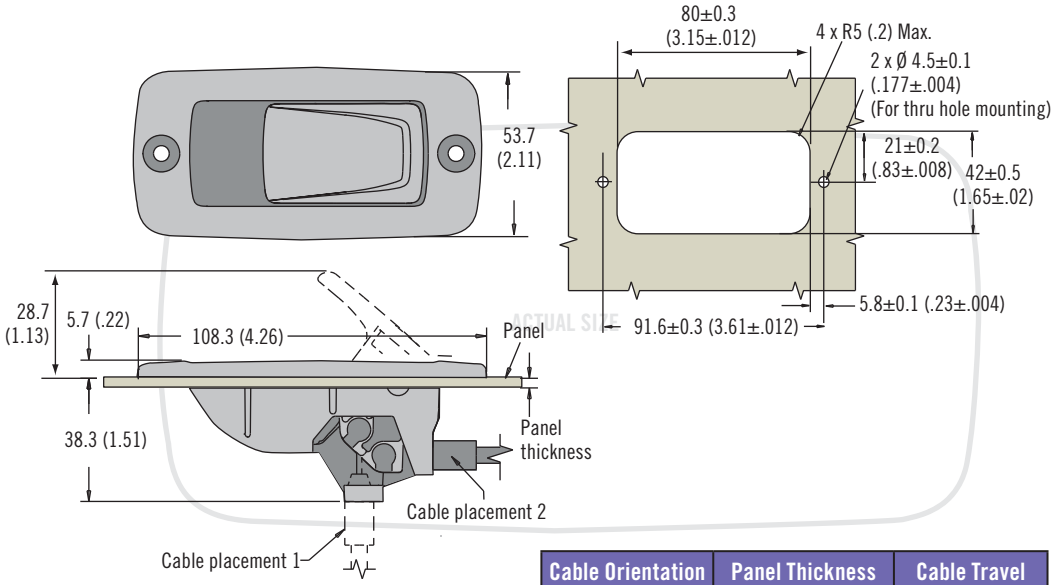
Paddle and housing:
33% glass-filled nylon, black
Spring: Stainless steel, passivated

Part Number

See table

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/AC*

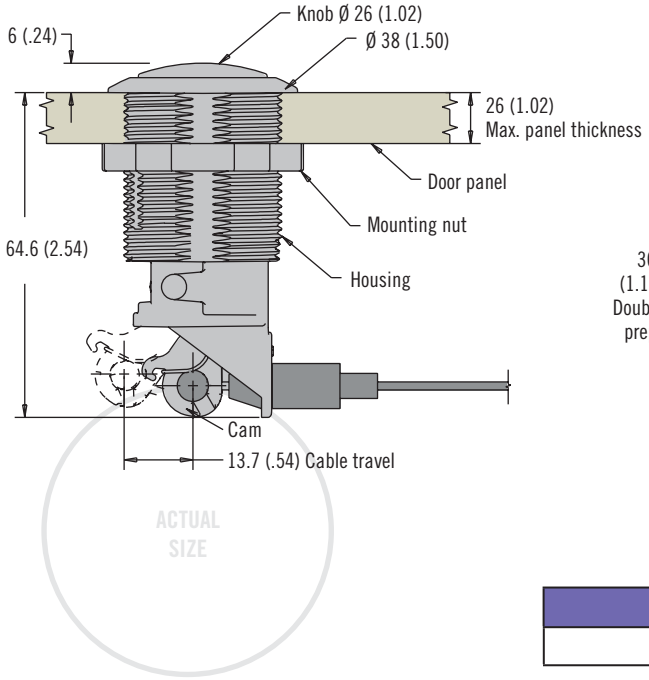


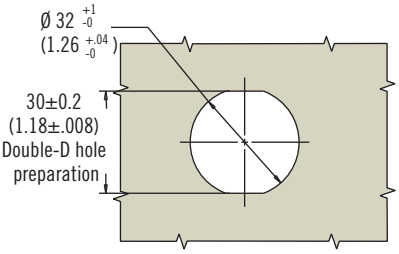
Part Number
AC-70-101-11

Cable Orientation	Panel Thickness	Cable Travel
Placement 1	12.5 (.49) max.	11.1 (.44)
Placement 2	16 (.63) max.	13.2 (.52)

Dimensions in millimeters (inch) unless otherwise stated

AC Single Point Actuator
Push-button





Part Number
AC-80-101-11

- **Flush**
- **Mounting hardware included**

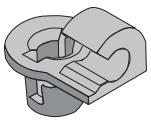
Material and Finish
Push button and housing:
PC/ABS, black
Cam: 33% glass-filled nylon, black
Spring: Stainless steel, passivated

Part Number
See table

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/AC

AC Retainer Clips and Cables

Retainer clip



Latch Series	Part Number
	Retainer Clip
R4-10	R4-0-43922
R4-30	
R4-20	R4-0-43922-1
R4-50	

- **For use with Ø 4 (.157) rod or Southco cable assembly**

Material and Finish
See www.southco.com

Part Number
Retainer clip see table
Cable assembly contact Southco

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/R4

Dimensions in millimeters (inch) unless otherwise stated

AC Multi-Point Actuator

- **Multi-point capable**
- **Locking and non-locking styles**
- **Sealed**
- **EAS compatible**

Notes

For information on these and other actuators, go to www.southco.com/AC

AC-10 Series Lever Entry Actuator

AC-20 Series Paddle Entry Actuator

AC-30 Series Push Button Entry Actuator

AC-40 Series Push Button Handle Entry Actuator

Other options available. For complete details on variety, part numbers, installation and specification, go to

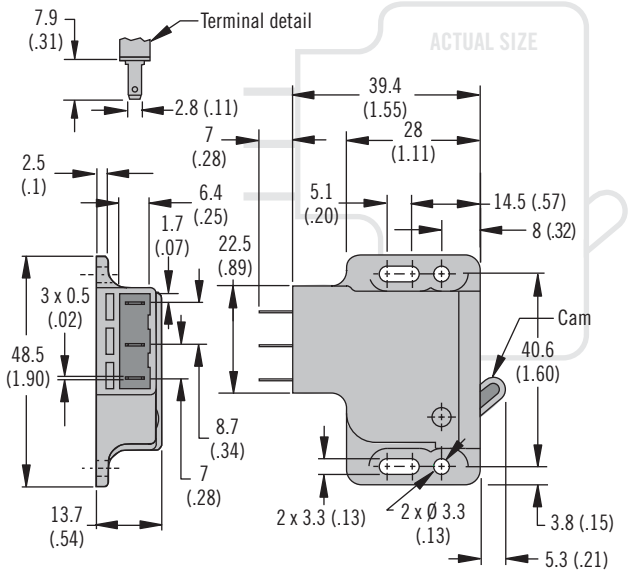
INFO CLIC *www.southco.com/AC*

Dimensions in millimeters (inch) unless otherwise stated

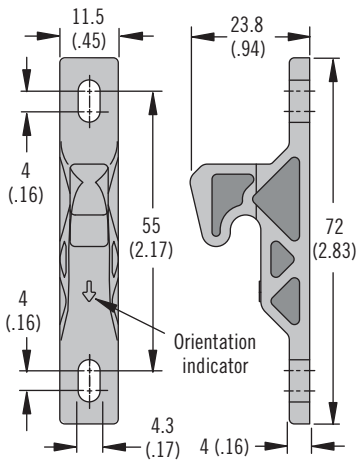
C3 Push-to-Close Latch

Pull-to-open · Grabber catch with integral Microswitch

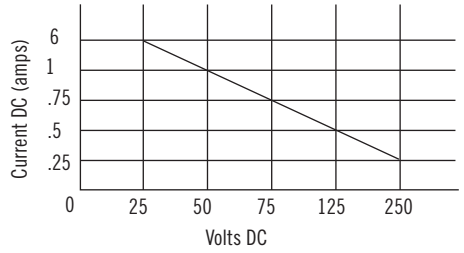
Catch



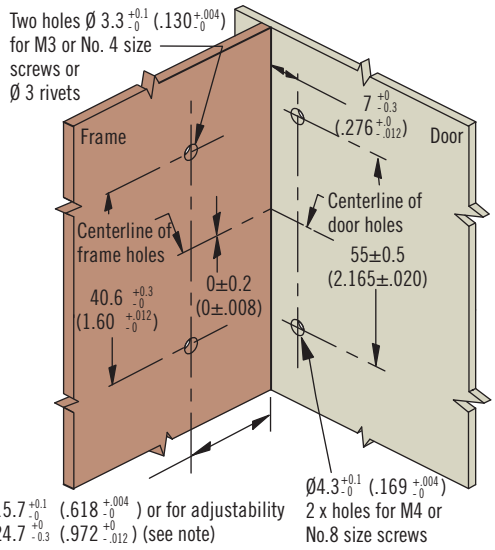
Keeper



Switch specification. Subminiature VDE, UL approved. Switch is fitted with fast-on terminals. Max AC voltage 250V, max AC current 6A. See graph below for DC resistive load.



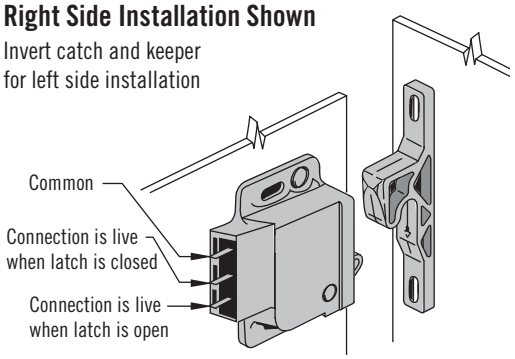
Over 50 V DC, inductive loads should be greatly reduced



Note: These holes and dimensions are used only if adjustability through the use of slotted holes in catch is desired.

Right Side Installation Shown

Invert catch and keeper for left side installation



Approximate Pull-Up Force	Spring Color	Part Number
13 N (3 lbf)	Blue	C3-1803
22 N (5 lbf)	Silver	C3-1805
44 N (10 lbf)	Black	C3-1810

- **Opens and closes switch contacts with door operation**
- **One assembly includes catch and keeper**
- **Spring loaded over-center latching**

Material and Finish

PC/ABS, black and glass-filled nylon, black

Performance Details

Operating temperature range: -40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-V0

Installation Notes

Max. tightening torque on mounting screws (not supplied):
Catch 1.1 N·m (9.7 in·lbf)
Keeper 2.8 N·m (24.8 in·lbf)
Orient **keeper** to latch. The arrow on the keeper should point towards the cam. Mount to door and adjust for smooth latching.

Notes

This product is specifically designed to be used as a mechanical grabber catch with an electric switch. The switch is designed to operate an indicator light or form part of a non-safety related logic circuit. This is not designed for use as a safety interlock.
Terminal cover is used for protection during shipping only. Use strain relief on wires.

Min. distance from frame (or surface on which catch sub-assembly is mounted) to centerline of door hinge is 150 (5.9)

Part Number

See table

C3 Push-to-Close Latch

Pull-to-open · Grabber catch · Snap-in

- **Spring-loaded over-center latching**
- **One assembly includes catch and keeper**

Material and Finish

PC/ABS, black and glass-filled nylon, black, mineral filled nylon, black

Performance Details

Operating temperature range: -30°C (-20°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

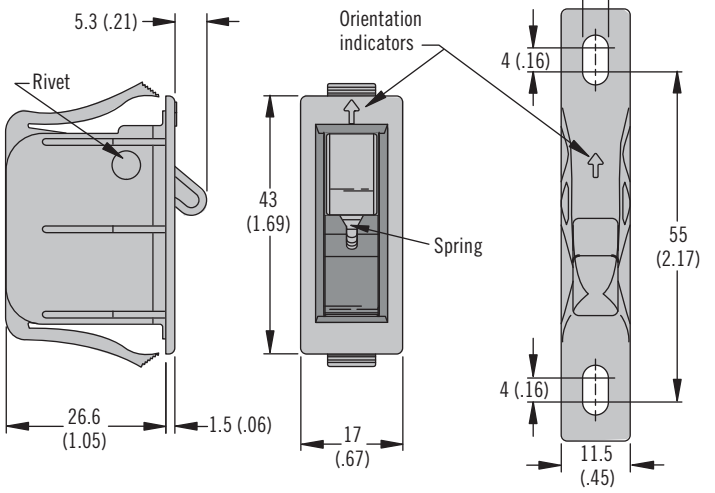
Max. tightening torque on mounting screws (not supplied)
Keeper: 2.8 N·m (24.8 in·lbf)

Orient **keeper** to latch. The arrow on the keeper should point towards the cam. Mount to door and adjust for smooth latching

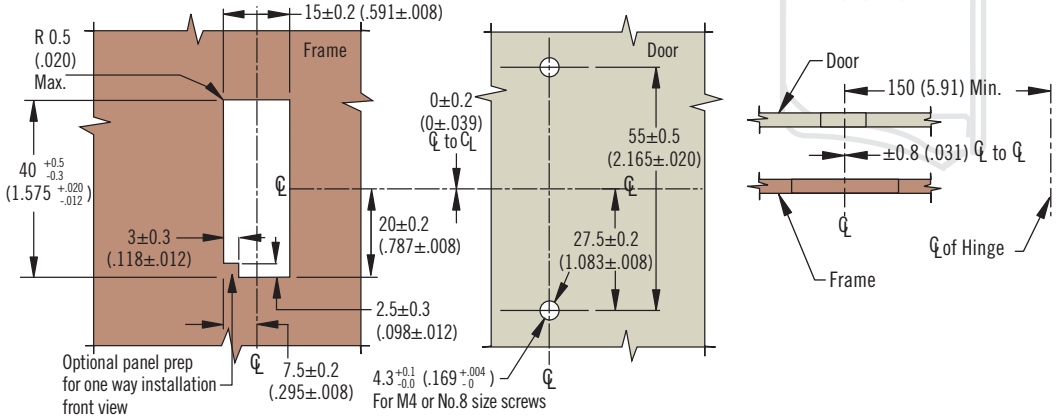
Part Number

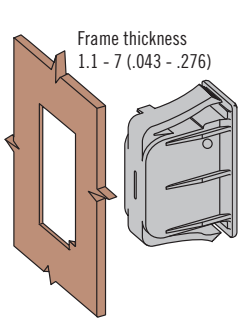
See table

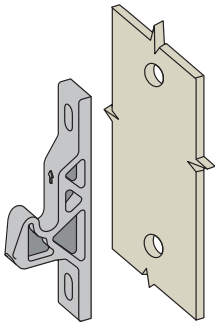
Catch

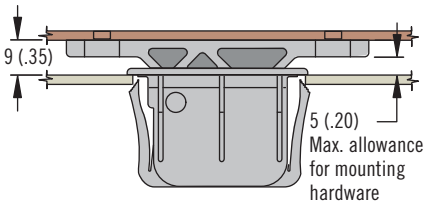


Keeper









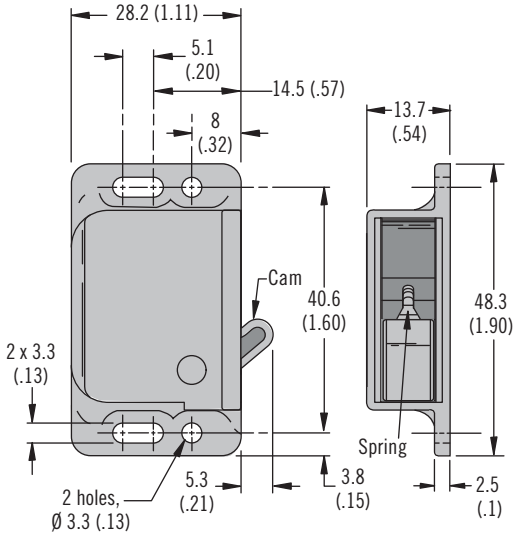
Approximate Pull-Up Force	Spring Color	Part Number		
		Frame Thickness Range		
		1.1 - 2.9 (.043 - .114)	2.9 - 5.3 (.114 - .209)	5.3 - 7 (.209 - .276)
13 N (3 lbf)	Blue	C3-303	C3-503	C3-703
22 N (5 lbf)	Silver	C3-305	C3-505	C3-705
44 N (10 lbf)	Black	C3-310	C3-510	C3-710

Dimensions in millimeters (inch) unless otherwise stated

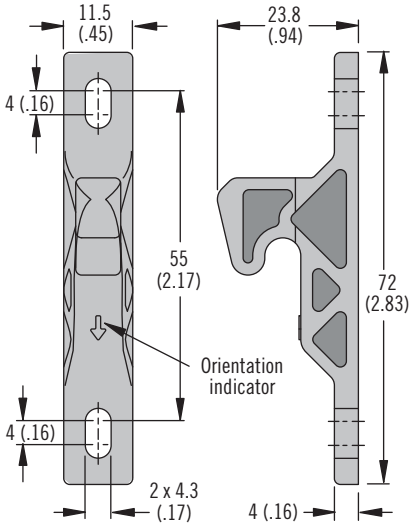
C3 Push-to-Close Latch

Pull-to-open · Grabber catch · Side mount

Catch

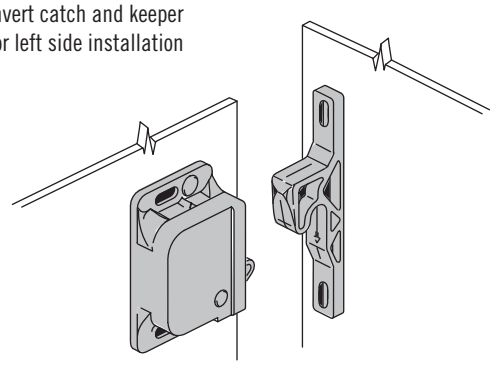


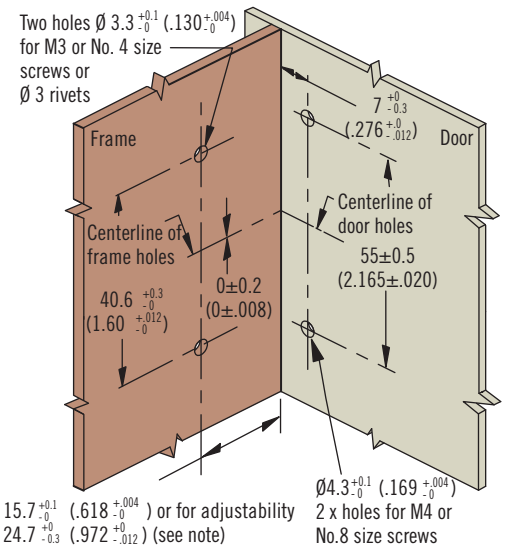
Keeper



Right Side Installation Shown

Invert catch and keeper for left side installation





Note: These holes and dimensions are used only if adjustability through the use of slotted holes in catch is desired.

Approximate Pull-Up Force	Spring Color	Part Number
13 N (3 lbf)	Blue	C3-803
22 N (5 lbf)	Silver	C3-805
44 N (10 lbf)	Black	C3-810

- **Spring-loaded over-center latching**
- **One assembly includes catch and keeper**

Material and Finish

PC/ABS, black and glass-filled nylon, black, mineral filled nylon, black

Performance Details

Operating temperature range: -30°C (-20°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting screws: (not supplied)
Catch: 1.1 N·m (9.7in·lbf)
Keeper: 2.8 N·m (24.8in·lbf)

Orient **keeper** to latch. The arrow on the keeper should point towards the cam. Mount to door and adjust for smooth latching.

Min. distance from frame (or surface on which catch sub-assembly is mounted) to centerline of door hinge is 150 (5.9)

Part Number

See table

E2 Push-to-Close Latch

Push-button to open · Hidden panel latching system

- Concealed latch points
- Door ejection feature
- Accommodates misalignment
- Single or two point latching

Material and Finish

Steel, zinc plated and thermoplastic, white, aluminum, natural

Performance Details

Keeper style	Static load	Ultimate load
Fixed	1300 N (300 lbf)	2200 N (500 lbf)
Floating	750 N (170 lbf)	1400 N (310 lbf)

Operating temperature range: -18°C (-0°F) to 120°C (250°F)

Flammability rating: UL94-V0

Installation Notes

See page 138

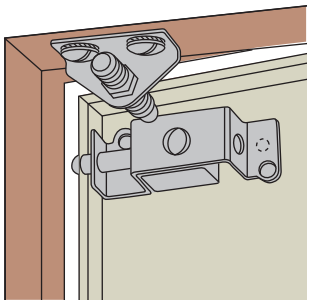
*Nominal keeper location from inside surface of door. Adjustable 6.4 (.25) either way to allow for variations in mounting, gasketing, etc

Part Number

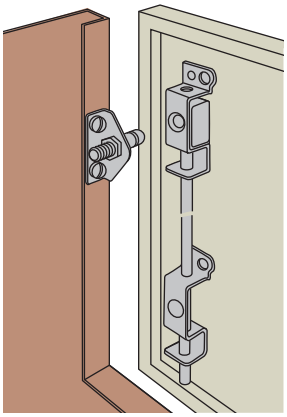
See table

Available in Two Versions - Near Edge and Remote

Near Edge

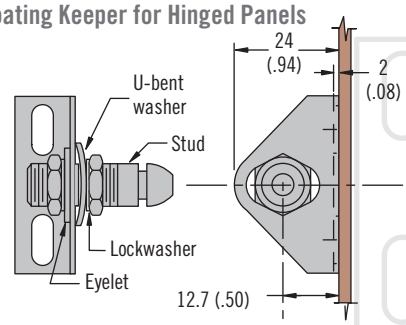


Remote

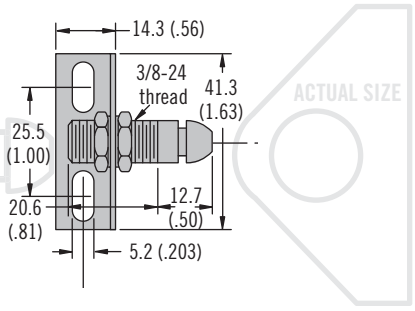


1. Select Keeper

Floating Keeper for Hinged Panels

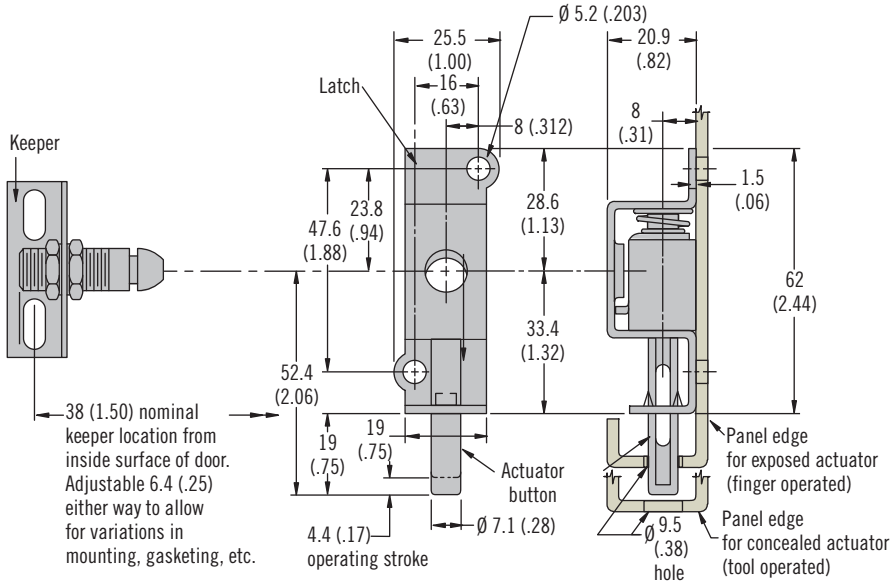


Fixed Keeper for Lift-Off Panels



2. Determine Latch Location - Near Edge or Remote (Single or Two Point)

Near Edge



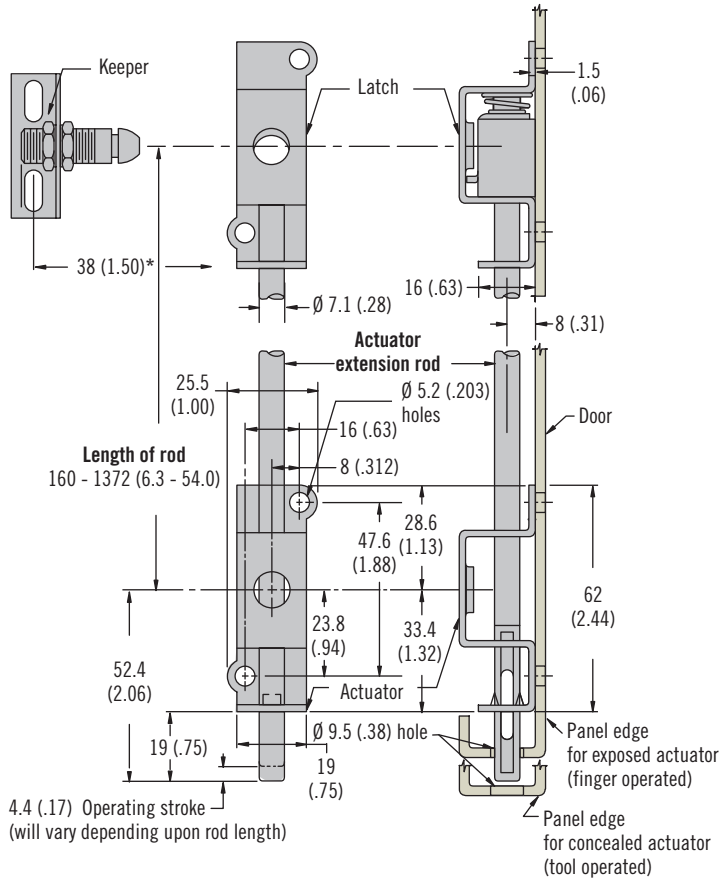
Near Edge Complete Assembly Part Number	
With Fixed Keeper	With Floating Keeper
E2-50-101-10	E2-50-101-20

A complete near edge assembly comes with keeper

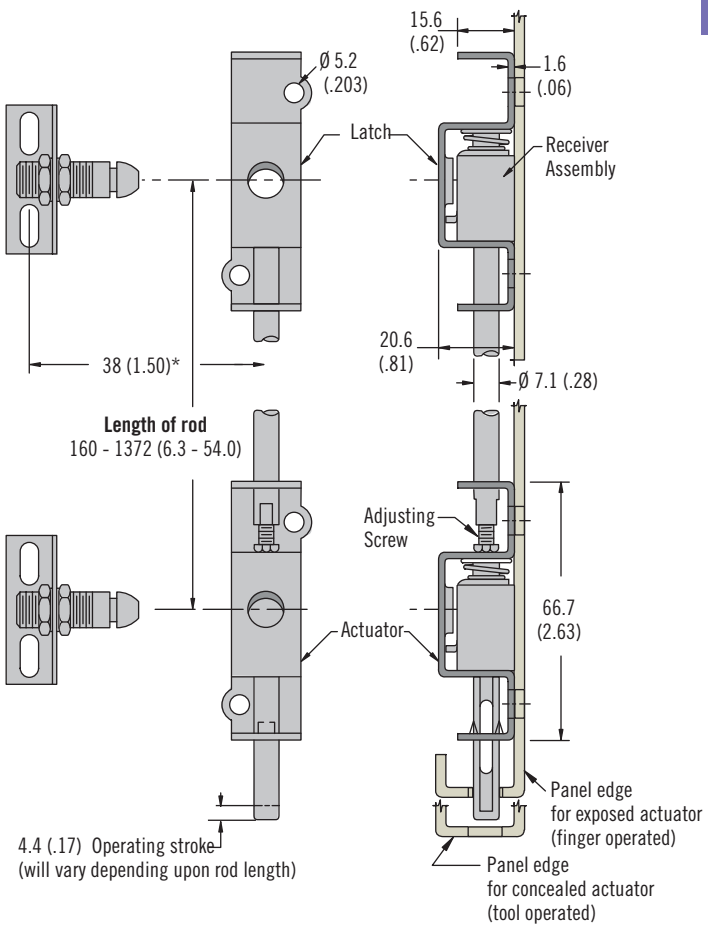
Dimensions in millimeters (inch) unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

Remote - Single Point



Remote - Two Point



Remote Single Point Part Number	
Fixed keeper	E2-55-101-10
Floating keeper	E2-55-102-10
Rod 500 mm	E2-46-0500-16
Rod 1250 mm	E2-46-1250-16
Latch	E2-92-101
Actuator	E2-91-101

A complete remote single point assembly consists of 4 components: keeper, rod, latch and actuator

To order rod lengths other than the standard lengths, use part number:
E2-42-XXX-16
(XXX = length in mm)
Min. = 160 mm
Max. = 1372 mm
Min. order = 50 units

Remote Two Point Part Number	
Fixed keeper	E2-55-101-10
Floating keeper	E2-55-102-10
Rod 500 mm	E2-42-0500-16
Rod 1250 mm	E2-42-1250-16
Latch	E2-92-102
Actuator	E2-93-102

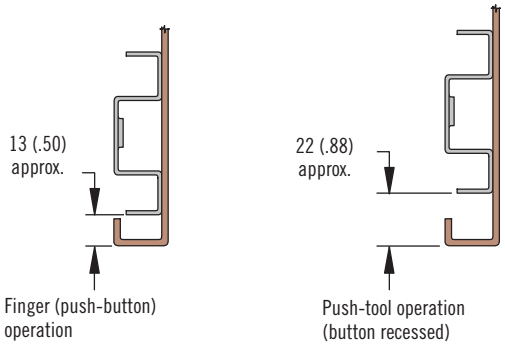
A complete remote two point assembly consists of 4 components: keeper, rod, latch and actuator

E2 Push-to-Close Latch

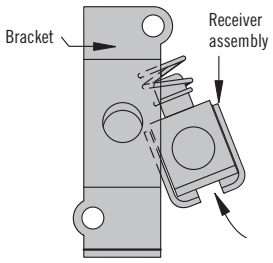
Push-button to open · Hidden panel latching system

Installation Notes

1. Mount brackets on inside surface of your panel using studs, welds, M5 (No.10) screws or Ø 5 (.188) rivets.

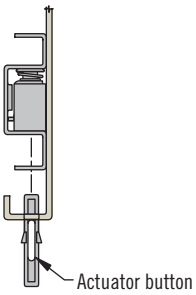


2. Slide receiver assembly into side of upper bracket.

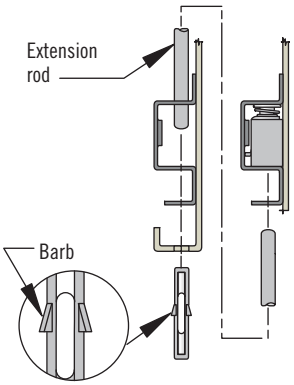


3. Insert extension rod into brackets, then slide receiver assembly into side of lower bracket and snap-in actuator button.

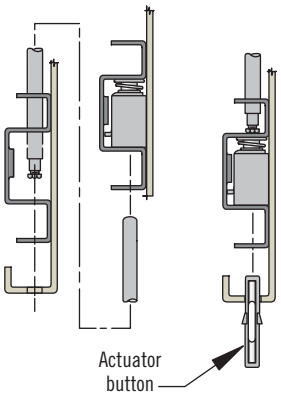
Near Edge Style
Snap actuator button into bracket



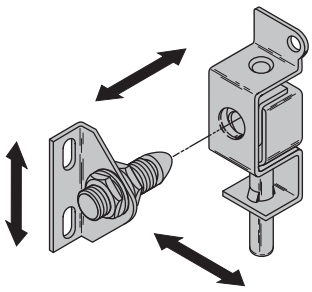
Remote Latching Style
Insert extension rod and actuator button into brackets



Two-Point Style
Insert extension rod into brackets then slide receiver assembly into side of lower bracket and snap in actuator button



4. Mount keeper with M5 (No. 10) screws. Keeper can be adjusted 3.2 (.13) from center both vertically and horizontally for proper alignment with latch.

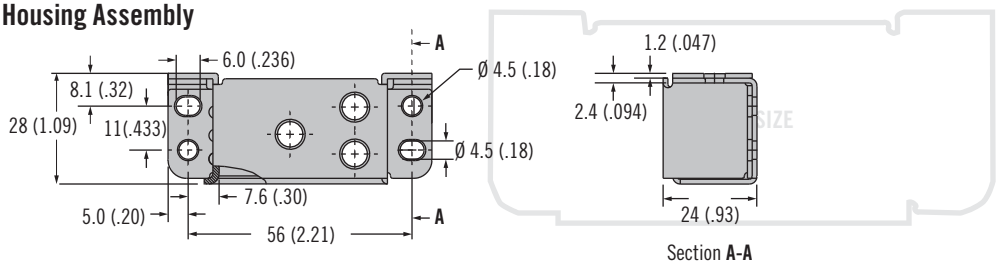


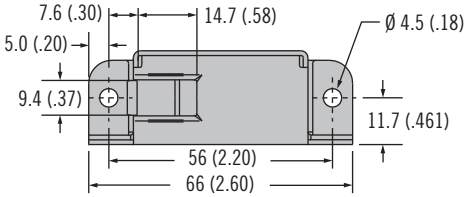
Dimensions in millimeters (inch) unless otherwise stated

A4 Push-to-Close Latch

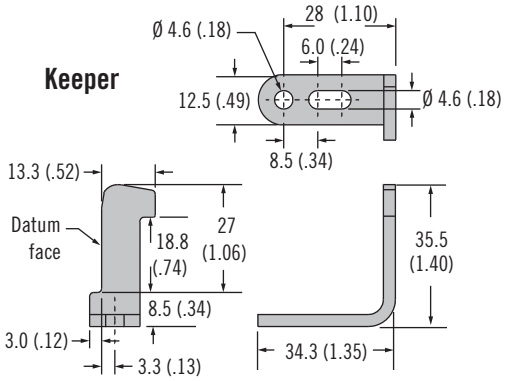
Push-to-open · Large

Housing Assembly





Keeper



Description	Part Number
Latch	A4-30-201-12
Keeper	A4-36-201-12

- **Heavy-duty construction**
- **Push-to-close, push-to-open**

Material and Finish

Steel, zinc plated

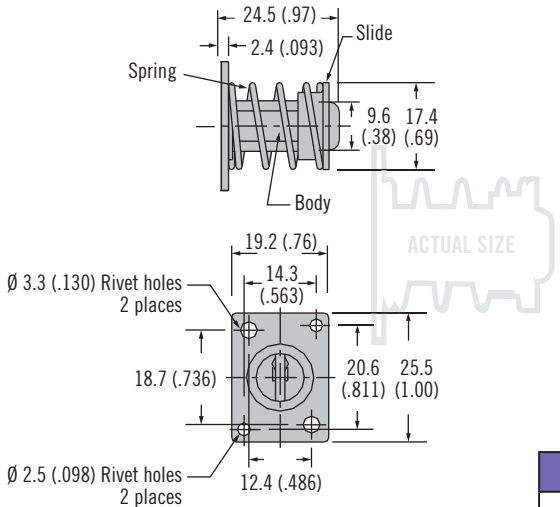
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/A4**

A4 Push-to-Close Latch

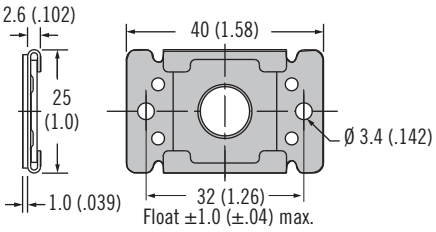
Push-to-open · Small

Pin Latch



Optional Floating Receptacle

Notes: Floating part of receptacle faces pin latch



Part Number	
Pin latch	A4-20-501-10
Optional floating receptacle	A4-26-502-10

- **Accommodates misalignment**
- **Push-to-close, push-to-open**

Material and Finish

Steel, zinc plated and thermoplastic, black

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/A4**

Dimensions in millimeters (inch) unless otherwise stated

E4 Push-to-Close Latch

Push-to-open · Touch latch · Small

- **Concealed latch points**
- **Door ejection feature**
- **Snap-in installation**

Material and Finish

Latch and keeper: Acetal, black
Alignment guide: Acetal, white

Performance Details

Average tensile load: 15 N (3.5 lbf)

Operating temperature range: -40°C (-40°F) to 105°C (220°F)

Flammability rating: UL94-HB

Installation Notes

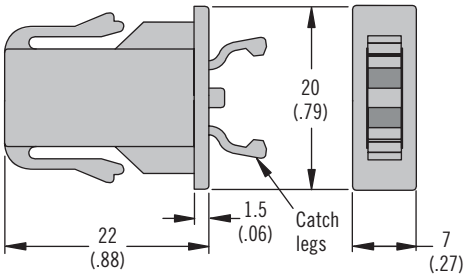
Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond.

Self-adhesive keepers are designed to function under intermittent break-away loads

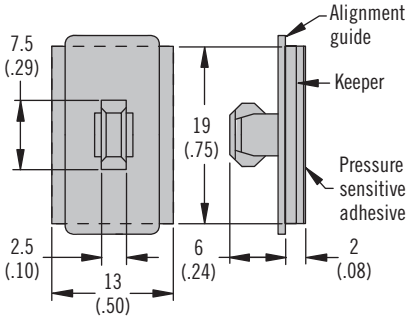
Part Number

See table

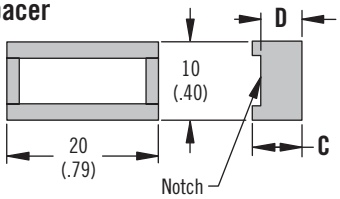
Latch



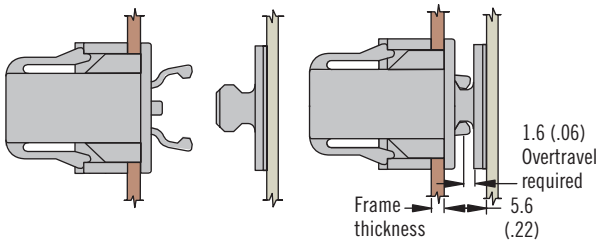
Keeper Assembly



Spacer

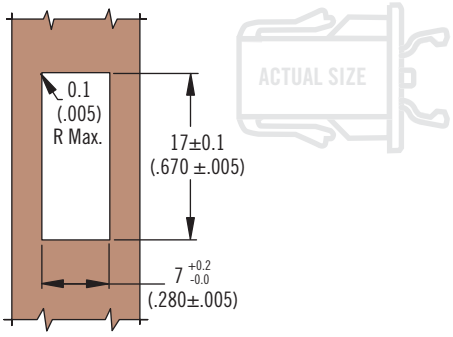


Unlatched / Latched

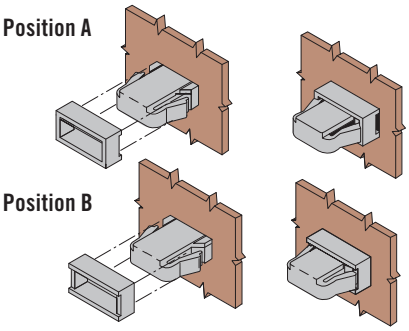


Installation

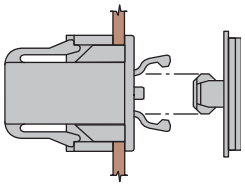
1. Prepare frame. Snap latch into place.



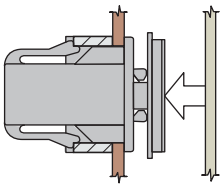
2. Install spacer (If required).



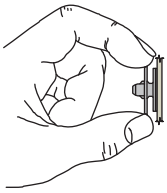
3. With alignment guide in place, engage keeper with latch. (If catch legs are retracted, push them into the latch housing to release before proceeding).



4. Peel protective backing from keeper. Close door against adhesive.



5. Remove alignment guide from keeper and discard.



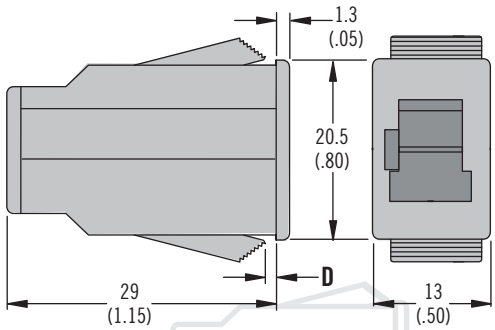
Frame Thickness		Part Number	Spacer Position Installed	Spacer Thickness		Spacer Color
Min.	Max.			C	D	
0.8 (.030)	1 (.040)	E4-10-102-10	A	7.5 (.295)	6.9 (.270)	Black
1.4 (.055)	1.7 (.065)		B			
1.8 (.070)	2 (.080)	E4-10-103-10	A	6.5 (.255)	5.3 (.210)	Natural
2.9 (.115)	3.2 (.125)		B			
4.6 (.182)	4.9 (.192)	E4-10-104-10	A	3.6 (.143)	2 (.080)	Gray
6.2 (.245)	6.5 (.255)		B			
8.1 (.320)	8.6 (.340)	E4-10-101-10	Spacer not required			

E4 Push-to-Close Latch

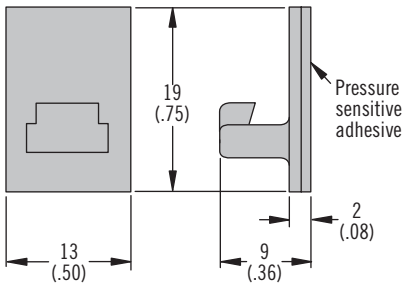
Push-to-open · Touch latch · Large

- **Concealed latch points**
- **Door ejection feature**
- **Snap-in installation**

Latch

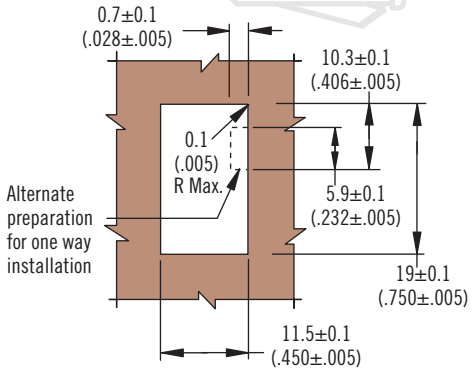


Keeper Assembly

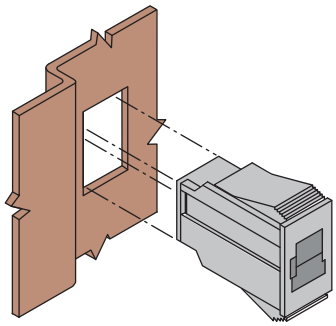


Installation

1. Prepare frame

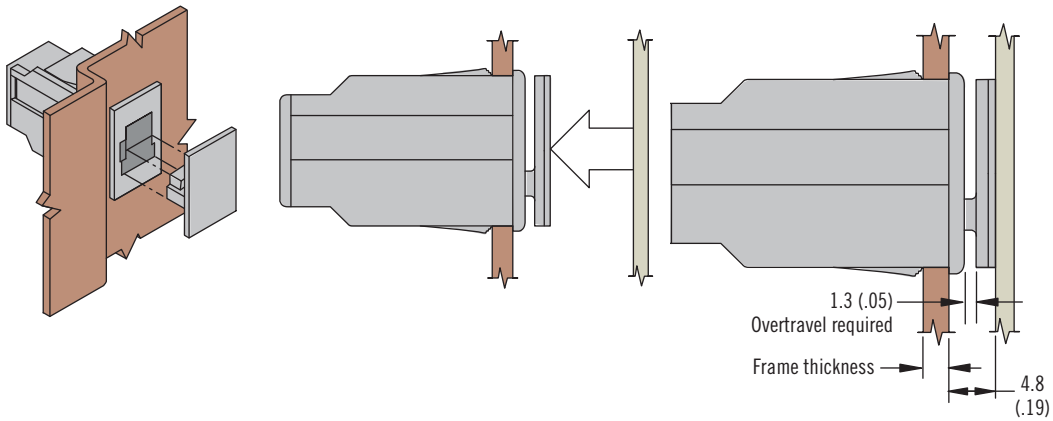


2. Snap latch into place



3. Re-engage keeper with latch

4. Peel protective backing from keeper
Close door against adhesive



Frame Thickness		D	Part Number
Min.	Max.		
1 (.04)	3 (.12)	0.9 (.035)	E4-10-201-10
3 (.12)	5 (.20)	2.9 (.115)	E4-10-202-10
5 (.20)	7 (.28)	4.9 (.196)	E4-10-203-10

Material and Finish

Latch and keeper: Acetal, black and thermoplastic polyester, black

Performance Details

Average tensile load:
Self-adhesive keeper: 50 N (11 lbf)
Integrally molded keeper:
120 N (27 lbf)

Operating temperature range:
-40ºC (-40ºF) to 105ºC (220ºF)

Flammability rating: UL94-HB

Installation Notes

Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond. Keeper can be molded into application door

Self-adhesive keepers are designed to function under intermittent break-away loads

Part Number

See table

02 Push-to-Close Latch

Pull-to-open · Magnetic catch · Snap-in

- **Snap-in installation**
- **Optional side mount bracket**

Material and Finish

Housing:
Polypropylene, black or white

Pole pieces and mounting bracket:
Steel, zinc plated

Magnet:
Small, large: Barium ferrite
Medium: Strontium ferrite

Performance Details

Size	Average breakaway force	Standard deviation
Small 300 series	8 N (1.8 lbf)	2.1 N (.47 lbf)
Medium 100 series	46 N (10 lbf)	5.9 N (1.3 lbf)
Large 200 series	64 N (14 lbf)	7.3 N (1.6 lbf)
Double magnet 800 series	105 N (23 lbf)	18 N (1.0 lbf)

Operating temperature range:
-30°C (-20°F) to 115°C (240°F)

Flammability rating
UL94-HB

Installation Notes

For non-ferrous applications. Screw-mounted and adhesive backed strikes are available. Order separately. See page 146.

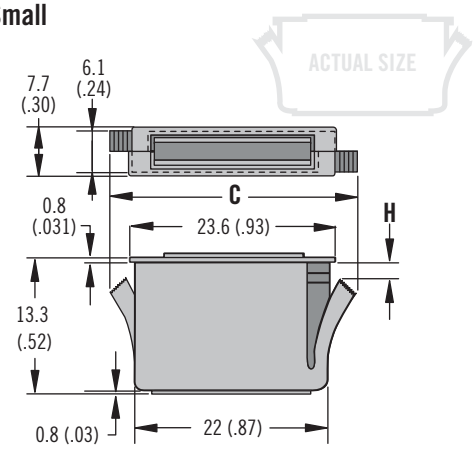
Notes

Performance values shown are supplied as a general guide only.

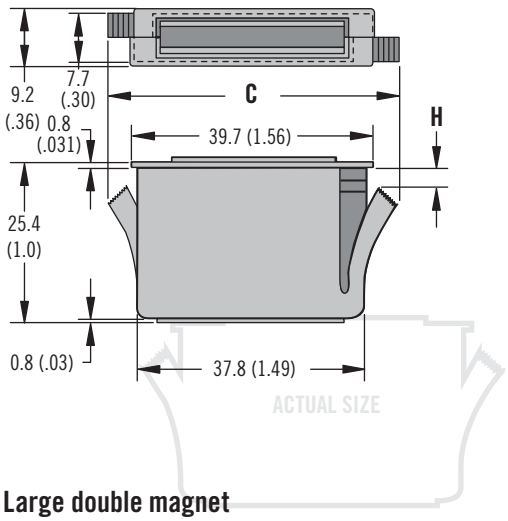
Part Number

See table

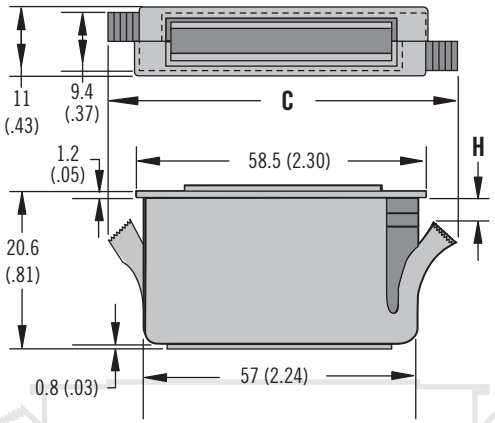
Small



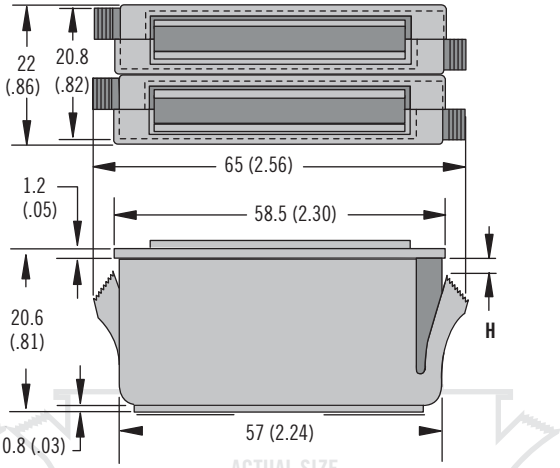
Medium



Large



Large double magnet

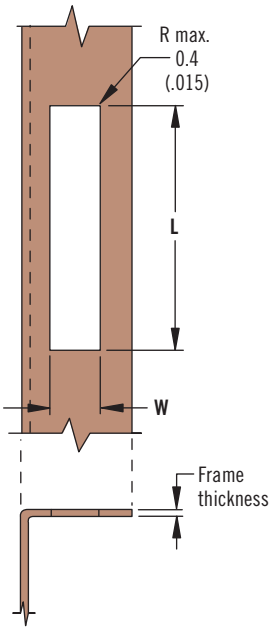


Size	C	H	Frame Thickness		Magnet Part Number	
			Min.	Max.	Black	White
Small	27.9 (1.10)	0.9 (.035)	0.5 (.020)	2 (.080)	02-10-301-10	02-10-301-20
	26.7 (1.05)	2.4 (.095)	2 (.080)	3.6 (.140)	02-10-302-10	02-10-302-20
Medium	47 (1.85)	1 (.040)	0.5 (.020)	2 (.080)	02-10-101-10	02-10-101-20
	46.2 (1.82)	2.5 (.100)	2 (.080)	3.6 (.140)	02-10-102-10	02-10-102-20
	45.5 (1.79)	4 (.160)	3.6 (.140)	5.1 (.200)	02-10-103-10	02-10-103-20
Large	65.3 (2.57)	0.3 (.010)	0.5 (.020)	2 (.080)	02-10-201-10	02-10-201-20
	64.5 (2.54)	1.8 (.070)	2 (.080)	3.6 (.140)	02-10-202-10	02-10-202-20
	63.3 (2.49)	3.3 (.130)	3.6 (.140)	5.1 (.200)	02-10-203-10	02-10-203-20
Large double magnet	~	0.3 (.010)	0.5 (.020)	2 (.080)	02-10-801-10	~
	~	1.8 (.070)	2 (.080)	3.6 (.140)	02-10-802-10	~
	~	3.3 (.130)	3.6 (.140)	5.1 (.200)	02-10-803-10	~

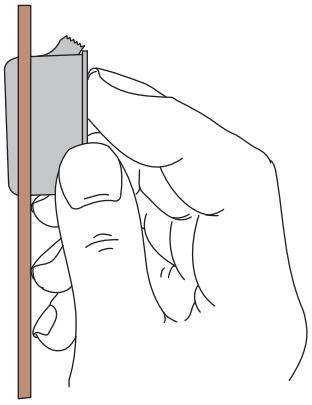
Dimensions in millimeters (inch) unless otherwise stated

Installation

1. Punch rectangular slot



2. Snap catch into slot



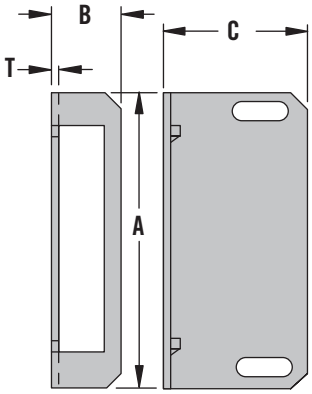
- Snap-in installation
- Optional side mount bracket

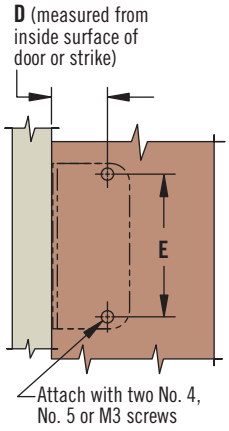
Installation Notes

Size	L ±0.1 (.005)	W ±0.1 (.005)
Small	22.2 (.875)	6.4 (.25)
Medium	38.1 (1.50)	8.1 (.32)
Large	57.1 (2.25)	9.6 (.38)
Double magnet	57.1 (2.25)	21 (.828)

Mounting Bracket

For applications where frame is not suitable for punching (order separately)





Size	A	B	C	D	E ±0.1 (±.005)	T	For Use with these Magnets ONLY	Bracket Part Number
Small	41.3 (1.63)	11.1 (.44)	13.5 (.53)	7.9±2.4 (.31±.09)	35 (1.38)	1 (.042)	02-10-301-10 02-10-301-20	02-16-301-11
Medium	51 (2.00)	12.7 (.50)	24.6 (.97)	17.5±3.2 (.69±.13)	44.5 (1.75)		02-10-101-10 02-10-101-20	02-16-101-11
Large	76 (3.00)	14.3 (.56)	18.7 (.73)	12.7±3.2 (.50±.13)	70 (2.75)		02-10-201-10 02-10-201-20	02-16-201-11
Large double magnet	76 (3.00)	25.4 (1.00)	18.7 (.73)	12.7±3.2 (.50±.13)	70 (2.75)	1.6 (.062)	02-10-801-10	02-16-801-11

Part Number

See table

02 Push-to-Close Latch

Pull-to-open · Magnetic catch · Snap-in

- **Snap-in installation**
- **Optional side mount bracket**

Material and Finish

Housing: Polypropylene, black
Pole pieces: Steel, zinc plated
Magnet: Barium ferrite

Performance Details

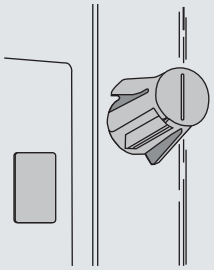
Size	Average breakaway force	Standard deviation
Small 400 series	14 N (3.1 lbf)	2.2 N (.49 lbf)
Large 600 series	49 N (11 lbf)	6.4 N (1.4 lbf)

Operating temperature range: -30°C (-20°F) to 115°C (240°F)

Flammability rating: UL94-HB

Installation Notes

For non-ferrous applications. Screw-mounted and adhesive backed strikes are available. Order separately. See page 146.



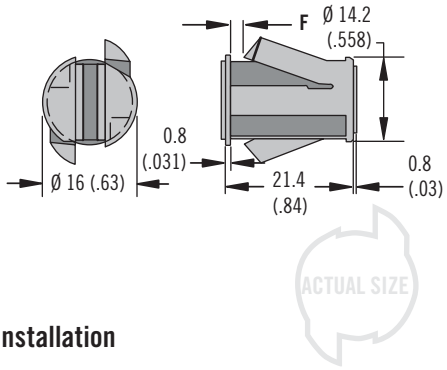
Notes

Performance values shown are supplied as a general guide only

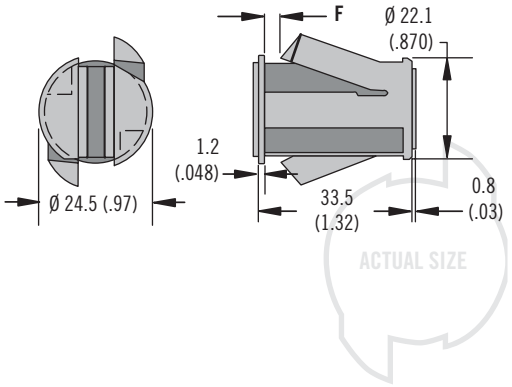
Part Number

See table

Small - 400 Series



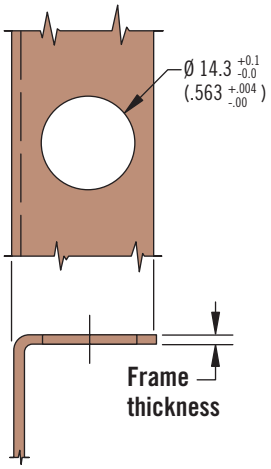
Large - 600 Series



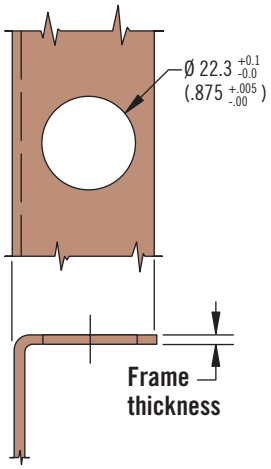
Installation

1. Drill or punch hole

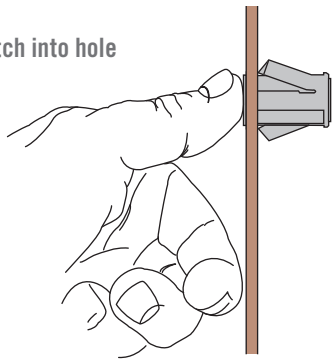
Small Size



Large Size



2. Snap catch into hole



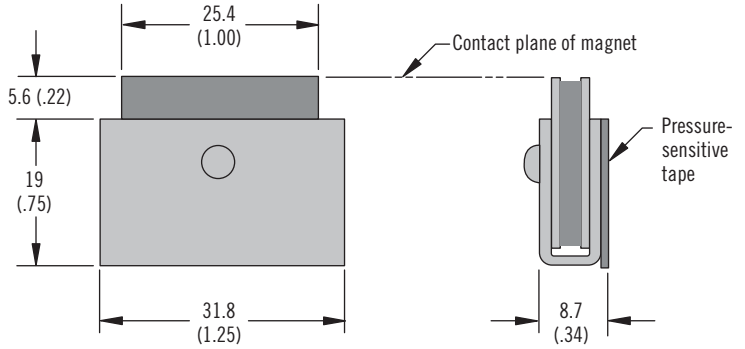
Size	F	Frame Thickness		Magnet Part Number
		Min.	Max.	
Small	0.8 (.030)	0.5 (.020)	2 (.080)	02-20-411-10
	2.3 (.090)	2 (.080)	3.5 (.140)	02-20-412-10
	3.8 (.150)	3.5 (.140)	5 (.200)	02-20-413-10
Large	0.5 (.020)	0.5 (.020)	2 (.080)	02-20-611-10
	2 (.080)	2 (.080)	3.5 (.140)	02-20-612-10
	3.5 (.140)	3.5 (.140)	5 (.200)	02-20-613-10

02 Push-to-Close Latch

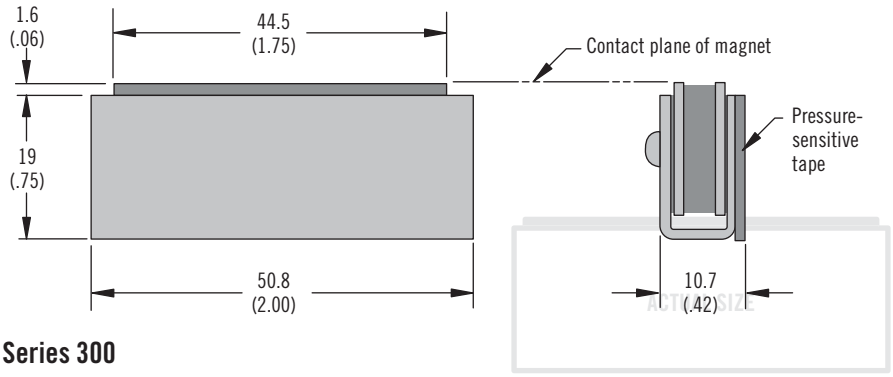
Pull-to-open · Magnetic catch · Snap-in

- **Adhesive installation**
- **Optional side mount bracket**

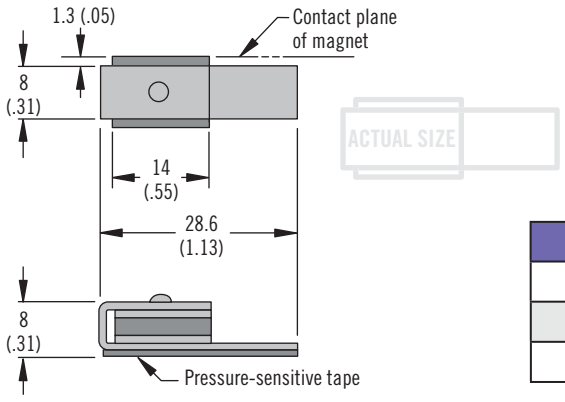
Series 100



Series 200



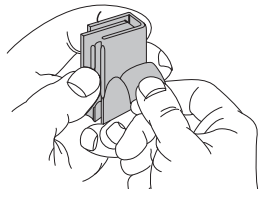
Series 300



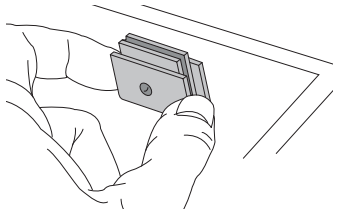
Series	Magnet Part Number
100	02-30-121-10
200	02-30-221-10
300	02-30-321-10

Installation

1. Remove protective paper



2. Place in position



Notes: Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond

Material and Finish

Housing: Polypropylene, black
Pole pieces: Steel, zinc plated
Magnet: Barium ferrite

Performance Details

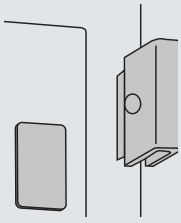
Series	Average breakaway force	Standard deviation
100	46 N (10 lbf)	5.9 N (1.3 lbf)
200	64 N (14 lbf)	7.3 N (1.6 lbf)
300	8 N (1.8 lbf)	2.1 N (.47 lbf)

Operating temperature range:
-30°C (-20°F) to 115°C (240°F)

Flammability rating: UL94-HB

Installation Notes

For non-ferrous applications. Screw-mounted and adhesive backed strikes are available. Order separately. See page 146.



Notes

Performance values shown are supplied as a general guide only

Part Number

See table

02 Push-to-Close Latch

Steel strikes

- **Ferrous keepers for magnet catch**
- **Self-adhesive or screw mount**

Material and Finish

Steel, zinc plated
Adhesive:
Neoprene foam with acrylic

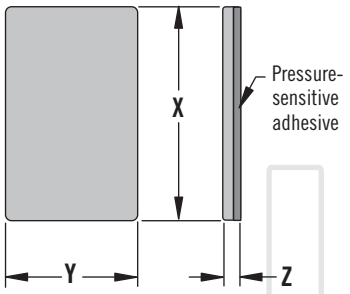
Installation Notes

Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond. Self-adhesive mounted strikes are designed to function under intermittent break-away loads. Use screw-mounted strikes for continuous load applications.

Part Number

See table

Self-adhesive



ACTUAL SIZE

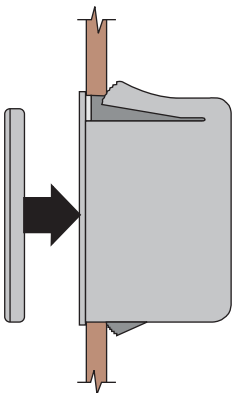
ACTUAL SIZE

ACTUAL SIZE

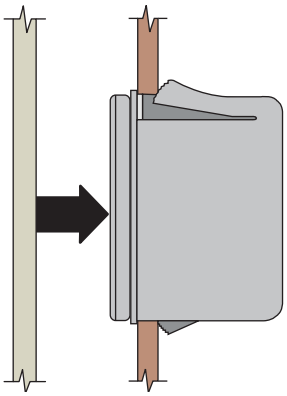
For Use with Series Catch	Strike Part Number	X	Y	Z
300	02-14-301-14	24 (.94)	8 (.31)	2 (.08)
400				
100	02-14-101-14	32 (1.25)	19 (.75)	2.4 (.094)
600				
200	02-14-201-14	51 (2.00)	19 (.75)	2.4 (.094)
800				

Installation

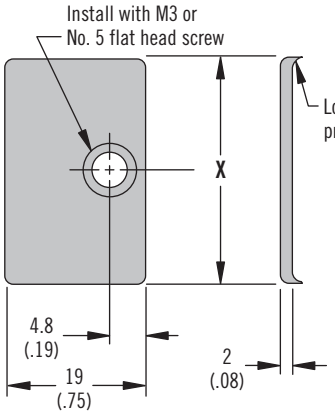
1. Position strike on installed catch



2. Remove protective paper. Close door or panel onto strike



Screw-Mounted



ACTUAL SIZE

ACTUAL SIZE

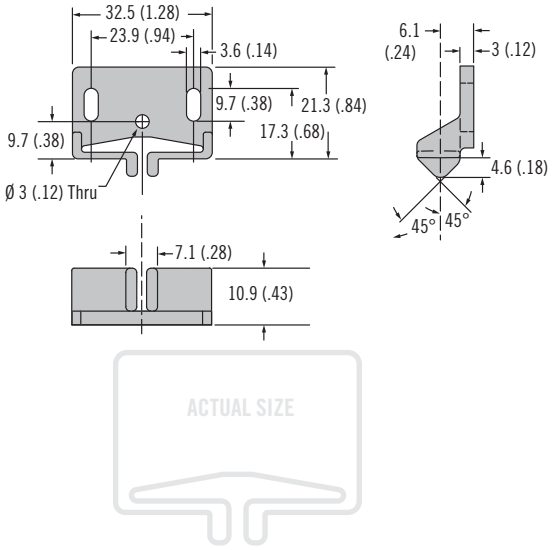
For Use With Series Catch	Strike Part Number	X
100	02-14-102-11	32 (1.25)
600		
200	02-14-202-11	51 (2.00)
800		

Dimensions in millimeters (inch) unless otherwise stated

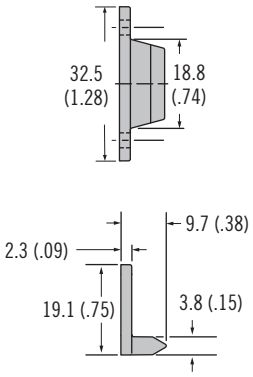
T9 Push-to-Close Latch

Pull-to-open · Cabinet catches

Catches



Keeper

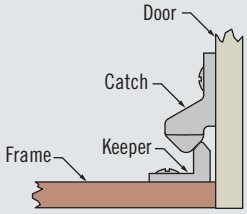


Color	Part Number
Black	T9-10-101-50
White	T9-10-101-70

- **Detent action**
- **Non-corrosive and non-conductive**

Material and Finish

Latch and keeper:
Acetal, black or white



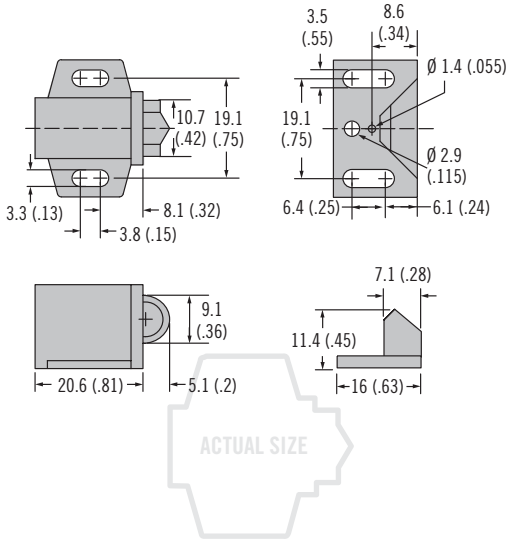
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/T9*

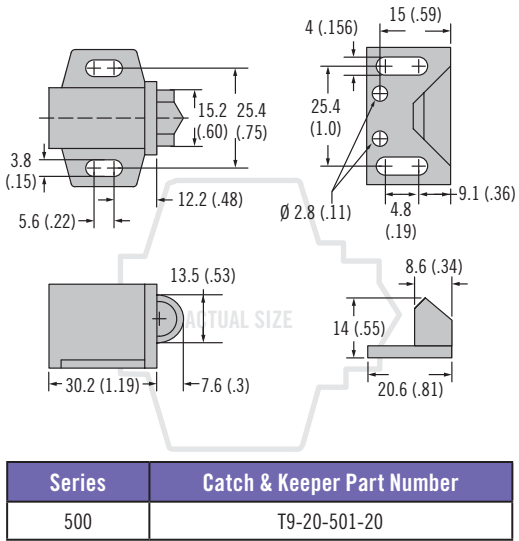
T9 Push-to-Close

Pull-to-open · Cabinet catches

500 Series



800 Series

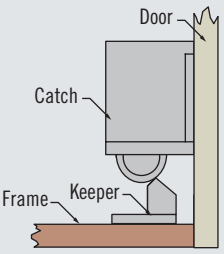


Series	Catch & Keeper Part Number
500	T9-20-501-20
800	T9-20-801-20

- **Roller action for smooth consistent operation**
- **Non-corrosive and non-conductive**

Material and Finish

Latch and keeper:
Acetal, white



Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/T9*

Dimensions in millimeters (inch) unless otherwise stated

MT Push-to-Close Latch

Pull-to-open · Cabinet catches

- **Ergonomic design**
- **Dampening pad to eliminate door slam**

Material and Finish

Latch: Acetal, black
Keeper: Steel, zinc plated

Part Number

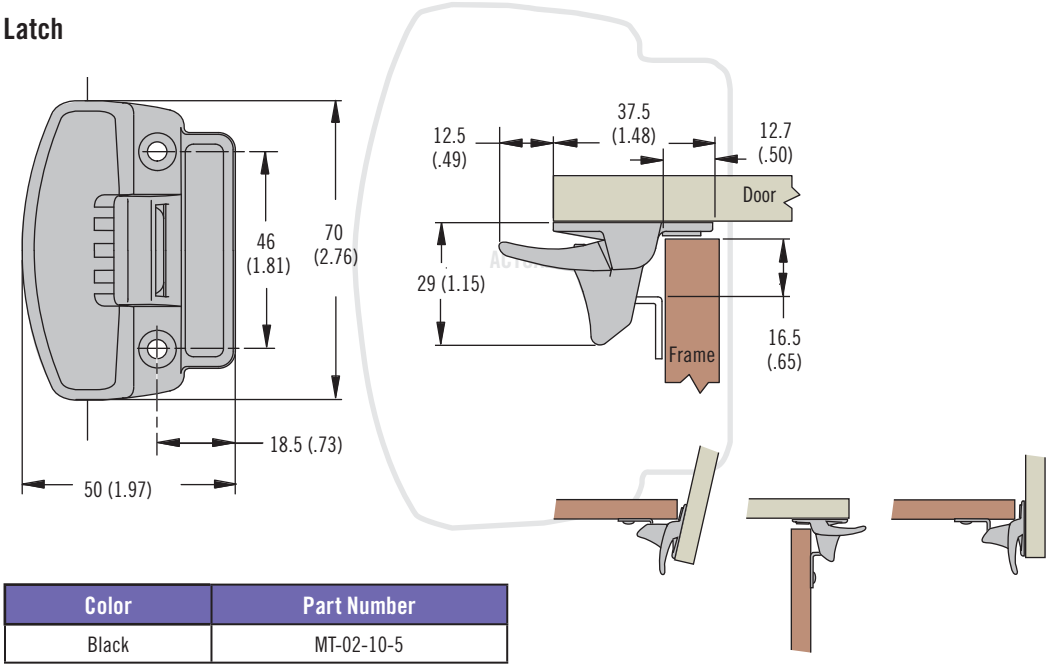
See table

Latch and keeper supplied

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/MT*

Latch



Color	Part Number
Black	MT-02-10-5

MT Push-to-Close Latch

Pull-to-open · Cabinet catches

- **Over-center for vibration resistance**
- **Corrosion-resistant**

Material and Finish

Nylon, white and stainless steel

Part Number

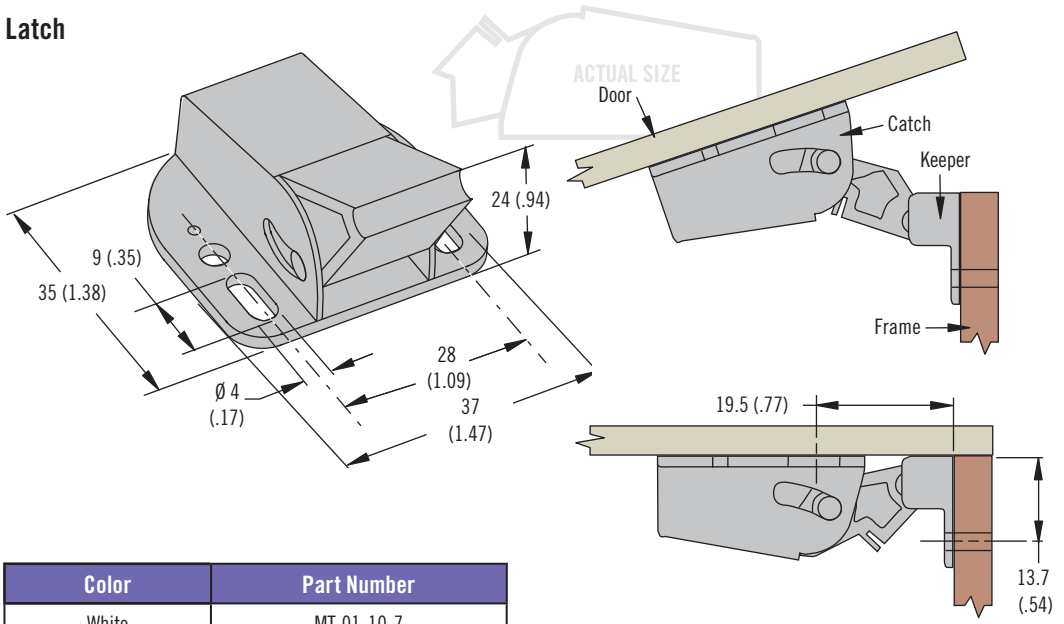
See table

Latch and keeper supplied

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/MT1*

Latch



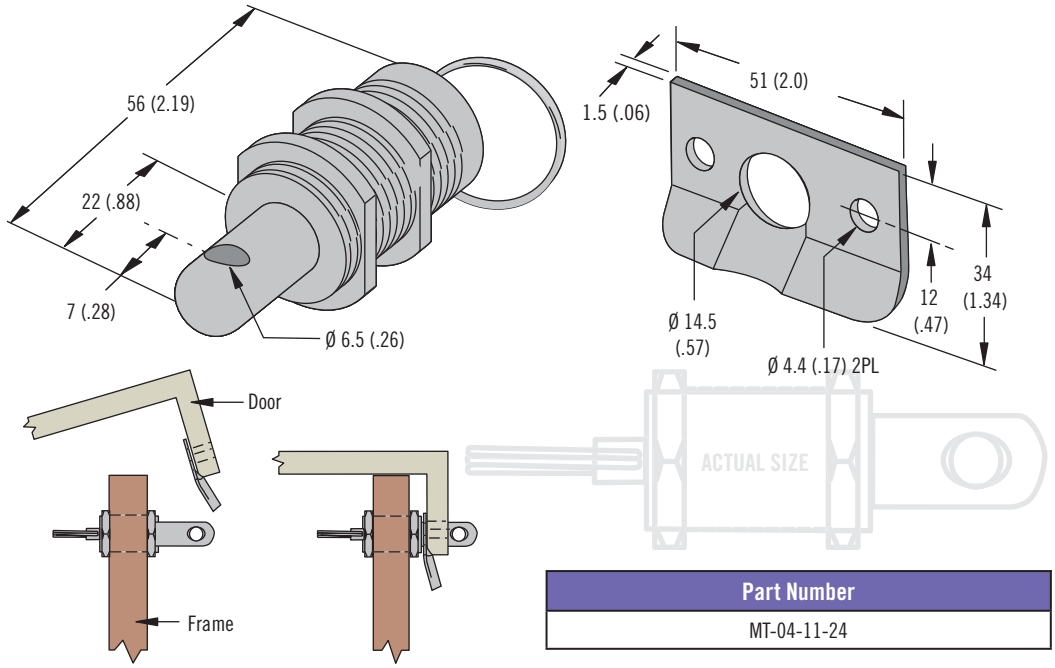
Color	Part Number
White	MT-01-10-7

Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

MT Push-to-Close Latch

Pull-to-open · Padlockable



Part Number
MT-04-11-24

- **Remote actuation**
- **Corrosion-resistant**

Material and Finish

Latch and keeper:
Stainless steel, passivated

Part Number

See table

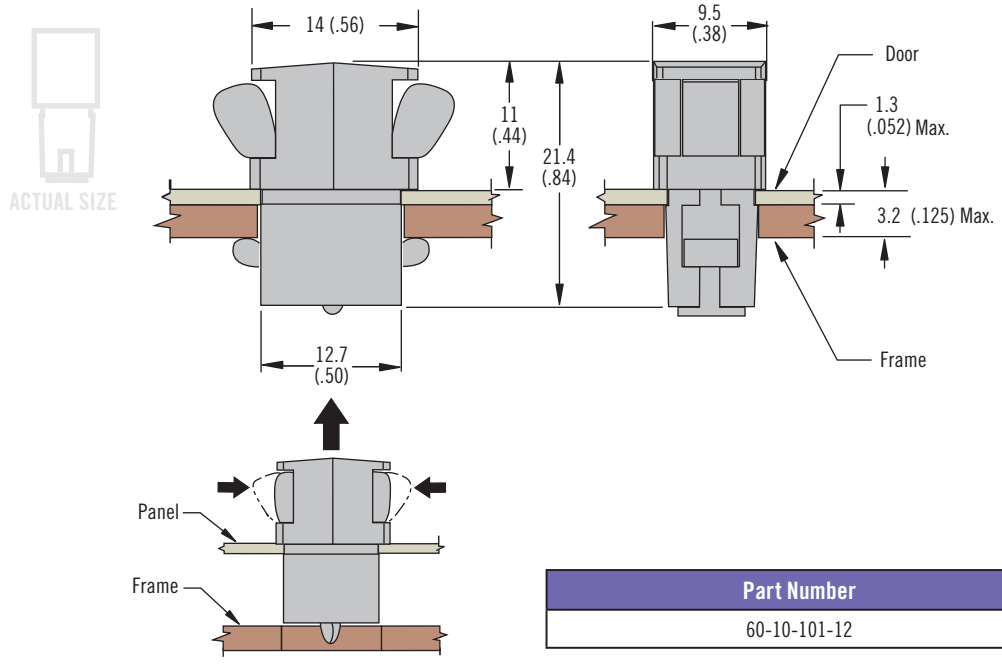
Latch and keeper supplied

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/MT2*

60 Push-to-Close Latch

Squeeze to open



Part Number
60-10-101-12

- **Single hole installation**
- **Suitable for limited space applications**

Material and Finish

Acetal, black

Part Number

See table

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/60*

Dimensions in millimeters (inch) unless otherwise stated

M1 Push-to-Close Latch

Small · Stainless steel

- **Single, round-hole installation**
- **Locking style restricts access**
- **Premium finish and corrosion resistance**
- **Privacy lock on locking version**

Material and Finish

Latch: 316 grade stainless steel and bright polished
Spacer: Nylon, black
Contact Southco for other finishes

Performance Details

Max. static load: 545 N (122 lbf)

Accessories

One key supplied per latch for additional keys order M7-88-9121324-S

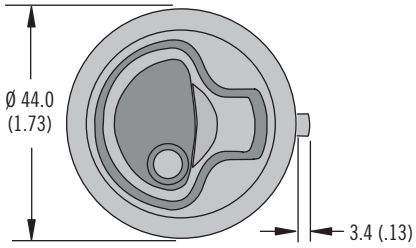
Spacer: M1-510-96-1
(Sold separately)

Keeper: M1-510-19-8

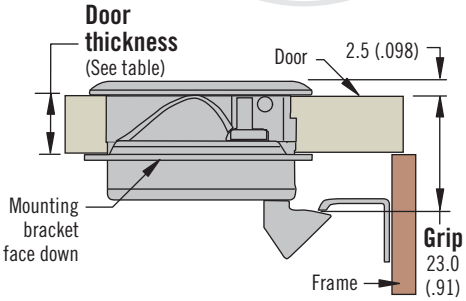
Mounting screws: M1-510-96-4

Installation Notes

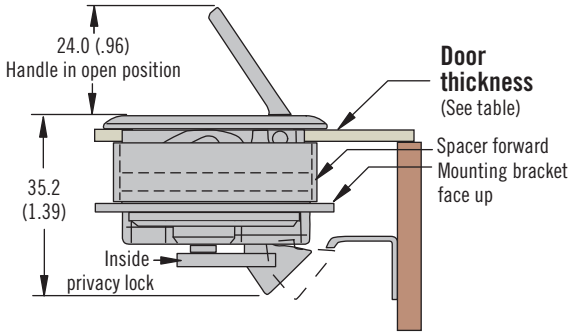
Use the reference table to determine if a spacer is required for the door thickness and the correct mounting bracket orientation. The spacer shown is in the forward position.

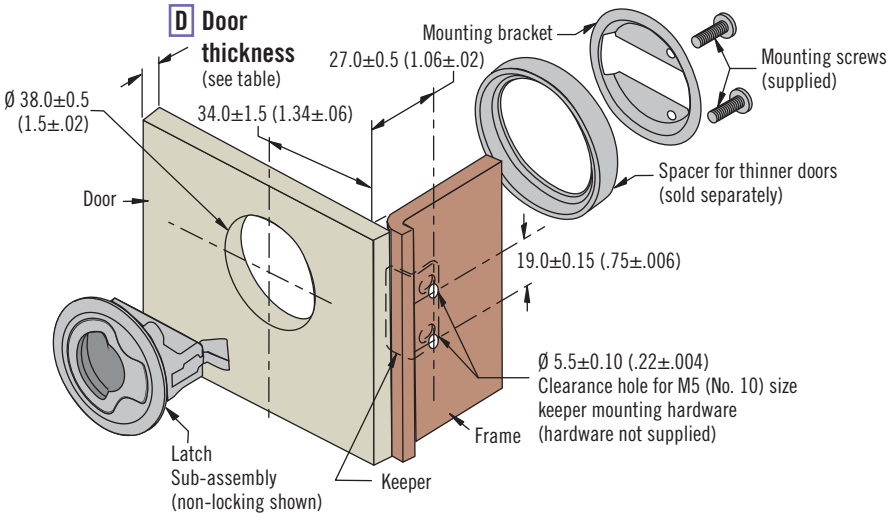


Non-locking



Locking





D Door Thickness	Spacer Orientation	Mounting Bracket Orientation
1.0 - 5.0 (.04 - .20)	Forward	Face Up
5.0 - 9.0 (.20 - .36)	Reverse	Face Up
9.0 - 14.5 (.36 - .57)	(not required)	Face Up
14.5 - 21.0 (.57 - .83)	(not required)	Face Down

Part Number Selection

M1 - 15 - L 1 - 8

L Lock style
4 Locking (one tubular key supplied)
6 Non-locking

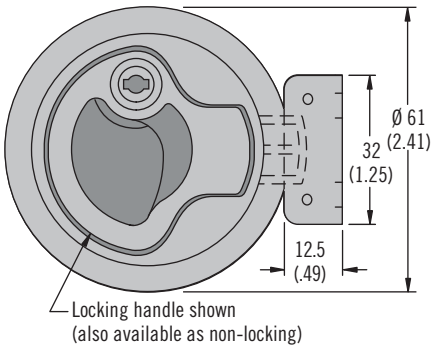
INFO CLIC www.southco.com/M1

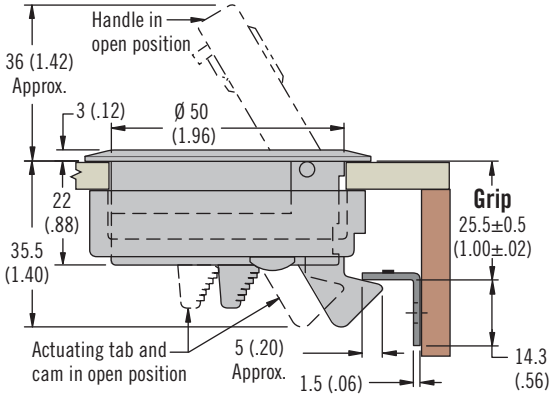
Dimensions in millimeters (inch) unless otherwise stated

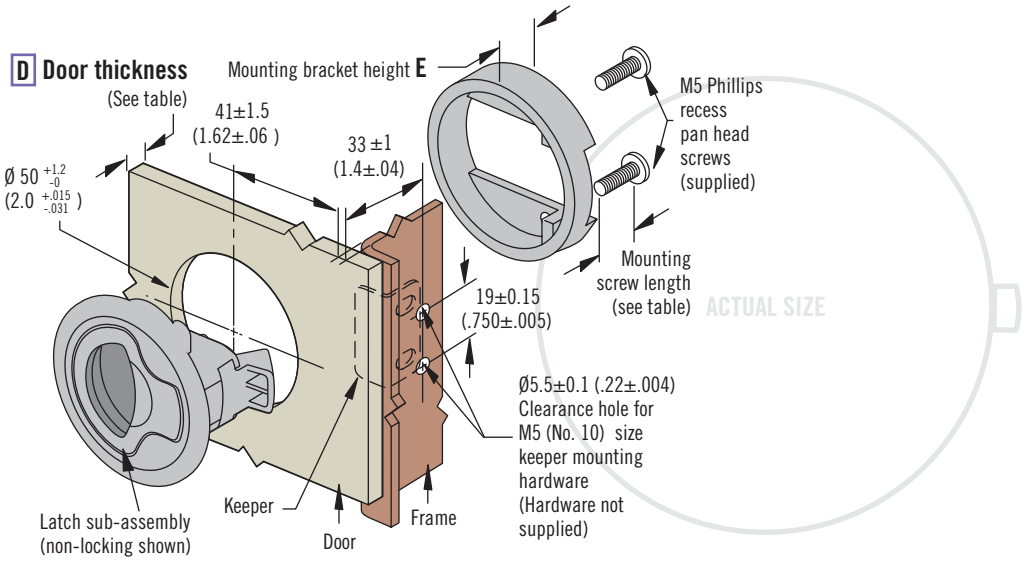
M1 Push-to-Close Latch

Medium · Stainless steel ·Plastic

- **Single, round-hole installation**
- **Corrosion-resistant materials**
- **Inside actuation when locked or unlocked**







D Door Thickness		Mounting Bracket Height E	Mounting Screw Length	Replacement Screw Part Number
Min.	Max.			
2 (.075	7 (.275)	14 (.55)	16 (.63)	M1-0-27358-01
7 (.275)	12 (.475)	14 (.55)	20 (.81)	M1-0-27358-02
12 (.475)	17 (.675)	3.8 (.15)	16 (.63)	M1-0-27358-01
17 (.675)	22 (.875)	3.8 (.15)	20 (.81)	M1-0-27358-02

Material and Finish

Stainless steel: 316 grade electro polished or PC/PBT blend, black, white or beige

Performance Details

Max. working load:
Stainless Steel: 835 N (187 lbf)
PC/ABT blend 270 N (60 lbf)

Operating temperature range:
-18 ºC (0 ºF) to 60 ºC (140 ºF)

Flammability rating:
UL94-HB (plastic version)

Installation Notes

Max. tightening torque on mounting screws: 1.7 N·m (15 in·lbf)

Accessories

Keeper
Part number: M1-519-4

For lock style 4
Key (pair)
Part number: M1-546

For lock style 7
Overmolded key S008 (pair)
Part number:
M1-525-39-S008

Part Number Selection

See page 70 for complimentary styled compression version

D Door thickness
1 2 - 7 (.075 - .275)
2 7 - 12 (.275 - .475)
3 12 - 17 (.475 - .675)
4 17 - 22 (.675 - .875)

M1 - L D - F

F Finish
1 White Thermoplastic
7 Beige Thermoplastic
8 Stainless steel (omit for black)

L Lock style
4 Locking (2 keys supplied)
6 Non-locking
7 Key-locking keyed alike S008 (2 overmolded keys supplied) (Only available for stainless steel version)

M1 Push-to-Close Latch

Large · Stainless steel

- **Single, round-hole installation**
- **Corrosion-resistant materials**
- **Inside actuation when locked or unlocked**

Material and Finish

Stainless steel 316 grade electro polished

Performance Details

Max. working load: 835 N (187 lbf)

Operating temperature range: -18°C (0°F) to 60°C (140°F)

Installation Notes

Max. tightening torque on mounting screws: 1.7 N·m (15 in·lbf)

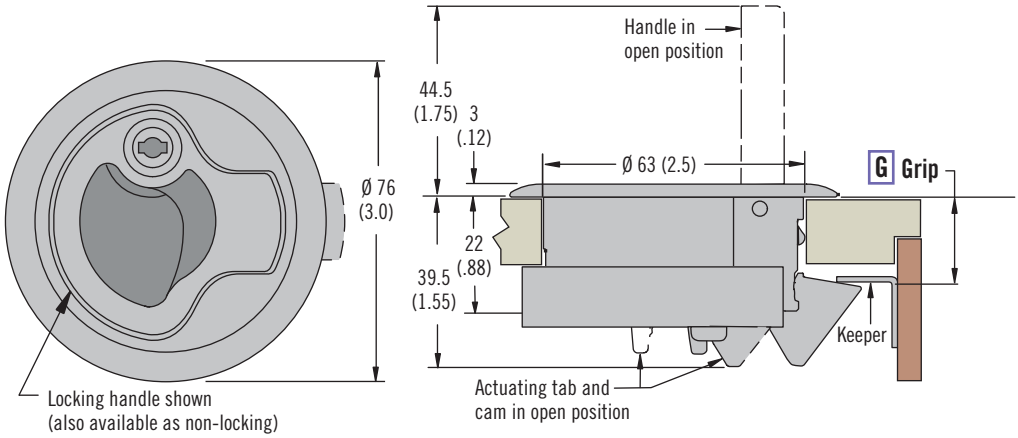
Accessories

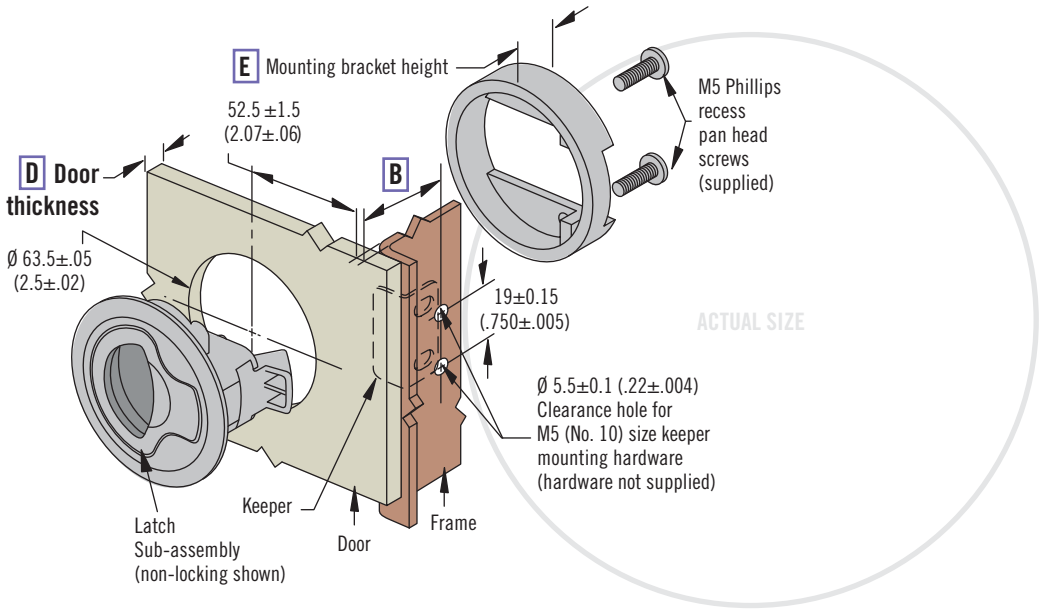
Keeper
Part number: M1-525-19-4

For lock style 4
Key (pair)
Part number: M1-546

For lock style 7
Overmolded key S008 (pair)
Part number: M1-525-39-S008

Replacement mounting screw
Part number: M1-0-27358-02





G Grip	E Mounting Bracket Height	D Door Thickness		B
		Min.	Max.	
20±0.5 (.75±.02)	22 (.875)	2 (.075)	12 (.475)	27 (1.10)
32±0.5 (1.25±.02)	22 (.875)	2 (.075)	12 (.475))	39 (1.54)
20±0.5 (.75±.02)	12 (.475)	12 (.475)	22 (.875)	27 (1.10)
32±0.5 (1.25±.02)	12 (.475)	12 (.475)	22 (.875)	39 (1.54)

Part Number Selection

See page 71 for complimentary styled compression version

D Door thickness
1 2 - 12 (.075 - .475)
2 12 - 22 (.475 - .875)

G Grip
1 20±0.5 (.75±.02)
2 32±0.5 (1.25±.02)

M1 - 25 - L D - G 8

L Lock style
4 Locking keyed alike (2 keys supplied)
6 Non-locking
7 Key-locking keyed alike S008 (2 overmolded keys supplied)

Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/M1

southco® CONNECT · CREATE · INNOVATE

MP Push-to-Close Latch

Medium · Plastic

- **Adjustable Grip**
- **Round-hole installation**
- **Inside actuation when locked or unlocked**

Material and Finish

Housing cover, cup and handle:
Stainless steel,
316 grade electro polished
Housing:
PC/PBT blend, black or white

Performance Details

Max. working load: 270 N (60 lbf)

Operating temperature range:
-18°C (0°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting screws (supplied):
1.7 N·m (15 in·lbf)

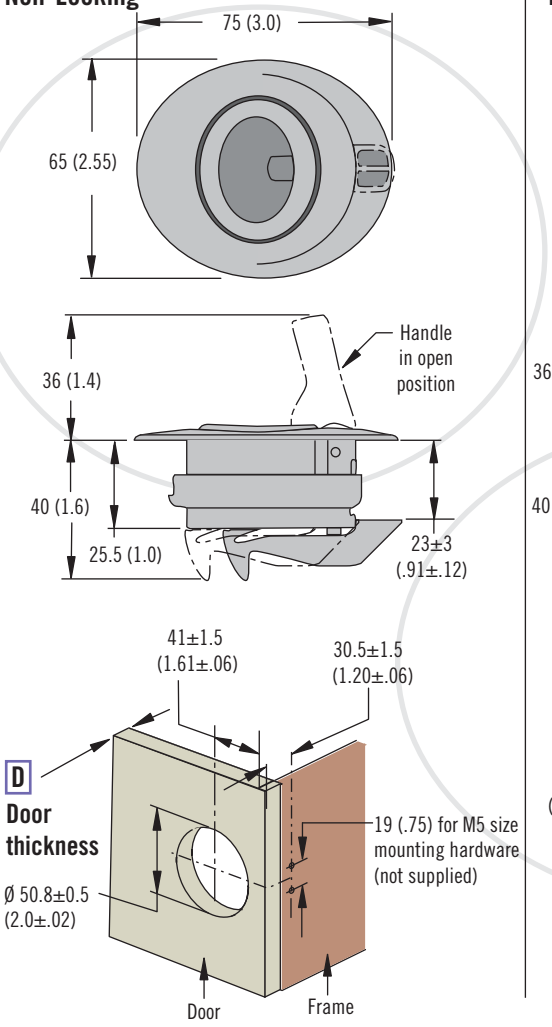
Accessories

Keeper
Part number: M1-519-4

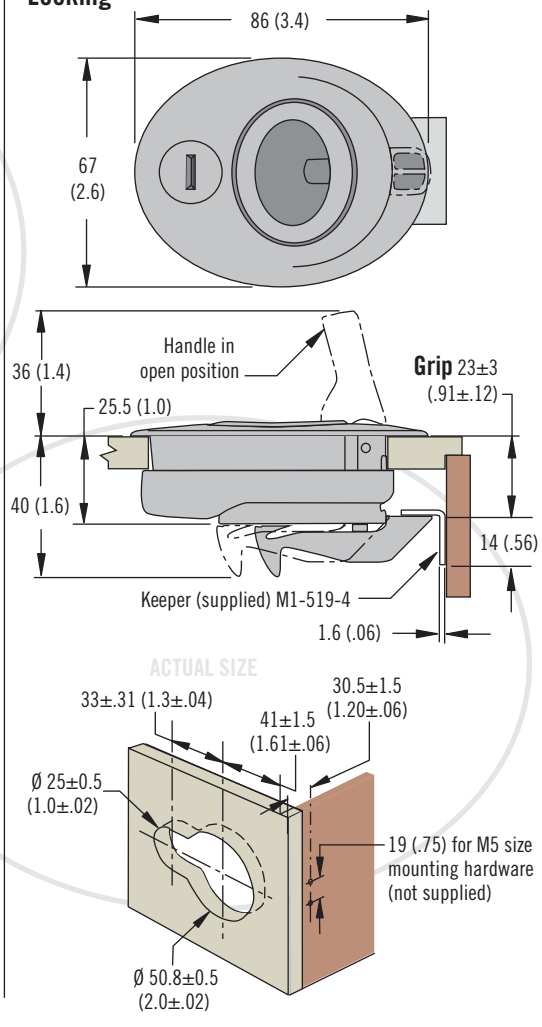
Key 948 (pair)
Part number: MF-98-948-41

Replacement mounting screw
Part number: MP-520-28-4

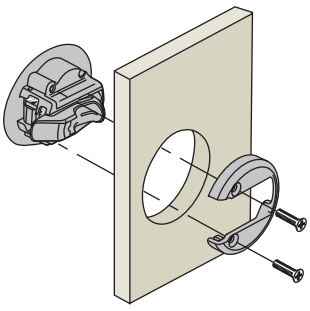
Non-Locking



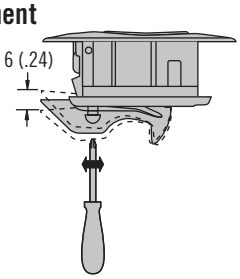
Locking



Installation



Grip Adjustment



Part Number Selection

MP - 03 - 1 L D - F 0

F **Finish**
- **00** 316 Stainless cover over black housing
- **55** Black housing
- **77** White housing

L **Lock style**
- **0** Non-locking
- **1** Key-locking keyed alike 948 (2 keys supplied)

D **Door thickness**
- **0** 10 - 16 (.39 - .63)
- **1** 16 - 22 (.63 - .87)

M1 Push-to-Close Latch

Pull-to-open

- **Single, round-hole installation**
- **Flush pop out knob**
- **Corrosion-resistant materials**

Material and Finish

PC/ABS, black, chrome plated or gold colored PVD

Performance Details

Max. working load: 310 N (70 lbf)

Operating temperature range: -30ºC (-22ºF) to 60ºC (140ºF)

Flammability rating: UL94-HB

Installation Notes

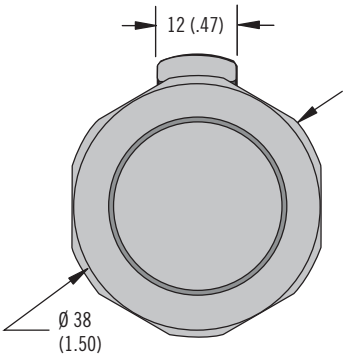
Max. tightening torque on mounting nut:
4.2 N·m (37 in·lbf)

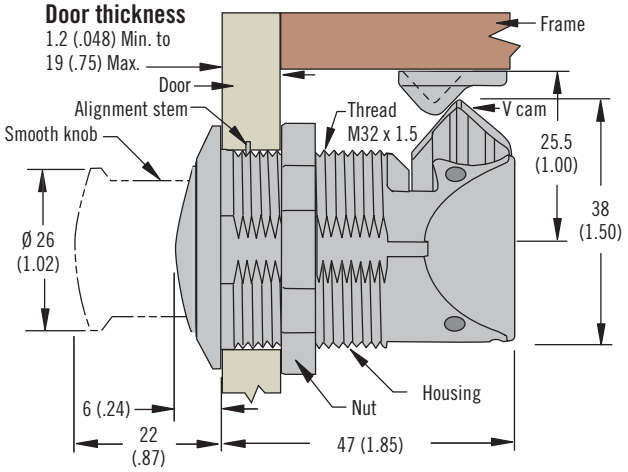
Accessories

Replacement Keeper
Part number: M1-2A-9-105-41

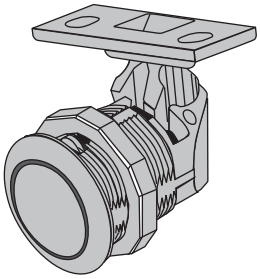
Part Number

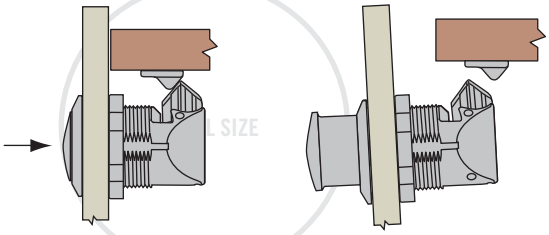
See table



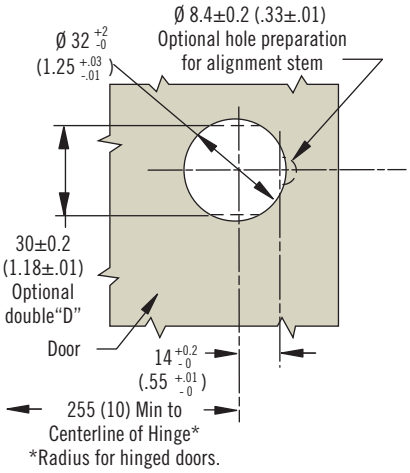


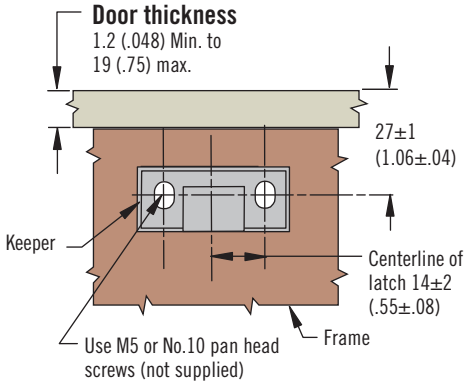
Closed



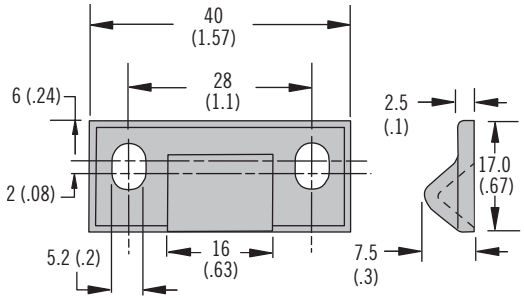


Installation





Keeper



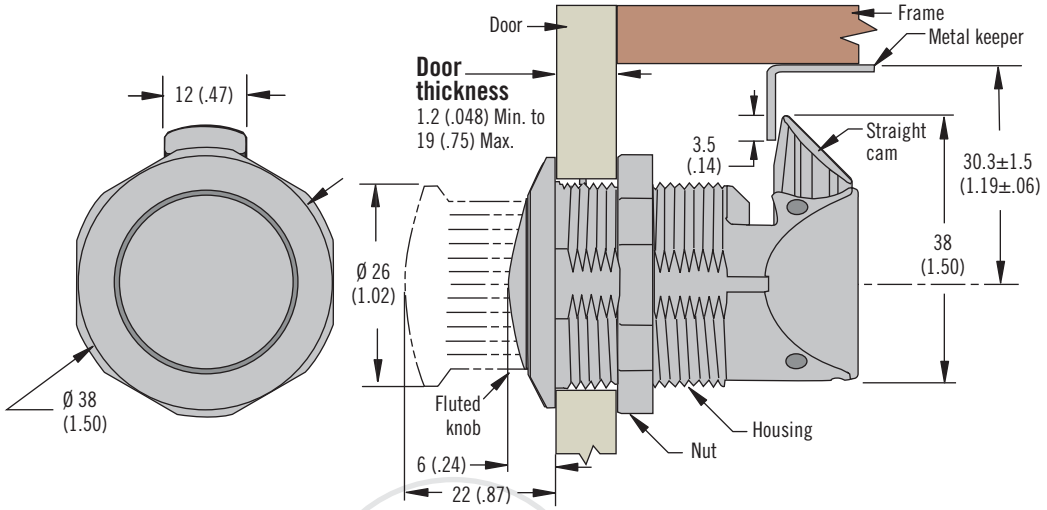
Finish	Part Number
Chrome	M1-2A-15-1
Black	M1-2A-15-5
Gold	M1-2A-15-8

Dimensions in millimeters (inch) unless otherwise stated

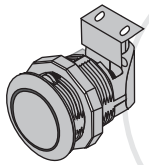
M1 Push-to-Close Latch

Turn-to-open

- **Single, round-hole installation**
- **Flush pop out knob**
- **Corrosion-resistant materials**

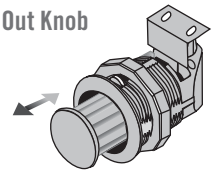


Closed

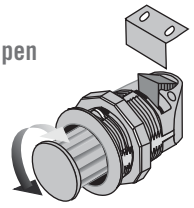


ACTUAL SIZE

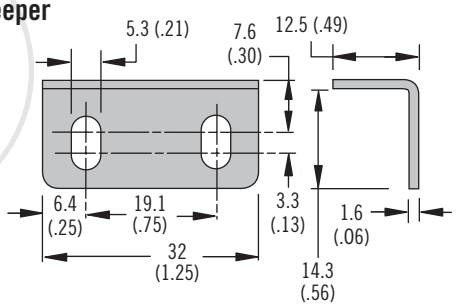
Push To Pop Out Knob



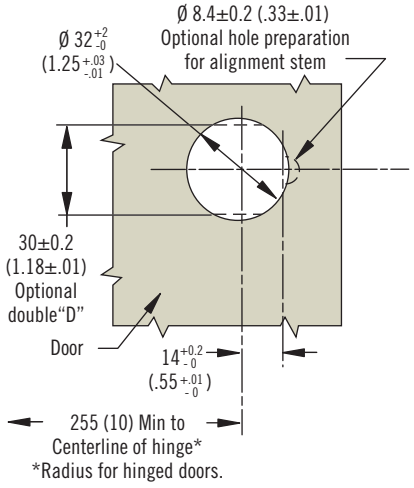
Turn Knob To Open

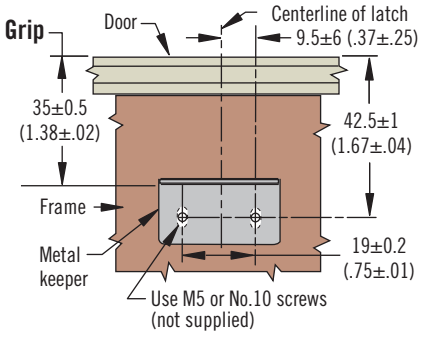


Keeper



Installation





Finish	Part Number
Chrome	M1-2A-13-1
Black	M1-2A-13-5
Gold	M1-2A-13-8

Material and Finish

PC/ABS, black, chrome plated or gold colored PVD

Performance Details

Max. working load: 310 N (70 lbf)

Operating temperature range: -30°C (-22°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting nut: 4.2 N·m (37 in·lbf)

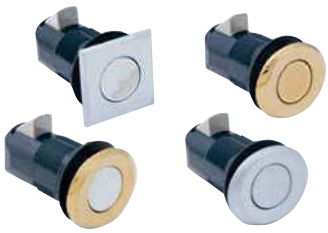
Accessories

Replacement Keeper
Part number: M1-519-4

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated



MP Point Push-to-Close Latch

Pull-to-open

- **Single, round-hole installation**
- **Flush pop out knob**
- **Corrosion-resistant materials**
- **Optional cover available for a stylish look of the latch body**
- **Keeper sold separately**

Material and Finish

Housing: Glass-filled nylon

Flange and knob: Zinc alloy, plated

Cam: Zinc alloy

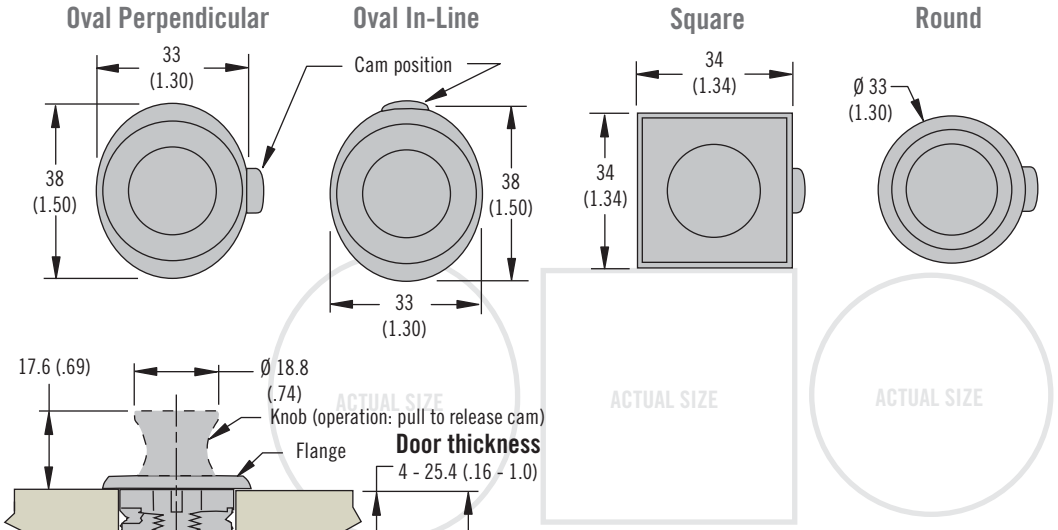
Installation Notes

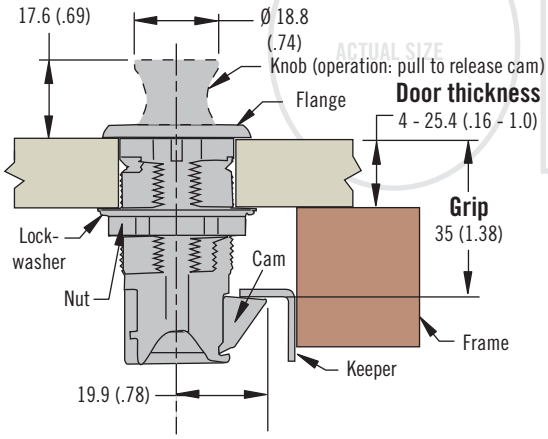
Max. tightening torque on mounting nut: 4.5 N·m (40 in·lbf)

Accessories

Matching pulls available
see page 486

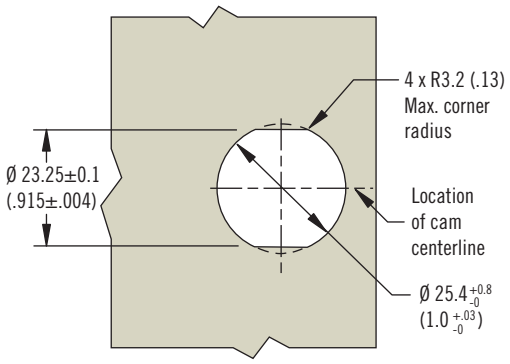
H Housing Style





Installation

Latch Only (for keeper installation see page 157)



Part Number Selection

H Housing style
- **11** Oval perpendicular
- **12** Oval in-line
- **21** Square
- **31** Round

MP - 05 - H 2 - F K

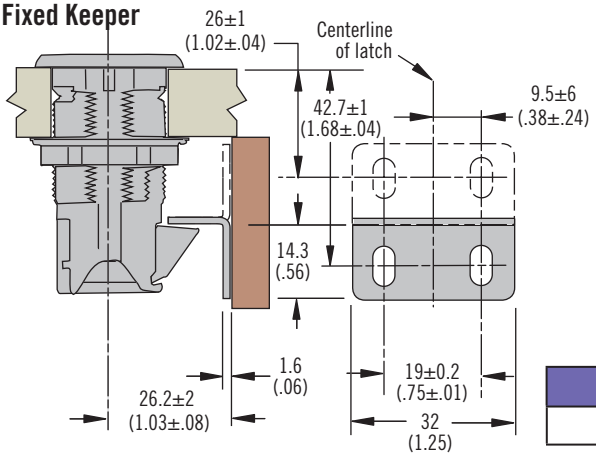
F Flange finish
- **1** Chrome plated
- **2** Satin chrome plated
- **3** Brushed nickel plated
- **4** Diamond brass plated
- **5** Black powder coated
- **6** Satin nickel plated

K Knob finish
- **1** Chrome plated
- **2** Satin chrome plated
- **3** Brushed nickel plated
- **4** Diamond brass plated
- **5** Black powder coated
- **6** Satin nickel plated

INFO CLIC www.southco.com/MP2

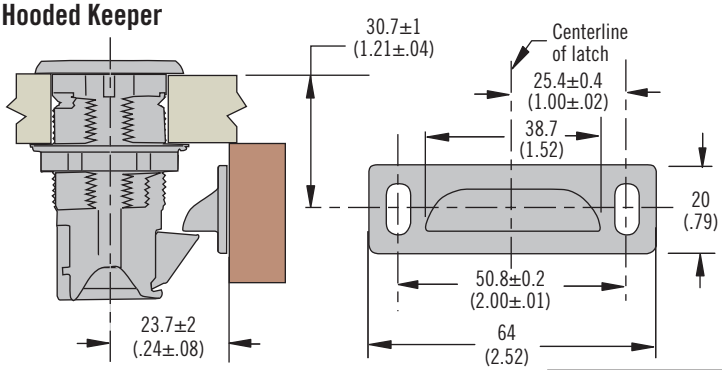
Dimensions in millimeters (inch) unless otherwise stated

Fixed Keeper



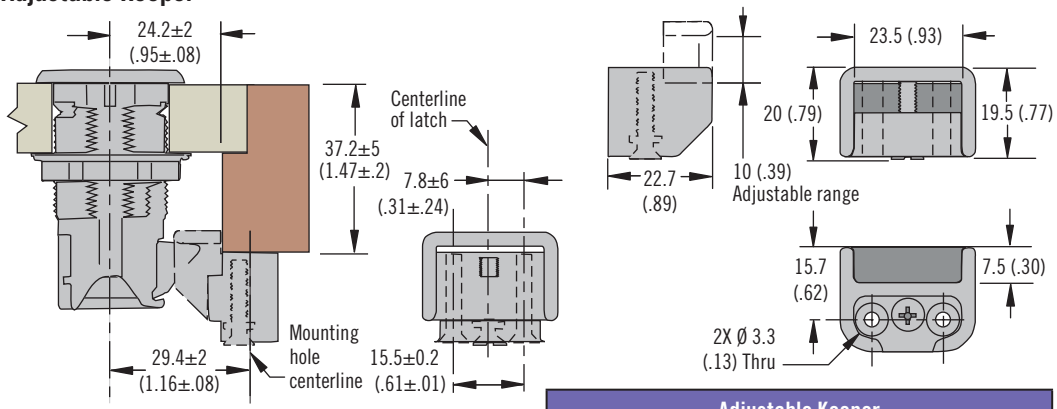
Fixed Keeper
M1-519-4

Hooded Keeper



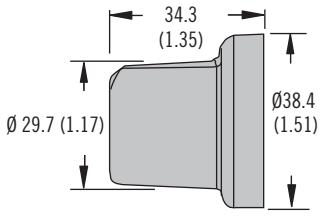
Hooded Keeper
MP-510-16-4

Adjustable Keeper



Adjustable Keeper
MP-5113

Optional Cover



Optional Cover	
Bright Chrome Plated	**Satin Chrome Plated**
MP-510-84-1	MP-510-84-2

- **Keeper sold separately**

Material and Finish

Fixed keeper: Stainless steel

Hooded keeper: Nylon, black

Adjustable keeper: Acetal, black with brass adjusting screw

Cover: Polycarbonate ABS, bright or satin chrome plated

Installation Notes

Fixed keeper: Use M5 or No. 10 screws to mount (not supplied)

Hooded keeper: Use M5 or No. 10 screws to mount (not supplied)

Adjustable keeper: Use M3 x 25 (No. 5 x 1.00) screws to mount (not supplied)

Optional cover:
Suitable for door thickness from 16 - 20 (.630 - .787)

A3 Push-to-Close Latch

Slide-to-open · Flush · Locking

- **Single hole snap-in installation**
- **Corrosion-resistant materials**

Material and Finish

Latch: ABS, black
Spring: Stainless steel

Performance Details

Operating temperature range: -40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-V0

Installation Notes

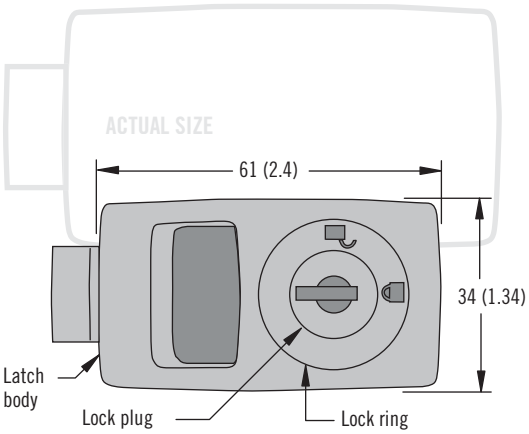
Prepare a burr free hole

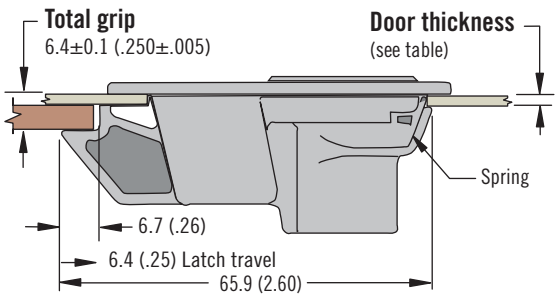
Door thickness must include plating or paint thickness

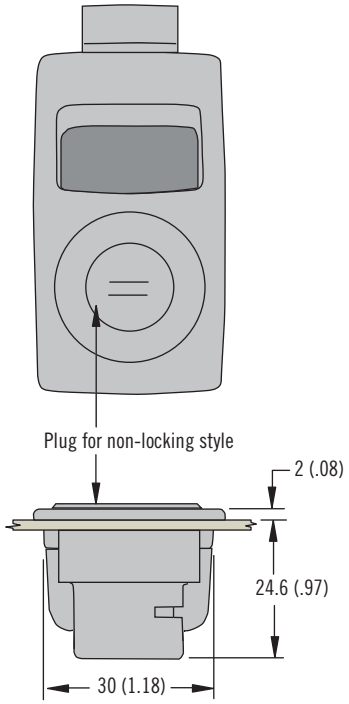
Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

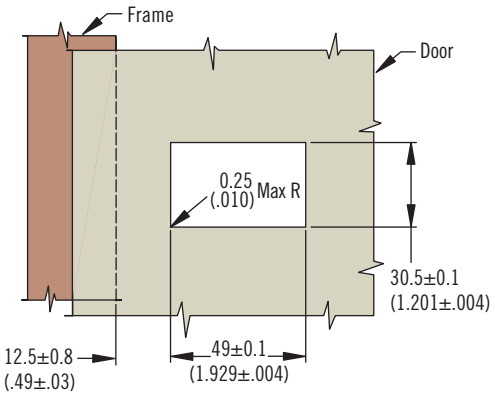
Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05



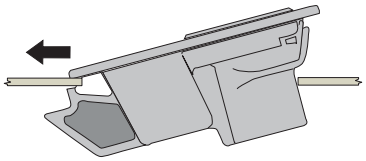




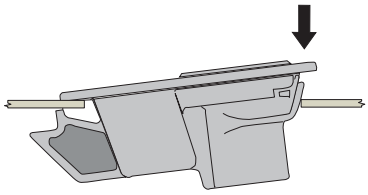
Installation



1. Slip front of latch through hole, push forward



2. Snap back end of latch into position



Part Number

See table

Door Thickness	Part Number		
	Non-Locking	Key-Locking Keyed Alike CH751 (No Keys Supplied)	Key-Locking Keyed Alike CH751 (2 Flat Keys Supplied)
0.9 (.035) to 1.2 (.047)	A3-80-525-12	A3-85-525-12	A3-87-525-12
1.3 (.051) to 1.6 (.062)	A3-80-625-12	A3-85-625-12	A3-87-625-12

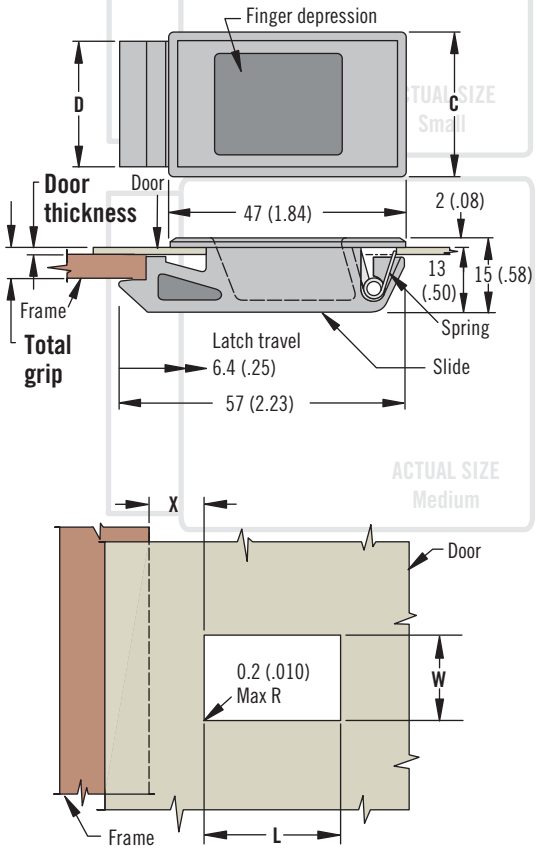
INFO CLIC www.southco.com/A3

Dimensions in millimeters (inch) unless otherwise stated

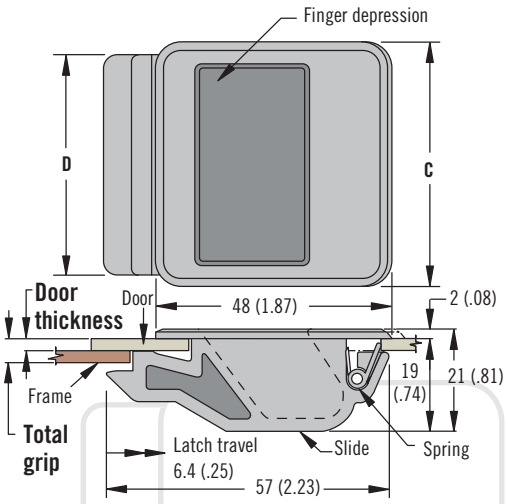
A3 Push-to-Close Latch

Slide-to-open · Flush

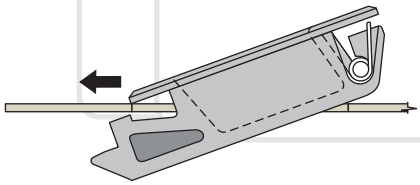
Small and Medium



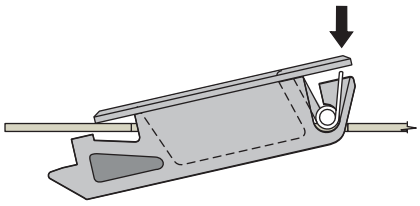
Large (deeper depression)



1. Slip front of latch through hole, push forward



2. Snap back end of latch into position



Series	Installation		
	L	W	X
Small	38.1±0.1 (1.50±.005)	25.4±0.1 (1.0±.005)	12.7±0.7 (.5±.03)
Medium		44.5±0.1 (1.75±.005)	
Large			

Size	Door Thickness	Total Grip	Dimensions		Part Number	
			C	D	UL94-HB	UL94-V0
Small	1.2±0.1 (.050±.005)	6.4±0.1 (.250±.005)	28 (1.11)	25 (.99)	A3-40-525-12	A3-99-187-12
	1.6 $^{+0}_{-0.2}$ (.060±.005)	6.4±0.1 (.250±.005)	28 (1.11)	25 (.99)	A3-40-625-12	A3-99-130-12
Medium	2.2 $^{+0.2}_{-0}$ (.090±.005)	6.4±0.1 (.250±.005)	47 (1.86)	44 (1.74)	A3-50-925-12	A3-99-144-12
Large	2.2 $^{+0.2}_{-0}$ (.090±.005)	6.4±0.1 (.250±.005)	50 (1.95)	44 (1.74)	A3-99-122-12	A3-99-253-01

- **Single hole snap-in installation**
- **Corrosion-resistant materials**

Material and Finish

Latch: ABS, black
Spring: Stainless steel

Performance Details

Max. working load:
40 series 180 N (40 lbf)

50 and 99 series
220 N (50 lbf)

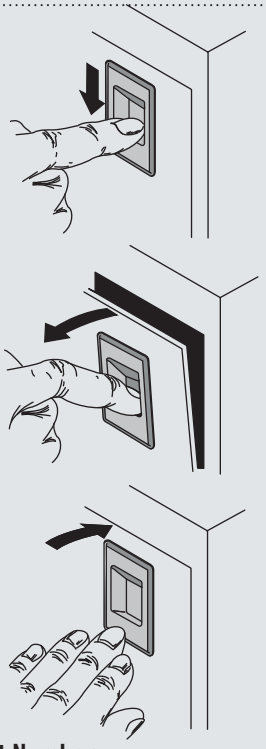
Operating temperature range:
-40°C (-40°F) to 60°C (140°F)

Flammability rating:
UL94-HB or UL94-V0

Installation Notes

Prepare a burr free hole

Door thickness must include plating or paint thickness



Part Number

See table

A3 Push-to-Close Latch

Slide-to-open · Ergo tab style

- **Single hole snap-in installation**
- **Corrosion-resistant materials**

Material and Finish

Latch: ABS, black

Spring: Stainless steel

Performance Details

Max. working load:
Medium: 90 N (20 lbf)

Large:130 N (29 lbf)

Operating temperature range:
-40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-V0

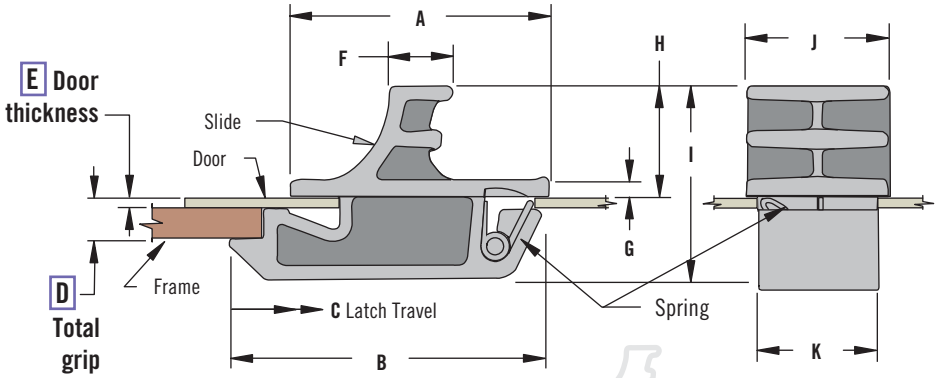
Installation Notes

Prepare a burr free hole

Door thickness must include plating or paint thickness

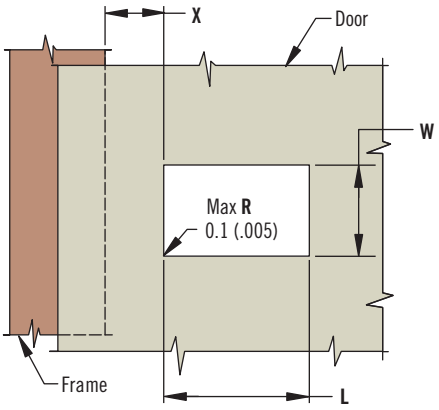
Part Number

See table

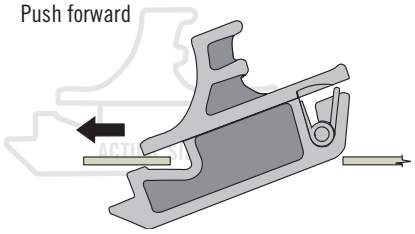


Installation

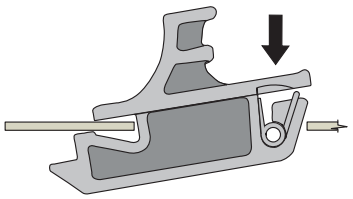
1. Prepare burr-free hole

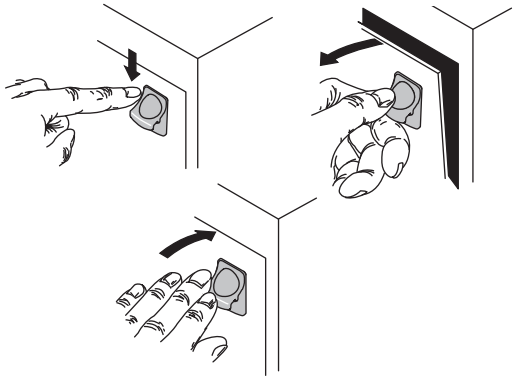


2. Slip front of latch through hole
Push forward



3. Snap back end of latch into position



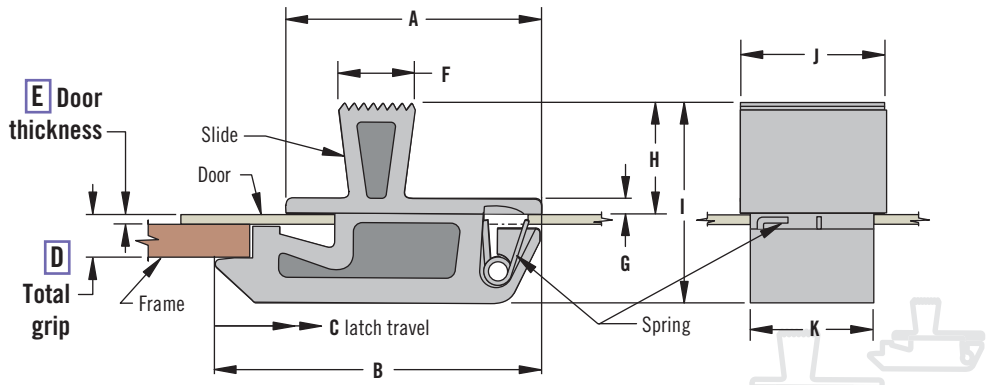


Size	Installation		
	L	W	X
Medium	12.7±0.1 (.500±.005)	7.8±0.05 (.307±.002)	6.4±0.8 (.25±.03)
Large	22.2±0.1 (.875±.005)	14.3±0.1 (.562±.005)	9.5±0.8 (.38±03)

E Door Thickness	D Total Grip	Dimensions									Part Number	Size
		A	B	C	F	G	H	I	J	K		
1 ± 0.1 (.04±.005)	3 ± 0.1 (.12±.005)	19 (.75)	22.2 (.87)	4 (.16)	5.1 (.20)	1.5 (.06)	8.3 (.33)	15.5 (.61)	9.5 (.37)	7.6 (.30)	A3-70-412-25	Medium
1.2+0.2-0 (.05±.005)	4.8 ± 0.1 (.19±.005)	30.1 (1.19)	36.2 (1.43)	4.3 (.17)	7.2 (.28)	2.2 (.09)	12.8 (.50)	22.4 (.88)	16.5 (.65)	14 (.55)	A3-60-519-25	Large

A3 Push-to-Close Latch

Slide-to-open · Tab style



- **Single hole snap-in installation**
- **Corrosion-resistant materials**

Material and Finish

Latch: ABS, black

Spring: Stainless steel

Performance Details

Max. working load:
Small 25 N (5 lbf)

Medium 90 N (20 lbf)

Large 130 N (30 lbf)

Operating temperature range:
-40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

Prepare a burr free hole

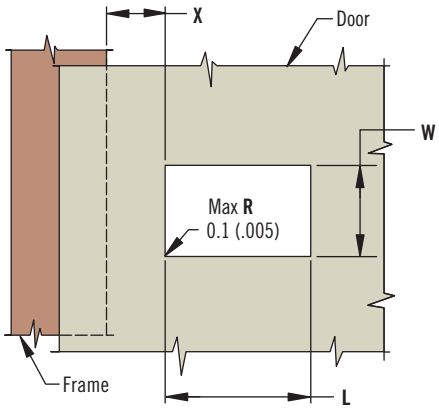
Door thickness must include plating or paint thickness

Part Number

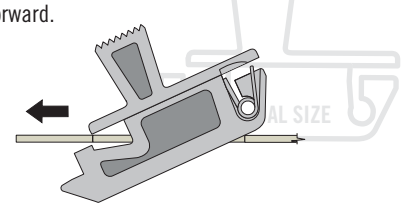
See table

Installation

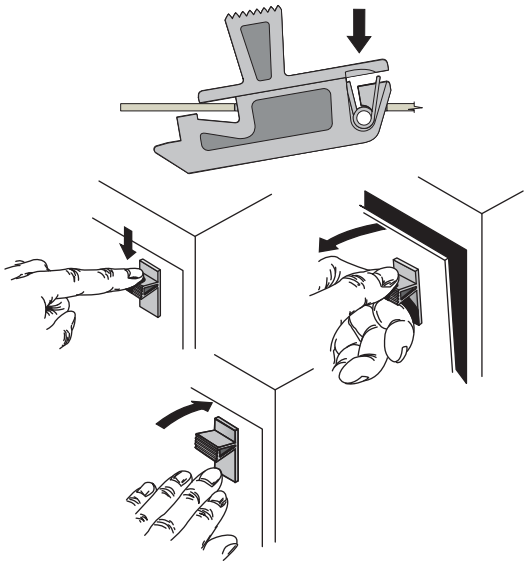
1. Prepare burr-free hole



2. Slip front of latch through hole
Push forward.



3. Snap back end of latch into position



Size	Installation		
	L	W	X
Small	8.33±0.05 (.328±.002)	4.57±0.05 (.180±.002)	4.8 ±0.8 (.19±.03)
Medium	12.7±0.1 (.500±.005)	7.8±0.05 (.307±.002)	6.4±0.8 (.25±.03)
Large	22.2±0.1 (.875±.005)	14.3±0.1 (.562±.005)	9.5±0.8 (.38±03)

E Door Thickness	D Total Grip	Dimensions									Part Number	Size
		A	B	C	F	G	H	I	J	K		
.76±.08 (.030±.003)	2.54±0.13 (.100±.005)	11.9 (.47)	15.1 (.59)	3 (.12)	4.0 (.16)	0.8 (.03)	5.6 (.22)	11.1 (.44)	6.0 (.23)	4.4 (.17)	A3-10-310-12	Small
1±0.1 (.04±.005)	3±0.1 (.12±.005)	18 (.70)	22.5 (.87)	4 (.16)	5.5 (.22)	1.5 (.06)	8.5 (.33)	15.5 (.61)	9.5 (.37)	7.5 (.30)	A3-20-412-12	Medium
1.2+0.2-0 (.05±.005)	4.8±0.1 (.19±.005)	29 (1.13)	36 (1.41)	4.3 (.17)	9 (.34)	2 (.08)	13 (.50)	22.5 (.87)	16.5 (.64)	14 (.55)	A3-30-519-12	Large

93 Push-to-Close Latch

Push button to open

- **Push button opening**
- **Single hole installation**
- **Optional ejector spring helps prevent rattles**

Material and Finish

Latch: ABS, black
Spring: Stainless steel

Performance Details

Max. working load:
530 N (120 lbf)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting nut: 7.9 N·m (70 in·lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

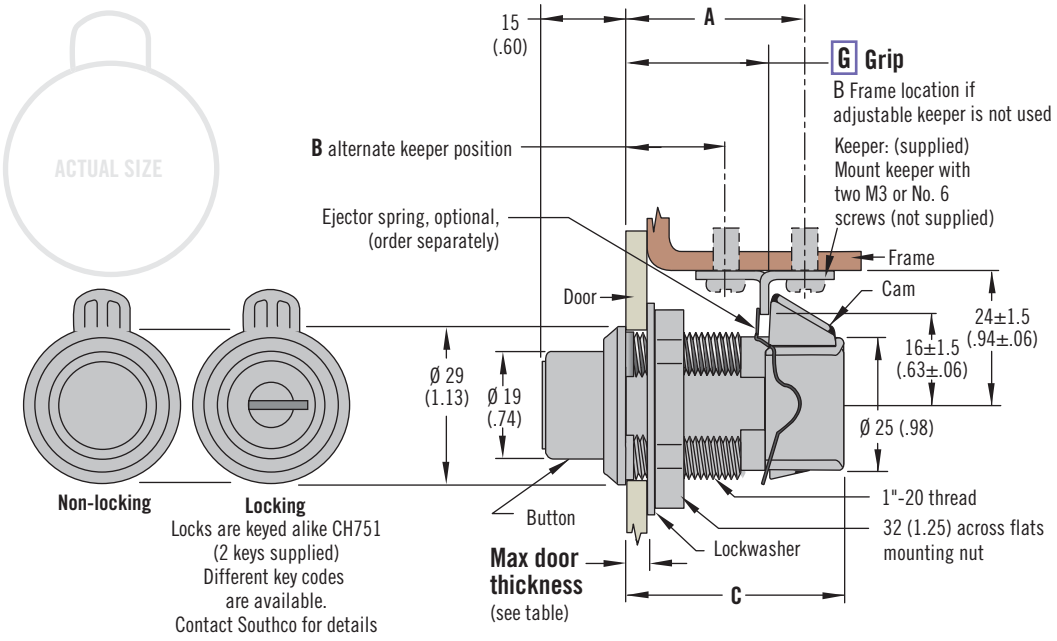
Pull tab (optional) part number:
In-line 93-21-301-14
Perpendicular 93-21-322-14

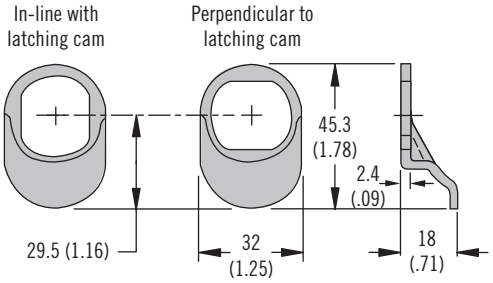
Keeper (replacement) part number:
93-14-101-24

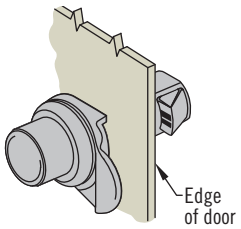
Ejector spring (optional)
part number: 93-22-302-18

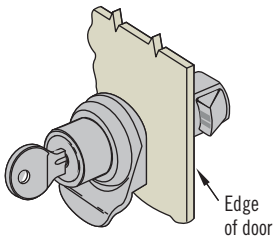
Part Number

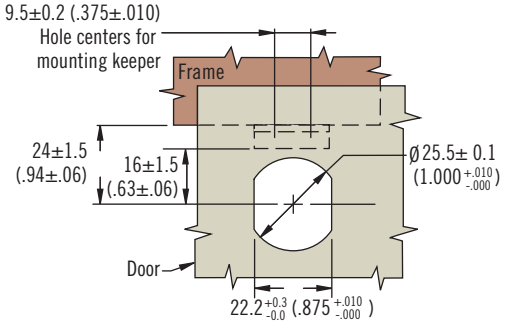
See table

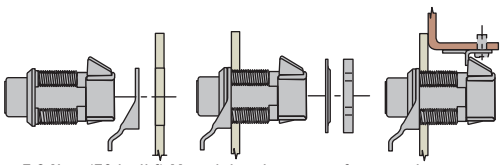












7.9 N·m (70 in·lbf) Max. tightening torque for mounting nut

Style	Max. Door Thickness	G Grip	Dimensions			Latch Part Number	
			A	B	C Ref	Key-Locking (2 Flat Keys Supplied)	Non-Locking
Pull tab in-line with latching Cam	10.3 (.407)	$23^{+0.1}_{-.07}$ ($.907^{+0}_{-.032}$)	29.5±1.5 (1.16±.06)	14.5±1.5 (.57±.06)	37 (1.47)	93-303	93-304
Pull tab perpendicular to latching Cam	10.3 (.407)	$23^{+0.1}_{-.07}$ ($.907^{+0}_{-.032}$)	29.5±1.5 (1.16±.06)	14.5±1.5 (.57±.06	37 (1.47)	93-313	93-314
Latch only	12.7 (.500)	25±0.4 ($1.000^{+0}_{-.032}$)	32±1.5 (1.25±.06	17±1.5 (.66±.06)	40 (1.57)	93-307	93-308

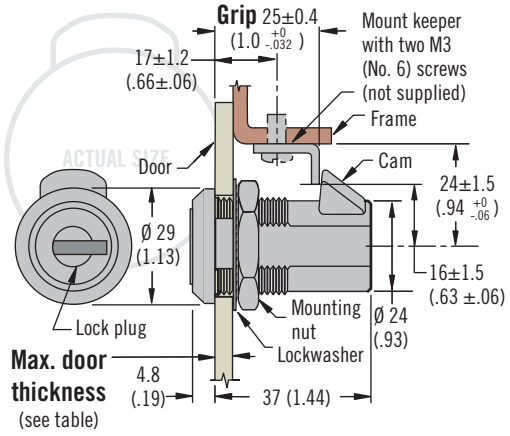
Dimensions in millimeters (inch) unless otherwise stated

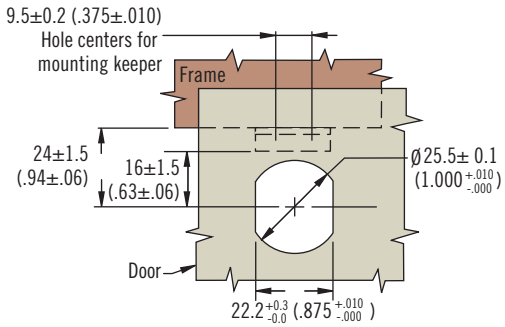
southco® CONNECT · CREATE · INNOVATE

93 Push-to-Close Latch

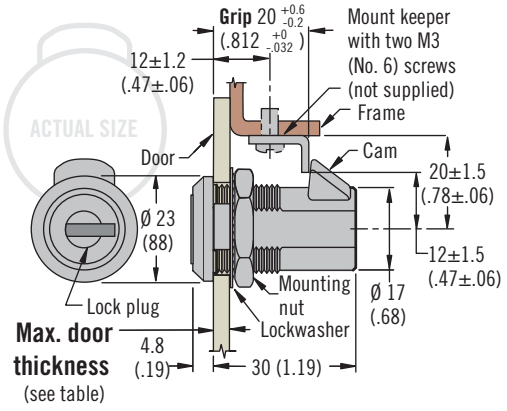
Key actuated

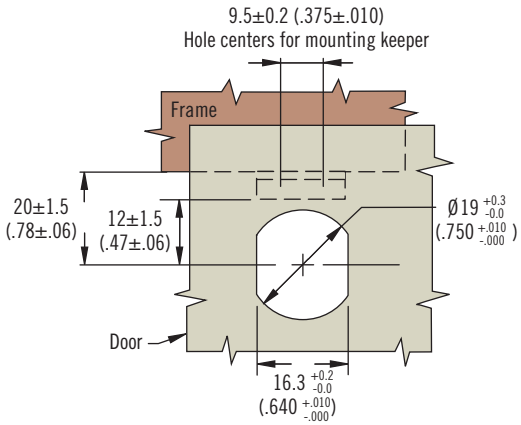
Large



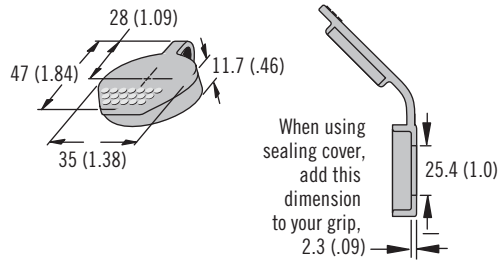


Small

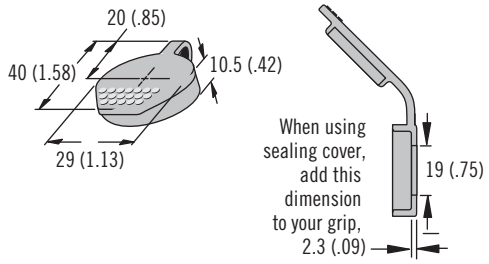




Sealing Cover (optional)



Sealing Cover (optional)



Size	Max. Door Thickness	Latch Part Number Locking Keyed Alike Ch751 (2 Flat Keys Supplied)	Lock Core Finish	Sealing Cover (Optional) Part Number
Large	12.7 (.500)	93-10-101-10	Bright	90-4
Small	9.5 (.375)	93-10-201-50	Black	90-2
		93-10-201-10	Bright	

- **Key only operation for access restriction**
- **Single hole installation**

Material and Finish

Latch: Zinc alloy, zinc plated or black powder coated

Performance Details

Max. working load:

Large: 560 N (125 lbf)

Small: 330 N (75 lbf)

Operating temperature range: -18°C (0°F) to 65°C (150°F)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting nut: 7.9 N·m (70 in·lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

Pull tab (optional - large size only):
Part number:
In-line: 93-21-301-14
Perpendicular: 93-21-322-14

Keeper (replacement)
Part number: 93-14-101-11

Part Number

See table

93 Push-to-Close Latch

Turn-to-open · Knob style

- **Turn-to-open**
- **Single hole installation**

Material and Finish

Latch: Zinc alloy, zinc plated
Knob: Polycarbonate black

Performance Details

Max. working load:
Large: 560 N (125 lbf)

Small: 330 N (75 lbf)

Operating temperature range:
-18ºC (0ºF) to 65ºC (150ºF)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting nut: 7.9 N·m (70 in·lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

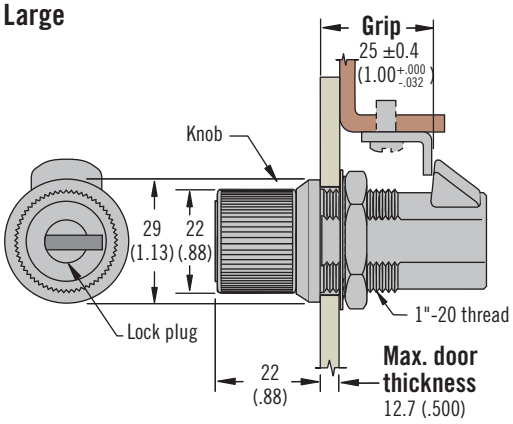
Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

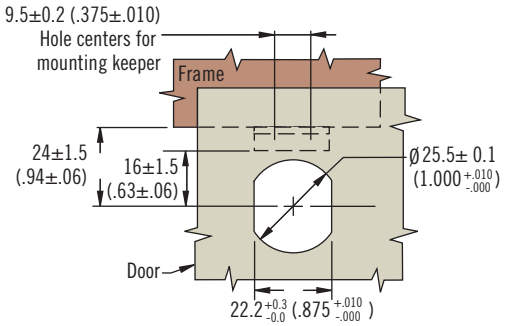
Keeper (replacement)
Part number: 93-14-101-11

Part Number

See table

Large





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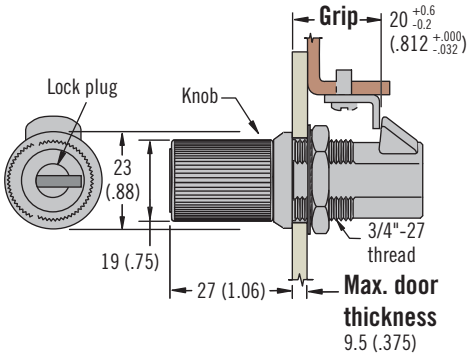
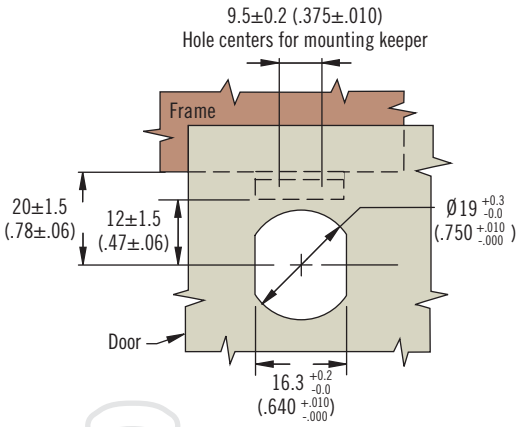


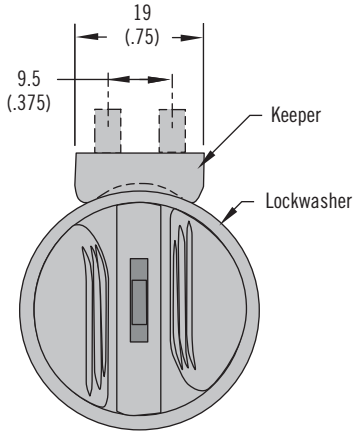


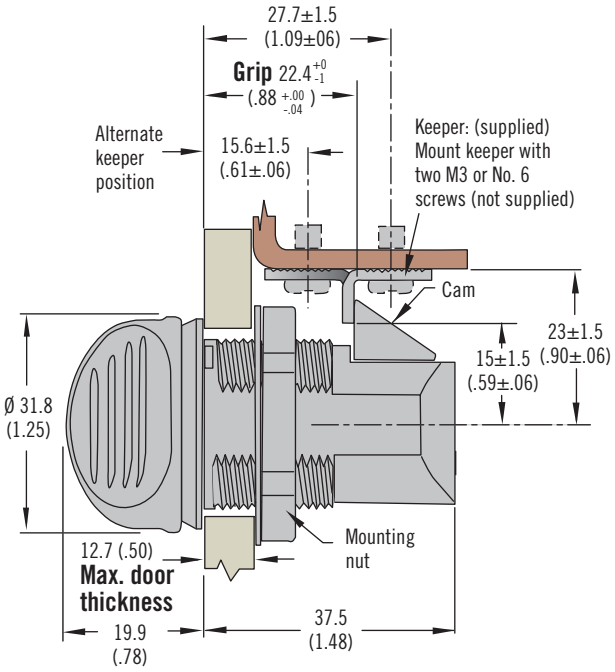
Size	Latch Part Number		Lock Core Finish
	Locking (2 Flat Keys Supplied)	Non-locking	
Large	93-10-102-50	93-10-103-50	Black
	93-10-102-10	93-10-103-10	Bright
Small	93-10-202-50	93-10-203-50	Black
	93-10-202-10	93-10-203-10	Bright

Dimensions in millimeters (inch) unless otherwise stated

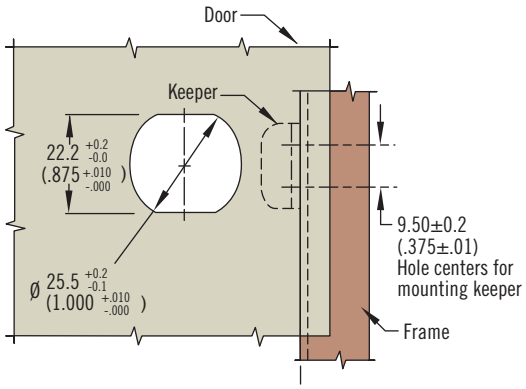
93 Push-to-Close Latch

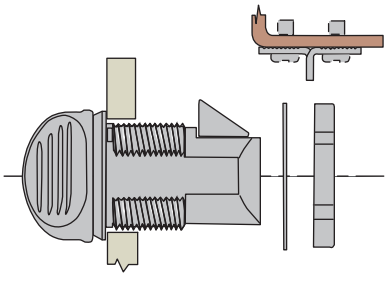
Turn-to-open · Wing style





ACTUAL SIZE





Latch Part Number (2 Flat Keys Supplied)
93-402

- **Turn-to-open**
- **Single hole installation**

Material and Finish

Glass reinforced nylon and acetal, black

Performance Details

Max. working load:
425 N (100 lbf)

Operating temperature range:
-20ºC (0ºF) to 65ºC (150ºF)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting nut: 6 N·m (53 in·lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

Keeper (replacement):
Part number: 93-14-101-24

Part Number

See table

R3 Push-to-Close Latch

Pull-to-open · Paddle handle · Baggage door latch

- **Environmentally sealed**
- **Emergency release**
- **For use with R4 rotary latches**

Material and Finish

Latch assembly: Zinc alloy, black or white powder coated or chrome plated

Slide bolt: Zinc alloy, zinc plated

Striker mounting plates and brackets: Steel, zinc plated

Performance Details

Max. working load: 560 N (125 lbf)

Installation Notes

Max. tightening torque on mounting screws: 2 N·m (14 in·lbf)

Notes

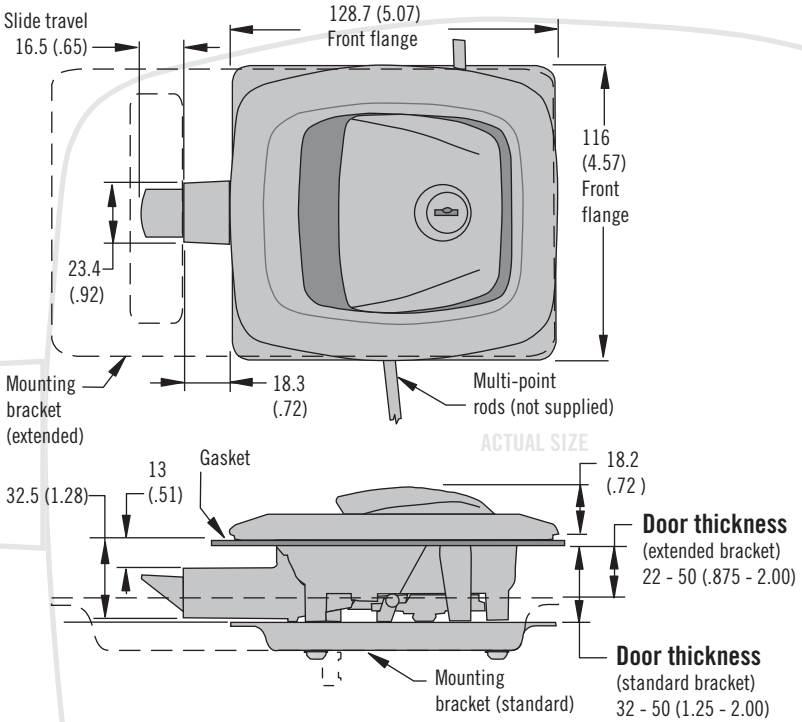
*For lock core selection and a complete overview of the *SOUTHCO®* Key-Choice System see pages 182 -183

Part Number

Order latch, bracket and mounting screws separately.

For latch see table

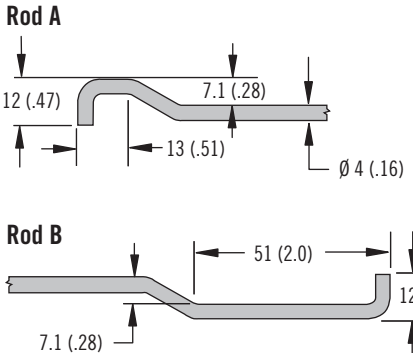
For bracket and mounting screws see page 167



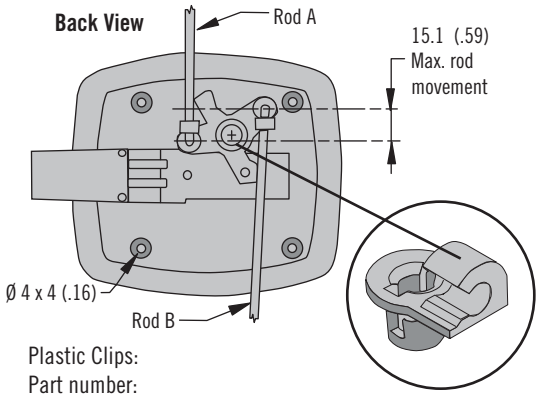
Multi-Point Capable

For applicable rotary latches see page 121

Actuating rods are not supplied
Recommended rod configuration shown below



Latch shown in actuated (unlatched) position
(slide retracted)



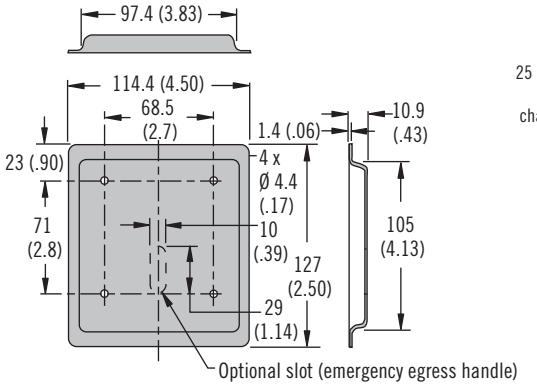
Plastic Clips:
Part number:
R4-0-43922 for 4mm rods are available as an option

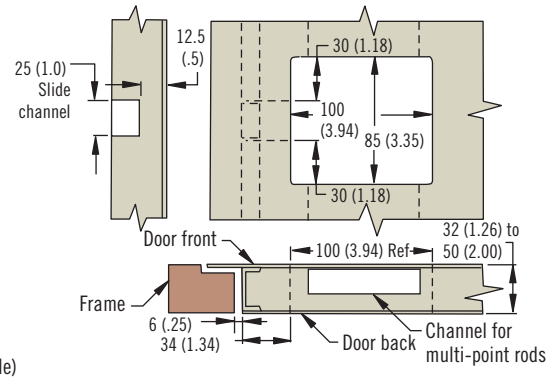
Latch Finish	Part Number			
	Locking (CH751) (2 Keys Included)	Locking (Reversible Key) R001 (2 Keys Included)	Locking (No Core)*	Non-Locking
Chrome, polished	R3-20-350-10	R3-20-320-10	R3-20-390-10	R3-20-300-10
Black powder coated	R3-20-350-50	R3-20-320-50	R3-20-390-50	R3-20-300-50
White powder coated	R3-20-350-70	R3-20-320-70	R3-20-390-70	R3-20-300-70

INFO CLIC www.southco.com/R3

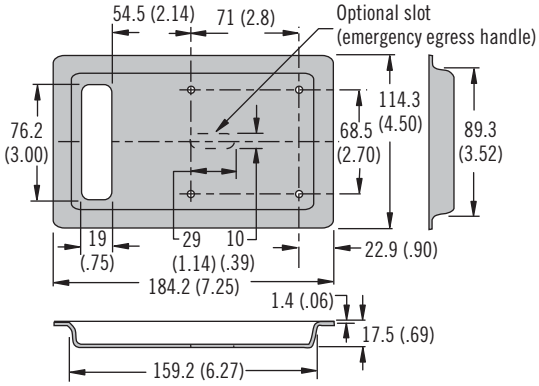
Dimensions in millimeters (inch) unless otherwise stated

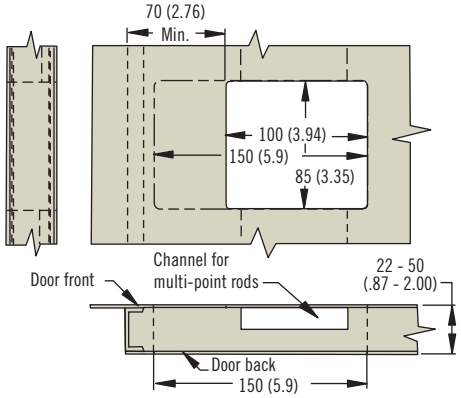
Standard Bracket



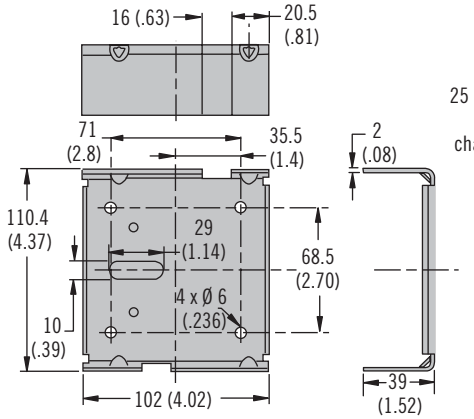


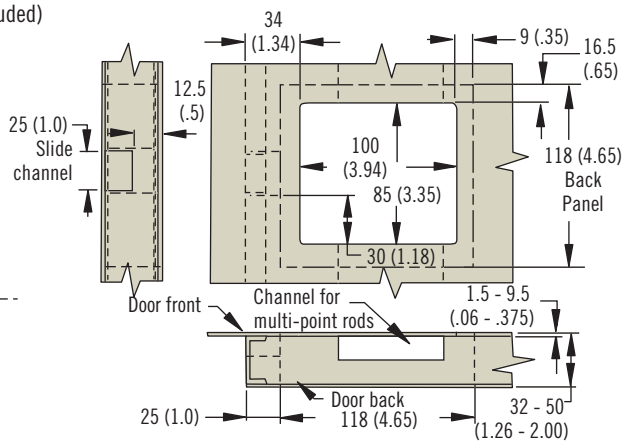
Extended Bracket





U-Bracket (slot for emergency egress handle included)





Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

Overmolded key, keyed alike CH751
(2 keys per ring)

Part number: PK-10-01-05

Overmolded key, keyed alike R001
(2 keys per ring)
Part number: PK-10-01-KR001

Emergency egress handle (optional):
Part number: R3-21-110

Notes

U-bracket is intended for sheet metal door applications

Part Number

Order latch, bracket and mounting screws separately.

For latch see page 166

For bracket and mounting screws see table

Bracket Part Number		No. 8 Self Tapping Screw (Part Number By Length)				
		R3-23-250-01	R3-23-250-02	R3-23-250-03	R3-23-250-04	R3-23-250-05
		16 (.625) Long	19 (.750) Long	25.4 (1.00) Long	32 (1.250) Long	38 (1.500) Long
Standard Bracket	R3-23-160-11-01	32 (1.250)	32 (1.250) - 38 (1.500)	38 (1.500) - 44 (1.750)	44 (1.750) - 50 (2.00)	–
Extended Bracket	R3-23-162-11-01	22 (.875) - 25 (1.00)	25 (1.000) - 32 (1.250)	32 (1.250) - 38 (1.500)	38 (1.500) - 44 (1.750)	44 (1.750) - 50 (2.00)
U-Bracket	R3-23-161-11	1.5 (.0620 - 4.8 (.187)	4.8 (.187) - 9.5 (.375)	–	–	–
		Door thickness				

R3 Push-to-Close Latch

Pull-to-open · Paddle handle · Entry door latch

- **Environmentally sealed**
- **Dual sided access and locking**

Material and Finish

Latch assembly: Zinc alloy, black powder coated or white or chrome plated

Slide bolt: Zinc alloy, zinc plated

Striker mounting plates and brackets: Steel plated, zinc plated

Performance Details

Max. working load: 560 N (125 lbf)

Operating temperature range: -18ºC (0ºF) to 60ºC (140ºF)

Installation Notes

Max. tightening torque on mounting screws: 2 N·m (14 in·lbf)

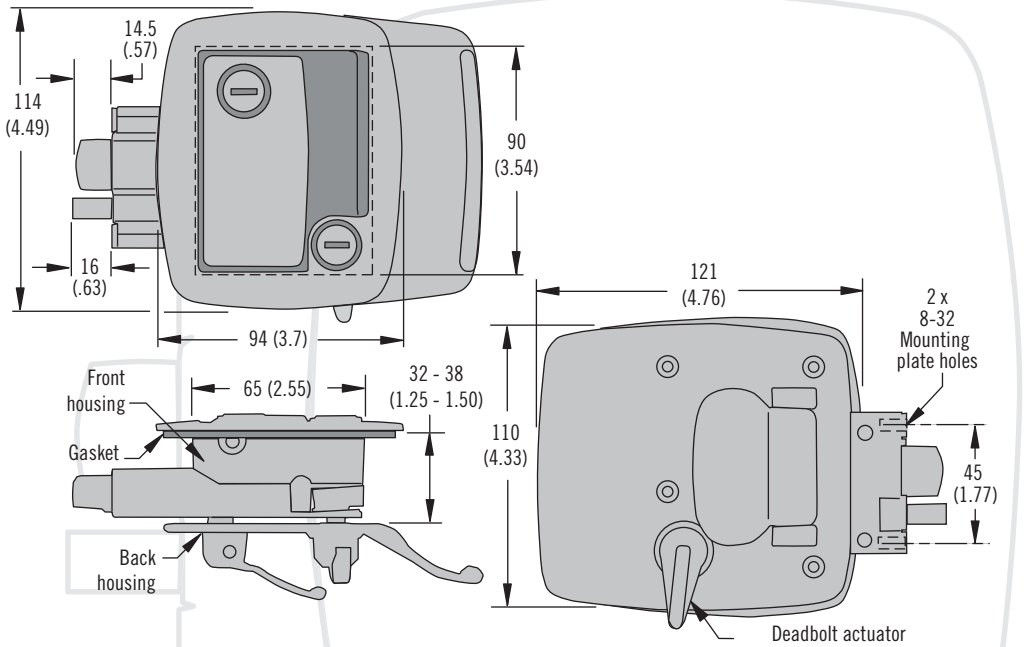
Accessories

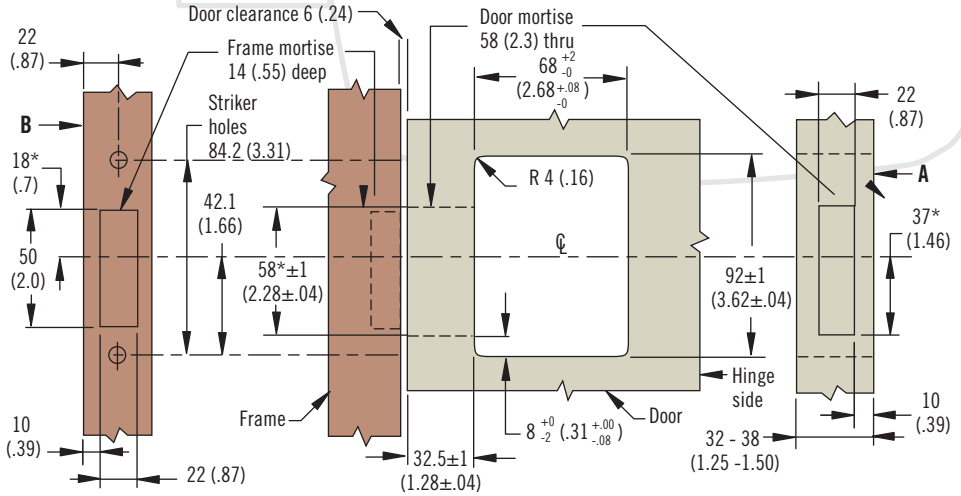
Overmolded key, keyed alike R302 (2 keys per ring)
Part number: PK-10-01-07-KR302

Replacement screws
Part number: R3-13-310

Notes

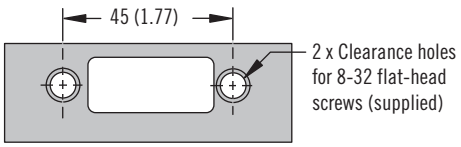
Mounting plate, striker plate and all mounting screws except striker plate screws are provided with each lock set.



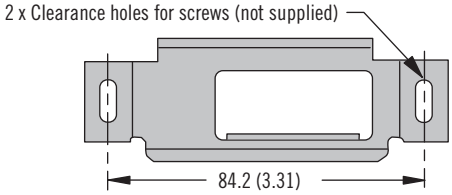


*For left hand mounting mirror the dimensions marked with * by moving them to the other side of the centerline.

Mounting Plate



Striker Plate



Finish	Latch Part Number
Chrome, polished	R3-10-311-10
Black powder coated	R3-10-311-50
White Powder coated	R3-10-311-70

Part Number	
Mounting plate	R3-13-190
Striker plate	R3-13-180

Part Number

See table

INFO CLIC www.southco.com/R3

Dimensions in millimeters (inch) unless otherwise stated

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R4 Push-to-Close Latch

Lift-to-open · Flush

- **Lift-to-open**
- **Single hole installation**
- **Rotary latching**

Material and Finish

Glass reinforced nylon and acetal, black

Performance Details

Max. working load: 290 N (65 lbf)

Operating temperature range: -20ºC (0ºF) to 65ºC (150ºF)

Flammability rating: UL94-HB

Installation Notes

Max. tightening torque on mounting screws 1.4 N·m (12.4 in·lbf)

Accessories

Flat key, keyed alike R001 (2 keys per ring)
Part number: PK-10-01-KR001

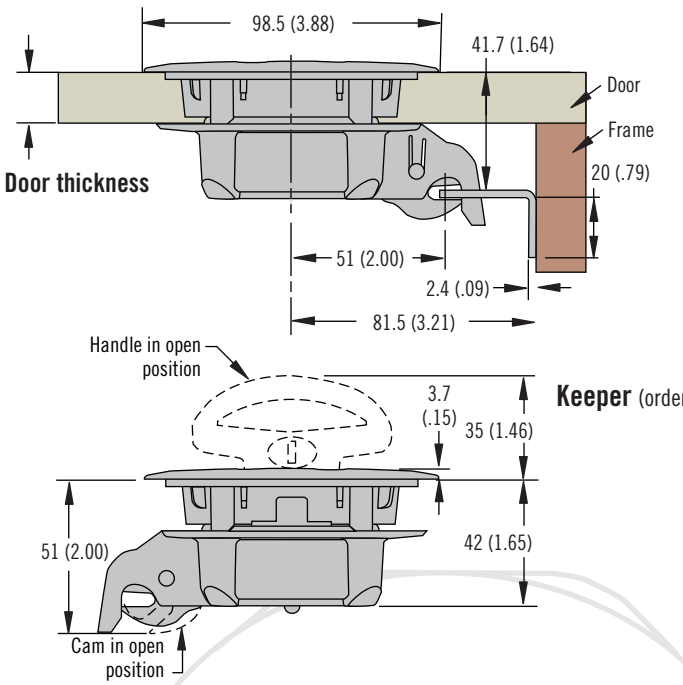
Keeper: Part number R4-64-11

Mounting screws (replacement): Recessed T15 TORX® / Slot M4.2 x 1.4:
Part number: M1-0-33211-24 or R4-0-51779-24

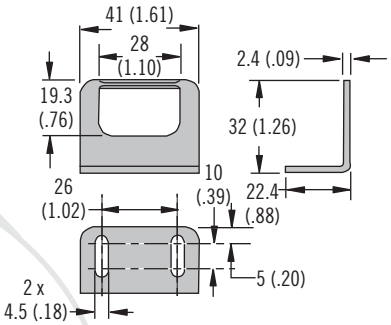
Part Number Selection

Order latch, keeper and spacers separately

See table for spacer width and number required by door thickness



Keeper (order separately)

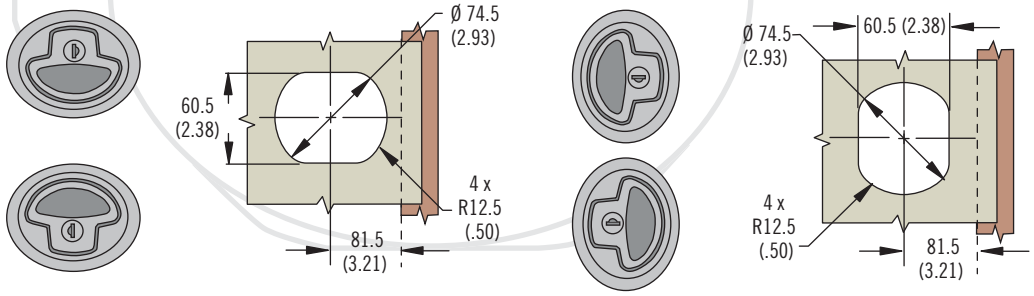


Install keeper using 2 x M4 (No. 8) screws (not supplied)

Four options for handle orientation

Perpendicular Handle Orientation

In-Line Handle Orientation



L **Lock-style**
0 Non-locking
1 Key-locking keyed alike R001 (2 keys supplied)

D **Door Thickness**
0 1 to 23.9 (.04 to .94)
1 24 to 27 (.94 to 1.1)

R4 - 60 - 2 L D - F F

F **Finish upper housing**
5 Black
7 White

F **Finish lower housing**
5 Black
7 White

Part Number	Spacer Thickness	Door Thickness					
		1 - 4.9 (.04 - .19)	5 - 9.9 (.19 - .39)	10 - 14.9 (.39 - .59)	15 - 19.9 (.59 - .78)	20 - 23.9 (.78 - .94)	24 - 27.9 (.94 - 1.1)
Part Number R4-64-13-1 Spacers Required	4 (.16)	0	1	0	1	0	0
Part Number R4-64-13-2 Spacers Required	8 (.31)	2	1	1	0	0	0

M1 Push-to-Close Latch

Lift-to-open · Flush

- **Lift-to-open**
- **Single hole installation**
- **Dual sided latching**

Material and Finish

Latching slides and mounting bracket:
Glass reinforced nylon, black
Housing and paddle:
Polycarbonate/ABS, black

Performance Details

Max. working load: 500 N (112 lbf)

Flammability rating: UL94-HB

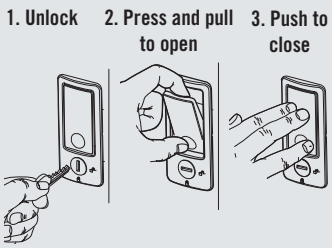
Installation Notes

Max. tightening torque on torx mounting screws:
1.8 N·m (16 in·lbf)

Accessories

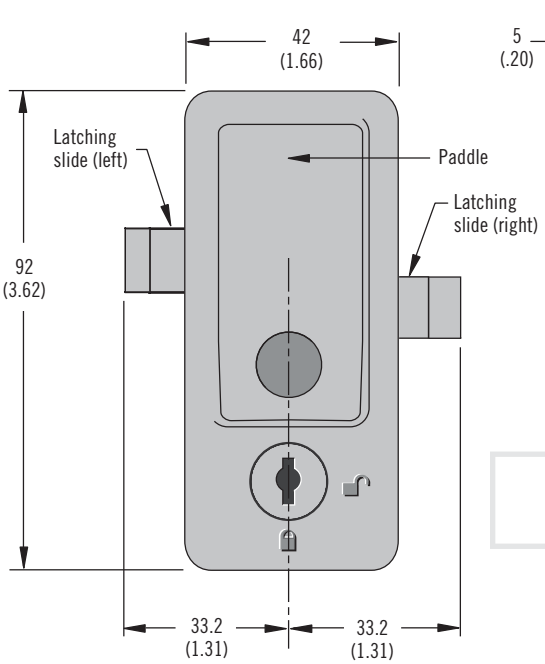
Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

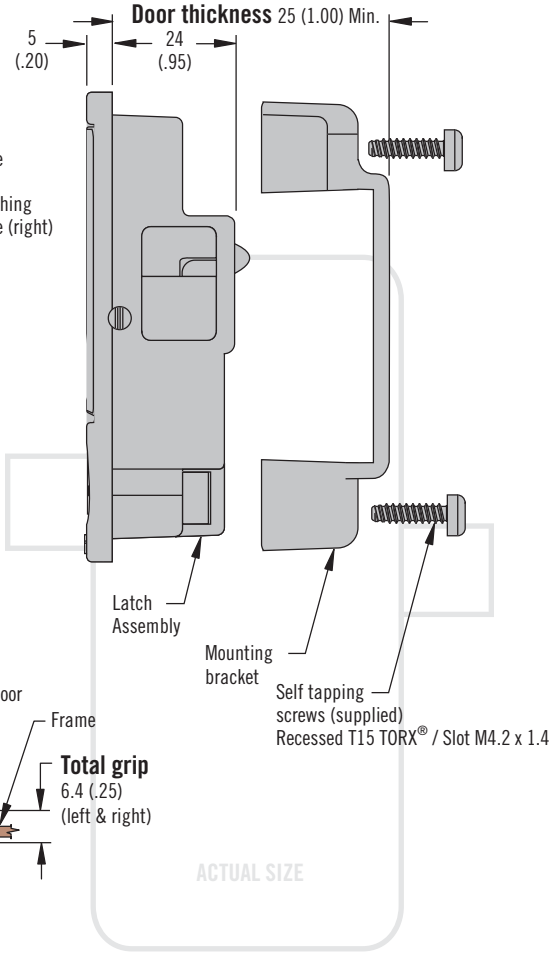
Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

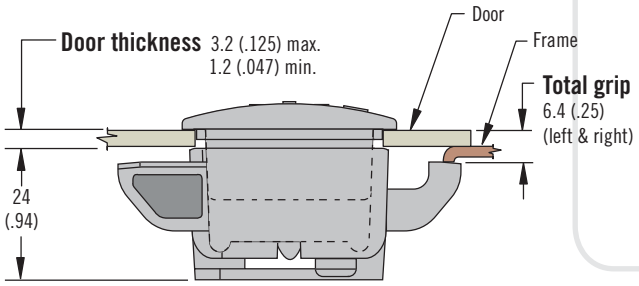


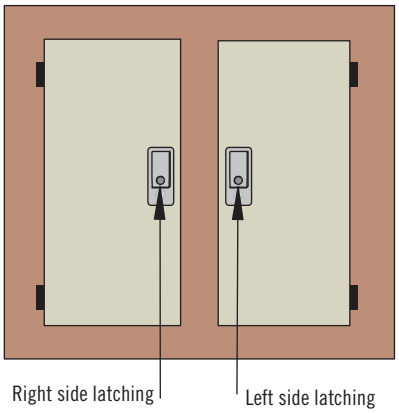
Part Number

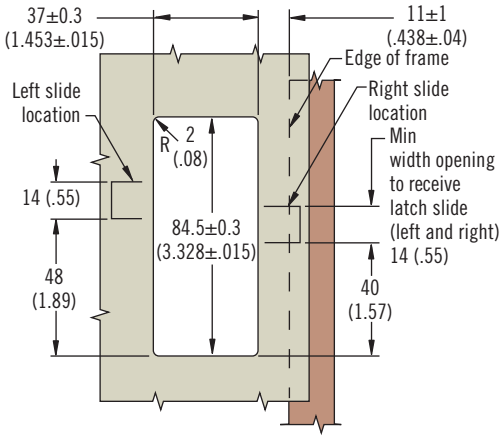
See table











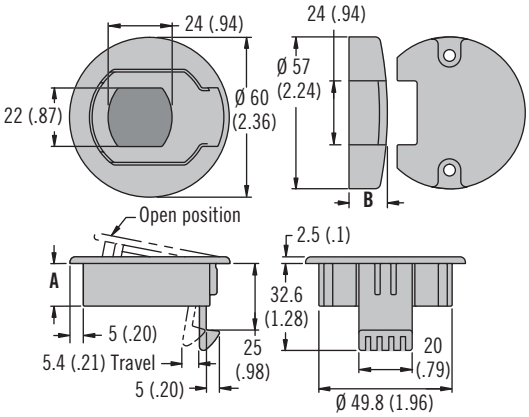
Part Number (2 Flat Keys Supplied)	
Right side latching	M1-2F-1-25
Dual side latching	M1-2F-2-25
Left side latching	M1-2F-3-25

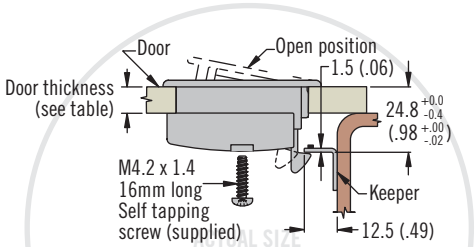
Dimensions in millimeters (inch) unless otherwise stated

M1 Push-to-Close Latch

Lift-to-open · Flush

Mounting Cup





Door Thickness Range	A	B	Part Number
1 - 7 (.04 - .28)	16 (.63)	20.4 (.80)	M1-81
7 - 13 (.28 - .51)	16 (.63)	14.3 (.57)	M1-82
13 - 19 (.51) - .75)	22 (.87)	14.3 (.57)	M1-83

- **Low profile**
- **Non-corrosive and non-conductive**

Material and Finish

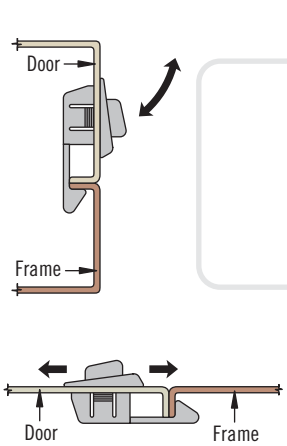
Latch: Acetal, black
Mounting hardware: Stainless steel

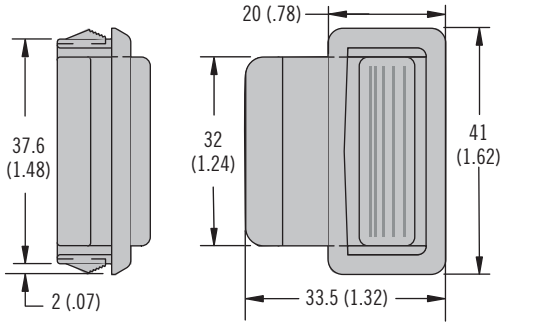
Other options available. For complete details on variety, part numbers, installation and specification, go to

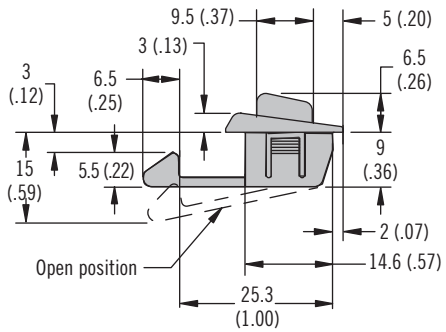
INFO CLIC *www.southco.com/M1*

80 Push-to-Close Latch

Push-to-open · Snap-in







Color	Part Number
White	80-201
Black	80-202

- **Snap-in installation**
- **Non-corrosive and non-conductive**
- **Suitable for sliding or hinged doors**

Material and Finish

Acetal, black or white

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/80*

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Miniature

- **Single hole installation**
- **Concealed mounting**
- **Plastic slide**

Material and Finish

Stainless steel passivated and brushed finish and glass reinforced nylon, black

Performance Details

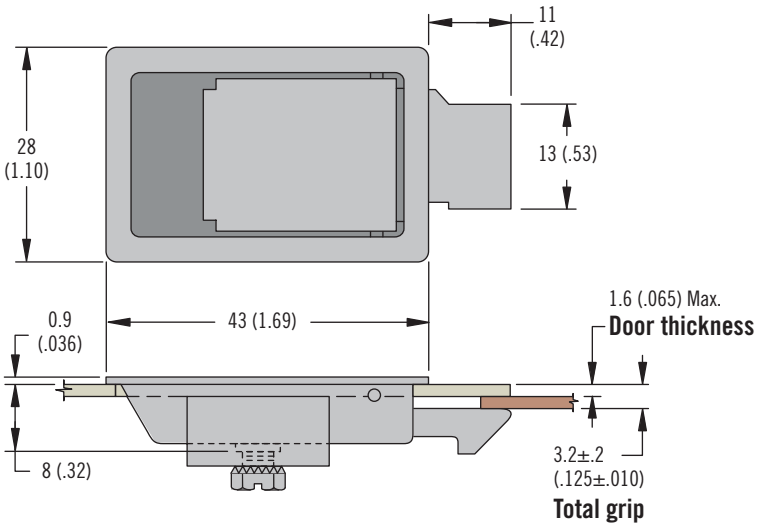
Max. working load:
90 N (20 lbf)

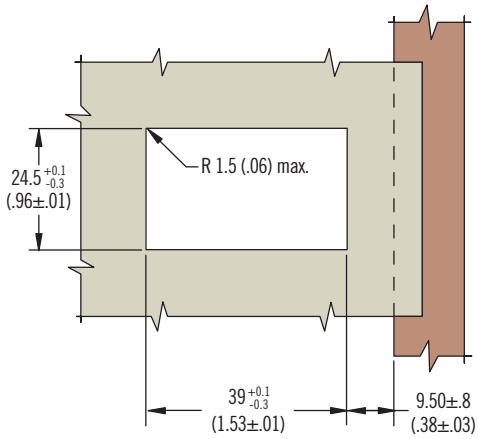
Operating temperature range:
-18°C (0°F) to 100°C (210°F)

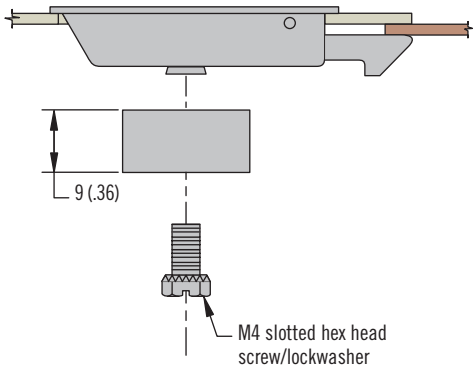
Flammability rating: UL94-V0

Installation Notes

Max. tightening torque on mounting screws: 0.9 N·m (8 in·lbf)







Part Number

See table

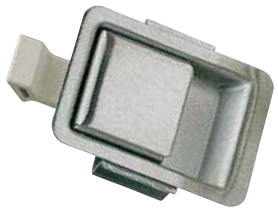
Part Number
64-01-10

INFO CLIC www.southco.com/64

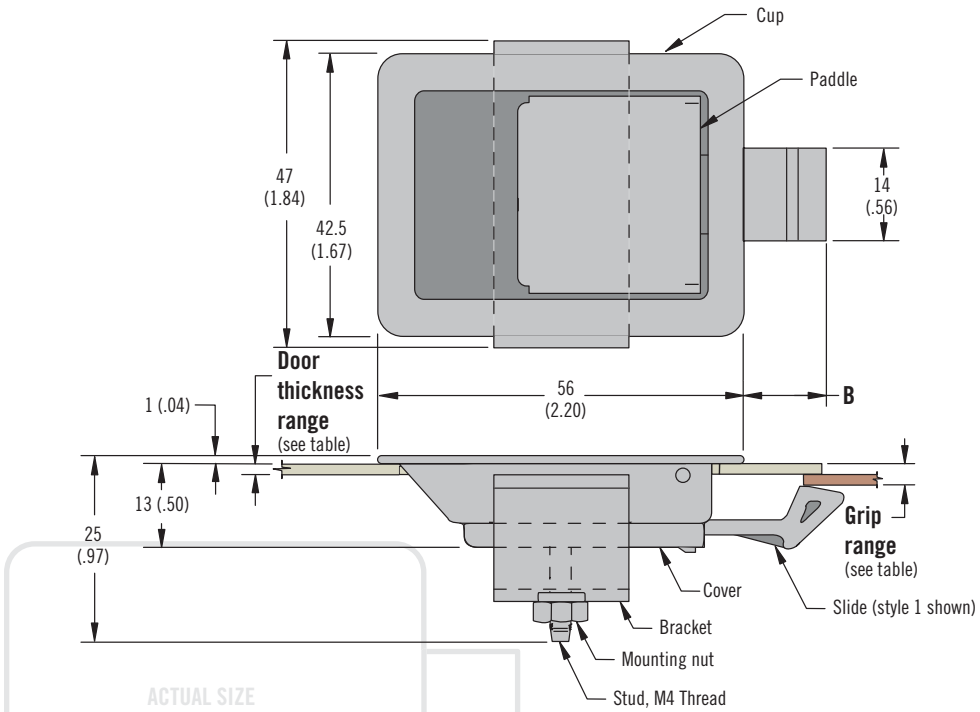
Dimensions in millimeters (inch) unless otherwise stated

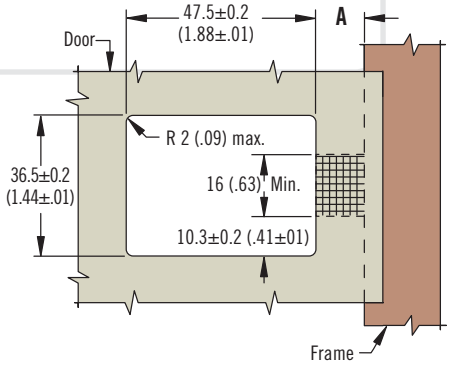
64 Push-to-Close Latch

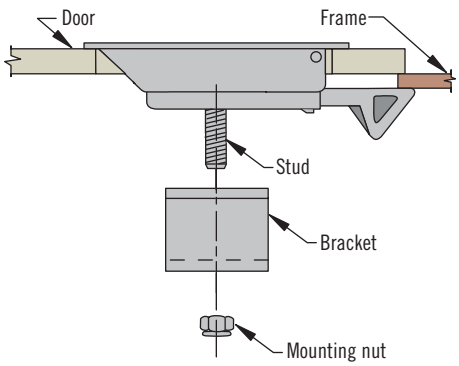
Pull-to-open · Paddle latch · Small



- **Single hole installation**
- **Concealed mounting**
- **Plastic slide**







Grip Range		Slide Style	A		B	T (See Notes)	Part Number Brushed Finish			
							Door Thickness Range			
Min.	Max.		Min.	Max.			3.7 (.144) Max.	3.9 - 7.3 (.154 - .288)	11.1 - 14.6 (.437 - .576)	18.6 - 22 (.734 - .868)
1.2 (.05)	2 (.08)	1	10.4 (.41)	12.7 (.50)	12.4 (.49)	1.6 (.063)	64-10-111-50	~	~	~
2.8 (.11)	3.6 (.14)	3	11.9 (.47)	14.2 (.56)	14.2 (.56)	3.2 (.125)	64-10-113-50	64-10-133-50	~	~
6 (.23)	6.7 (.27)	4				6.4 (.250)	64-10-124-50	64-10-114-50	~	~
12.3 (.48)	13.1 (.52)	5				7.1 (.281)	64-10-125-50	64-10-135-50	64-10-115-50	64-10-115-50
18.6 (.73)	19.4 (.77)	6				7.1 (.281)	64-10-126-50	~	64-10-116-50	64-10-116-50

Material and Finish

Stainless steel passivated and brushed or black powder coated and glass reinforced nylon, natural

Performance Details

Max. working load:

Style	Max. Static Load N (lbf)
1	130 (30)
2	110 (25)
3	90 (20)
4	70 (15)
5	55 (12)

Operating temperature range: -18°C (0°F) to 100°C (210°F)

Flammability rating: UL94-V0

Installation Notes

Door thickness must not exceed **T** dimension (see table) in area through which slide will operate. It may be necessary to reduce thickness of door in area indicated by grid.

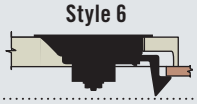
Slide styles:

Style 3

Style 4

Style 5

Style 6



Notes

For an assembly with black powder coated finish change last digit from 0 to 5 - Example: 64-10-111-55

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Small

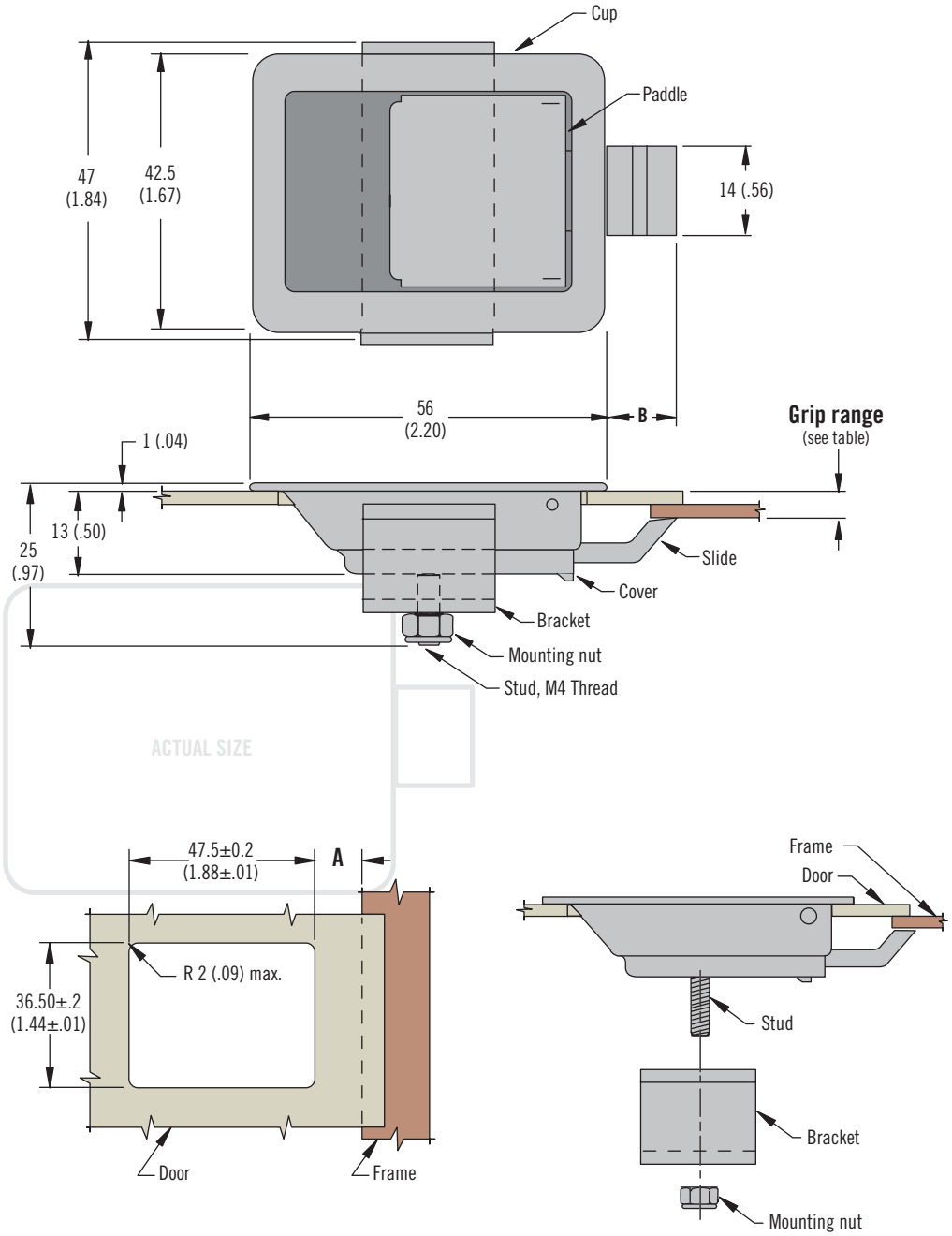
- **Single hole installation**
- **Concealed mounting**
- **Metal slide**

Material and Finish

Stainless steel passivated and brushed or black powder coated, steel, chrome plated

Performance Details

Max. working load:
222 N (50 lbf)



Part Number

See table

Grip Range		Part Number		A		B
Min.	Max.	Stainless Steel, Brushed	Stainless Steel Black Powder coated	Min.	Max.	
1.2 (.05)	2 (.08)	64-11-10	64-11-12	10.4 (.41)	12.7 (.50)	11.5 (.45)
2 (.08)	2.8 (.11)	64-11-20	64-11-22	11.2 (.44)	13.5 (.53)	11.9 (.47)
2.8 (.11)	3.6 (.14)	64-11-30	64-11-32	11.9 (.47)	14.2 (.56)	12 (.48)

INFO CLIC www.southco.com/64

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Medium

- **Single hole installation**
- **Concealed mounting**
- **Metal slide**

Material and Finish

Stainless steel brushed, steel, zinc plated or steel, black powder coated or silver

Performance Details

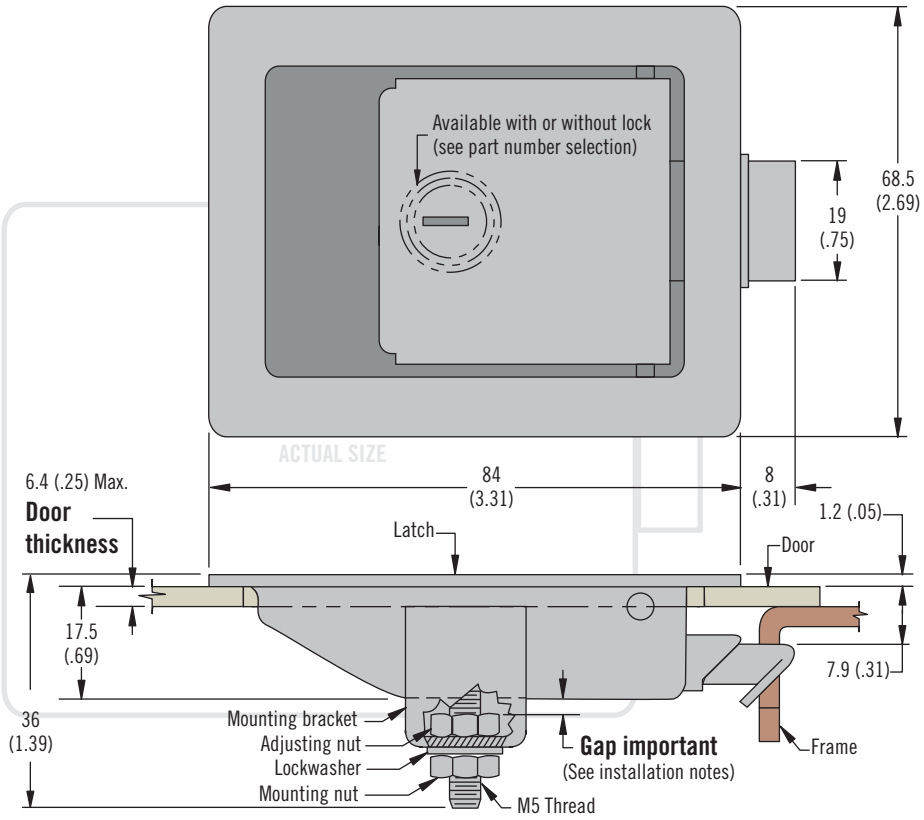
Max. working load:
570 N (125 lbf)

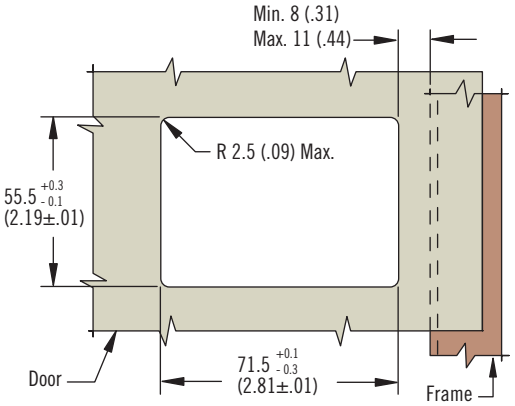
Installation Notes

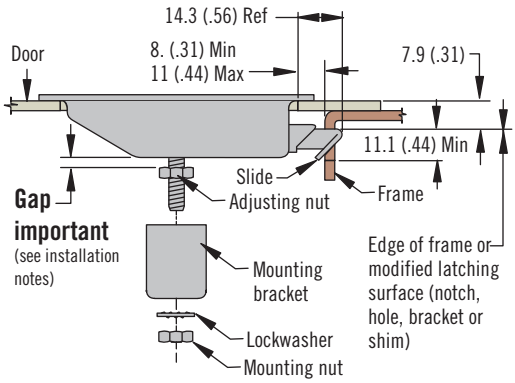
Measure your door thickness and set adjusting nut so that GAP is equal to door thickness within plus 0.8 (.03), minus 0.0 (.00).

Accessories

Flat key, keyed alike H257
(2 keys per ring)
Part number: 64-0-33578







Part Number Selection

64 - 2 L - 1 M

L Lock style
- **1** Non-locking
- **2** Key-locking keyed alike H257 (2 keys supplied)

M Material
- **0** Stainless steel, brushed
- **1** Steel, black powder coated
- **3** Steel, zinc plated
- **5** Steel, powder coated silver

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Large

- **Single hole installation**
- **Concealed mounting**
- **Metal slide**

Material and Finish

Stainless steel, brushed, steel, zinc plated or steel, black powder coated

Performance Details

Max. working load: 1110 N (250 lbf)

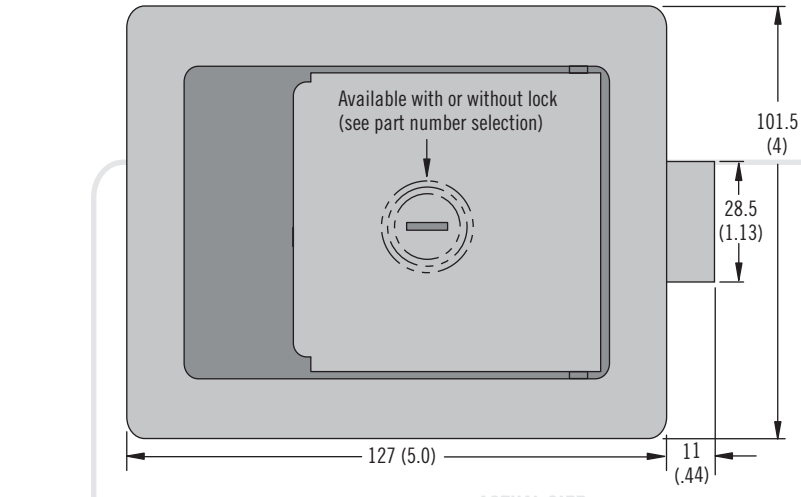
Installation Notes

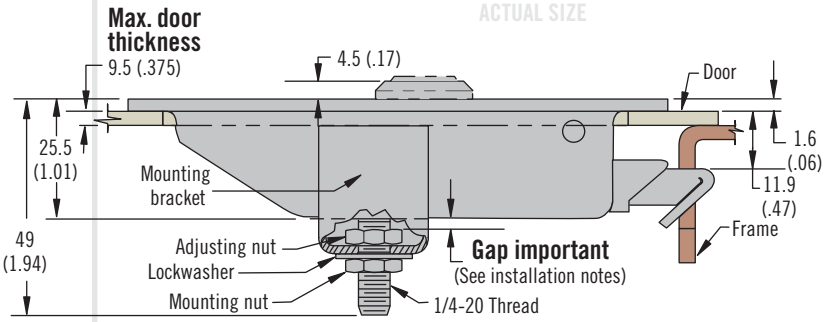
Measure your door thickness and set adjusting nut so that GAP is equal to door thickness within plus 0.8 (.03), minus 0.0 (.00)

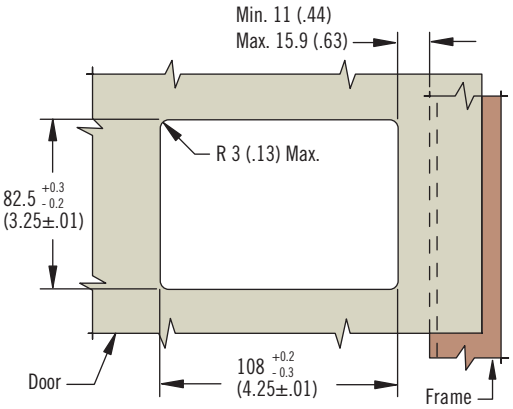
Accessories

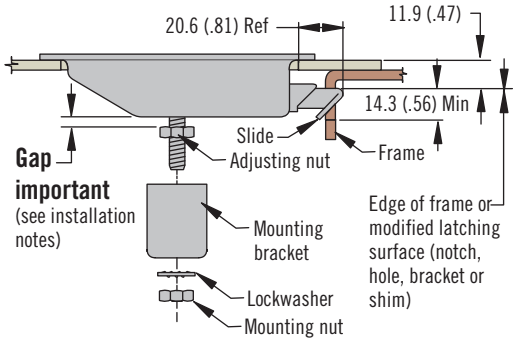
Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05









Part Number Selection

64 - 10 - 30 L - M 0

M Material
- **4** Steel, zinc plated
- **5** Stainless steel brushed
- **9** Steel, black powder coated

L Lock style
- **1** Non-locking
- **2** Key-locking keyed alike H257 (2 keys supplied)

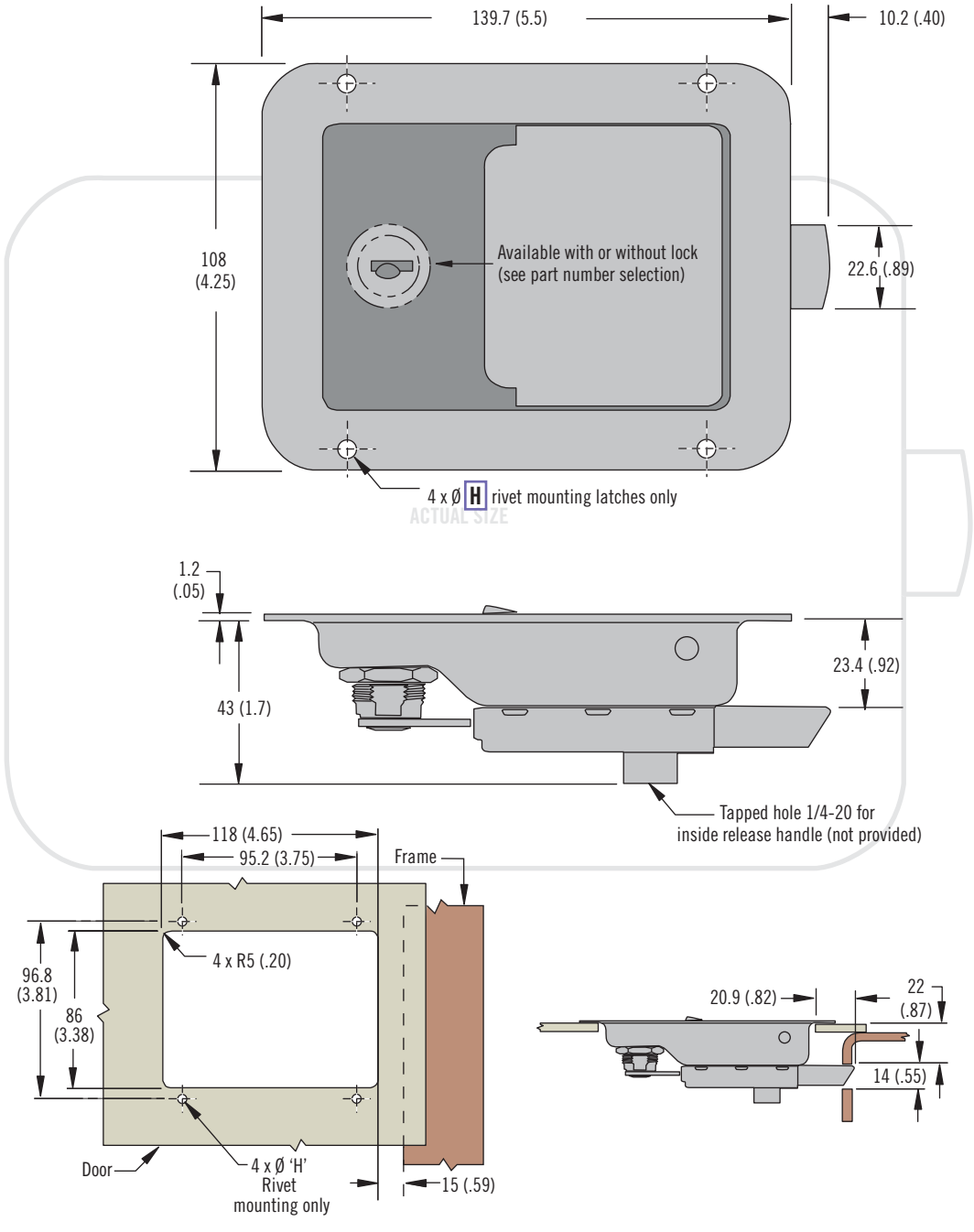
INFO CLIC www.southco.com/64

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Large

- **Single hole installation**
- **Multiple mounting styles**
- **Inside actuation in locked or unlocked position**



Material and Finish

Stainless steel, polished, steel, zinc plated or steel, black powder coated

Slide bolt and lock assembly: Zinc plated or powder coated

Performance Details

Max. working load: 560 N (125 lbf)

Accessories

Flat key, keyed alike CH751 (2 keys per ring)
Part number: PK-10-01

Overmolded key, keyed alike CH751 (2 keys per ring)
Part number: PK-10-01-05

Part Number Selection

64 - 50 - 4 L H - M

M Material
- **10** Steel, zinc plated
- **20** Stainless steel polished
- **50** Steel, black powder coated

L Lock style
- **0** Non-locking
- **1** Key-locking keyed alike CH751 (2 keys supplied)

H Housing
- **0** Weld
- **1** Rivet through hole 4.9 (.19)
- **2** Rivet through hole 5.2 (.20)

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Actuator

Pull-to-open · Paddle handle actuator · Multi-point · Large

- **For use with R4 rotary latches**
- **Multiple mounting styles**

Material and Finish

Stainless steel, polished, steel, zinc plated or black powder coated

Accessories

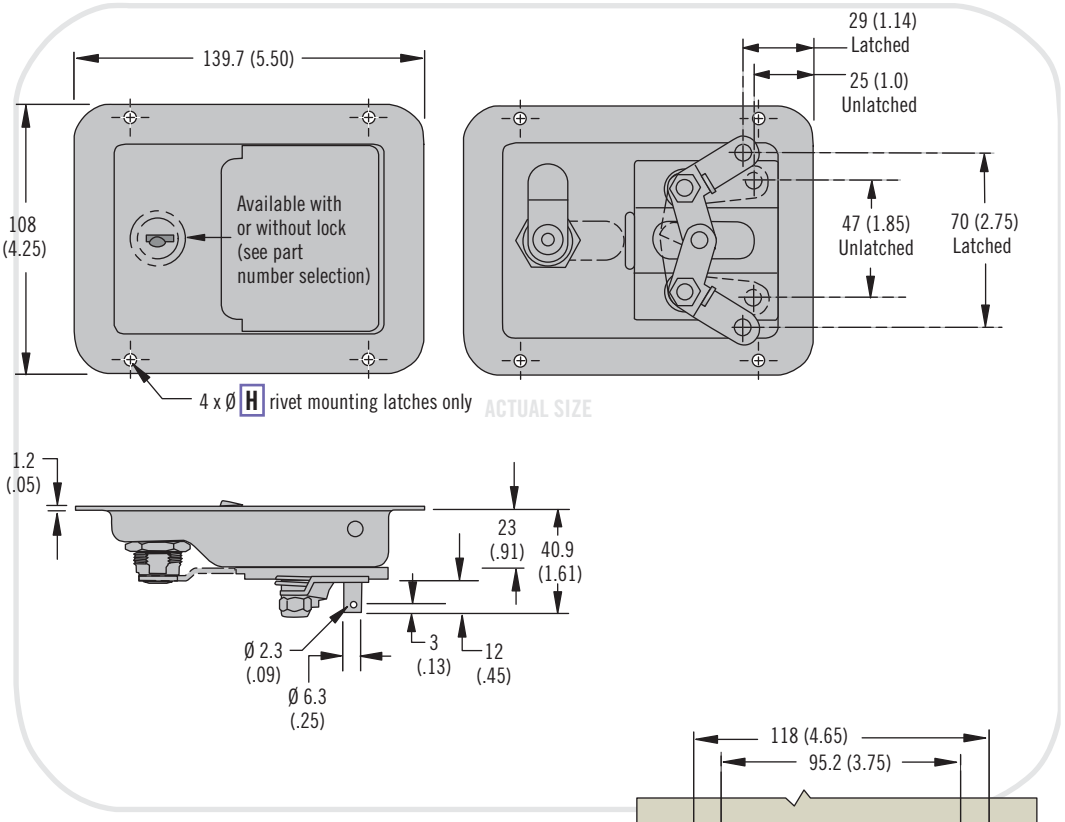
Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

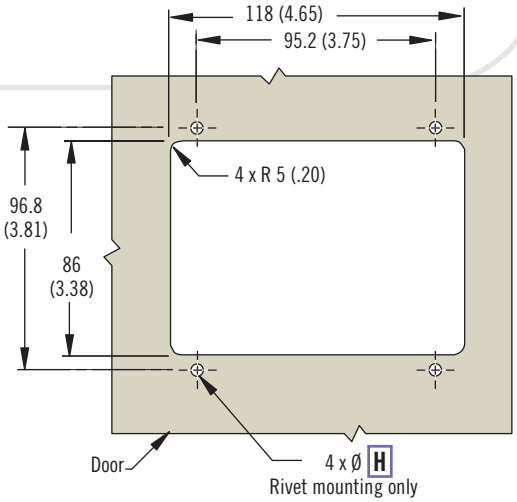
Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

Notes

Contact Southco for recommended cable or rods

For applicable rotary latches see page 121





Part Number Selection

H Housing
- **0** Weld
- **1** Rivet through hole 4.9 (.19)
- **2** Rivet through hole 5.2 (.20)

M Material
- **10** Steel, zinc plated
- **20** Stainless steel, polished
- **50** Steel, black powder coated

64 - 40 - 4 L H - M

L Lock style
- **0** Non-locking
- **1** Key-locking keyed alike CH751 (2 keys supplied)

INFO CLIC www.southco.com/64

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Heavy-duty pivot

- **Robust design resists binding from dirt and debris**
- **Multiple mounting styles**

Material and Finish

Steel, zinc plated or black powder coated

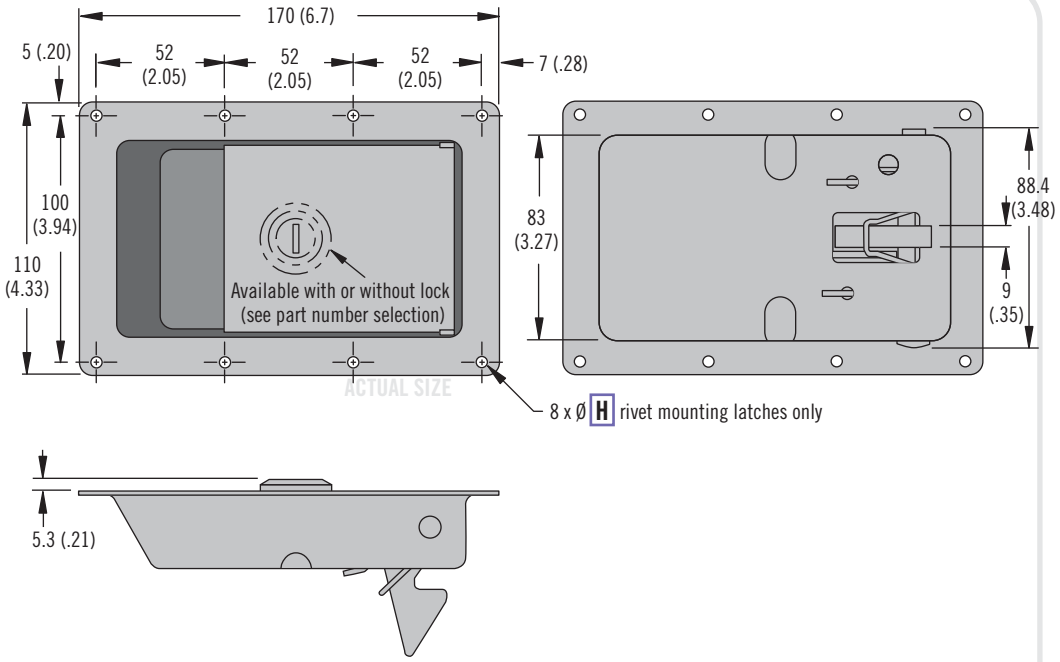
Slide bolt and lock assembly: Zinc plated or powder coated

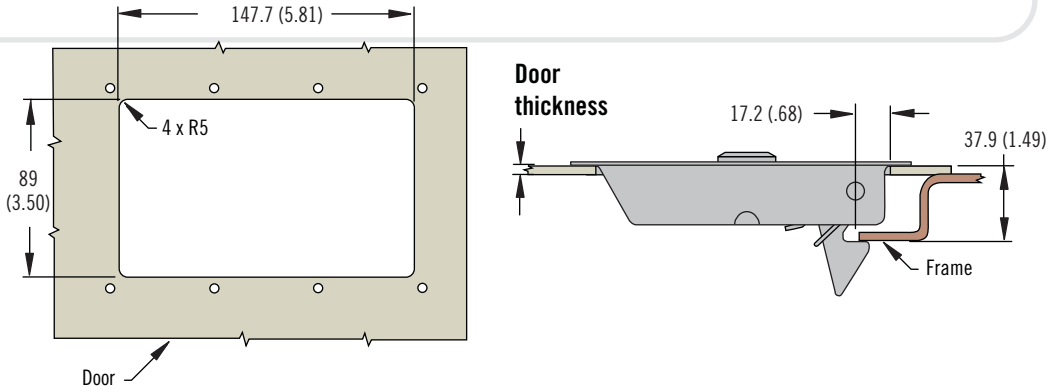
Performance Details

Max. working load: 2700 N (607 lbf)

Accessories

Flat key, keyed alike 14603
(2 keys per ring)
Part number: PK-10-01-14603





Part Number Selection

64 - 60 - 5 L H - M

M Material
10 Steel, zinc plated
50 Steel, black powder coated

L Lock style
0 Non-locking
1 Key-locking keyed alike 14603 (2 keys supplied)

H Housing
0 Weld
1 Rivet through hole 4.9 (.19)
2 Rivet through hole 5.2 (.20)

southco®
CONNECT · CREATE · INNOVATE

Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/64

CAM LOCKS & LOCK CORES

PK Lock Cores

Pages 182- 183

Different latch and lock core styles offer a variety of key code choices and implementation options for optimum security and flexibility.

Lock core options include:

- Keyed alike
- Keyed differently
- Master keyed, keyed differently
- Shuttered and non-shuttered
- Tool access
- Multiple finishes

PK

PK

PK

PK

PK

CM Cam Locks

Pages 186 - 193

SOUTHCO® CM Cam Locks provide a basic key-locking or manual solution for a wide range of applications.

SOUTHCO® CM Cam Lock options include:

- Broad range of sizes fits a variety of enclosure applications
- Multiple access control styles: Key, tool or hand actuation
- Flexible key code options
- Modular design reduces inventory investment
- Options to meet environmental sealing requirements
- Attractive aesthetic finishes

CM-9

CM-9

CM-1

CM-2 CM-5

CM-3 CM-6

PT Tubular Key Cam Locks

Pages 194 - 195

SOUTHCO® PT Tubular Key cam locks offer a higher security solution with multiple options.

SOUTHCO® PT Tubular Key cam lock options include:

- 7-Pin tumbler design enhances key-locking security
- Broad range of sizes fits a variety of enclosure applications
- Flexible key code options
- Attractive chrome finish

PT-1

PK Lock Cores

SOUTHCO® Key-Choice System

- **Lock cores ordered separately**
- **Greater flexibility in locking requirements**

Material and Finish

Zinc alloy, chrome plated, black powder coated or with a stainless steel scalp

Key-Choice System

This icon indicates that a product is compatible with the *SOUTHCO®* Key-Choice System

For other lock core styles visit *www.southco.com*

For additional details on the *SOUTHCO®* Key-Choice System go to *www.security.southco.com*

The *SOUTHCO®* Key-Choice System features a common lock core that fits a wide range of *SOUTHCO®* latches.

This system allows for the independent selection of the correct latch for your application and the lock core required to manage the security of the end product. The guide below shows each of the latches in the *SOUTHCO®* Key-Choice System that can be purchased without the lock core installed.

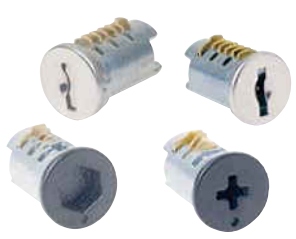
Lock cores are sold separately which provides:

- **The option to configure multiple latch styles with the same keying option**
- **The ability to configure the same latch style with multiple keying options**
- **Inventory reduction by managing multiple keying options with the lock core, while latches remain without the core installed until keying assignment is desired**

Latches in the *SOUTHCO®* Key-Choice System

Compression	Cam	Push-to-close	Locks
62 Lift and Turn Latch page 65	E5 Wing Style Latch page 94	R3-20 Baggage Door Latch page 166	CM-3 Sealed page 188
C2 Lever Latch page 74	E5 T-Handle Latch page 93	AC Actuator page 132	CM-6 Non-sealed page 188
C5 Sealed Lever Latch page 72	E5 L-Handle Latch page 92		
	E5 Flush Cup Wing Style page 90		

PK Lock Cores
SOUTHCO® Key-Choice System



Lock Cores - Disc Tumbler

Lock Core Part Number						
Keying	Key code	Bag qty	Shuttered stainless steel scalp	Non shuttered stainless steel scalp	Non shuttered black powder coated	Non shuttered chrome plated
KA	CH751	1	PK-39-72-13-KCH751	PK-132-13	PK-115-13	PK-116-13
KA	RS001	1	PK-39-72-13-RS001	PK-132-13-RS001	PK-29-15-13-RS001	PK-29-16-13-RS001
KD	10 CODES	10	PK-39-72-13-KD1010	PK-132-13-KD1010	PK-29-15-13-KD1010	PK-29-16-13-KD1010
KD	50 CODES	50	PK-39-72-13-KD1050	PK-132-13-KD1050	PK-29-15-13-KD1050	PK-29-16-13-KD1050
KD	125 CODES	125	PK-39-72-13-KD1125	PK-132-13-KD1125	PK-29-15-13-KD1125	PK-29-16-13-KD1125
MKKD	10 CODES	10	PK-39-72-13-MK1010	PK-132-13-MK1010	PK-29-15-13-MK1010	PK-29-16-13-MK1010
MKKD	50 CODES	50	PK-39-72-13-MK1050	PK-132-13-MK1050	PK-29-15-13-MK1050	PK-29-16-13-MK1050
MKKD	125 CODES	125	PK-39-72-13-MK1125	PK-132-13-MK1125	PK-29-15-13-MK1125	PK-29-16-13-MK1125

Keys	Part Number
Master Key (1)	PK-24-01
Control (Removal) Key (1)	PK-11-03

Lock Cores - Tool Operable

Head Style	Lock Core Part Number			
	Phillips recess	Slotted	4 mm Hex recess	8 mm Hex recess
Chrome plated	PK-0-34027-01	PK-0-43489-01	PK-0-34323-01	PK-0-40374-01
Black powder coated	PK-0-34027-50	PK-0-43489-50	PK-0-34323-50	PK-0-40374-50

Key code selection

KA- Keyed Alike:
All lock cores are the same key code

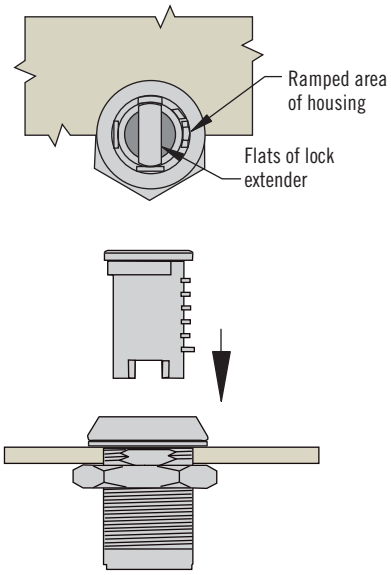
KD- Keyed Differently:
Multiple key codes provided in a non-master key system

MKKD - Master Keyed, Keyed Differently:
Multiple key codes provided in a master key system

Notes

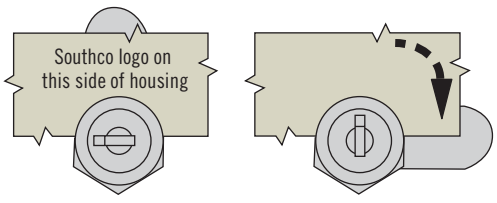
Part Number includes 1 lock core and 2 keys

Lock Core Installation for CM-3 and CM-6 only (see page 188)



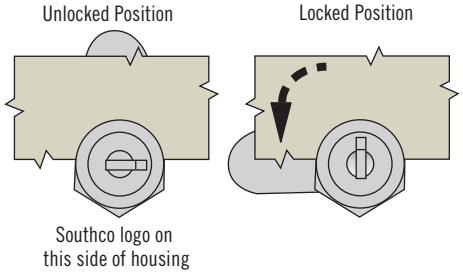
01 (Clockwise)

Lock Core Installed *(01 Rotation)*



09 (Counter-Clockwise)

Lock Core Installed *(09 Rotation)*



Installation Notes

1. Prepare panel and install latches shown on page 188.
2. Latch should be in unlatched position. The flats of the lock extender should be aligned with the flats on the housing.
3. Take a lock core and orient the brass wafers to the internal ramped area of the housing. Push lock core into housing until it stops.
4. Insert key into lock core and turn to verify lock core is fully seated and operating properly.
5. Install cam.

Dimensions in millimeters (inch) unless otherwise stated

Locks

Selection guide

Use this selection guide to choose the right cam lock for your application

Key-Locking Available

Key-Choice System

NEMA / IP Rated

Stainless Steel

			MATERIAL		INSTALLATION	
		Latching Series	Stainless Steel Scalp	Zinc and Steel	Key-Choice System	Maximum Door Thickness
CM REMOVABLE CORE PAGE 188		CM-6	✔	✔	✔	38.9 (1.53)
		CM-3		✔	✔	38.9 (1.53)
CM FIXED CORE PAGES 189 - 190		CM-5	✔	✔		38.9 (1.53)
		CM-2		✔		38.9 (1.53)
		CM-1		✔		26.2 (1.03)
CM MINI CAM PAGE 192		CM-9		✔		7.5 (.3)
		CM-9		✔		7.5 (.3)
PT TUBULAR PAGE 194		PT-1		✔		28.9 (1.14)

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Dimensions in millimeters (inch) unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

PERFORMANCE			ACCESS STYLE				
NEMA / IP Rated	Average Ultimate Load on Cam	Grip Range	Key-Locking	Keyed Alike	Keyed Differently	Master Keyed, Keyed Differently	Tool Access
	180N (40 lbf)	6.4 - 57.2 (.25 - 2.25)	✔	✔	✔	✔	✔
✔	180N (40 lbf)	6.4 - 57.2 (.25 - 2.25)	✔	✔	✔	✔	✔
	180N (40 lbf)	1.6 - 57.2 (.063 - 2.25)	✔	✔			
✔	180N (40 lbf)	6.4 - 57.2 (.25 - 2.25)	✔	✔			
✔	180N (40 lbf)	6.4 - 44.5 (.25 - 1.75)					
	160N (35 lbf)	9.7 - 21.3 (.38 - .84)	✔	✔	✔		
	160N (35 lbf)	9.7 - 21.3 (.38 - .84)					
	645N (145 lbf)	6.4 - 42.8 (.25 - 1.69)	✔	✔	✔		

CM Cam Locks

Selection

- **Removable core options provide maximum flexibility**
- **Fixed core options provide simple, economic solutions**
- **Sealed housings are available**
- **Multiple finishes**
- **A broad selection of lock housing and cam sizes available**

Notes

All CM Cam Lock housings, cams, and lock core components are ordered separately for maximum configuration flexibility with minimal inventory investment. To determine the perfect CM Cam Lock components for your needs, simply follow the **Selection Guide** on the next page.

Cam Lock Options

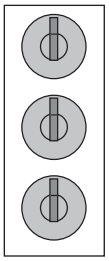
Removable Core

- **Multiple key codes**
- **Tool actuation**
- **Change key codes in future**
- **Configure to order**

Non Sealed CM-6
Page 188

Sealed CM-3
Page 188

Key Options

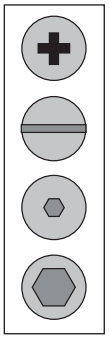


Keyed alike

Keyed differently

Master keyed, keyed differently

Tool Options



Phillips recess

Slotted

4mm Hex recess

8mm Hex recess

Fixed Core

- **Single key code**
- **Key-locking**
- **Wing driver**
- **Integrated housing and lock core**

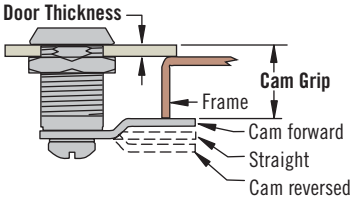
Non Sealed CM-5
Page 189

Sealed CM-2
Page 189

Wing Driver CM-1
Page 190

Cam Lock Selection Guide

1. Once you have determined the **CM Cam Lock** version that best meets your needs, calculate the **Cam Grip** for your application using the illustration below.



Notes: add 0.5 (.02) to your grip when using a sealed product.

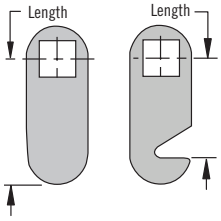
2. In the TAN section below, locate the **Cam Grip** calculated for your application. If your grip falls between two values, use the higher value.

Notes: Certain grip values repeat in the table below. Use the value that results in the shortest housing possible based on the **Max. Door Thickness** allowed.

3. From this value, move right horizontally into the GRAY section and verify your door thickness falls within the **Max. Door Thickness** listed. Once this is verified, the housing length is selected and is illustrated by the **Housing Length Number**.

4. Returning to your original grip value in the TAN section, move down vertically into the GREEN section. The GREEN section illustrates the cams that are appropriate for your grip.

5. By determining the required cam orientation and length in the BLUE section, the appropriate **Cam Part Number** for your application is selected.



6. Proceed to the Cam Lock sections (CM-6, CM-3, CM-2, CM-5, and CM-1) to complete your **Part Number** selection.

Selection Guide

Cam Grips							Max. Door Thickness	H Housing Length Number
20.7 (.813)	17.5 (.688)	14.3 (.563)	11.1 (.438)	8 (.313)	4.8 (.188)	1.6 (.063)	2.4 (.09)	7
25.4 (1.000)	22.2 (.875)	19.1 (.750)	15.9 (.625)	12.7 (.500)	9.5 (.375)	6.4 (.250)	7.1 (.28)	1
31.8 (1.250)	28.6 (1.125)	25.4 (1.000)	22.2 (.875)	19.1 (.750)	15.9 (.625)	12.7 (.500)	13.5 (.53)	2
38.1 (1.500)	34.9 (1.375)	31.8 (1.250)	28.6 (1.125)	25.4 (1.000)	22.2 (.875)	19.1 (.750)	19.8 (.78)	6
44.5 (1.750)	41.3 (1.625)	38.1 (1.500)	34.9 (1.375)	31.8 (1.250)	28.6 (1.125)	25.4 (1.00)	26.2 (1.03)	3
50.8 (2.000)	47.6 (1.875)	44.5 (1.750)	41.3 (1.625)	38.1 (1.500)	34.9 (1.375)	31.8 (1.250)	32.5 (1.28)	4
57.2 (2.250)	54 (2.125)	50.8 (2.000)	47.6 (1.875)	44.5 (1.750)	41.3 (1.625)	38.1 (1.500)	38.9 (1.53)	5

Cam Part Number							Cam Length	Cam Orientation
Cam Reversed			Straight	Cam Forward				
CM-C606	CM-C406	CM-C206	CM-C006	CM-C206	CM-C406	CM-C606	19.1 (.75)	No Hook
CM-C610	CM-C410	CM-C210	CM-C010	CM-C210	CM-C410	CM-C610	31.8 (1.25)	
CM-C614	CM-C414	CM-C214	CM-C014	CM-C214	CM-C414	CM-C614	44.5 (1.75)	
CM-L606	CM-L406	CM-L206	CM-H006	CM-H206	CM-H406	CM-H606	19.1 (.75)	Left
CM-L610	CM-L410	CM-L210	CM-H010	CM-H210	CM-H410	CM-H610	31.8 (1.25)	
CM-L614	CM-L414	CM-L214	CM-H014	CM-H214	CM-H414	CM-H614	44.5 (1.75)	
CM-H606	CM-H406	CM-H206	CM-H006	CM-L206	CM-L406	CM-L606	19.1 (.75)	Right
CM-H610	CM-H410	CM-H210	CM-H010	CM-L210	CM-L410	CM-L610	31.8 (1.25)	
CM-H614	CM-H414	CM-H214	CM-H014	CM-L214	CM-L414	CM-L614	44.5 (1.75)	

Also use the online configurator at www.southco.com

CM Cam Locks

Removable core

- **Ideal for applications requiring multiple key codes or tool actuated options**
- **Sealed version meets NEMA 4 and IP65 water intrusion standards**
- **Lock cores and cams sold separately**
- **Master and non-master key codes available**

Material and Finish

Housing: Zinc alloy, chrome plated or black powder coated
Scalp: stainless steel (non-sealed only)

Performance Details

Average ultimate load on cam: 180 N (40 lbf)

Installation Notes

See page 183

Accessories

See page 193

Part Number Selection

Housing part number (no lock core or cam)

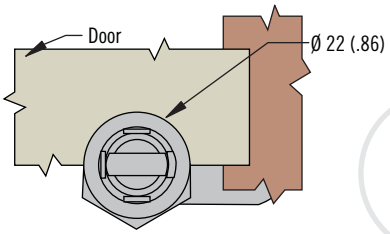
Order housing, lock core and cam separately

Lock core part numbers and installation see page 183

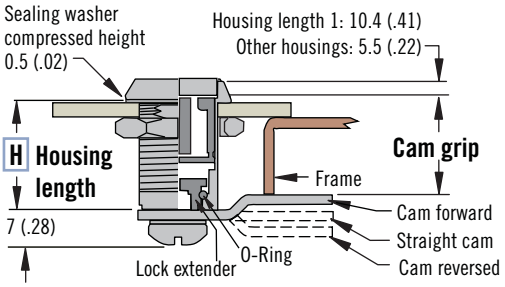
Cam page 191

To select cam part number see grip table page 187

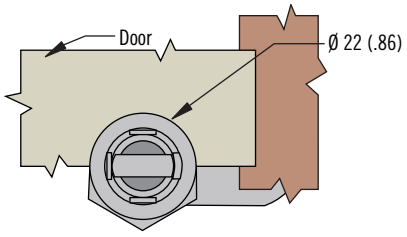
Sealed Disc Tumbler

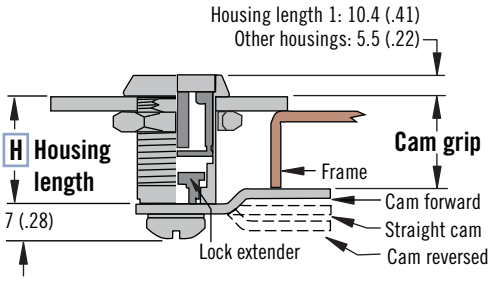


ACTUAL SIZE



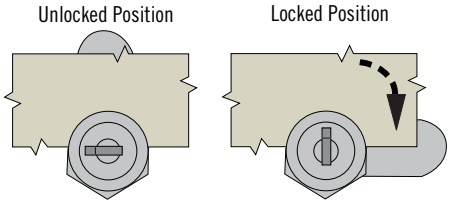
Non-Sealed Disc Tumbler



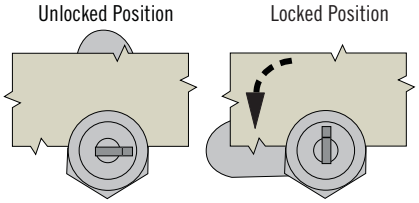


Cam Rotation

R 01 (Clockwise)



R 09 (Counter-Clockwise)



Sealed Version

CM - 3 - H F 1 R - NUB

- **F** Finish
  - **B** Black powder coated
  - **C** Chrome plated
- **H** Housing Length Number
- **R** Rotation
  - **01** Clockwise
  - **09** Counter-clockwise

Max. Door Thickness	Housing Length	H Housing Length Number
7.1 (.28)	16 (.625)	1
13.5 (.53)	22 (.875)	2
19.8 (.78)	28.5 (1.125)	6
26.2 (1.03)	35 (1.375)	3
32.5 (1.28)	41 (1.625)	4
38.9 (1.53)	48 (1.875)	5

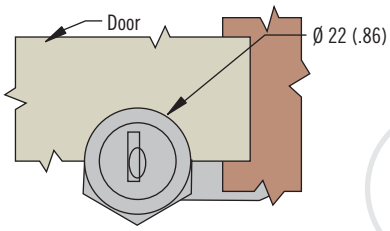
Non-sealed version

CM - 6 - H S4 R - NUB

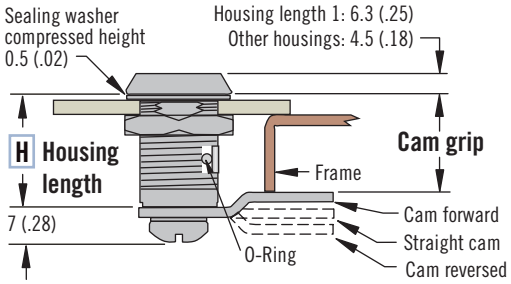
INFO CLIC www.southco.com/CM

Dimensions in millimeters (inch) unless otherwise stated

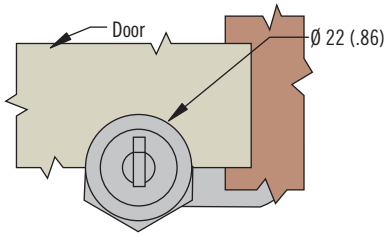
Sealed Disc Tumbler

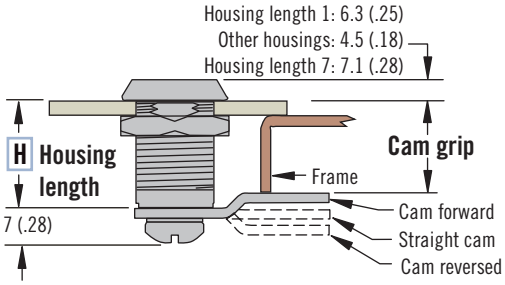


ACTUAL SIZE



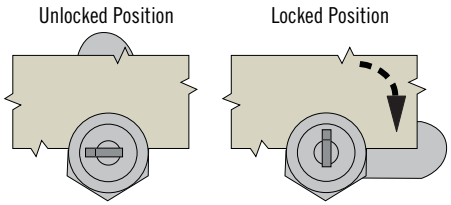
Non-Sealed Disc Tumbler



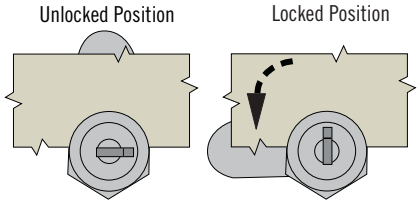


Cam Rotation

R 01 (Clockwise)



R 09 (Counter-Clockwise)



- **Stainless steel scalp on housing and lock core on non-shuttered style**
- **Sealed version meets NEMA 4 and IP65 water intrusion standards**
- **Cams sold separately**

Material and Finish

Housing: Zinc alloy, chrome plated or black powder coated
Scalp: stainless steel (non-sealed only)

Performance Details

Average ultimate load on cam: 180 N (40 lbf)

Installation Notes

See page 191

Accessories

See pages 193

Notes

Lock: Key code CH751, keyed alike, key removal in locked and unlocked positions (two keys supplied)

Part Number Selection

Lock part number (no cam)

Order lock and cam separately

Cam page 191

To select cam part number see grip table page 187

Notes

CM-2-1 version is sealed but does not meet the NEMA 4 / IP65 standards

Sealed Version

CM - 2 - H F 1 R - 2SB

F Finish
- **B** Black powder coated
- **C** Chrome plated

Max. Door Thickness	Housing Length	**H** Housing Length Number
2.4 (.09)	11 (.438)	**7 Non-Sealed Only**
7.1 (.28)	16 (.625)	**1**
13.5 (.53)	22 (.875)	**2**
19.8 (.78)	28.5 (1.125)	**6**
26.2 (1.03)	35 (1.375)	**3**
32.5 (1.28)	41 (1.625)	**4**
38.9 (1.53)	48 (1.875)	**5**

R Rotation
- **01** Clockwise
- **09** Counter-clockwise

Non-sealed version

CM - 5 - H S4 R - 2TB

CM Cam Locks

Fixed core wing driver

- **Sealed to meet NEMA 4 and IP65 water intrusion standards**
- **Smooth, consistent operation**
- **Cams sold separately**

Material and Finish

Housing: Zinc alloy, chrome plated or black powder coated

Performance Details

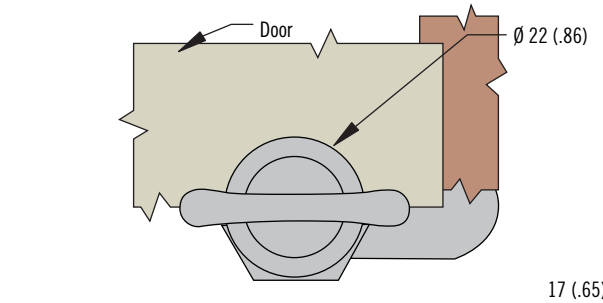
Average ultimate load on cam: 180 N (40 lbf)

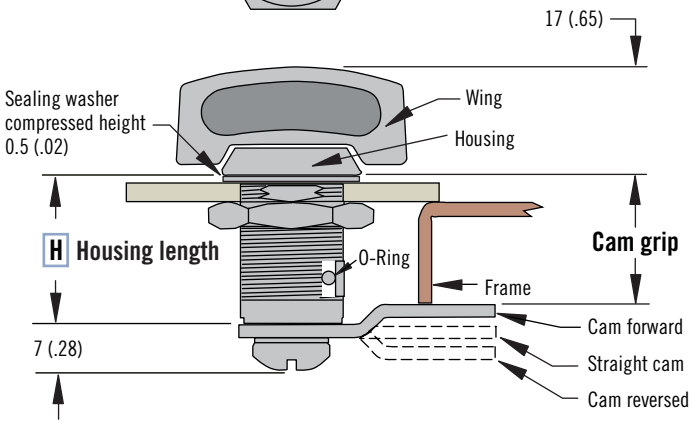
Installation Notes

See page 191

Accessories

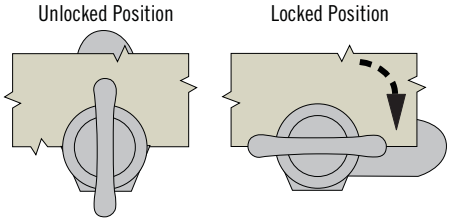
See page 193



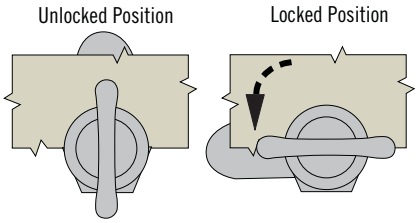


Cam Rotation

R 01 (Clockwise)



R 09 (Counter-Clockwise)



Part Number Selection

Lock part number (no cam)

Order lock and cam separately

Cam page 191

To select cam part number see grip table page 187

F **Housing Finish**
B Black powder coated
C Chrome plated

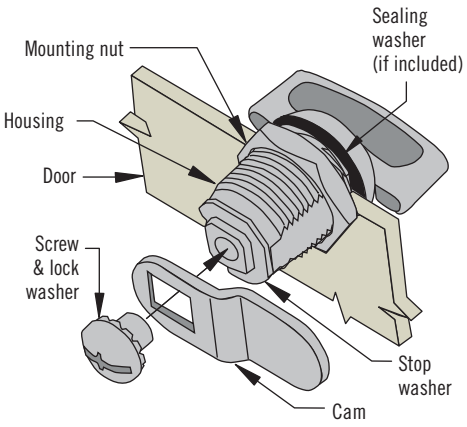
R **Rotation**
01 Clockwise
09 Counter-clockwise

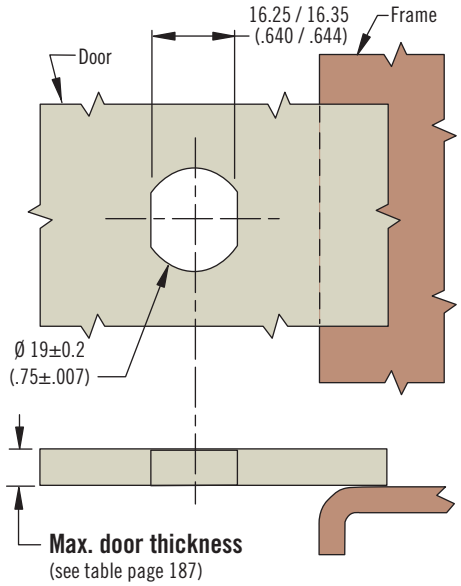
W **Wing Finish**
B Black powder coated
C Chrome plated

CM - 1 - H F 1 R - 1 W

H Housing Length Number	Housing Length	Max. Door Thickness
1	16 (.625)	7.1 (.28)
2	22 (.875)	13.5 (.53)
3	35 (1.375)	26.2 (1.03)

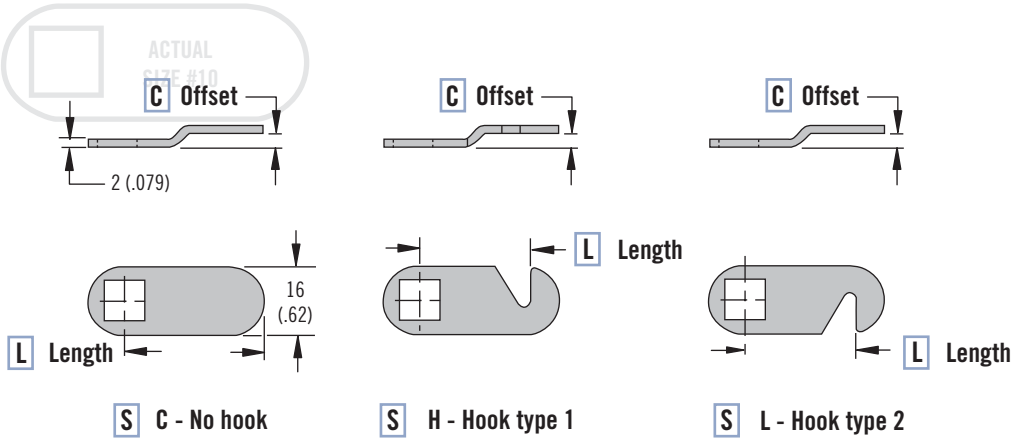
Dimensions in millimeters (inch) unless otherwise stated





Installation Notes

1. Place sealing washer onto housing (if included) and put through the mounting hole (see panel preparation).
2. Install mounting nut and tighten to 5 N•m (44 in•lbf).
3. Install cam to assembly Properly orientate for rotation and grip.
4. Install screw. Tighten to 4 N•m (35 in•lbf).



Material and Finish

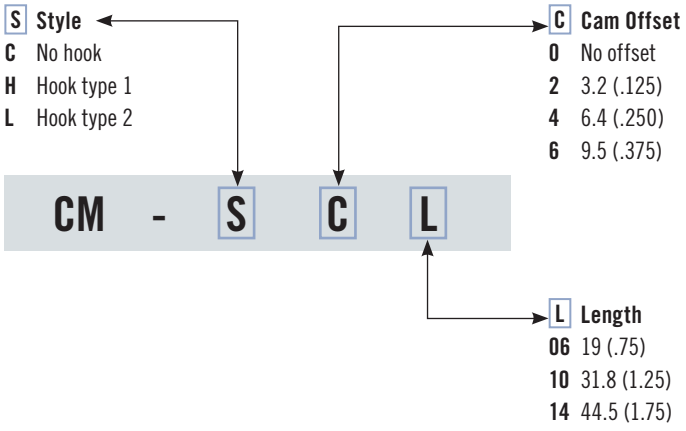
Cam: Steel plated

Part Number Selection

Order lock and cam separately

Cam part number (no lock)

For Lock selection see pages 188 - 190



CM Mini Cam Locks

Fixed core

- **Compact design**
- **Non-shuttered lock core**
- **Cams sold separately**

Material and Finish

Lock: Zinc alloy, chrome plated or black powder coated
Cam: Steel, zinc plated

Performance Details

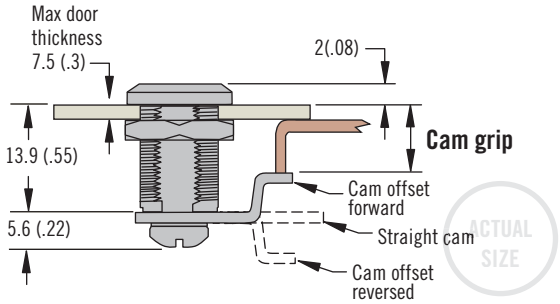
Average ultimate load on cam: 160 N (35 lbf)

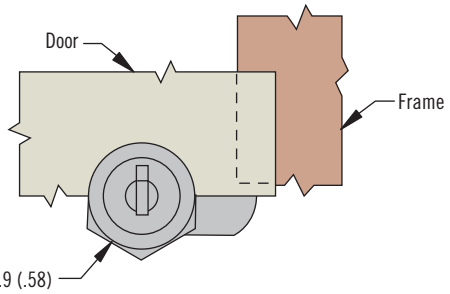
Installation Notes

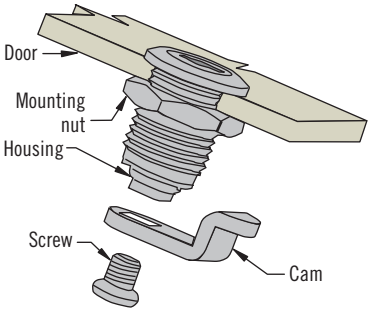
1. Install mounting nut and tighten to 4 N•m (35 in•lbf).
2. Install cam to assembly. Properly orientate for rotation and grip.
3. Install screw. Tighten to 4 N•m (35 in•lbf).

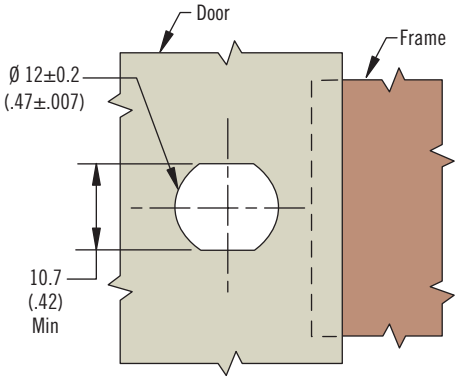
Accessories

See page 193

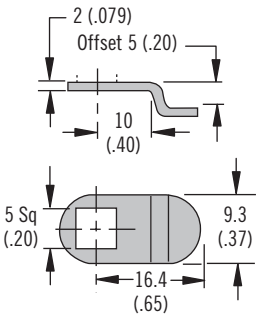




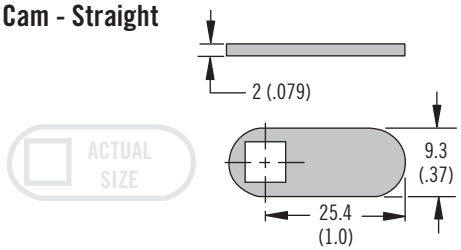




Cam - Offset



Cam - Straight



Cam Grip		
Cam Grip	**Cam Type**	**Cam Part Number**
9.7 (.38)	Offset forward	CM-M101
15.4 (.61)	Straight	CM-M002
21.3 (.84)	Offset reverse	CM-M101

Part Number Selection

Lock part number (no cam)

Order lock and cam separately

To select cam part number see grip table above

F **Housing Finish**
B Black powder coated
C Chrome plated

CM - 9 - 1 F 109 - S - KC

S **Style**
12N Wing
21B Key-locking

KC **Key Code**
Omit for wing style
KA Keyed alike M01 (2 keys supplied)
KD Keyed differently (10 key codes provided in a non-master key system) M01 to M10 (2 keys supplied)

INFO CLIC www.southco.com/CM

Dimensions in millimeters (inch) unless otherwise stated

Accessories (Add adjustment value to door thickness when accessory is used)

Metal Dust Cover

Plastic Dust Cover

Pull Tab - In-Line

Pull Tab - Perpendicular

Overmolded Key

Metal Pull Tab

Trim Washer

Prong Washer

Sealing Washer

Plain Key

Item	Part Number	Material	Adjustment Value	Suitable for		
				CM	Mini CM	PT
Metal dust cover	CM-A-10-01	Zinc alloy, chrome plated and stainless steel	0.7 (.027)	✓		✓
Plastic dust cover	90-2	Santoprene, black	2.1 (.085)	✓		✓
Pull tab - In-line	CM-A-08-01	Nylon, black	2.1 (.085)	✓		✓
Pull tab - Perpendicular	CM-A-08-02	Nylon, black	2.1 (.085)	✓		✓
Metal pull tab	CM-A-09	Stainless steel	1.5 (.059)	✓		✓
Trim washer	CM-A-07-N	Steel, nickel plated	0.8 (.031)	✓		✓
Prong washer	CM-A-04	Steel, plated	0.9 (.035)	✓		✓
Sealing washer	CM-A-03	Rubber, black	1.0 (.039)	✓		✓

Keys (contact Southco for custom overmolded logo options)

Item	Part Number	Suitable for		
		CM	Mini CM	PT
Plain key CH751 pair	PK-10-01	✓		
Overmolded key CH751 pair	PK-10-01-05	✓		
Overmolded key CH751 single	PK-10-10-05	✓		
Control (removal) key single	PK-11-03	✓		
Master key single	PK-24-01	✓		
Plain key M01 pair	PK-10-01-M01		✓	
Tubular key T0001 pair	PK-60-01-T0001			✓

Replacement Parts

Item	Part Number	Material	Suitable for		
			CM	Mini CM	PT
Housing mounting nut	CM-A-01	Zinc alloy	✓		
Housing mounting nut	PT-A-04-01				✓
Housing mounting nut	CM-B-01			✓	
Housing mounting clip	CM-A-05	Spring steel, plated	✓		
Cam mounting screw	CM-A-02	Steel, plated	✓		
Cam mounting screw	CM-B-03			✓	
Tooth washer hex nut	CM-A-12		✓		
Lockwasher	PT-A-09				✓
Cam mounting nut	PT-A-05-01				✓

PT Tubular Key Cam Locks

Fixed core

- 7-pin tumbler lock security
- Keyed alike, keyed differently or custom key code options
- Cams sold separately

Material and Finish

Zinc alloy, chrome plated

Performance Details

Average ultimate load on cam: 645 N (145 lbf)

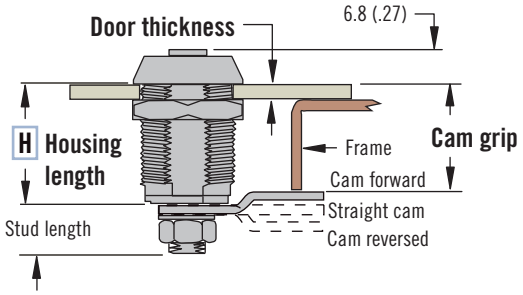
Installation Notes

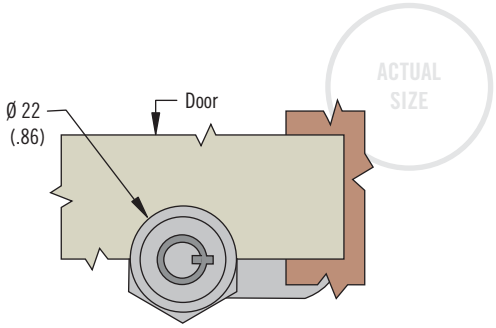
See page 195

Accessories

See page 193

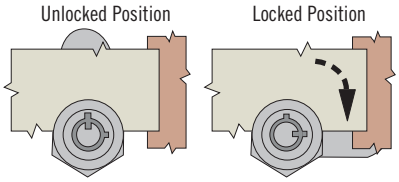
Non-Sealed Pin Tumbler



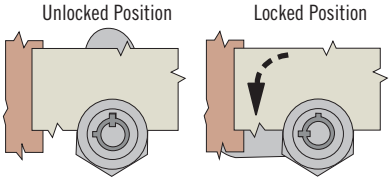


B - Key Removable in Locked / Unlocked Positions

R 01 (Clockwise)

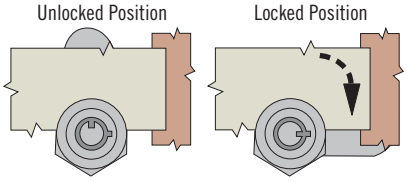


R 09 (Counter-Clockwise)

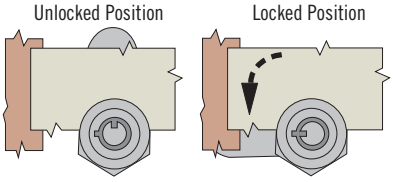


L - Key Removable in Locked Positions Only

R 01 (Clockwise)



R 09 (Counter-Clockwise)



Part Number Selection

Lock part number (no cam)

Order lock and cam separately

Cam page 195

To select cam part number see grip table page 195

R Rotation
01 Clockwise
09 Counter-clockwise

K Key removal
B Locked / unlocked removal
L Locked removal only

PT - 1 - H C1 R - 20 K - KC

H Housing Length Number	Housing Length	Stud Length	Max. Door Thickness
1	12.7 (.50)	8.9 (.35)	5.1 (.20)
2	17.5 (.69)	9.5 (.37)	10.9 (.43)
3	23.8 (.94)	9.5 (.37)	15.9 (.63)
4	30.5 (1.20)	9.5 (.37)	22.9 (.90)
5	36.5 (1.44)	9.5 (.37)	28.9 (1.14)

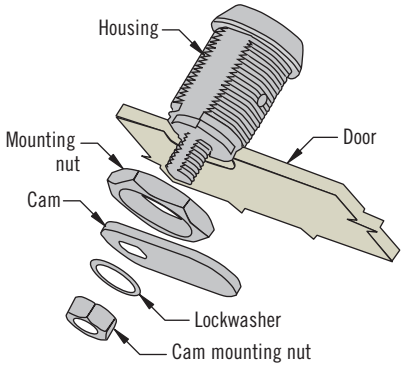
KC Key Code
KA Keyed alike T0001 (2 keys supplied)
KD Keyed differently
50 key codes (T0001 to T0050) provided in a non-master key system (2 keys supplied)

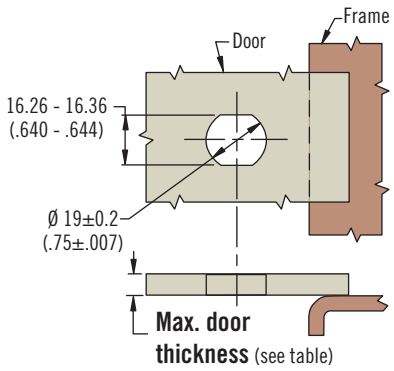
INFO CLIC www.southco.com/PT

Dimensions in millimeters (inch) unless otherwise stated

PT Tubular Key Cam Locks

Cams & installation





Installation Notes

1. Install mounting nut and tighten to 5 N•m (44 in•lbf) Max.
2. Install cam to assembly. Properly orient for rotation and grip.
3. Install lockwasher and cam mounting nut. Tighten to 2 N•m (18 in•lbf).

Cam Grip					Max. Door Thickness	Housing Length Number
19.0 (.75)	15.9 (.625)	12.7 (.500)	9.5 (.375)	6.4 (.250)	5.1 (.20)	1
23.8 (.938)	20.7 (.814)	17.5 (.689)	14.3 (.564)	11.2 (.439)	10.9 (.43)	2
30.1 (1.187)	27 (1.062)	23.8 (.938)	20.6 (.812)	17.5 (.689)	15.9 (.63)	3
36.8 (1.450)	33.7 (1.325)	30.5 (1.201)	27.3 (1.076)	24.2 (.951)	22.9 (.90)	4
42.8 (1.687)	39.7 (1.562)	36.5 (1.437)	33.3 (1.312)	30.2 (1.187)	28.9 (1.14)	5

Cam Part Number					Cam Orientation
Cam Reversed		Straight	Cam Forward		
PT-T409	PT-T209	PT-T009	PT-T209	PT-T409	No Hook
PT-W409	PT-W209	PT-F009	PT-F209	PT-F409	Left
PT-F409	PT-F209	PT-W009	PT-W209	PT-W409	Right

Also use the online configurator at www.southco.com

Material and Finish

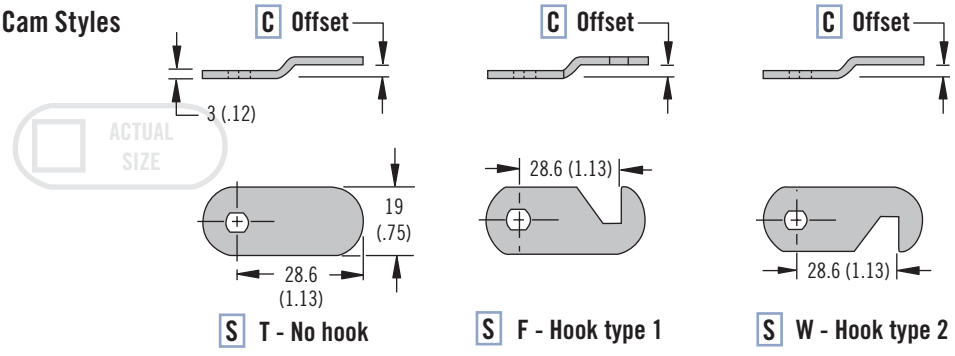
Steel plated

1. In the TAN section, locate the cam grip calculated for your application. If your grip falls between two values, use the higher value.

Notes: For cam grips that can be achieved with multiple housing lengths, use the value that results in the shortest housing possible based on the Max. door thickness allowed.

2. From this value, move right horizontally into the Gray section and verify your door thickness falls within the Max. door thickness listed. Once this is verified, the housing length is selected and is illustrated by the housing length number.
3. Returning to your original grip value in the TAN section, move down vertically into the GREEN section. The GREEN section illustrates the cams that are appropriate for your grip.
4. By determining the required cam orientation and style in the BLUE section, the appropriate cam for your application is selected.

Cam Styles



Part Number Selection

Order lock and cam separately

Cam part number (no lock)

For Lock selection see page 194

S Cam Style
- T No hook
- F Hook type 1
- W Hook type 2

PT - S C 09

C Cam Offset
- 0 No offset
- 2 3.2 (.125)
- 4 6.4 (.250)

southco® CONNECT · CREATE · INNOVATE

Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/PT

DRAW LATCHES

Over-Center/ Under-Center

Pages 200 - 221

The expanded line of *SOUTHCO®* draw latches provides numerous options of over-center and under-center designs. Choose your ideal solution based on working load, space constraints, and styling considerations.

- Stylized latches are available for better aesthetic presentation
- Functional designs provide both economical and high strength solutions
- Curved wire bail or claw designs provide added resilience under shock loads

V7

V2

97

TL

A1

91

Rotary

Pages 222 - 227

Rotary cam design provides mechanical advantage to deliver a high degree of draw action for a firm grip and consistent closure that resists accidental opening. Compact all-metal construction provides high strength in low profile designs for co-planar and off-plane applications.

- Simple lift and turn action
- Consistent pull-up for gasket compression
- Multiple actuation styles

K2

K3

K4

K5

Concealed

Pages 229 - 232

These high strength latch designs mount behind or within thicker mating panels for concealed operation. Their tool-actuated operation provides strong pull-up action to compress gasketing for airtight and watertight seals. Multiple mounting options fit butt-joint and right-angle applications.

- Heavy-duty clamping force
- Provides for air and watertight seals
- Multiple mounting options

R5

R2

Flexible

Pages 233 - 239

SOUTHCO® flexible draw latches use thermoplastic elastomer or rubber handles to provide latching flexibility, pull panels tight, absorb/reduce vibration, and maintain tension on the closed latch.

- Non-corrosive materials suitable for indoor or outdoor use
- Over-center style for consistent easy latching

37

F7

37

C7

Draw Latches

Selection guide

Use this selection guide to choose the right draw latch for your application

Key-Locking Available

Padlockable

Stainless Steel

Vibration Resistant

			MATERIAL			INSTALLATION	
		Latching Series	Stainless Steel	Zinc or Steel	Plastic and Rubber	Exposed Mounting	Concealed Mounting
OVER-CENTER PAGES 200 - 216		V7	✔	✔			✔
		97	✔	✔		✔	✔
		V2, V4	✔	✔		✔	
		TL	✔	✔		✔	✔
		A1	✔	✔		✔	✔
		07			✔		✔
		E8			✔		✔
UNDER-CENTER PAGES 217 - 221		91	✔	✔		✔	✔
ROTARY PAGES 222 - 227		K2	✔	✔		✔	
		K3, K4, K5	✔	✔		✔	
CONCEALED PAGES 228 - 232		R2		✔			✔
		R5		✔			✔
FLEXIBLE PAGES 233 - 239		C7			✔		✔
		37 Lever			✔	✔	
		F7			✔	✔	✔
		37 Pull			✔	✔	

INFO CLIC www.southco.com

Dimensions in millimeters (inch) unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

PERFORMANCE					ACCESS STYLE			
Co-Planar	Non Co-Planar	Fixed Grip	Adjustable Grip	Vibration Resistance	Key-Locking	Tool Access	Padlockable	Secondary Locking
✔		✔		✔	✔			
✔		✔		✔			✔	✔
✔		✔		✔			✔	
✔		✔		✔			✔	✔
✔			✔	✔			✔	
✔		✔		✔				✔
✔			✔	✔				
✔	✔		✔	✔			✔	✔
✔	✔	✔		✔				
✔	✔	✔		✔	✔	✔	✔	
✔			✔	✔		✔		
✔		✔		✔		✔		
✔		✔		✔				
✔		✔		✔				
✔		✔		✔				
✔	✔	✔		✔				

V7 Draw Latch

Over-center · Large · Stainless steel

- **Sleek, smooth low profile design**
- **Locking and non-locking**
- **Robust, riveted, tamper-resistant construction**

Material and Finish

316 Grade stainless steel electropolished

Performance Details

Max. working load: 1200 N (270 lbf)

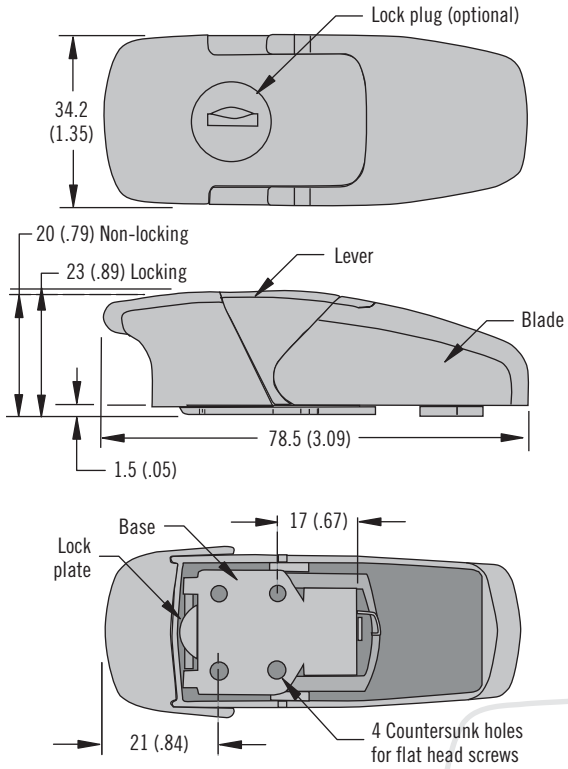
Installation Notes

Install assembly with six M3 (No. 4) flat head screws (not supplied)

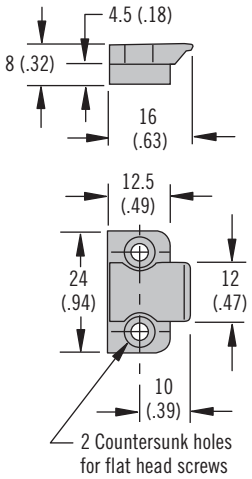
Keys

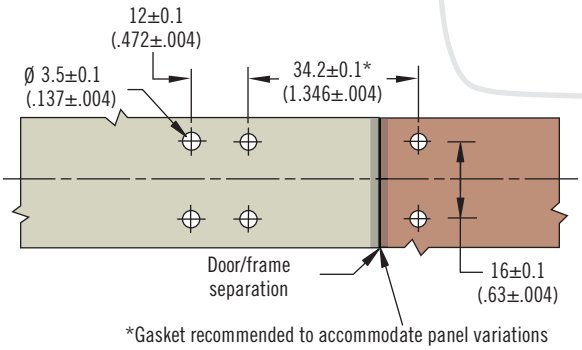
Overmolded key S008 (pair)
Part number: M1-525-39-S008

Latch



Keeper





ACTUAL SIZE

Part Number

See table

Assembly complete with keeper

Description	Part Number
Non-locking	V7-20-101-24
Locking keyed alike S008 (2 keys supplied)	V7-20-111-24

INFO CLIC www.southco.com/V7

Dimensions in millimeters (inch) unless otherwise stated

V7 Draw Latch

Over-center · Large and small · Zinc alloy

- **Sleek, smooth low profile design**
- **Locking and non-locking**
- **Robust, riveted, tamper-resistant construction**

Material and Finish

Zinc alloy, chrome plated or powder coated and stainless steel

Performance Details

Max. working load:
1200 N (270 lbf)

Installation Notes

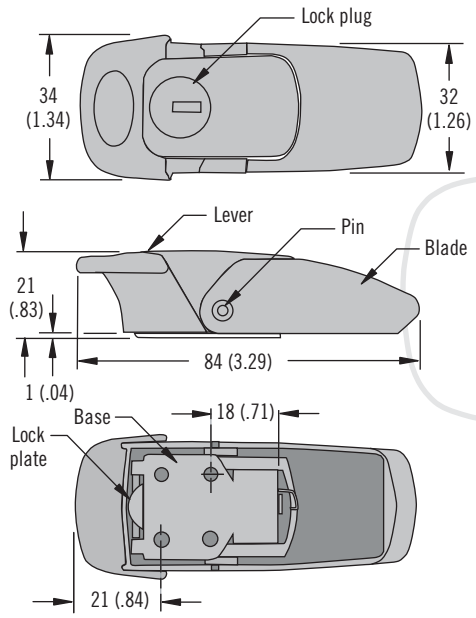
Install assembly with six M3 (No. 4) flat head screws (not supplied)

Keys

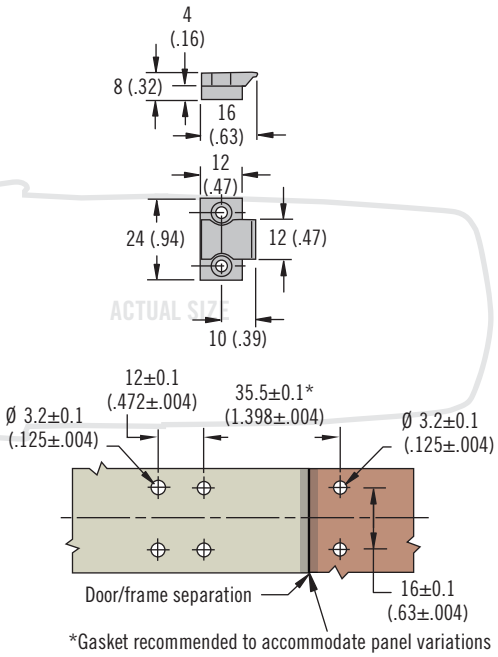
Key S010 (pair)
Part number: V7-KEYS

Latch

Large

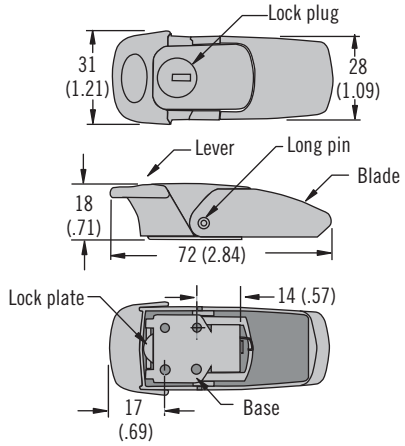


Keeper

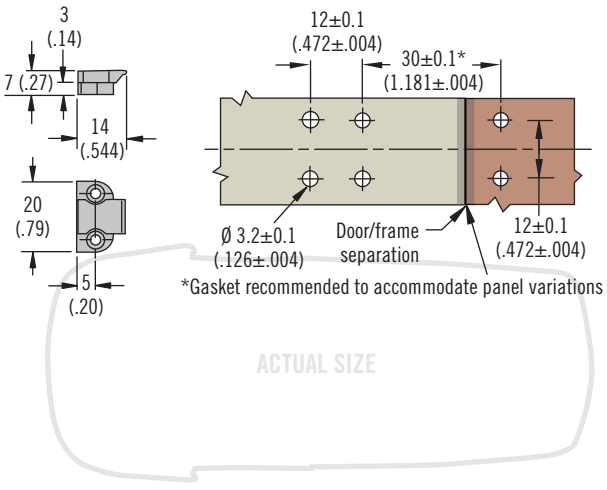


Latch

Small



Keeper



Part Number Selection

Assembly complete with keeper

B Base type
10 Small
20 Large

V7 - B - 1 L - F

F Finish
10 Bright chrome plated
20 Satin chrome plated
50 Black powder coated

L Lock style
01 Large non-locking
05 Small non-locking
11 Large locking keyed alike S010 (2 keys supplied)
15 Small locking keyed alike S010 (2 keys supplied)

Dimensions in millimeters (inch) unless otherwise stated

97 Draw Latch

Over-center · Small

- **Compact latch**
- **Multiple keeper options for application variances**

Material and Finish

Stainless steel or steel, zinc plated

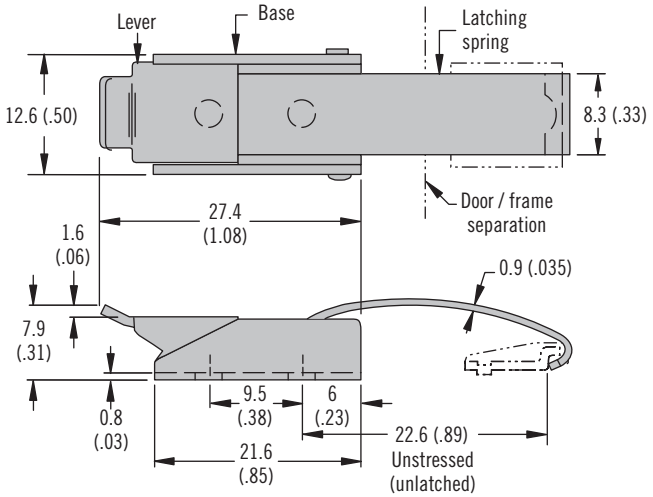
Performance Details

Clamping force: 135 N (30 lbf)

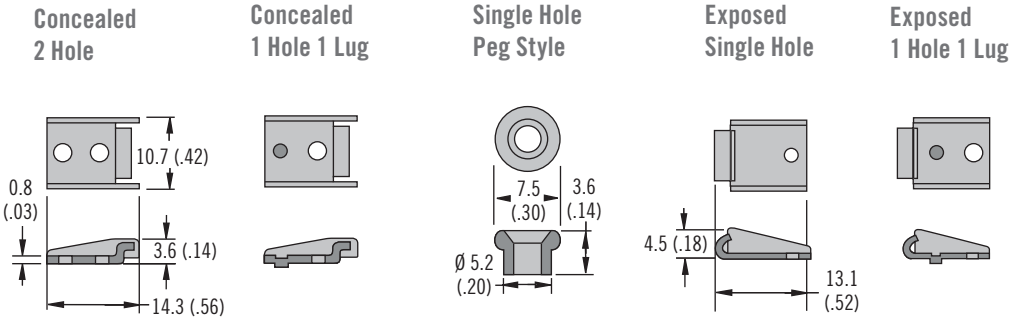
Installation Notes

Install assembly with M3 (No. 4) round head screws or 3 (.118) rivets (not supplied)

For peg style keeper use M3 (No. 4) flat head screws or rivets



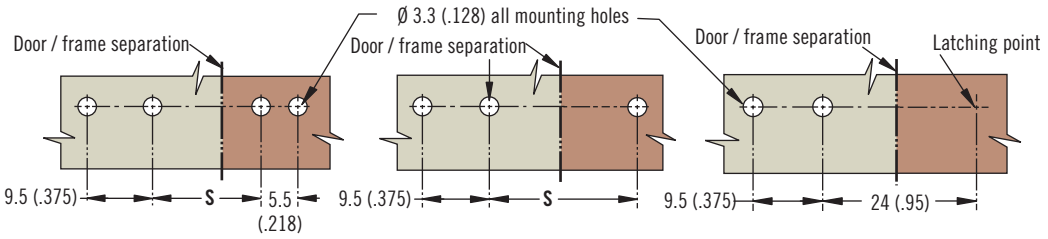
Keepers



Two Hole Keepers

Single Hole Keepers

Latch Only



Part Number

See table

Order latch and keeper separately

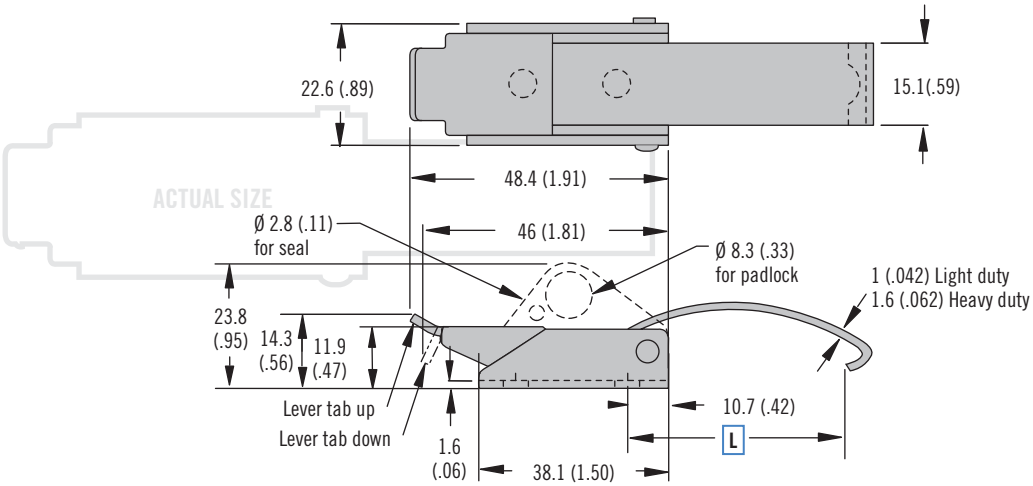
Material	Part Number						
	Latch	Keepers					
		Concealed 2 Hole	Concealed 1 Hole 1 Lug	Single Hole Peg Style	Exposed Single Hole	Exposed 1 Hole 1 Lug
Steel	97-30-160-11	97-37-103-11	97-37-101-11	97-37-105-11	97-37-104-11	97-37-102-11
Stainless Steel	97-30-160-12	97-37-103-24	97-37-101-24	97-37-105-24	97-37-104-24	97-37-102-24
S Dimension		14.7 (.58)	14.7 (.58)	21.8 (.86)	33 (1.30)	27.4 (1.08)

INFO CLIC www.southco.com/97

Dimensions in millimeters (inch) unless otherwise stated

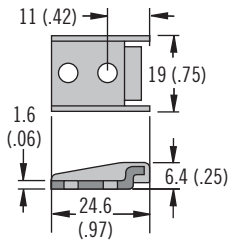
97 Draw Latch

Over-center · Medium

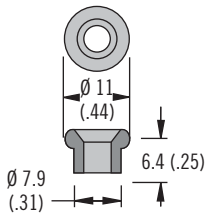


Keepers

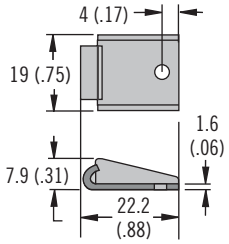
Concealed 2 Hole



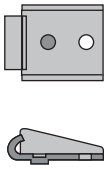
Single Hole Peg Style



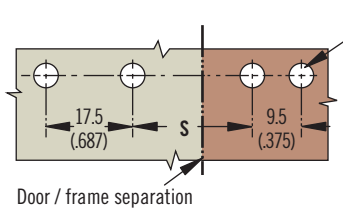
Exposed Single Hole



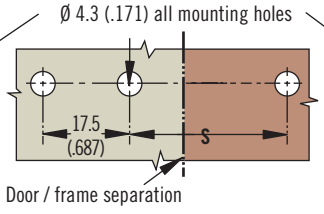
Exposed 1 Hole 1 Lug



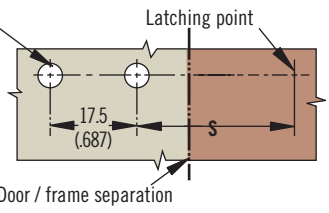
Two Hole Keepers



Single Hole Keepers



Latch Only



- **Multiple link and keeper options for application variances**
- **Secondary locking style available**

Material and Finish

Stainless steel, steel, zinc plated or steel, black powder coated

Performance Details

Heavy-duty:
Clamping force: 670 N (150 lbf)

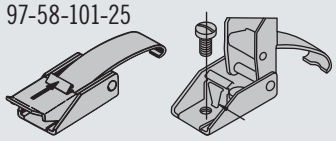
Light-duty:
Clamping force: 310 N (70 lbf)

Installation Notes

Install assembly with M4 (No. 8) round head screws or 4 (.156) rivets (not supplied). Peg needs flat head.

Accessories

Secondary catch provides resistance against severe vibration and accidental opening.
Part number steel: 97-58-101-11
Part number stainless steel: 97-58-101-25



Part Number Selection

Order latch and keeper separately

For latch part number see builder

For keeper part number see table

S Style
1 Lever tab up
2 Lever tab down
3 Padlockable

L Link Length
1 Short (light-duty)
2 Medium (light-duty)
3 Long (light-duty)
5 Short (heavy-duty)
6 Medium (heavy-duty)
7 Long (heavy-duty)

97 - 50 - S L 0 - 1 M

M Material
1 Steel, zinc plated
2 Stainless steel (light-duty only)
5 Steel, black powder coated

Keeper Style	Keeper Part Number		S Dimension		
	Steel	Stainless Steel	Short Link L = 29.4 (1.16)	Medium Link L = 42.1 (1.66)	Long Link L = 54.8 (2.16)
Concealed 2 hole	97-57-103-11	97-57-103-24	15.9 (.63)	28.6 (1.13)	41.3 (1.63)
Single hole peg style	97-57-105-11	97-57-105-24	29.4 (1.16)	42.1 (1.66)	54.8 (2.16)
Exposed single hole	97-57-104-11	97-57-104-24	47.6 (1.88)	60.3 (2.38)	73.0 (2.88)
Exposed 1 hole 1 lug	97-57-102-11	97-57-102-24	38.1 (1.50)	50.8 (2.00)	63.5 (2.50)
Latch only			31.8 (1.25)	44.5 (1.75)	57.1 (2.25)

97 Draw Latch

Over-center · Large

- **Multiple keeper options for application variances**

Material and Finish

Steel, zinc plated or steel powder coated black

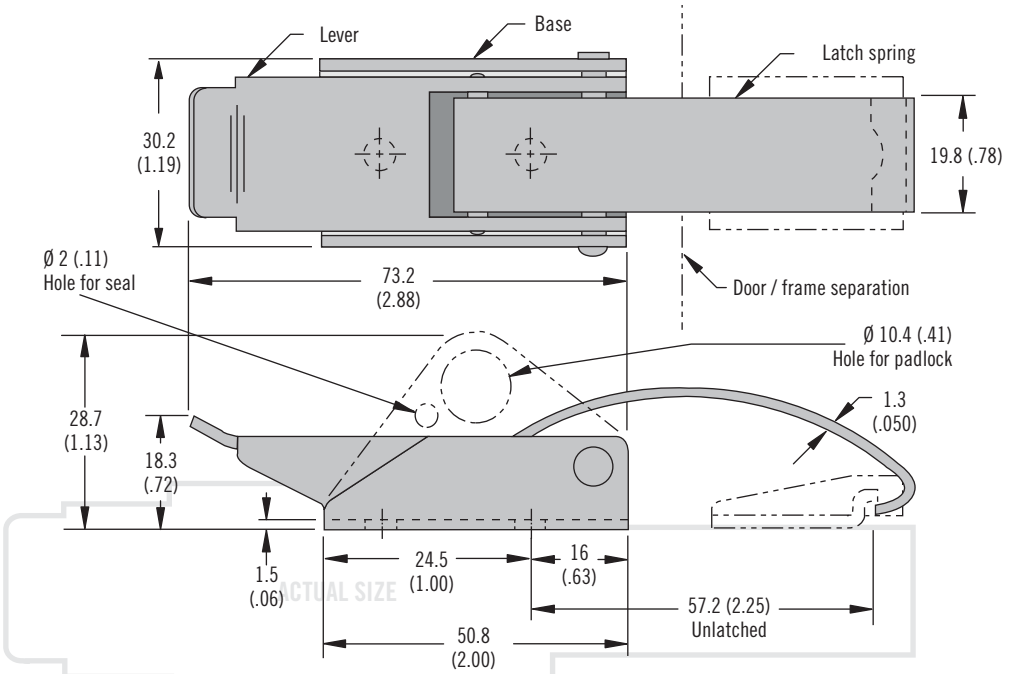
Performance Details

Clamping force: 290 N (65 lbf)

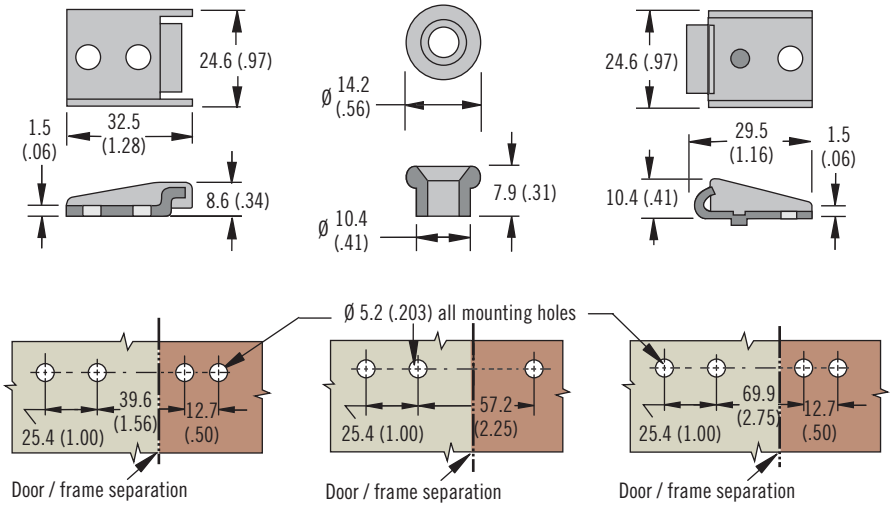
Installation Notes

Install assembly with M5 (No. 10) round head screws (not supplied) or 5 (3/16) rivets

For peg style keeper use M5 (No. 10) flat head screws or rivets



Keepers



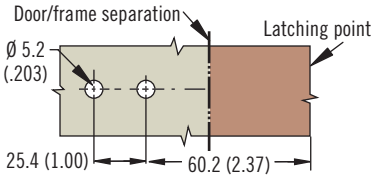
Part Number

See table

Order latch and keeper separately

Material	Latch Part Number	
	Lever Tab Up	Padlockable
Steel, Zinc Plated	97-60-120-11	97-60-320-11
Steel, Black Powder Coated	97-60-120-15	97-60-320-15

Latch Only



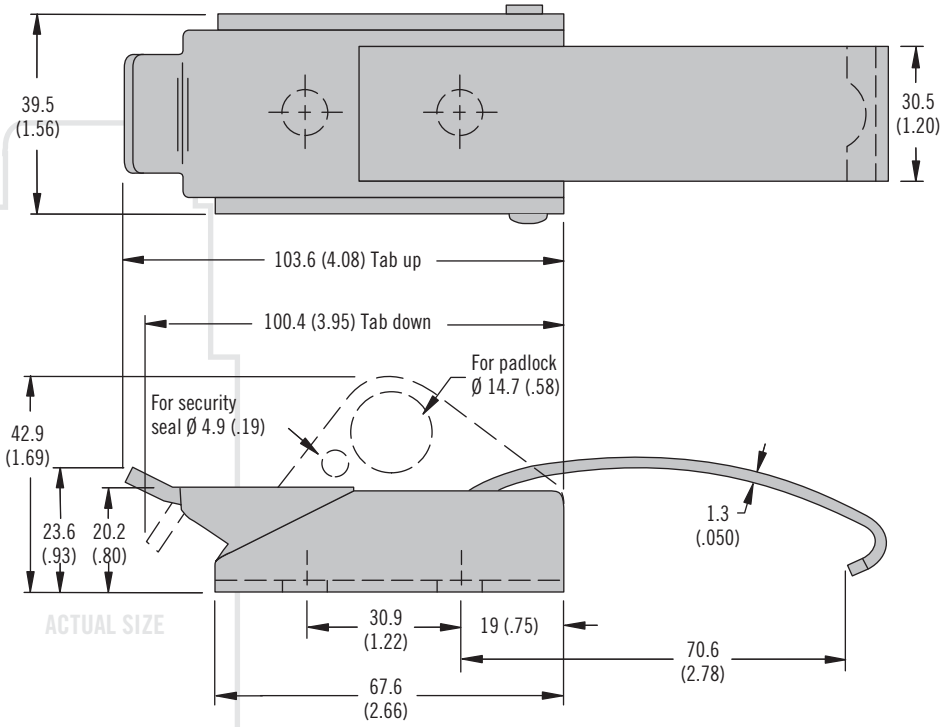
Material	Keeper Part Number		
	Concealed 2 Hole	Single Hole Peg Style	Exposed 1 Hole 1 Lug
Steel, Zinc Plated	97-67-103-11	97-67-105-11	97-67-104-11
Steel, Black Powder Coated	97-67-103-15	97-67-105-15	97-67-104-15

INFO CLIC www.southco.com/97

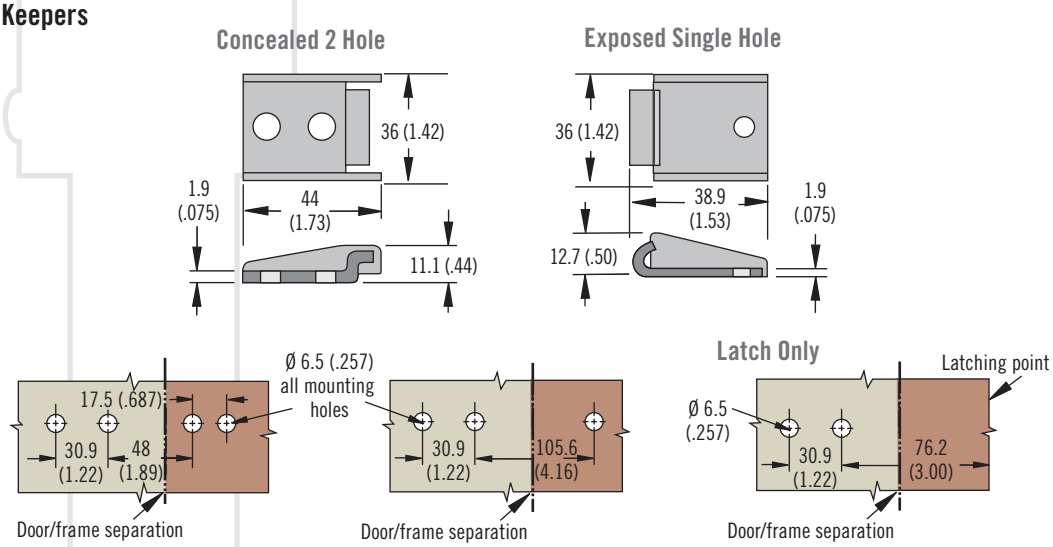
Dimensions in millimeters (inch) unless otherwise stated

97 Draw Latch

Over-center · Extra large



Keepers



Material	Latch Part Number		
	Lever Tab Up	Lever Tab Down	Padlockable
Steel	97-70-120-11	97-70-220-11	97-70-320-11

Material	Keeper Part Number	
	Concealed 2 Hole	Exposed Single Hole
Steel	97-77-103-11	97-77-104-11

- **Multiple keeper options for application variances**

Material and Finish

Steel, zinc plated

Performance Details

Clamping force: 645 N (145 lbf)

Installation Notes

Install assembly with M6 (1/4) round head screws (not supplied) or 6 (1/4) rivets

Part Number

See table

Order latch and keeper separately

V2 Draw Latch

Over-center · Small

- **Torsion spring to accommodate application variances**

Material and Finish

Stainless steel or steel, zinc plated

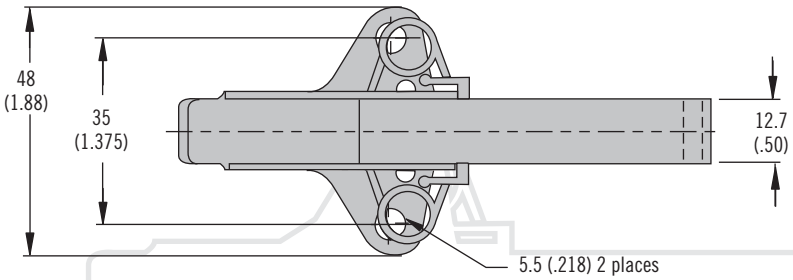
Performance Details

Steel
Clamping force:
330 N (75 lbf) Min.
700 N (160 lbf) Max.

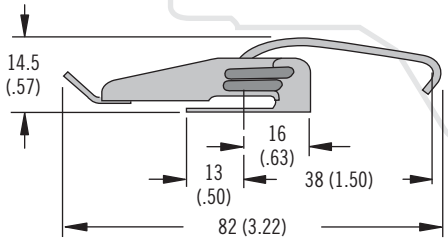
Stainless Steel
Clamping force:
260 N (60 lbf) Min.
530 N (120 lbf) Max.

Notes

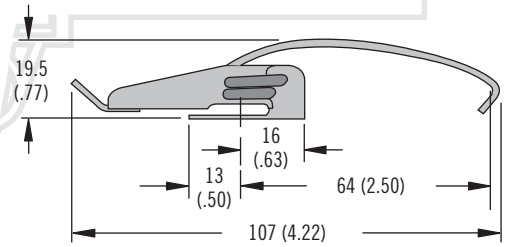
Spring loaded anchor plate compensates up to 2.3 (0.09) for irregularities in sealing and gasket set



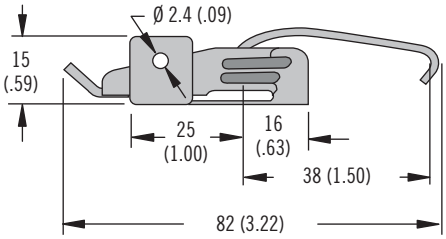
Short Blade



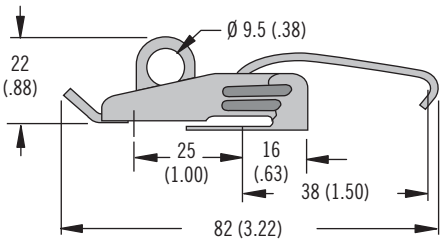
Long Blade

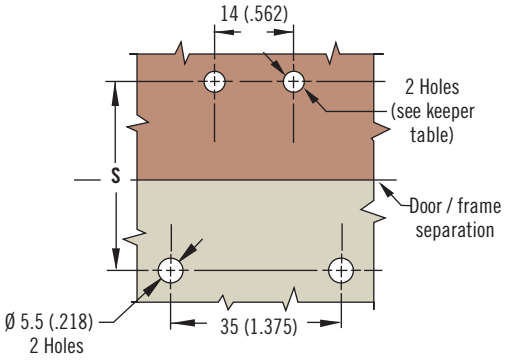


Wire Sealing

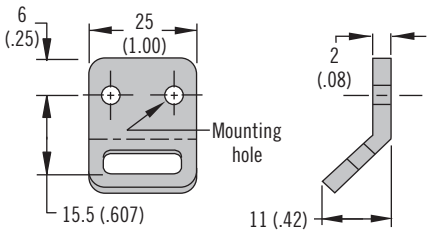


Padlockable





Keeper



Part Number

See table

Order latch and keeper separately

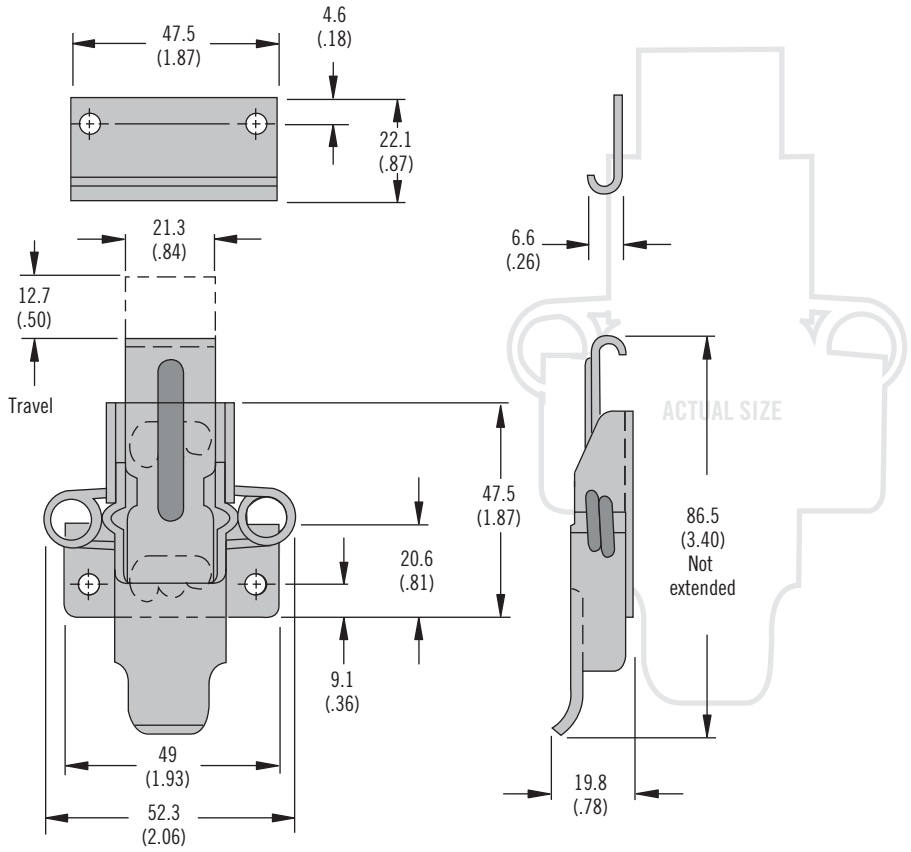
Description	Style	S Dimension		Part Number	
		Min.	Max.	Steel	Stainless Steel
Latch	Short blade	55 (2.17)	57.3 (2.26)	V2-0025-07	V2-0025-52
	Long blade	80.7 (3.17)	83 (3.26)	V2-0068-07	~
	Wire sealing	55 (2.17)	57.3 (2.26)	V2-0034-07	V2-0034-52
	Padlockable	55 (2.17)	57.3 (2.26)	V2-0026-07	V2-0026-52
Keeper	3.4 (.135) mounting holes			V2-0018-07	V2-0018-52
	5.5 (.218) mounting holes			V2-0054-07	V2-0054-52

INFO CLIC www.southco.com/V2

Dimensions in millimeters (inch) unless otherwise stated

V4 Draw Latch

Over-center · Large



- **Torsion spring to accommodate application variances**

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

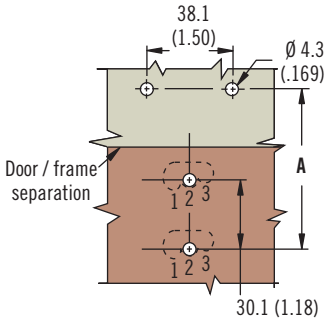
Steel
Average ultimate load:
3500 N (786 lbf)

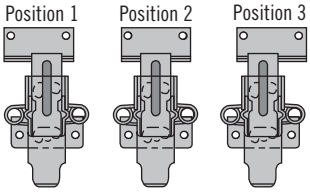
Stainless Steel
Average ultimate load:
3800 N (850 lbf)

Notes

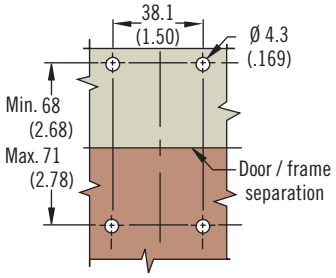
Spring loaded anchor plate compensates up to 2.3 (0.09) for irregularities in sealing and gasket set

Adjustable Installation





Fixed Installation



Position Number	Dimensions A	
	Min.	Max.
1	71.4 (2.81)	73.7 (2.90)
2	69.9 (2.75)	72.1 (2.84)
3	68 (2.68)	70.6 (2.78)

Description	Part Number	
	Steel	Stainless Steel
Latch	V4-0006-02	V4-0006-52
Keeper	V4-0009-02	V4-0009-52

Part Number

See table

Order latch and keeper separately

TL Draw Latch

Over-center · Small · Wire bail

- **Compact latch**
- **Multiple link options for application variances**

Material and Finish

Stainless steel, steel, zinc plated or steel, black E-coat

Performance Details

Steel working load:
Compact heavy-duty:
1290 N (290 lbf)
Compact: 220 N (45 lbf)

Stainless steel working load:
Compact heavy-duty:
800 N (180 lbf)
Compact: 220 N (45 lbf)

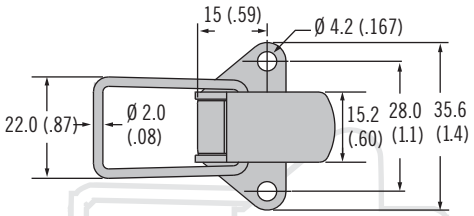
Installation Notes

Install assembly with M4 (No. 6) round head screws (not supplied) or 4 (.156) rivets

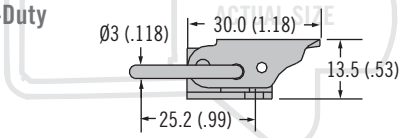
Notes

Order keepers separately, see page 210

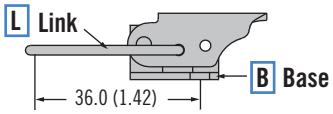
Exposed Mounting Holes



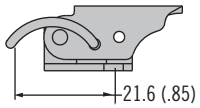
Heavy-Duty



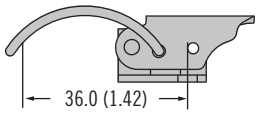
Flat Wire Link



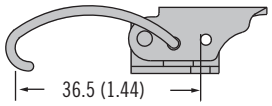
Short Curved Wire Link



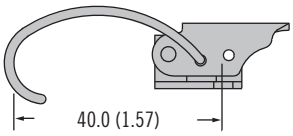
Long Curved Wire Link



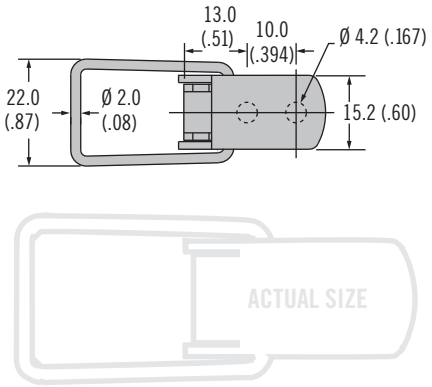
Shallow Hook Link



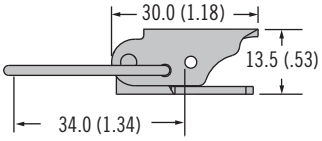
Deep Hook Link



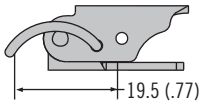
Concealed Mounting Holes



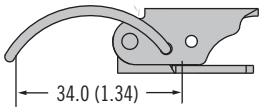
Flat Wire Link



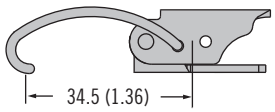
Short Curved Wire Link



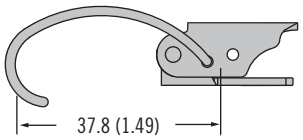
Long Curved Wire Link



Shallow Hook Link



Deep Hook Link



Part Number Selection

Latch only

See page 210 for keepers

L Link style
1 Flat
2 Short curved
3 Long curved
4 Shallow hook
5 Deep hook
6 Heavy-duty (Steel & 300 stainless steel model only)

TL - 20 - B 0 L - F

B Base type
1 Exposed
2 Concealed

F Finish
07 Steel, zinc plated
13 Black E-coat
24 316 stainless steel electropolished
52 300 stainless steel passivated

Dimensions in millimeters (inch) unless otherwise stated

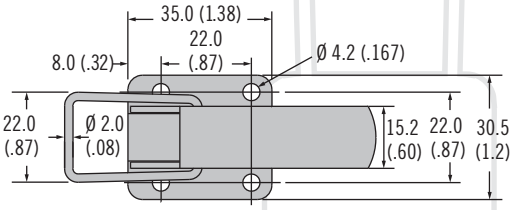
INFO CLIC www.southco.com/TL

southco® CONNECT · CREATE · INNOVATE

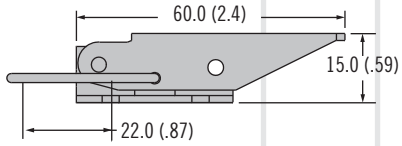
TL Draw Latch

Over-center · Medium · Wire bail

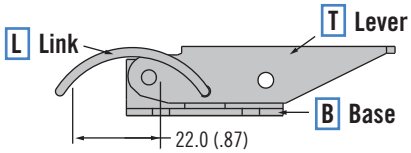
Exposed Mounting Holes



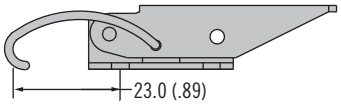
Flat Wire Link



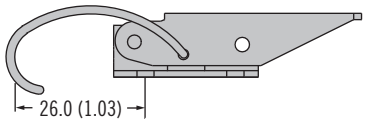
Curved Wire Link



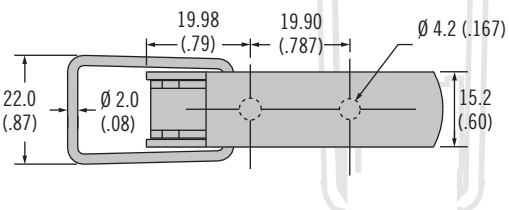
Shallow Hook Link



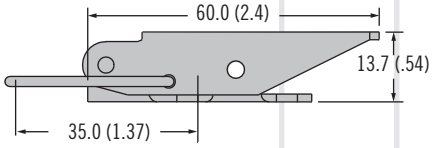
Deep Hook Link



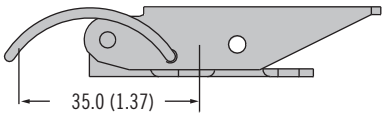
Concealed Mounting Holes



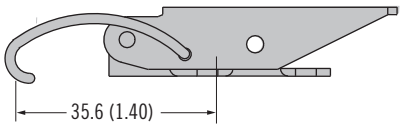
Flat Wire Link



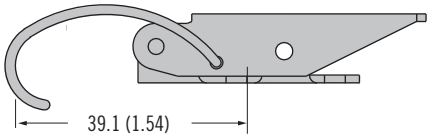
Curved Wire Link



Shallow Hook Link



Deep Hook Link



- **Multiple link options for application variances**
- **Secondary locking style available**

Material and Finish

Stainless steel or steel, zinc plated or steel, black E-coat

Performance Details

Steel:
Working load: 220 N (45 lbf)

Stainless Steel:
Working load: 220 N (45 lbf)

Installation Notes

Install assembly with M4 (No. 6) round head screws (not supplied) or 4 (.156) rivets

Notes

Order keepers separately, see page 210

Part Number Selection

Latch only

See page 210 for keepers

L Link style
- **1** Flat
- **3** Short curved
- **4** Shallow hook
- **5** Deep hook

TL - 40 - B T L - F

B Base type
- **1** Exposed
- **2** Concealed

F Finish
- **07** Steel, zinc plated
- **13** Black E-coat
- **24** 316 Stainless steel electropolished
- **52** 300 Stainless steel passivated

T Lever type
- **0** Standard
- **1** Secondary catch (Steel & 300 Stainless steel model only) (Exposed base only)
- **2** Padlockable (Steel model only) (Concealed base only)

Dimensions in millimeters (inch) unless otherwise stated

TL Keeper

Keeper

- **Multiple keeper options for application variances**
- **Suitable for all TL-20 and TL-40 latches**

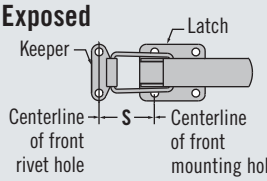
Material and Finish

Stainless steel, steel, zinc plated or steel, black E-coat

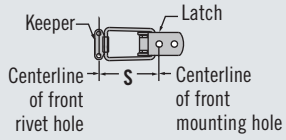
Installation Notes

Install assembly with M4 (No. 6) round head screws (not supplied) or 4 (.156) rivets

Exposed



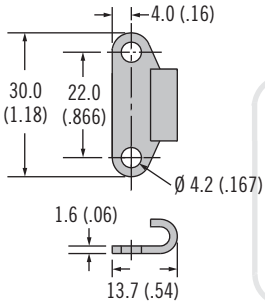
Concealed



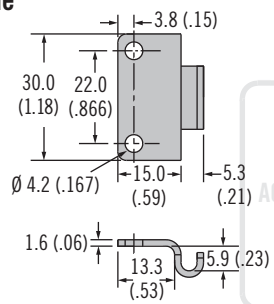
Part Number Selection

1. Select your latch choice in the draw latch column
2. Select your keeper style in the keeper style row
3. Where the column and row meet use the figure for your install **S** dimension

Small

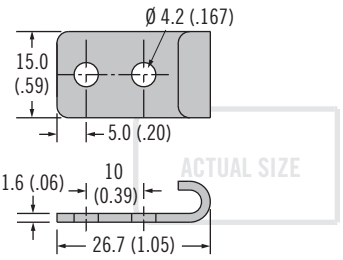


Right Angle

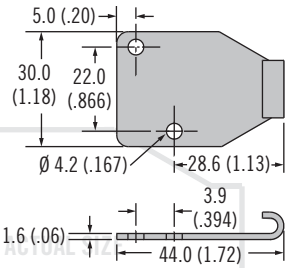


Contact Southco for assistance in determining the "S" dimension.

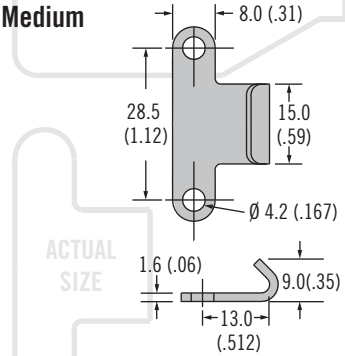
Narrow



Large



Medium



B Base type

1 Small
2 Narrow
3 Right angle
5 Large
9 Medium

TL - 17 - 20 B - F

F Finish

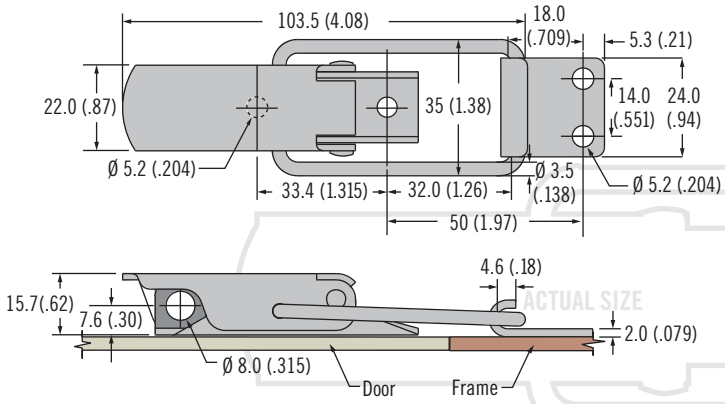
07 Steel, zinc plated
13 Black E-coat
24 316 stainless steel electropolished
52 300 stainless steel passivated

Keeper Style	Small	Narrow	Large	Medium
	TL-17-201-F	TL-17-202-F	TL-17-205-F	TL-17-209-F
Draw Latch	S Dimension			
TL-20-101	44.7 (1.76)	46.7 (1.84)	62.0 (2.44)	49.0 (1.93)
TL-20-102	30.3 (1.19)	32.3 (1.27)	47.6 (1.87)	34.6 (1.36)
TL-20-103	44.7 (1.76)	46.7 (1.84)	62.0 (2.44)	49.0 (1.93)
TL-20-106	33.9 (1.33)	35.9 (1.41)	51.2 (2.02)	38.2 (1.50)
TL-20-201	41.7 (1.64)	43.7 (1.72)	59.0 (2.32)	46.0 (1.81)
TL-20-202	28.2 (1.11)	30.2 (1.19)	45.5 (1.79)	32.5 (1.28)
TL-20-203	41.7 (1.64)	43.7 (1.72)	59.0 (2.32)	46.0 (1.81)
TL-40-101	30.7 (1.21)	32.7 (1.29)	48.0 (1.89)	35.0 (1.38)
TL-40-103	30.7 (1.21)	32.7 (1.29)	48.0 (1.89)	35.0 (1.38)
TL-40-201	43.7 (1.72)	45.7 (1.80)	61.0 (2.40)	48.0 (1.89)
TL-40-203	43.7 (1.72)	45.7 (1.80)	61.0 (2.40)	48.0 (1.89)

Dimensions in millimeters (inch) unless otherwise stated

TL Draw Latch

Over-center · Large · Wire bail



Description	Part Number	
	Steel	Stainless Steel
Latch	TL-50-201-07	TL-50-201-52
Keeper	TL-17-501-07	TL-17-501-52

- **Robust construction**

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Working load: 2490 N (560 lbf)

Installation Notes

Install assembly with M5 (No. 10) round head screws (not supplied) or 5 (.196) rivets.

Part Number

See table

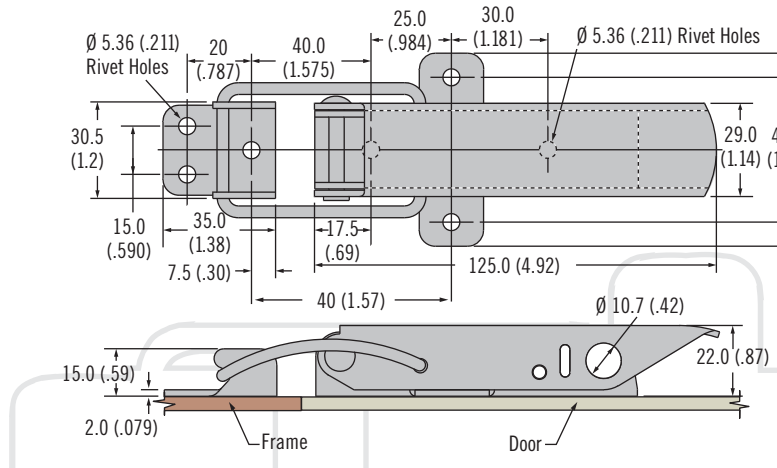
Order latch and keeper separately

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/TL*

TL Draw Latch

Over-center · Heavy-duty · Wire bail



Description	Part Number
Draw Latch	TL-60-102-07
Keeper	TL-17-601-07

- **Robust construction**

Material and Finish

Steel, zinc plated

Performance Details

Working load: 2670 N (600 lbf)

Installation Notes

Install assembly with M5 (No. 10) round head screws (not supplied) or 5 (.196) rivets

Part Number

See table

Order latch and keeper separately

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/TL*

Dimensions in millimeters (inch) unless otherwise stated

A1 Draw Latch

Over-center · Heavy-duty · Small and medium · Adjustable

- **Hooked latching rod**
- **Latching arm adjusts to fit your grip range**

Material and Finish

Stainless steel or steel, zinc plated
Grip: Vinyl yellow

Performance Details

Latched at end of hook:
Small:
Max. static load: 1200 N (270 lbf)
Medium:
Max. static load: 1780 N (400 lbf)

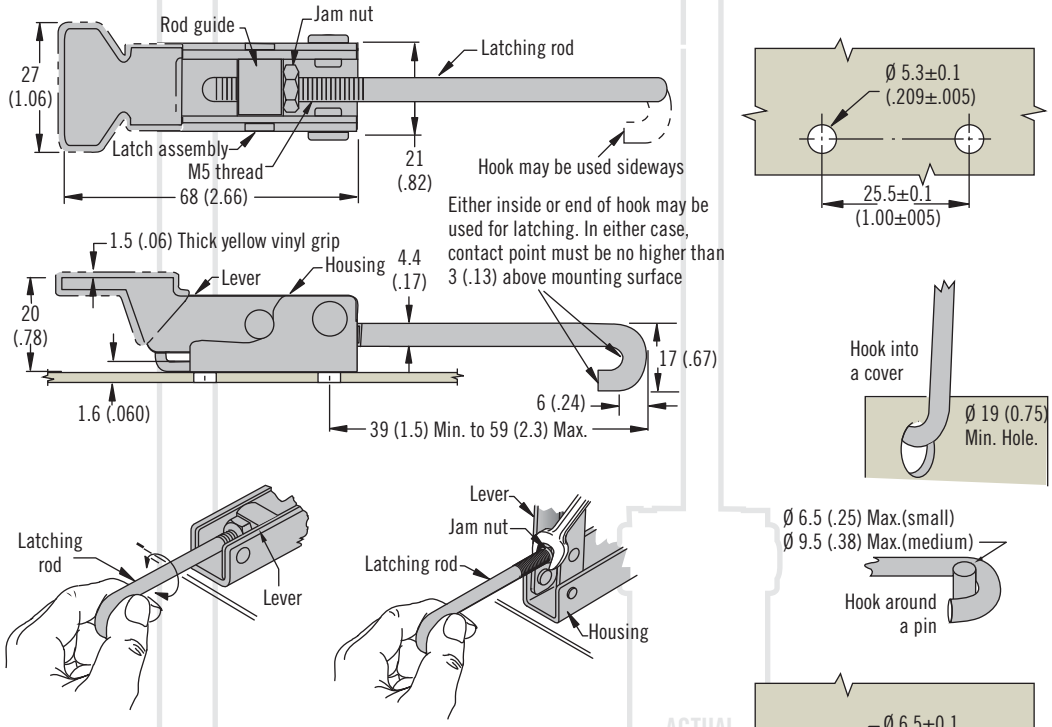
Latched at center of radius:
Small:
Max. static load: 1350 N (300 lbf)
Medium:
Max. static load: 3110 N (700 lbf)

Installation Notes

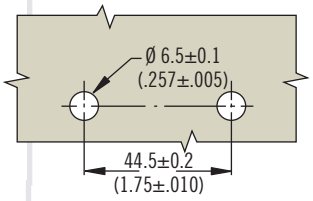
Small:
Install assembly with four M5 (No. 10) screws or rivets

Medium:
Install assembly with four M6 (1/4) screws or rivets

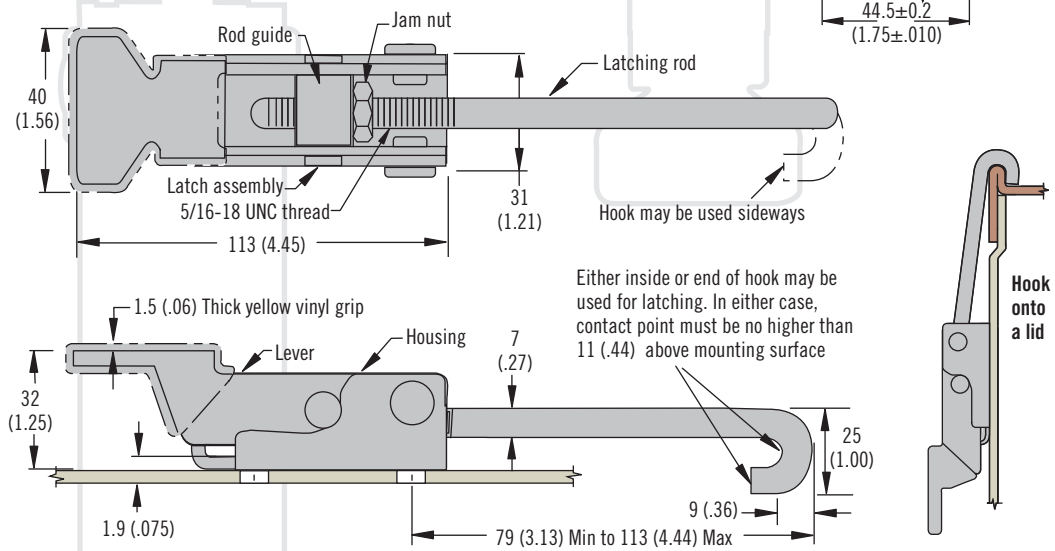
Small



ACTUAL SIZE



Medium



ACTUAL SIZE

Part Number Selection

B Base type
5 Small
7 Medium

A1 - 11 - B 02 - M

M Finish
10 Steel, zinc plated without yellow grip
20 Steel, zinc plated with yellow grip
40 Stainless steel without yellow grip
50 Stainless steel with yellow grip

Dimensions in millimeters (inch) unless otherwise stated

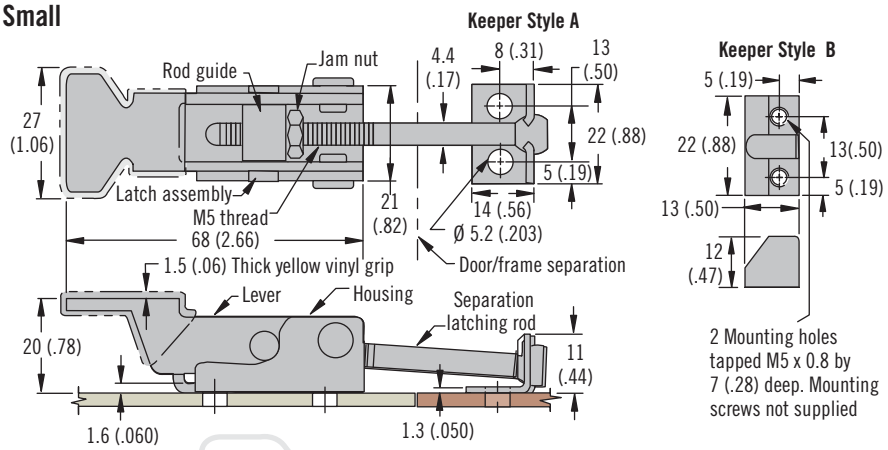
INFO CLIC www.southco.com/A1

southco® CONNECT · CREATE · INNOVATE

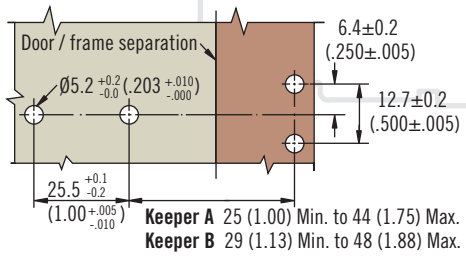
A1 Draw Latch

Over-center · Small and medium · Adjustable

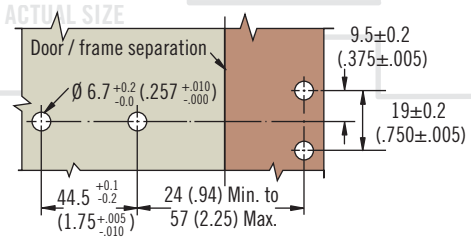
Small



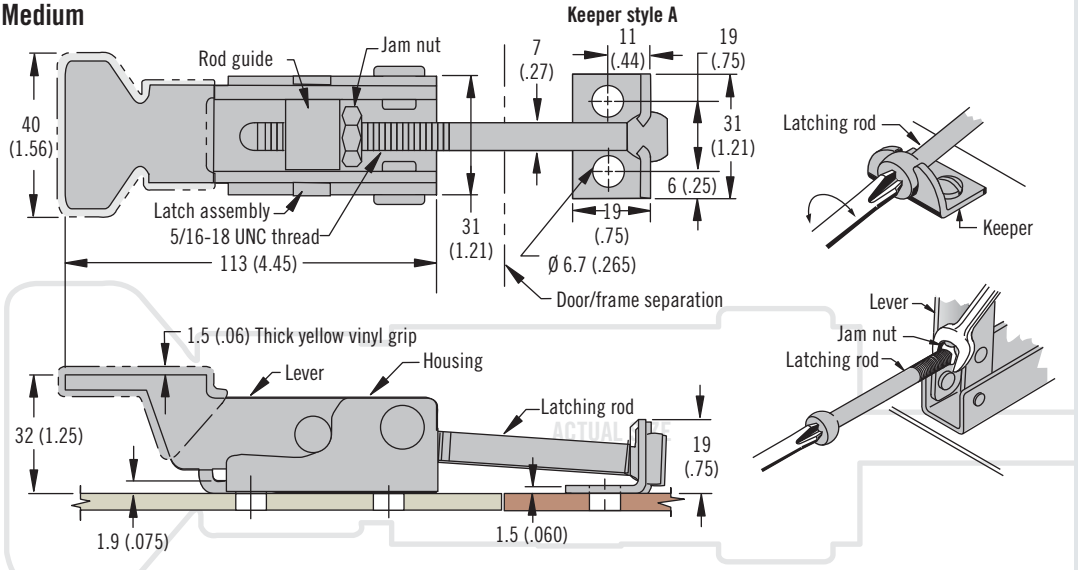
Small Panel Preparation



Medium Panel Preparation



Medium



- **Adjustable grip**

Material and Finish

Stainless steel or steel, zinc plated
Grip: Vinyl yellow

Performance Details

Small (keeper style A):
Max. static load: 180 N (40 lbf)

Small (keeper style B):
Max. static load: 1550 N (350 lbf)

Medium (keeper style A)
Max. static load: 890 N (200 lbf)

Installation Notes

Small:
Install assembly with four M5 (No. 10) round head screws or rivets

Medium:
Install assembly with four M6 (1/4) round head screws or rivets

Part Number Selection

Assembly complete with keeper

A1 - 10 - B 0 K - M

B Base type
- **5** Small
- **7** Medium

K Keeper style
- **1** Type A
- **3** Type B (Small steel, zinc plated models only)

M Finish
- **10** Steel, zinc plated without yellow grip
- **20** Steel, zinc plated with yellow grip
- **40** Stainless steel without yellow grip
- **50** Stainless steel with yellow grip

Dimensions in millimeters (inch) unless otherwise stated

A1 Draw Latch

Over-center · Heavy-duty · Adjustable

- **Robust construction**
- **Adjustable grip**

Material and Finish

Steel, zinc plated or black powder coated

Performance Details

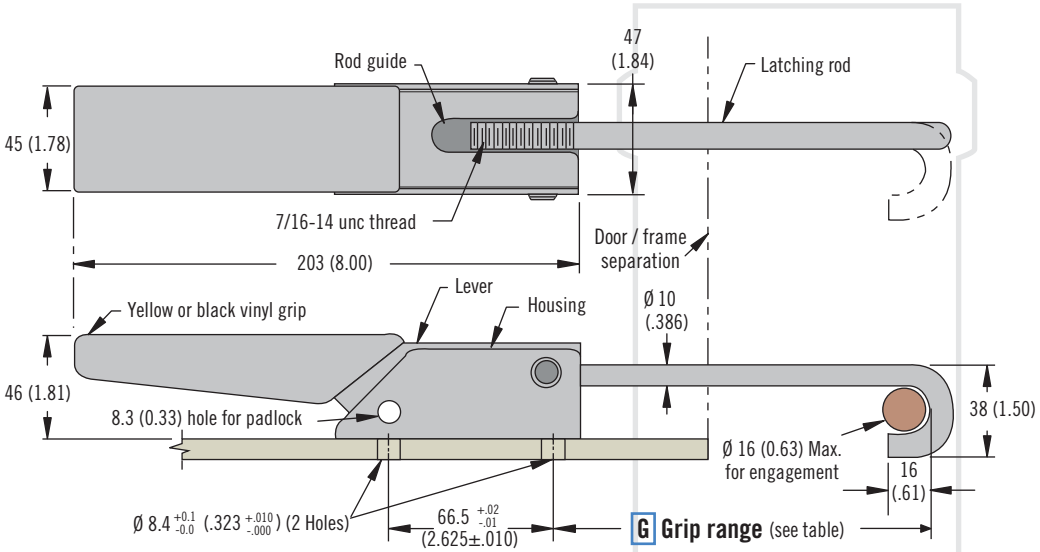
Latched at end of hook:
Max. static load: 2225 N (500 lbf)

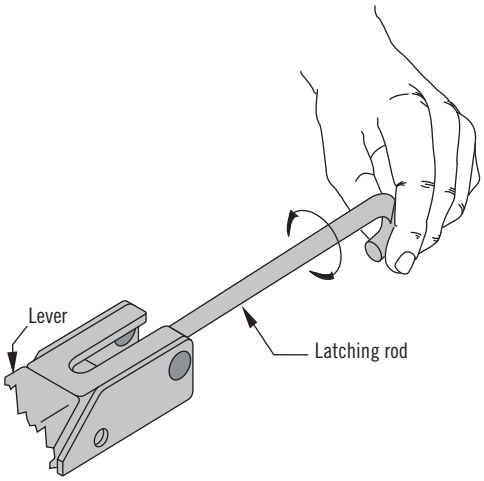
Latched at center of radius:
Max. static load: 4450 N (1000 lbf)

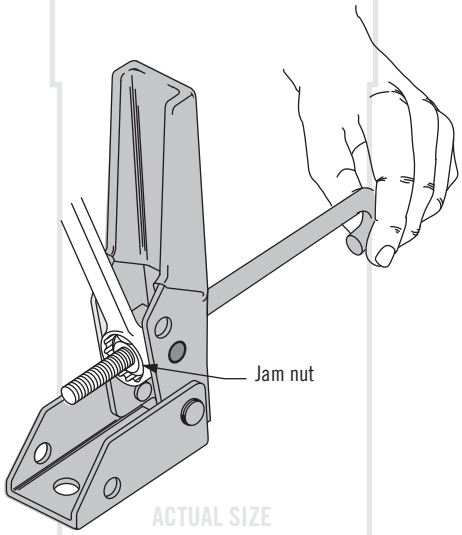
Installation Notes

Install assembly with two M8 (5/16) bolts (not supplied)

Hook may be used sideways. Either inside or end of hook may be used for latching. In either case, contact point must be no higher than 25 (1.00) above mounting surface







Part Number

See table

G Grip Range		Part Number	
Min.	Max.	Bright latch with yellow vinyl grip	Black latch with black vinyl grip
89 (3.50)	114 (4.50)	A1-11-902-20	A1-11-902-31

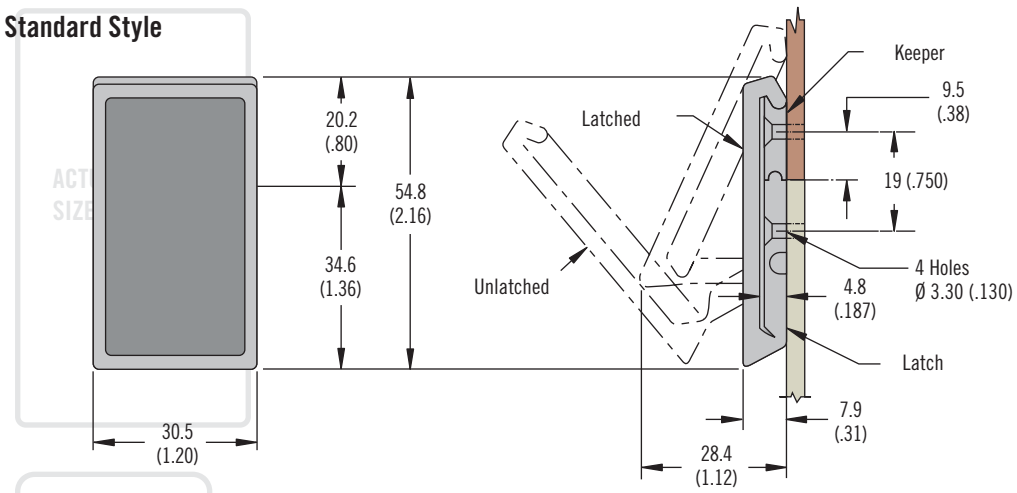
INFO CLIC www.southco.com/A1

Dimensions in millimeters (inch) unless otherwise stated

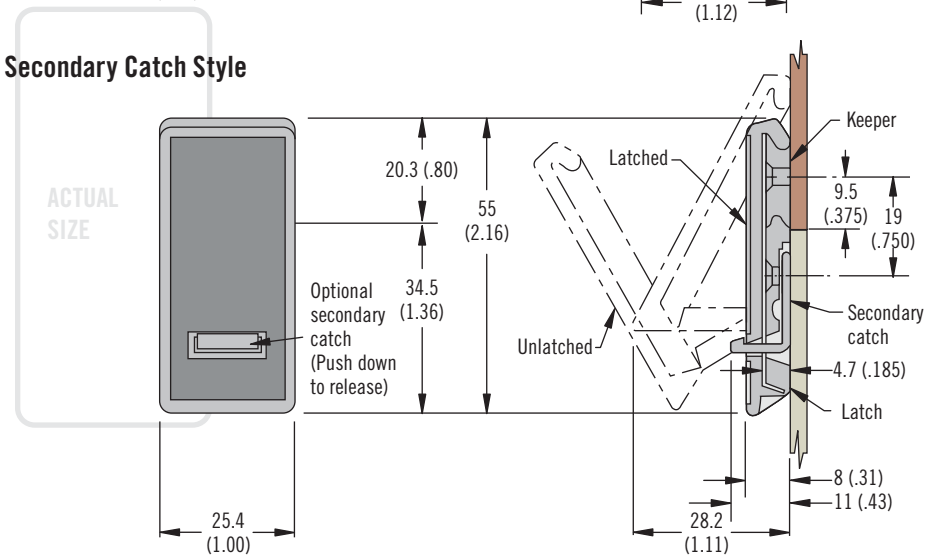
07 Draw Latch

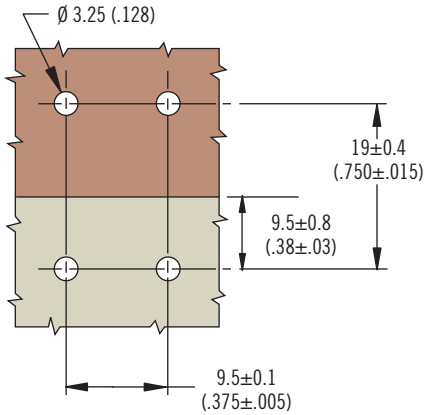
Over-center · Living hinge

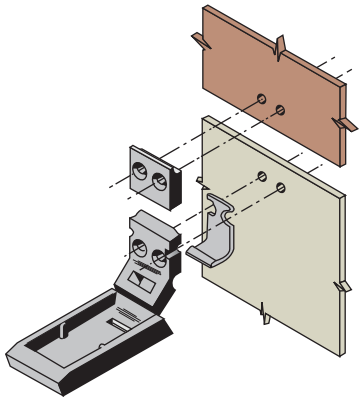
Standard Style



Secondary Catch Style







- **Low profile one piece molded latch**
- **Concealed mounting**
- **Secondary catch option to prevent accidental opening**

Material and Finish

Polypropylene black or white
Secondary catch: acetal black or red

Performance Details

Max. working load:
Standard: 445 N (100 lbf)

Secondary catch: 310 N (70 lbf)

Operating temperature range:
0°C (32°F) to 65°C (150°F)

Flammability rating: UL94-HB

Installation Notes

Install assembly with four Ø 3 (.125) flat head rivets or M3 (No. 4) flat head screws (not supplied)

Part Number Selection

Assembly complete with keeper

B Base type
- **2** Standard
- **5** Secondary catch

07 - 10 - B 01 - F

F Finish
- **11** White (standard only)
- **12** Black (standard only)
- **70** Black with red secondary catch
- **72** Black with black secondary catch

Dimensions in millimeters (inch) unless otherwise stated

E8 Draw Latch

Over-center · Adjustable

- **Adjustable grip**
- **Concealed mounting**

Material and Finish

Acetal black and glass reinforced nylon, black
Adjusting nut: Stainless steel

Performance Details

Max. working load: 1560 N (350 lbf)

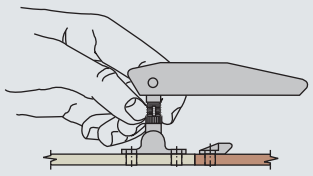
Operating temperature range: -29ºC (-20ºF) to 80ºC (176ºF)

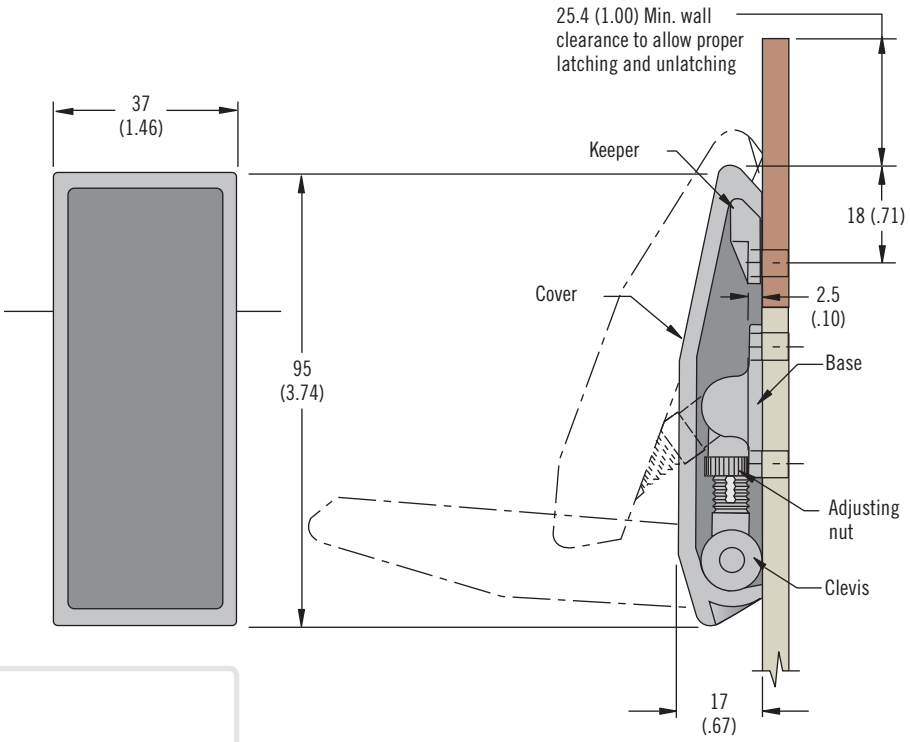
Flammability rating: UL94-HB

Installation Notes

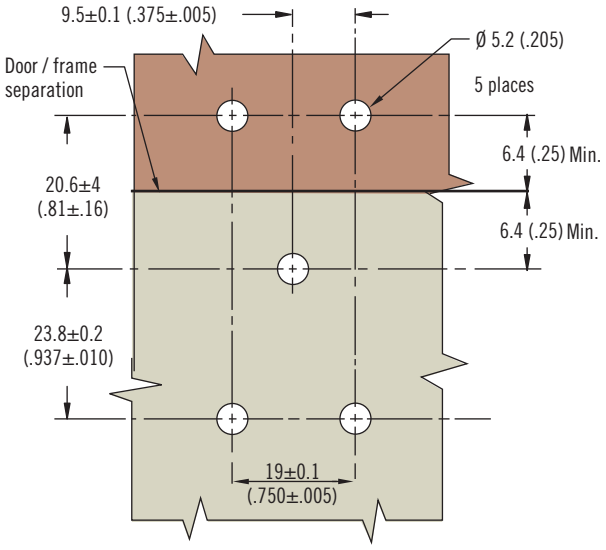
Install assembly with five Ø 5 (.197) rivets or M5 (No. 10) screws (not supplied)

To adjust latching force, thread adjustment nut up or down clevis (total 7.9 (.31) range)





ACTUAL SIZE



Part Number

See table
Assembly complete with keeper

Part Number
E8-10-502-20

91 Draw Latch

Under-center · Small · Adjustable

- **Adjustable grip**
- **Secondary catch option to prevent accidental opening**

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Max. working load

Stainless steel: 710 N (160 lbf)

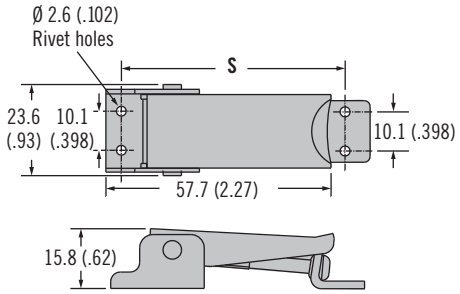
Steel, zinc plated: 1200 N (270 lbf)

Installation Notes

Ø 2.5 (No. 3) screws (not supplied)

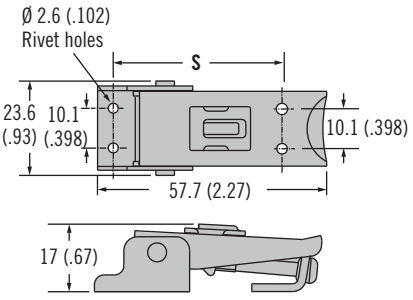
Latch

Standard



Latch shown with 91-630-XX keeper

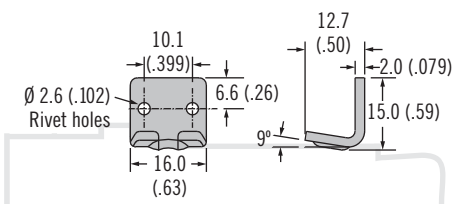
Secondary Catch



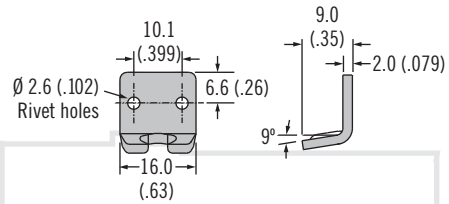
Latch shown with 91-634-XX keeper

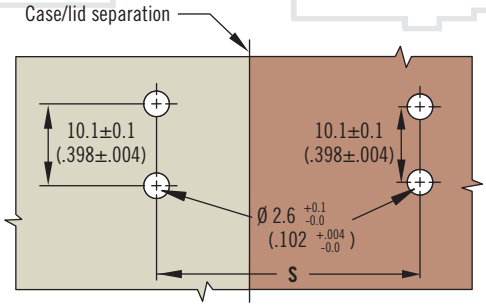
Keeper

Exposed



Concealed





Material	Latch Part Number	
	Standard	Secondary Catch
Steel	91-351-07	91-361-07
Stainless Steel	91-351-52	91-361-52

S	Keeper Type		
		Steel	Stainless Steel
39 - 47 (1.53 - 1.85)	Concealed	91-634-07	91-634-52
52 - 60 (2.04 - 2.36)	Exposed	91-630-07	91-630-52

Part Number

See table

Order latch and keeper separately

91 Draw Latch

Under-center · Medium · Adjustable

- **Adjustable grip**
- **Kick out feature disengages from keeper**
- **Secondary catch option to prevent accidental opening**

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Max. working load:
With 91-600 keeper:
1325 N (300 lbf)

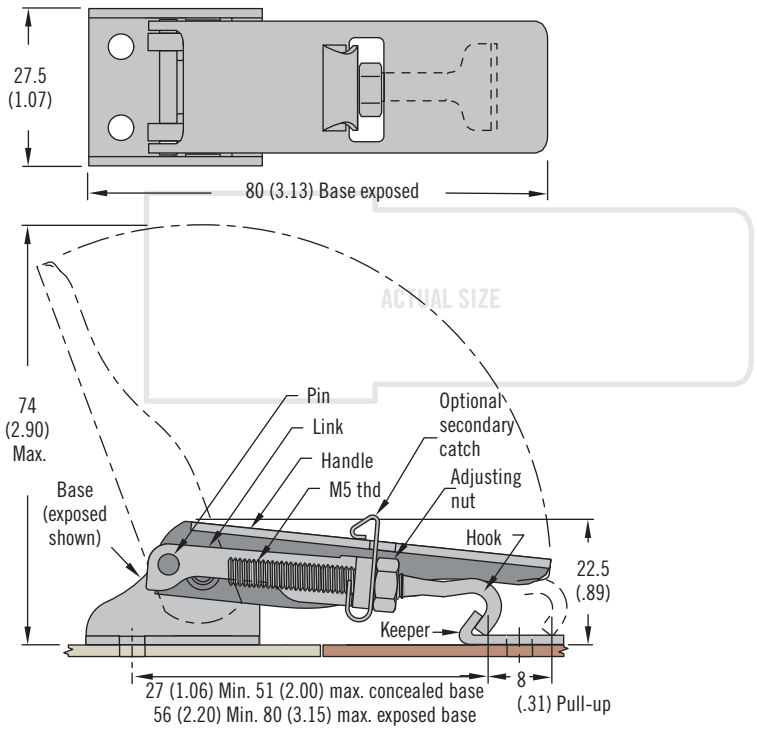
With K4-2338 keeper:
1550 N (350 lbf)

Installation Notes

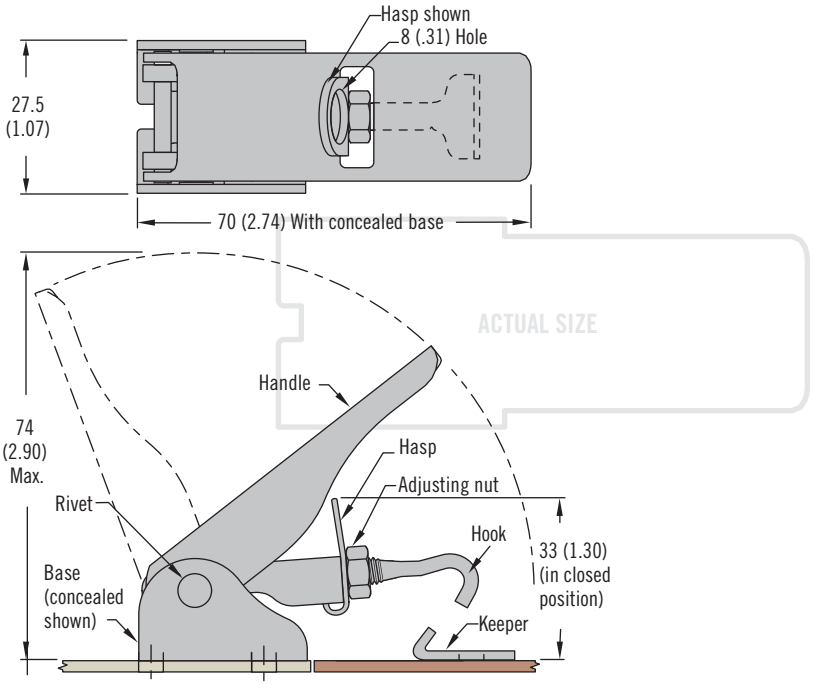
M4 (No. 8) screws (not supplied)

Latch

Exposed Base (Secondary catch option shown)



Concealed Base (Hasp option shown)



INFO CLIC www.southco.com/91

Dimensions in millimeters (inch) unless otherwise stated

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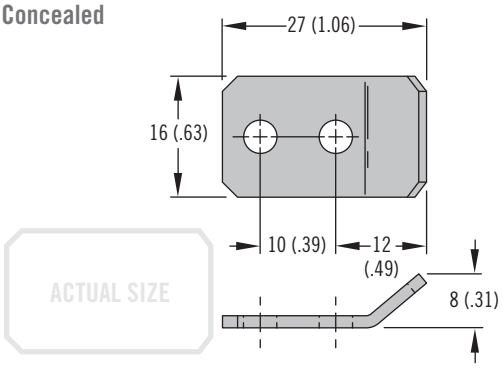
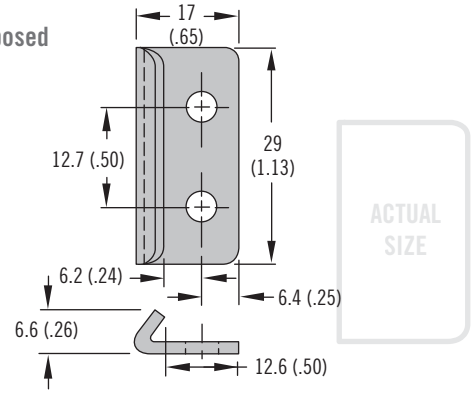
Keepers

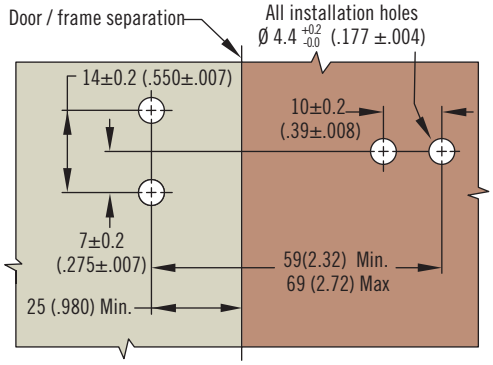
Concealed



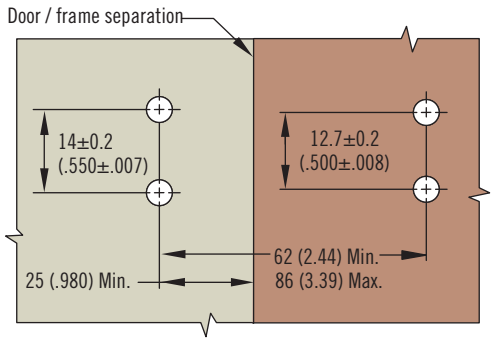
Exposed



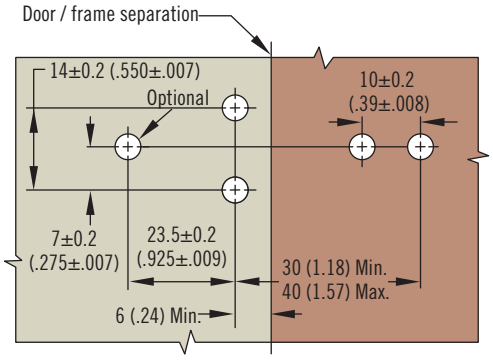
Exposed Base and Concealed Keeper



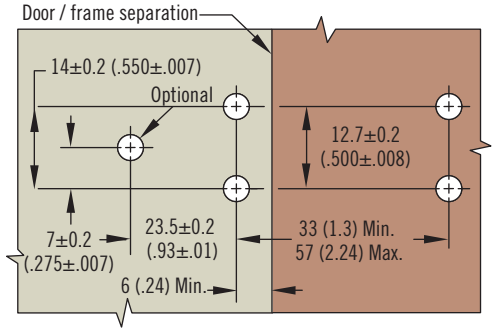
Exposed Base and Exposed Keeper



Concealed Base and Concealed Keeper



Concealed Base and Exposed Keeper



B Base type

1 Concealed
2 Concealed with secondary catch
3 Concealed with padlock hasp
5 Exposed
6 Exposed with secondary catch
7 Exposed with padlock hasp

91 - 5 B 2 - F

F Finish

07 Steel, zinc plated
52 Stainless steel

Finish	Keeper Part Number	
	Concealed	Exposed
Steel	91-600-07	K4-2338-07
Stainless Steel	91-600-52	K4-2338-52
Stainless Steel, Black	91-600-63	K4-2338-63

Dimensions in millimeters (inch) unless otherwise stated

Part Number Selection

Order latch and keeper separately

For latch part number see builder

For keeper part number see table

91 Draw Latch

Under-center · Large · Adjustable

- **Adjustable grip**

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Max. working load: 2670 N (600 lbf)

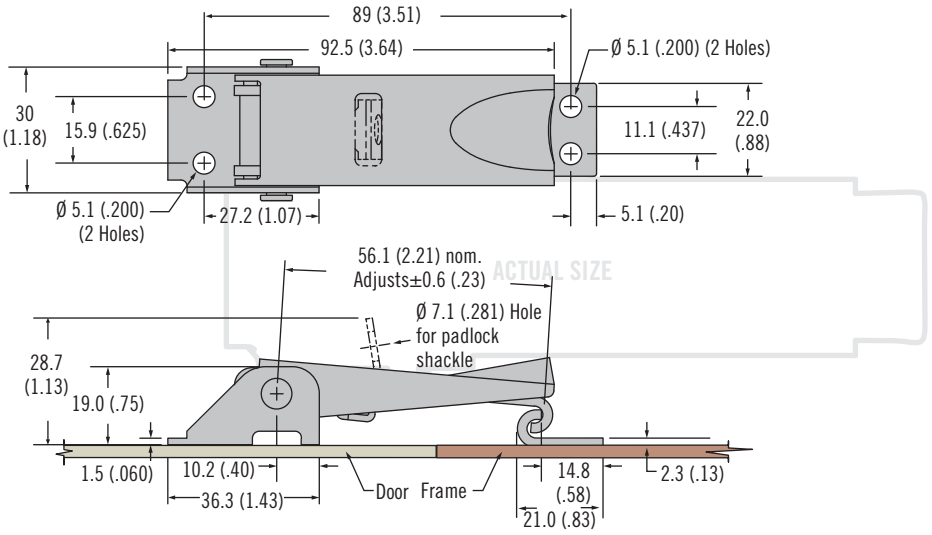
Installation Notes

M5 (No. 10) screws (not supplied)

Part Number

See table

Assembly complete with keeper



Type	Part Number	
	Steel	Stainless Steel
Standard Latch	91-752-07	91-752-52
Latch with Padlock Hasp	91-772-07	91-772-52

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/91*

91 Draw Latch

Under-center · Heavy-duty · Adjustable

- **Adjustable grip**

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Max. working load:
Steel: 2670 N (600 lbf)
Stainless steel: 2000 N (450 lbf)

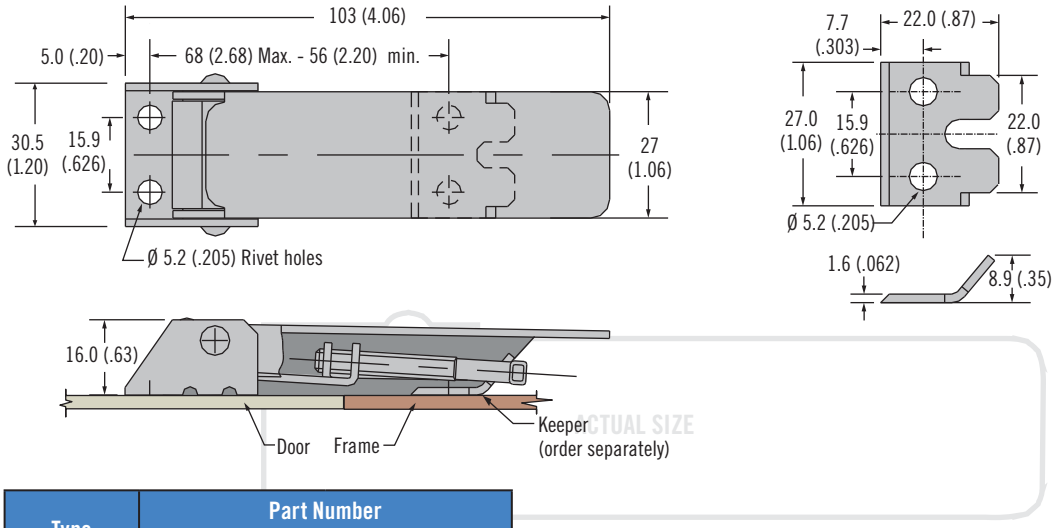
Installation Notes

M5 (No. 10) screws (not supplied)

Part Number

See table

Order latch and keeper separately



Type	Part Number	
	Steel	Stainless Steel
Latch	91-751-07	91-751-52
Keeper	91-674-07	91-674-52

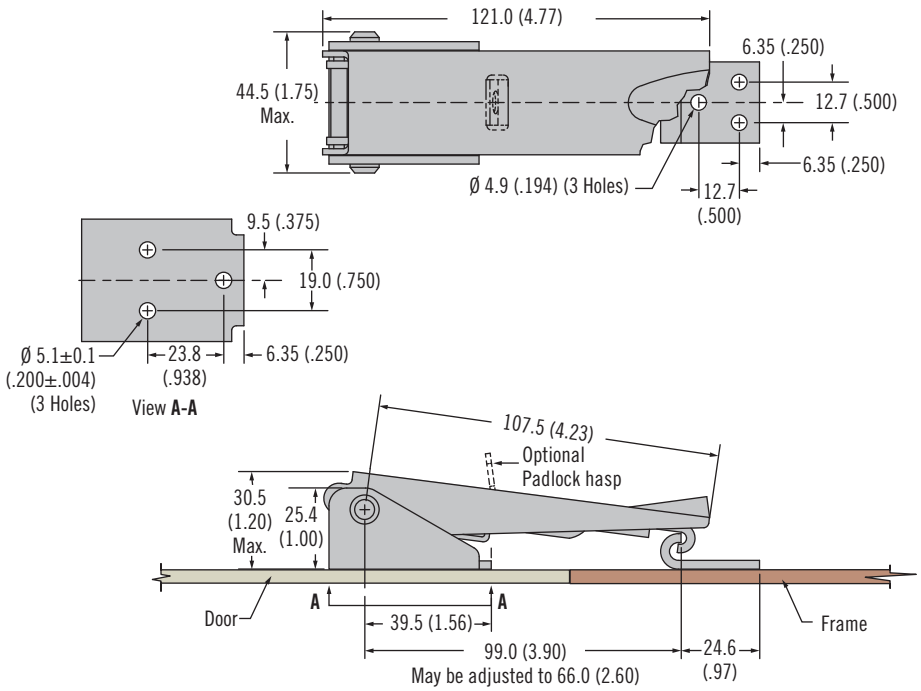
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/91*

Dimensions in millimeters (inch) unless otherwise stated

91 Draw Latch

Under-center · Heavy-duty · Adjustable



- **Adjustable grip**

Material and Finish

Stainless steel

Performance Details

Max. working load: 3560 N (800 lbf)

Installation Notes

Install assembly with M4 (No. 10) screws (not supplied)

Type	Part Number
Standard Latch	91-812-52
Latch with Padlock Hasp	91-832-52

Part Number

See table

Assembly complete with keeper

K2 Draw Latch

Rotary · Medium · Stylized wing

- **Lift and Turn operation**
- **Consistent pull-up**

Material and Finish

Stainless steel or steel, black powder coated

Performance Details

Steel:
Max. working load: 1230 N (275 lbf)

Stainless steel:
Max. working load: 845 N (190 lbf)

Operating temperature range:
-40°C (-40°F) to 80°C (175°F)

Installation Notes

Install assembly with Ø 4 (.157) rivets or M4 (No. 8) screws (not supplied)

Notes

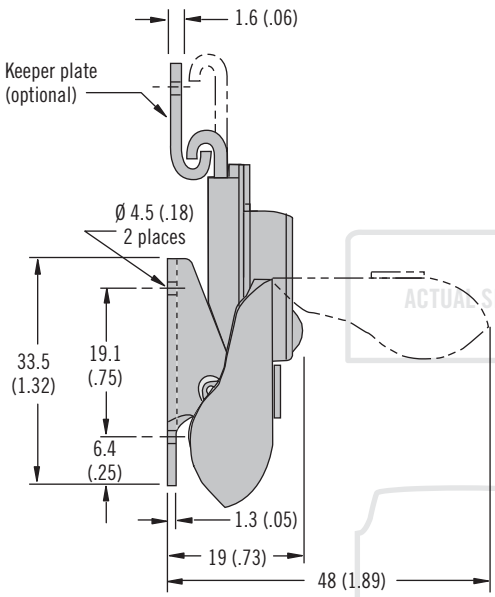
Spring loaded:
Ideal for applications where shock and vibration occur. Compensates up to 1.7 (.07) for mounting hole irregularities, panel variations and gasket set. Also provides an additional allowance of 2.3 (.09) deflection when loaded.

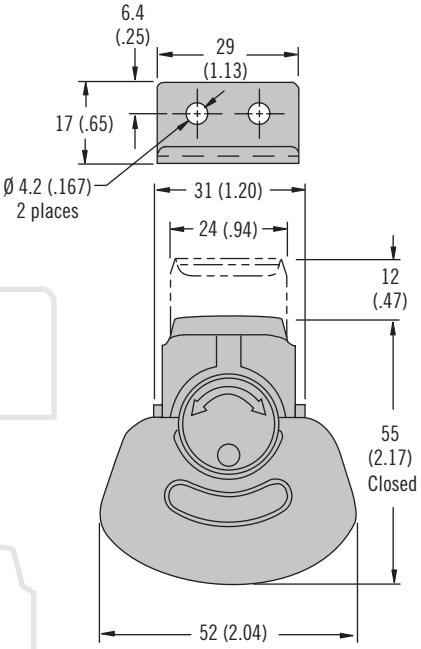
Part Number

See table

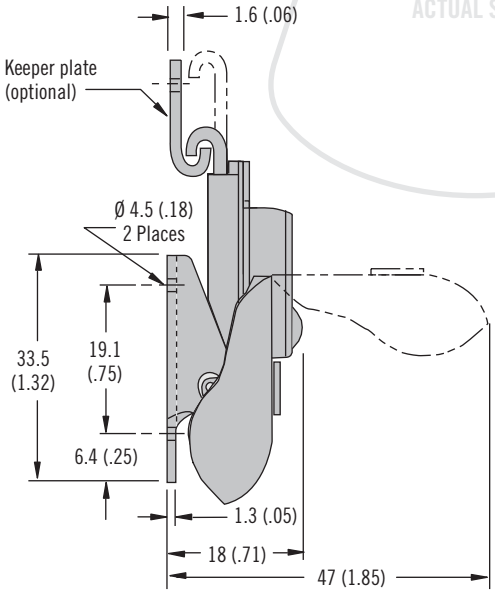
Order latch and keeper separately

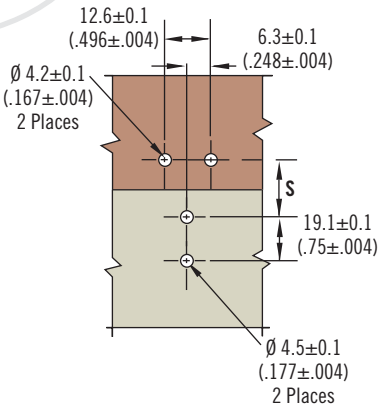
Spring Loaded





Fixed





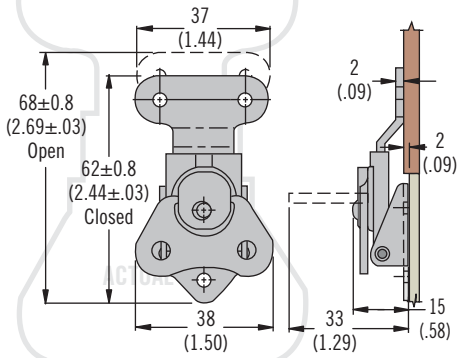
Latch	Part Number			S
	Style	Steel, Black Powder Coated	Stainless Steel	
	Spring loaded	K2-3005-89	K2-3005-51	$32^{+1.7}_{-0.2}$ ($1.25^{+.07}_{-.01}$)
	Fixed	K2-3001-89	K2-3001-51	32±0.2 (1.25±.01)
Keeper plate		K4-2338-89	K4-2338-51	

INFO CLIC www.southco.com/K2

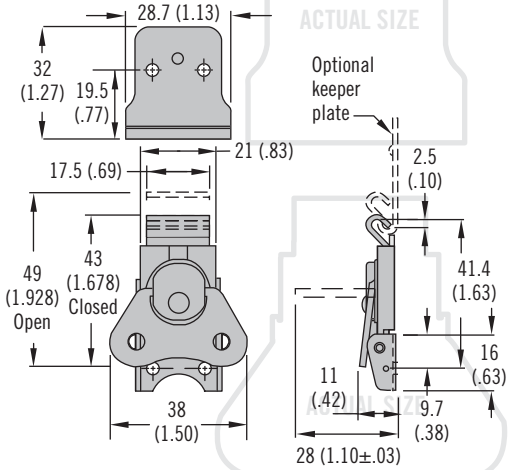
Dimensions in millimeters (inch) unless otherwise stated

K3 Draw Latch
Rotary · Small

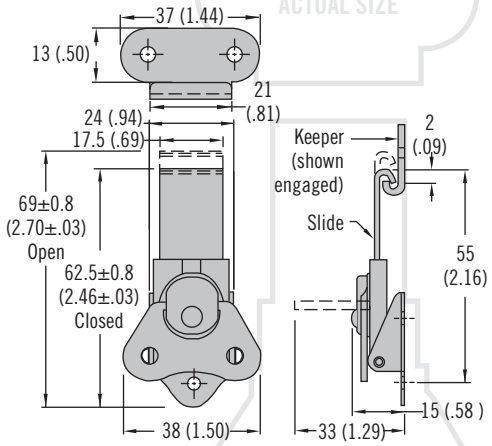
Hinge Lock



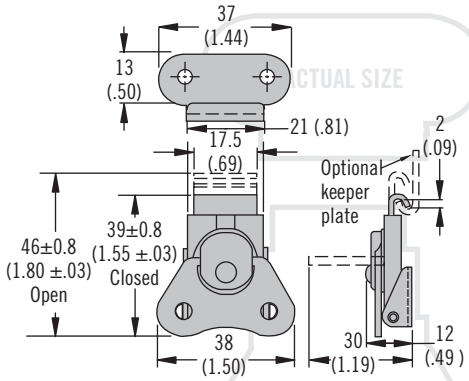
Low Profile



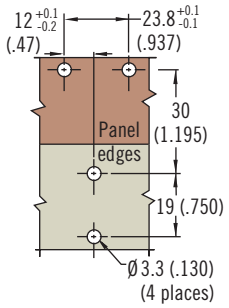
Long Slide



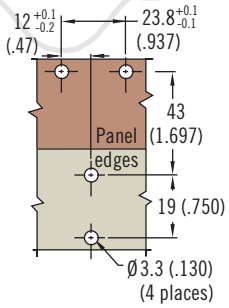
Short Anchor Plate



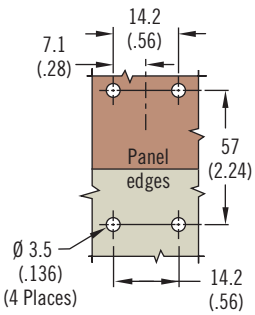
Hinge Lock



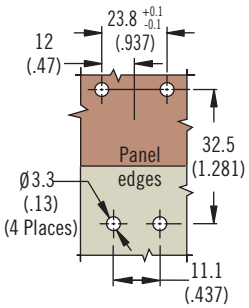
Long Slide



Low Profile



Short Anchor Plate



Material	Latch Part Number				Keeper Part Number	
	Hinge Lock	Long Slide	Low Profile	Short Anchor Plate	Keeper	Low Profile Keeper
Steel	K3-1746-07	K3-2347-07	K3-2694-07	K3-1660-07	K3-0334-07	K3-2696-07
Stainless Steel	~	K3-2347-52	~	K3-1660-52	K3-0334-52	~

- **Adjustable grip**

Material and Finish
Stainless steel or steel, zinc plated

Installation Notes
Install assembly with Ø 3 (.125) rivets or M3 (No. 4) screws (not supplied)

Notes
Hinge lock style has an integrally attached keeper

Part Number
See table

Order latch and keeper separately

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Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/K3

K3 Draw Latch

Rotary · Small

- **Lift and Turn operation**
- **Consistent pull-up**

Material and Finish

Stainless steel or steel, zinc plated

Installation Notes

Install assembly with Ø 3 (.125) rivets or M3 (No. 4) screws (not supplied)

Notes

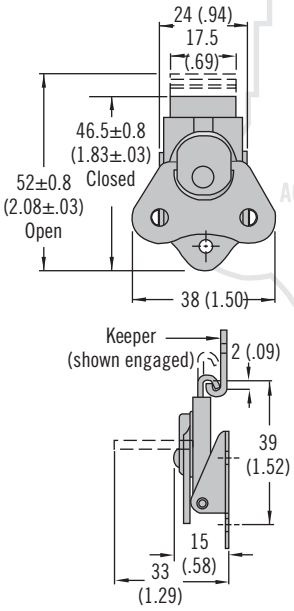
Spring loaded:
Ideal for applications where shock and vibration occur. Compensates up to 4 (.156) for mounting hole irregularities, panel variations and gasket set.

Part Number

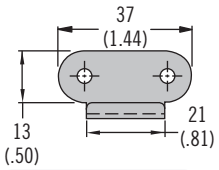
See table

Order latch and keeper separately

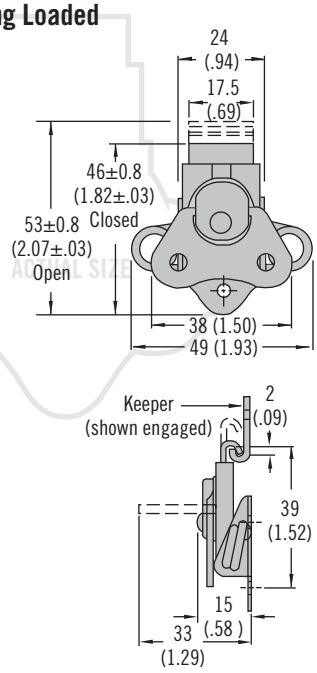
Riveted



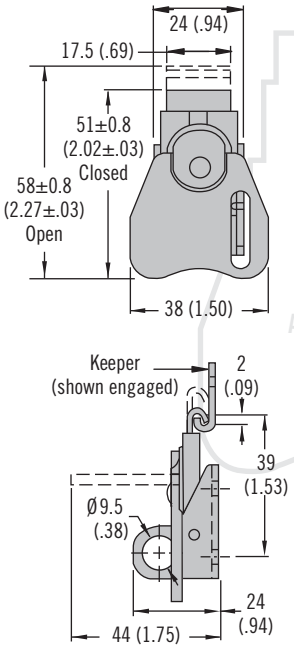
Keeper

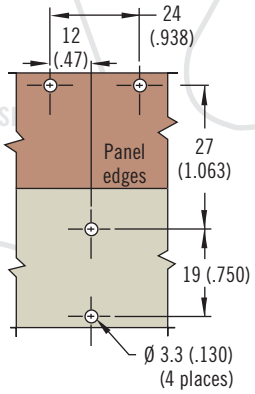


Spring Loaded

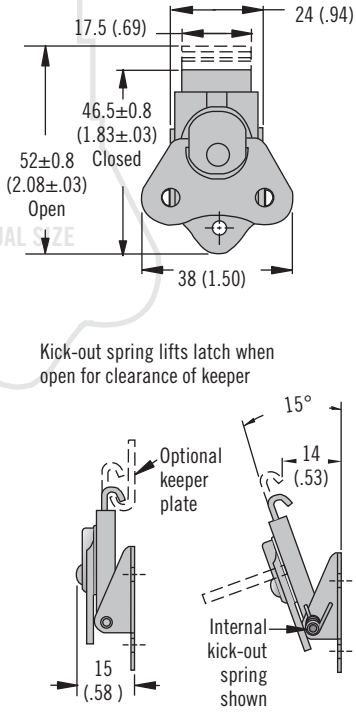


Padlockable





Kick-Out Spring



Material	Part Number				
	Riveted	Spring Loaded	Padlockable	Kick-Out Spring	Keeper
Steel	K3-1625-07	K3-1735-07	K3-2403-07	K3-1887-07	K3-0334-07
Stainless Steel	K3-1625-52	K3-1735-52	K3-2403-52	K3-1887-52	K3-0334-52

INFO CLIC www.southco.com/K3

Dimensions in millimeters (inch) unless otherwise stated

K4 Draw Latch
Rotary · Medium

- Lift and Turn operation
- Consistent pull-up

Material and Finish
Steel, zinc plated

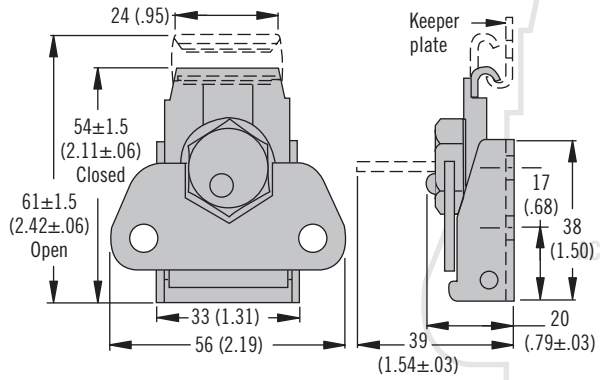
Installation Notes
Install assembly with Ø 4 (.157) rivets or M4 (No. 8) screws (not supplied)

Notes
Spring loaded:
Ideal for applications where shock and vibration occur. Compensates up to 4 (.156) for mounting hole irregularities, panel variations and gasket set.

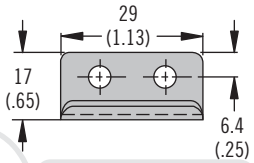
Part Number
See table

Order latch and keeper separately

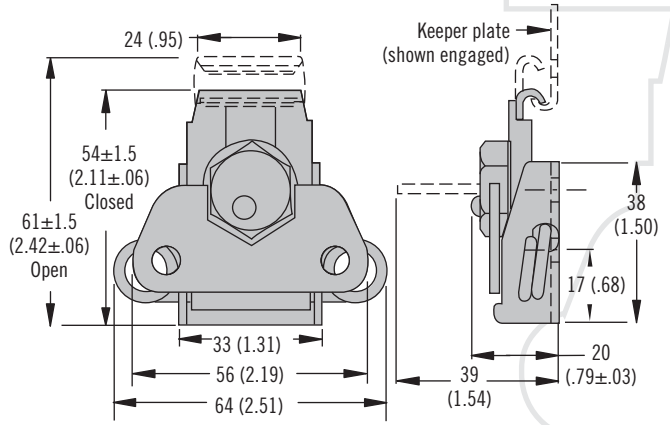
Riveted

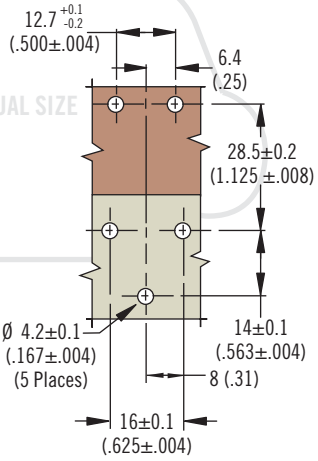


Keeper

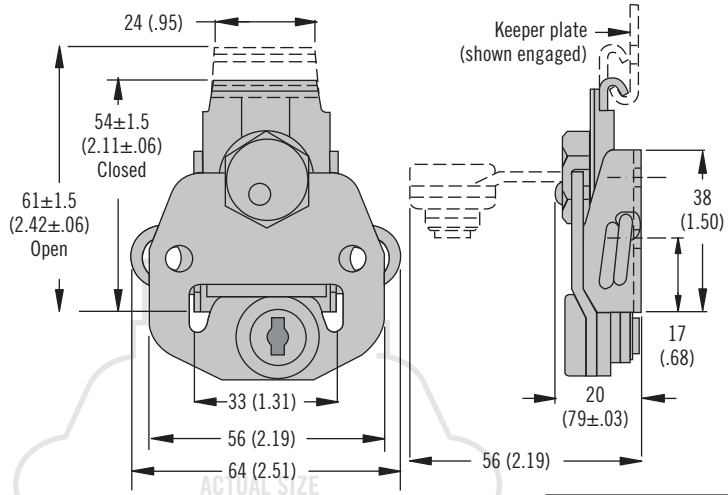


Spring Loaded





Key Lockable



Type	Part Number	
	Latch	Keeper
Riveted	K4-2714-07	K4-2338-07
Spring loaded	K4-2359-07	
Key lockable	K4-2833-07	

Dimensions in millimeters (inch) unless otherwise stated

K5 Draw Latch

Rotary · Large

- **Lift and Turn operation**
- **Consistent pull-up**

Material and Finish

Stainless steel or steel, zinc plated

Installation Notes

Install assembly with Ø 5 (3/16) rivets or M5 (No. 10) screws (not supplied)

Notes

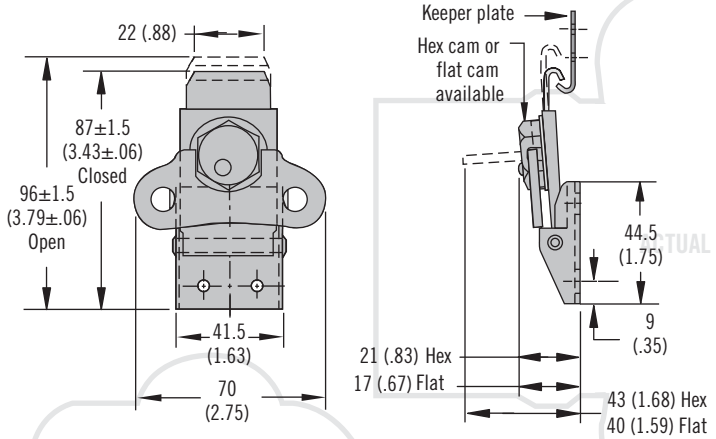
Spring loaded and low profile: Ideal for applications where shock and vibration occur. Compensates up to 4 (.16) for mounting hole irregularities, panel variations and gasket set.

Part Number

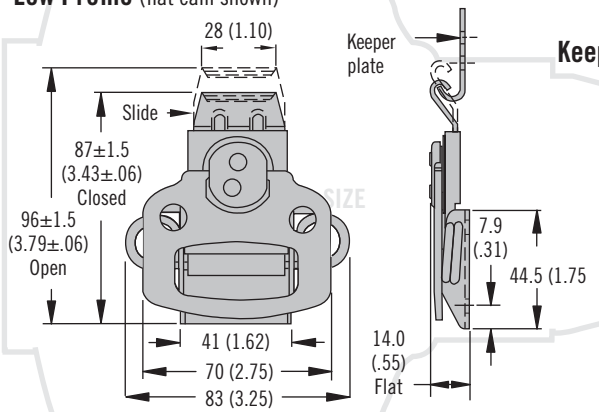
See table

Order latch and keeper separately

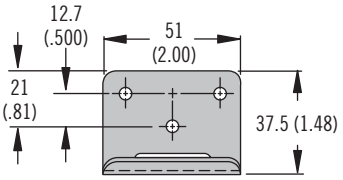
Riveted (hex cam shown)



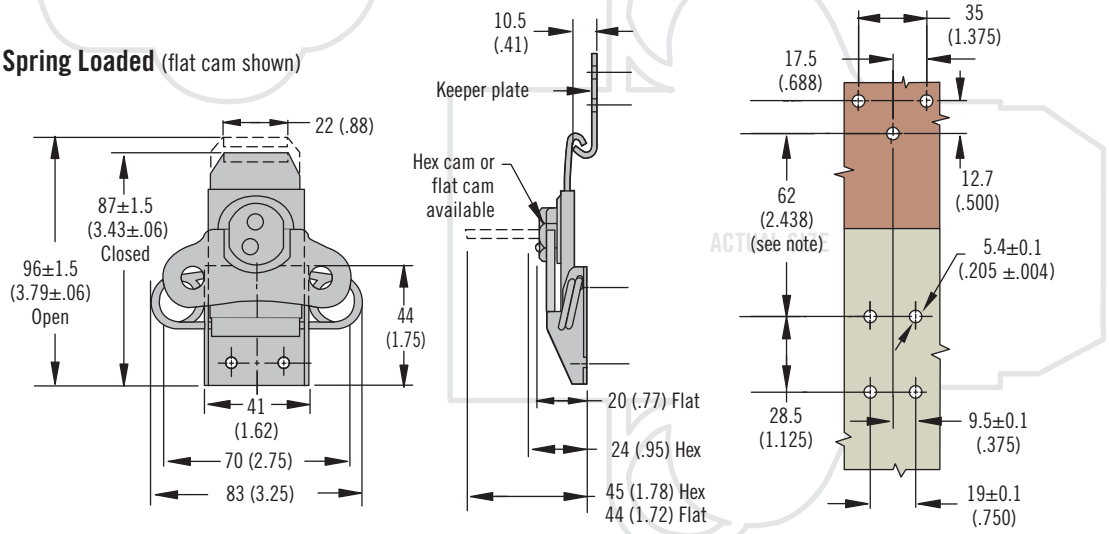
Low Profile (flat cam shown)



Keeper



Spring Loaded (flat cam shown)



Material	Part Number					
	Riveted Hex Cam	Riveted Flat Cam	Low Profile Flat Cam	Spring Loaded Hex Cam	Spring Loaded Flat Cam	Keeper
Steel	K5-2812-07	K5-2857-07	K5-2814-07	K5-2858-07	K5-2856-07	K5-2811-07
Stainless Steel	~	K5-2857-52	~	~	K5-2856-52	K5-2811-52

K5 Draw Latch
Rotary · Large

- **Lift and Turn operation**
- **Consistent pull-up**

Material and Finish
Steel, zinc plated

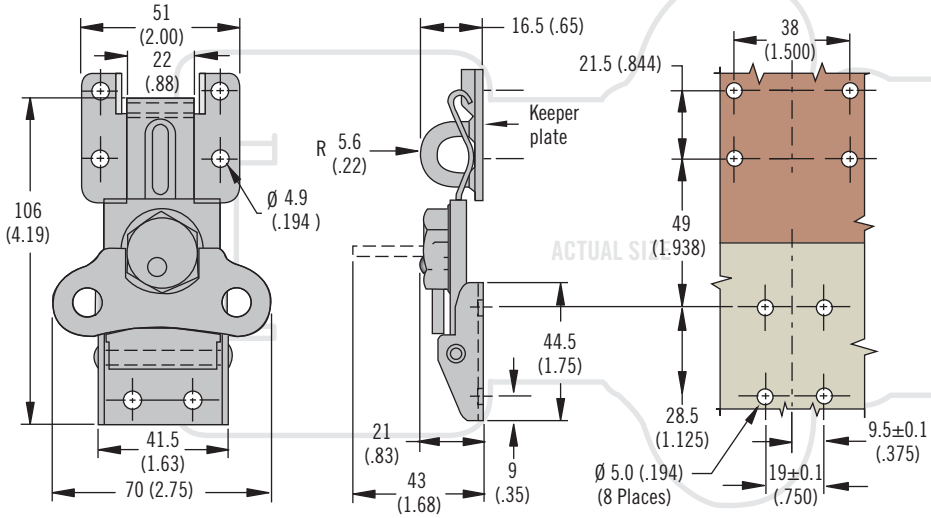
Installation Notes
Install assembly with Ø 5 (3/16) rivets or M5 (No. 10) flat head screws (not supplied)

Notes
Spring loaded:
Ideal for applications where shock and vibration occur. Compensates up to 4 (.16) for mounting hole irregularities, panel variations and gasket set.

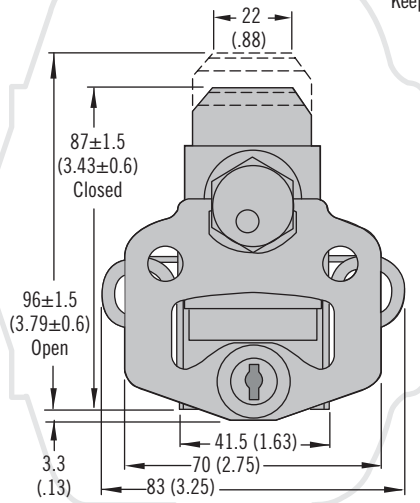
Part Number
See table

Order latch and keeper separately

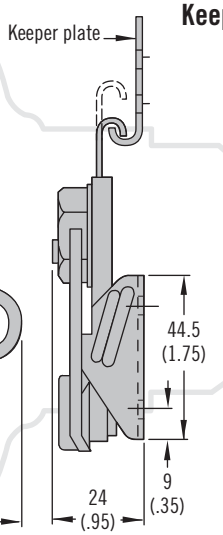
Padlockable (riveted hex cam shown)

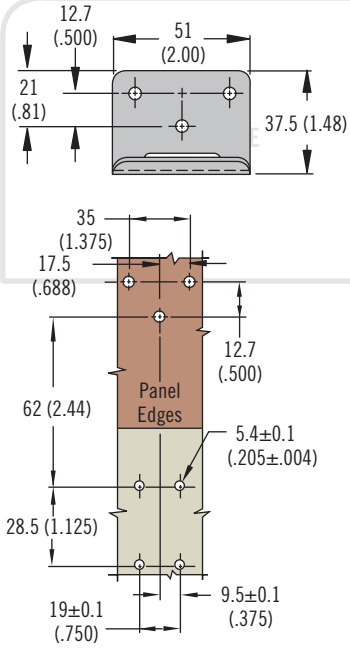


Key Lockable

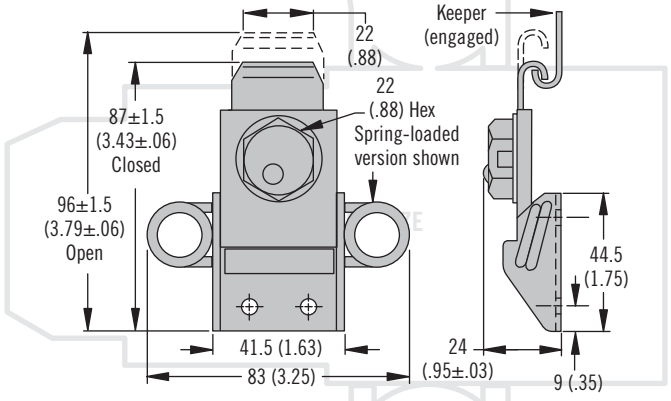


Keeper





Tool Operated (spring loaded shown)



Latch Part Number	
Padlockable Riveted Hex Cam	K5-2754-07
Padlockable Riveted Flat Cam	K5-1993-07
Padlockable Flat Cam, Spring Loaded	K5-1994-07
Key Lockable	K5-2813-07
Tool Operated, Spring Loaded	K5-2819-07
Tool Operated, Riveted	K5-2818-07
Keeper Part Number	
Keeper	K5-2811-07
Keeper, Padlockable	K5-1736-07

Dimensions in millimeters (inch) unless otherwise stated

R2 Draw Latch

Concealed · Shallow tab

- **High tensile load**
- **Adjustable pull-up**
- **Suited for thin panels**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
6200 N (1400 lbf)

Average ultimate shear load:
8900 N (2000 lbf)

Installation Notes

Install assembly with M5 (No. 10) screws (not supplied)

Accessories

Actuation tool
Part number: 29-0059-02

Hole plugs
Part number:
White: T5-7075-000
Black: T5-7075-028

Part Number

See table

Order latch and keeper separately

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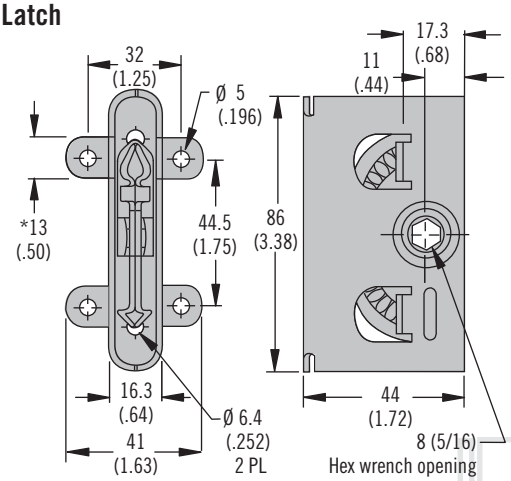
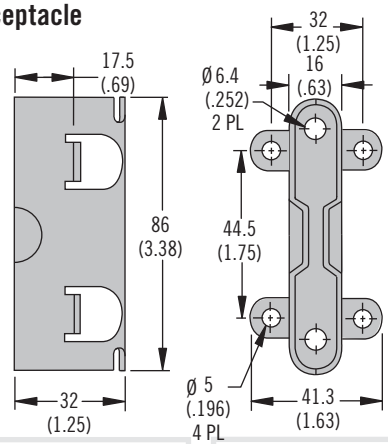
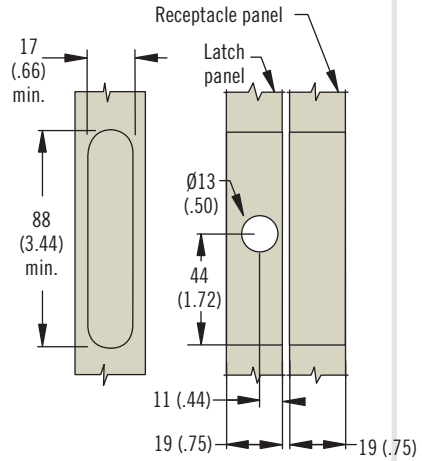
Latch

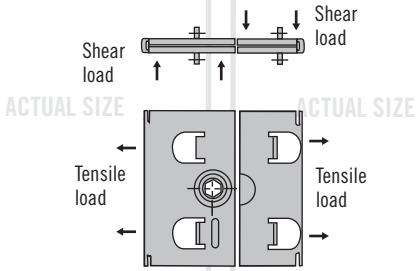


Receptacle



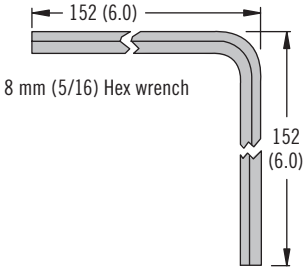
*** Typical on latch and receptacle**





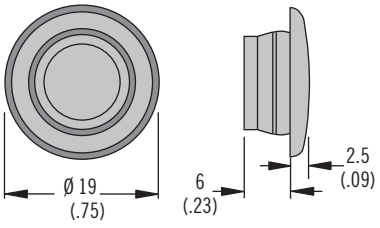
Accessories

Actuation Tool



Hole Plugs

Optional hole plugs to conceal actuator access hole are available for a 13 (.50) diameter hole



Part Number	
Latch	R2-0259-02
Receptacle	R2-0257-02

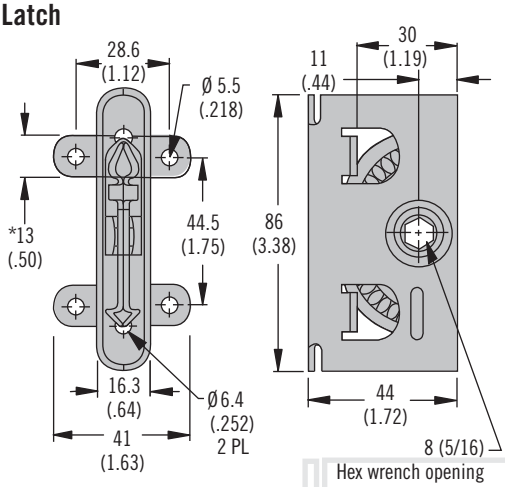
Dimensions in millimeters (inch) unless otherwise stated

R2 Draw Latch

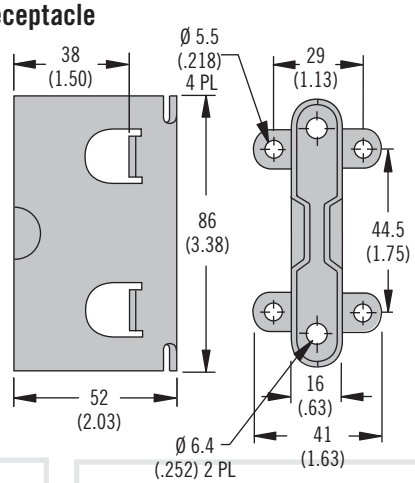
Concealed · Deep tab

- **High tensile load**
- **Adjustable pull-up**
- **Suited for thick panels**

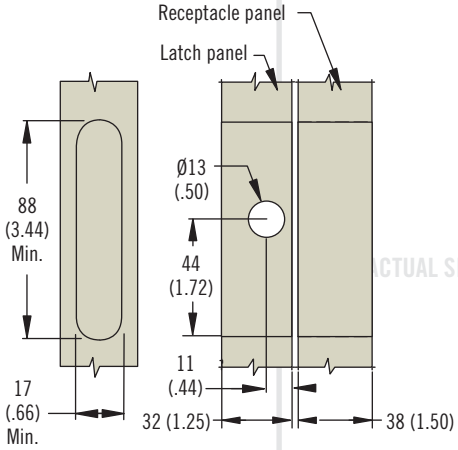
Latch

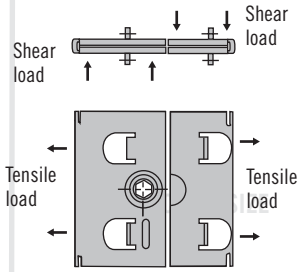


Receptacle



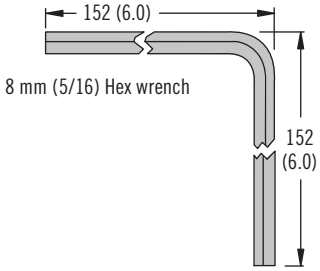
*** Typical on latch and receptacle**





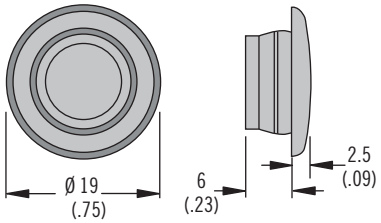
Accessories

Actuation Tool



Hole Plugs

Optional hole plugs to conceal actuator access hole are available for a 13 (.50) diameter hole



Part Number	
Latch	R2-0169-02
Receptacle	R2-0160-02

Material and Finish

Steel, zinc plated

Performance details

Average ultimate tensile load: 6200 N (1400 lbf)

Average ultimate shear load: 8900N (2000 lbf)

Installation Notes

Install assembly with Ø 5 (.205) rivets or M5 (No. 10) screws (not supplied)

Accessories

Actuation Tool
Part number: 29-0059-02

Hole Plugs
Part number:
White: T5-7075-000
Black: T5-7075-028

Part Number

See table

Order latch and keeper separately

R2 Draw Latch

Concealed · Mortise

- **High tensile load**
- **Adjustable pull-up**
- **Suited for mortise or side mount installation**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
6200 N (1400 lbf)

Average ultimate shear load:
8900 N (2000 lbf)

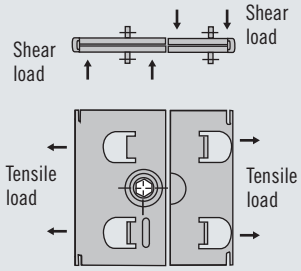
Installation Notes

Install assembly with Ø 6 (1/4) rivets or M6 (1/4) screws (not supplied).
A 1.6 (.06) gap should be maintained between latch and receptacle.

Accessories

Actuation tool
Part number: 29-0059-02

Hole plugs
Part number:
White: T5-7075-000
Black: T5-7075-028



Part Number

See table

Order latch and keeper separately

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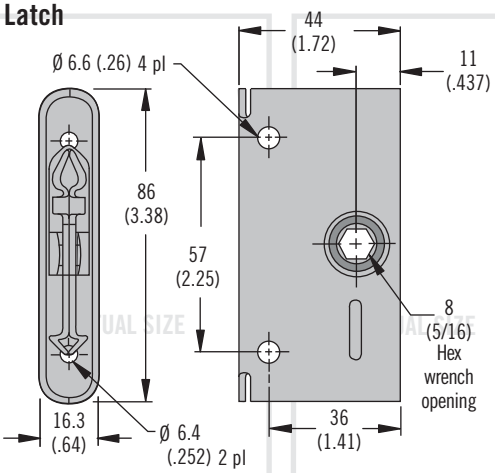
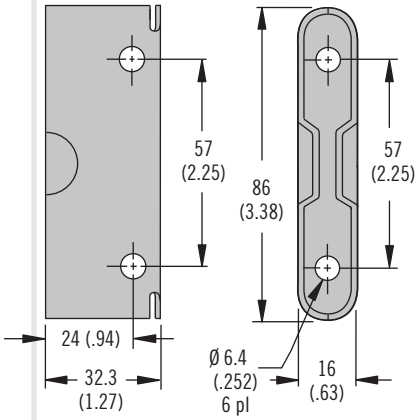
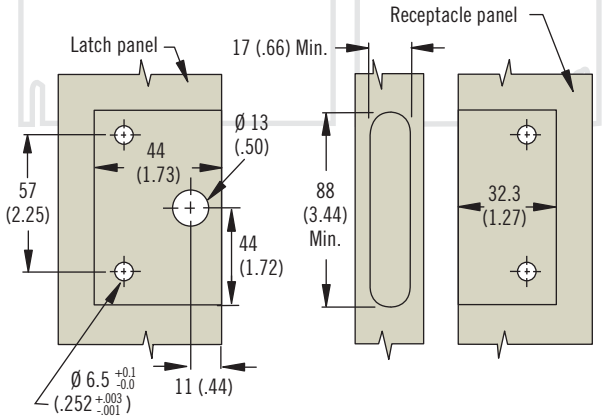
Latch



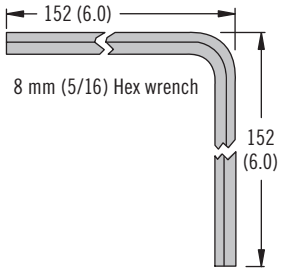
Receptacle





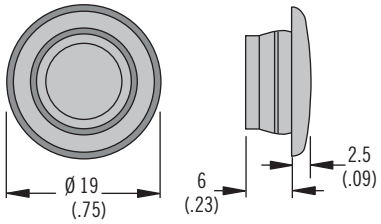
Accessories

Actuation Tool



Hole Plugs

Optional hole plugs to conceal actuator access hole are available for a 13 (.50) diameter hole



Part Number	
Latch	R2-0055-02
Receptacle	R2-0002-02

Dimensions in millimeters (inch) unless otherwise stated

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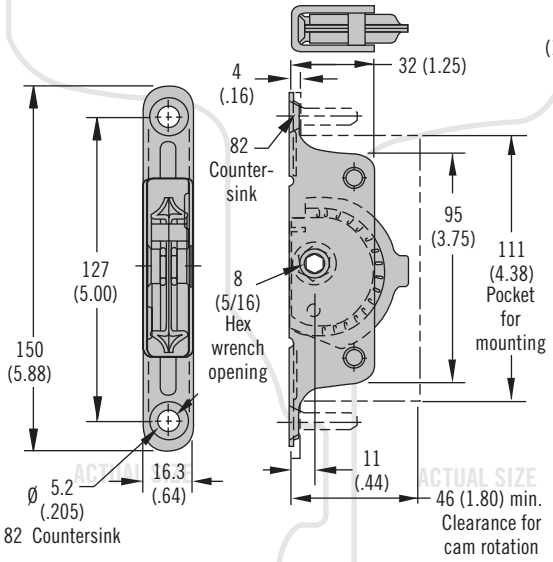
R2 Draw Latch

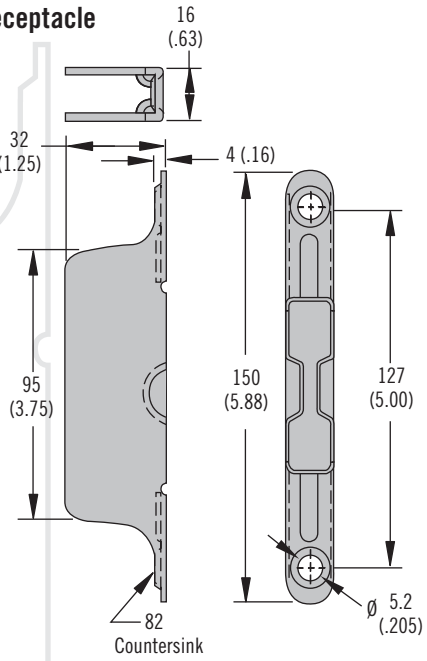
Concealed · Front mount

- **High tensile load**
- **Adjustable pull-up**
- **Front mount installation**

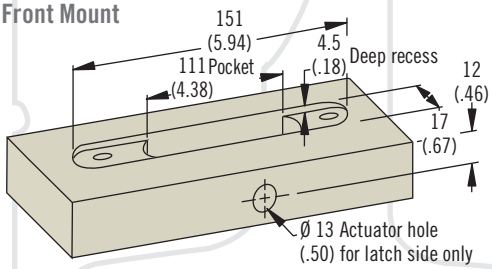
Latch



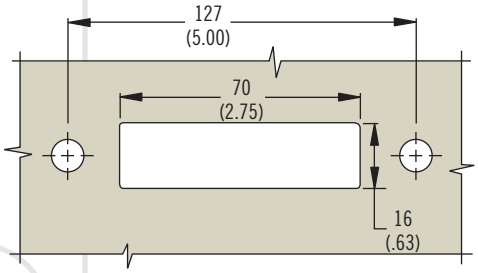
Receptacle



Front Mount

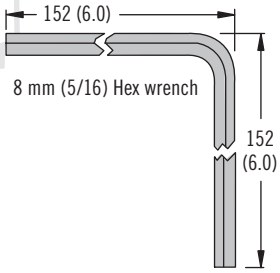


Rear Mount



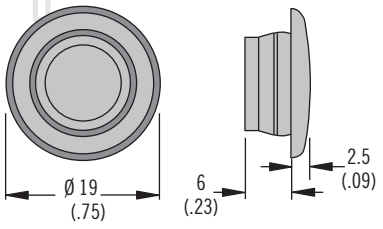
Accessories

Actuation Tool



Hole Plugs

Optional hole plugs to conceal actuator access hole are available for a 13 (.50) diameter hole



Part Number	
Latch	R2-0267-02
Receptacle	R2-0268-02

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load: 4000 N (900 lbf)

Installation Notes:

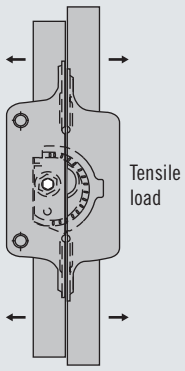
Wood application:
Install assembly with M5 (No. 10) flat head screws (not supplied).
Note: Latch strength is dependant on mounting hardware and installation material

Metal application:
Install assembly with 5 (.196) flathead rivets or M5 (No. 10) screws. Note: Max. metal panel thickness should be 2.5 (.10)

Accessories

Actuation tool
Part number: 29-0059-02

Hole plugs
Part number:
White: T5-7075-000
Black: T5-7075-028



Part Number

See table

Order latch and keeper separately

R5 Draw Latch

Concealed · Heavy-duty

- **High tensile load**
- **Consistent pull-up**
- **Concealed installation**

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
11,100 N (2500 lbf)

Average ultimate shear load:
76,920 N (17292 lbf)

Installation Notes

Install assembly with Ø 6 (1/4) rivets or M6 (1/4) screws (not supplied)

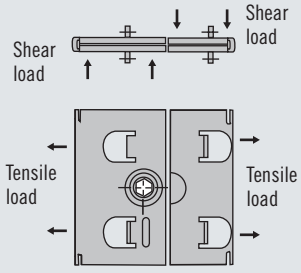
Accessories

Actuation tool
Part number: 29-0059-02

Hole plugs
Part number:
White: T5-7075-000
Black: T5-7075-028

Notes

Operating force
To open: 4 N•m (35 in•lbf)
To close: 4 N•m (35 in•lbf)

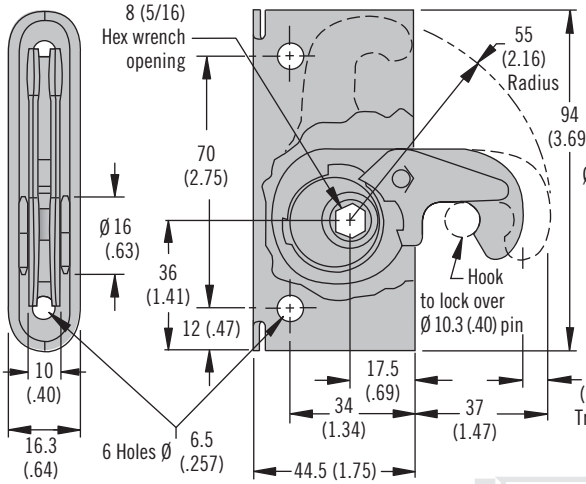


Part Number

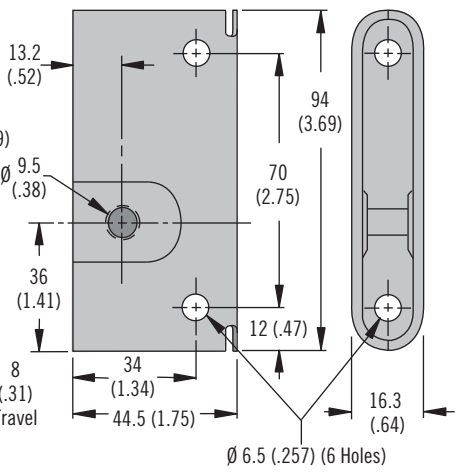
See table

Order latch and keeper separately

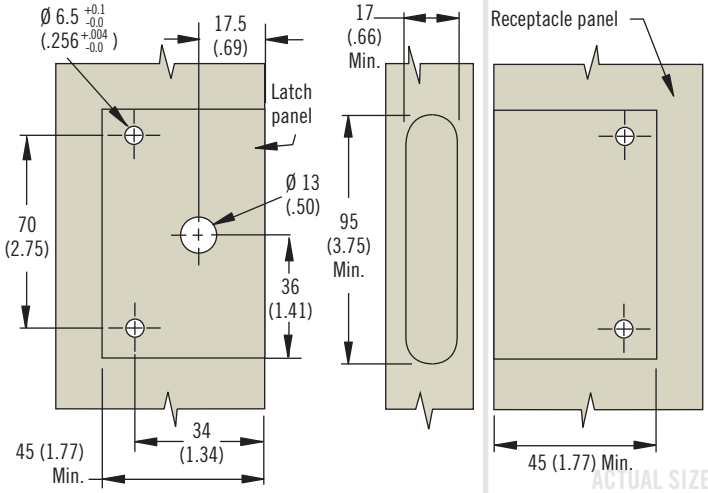
Latch



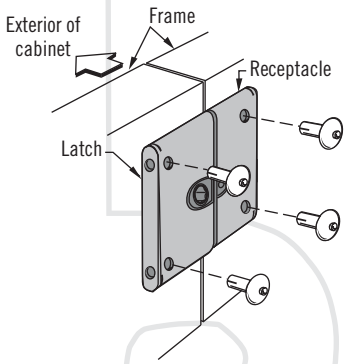
Receptacle



Recessed Pocket



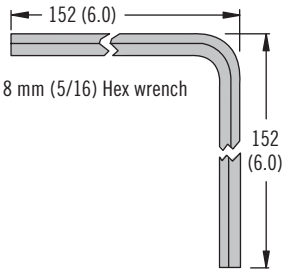
Side Mount



ACTUAL SIZE

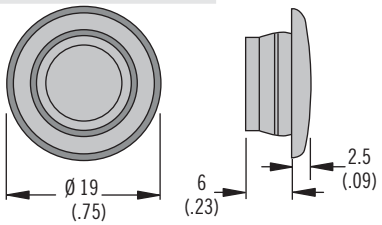
Accessories

Actuation Tool



Hole Plugs

Optional hole plugs to conceal actuator access hole are available for a 13 (.50) diameter hole



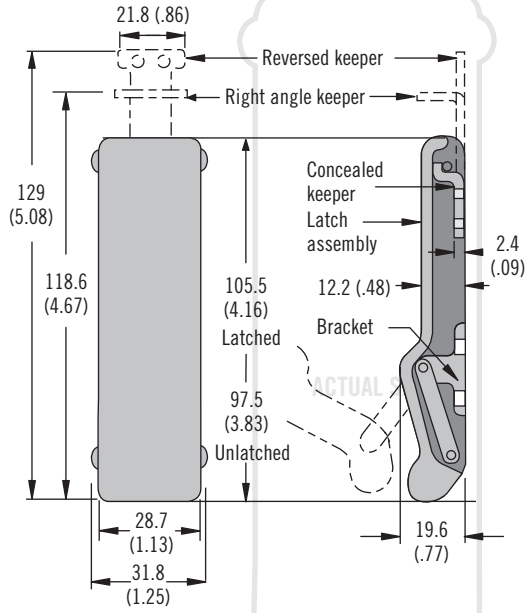
Part Number	
Latch	**Receptacle**
R5-0074-07	R5-0079-07

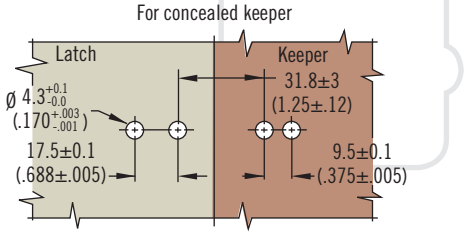
Dimensions in millimeters (inch) unless otherwise stated

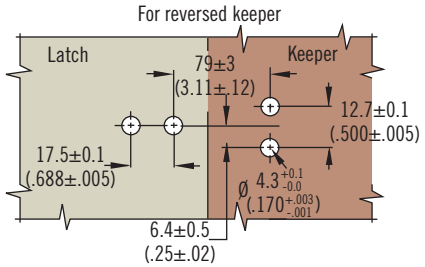
C7 Draw Latch

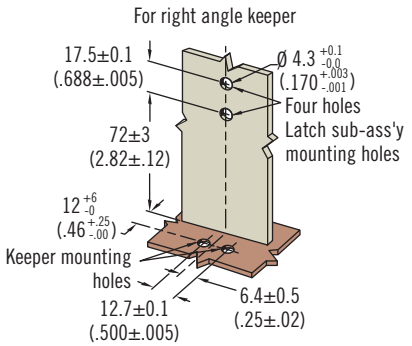
Flexible · Over-center

Small

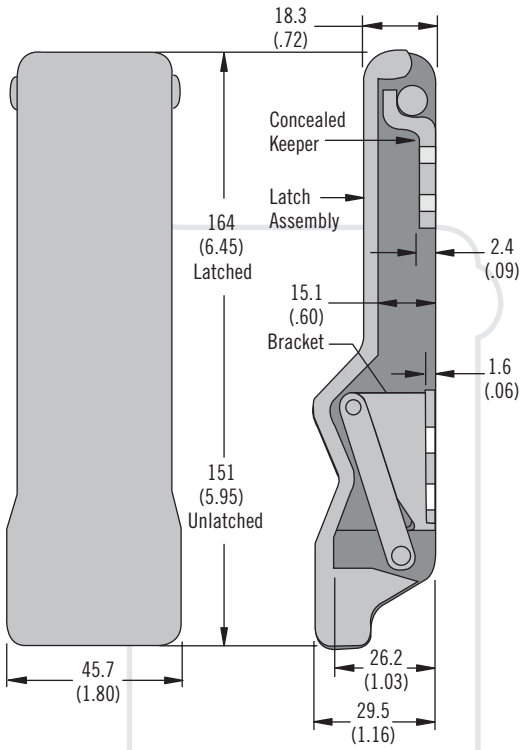


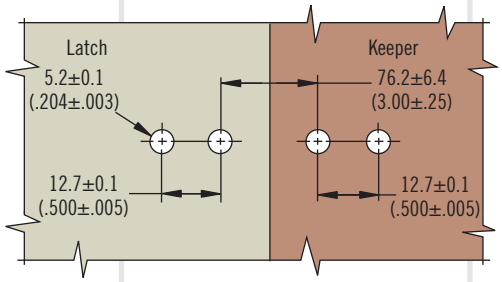


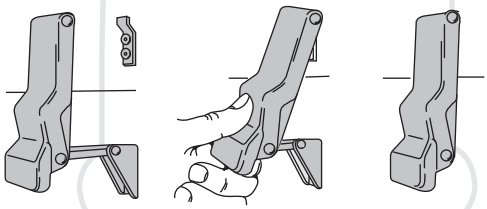




Large







Size	Keeper Style	Assembly Part Number
Small	Concealed	C7-10
	Reverse Keeper	C7-11
	Right Angle Keeper	C7-12
Large	Concealed	C7-20

- **Low profile design**
- **Non-corrosive materials**
- **Cushions impact and accommodates misalignment**

Material and Finish

Latch:
Thermoplastic elastomer black
Link and bushings:
Glass reinforced nylon
Keeper and bracket: Stainless steel

Performance Details

Small:
Clamping force: 49 N (11 lbf)

Large:
Clamping force: 176 N (40 lbf)

Flammability rating: UL94-HB

Installation Notes

Small:
Install assembly with four Ø 4 (.170) rivets or M4 (No. 8) screws (not supplied)

Large:
Install assembly with four Ø5 (.204) rivets or M5 (No. 10) screws (not supplied)

Part Number

See table

Assembly complete with keeper

Dimensions in millimeters (inch) unless otherwise stated

37 Draw Latch

Flexible · Over-center · Lever assist

- **Flexible heavy-duty**
- **Detent feature**
- **Absorbs and reduces vibration**

Material and Finish

EPDM rubber and glass-filled nylon black with stainless steel pins

Performance Details

Clamping force:
Heavy-duty: 350 N (79 lbf)

Small: 110 N (25 lbf)

Large: 190 N (43 lbf)

Operating temperature range:
-40°C (-40°F) to 80°C (175°F)

Flammability rating: UL94-HB

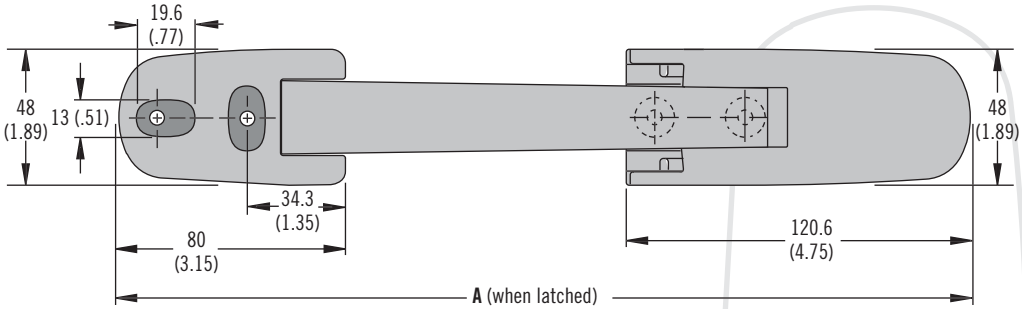
Installation Notes

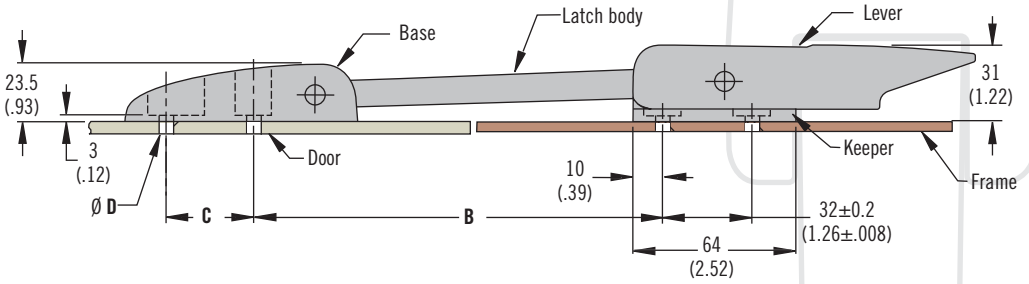
Heavy-duty:
Install assembly with Ø 6 (.250) rivets or M6 (1/4) screws (not supplied)

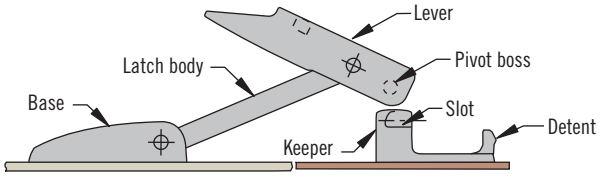
Small and Large:
Install assembly with Ø 5 (3/16) rivets or M5 (No 10) screws (not supplied)

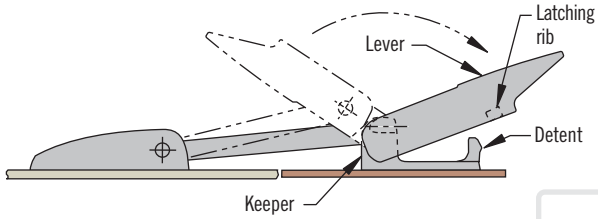
Notes

5 (.20) Max. non co-planar offset









Part Number

See table

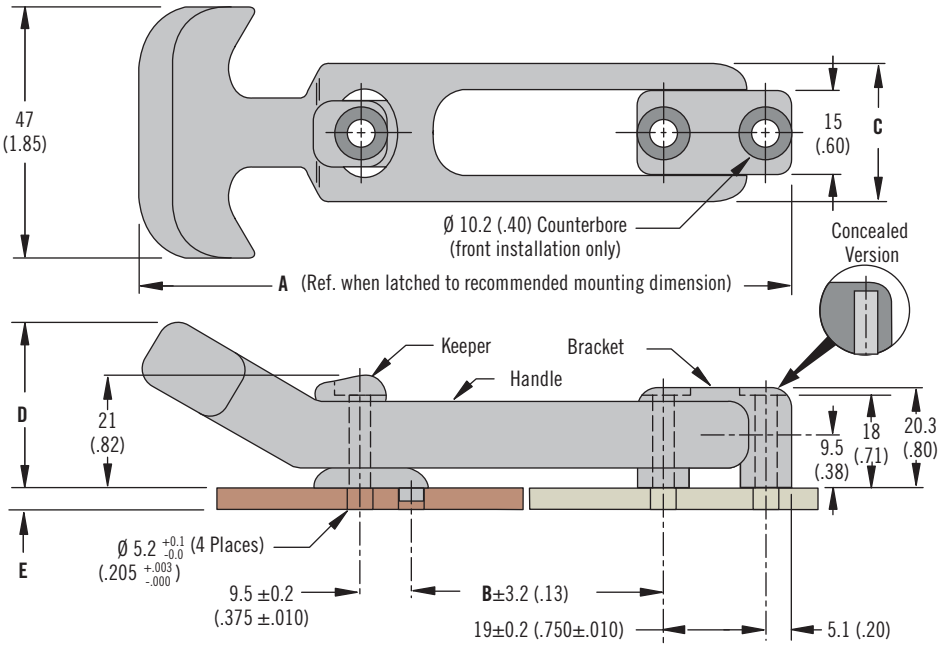
Assembly complete with keeper

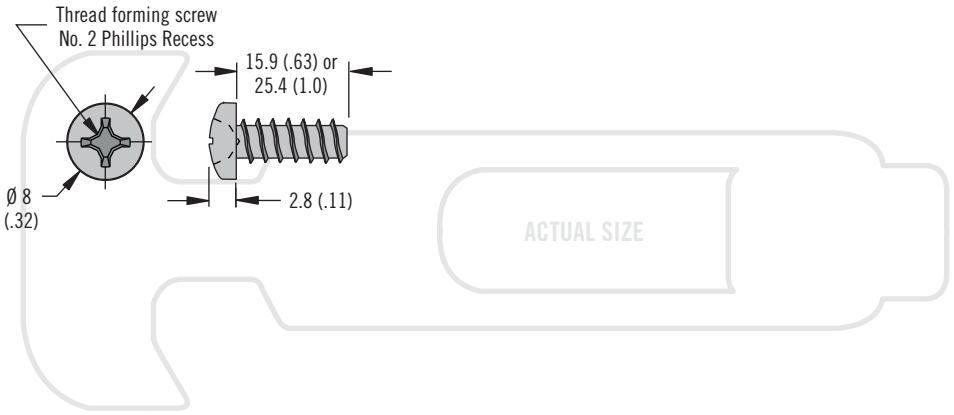
Part Number	Dimensions			
	A	B	C±0.2 (.008)	D±0.1 (.004)
37-30-294-60	254 (10)	97±3 (3.82±.12)	25.4 (1.00)	5.5 (.217)
37-30-297-60	379 (15)	222±6 (8.74±.24)		
Heavy-Duty				
37-40-295-60	300 (12)	144±4 (5.67±.16)	32 (1.25)	6.6 (.260)

A
ACTUAL SIZE

F7 Draw Latch

Flexible · Pull type





- **Flexible one piece molded latch**
- **UV resistant**
- **Absorbs and reduces vibration**

Material and Finish

Thermoplastic elastomer and glass-filled nylon, black
Screw: Stainless steel, passivated

Performance Details

Clamping force
Small: 58 N (13 lbf)
Medium: 84 N (19 lbf)
Large: 98 N (22 lbf)
Flammability rating: UL94-HB

Installation Notes

Concealed:
Install assembly with thread forming screws (order separately).
Max. tightening torque
2.0 N•m (18 in•lbf)

Front installation:
Install assembly with M5 (No. 10) screw or Ø 5 (3/16) rivet (not supplied)

Part Number				Installation Method	Dimensions				
Size	Latch	Keeper	Screws (3 per bag)		E	A	B	C	D
Small	F7-530	F7-537	~	Front	~	112 (4.81)	41 (1.6)	25.4 (1.00)	31 (1.23)
	F7-540	F7-547	F7-548-3	Concealed (thread forming)	up to 8.0 (.32)				
			F7-558-3	Concealed (thread forming)	8.1 - 17.5 (.32 - .69)				
Medium	F7-630	F7-537	~	Front	~	167 (6.6)	72 (2.83)	32 (1.25)	29 (1.13)
	F7-640	F7-547	F7-548-3	Concealed (thread forming)	up to 8.0 (.32)				
			F7-558-3	Concealed (thread forming)	8.1 - 17.5 (.32 - .69)				
Large	F7-730	F7-537	~	Front	~	221 (8.7)	117 (4.6)	32 (1.25)	29 (1.13)
	F7-740	F7-547	F7-548-3	Concealed (thread forming)	up to 8.0 (.32)				
			F7-558-3	Concealed (thread forming)	8.1 - 17.5 (.32 - .69)				

Part Number

See table
Order latch, keeper and screws (if required) separately

37 Draw Latch

Flexible · Pull type · Tab handle

- **Flexible one piece molded latch**

Material and Finish

Small:
EPDM rubber and stainless steel
Medium:
EPDM rubber and steel, zinc plated

Performance Details

Small:
Average clamping force:
20.9 N (4.7 lbf)

Medium:
Average clamping force:
26.2 N (5.9 lbf)

Operating temperature range:
-20°C (0°F) to 95°C (200°F)

Installation Notes

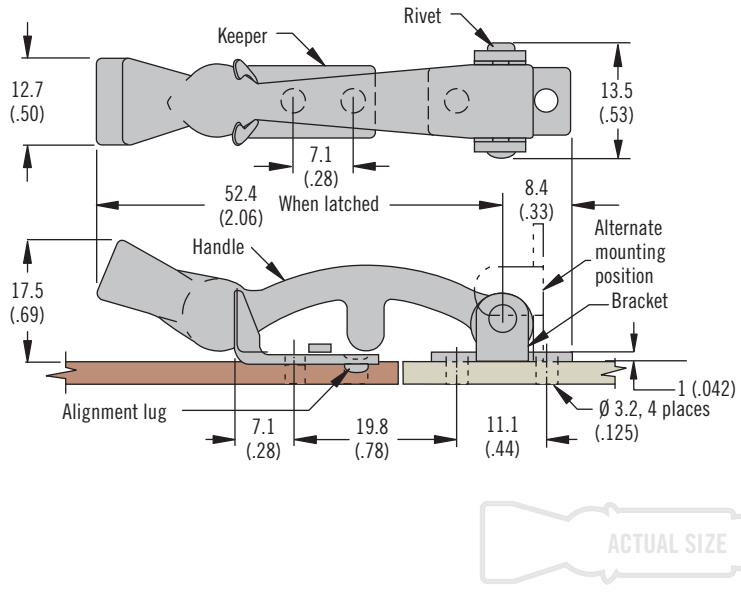
Install assembly with four Ø 3 (.125) rivets or M3 (No. 4) screws (not supplied)

Part Number

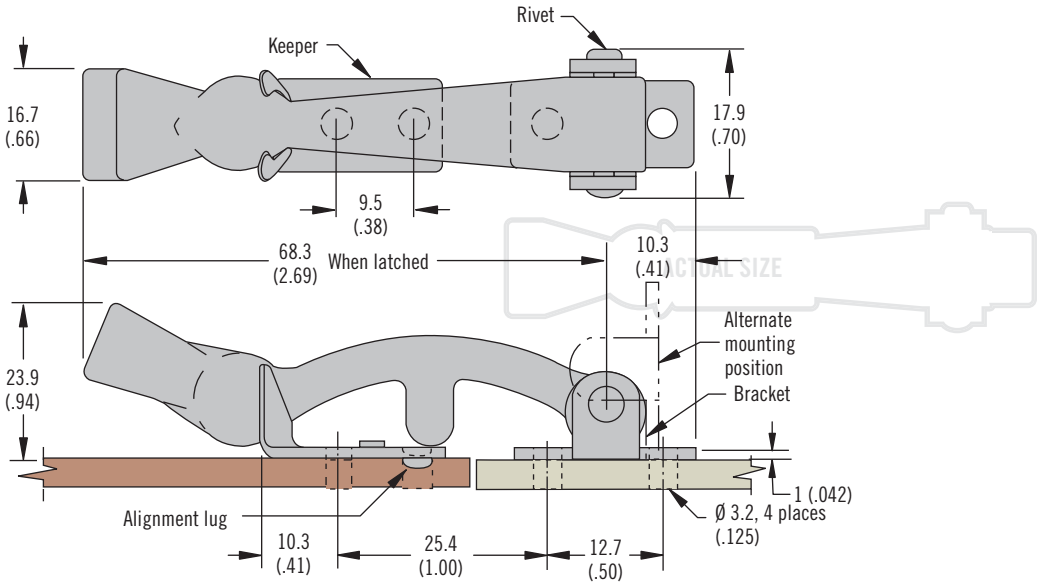
See table

Assembly complete with keeper

Small



Medium



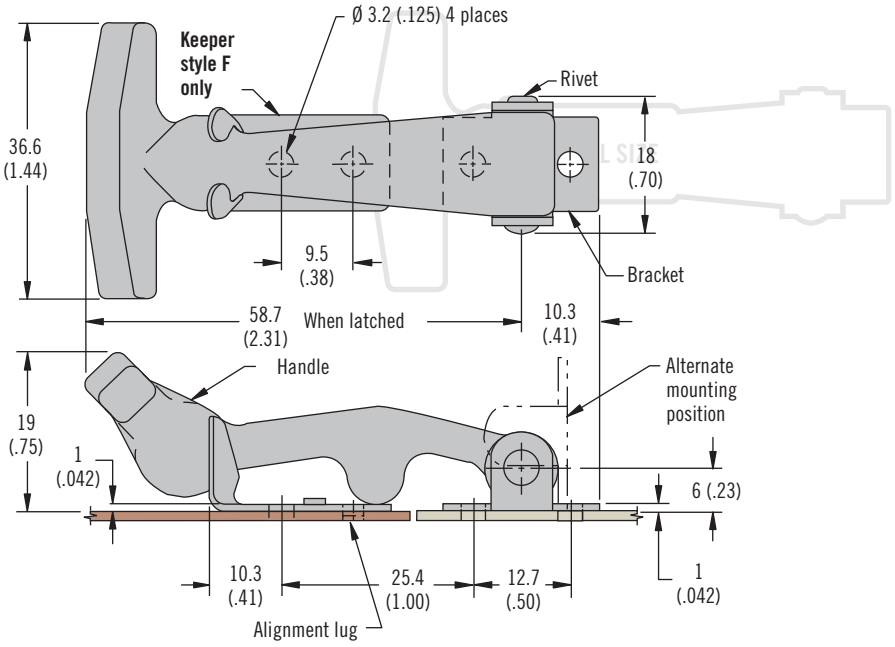
Part Number		
Series	**Steel**	**Stainless Steel**
Small	~	37-10-051-20
Medium	37-10-061-10	~

Dimensions in millimeters (inch) unless otherwise stated

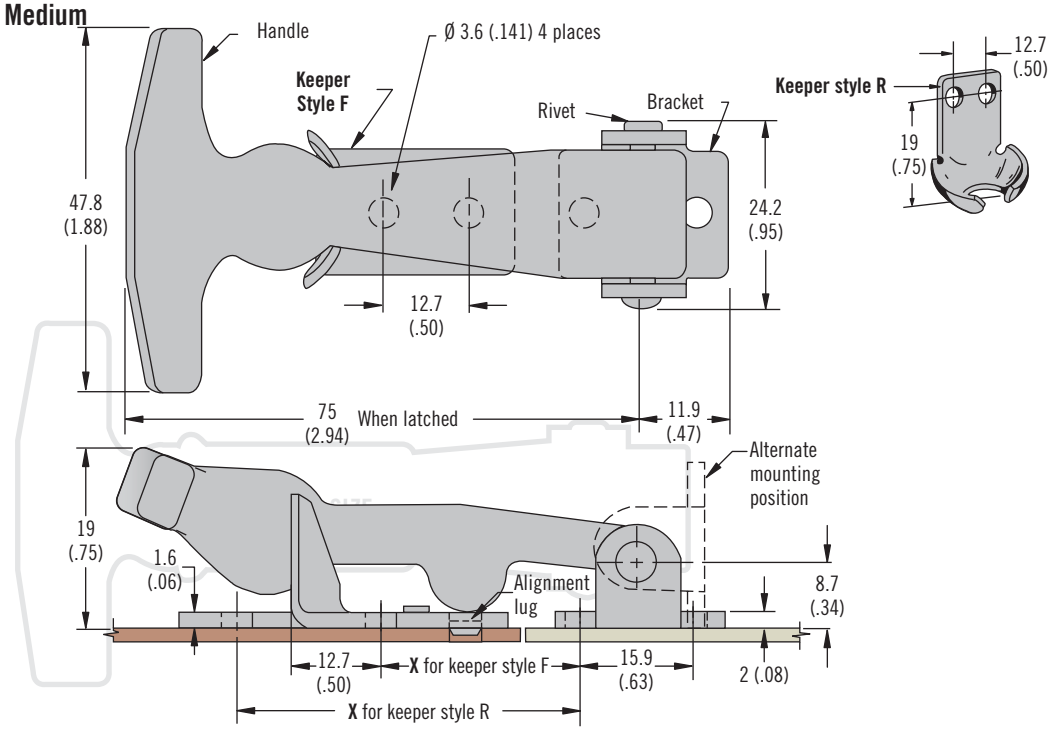
37 Draw Latch

Flexible · Pull type · T-handle

Small



Medium



Small Size Part Number	
Steel	Stainless Steel
37-10-065-10	37-10-065-20

Medium Size Part Number				
Keeper Style	X	Latch Shipped Assembled		Latch Shipped Unassembled
		Steel	Stainless Steel	Steel
F	31.8 (1.25)	37-10-071-10	37-10-071-20	37-10-072-10
R	56.4 (2.22)	37-20-071-10	37-20-071-20	37-20-072-10

- **Flexible one piece molded latch**

Material and Finish

EPDM rubber and stainless steel or steel, zinc plated

Performance Details:

Average clamping force:
Small: 26 N (6 lbf)

Medium: 39 N (8.7 lbf)

Operating temperature range:
-20°C (0°F) to 95°C (200°F)

Installation Notes

Small:
Install assembly with four Ø 3 (.125) rivets or M3 (No. 4) screws (not supplied)

Medium:
Install assembly with four Ø 3.6 (.141) flat head rivets or M3.5 (No. 5) screws (not supplied)

Part Number

See table

Assembly complete with keeper

Dimensions in millimeters (inch) unless otherwise stated

37 Draw Latch

Flexible · Pull type · T-handle

- **Flexible one piece molded latch**

Material and Finish

EPDM rubber and stainless steel

Performance Details

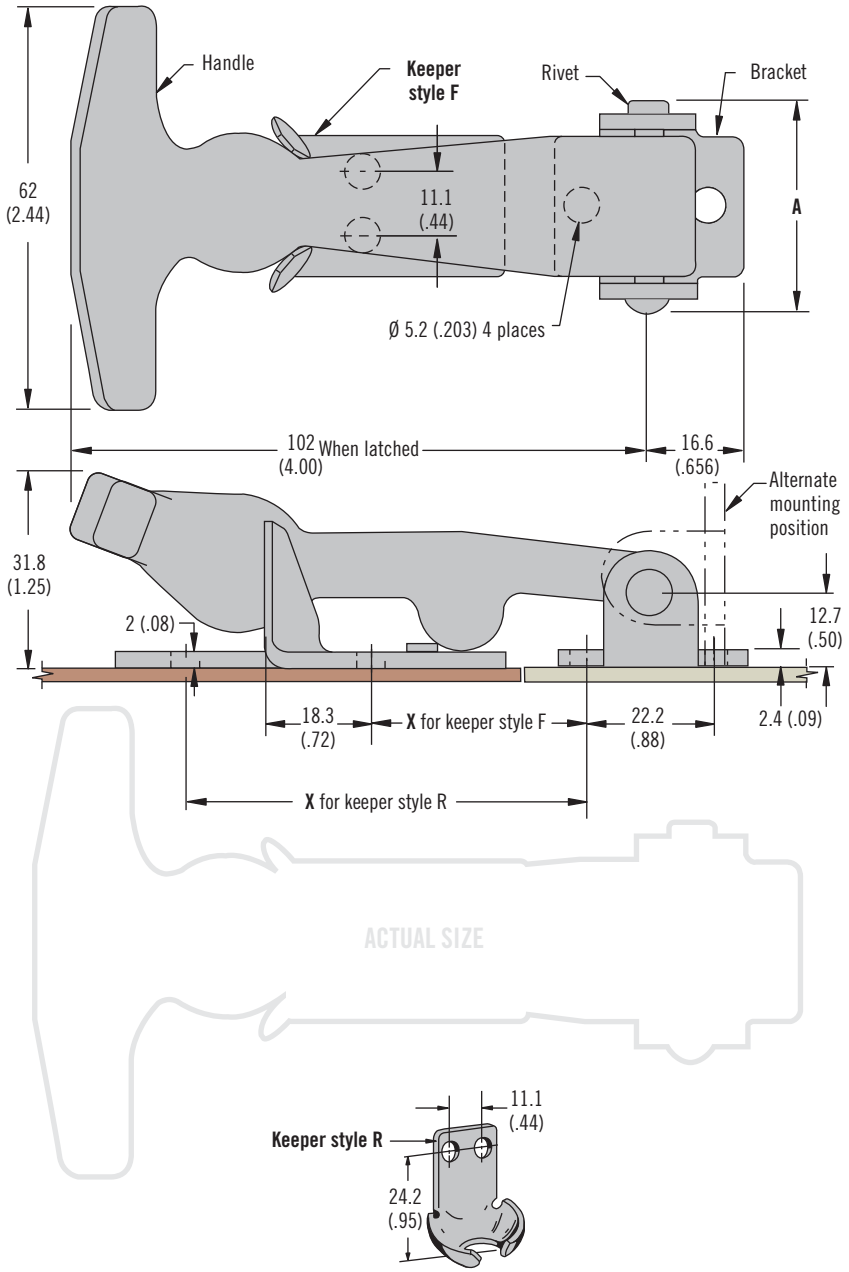
Average clamping force:
49 N (11 lbf)

Operating temperature range:
-20°C (0°F) to 95°C (200°F)

Installation Notes

Install assembly with four Ø 5(.188) rivets or M5 (No. 10) screws (not supplied)

Large



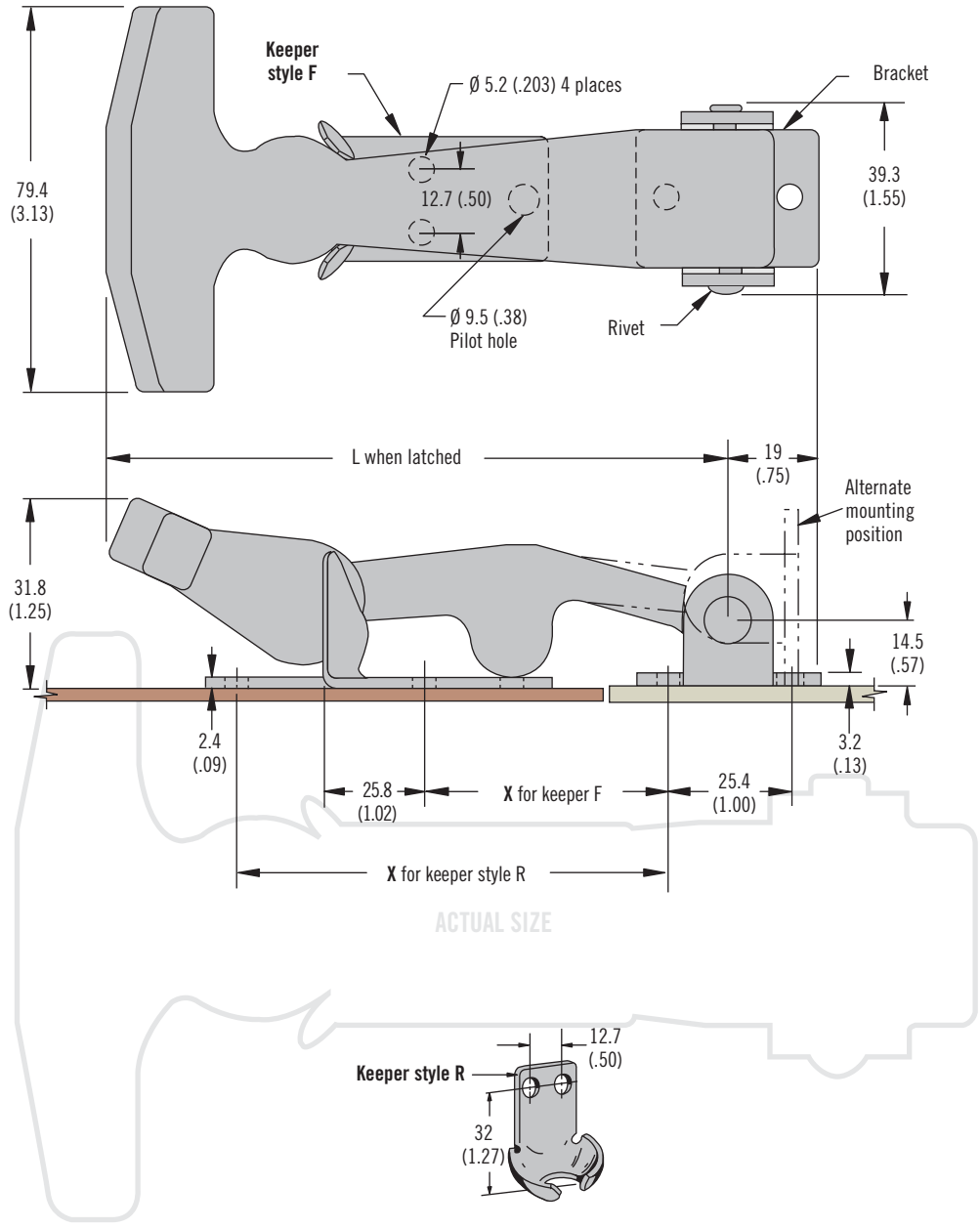
Part Number

See table

Assembly complete with keeper

Part Number						
Keeper Style	X	Latch shipped assembled			Latch shipped unassembled	
		A	Steel	Stainless Steel	A	Steel
F	38.1 (1.50)	31.8 (1.25)	37-10-086-10	37-10-086-20	34 (1.34)	37-10-087-10
R	73 (2.88)		37-20-086-10	37-20-086-20		37-20-087-10

Extra Large



- **Flexible one piece molded latch**

Material and Finish

EPDM rubber and stainless steel or steel, zinc plated

Performance Details

Average clamping force: 84 N (19 lbf)

Operating temperature range: -20°C (0°F) to 95°C (200°F)

Installation Notes

Install assembly with four Ø 5 (.188) rivets or M5 (No. 10) screws (not supplied)

Part Number						
Series	Keeper Style	L	X	Latch Shipped Assembled		Latch Shipped Unassembled
				Steel	Stainless Steel	Steel
100	F	130.2 (5.13)	50.8 (2.00)	37-10-101-10	37-10-101-20	37-10-102-10
	R		90.5 (3.56)	37-20-101-10	37-20-101-20	37-20-102-10
130	F	247.7 (9.75)	165.1 (6.50)	37-10-131-10	37-10-131-20	~
	R		204.8 (8.06)	37-20-131-10	37-20-131-20	~

Part Number

See table

Assembly complete with keeper

MULTI-POINT LATCHES

Multi-Point Systems

Pages 246 - 261

Multi-point latching systems provide a convenient solution for large door spans with a single user touch point operating multiple latch points.

Multiple points of engagement provide extra security and strength by eliminating pry points, door flexing and rattle.

Available in multiple styles for gasket sealed applications.

M3

CR

F2

H3

Rod Systems

Pages 262 - 265

Multi-point rod systems provide a simple, economical add-on for many *SOUTHCO®* single point latches.

Rod systems can be included in your original cabinet design or retrofit as needed. Additional latching points provide extra security and strength by eliminating pry points, flexing and rattle.

Available in multiple styles for gasket sealed applications.

A5

NEW H3 Electronic Swinghandle System

Pages 30 - 31

The H3 electronic locking swinghandle provides the functionality of a manual latching system with the added benefit of electronic locking for access control. For more information see pages 30 - 31 in the Electronic Access section.

- Remote lock and unlock
- Single or multi-point
- Low power, gear motor driven mechanism
- Momentary or continuous lock actuation
- High security DIN lock manual override
- Directly integrates with industry standard rack monitoring and access control systems
- Fits industry standard panel preparations
- Integrated sensors detect lock and latch status for network control, monitoring and alarm functions
- Accommodates both left and right doors

Multi-Point Systems

Multi-point latching systems provide a convenient solution for large door spans, with a single user touch point operating multiple latching points. Providing multiple points of engagement alleviates door flexing and rattling, and eliminates pry points on doors with longer spans. Over-center mechanisms provide the ultimate in consistent compression along the entire edge of the enclosure door. Available with a choice of stylish actuators and security options to suit all your application requirements.

M3 Adjustable Compression

Designed for NEMA/IP rated enclosures

Multiple security options

Each latch fully adjustable for perfect door trim

CR Compression Swinghandle

Designed for NEMA/IP rated enclosures

Multiple security options

Designed with center point compression and heavy-duty adjustable rod roller system

F2 Lift Handle

Designed for indoor enclosures and installed outside the sealed area

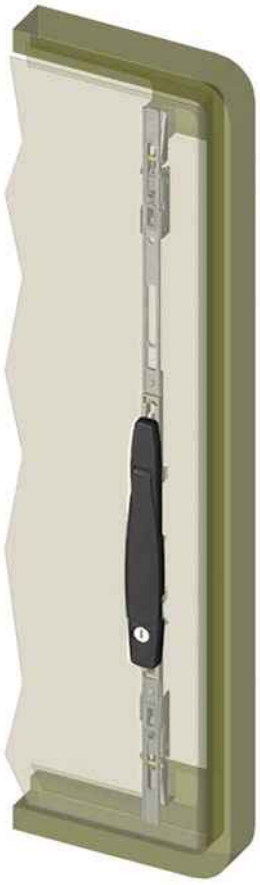
H3 Swinghandle

Designed for NEMA/IP rated enclosures

Multiple actuator styles

Suitable for A5 modular rod system

Linear actuator assembly for limited space application



SOUTHCO® **rod systems are a simple add-on option for many single-point latches to provide multi-point latching for added strength and security, eliminating pry points, flexing and rattle. Available with a variety of stylish actuators and security options to suit all your enclosure requirements.**

In this handbook, where a latch product page displays the multi-point icon, it indicates that you can add a rod system of your choice.

A rod system will require the center latching device to be ordered separately and the rod system components to be ordered from the same family.

COMPATIBLE PRODUCT CLASS FAMILIES									
EAS	COMPRESSION			CAM					
H3 - EM	E3 Large	62	M1	E5	H3	92	68	01	24

A5 Modular Rod System
Adjustable rod system (shown with H3 swing handle latch)

Multi-Point Latches

Selection guide

Use this selection guide to help make the right choice of multi-point system for your application

- Key-Locking Available
- NEMA / IP Rated
- Multi-Point Latching
- Padlockable
- Stainless Steel
- Vibration Resistant

COMPLETE SYSTEMS				MATERIAL		
	Actuator	Latch	Product Class	Die-Cast and Steel, Zinc Plated	Die-Cast and Stainless Steel	Plastic and Steel, Zinc Plated
MULTI-POINT LATCHING SYSTEM PAGES 246 - 261			M3	✔		
			CR		✔	
			F2			✔
			H3	✔		

ROD SYSTEMS			MATERIAL			PERFORMANCE
		Product Class	Die-Cast Actuator with Plated Steel Rod	Zinc Plated Steel actuator with Aluminium Rod	Die-Cast Actuator with Aluminum Rod	Rod Roller Assembly Pull-Up
ROD SYSTEMS PAGES 262 - 265		A5	✔		✔	4.5 (.18)
		A5 - A8 Contact Southco		✔		3 (.12)
		H3 Linear Actuator	✔			4.5 (.18)

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Dimensions in millimeters (inch) unless otherwise stated

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PERFORMANCE				ACCESS STYLE				INSTALLATION	
Working Load	NEMA / IP Rated	Compression	Grip Range	Key-Locking	Tool Secured	Padlockable	Electronic Access	Concealed	Flush/ Low Profile
890 N (200 lbf)	✔	5 (.197)	3.5 - 20 (.14 - .79)	✔	✔	✔		✔	✔
250 N (56 lbf)	✔	5 (.197)	5 - 124 (.197 - 4.88)	✔	✔	✔			✔
500 N (112 lbf)		12 (.47)	15 - 25 (.59 - .98)	✔					✔
250 N (56 lbf)	✔		10.3 - 50.9 (.41 - 2)	✔	✔	✔	✔		✔

COMPATIBLE PRODUCT CLASS FAMILIES									
EAS PAGES 30 - 31	COMPRESSION PAGES 34 - 79			CAM PAGES 80 - 113					
H3 - EM	E3 Large	62	M1	E5	H3	92	68	01	24
		✔		✔	✔	✔			
	✔	✔	✔	✔		✔	✔	✔	✔
✔					✔				

Dimensions in millimeters (inch) unless otherwise stated

M3 Compression System

Remote compression latch

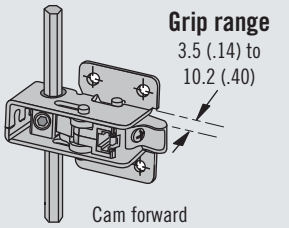
- **Consistent compression driven by rotational rod**
- **Adjustable grip**
- **Meets NEMA 4 / IP66 and EMI standards**
- **Can be driven by hand, tool or key-locking actuators**

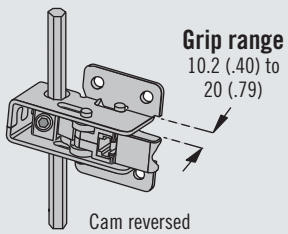
Material and Finish

Zinc alloy and steel, zinc plated

Performance Details

Max. static load:
890 N (200 lbf) per latch
Average ultimate load:
1335 N (300 lbf)





Notes

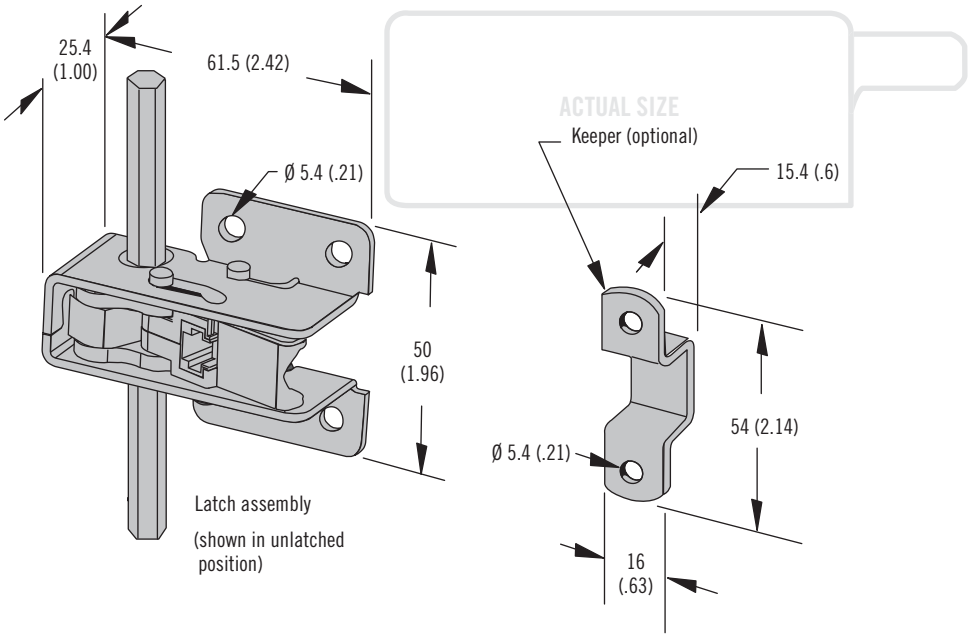
Do not exceed 20 (.79) grip range with cam reversed

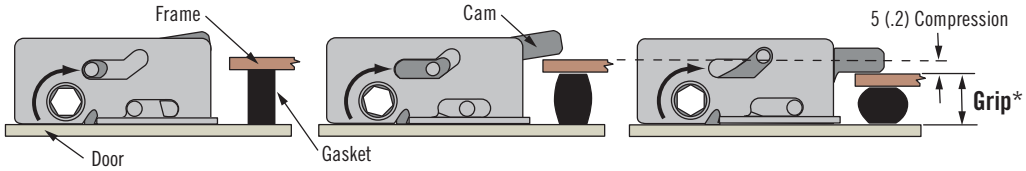
Part Number

Remote compression latch and optional keeper only see table

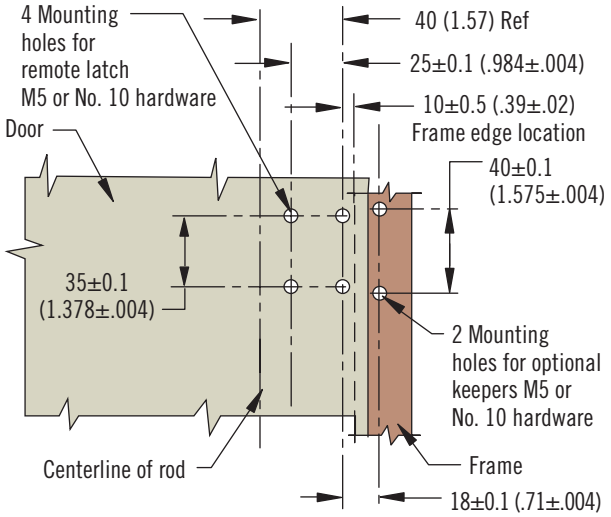
The complete system consists of:
Remote compression latch and / or optional keeper (see page 246)
Actuator (see pages 247 - 250)
Rods (see page 251)

Order each component separately

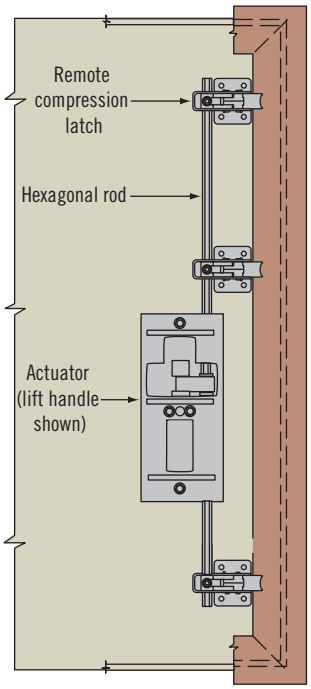




* Measure your **Grip** from the latch mounting surface to the inside frame surface, with gasket compressed



Inside view



Part Number	
Remote compression latch	M3-50
Keeper (optional) use for grip ranges 15 - 30 (.59 - 1.18)	M3-51

Dimensions in millimeters (inch) unless otherwise stated

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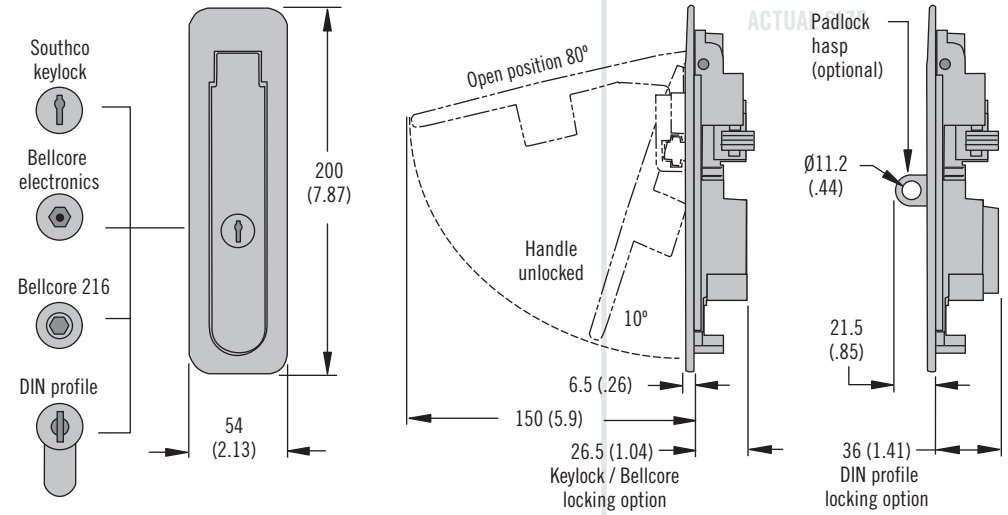
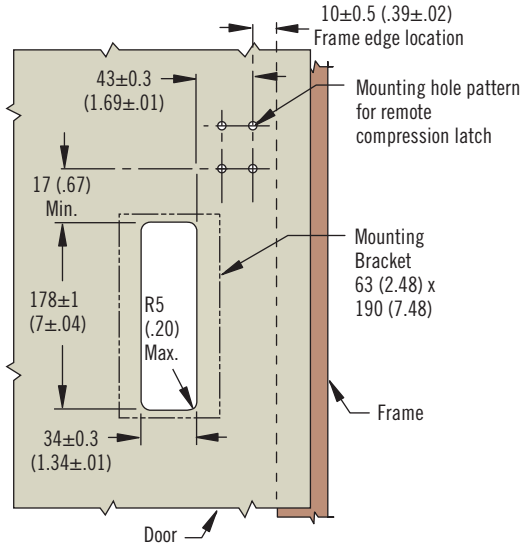
Lift Handle

Locking options





- **Suitable for left and right side latching**
- **Meets NEMA 4/ IP66, GR487 and EMI standards**
- **Ejecting handle**

Material and Finish

Zinc alloy black powder coated and steel, zinc plated

Sealing Notes

NEMA 4 / IP66 achieved using gasket supplied

Part Number Selection

Actuator only

The complete system consists of:
Remote compression latch and / or optional keeper (see page 246)
Actuator (see pages 247 - 250)
Rods (see page 251)

Order each component separately

P **Padlock option**
- **0** Non padlock
- **1** Padlockable

D **Door thickness range**
- **10** 1.5 - 3 (.06 - .12)
- **11** 3 - 4.5 (.12 - .18)
- **25** 24 - 25.5 (.94 - 1.0)

M3 - 40 - L P - D

L **Lock style**
- **10** Key-locking keyed alike CH751 (two keys supplied)
- **11** DIN profile supplied keyed alike 347876 (three keys supplied)
- **16** Bellcore 216
- **17** Bellcore electronics

M3 Compression System

Actuators · Push-button handle

- **Suitable for left and right side latching**

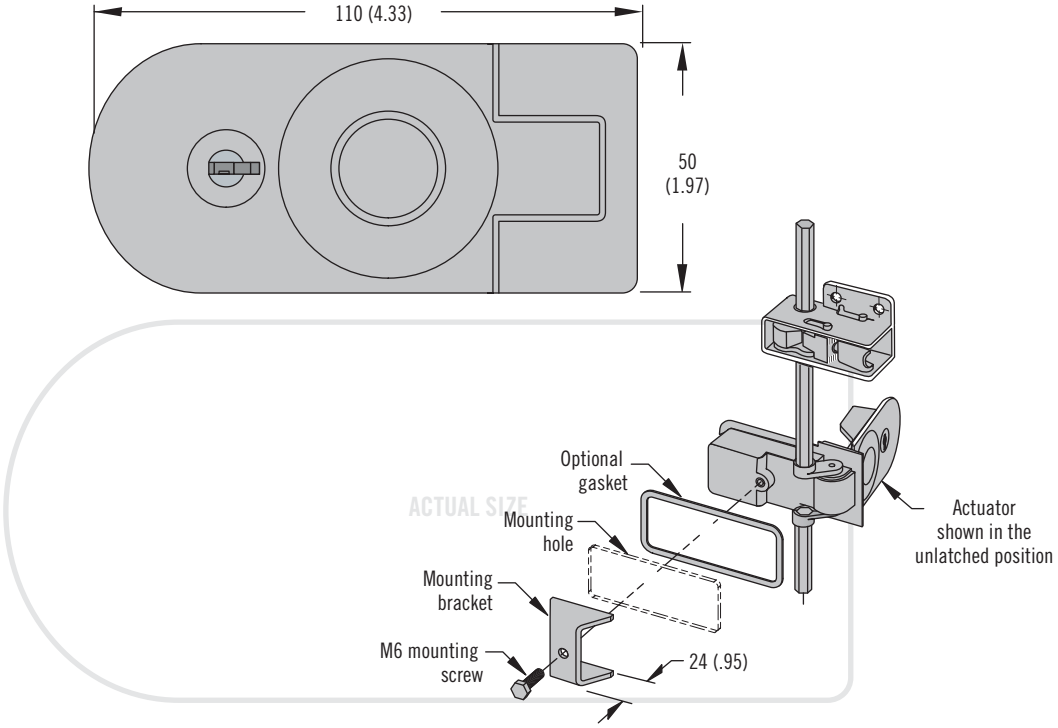
Material and Finish

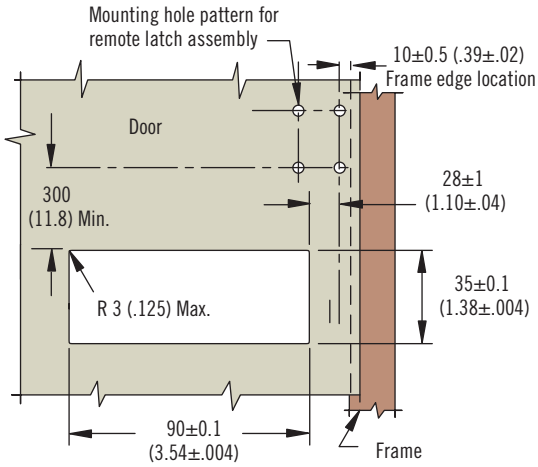
Zinc alloy black powder coated and steel, zinc plated

Sealing Notes

NEMA 4 / IP66 achieved using optional gaskets (ordered separately)

Push-Button Handle





Part Number

Actuator and sealing gasket only see table

The complete system consists of:
Remote compression latch and / or optional keeper (see page 246)
Actuator (see pages 247 - 250)
Rods (see page 251)

Order each component separately

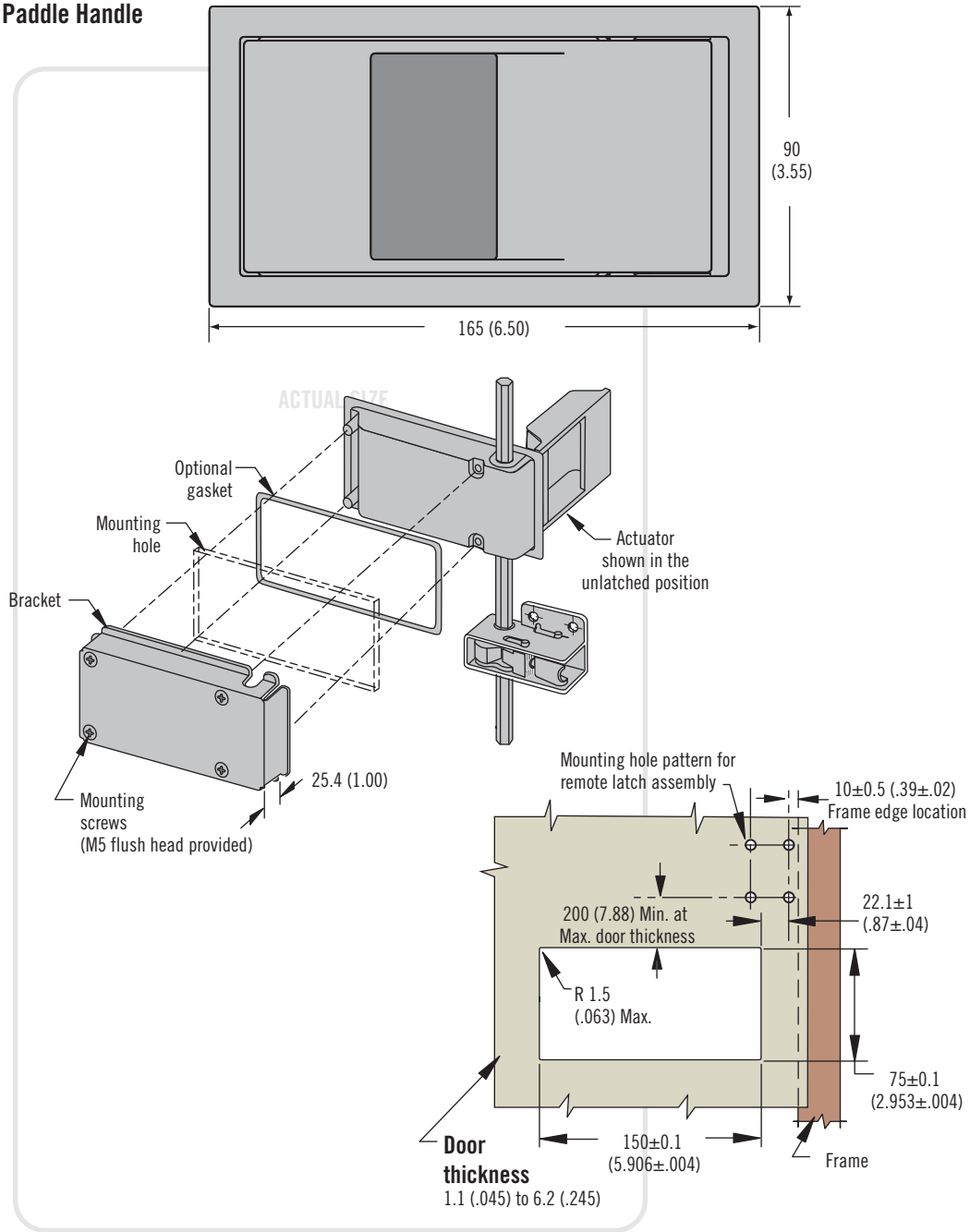
Actuator	Door Thickness Range	Part Number
Push-button handle	0 - 5 (0 - .20)	M3-90
	5 - 10 (.20 - .39)	M3-92
Push-button handle with key-lock	0 - 5 (0 - .20)	M3-91
	5 - 10 (.20 - .39)	M3-93

Sealing Gasket Part Number
C5-82

INFO CLIC www.southco.com/M3

Dimensions in millimeters (inch) unless otherwise stated

Paddle Handle



- **Suitable for left and right side latching**

Material and Finish

Zinc alloy black powder coated and steel, zinc plated

Sealing Notes

NEMA 4 / IP66 achieved using gasket supplied

Actuator	Part Number
Paddle (includes bracket and screws)	M3-**10**
Paddle with key-lock (includes bracket and screws)	M3-**17**

Gasket Type	Part Number
Environmental	M3-**12**
EMC	M3-**13**

Part Number

Actuator and gaskets only see table

The complete system consists of:
Remote compression latch and / or optional keeper (see page 246)
Actuator (see pages 247 - 250)
Rods (see page 251)

Order each component separately

M3 Compression System

Actuators · Door edge lever · Concealed

- **Simple actuator for top or bottom of door**

Material and Finish

Door edge lever: Zinc alloy black powder coated and steel, zinc plated
Adaptor: Zinc alloy, chemical protective film
Concealed: Zinc alloy, chemical protective film

Notes

Concealed: Operated by 8mm hex wrench (not supplied)

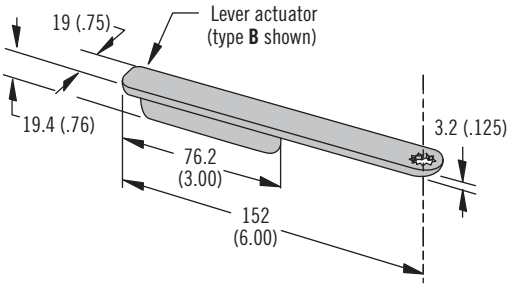
Part Number

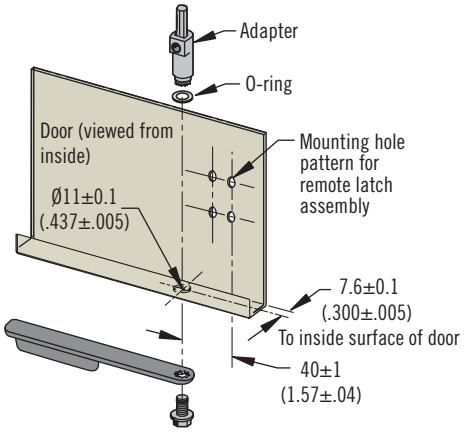
Actuator only see table

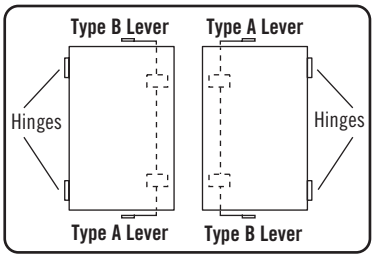
The complete system consists of:
Remote compression latch and / or optional keeper (see page 246)
Actuator (see pages 247 - 250)
Rods (see page 251)

Order each component separately

Door Edge Lever



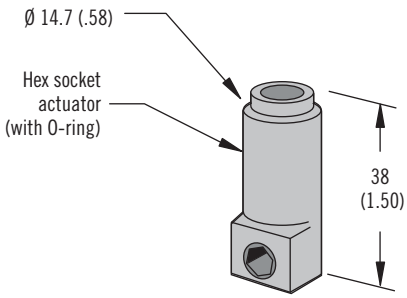


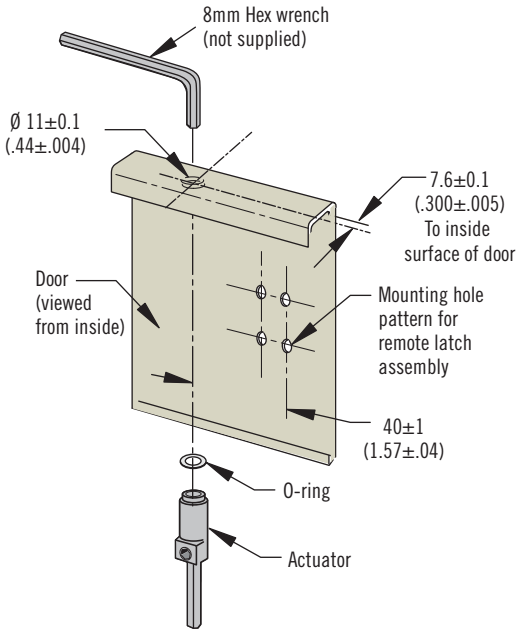


Viewed from outside

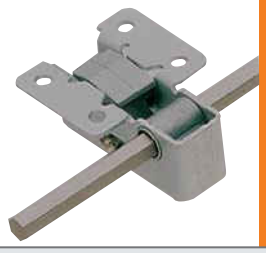
Actuator	Type	Part Number
Lever (includes adapter and O-ring)	A	M3-31
	B	M3-32

Concealed





Actuator	Part Number
Hex socket with O-ring seal	M3-30



Hexagonal Rod

Hex Rod Length		Part Number
Hex rods (length measured in centimeters)	125 cm	M3-125
	155 cm	M3-155
	185 cm	M3-185

Material and Finish

Stainless steel, natural

Notes

If you choose to use your own rods, they should have no more than 1 degree of twist in any meter length

Part Number

Rod only see table

The complete system consists of:
Remote compression latch and / or optional keeper (see page 246)
Actuator (see pages 247 - 250)
Rods (see page 251)

Order each component separately

To Determine Rod Length Per Actuator		
For Lift and Paddle Handle	**For Push-Button Handle**	**For Door Edge Lever and 8 mm Hex Socket**
• Use center to center distance between farthest remote latches • Add 2 cm	• 2 rods are required • Use the distance from centerline of actuator to centerline of farthest latch assembly • Top and bottom rods may be different length	• Use the distance between the door edge and the centerline of the farthest latch

Calculation Notes

Once you have completed the calculation please order the following parts:

- 1 x Actuator
- 1 or 2 rods to correct length
- Number of compression latches determined from calculation

Calculator

To determine the minimum number of remote compression latches you require along the door edge:

$$N = \frac{L \times R}{470}$$

N = Number of compression latches along door edge (rounded to the nearest whole number)
L = Total length of gasketing material in millimeters
R = Gasket compression rate in N / mm

Example: $\frac{5200 \text{ mm} \times 0.3 \text{ N / mm}}{470} = 3.28 = 3 \text{ latches}$

Remote compression latches should be evenly spaced along edge of door

CR Compression System

Swinghandle actuator

- **Consistent compression**
- **Adjustable grip**
- **Meets NEMA 4 / IP 66 and EMI standards**

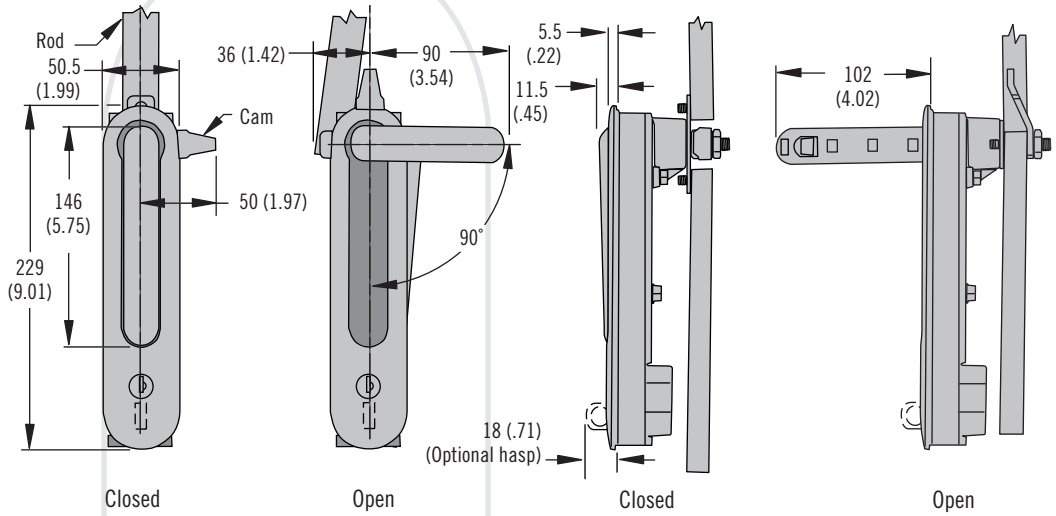
Material and Finish

Handle actuator:
Zinc alloy black powder coated
Mounting hardware:
Acetal black, stainless steel and brass

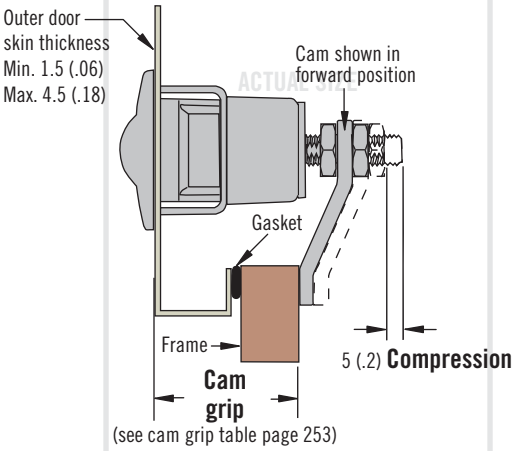
Performance Details

Max. static load:
250 N (55 lbf) per latch point
580 N (130 lbf) for entire system
Average ultimate load:
580 N (130 lbf)

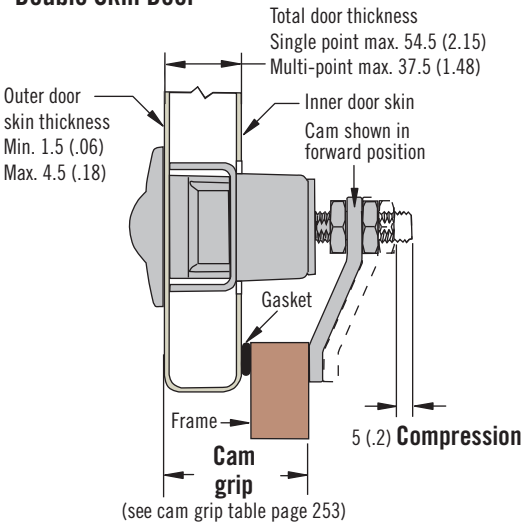
Flammability rating:
UL94-HB for all plastic components



Single Skin Door



Double Skin Door



Part Number Selection

Actuator only

The complete system consists of:
Actuator (see part number selector)
Cam (see page 253)
Rod end (see page 254)
Rods (see page 254)
Rod guide (see page 254)
Order each component separately

CR - 19 - L - R 5

L Lock style

- **11** Key-locking keyed alike CH751 (2 keys supplied)
- **21** Keylocking keyed alike CH751 (2 keys supplied) and padlock hasp
- **32** DIN 18354 profile keyed alike 347876 (3 keys supplied)
- **44** Bellcore electronics
- **45** Bellcore 216
- **54** Bellcore electronics and padlock hasp
- **55** Bellcore 216 and padlock hasp

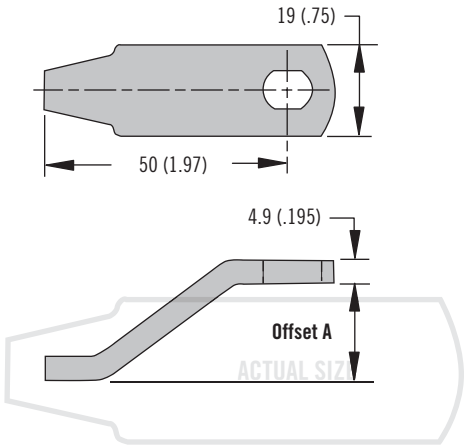
R Rotation

- **1** Universal 180°
- **2** Counter-clockwise 90°
- **3** Clockwise 90°

INFO CLIC www.southco.com/CR

Dimensions in millimeters (inch) unless otherwise stated

Cam
See page 252 for definition of cam grip



Cam Part Number	Offset A	Cam Grip Range	
		Cam Forward	Cam Reversed
CR-846-1000-24	0 (0.0)	56.5 - 62 (2.23 - 2.44)	
CR-846-1005-24	5 (.20)	51.5 - 57 (2.03 - 2.25)	61.5 - 67 (2.42 - 2.64)
CR-846-1010-24	10 (.39)	46.5 - 52 (1.83 - 2.05)	66.5 - 72 (2.62 - 2.84)
CR-846-1015-24	15 (.59)	41.5 - 47 (1.64 - 1.85)	71.5 - 77 (2.82 - 3.03)
CR-846-1020-24	20 (.79)	36.5 - 42 (1.44 - 1.66)	76.5 - 82 (3.01 - 3.23)
CR-846-1025-24	25 (.98)	31.5 - 37 (1.24 - 1.46)	81.5 - 87 (3.21 - 3.43)
CR-846-1030-24	30 (1.18)	26.5 - 32 (1.05 - 1.26)	86.5 - 92 (3.41 - 3.62)
CR-846-1035-24	35 (1.38)	21.5 - 27 (.85 - 1.07)	91.5 - 97 3.60 - 3.82)
CR-846-1040-24	40 (1.58)	16.5 - 22 (.65 - 87)	96.5 - 102 (3.80 - 4.02)
CR-846-1045-24	45 (1.77)	11.5 - 17 (.46 - .67)	101.5 - 107 (3.99 - 4.22)
CR-846-1050-24	50 (1.97)	6.5 - 12 (.26 - .47)	106.5 - 112 (4.19 - 4.41)

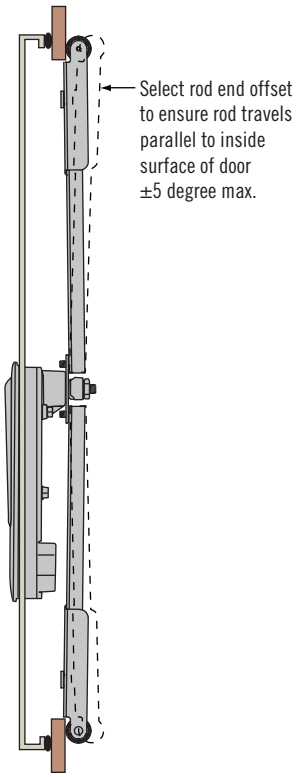
Material and Finish
Stainless steel

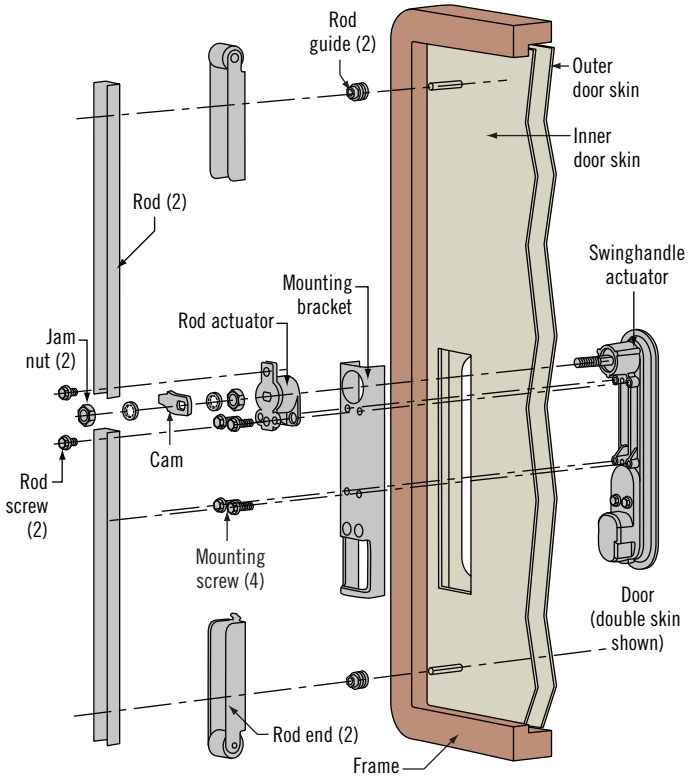
Part Number
Cam see table

The complete system consists of:
Actuator (see page 252)
Cam (see table)
Rod end (see page 254)
Rods (see page 254)
Rod guide (see page 254)

Order each component separately

Assembly





Dimensions in millimeters (inch) unless otherwise stated

CR Compression System

Rod end · Rod · Rod guide · Installation

Material and Finish

Rod end: Stainless steel and nylon, black
Rod: Aluminum
Rod guide: Brass

Notes

For your specific application requirement use Southco's online configurator, visit www.southco.com/CR or contact Southco

Rod end: When more than one rod end fits desired rod end grip range select the part number with the lowest offset value

Rod: Sold separately without mounting hole, in standard length of 1000 (39.37). Rod will need to be cut to desired lengths and mounting holes Ø 8.5 (.33) drilled. Min. 300 (11.81) Max. 1000 (39.37)

Rod guide: M6 thread with prevailing torque for vibration resistance

Part Number

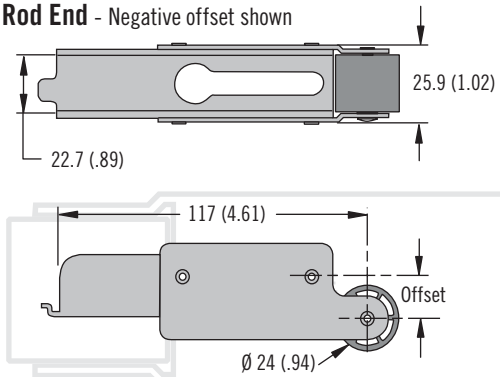
Rod end, rod and rod guides see tables

The complete system consists of:
Actuator (see page 252)
Cam (see page 253)
Rod end (see table)
Rods (see table)
Rod guide (see table)

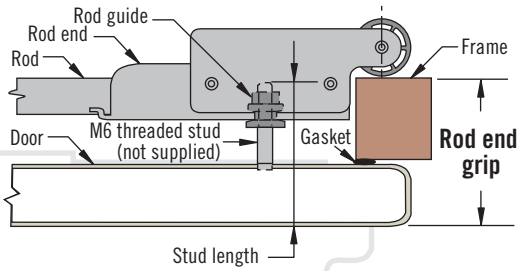
Order each component separately

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/CR

Rod End - Negative offset shown



Positive offset shown

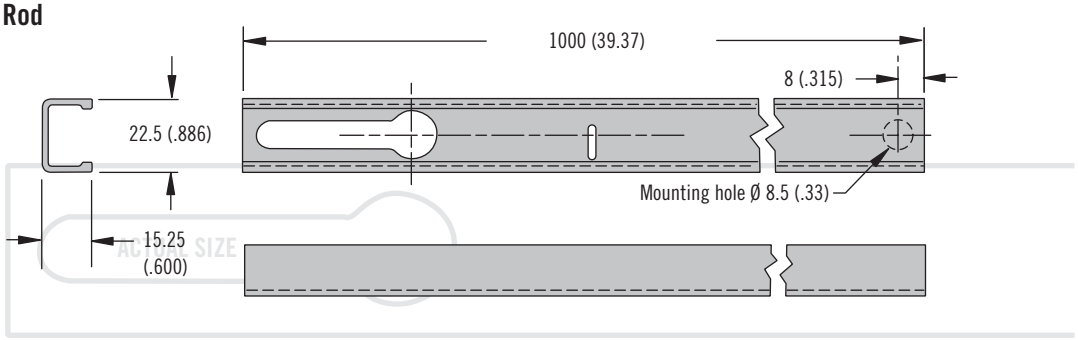


Rod End Grip when used with 1000 (39.37) rod	Offset	Stud Length $^{+2.5}_{-0}$ ($^{+1}_{-0}$) Distance from front of door to the end of the threaded stud (not supplied)	Rod End Part Number
40 (1.57) Min. to 124 (4.88) Max.	+30 (1.18)	Rod end grip -16.5 (.65)	CR-51-30-24
25 (.98) Min. to 109 (4.29) Max.	+15 (.59)	Rod end grip -1.5 (.06)	CR-51-15-24
10 (.39) Min. to 94 (3.70) Max.	0 (0)	Rod end grip +13.5 (.53)	CR-50-01-24
5 (.20) Min. to 79 (3.11) Max.	-15 (.59)	Rod end grip +28.5 (1.12)	CR-52-15-24
5 (.20) Min. to 64 (2.52) Max.	-30 (1.18)	Rod end grip +43.5 (1.71)	CR-52-30-24

For your specific application requirement use Southco's online configurator, visit www.southco.com/CR or contact Southco

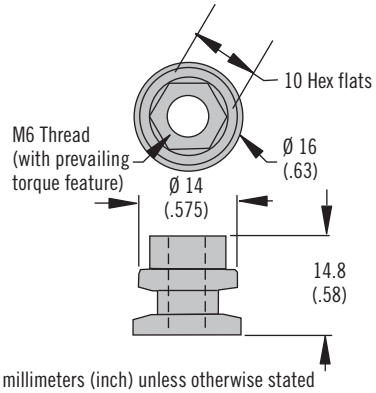
Example:
Rod end grip = 40 (1.57)
Rod end offset = +15 (.59)
Stud Length = 40 (1.57) - 1.5 (.06) = **38.5 (1.51)**

Rod



Rod Part Number
CR-64-1000-50

Rod Guide



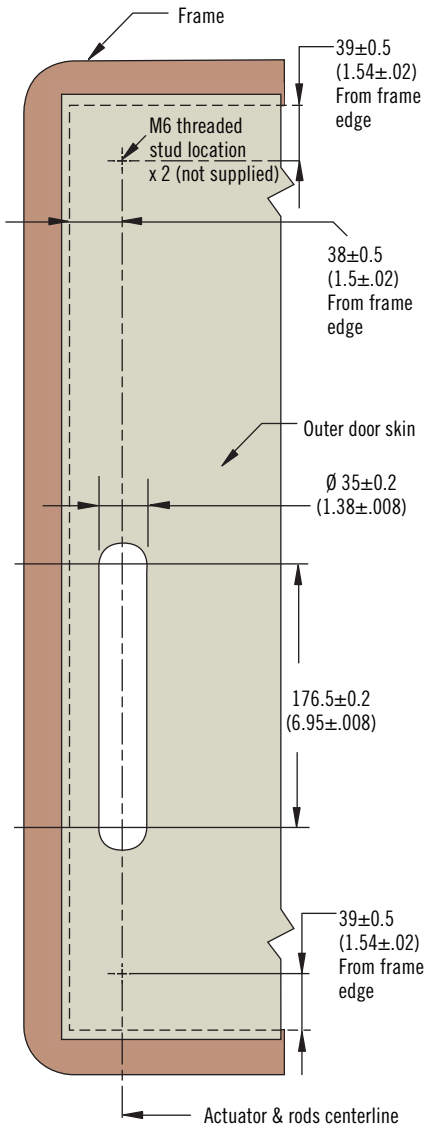
Rod Guide Part Number
CR-843-01-26

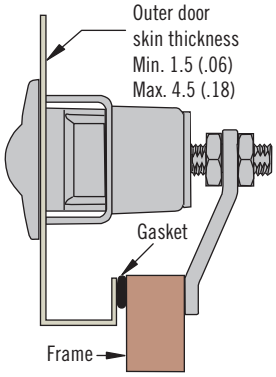
Dimensions in millimeters (inch) unless otherwise stated

southco
CONNECT · CREATE · INNOVATE

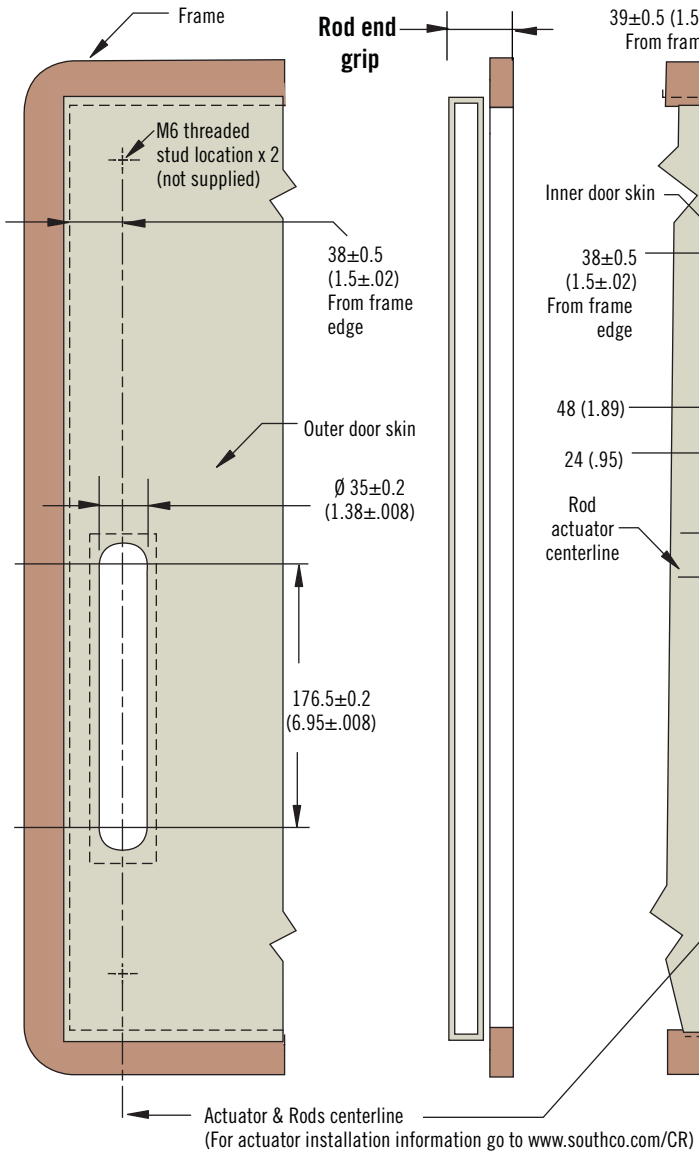
Installation (For full installation drawings go to www.southco.com/CR)

Single Skin Door
View From Front

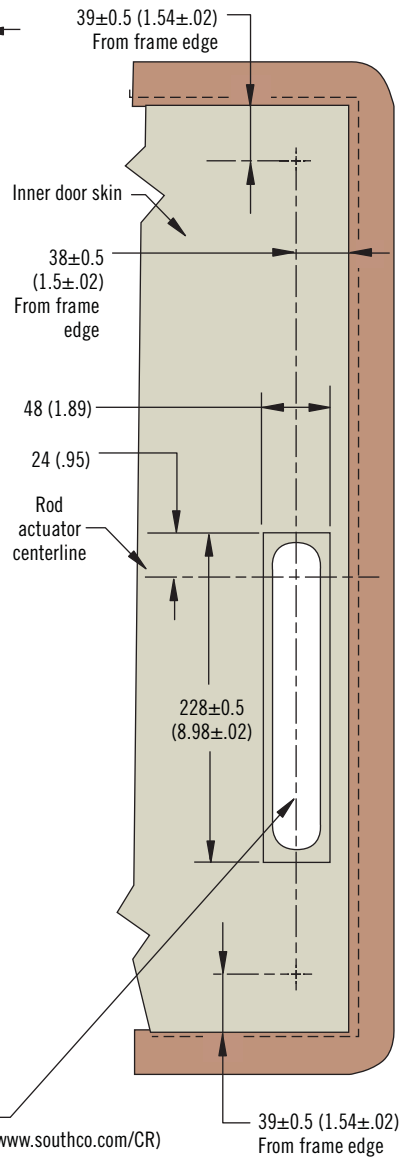


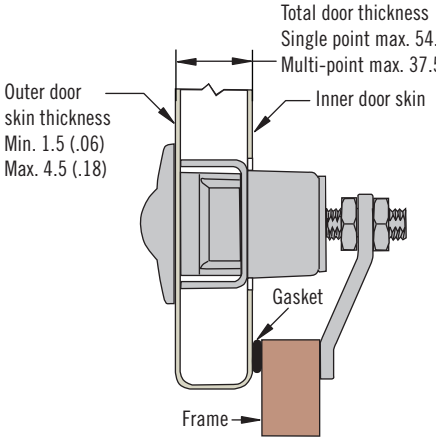


Double Skin Door
View From Front

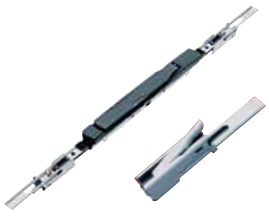


View From Rear





Dimensions in millimeters (inch) unless otherwise stated



F2 Compression System

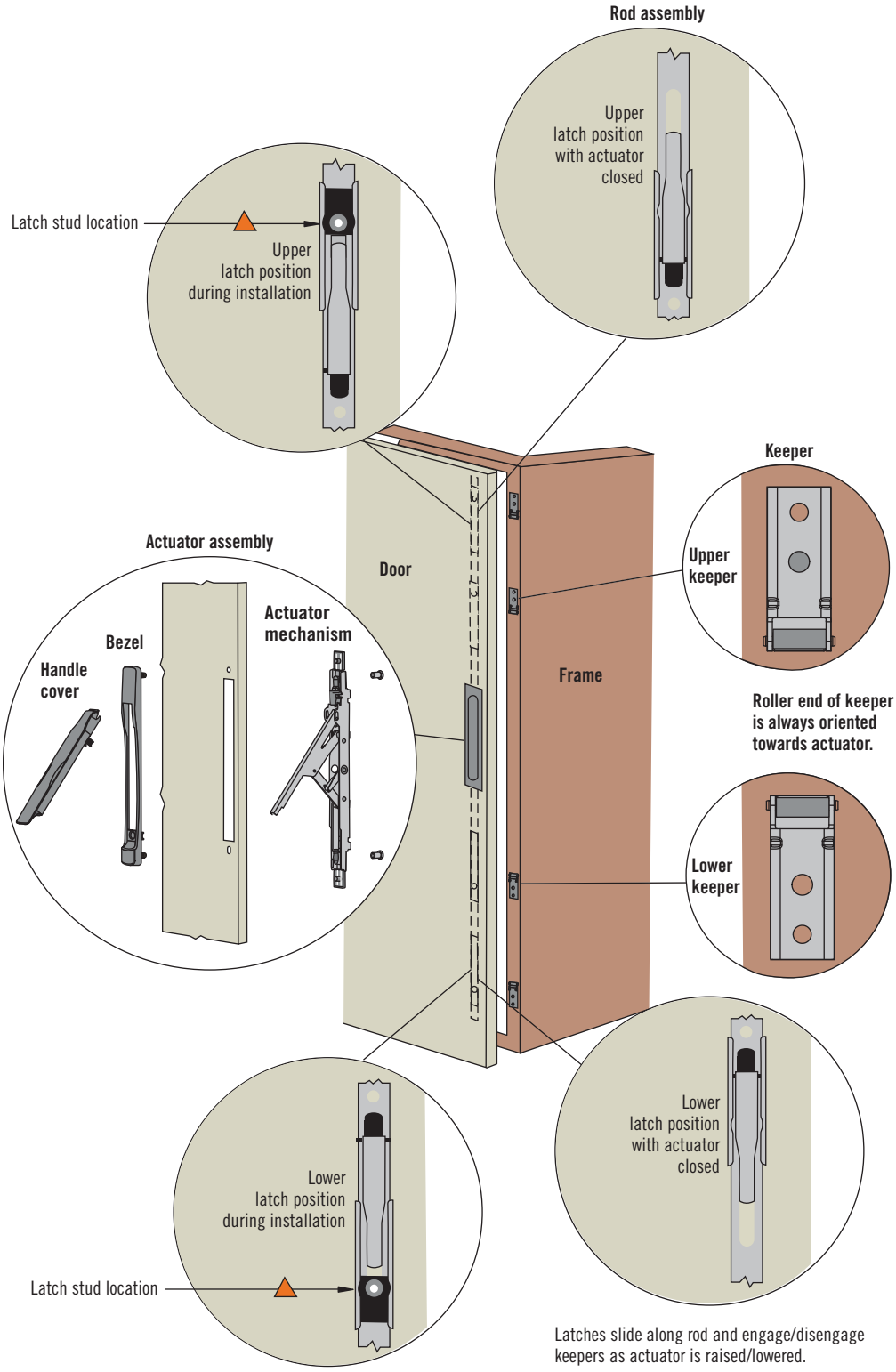
System integration

- **Designed for indoor enclosures**
- **Operates outside the enclosure's seal**
- **Installs close to the door edge**
- **System engages when door is up to 15 mm (.59 in) away from the closed position**

Notes

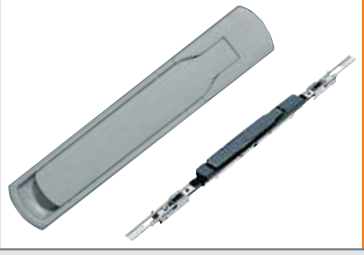
One complete system consists of:
One actuator assembly
(see page 257)
Two rod assemblies
(see pages 258 - 259)
Keepers (quantity depends on no. of latches specified; see page 259)

Order each component separately

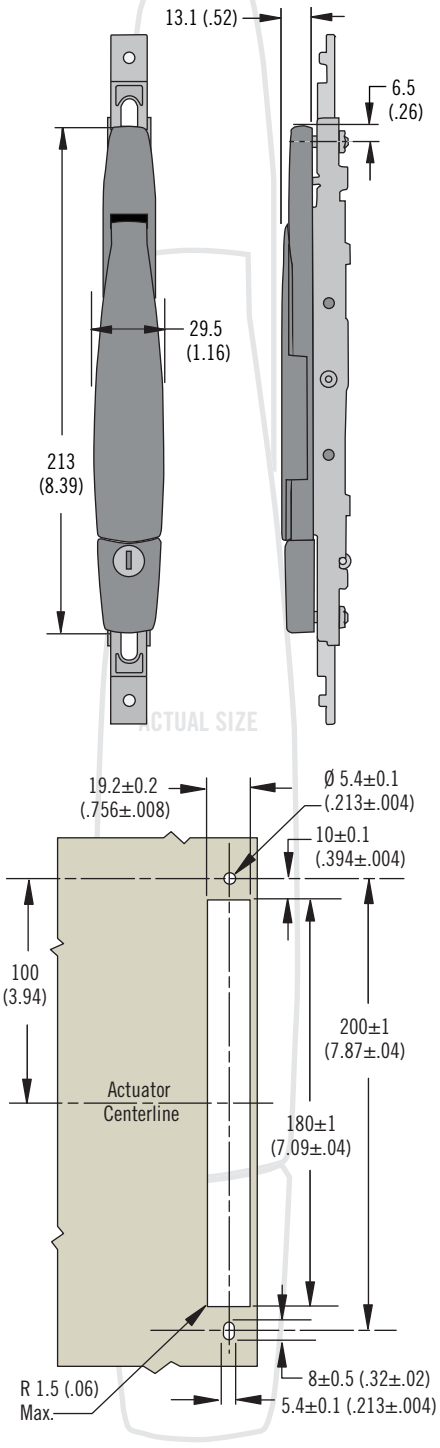


Latches slide along rod and engage/disengage keepers as actuator is raised/lowered.

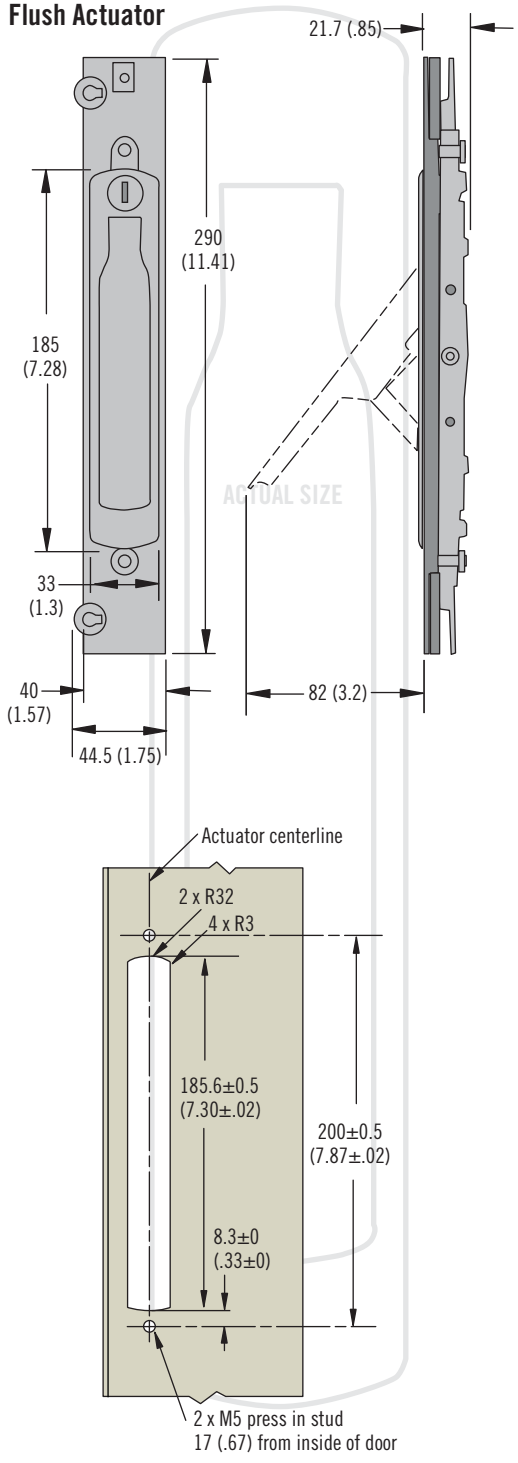
Dimensions in millimeters (inch) unless otherwise stated



Surface Actuator



Flush Actuator



Lock Style	Surface Actuator Part Number	Flush Actuator Part Number
Non-locking	F2-20-17	F2-20-12
Key-locking keyed alike SC001 (two keys supplied)	F2-20-18	F2-20-13
Key-locking keyed alike CH751 (two keys supplied)	F2-20-19	~

- **Designed for indoor enclosures**
- **Operates outside the enclosure's seal**
- **System engages when door is up to 15 mm (.59 in) away from the closed position**

Material and Finish

PC/ABS plastic black
Zinc alloy and steel, zinc plated

Performance Details

Max. static load:
100 N (22 lbf) per latch point
500 N (112 lbf) for entire system

Flammability rating:
UL94-VO for all plastic components

Accessories

Flat key keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

Overmolded key keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

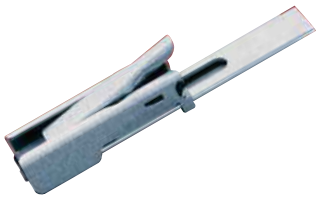
Plain key SC001 (2 keys per ring)
Part number: FK-KEY-SC001

Part Number

Actuator only see table

One complete system consists of:
One actuator assembly
(see page 257)
Two rod assemblies
(see pages 258 - 259)
Keepers (quantity depends on no. of latches specified; see page 259)

Order each component separately



F2 Compression System

Rod assembly · High compression

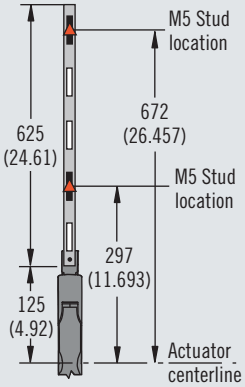
- **Multiple lengths and latching point locations**
- **Latching mechanisms engage keepers when door is up to 15 mm (.59 in) away from the closed position**

Material and Finish

PC/ABS plastic black, zinc alloy and steel, zinc plated

Installation Notes

Latch installation stud is not supplied. Use M5 press-in studs or non-flanged weld studs. Length is 6 (.24) to 10 (.39) Max., measured from inside surface of the door.
Example: F2-10-625-25



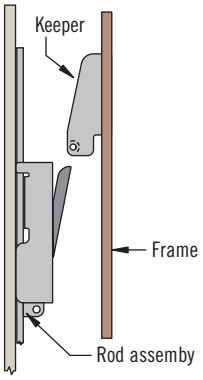
Stud must be positioned within 0.2 (.008) of nominal

Part Number

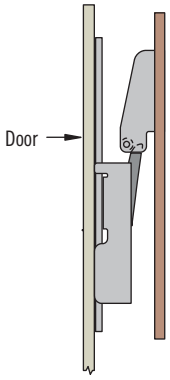
High compression rod assembly only see table

One complete system consists of:
One actuator assembly (see page 257)
Two rod assemblies (see pages 258 - 259)
Keepers (quantity depends on no. of latches specified; see page 259)

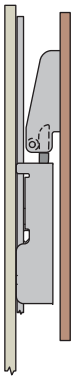
Order each component separately



Unlatched



Engaged



Latched

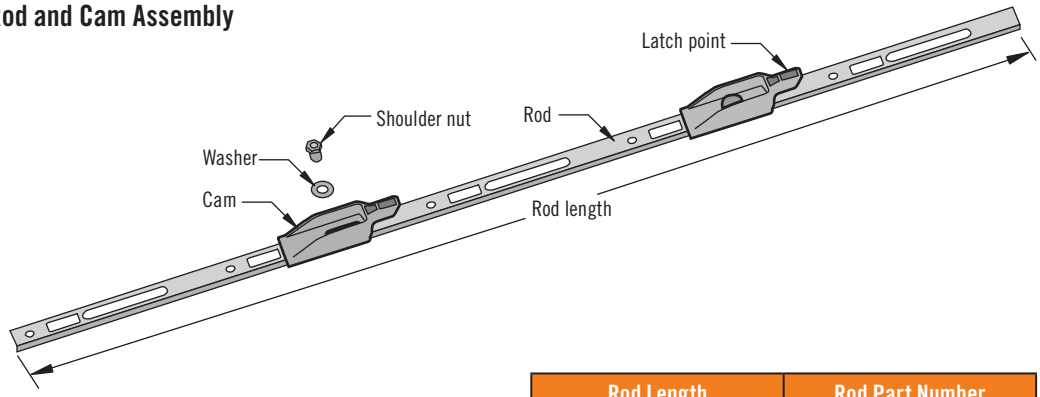
Rod Length	Latch Installation Stud Locations from Centerline of Actuator	Part Number								
		F2-10-125-1	F2-10-250-2	F2-10-375-3	F2-10-375-13	F2-10-500-14	F2-10-625-25	F2-10-750-26	F2-10-750-36	F2-10-875-37
125 (4.92)	172 (6.772)									
250 (9.84)	297 (11.693)									
375 (14.76)	422 (16.614)									
500 (19.69)	547 (21.535)									
625 (24.61)	672 (26.457)									
750 (29.53)	797 (31.378)									
875 (34.45)	922 (36.299)									

- No Latch Point
- Latch Point
- Actuator Connection
- Latch Stud Location

Dimensions in millimeters (inch) unless otherwise stated

F2 Compression System
Rod assembly · Flexible

Rod and Cam Assembly



Cam Assembly Part Number	
Hardware pack assembly contains 1 x cam, washer and shoulder nut (order 1 hardware pack per latching point)	F2-50-1

Rod Length	Rod Part Number
125 (4.92)	F2-11-125-19
250 (9.84)	F2-11-250-19
375 (14.76)	F2-11-375-19
500 (19.69)	F2-11-500-19
625 (24.61)	F2-11-625-19
750 (29.53)	F2-11-750-19
875 (34.45)	F2-11-875-19

- **Flexible mounting options**

Material and Finish

Glass-filled nylon black, brass and steel, zinc plated

Part Number

Rod and cam assembly only see table

The complete system consists of:
Actuator Assembly (see page 257)
Rod Assemblies (see pages 258 - 259)
Keepers (see page 259)

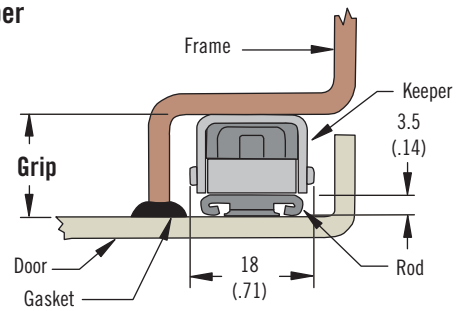
Order each component separately

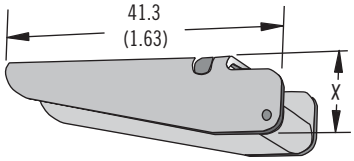
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/F2*

F2 Compression System
Keeper

Keeper





Grip	Part Number	X	Rod System Compatibility	
			High Compression	Flexible
15 (.59)	F2-30-15	11.5 (.45)	✔	~
19 (.75)	F2-30-19	15.5 (.61)	✔	✔
20 (.79)	F2-30-20	16.5 (.65)	✔	✔
22 (.87)	F2-30-22	18.5 (.73)	✔	✔
25 (.98)	F2-30-25	21.5 (.85)	✔	✔

- **Keeper roller provides for smooth operation**

Notes

Order one keeper per latching point

Part Number

Keeper only see table

One complete system consists of:
One actuator assembly
(see page 257)
Two rod assemblies
(see pages 258 - 259)
Keepers (quantity depends on no. of latches specified; see page 259)

Order each component separately

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/F2*

Dimensions in millimeters (inch) unless otherwise stated

H3 Swinghandle System

Medium / large · Sealed / non-sealed

- **Zinc alloy swinghandle system**
- **Multiple locking options; including DIN profile**
- **Indoor/outdoor version**
- **Available for medium (125mm x 25mm) and large (150mm x 25mm) door cutout**
- **Linear and rotational systems available**

Material and Finish

Handle: Zinc alloy black powder coated or satin chrome plated
Cam: Steel, zinc plated

Performance Details

Max. static load: 250 N (56 lbf)

Sealing Notes

Sealed version meets NEMA 4/IP 66 water intrusion standards

Keys

See page 98

Notes

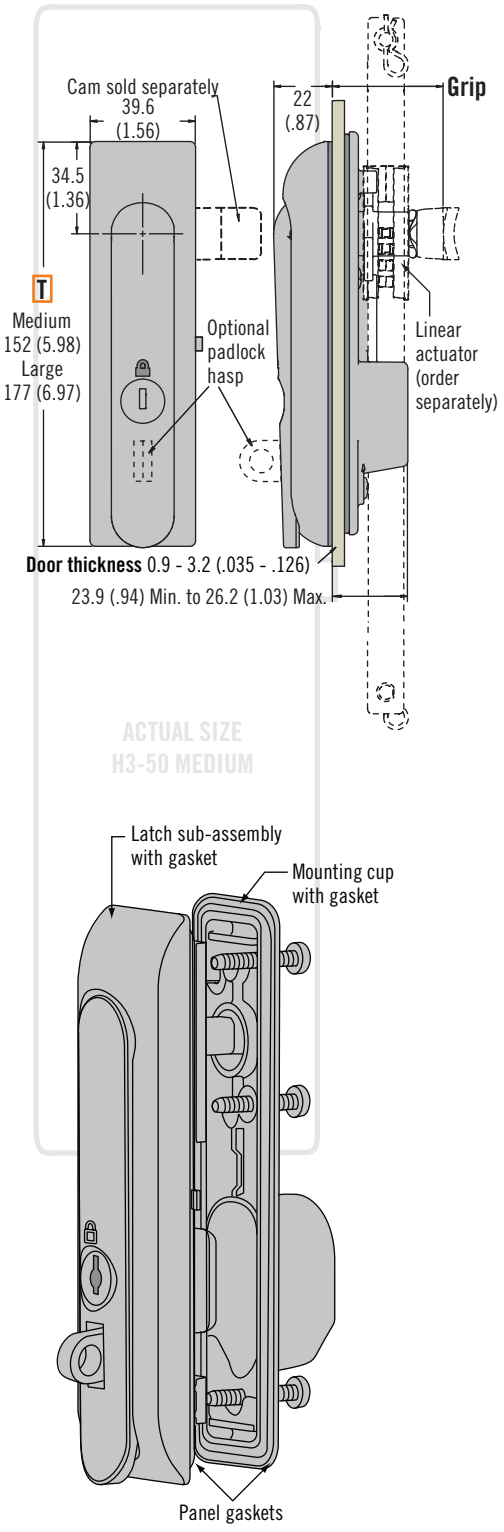
Product available to meet Telcordia GR-487 contact Southco for details

Electromechanical swinghandle available see pages 30 - 31

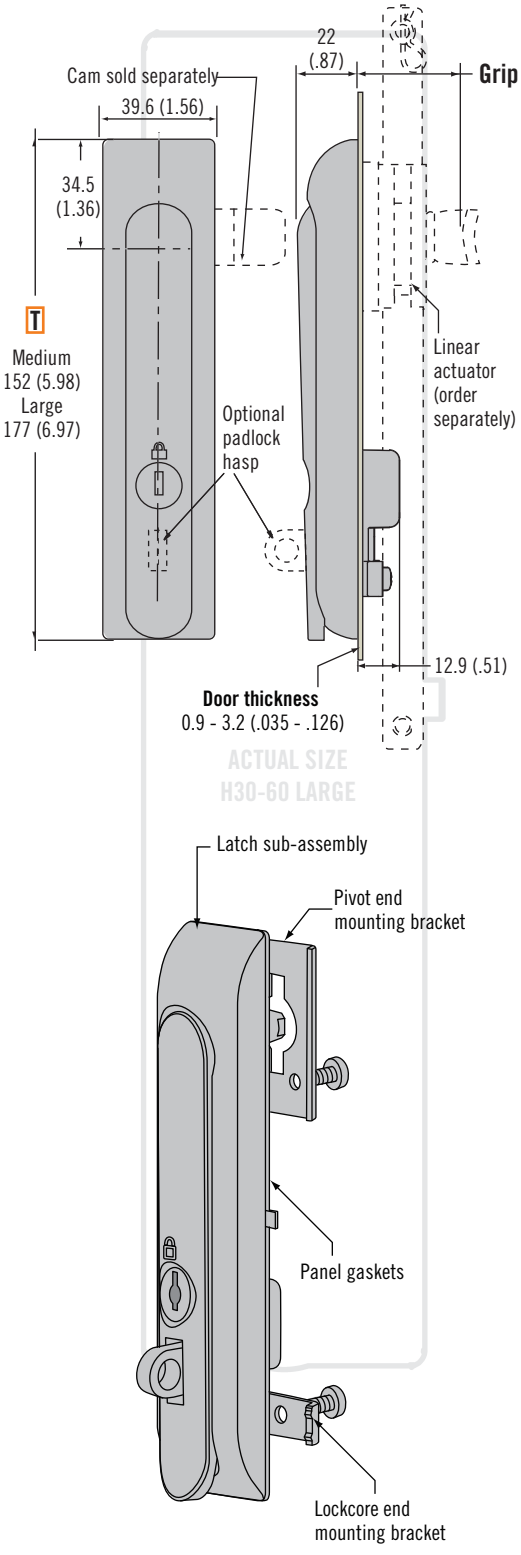
For single point and actuator plate system see page 112 - 113

For dimension details of DIN lock version, please contact Southco

Sealed (H3-50 medium shown)
(Also available in large. See part number selection)



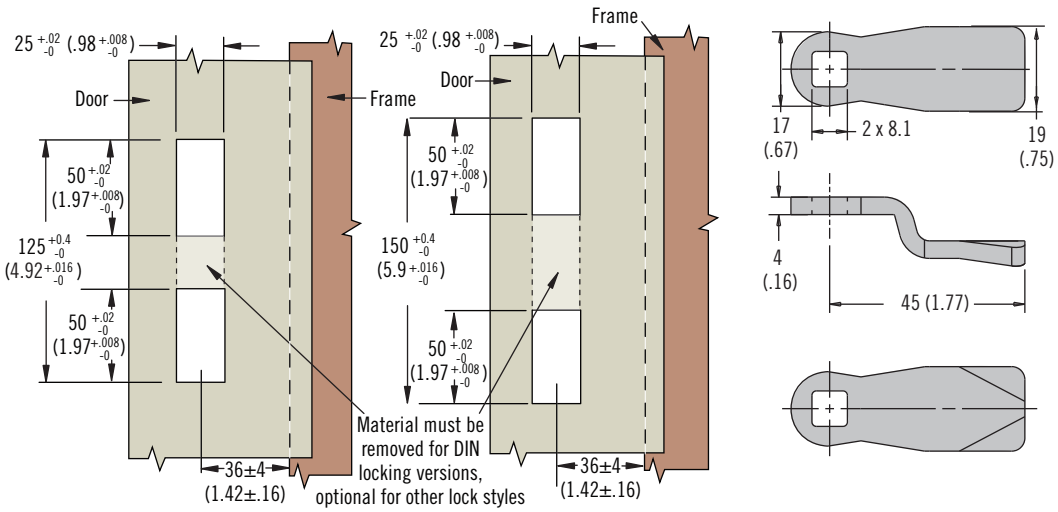
Non-Sealed (H3-60 large shown)
(Also available in medium. See part number selection)



Dimensions in millimeters (inch) unless otherwise stated

Medium H3-50

Large H3-60



Cam Part Number Table For Use With Linear Actuator Or Actuator Plate					
Grip With Linear Actuator	Grip With Actuator Plate	Part Number	Grip With Linear Actuator	Grip With Actuator Plate	Part Number
~	10.3 (.41)	E5-6107	36.9 (1.45)	26.3 (1.04)	E5-6115
~	12.3 (.48)	E5-6108	38.9 (1.53)	28.3 (1.11)	E5-6116
24.9 (.98)	14.3 (.56)	E5-6109	40.9 (1.61)	30.3 (1.19)	E5-6117
26.9 (1.06)	16.3 (.64)	E5-6110	42.9 (1.69)	32.3 (1.27)	E5-6118
28.9 (1.14)	18.3 (.72)	E5-6111	44.9 (1.76)	34.3 (1.35)	E5-6119
30.9 (1.22)	20.3 (.80)	E5-6112	46.9 (1.85)	36.3 (1.43)	E5-6120
32.9 (1.30)	22.3 (.88)	E5-6113	48.9 (1.93)	38.3 (1.51)	E5-6121
34.9 (1.37)	24.3 (.96)	E5-6114	50.9 (2.00)	40.3 (1.59)	E5-6122

Part Number Selection

For single point:
Order latch and cam separately (see pages 112 - 113)

For multi-point order:
Latch and cam (if 3 point latching required)
Linear actuator and rod adaptors (see page 262)
Rods (see page 264)
Rod guides (see page 264)

Note

*2 Overmolded keys supplied

Latch Part Number (no cam)

T Size
- **50** Medium - 152 (5.98) height
- **60** Large - 177 (6.97) height

H3 - T - A L - S F

A Actuator style
- **1** No padlock hasp for use with linear actuator (see page 262)
- **2** With padlock hasp for use with linear actuator (see page 262)
- **3** No padlock hasp for use as single point or with actuator plate (see page 263)
- **4** With padlock hasp for use as single point or with actuator plate (see page 263)

S Sealing option
- **0** Non-sealed
- **1** Sealed

F Finish
- **44** Satin chrome
- **50** Black powder coated

L Lock style
- **00** Locking DIN profile (no lock supplied)
- **01** Locking keyed alike CH751*
- **02** Locking keyed alike 300*
- **03** Locking keyed alike 333*
- **20** Non-locking with detent
- **21** Locking DIN profile keyed alike CH751*
- **22** Locking DIN profile keyed alike 300*
- **23** Locking DIN profile keyed alike 333*
- **40** 3 mm Double-bit
- **41** 5 mm Double-bit
- **42** Bellcore 216
- **43** Bellcore Hex-Pin Recess
- **47** 8 mm triangle
- **70** DIN profile 3 mm Double-bit
- **71** DIN profile 5 mm Double-bit
- **72** DIN profile Bellcore 216
- **73** DIN Profile Bellcore Hex-Pin Recess
- **77** DIN profile 8 mm triangle

Dimensions in millimeters (inch) unless otherwise stated

H3 Linear Actuator

Linear actuator and rod adaptor

- **Linear actuator for H3 swinghandles**
- **Linear rod travel for limited space**
- **Suitable for left and right hand applications**

Material and Finish

Zinc alloy and steel, zinc plated

To Select Linear actuator and Rod Adaptor:

For use with H3-50 and H3-60 swinghandles (see pages 260 - 261)
Order linear actuator and rod adaptors separately (1 actuator and 2 adaptors required per latch)

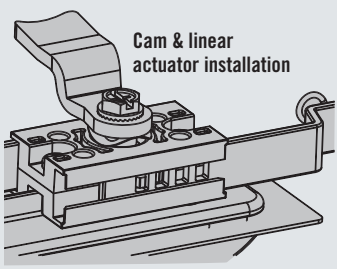
Accessories

Replacement rod adaptor retainer pin part number: H3-0-44778-01

Part Number

Linear actuator and rod adaptors see table

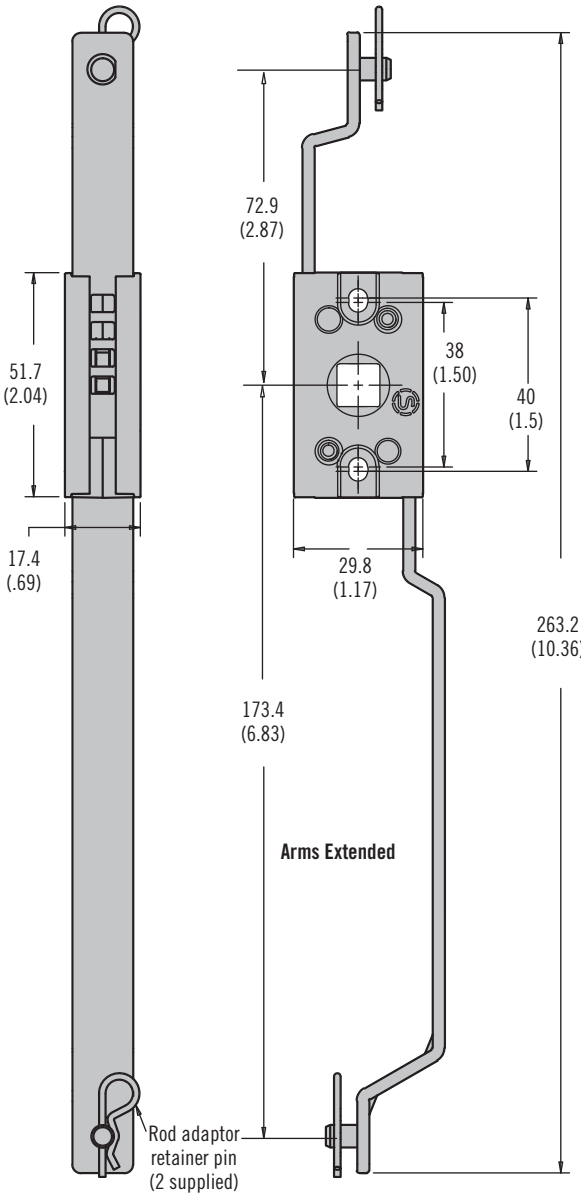
For multi-point order:
Latch (see page 261)
Cam (if 3 point latching required) (see page 261)
Linear actuator and rod adaptor (see table)
Rods (see page 264)
Rod guides (see page 264)



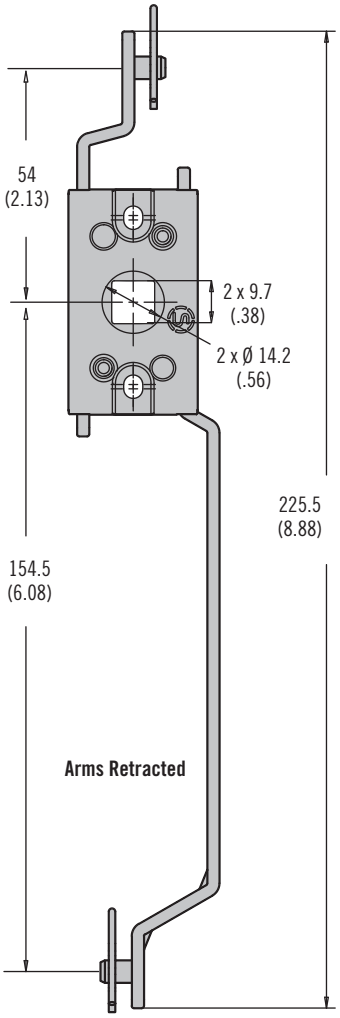
Cam & linear actuator installation

Linear Actuator

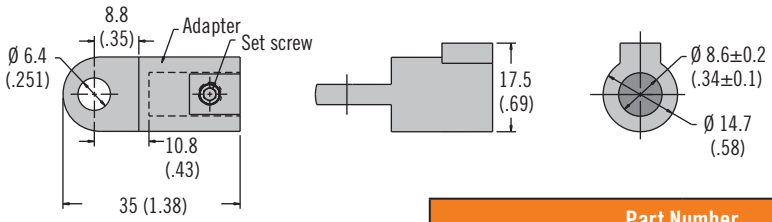
Closed Position



Open Position



Rod Adaptor



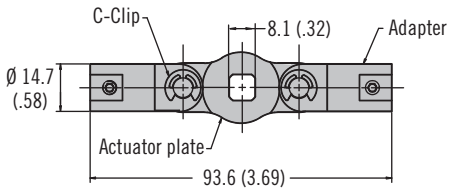
Part Number	
Linear actuator	H3-51-40
Rod adaptor	A5-92-201-31

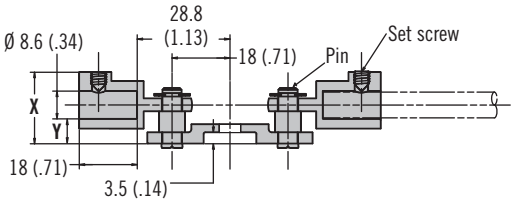
INFO CLIC www.southco.com/H3

Dimensions in millimeters (inch) unless otherwise stated

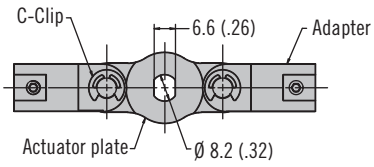
Actuator Plate

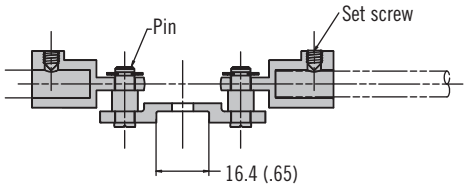
A5-90-101-11





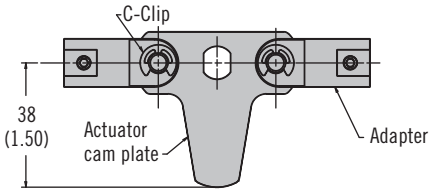
A5-90-301-11

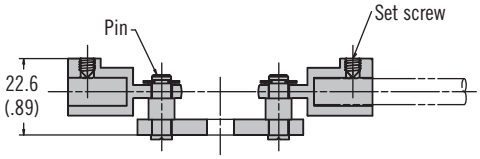




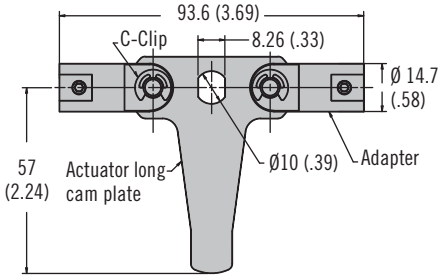
Part Number	X	Y
A5-90-101-11	22.2 (0.87)	4.7 (0.18)
A5-90-104-11	25.2 (0.99)	7.7 (0.30)

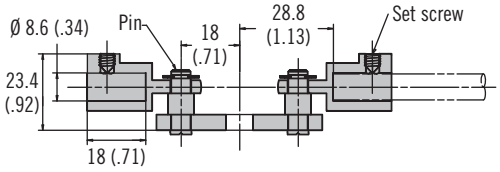
A5-90-401-11 (Short Cam)





A5-90-501-11 (Long Cam)





Actuator Plate Part Number								
Operating Latch Families	E5-5	E5-6	E5-9	H3-50	H3-60	62 Series M8 threaded shaft	92 Series M10 threaded shaft	
	Pages 86 - 95			Pages 112 - 113		Pages 68 - 69	Pages 102 -103	
Actuator Plate Part Number	A5-90-101-11					A5-90-301-11	A5-90-401-11	A5-90-501-11

- **Modular actuators to suit multiple latch families using A5 modular rods**

Material and Finish

Zinc alloy, steel, zinc plated and stainless steel set screw

To Select Correct Actuator:

1. Choose actuator plate to match latch family (one per latch required)
2. Order rods and rod guides from page 264

Part Number

Actuator plate see table

Rods (see page 264)

Rod guides (see page 264)

A5 Modular System

Rods and rod guides

- **Modular rod and rod guides**

Material and Finish

Rods: Aluminum or steel, zinc plated
Rod rollers: Glass-filled nylon, black
Rod guides: Glass-filled nylon, black with steel, zinc plated hardware

To Select Correct Assembly:

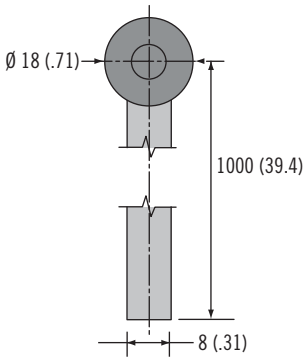
1. Choose actuator plate to match latch family or linear actuator and 2 adaptors
2. Order rod guides (2 per assembly). Fixed rod guide recommended for fixed point rod. Adjustable rod guide recommended for rod roller assembly.
3. Order rods (2 per assembly)

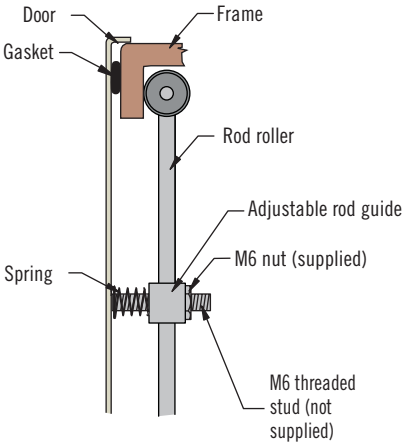
Part Number

Order rod and rod guide separately see tables

Rods

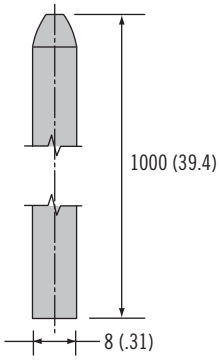
Rod Roller

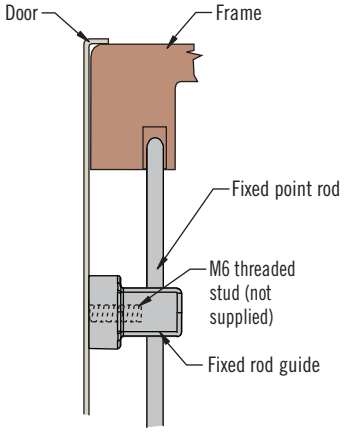




Rod Roller Steel Part Number
A5-56-1000-21

Fixed Point Rod

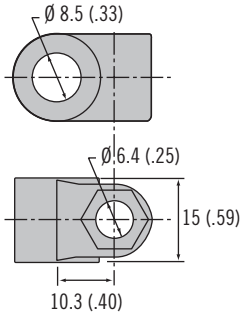


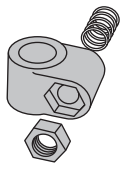


Material	Fixed Point Rod Part Number
Aluminum	A5-55-1000-10
Steel	A5-55-1000-11

Rod Guides

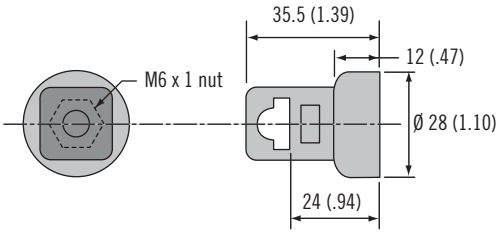
Adjustable





Adjustable Rod Guide Part Number (includes 2 rod guides, 2 springs and 2 M6 nuts)
A5-87-401

Fixed



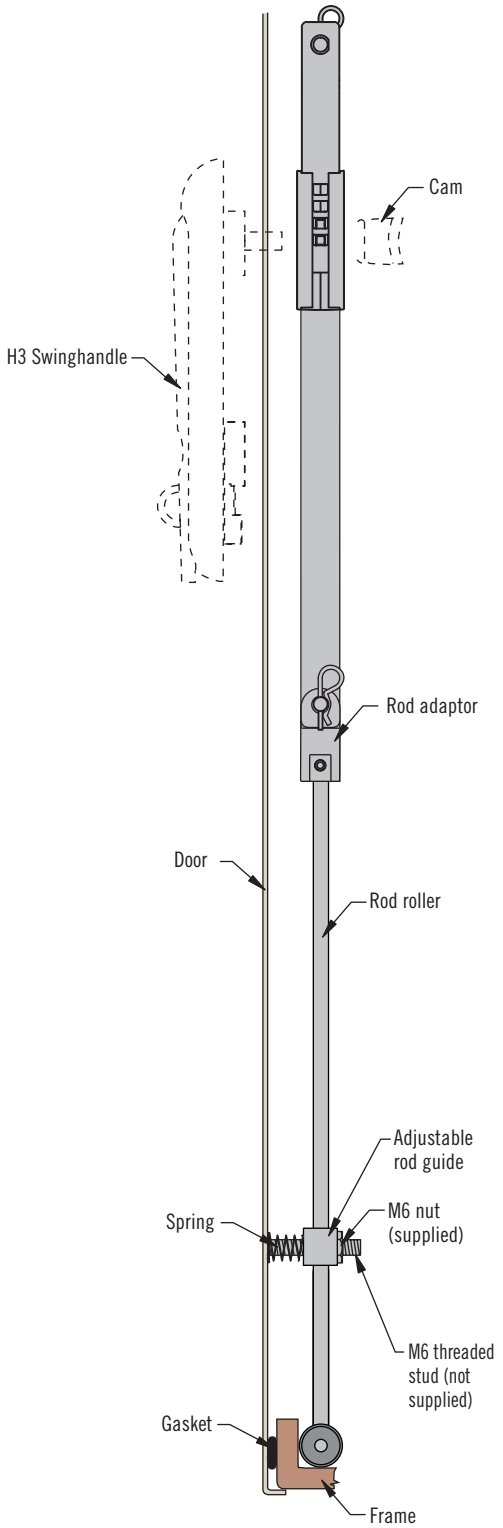
Fixed Rod Guide Part Number (one piece supplied)
A5-81-301-71

Other options available. For complete details on variety, part numbers, installation and specification, go to

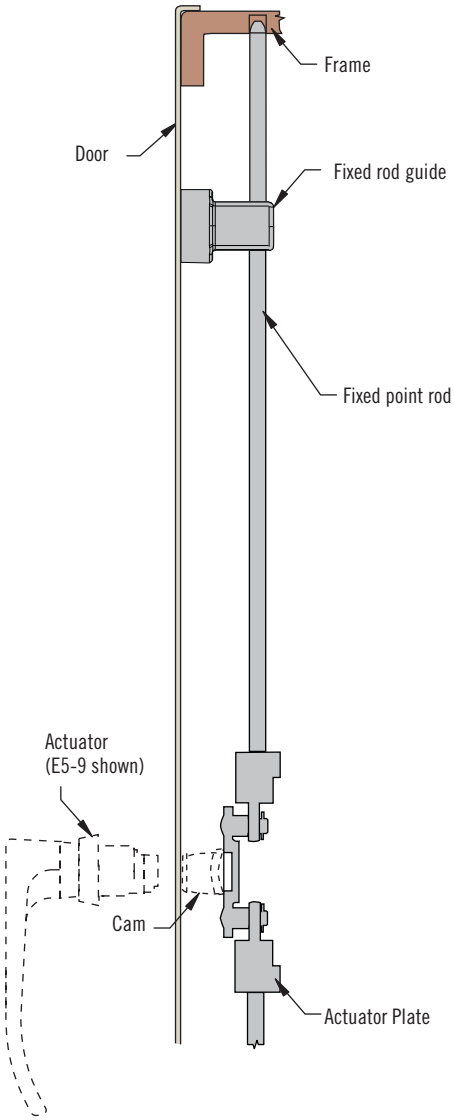
INFO CLIC *www.southco.com/A5*

Dimensions in millimeters (inch) unless otherwise stated

Linear Actuator Assembly
(adjustable with rod roller shown)



Actuator Plate Assembly
(fixed point shown)



Notes
Modular system allows for any configuration of rod and rod guides

DZUS® QUARTER-TURN FASTENERS

DZUS® Quarter-Turn Fasteners

Pages 272 - 331

DZUS® Quarter-Turn Fasteners

Southco offers an extensive selection of *DZUS*® Quarter-Turn Fasteners to satisfy a broad range of requirements for quick access, high strength, and economical performance. Each product line comes with its own set of matched receptacles for accurate, secure engagement and convenient mounting in a range of applications.

The *DZUS*® advantage

- Low installation cost
- Fast, repeatable access
- Lower assembly cost
- Faster service calls
- Better ergonomics
- Improved aesthetics

New *PANEX* Quarter-Turn Design

- New bail and wing design
- New snap-on, ergonomic bail covers
- Available in bright, black and chrome finishes

.....and more is on the way.

For the latest updates and additions to all of Southco's quick access products go to www.southco.com/dzus

82

85

D8

D1

D4

D7

NY

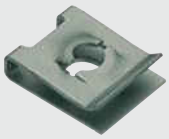
Fast-Lead Screws

When flexibility is of the utmost importance, Southco's line of fast-lead screw fasteners provide access in just a few turns. The coarse pitch of the fast-lead screw, when matched with the broad range of receptacles, provides built in vibration resistance over a wide range of panel thicknesses.

- ➲ High strength fastening system
- ➲ Vibration resistant
- ➲ Fast access in just a few turns
- ➲ Tolerant of material variation

Fast-Lead Screws

Pages 332 - 339


09, 12, 17

09, 12, 17

09, 12, 17

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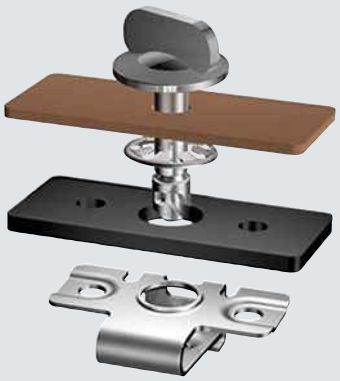
DZUS® Quarter-Turn Fasteners

System selection guide

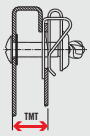
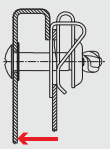
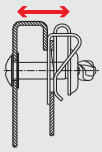
Typical assembly



Notes

TMT measures total material thickness (TMT) of the application. Tolerance in this measurement must be below the figure given in the selection table.

Available on request. Requires a modification request to Southco Engineering. Please contact your local Southco representative or send us an email to info@southco.com

DZUS® Quarter-Turn Systems		TMT Tolerance	Cycle Life	Tensile Load	Vibration Resistance	Stainless Steel Available
Determine the best quick access fastening system for your application			Guidelines: Moderate = 500-2000 High = 2000 +			
QUICK ACCESS FASTENERS	**82 and 85 Lion** • High strength • High cycle life • Variety of styles Pages 272 - 285		0.5 (.020)	High	High	Moderate	✔
	D8 *PANEX* Fasteners • Grip tolerant • Moderate cycle life • Variety of styles Pages 286 - 303		0.9 (.035)	Moderate	Medium	Moderate	
	D1 Dart • Plastic design • Light-weight • New Wing design Pages 304 - 307		1.2 (.049)	High	Low	Moderate	N/A
	D4 Standard • High clamp force • High strength • Vibration resistant Pages 308 - 327		0.6 (.024)	Moderate	High	High	✔
	D7 Pilot • Push-to-close • Vibration resistant • Quarter-turn-to-open Pages 328 - 329		2.4 (.98)	High	Medium	Moderate	
	D7 Arrow • Push-to-close • Quarter-turn-to-open • Light-duty Page 330		3.1 (.12)	High	Low	Moderate	N/A
	NY-Q Latch • Turn to close • Snap-in installation • Quarter-turn-to-open Page 331		2.26 (.089)	High	Low	Moderate	N/A
	Fast-Lead Screws • High clamp force • High strength • Vibration resistant Pages 332 - 339		Unlimited	High	High	High	✔

	Receptacle Type - Check Below Availability and Recommended Panel Configuration												
	Determine frame type and select receptacle	Clip-On	Self-Clinching	Snap-In	Front Load Clip-In	Blind Press-In	Ultrasonic	Rivet-On	Weld-On	Side Mount	Vibration Isolating	Heavy Duty S-Spring	Flaring Assembly
QUICK ACCESS FASTENERS	82, 85 Lion	✔	✔	✔		✔	✔	✔	✔	✔	✔		
	D8 *PANEX* Fasteners	✔	✔		✔	✔	✔	✔	✔	✔			
	D1 Dart	✔		✔				✔					
	D4 Standard	✔		✔				✔	✔			✔	
	D7 Pilot			✔									
	D7 Arrow			✔									✔
	NY-Q Latch			✔									✔
	09, 12, 17 Fast-Lead Screws	✔	✔					✔		✔			
FRAME TYPE	Near Edge Installation	✔		✔	✔			✔	✔	✔	✔	✔	✔
	Sheet Metal Installation	✔	✔	✔	✔			✔	✔	✔	✔	✔	✔
	Plastic and Composites	✔		✔	✔	✔	✔	✔		✔	✔	✔	✔
	Blind Holes and Tubular Frames			✔	✔	✔	✔						✔
	Metal Casting	✔		✔	✔	✔		✔		✔	✔	✔	✔
	High Vibration	✔		✔	✔			✔	✔	✔	✔	✔	

DZUS® Quarter-Turn Fasteners

Actuation styles

82
85
D8
D1
D4
D7
NY

DZUS® Online Help

Interactive product guide

- View product animations
- View solutions
- Get detailed product information including CAD models downloaded in your native format

Available on request. Requires a modification request to *SOUTHCO*® Engineering. Please contact your local *SOUTHCO*® representative or send us an email to info@southco.com

INFO CLIC *www.southco.com/dzus*

ACTUATION STYLES								
	Select the actuation style	Tool Actuated				Hand Actuated		
		Slotted Access	Phillips Recess	Hex Recess	Security Recess	Bail Style	Wing Style	Knob Style
QUICK ACCESS FASTENERS	82/85 Lion	✔	✔	✔	✔	✔	✔	
	D8 *PANEX* Fasteners	✔	✔	✔	✔	✔	✔	
	D1 Dart	✔		✔			✔	✔
	D4 Standard	✔	✔	✔		✔	✔	
	D7 Pilot		✔					
	D7 Arrow	✔		✔			✔	✔
	NY Q-Latch	✔					✔	
	Fast-Lead Screws	✔	✔		✔		✔	✔

(*DZUS*® specification worksheet)

Use the following worksheet to specify the parts for your *DZUS*® quick access system (Example in blue)

System type: *82 DZUS*® Lion quarter-turn fastener

1. Select receptacle type: Clip-on: 82-47-113-15 page 277

Notes: Stud selection column letter shown will be used to determine stud length in step 4. Ensure the receptacle chosen will accommodate the frame thickness.

2. Select retainer and accessories and note any adjustment values:

Accessories: Cupped washer, black 82-46-101-41 page 279

Retainer: Stainless Steel, 82-32-201-20

Adjustment values:

When using a cupped washer, add 0.5 (.020) to outer panel thickness or total material thickness (TMT).

3. Specify stud length: To determine stud length, first determine the material thickness value, TMT.

Notes: Each receptacle has a unique formula to calculate the value of TMT. Use the formulas given with the receptacle you choose. Add accessory adjustment values to TMT as appropriate.

Select the configuration that best represents the application

Application configuration:	Type 2 (page 277)
Outer panel thickness:	2 (.078)
Frame thickness:	2 (.078)
Gap thickness:	0 (0)
Accessory adjustment:	Add 0.5 (.020) to outer panel (P)

Configuration Type 2:

Calculate TMT using the formulas given for the receptacle.

Example:

TMT = P + F + 1.4 (.055) + 0.5 (.020) (for cupped washer thickness)

TMT = 2 (.078) + 2 (.078) + 1.4 (.055) + 0.5 (.020) = 5.9 (.232).

4. Finish the stud part number: (page 273)

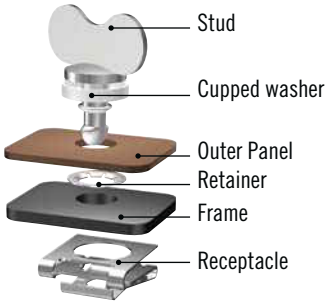
Head style:	Wing head
Material:	Steel, zinc plated

Final list of materials:

82 -47-113-15 **Receptacle: Steel clip-on**
82 -32-201-20 **Retainer: Stainless steel**
82 -46-101-41 **Accessory: Cupped washer, black**
82 -12-240-16 **Stud: Wing head, K=240, steel, zinc plated**

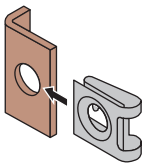
Notes: Ensure final list of materials are from the same product class and size

Choose system (page 268)



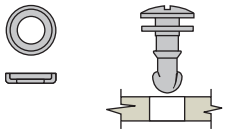
1. Select receptacle type

Clip-on receptacle
82-47-113-15



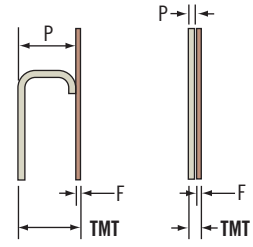
2. Select accessories

Cup washer add 0.5 (.020) to the outer panel thickness (P)
82-46-101-41



3. Calculate TMT

Type 1 | Type 2



TMT = P + F

TMT = P + F + 1.4 (.055)

Configuration 2

Stud selection column
D

Use the TMT value to find the correct stud length on the stud selector page.
The correct column of TMT ranges is given on the receptacle page.

D TMT Range		K
All other receptacles		
Min.	Max.	
2.3 (.090)	2.8 (.110)	100
2.8 (.110)	3.3 (.130)	120
3.3 (.130)	3.8 (.150)	140
3.8 (.150)	4.3 (.170)	160
4.3 (.170)	4.8 (.190)	180
4.8 (.190)	5.3 (.210)	200
5.3 (.210)	5.8 (.230)	220
5.8 (.230)	6.3 (.250)	240

Stud: Part Number Selection

H Head style
11 Oval slot
12 Wing head
15 Bail RA
16 Bail RB
78 Hex recess
19 Oval Phillips recess
T Tool head recess

K Length
Enter number from selection table

M Material
16 Steel, zinc plated
20 Stainless steel

82 - H - K - M

82 *DZUS®* Lion Quarter-Turn Fasteners

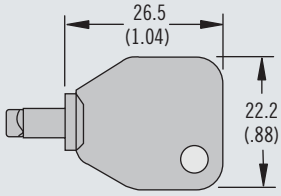
Studs

Material and Finish

Studs: Steel, zinc plated and chromate or stainless steel
Bail cover: ABS, black

Accessories

Tool head recess key:
Part number: 29-90-214-10



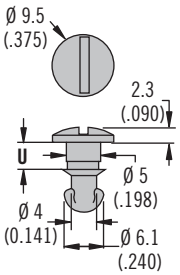
Installation Notes

Bail cover:
A retainer must be fitted under the stud head to fit flush with surface

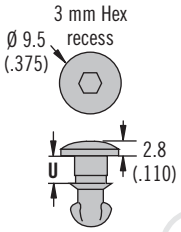
Retainer part number 82-32-301-12 (see page 279)

H Head Styles - Tool Actuated

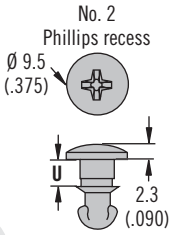
Oval Slot



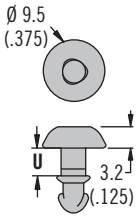
Hex Recess



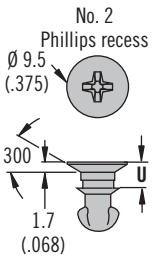
Oval Recess



Tool Head Recess



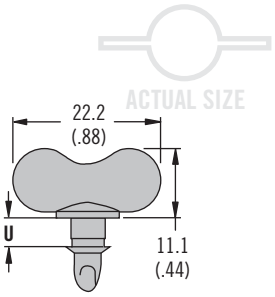
Flush Recess



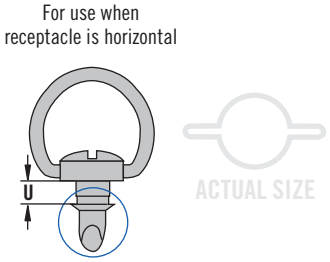
ACTUAL SIZE

H Head Styles - Hand Actuated

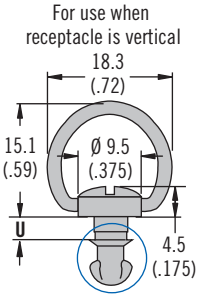
Wing



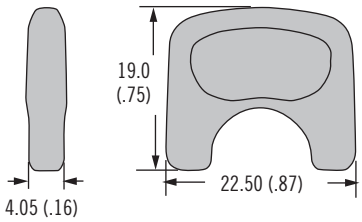
Bail Style RA



Bail Style RB

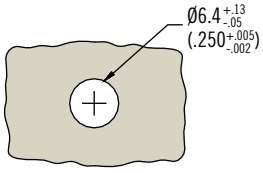


Optional Bail Cover



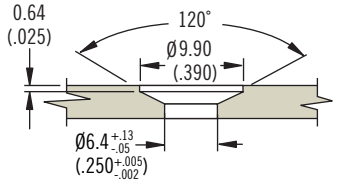
Bail Cover Part Number
82-2-B-000

Stud Panel Preparation



Flush Head Styles

(when outer panel is 1.3 (.050) or greater)



82 *DZUS®* Lion Quarter-Turn Fasteners

Stud selection

H Head style
- **11** Oval slot
- **12** Wing head
- **15** Bail RA
- **16** Bail RB
- **19** Oval Phillips recess
- **28** Flush Phillips recess
- **78** Hex recess
- **T** Tool head recess (not available in stainless steel)

K Length
Enter number from selection table below

82 - H - K - M

M Material
- **16** Steel, zinc plated
- **20** Stainless steel (not available in tool head recess head style)

Stud Length Table

A		B		C		D		K	U
TMT Range For: 82-35-306-10		TMT Range For: 82-35-308-55 82-35-310-55		TMT Range For: 82-35-315-55		TMT Range For: All Other Receptacles			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
0.7 (.026)	1.2 (.045)	~	~	~	~	2.3 (.090)	2.8 (.110)	**100**	3.2 (.127)
1.2 (.045)	1.7 (.065)	~	~	~	~	2.8 (.110)	3.3 (.130)	**120**	3.7 (.147)
1.7 (.065)	2.2 (.085)	~	~	~	~	3.3 (.130)	3.8 (.150)	**140**	4.2 (.167)
2.2 (.085)	2.7 (.105)	0 (0)	0.5 (.019)	1.3 (.050)	1.8 (.070)	3.8 (.150)	4.3 (.170)	**160**	4.7 (.187)
2.7 (.105)	3.2 (.125)	0.5 (.019)	1 (.039)	1.8 (.070)	2.3 (.090)	4.3 (.170)	4.8 (.190)	**180**	5.3 (.207)
3.2 (.125)	3.7 (.145)	1 (.039)	1.5 (.059)	2.3 (.090)	2.8 (.110)	4.8 (.190)	5.3 (.210)	**200**	5.8 (.227)
3.7 (.145)	4.2 (.165)	1.5 (.059)	2 (.079)	2.8 (.110)	3.3 (.130)	5.3 (.210)	5.8 (.230)	**220**	6.3 (.247)
4.2 (.165)	4.7 (.185)	2 (.079)	2.5 (.099)	3.3 (.130)	3.8 (.150)	5.8 (.230)	6.3 (.250)	**240**	6.8 (.267)
4.7 (.185)	5.2 (.205)	2.5 (.099)	3 (.119)	3.8 (.150)	4.3 (.170)	6.4 (.250)	6.9 (.270)	**260**	7.3 (.287)
5.2 (.205)	5.7 (.225)	3 (.119)	3.5 (.139)	4.3 (.170)	4.8 (.190)	6.9 (.270)	7.4 (.290)	**280**	7.8 (.307)
5.7 (.225)	6.2 (.245)	3.5 (.139)	4.1 (.159)	4.8 (.190)	5.3 (.210)	7.4 (.290)	7.9 (.310)	**300**	8.3 (.327)
~	~	4.1 (.159)	4.6 (.179)	5.3 (.210)	5.8 (.230)	7.9 (.310)	8.4 (.330)	**320**	8.8 (.347)
~	~	4.6 (.179)	5.1 (.199)	5.8 (.230)	6.3 (.250)	8.4 (.330)	8.9 (.350)	**340**	9.3 (.367)
~	~	5.1 (.199)	5.6 (.219)	6.3 (.250)	6.8 (.270)	8.9 (.350)	9.4 (.370)	**360**	9.8 (.387)
~	~	5.6 (.219)	6.1 (.239)	6.8 (.270)	7.3 (.290)	9.4 (.370)	9.9 (.390)	**380**	10.3 (.407)
~	~	6.1 (.239)	6.6 (.259)	7.3 (.290)	7.8 (.310)	9.9 (.390)	10.4 (.410)	**400**	10.8 (.427)
~	~	6.6 (.259)	7.1 (.279)	7.8 (.310)	8.3 (.330)	10.4 (.410)	10.9 (.430)	**420**	11.4 (.447)
~	~	7.1 (.279)	7.6 (.299)	8.3 (.330)	8.8 (.350)	10.9 (.430)	11.4 (.450)	**440**	11.9 (.467)
~	~	7.6 (.299)	8.1 (.319)	8.8 (.350)	9.3 (.370)	11.4 (.450)	11.9 (.470)	**460**	12.4 (.487)
~	~	8.1 (.319)	8.6 (.339)	9.3 (.370)	9.8 (.390)	11.9 (.470)	12.4 (.490)	**480**	12.9 (.507)
~	~	8.6 (.339)	9.1 (.359)	9.8 (.390)	10.3 (.410)	12.5 (.490)	12.9 (.510)	**500**	13.4 (.527)
~	~	9.1 (.359)	9.6 (.379)	10.3 (.410)	10.8 (.430)	13 (.510)	13.5 (.530)	**520**	13.9 (.547)
~	~	9.6 (.379)	10.1 (.399)	10.8 (.430)	11.3 (.450)	13.5 (.530)	14 (.550)	**540**	14.4 (.567)
~	~	10.1 (.399)	10.6 (.419)	11.3 (.450)	11.8 (.470)	14 (.550)	14.5 (.570)	**560**	14.9 (.587)
~	~	10.6 (.419)	11.1 (.439)	11.8 (.470)	12.3 (.490)	14.5 (.570)	15 (.590)	**580**	15.4 (.607)

Part Number Selection

To select correct fastener:

1. Select receptacle
Choose a receptacle from pages 274 - 278

2. Select retainer and accessories
from page 279 and note any adjustment values

3. Specify stud length
Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B, C, or D) given for the receptacle selected, find K

4. Complete the stud part number
by specifying the head style H, stud length K, and material M

Example:
For rivet-on with base receptacle 82-35-302-15 use column D
For TMT value calculated as 5.2 (.206), K = 200
For slotted head style in steel material, completed part number: 82-11-200-16
A complete example can be found on page 271

Notes
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

82 *DZUS*® Lion Quarter-Turn Fasteners

Receptacles

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with Ø 2.5 (3⁄32) rivets, spring plate must float freely after riveting

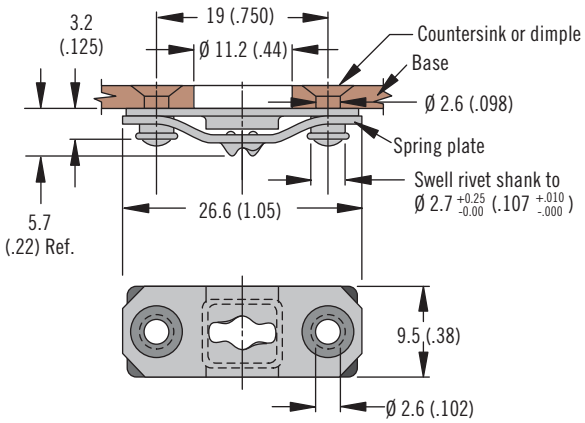
Part Number

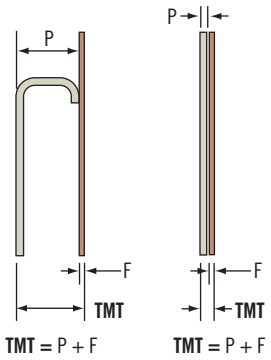
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Rivet-On With Base





ACTUAL SIZE

Part Number	Stud Selection Column
82-35-302-15	D

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with Ø 2.5 (3⁄32) rivets, spring plate must float freely after riveting

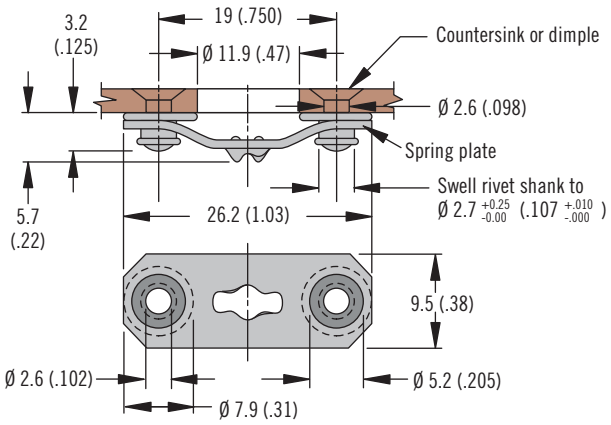
Part Number

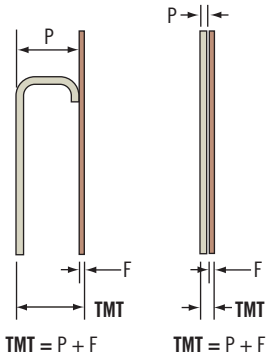
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Rivet-On Without Base

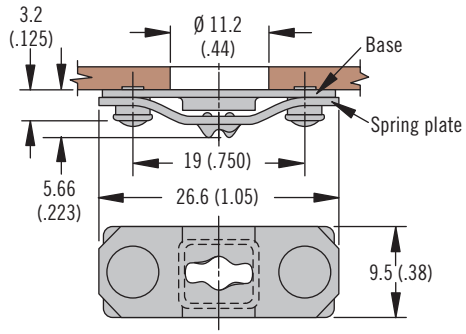


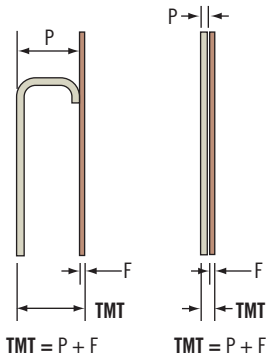


ACTUAL SIZE

Material	Part Number	Stud Selection Column
Steel	82-35-295-15	D
Stainless steel	82-35-295-20	

Weld-On





ACTUAL SIZE

Part Number	Stud Selection Column
82-35-303-15	D

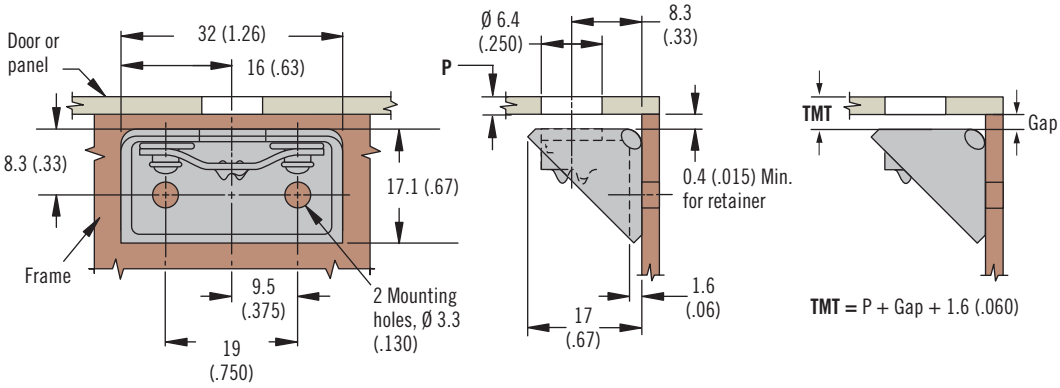
Material and Finish
Steel, zinc immersion coating

Installation Notes
Spring plate must float freely after welding

Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Side Mount



ACTUAL SIZE

Part Number	Stud Selection Column
82-45-101-15	D

Material and Finish
Steel, zinc immersion coating

Installation Notes
Install with Ø 2.5 (3⁄32) rivets

Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

82 *DZUS*® Lion Quarter-Turn Fasteners

Receptacles

Material and Finish

Steel, zinc plated and neoprene

Installation Notes

Install with Ø 2.5 (3/32) rivets

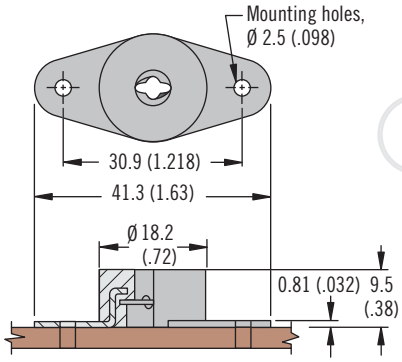
Part Number

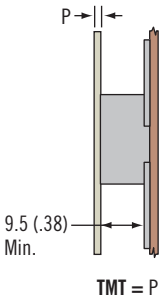
See table

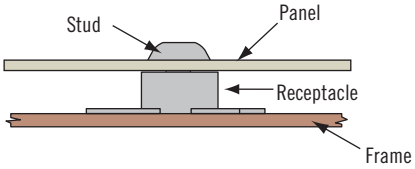
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Vibration Isolating







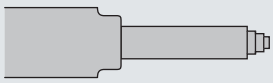
Part Number	Stud Selection Column
82-35-306-10	A

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

Installation Tool



Part Number: 29-8125-309

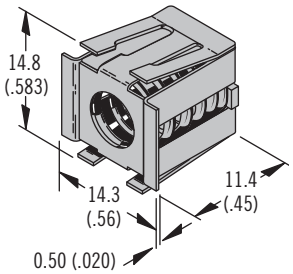
Part Number

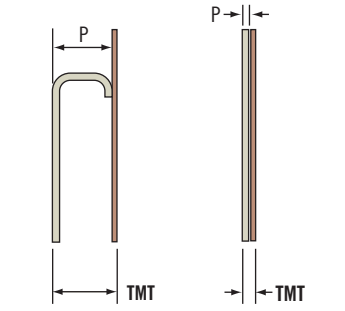
See table

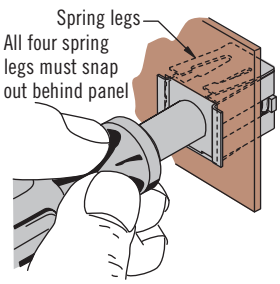
Notes

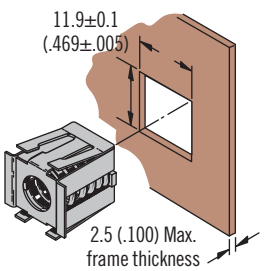
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Snap-In - Front Mount







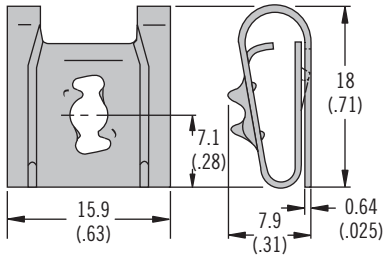


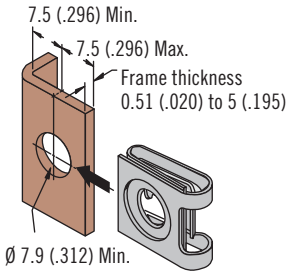
Part Number	Stud Selection Column
82-35-309-56	D

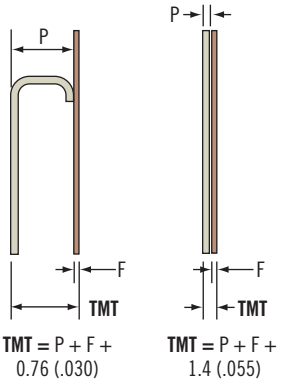
82 *DZUS®* Lion Quarter-Turn Fasteners

Receptacles

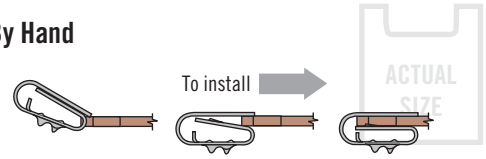
Clip-On







By Hand



With Screwdriver

Material	Part Number	Stud Selection Column
Steel	82-47-113-15	D
Stainless steel	82-47-113-20	

Material and Finish

Steel, zinc immersion coating or stainless steel

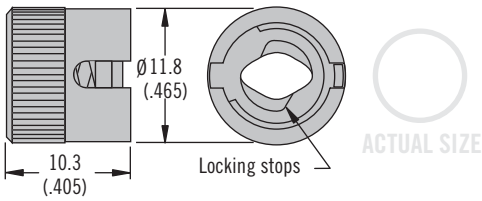
Part Number

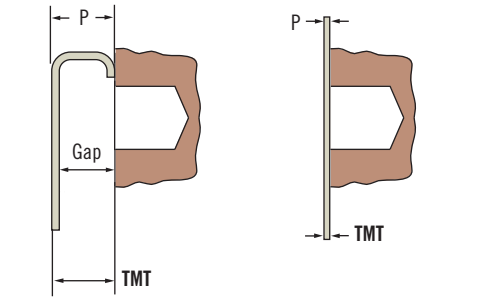
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Press-In





Material and Finish

Steel, zinc plated and stainless steel

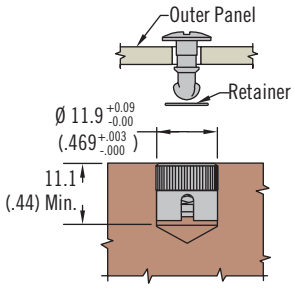
Installation Notes

Press receptacle flush to frame

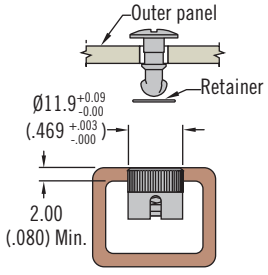
Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

Solid Install



Blind Install



Part Number	Stud Selection Column
82-35-308-55	B

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

82 *DZUS*® Lion Quarter-Turn Fasteners

Receptacles

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

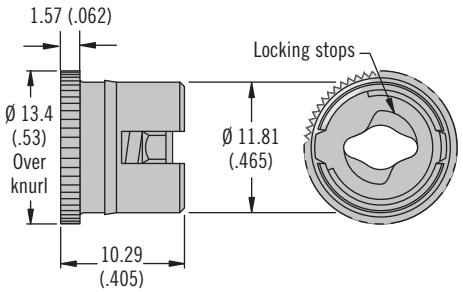
Part Number

See table

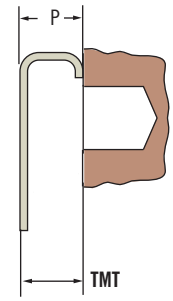
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

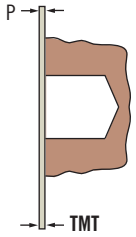
Ultrasonic For Thermoplastics



ACTUAL SIZE

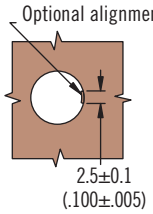


TMT = P - 0.5 (.020)

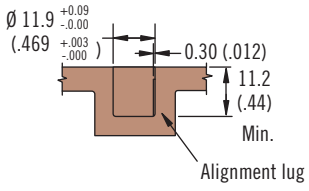


TMT = P + (Retainer adjustment value) - 0.5 (.020)

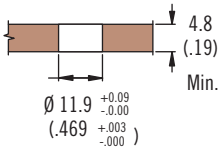
Installation



Blind Hole Installation



Thru Hole Installation



Part Number	Stud Selection Column
82-35-310-55	**B**

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R_B85 or softer

See page 497 for installation guidelines

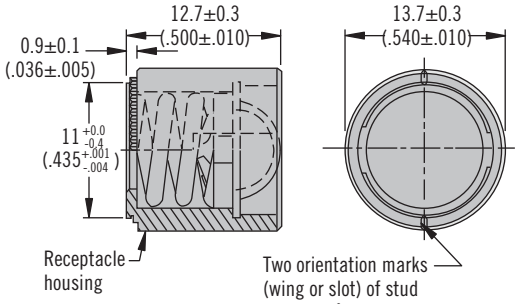
Part Number

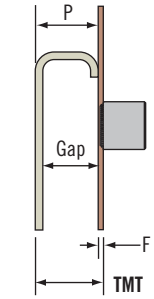
See table

Notes

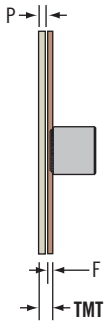
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 273

Shielded – Self-Clinching



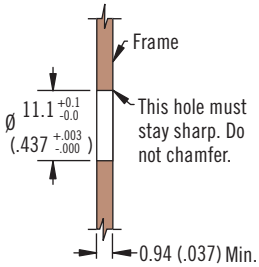


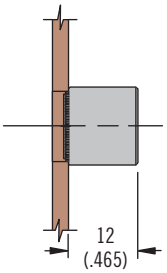
TMT = P + F
(when gap is > retainer thickness)



Frame thickness (F) > 0.9 (.036) + Retainer thickness: **TMT** = P + F

Frame thickness (F) ≥ 0.9 (.036) + Retainer thickness:
TMT = P + 0.9 (.036) + Retainer thickness





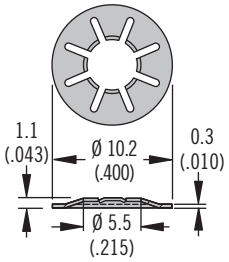
ACTUAL SIZE

Part Number	Stud Selection Column
82-35-315-55	**C**

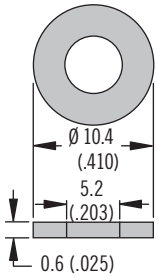
82 *DZUS®* Lion Quarter-Turn Fasteners

Retainers · Accessories

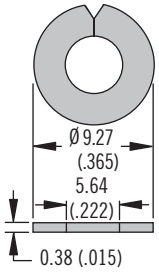
Retainer Push-On



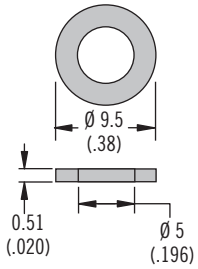
Retainer Push-On Plastic



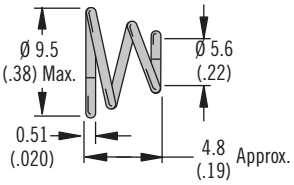
Retainer Split



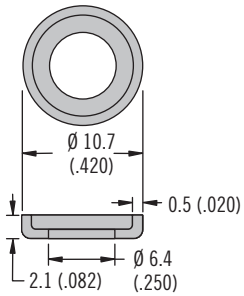
Sealing Washer



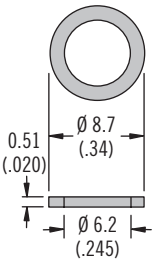
Ejector Spring



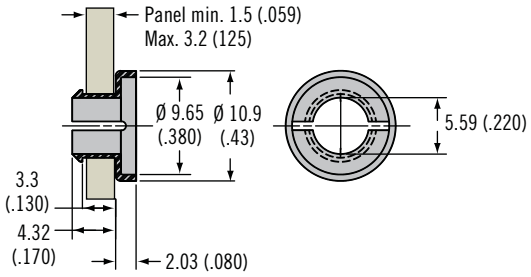
Cupped Washer

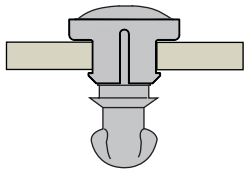


Flat Wear Washer



Snap-In Retainer





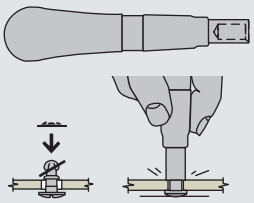
Type	Part Number	Material	Adjustment Value
Push-on retainer	82-32-201-20	Stainless steel	Add 0.25 (.010)
Push-on plastic retainer	82-32-301-12	Nylon, black	Add 0.64 (.025)
Split retainer	82-32-101-20	Stainless steel	Add 0.38 (.015)
Sealing washer	82-43-201-38	Neoprene nitrile rubber, black	Add 0.51 (.020)
Ejector spring	43-13-1-24	Stainless steel	Add 0.51 (.020)
Cupped washer	82-46-101-39	Nylon, white	Add 0.51 (.020)
	82-46-101-41	Nylon, black	
Flat wear washer	82-46-103-39	Nylon, white	Add 0.51 (.020)
Snap-in retainer	82-32-401-41	Nylon, black	Add 0.51 (.020)

Material and Finish

See table

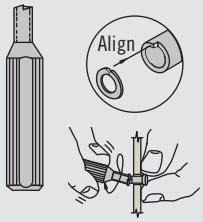
Installation Notes

For standard retainers:



Part Number: 82-0-22542-11

For split retainers:



Part Number: 82-0-7595-11

Notes

For snap-in retainer:
Min. stud K = 180 when using snap-in retainer (see page 273 for K reference).

Install stud into retainer before inserting into panel

Part Number

See table

Notes

Adjustment value:
When using accessories the components increase TMT

Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 271 for example)

85 *DZUS®* Lion Quarter-Turn Fasteners

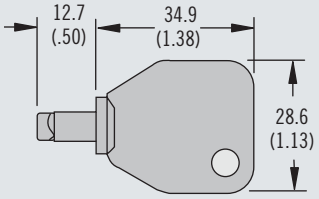
Studs

Material and Finish

Studs: Steel, zinc plated or stainless steel
Bail cover: ABS, black

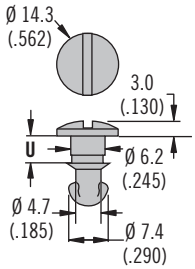
Accessories

Tool head recess key:
Part number: 29-90-215-10

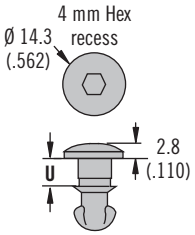


H Head Styles - Tool Actuated

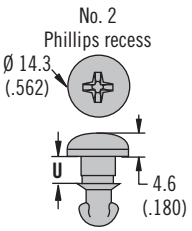
Oval Slot



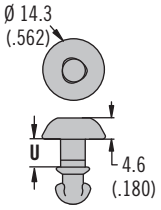
Hex Recess



Phillips Recess

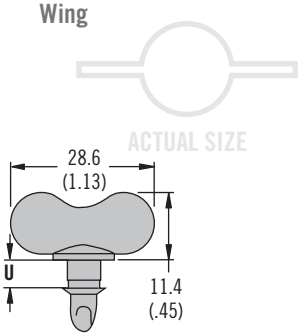


Tool Head Recess

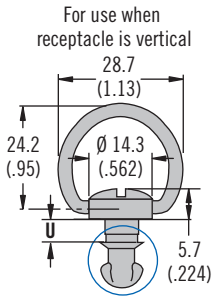


H Head Styles - Hand Actuated

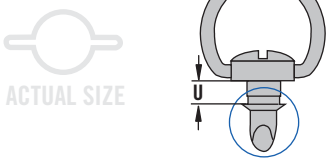
Wing



Bail Style RA



Bail Style RB

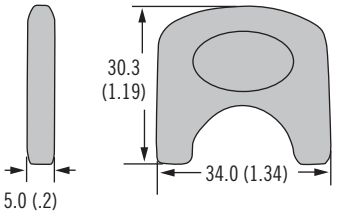


Installation Notes

Bail cover:
A wear washer must be fitted under the stud head to fit flush with surface

Wear washer part number
85-34-301-12 (see page 285)

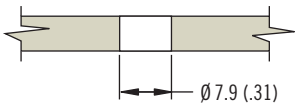
Optional Bail Cover



Bail Cover Part Number
85-5-B-000

Stud Panel Preparation

Prepare Hole



85 *DZUS®* Lion Quarter-Turn Fasteners

Stud selection

Part Number Selection

H Head style
- **11** Oval slot
- **12** Wing head
- **15** Bail RA
- **16** Bail RB
- **78** Hex recess
- **P** Oval Phillips recess
- **T** Tool head recess (not available in stainless steel)

K Length
Enter number from selection table below

85 - H - K - M

M Material
- **16** Steel, zinc plated
- **20** Stainless steel (not available in tool head recess head style)

Stud Length Table							
A		B		C		K	U
TMT Range For: 85-35-308-55		TMT Range For: 85-35-311-55		TMT Range For: All other receptacles			
Min.	Max.	Min.	Max.	Min.	Max.		
~	~	~	~	2.3 (.090)	2.8 (.110)	**100**	5.2 (.205)
~	~	~	~	2.8 (.110)	3.3 (.130)	**120**	5.7 (.225)
~	~	~	~	3.3 (.130)	3.8 (.150)	**140**	6.2 (.245)
~	~	~	~	3.8 (.150)	4.3 (.170)	**160**	6.7 (.265)
~	~	~	~	4.3 (.170)	4.8 (.190)	**180**	7.2 (.285)
~	~	~	~	4.8 (.190)	5.3 (.210)	**200**	7.7 (.305)
~	~	~	~	5.3 (.210)	5.8 (.230)	**220**	8.3 (.325)
~	~	1.3 (.050)	1.8 (.070)	5.8 (.230)	6.3 (.250)	**240**	8.8 (.345)
0.4 (.015)	0.9 (.035)	1.8 (.070)	2.3 (.090)	6.4 (.250)	6.9 (.270)	**260**	9.3 (.365)
0.9 (.035)	1.4 (.055)	2.3 (.090)	2.8 (.110)	6.9 (.270)	7.4 (.290)	**280**	9.8 (.385)
1.4 (.055)	1.9 (.075)	2.8 (.110)	3.3 (.130)	7.4 (.290)	7.9 (.310)	**300**	10.3 (.405)
1.9 (.075)	2.4 (.095)	3.3 (.130)	3.8 (.150)	7.9 (.310)	8.4 (.330)	**320**	10.8 (.425)
2.4 (.095)	2.9 (.115)	3.8 (.150)	4.3 (.170)	8.4 (.330)	8.9 (.350)	**340**	11.3 (.445)
2.9 (.115)	3.4 (.135)	4.3 (.170)	4.8 (.190)	8.9 (.350)	9.4 (.370)	**360**	11.8 (.465)
3.4 (.135)	3.9 (.155)	4.8 (.190)	5.3 (.210)	9.4 (.370)	9.9 (.390)	**380**	12.3 (.485)
3.9 (.155)	4.4 (.175)	5.3 (.210)	5.8 (.230)	9.9 (.390)	10.4 (.410)	**400**	12.8 (.505)
4.4 (.175)	4.9 (.195)	5.8 (.230)	6.3 (.250)	10.4 (.410)	10.9 (.430)	**420**	13.3 (.525)
5 (.195)	5.5 (.215)	6.4 (.250)	6.9 (.270)	10.9 (.430)	11.4 (.450)	**440**	13.8 (.545)
5.5 (.215)	6 (.235)	6.9 (.270)	7.4 (.290)	11.4 (.450)	11.9 (.470)	**460**	14.4 (.565)
6 (.235)	6.5 (.255)	7.4 (.290)	7.9 (.310)	11.9 (.470)	12.4 (.490)	**480**	14.9 (.585)
6.5 (.255)	7 (.275)	7.9 (.310)	8.4 (.330)	12.5 (.490)	12.9 (.510)	**500**	15.4 (.605)
7 (.275)	7.5 (.295)	8.4 (.330)	8.9 (.350)	13 (.510)	13.5 (.530)	**520**	15.9 (.625)
7.5 (.295)	8 (.315)	8.9 (.350)	9.4 (.370)	13.5 (.530)	14 (.550)	**540**	16.4 (.645)
8 (.315)	8.5 (.335)	9.4 (.370)	9.9 (.390)	14 (.550)	14.5 (.570)	**560**	16.9 (.665)
8.5 (.335)	9 (.355)	9.9 (.390)	10.4 (.410)	14.5 (.570)	15 (.590)	**580**	17.4 (.685)

To select correct fastener:

1. Select receptacle
Choose a receptacle from pages 282 - 284

2. Select retainer and accessories
from page 285 and note any adjustment values

3. Specify stud length
Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B or C) given for the receptacle selected, find K

4. Complete the stud part number
by specifying the head style H, stud length K, and material M

Example:
For rivet-on with base receptacle 85-35-295-15 use column C
For TMT value calculated as 5.2 (.206), K = 200
For slotted head style in steel material, completed part number: 85-11-200-16
A complete example can be found on page 271

Notes
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

85 *DZUS*® Lion Quarter-Turn Fasteners

Receptacles

Material and Finish

Steel, zinc immersion coating or stainless steel

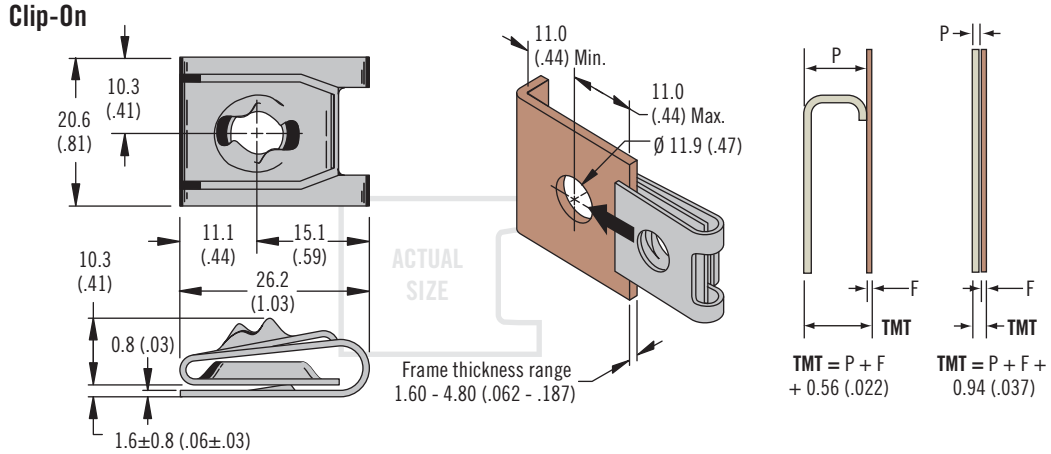
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

Clip-On



By Hand

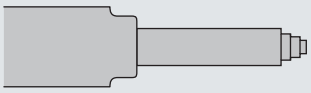
With Screwdriver

Material	Part Number	Stud Selection Column
Steel	85-47-101-15	C
Stainless steel	85-47-101-20	

Material and Finish

Steel, zinc plated and stainless steel

Installation Tool



Part Number: 29-8125-309

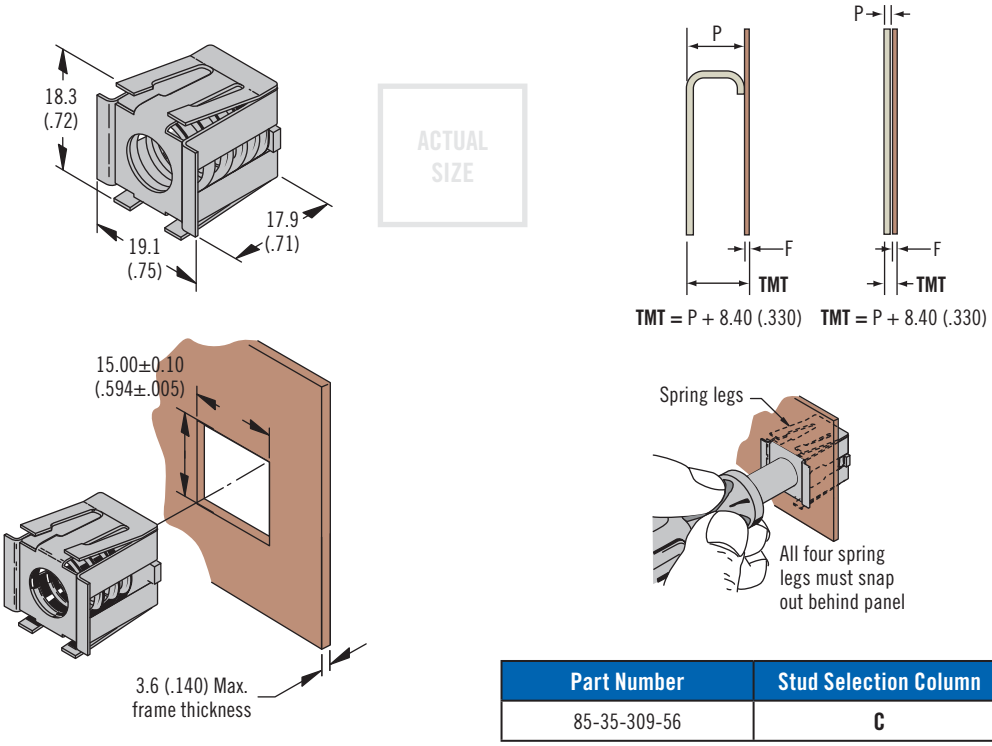
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

Snap-In – Front Mount

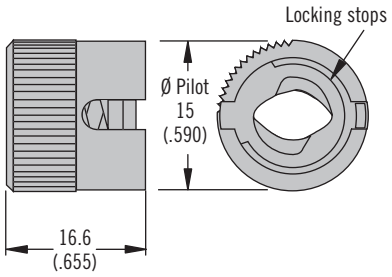


Part Number	Stud Selection Column
85-35-309-56	C

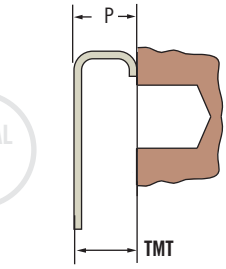
85 *DZUS*® Lion Quarter-Turn Fasteners

Receptacles

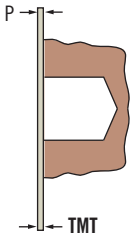
Press-In



ACTUAL SIZE

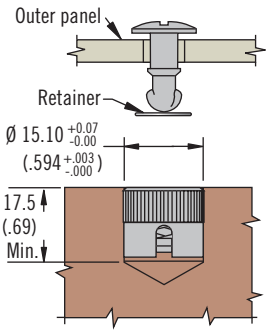


TMT = P + Gap - 0.6 (.025)
(when gap is > retainer thickness)

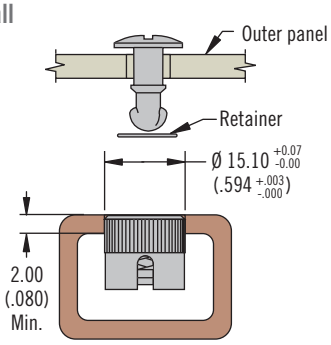


TMT = P +
(Retainer adjustment value)
- 0.6 (0.25)

Solid Install



Blind Install



Part Number	Stud Selection Column
85-35-308-55	A

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

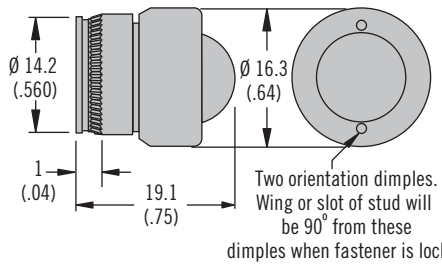
Part Number

See table

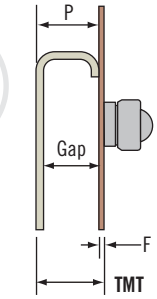
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

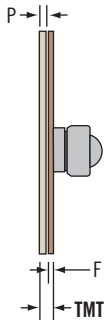
Shielded – Self-Clinching



ACTUAL SIZE

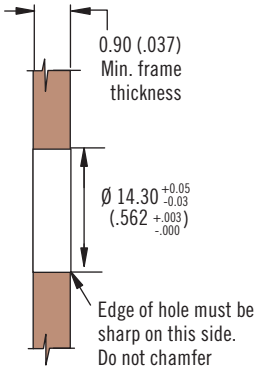


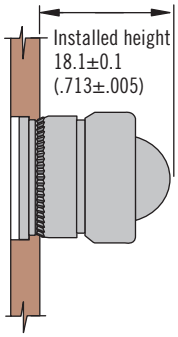
TMT = P + F
(when gap is >
retainer thickness)



Frame thickness (F) > 0.9 (.036)
+ Retainer thickness: **TMT** = P + F

Frame thickness (F) ≥ 0.9 (.036)
+ Retainer thickness:
TMT = P + 0.9 (.036) + Retainer thickness





Part Number	Stud Selection Column
85-35-311-55	B

Material and Finish

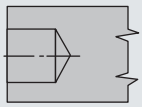
Steel, zinc plated and stainless steel

Installation Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R_B85 or softer.

See page 497 for installation guidelines

Installation Tool



Part number: 90-2825-11

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

85 *DZUS*® Lion Quarter-Turn Fasteners

Receptacles

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with Ø 3 (.125) rivets, spring must float freely after riveting

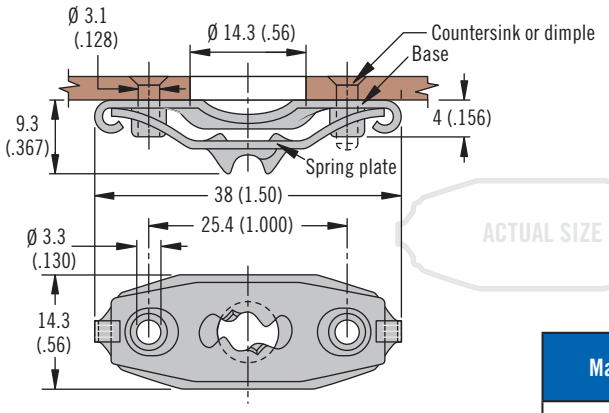
Part Number

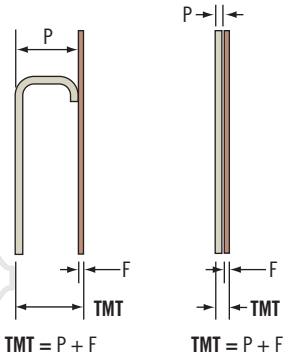
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

Rivet-On With Base





Material	Part Number	Stud Selection Column
Steel	85-35-295-15	C
Stainless steel	85-35-295-20	

Material and Finish

Steel, zinc immersion coating

Installation Notes

Spring must float freely after welding

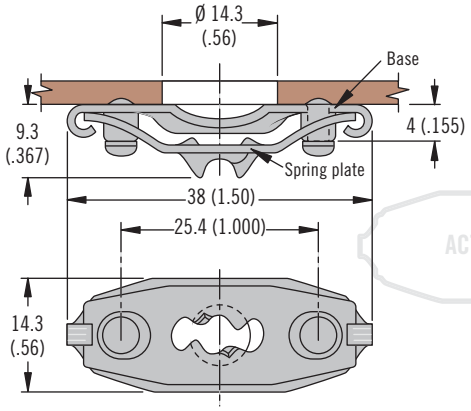
Part Number

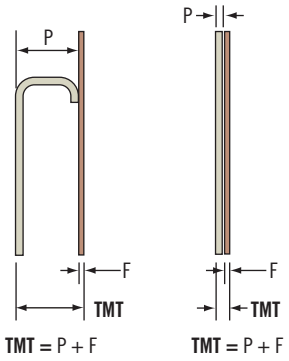
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

Weld-On





Part Number	Stud Selection Column
85-35-296-15	C

Material and Finish

Steel, zinc immersion coating

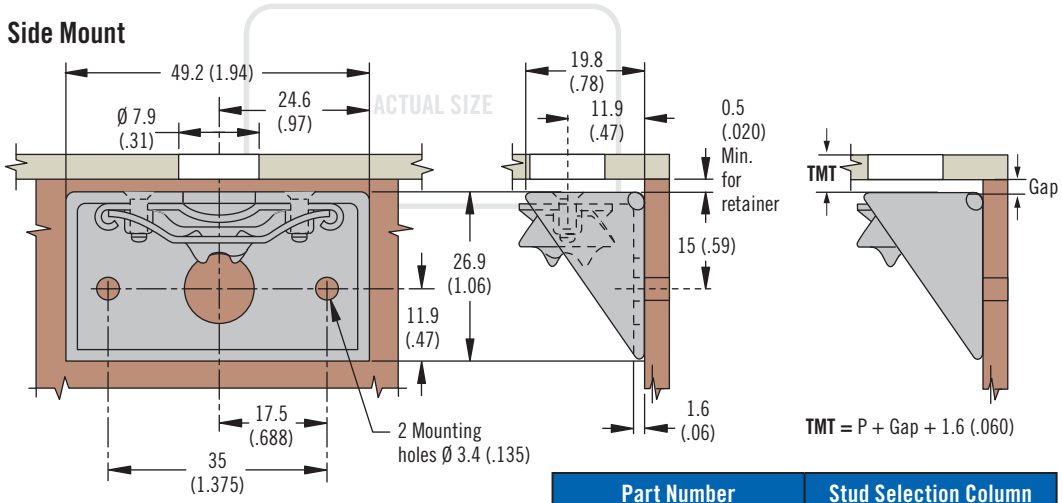
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 281

Side Mount



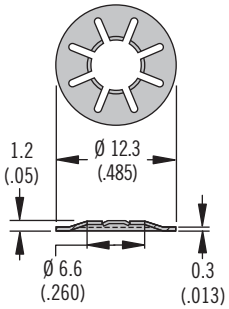
Part Number	Stud Selection Column
85-45-101-15	C

85 *DZUS®* Lion Quarter-Turn Fasteners

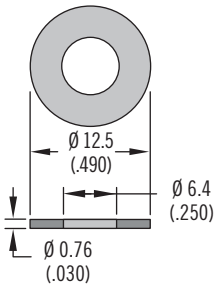
Retainers · Accessories

Retainers

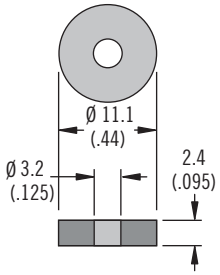
Push-On - Stainless Steel



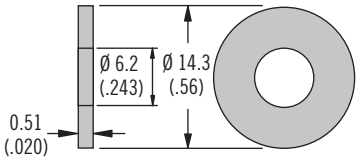
Push-On - Plastic



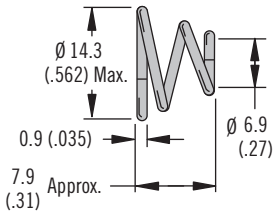
Push-On - Neoprene



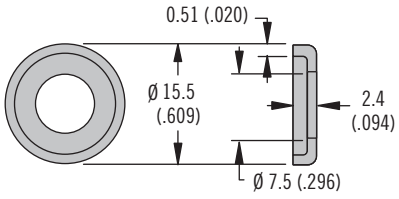
Sealing Washer



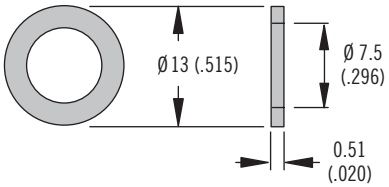
Ejector Spring



Cupped Washer



Flat Wear Washer



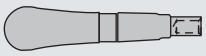
Type	Part Number	Material	Adjustment Value
Push-on - Stainless steel	85-34-201-20	Stainless steel	Add 0.33 (.013)
Push-on - Plastic	85-34-301-12	Nylon, black	Add 0.76 (.030)
Push-on - Neoprene	85-33-101-27	Neoprene, black	Add 1.22 (.048)
Sealing washer	85-43-201-38	Neoprene nitrile rubber, black	Add 0.51 (.020)
Ejector spring	14-18-150-24	Stainless steel	Add 1.00 (.039)
Cupped washer	85-46-101-39	Nylon, white	Add 0.51 (.020)
	85-46-101-41	Nylon, black	
Flat wear washer	85-46-103-39	Nylon, white	Add 0.51 (.020)

Material and Finish

See table

Installation Notes

For standard retainers use tool



Part number 85-0-22543-11

Part Number

See table

Adjustment value:

When using accessories the components add thickness

Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 271 for example)

D8 *DZUS® PANEX* Quarter-Turn Fasteners

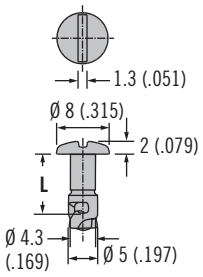
Studs · Size 4

Material and Finish

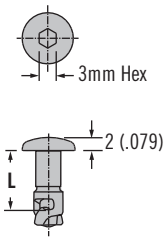
Studs: Steel, zinc plated plus chromate or chrome plated
Bail cover: ABS, black

H Head Styles - Tool Actuated

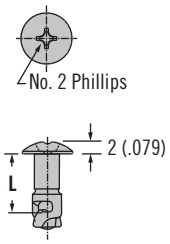
Oval Slot



Hex Recess

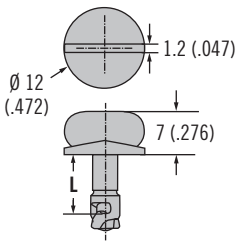


Phillips Recess

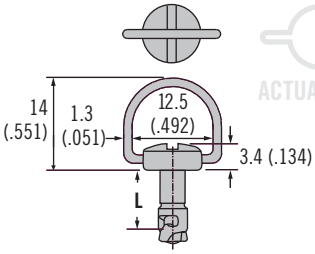


H Head Styles - Hand Actuated

Wing



Bail

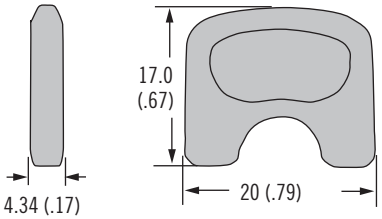


Installation Notes

Bail cover:
A Retainer must be fitted under the stud head to fit flush with surface

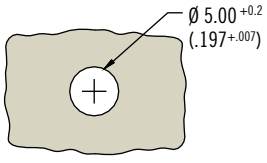
Retainer part number
D8-324-100-040 (see page 291)

Optional Bail Cover



Bail Cover Part Number
D8-4-B-000

Stud Panel Preparation



D8 *DZUS® PANEX* Quarter-Turn Fasteners

Stud selection · Size 4

Part Number Selection

H Head style
- **1** Slot recess
- **2** Hex recess
- **3** Wing
- **4** Bail
- **7** Phillips recess

K Length
Enter number from selection table below

D8 - 314 - H K - F

F Finish
- **170** Chrome plated
- **190** Zinc plated
- **191** Zinc plated, black

Stud Length Table

A		B		C		D		E		K	L ±.15 ±(.006)
TMT Range For: D8-334-400-121 D8-334-500-121		TMT Range For: D8-334-300-121 D8-334-310-121		TMT Range For: D8-334-200-190		TMT Range For: D8-334-100-300		TMT Range For: D8-334-110-190			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
1.0 (.04)	1.9 (.07)	1.5 (.06)	2.4 (.09)	~	~	~	~	~	~	08	8 (.315)
2.0 (.08)	2.9 (.11)	2.5 (.10)	3.4 (.13)	~	~	~	~	~	~	09	9 (.354)
3.0 (.12)	3.9 (.15)	3.5 (.14)	4.4 (.17)	~	~	0.7 (.03)	1.6 (.06)	1.7 (.07)	2.6 (.10)	10	10 (.394)
4.0 (.16)	4.9 (.19)	4.5 (.18)	5.4 (.21)	~	~	1.7 (.07)	2.6 (.10)	2.7 (.11)	3.6 (.14)	11	11 (.433)
5.0 (.20)	5.9 (.23)	5.5 (.22)	6.4 (.25)	1.5 (.06)	2.4 (.09)	2.7 (.11)	3.6 (.14)	3.7 (.15)	4.6 (.18)	12	12 (.472)
6.0 (.24)	6.9 (.27)	6.5 (.26)	7.4 (.29)	2.5 (.10)	3.4 (.13)	3.7 (.15)	4.6 (.18)	4.7 (.19)	5.6 (.22)	13	13 (.512)
7.0 (.28)	7.9 (.31)	7.5 (.30)	8.4 (.33)	3.5 (.14)	4.4 (.17)	4.7 (.19)	5.6 (.22)	5.7 (.22)	6.6 (.26)	14	14 (.551)
8.0 (.31)	8.9 (.35)	8.5 (.33)	9.4 (.37)	4.5 (.18)	5.4 (.21)	5.7 (.22)	6.6 (.26)	6.7 (.26)	7.6 (.30)	15	15 (.591)
9.0 (.35)	9.9 (.39)	9.5 (.37)	10.4 (.41)	5.5 (.22)	6.4 (.25)	6.7 (.26)	7.6 (.30)	7.7 (.30)	8.6 (.34)	16	16 (.630)
10.0 (.39)	10.9 (.43)	10.5 (.41)	11.4 (.45)	6.5 (.26)	7.4 (.29)	7.7 (.30)	8.6 (.34)	8.7 (.34)	9.6 (.38)	17	17 (.669)
11.0 (.43)	11.9 (.47)	11.5 (.45)	12.4 (.49)	7.5 (.30)	8.4 (.33)	8.7 (.34)	9.6 (.38)	9.7 (.38)	10.6 (.42)	18	18 (.709)
12.0 (.47)	12.9 (.51)	12.5 (.49)	13.4 (.53)	8.5 (.33)	9.4 (.37)	9.7 (.38)	10.6 (.42)	10.7 (.42)	11.6 (.46)	19	19 (.748)
13.0 (.51)	13.9 (.55)	13.5 (.53)	14.4 (.57)	9.5 (.37)	10.4 (.41)	10.7 (.42)	11.6 (.46)	11.7 (.46)	12.6 (.50)	20	20 (.787)
14.0 (.55)	14.9 (.59)	14.5 (.57)	15.4 (.61)	10.5 (.41)	11.4 (.45)	11.7 (.46)	12.6 (.50)	12.7 (.50)	13.6 (.54)	21	21 (.827)
15.0 (.59)	15.9 (.63)	15.5 (.61)	16.4 (.65)	11.5 (.45)	12.4 (.49)	12.7 (.50)	13.6 (.54)	13.7 (.54)	14.6 (.57)	22	22 (.866)
16.0 (.63)	16.9 (.67)	16.5 (.65)	17.4 (.69)	12.5 (.49)	13.4 (.53)	13.7 (.54)	14.6 (.57)	14.7 (.58)	15.6 (.61)	23	23 (.906)
17.0 (.67)	17.9 (.70)	17.5 (.69)	18.4 (.72)	13.5 (.53)	14.4 (.57)	14.7 (.58)	15.6 (.61)	15.7 (.62)	16.6 (.65)	24	24 (.945)
18.0 (.71)	18.9 (.74)	18.5 (.73)	19.4 (.76)	14.5 (.57)	15.4 (.61)	15.7 (.62)	16.6 (.65)	16.7 (.66)	17.6 (.69)	25	25 (.984)
19.0 (.75)	19.9 (.78)	19.5 (.77)	20.4 (.80)	15.5 (.61)	16.4 (.65)	16.7 (.66)	17.6 (.69)	17.7 (.70)	18.6 (.73)	26	26 (1.02)
20.0 (.79)	20.9 (.82)	20.5 (.81)	21.4 (.84)	16.5 (.65)	17.4 (.69)	17.7 (.70)	18.6 (.73)	18.7 (.74)	19.6 (.77)	27	27 (1.06)
21.0 (.83)	21.9 (.86)	21.5 (.85)	22.4 (.88)	17.5 (.69)	18.4 (.72)	18.7 (.74)	19.6 (.77)	19.7 (.78)	20.6 (.81)	28	28 (1.10)
22.0 (.87)	22.9 (.90)	22.5 (.89)	23.4 (.92)	18.5 (.73)	19.4 (.76)	19.7 (.78)	20.6 (.81)	20.7 (.81)	21.6 (.85)	29	29 (1.14)
23.0 (.91)	23.9 (.94)	23.5 (.93)	24.4 (.96)	19.5 (.77)	20.4 (.80)	20.7 (.81)	21.6 (.85)	21.7 (.85)	22.6 (.89)	30	30 (1.18)

To select correct fastener:

1. Select receptacle
Choose a receptacle from pages 288 - 290

2. Select retainer and accessories
from page 291 and note any adjustment values

3. Specify stud length
Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the length selection table (left) using the column (A, B ,C ,D or E) given for the receptacle selected.

4. Complete the stud part number
by specifying the head style H, stud length K, and material M

Example:
For rivet-on
D8-334-400-121 use column A
For TMT value calculated as 5.2 (.206), K = 12
For slotted head style in steel, zinc plated material, completed part number: D8-314-112-190
A complete example can be found on page 271.

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 4

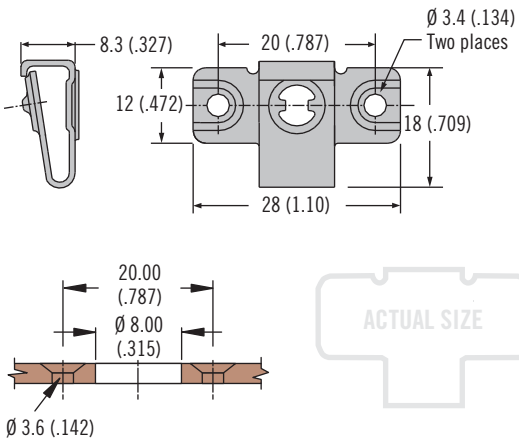
Rivet-On

Material and Finish
Steel, zinc immersion coating

Installation Notes
Install with Ø 3 (.125) rivets

Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287



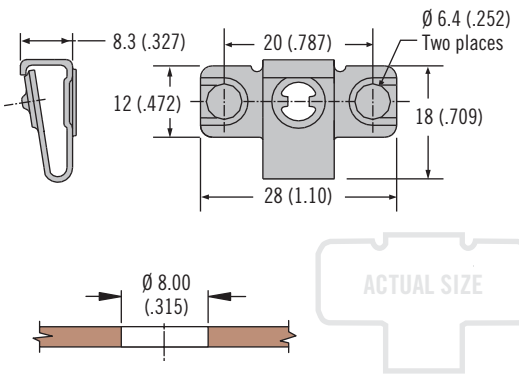
Part Number	Stud Selection Column
D8-334-400-121	A

Weld-On

Material and Finish
Steel, zinc immersion coating

Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287



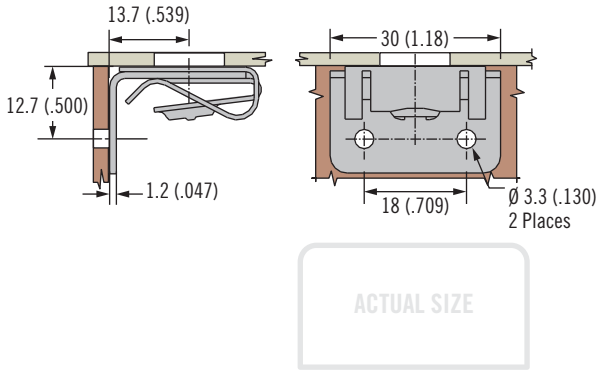
Part Number	Stud Selection Column
D8-334-500-121	A

Side Mount

Material and Finish
Steel, zinc immersion coating

Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287

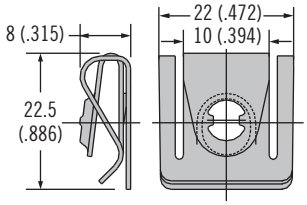


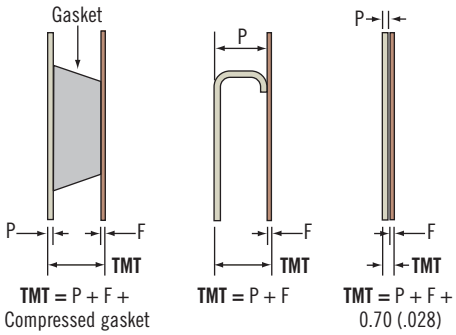
Part Number	Stud Selection Column
D8-334-310-121	B

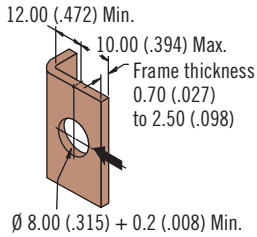
D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 4

Clip-On







Part Number	Stud Selection Column
D8-334-300-121	B

Material and Finish

Steel, zinc immersion coating

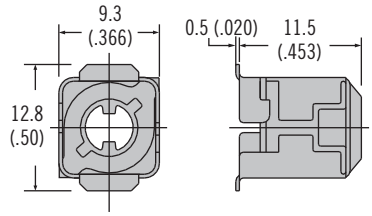
Part Number

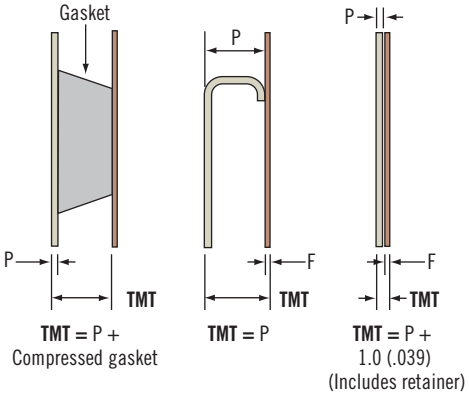
See table

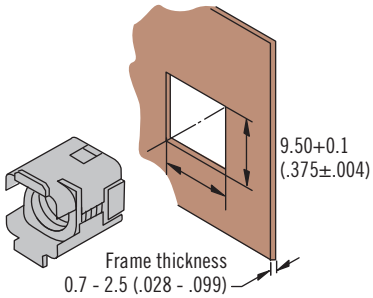
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287

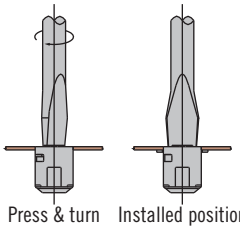
Front Mount







Installation



Part Number	Stud Selection Column
D8-334-200-190	C

Material and Finish

Steel, zinc plated and stainless steel

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 4

Material and Finish

Brass and steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

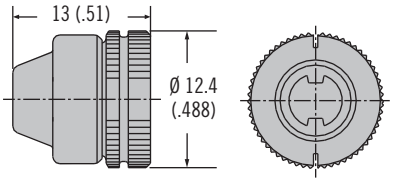
Part Number

See table

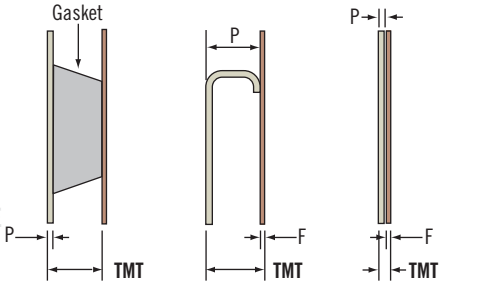
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287

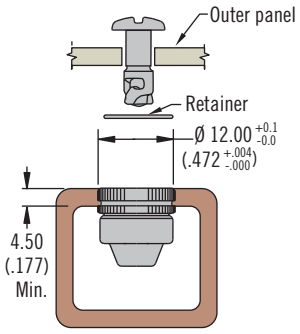
Press-In - Front Mount



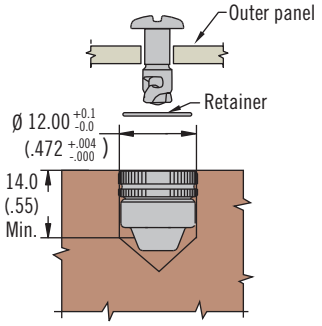
ACTUAL SIZE



Solid Install



Blind Install



Part Number	Stud Selection Column
D8-334-100-300	D

Material and Finish

Steel, zinc plated and stainless steel

Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are RB85 or softer

See page 497 for installation guidelines

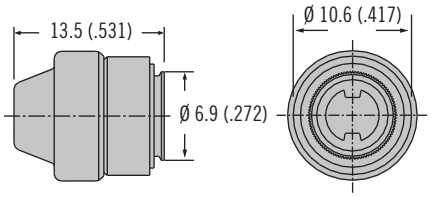
Part Number

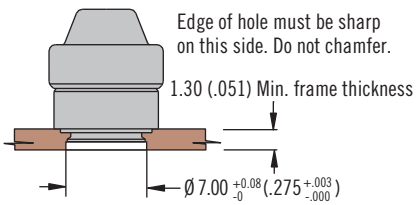
See table

Notes

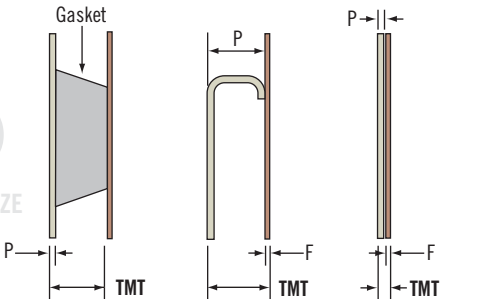
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 287

Press-In - Self-Clinching



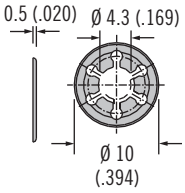


ACTUAL SIZE

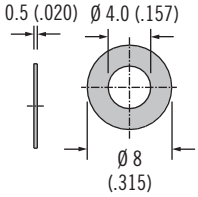


Part Number	Stud Selection Column
D8-334-110-190	E

Retainer Push-On



Retainer Push-On Plastic



Type	Part Number	Material	Adjustment Value
Push-on plastic	D8-324-100-040	High density polyethylene, black	Included in TMT calculation
Push-on	D8-324-101-200	Stainless steel	

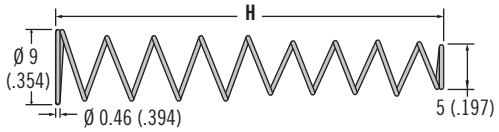
Material and Finish

See table

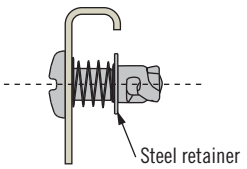
Part Number

See table

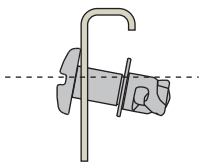
Retainer Spring (Must be secured with steel retainer)

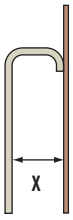


With Retaining Spring



Without Retaining Spring





Part Number	H	X Min.	X Max.
D8-324-200-200	48 (1.89)	14 (.551)	44 (1.73)
D8-324-201-200	20 (.787)	5 (.197)	16 (.630)

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Studs · Size 6

Material and Finish

Studs: Steel, zinc plated and chromate or chrome plated or stainless steel
Key: Steel with zinc plate and chromate
Bail cover: ABS, black

Accessories

Tamper resistant stud key:
Part number: D8-316-007-969

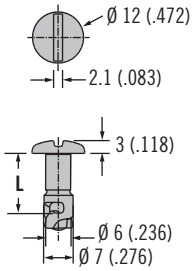
Installation Notes

Bail cover: A Retainer must be fitted under the stud head to fit flush with surface

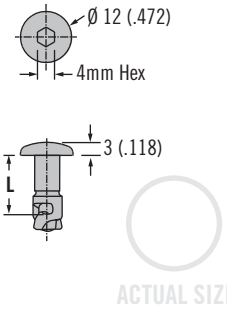
Retainer part number
D8-326-100-040 (see page 297)

H Head Styles - Tool Actuated

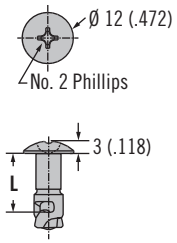
Oval Slot



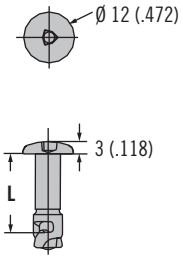
Hex Recess



Phillips Recess

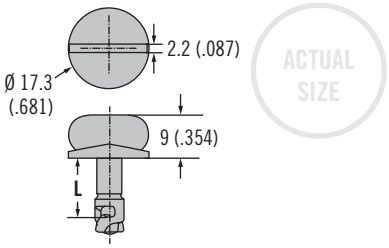


Tamper Resistant

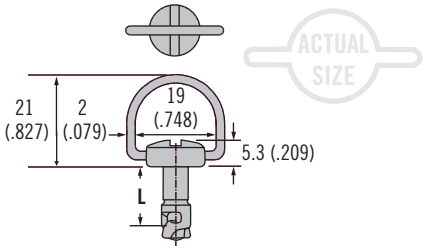


H Head Styles - Hand Actuated

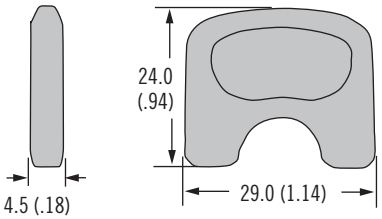
Wing



Bail

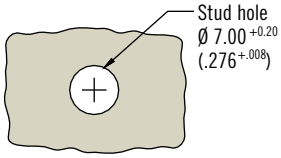


Optional Bail Cover



Bail Cover Part Number
D8-6-B-000

Stud Panel Preparation



D8 *DZUS® PANEX* Quarter-Turn Fasteners

Stud selection · Size 6

Part Number Selection

H Head style
- **1** Slot recess
- **2** Hex recess
- **3** Wing
- **4** Bail (standard stud only)
- **6** Tamper resistant
- **7** Phillips recess

F Finish
- **170** Chrome plated
- **190** Zinc plated
- **191** Zinc plated, black
- **200** Stainless Steel (Slot recess, Hex recess, Phillips recess)

D8 - 316 - H K - F

K Length
Enter number from selection table below

Stud Length Table											
A		B		C		D		E		K	L ±.15 ±(.006)
TMT Range For: D8-336-400-121 D8-336-500-121		TMT Range For: D8-336-300-121 D8-336-310-121 D8-336-330-121		TMT Range For: D8-336-200-190		TMT Range For: D8-336-100-300		TMT Range For: D8-336-110-190			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
~	~	1.5 (.06)	2.4 (.09)	~	~	~	~	~	~	09	9 (.354)
2.5 (.10)	3.4 (.13)	2.5 (.10)	3.4 (.13)	~	~	~	~	~	~	10	10 (.394)
3.5 (.14)	4.4 (.17)	3.5 (.14)	4.4 (.17)	~	~	~	~	~	~	11	11 (.433)
4.5 (.18)	5.4 (.21)	4.5 (.18)	5.4 (.21)	~	~	0.7 (.03)	1.6 (.06)	1.7 (.07)	2.6 (.10)	12	12 (.472)
5.5 (.22)	6.4 (.25)	5.5 (.22)	6.4 (.25)	~	~	1.7 (.07)	2.6 (.10)	2.7 (.11)	3.6 (.14)	13	13 (.512)
6.5 (.26)	7.4 (.29)	6.5 (.26)	7.4 (.29)	~	~	2.7 (.11)	3.6 (.14)	3.7 (.15)	4.6 (.18)	14	14 (.551)
7.5 (.30)	8.4 (.33)	7.5 (.30)	8.4 (.33)	~	~	3.7 (.15)	4.6 (.18)	4.7 (.19)	5.6 (.22)	15	15 (.591)
8.5 (.33)	9.4 (.37)	8.5 (.33)	9.4 (.37)	0.8 (.03)	1.7 (.07)	4.7 (.19)	5.6 (.22)	5.7 (.22)	6.6 (.26)	16	16 (.630)
9.5 (.37)	10.4 (.41)	9.5 (.37)	10.4 (.41)	1.8 (.07)	2.7 (.11)	5.7 (.22)	6.6 (.26)	6.7 (.26)	7.6 (.30)	17	17 (.669)
10.5 (.41)	11.4 (.45)	10.5 (.41)	11.4 (.45)	2.8 (.11)	3.7 (.15)	6.7 (.26)	7.6 (.30)	7.7 (.30)	8.6 (.34)	18	18 (.709)
11.5 (.45)	12.4 (.49)	11.5 (.45)	12.4 (.49)	3.8 (.15)	4.7 (.19)	7.7 (.30)	8.6 (.34)	8.7 (.34)	9.6 (.38)	19	19 (.748)
12.5 (.49)	13.4 (.53)	12.5 (.49)	13.4 (.53)	4.8 (.19)	5.7 (.22)	8.7 (.34)	9.6 (.38)	9.7 (.38)	10.6 (.42)	20	20 (.787)
13.5 (.53)	14.4 (.57)	13.5 (.53)	14.4 (.57)	5.8 (.23)	6.7 (.26)	9.7 (.38)	10.6 (.42)	10.7 (.42)	11.6 (.46)	21	21 (.827)
14.5 (.57)	15.4 (.61)	14.5 (.57)	15.4 (.61)	6.8 (.27)	7.7 (.30)	10.7 (.42)	11.6 (.46)	11.7 (.46)	12.6 (.50)	22	22 (.866)
15.5 (.61)	16.4 (.65)	15.5 (.61)	16.4 (.65)	7.8 (.31)	8.7 (.34)	11.7 (.46)	12.6 (.50)	12.7 (.50)	13.6 (.54)	23	23 (.906)
16.5 (.65)	17.4 (.69)	16.5 (.65)	17.4 (.69)	8.8 (.35)	9.7 (.38)	12.7 (.50)	13.6 (.54)	13.7 (.54)	14.6 (.57)	24	24 (.945)
17.5 (.69)	18.4 (.72)	17.5 (.69)	18.4 (.72)	9.8 (.39)	10.7 (.42)	13.7 (.54)	14.6 (.57)	14.7 (.58)	15.6 (.61)	25	25 (.984)
18.5 (.73)	19.4 (.76)	18.5 (.73)	19.4 (.76)	10.8 (.43)	11.7 (.46)	14.7 (.58)	15.6 (.61)	15.7 (.62)	16.6 (.65)	26	26 (1.02)
19.5 (.77)	20.4 (.80)	19.5 (.77)	20.4 (.80)	11.8 (.46)	12.7 (.50)	15.7 (.62)	16.6 (.65)	16.7 (.66)	17.6 (.69)	27	27 (1.06)
20.5 (.81)	21.4 (.84)	20.5 (.81)	21.4 (.84)	12.8 (.50)	13.7 (.54)	16.7 (.66)	17.6 (.69)	17.7 (.70)	18.6 (.73)	28	28 (1.10)
21.5 (.85)	22.4 (.88)	21.5 (.85)	22.4 (.88)	13.8 (.54)	14.7 (.58)	17.7 (.70)	18.6 (.73)	18.7 (.74)	19.6 (.77)	29	29 (1.14)
22.5 (.89)	23.4 (.92)	22.5 (.89)	23.4 (.92)	14.8 (.58)	15.7 (.62)	18.7 (.74)	19.6 (.77)	19.7 (.78)	20.6 (.81)	30	30 (1.18)

To select correct fastener:

1. Select receptacle
Choose a receptacle from pages 294 - 296

2. Select retainer and accessories
from page 297 and note any adjustment values

3. Specify stud length
Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B, C, D or E) given for the receptacle selected.

4. Complete the stud part number
by specifying the head style H, stud length K, and material M

Example:
For rivet-on D8-336-400-121 use column A
For TMT value calculated as 5.2 (.206), K = 12
For slotted head style in steel material, completed part number: D8-316-112-190
A complete example can be found on page 271.

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 6

Rivet-On

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

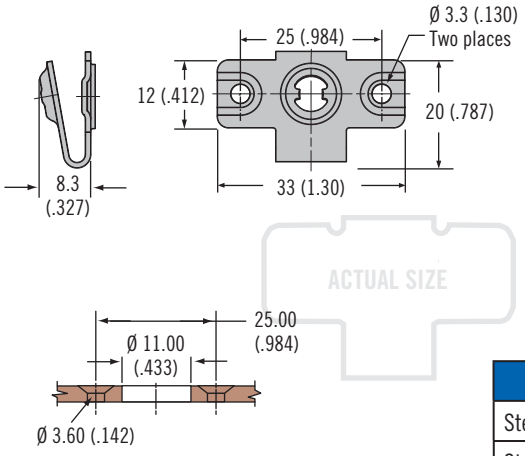
Install with Ø 3 (.125) rivets

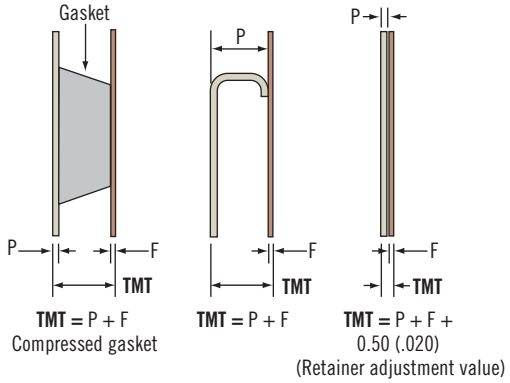
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293





Part Number		Stud Selection Column
Steel	D8-336-400-121	A
Stainless steel	D8-336-400-200	

Weld-On

Material and Finish

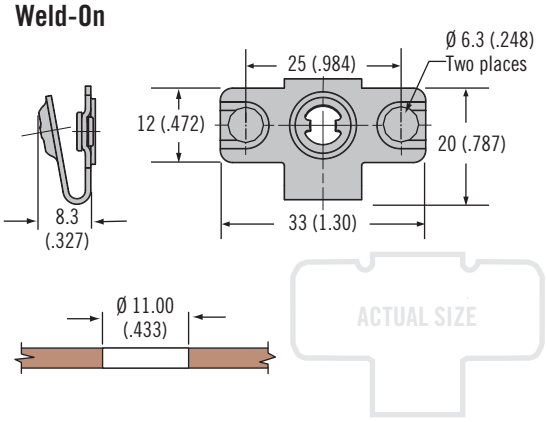
Steel, zinc immersion coating

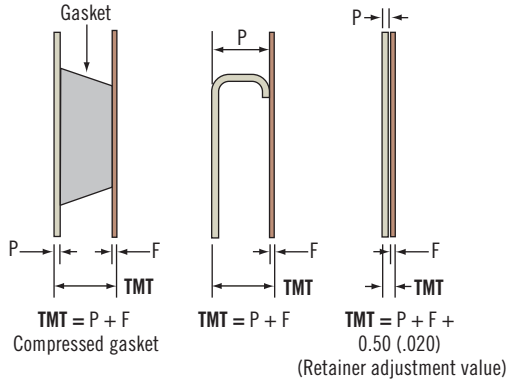
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293





Part Number	Stud Selection Column
D8-336-500-121	A

Side Mount

Material and Finish

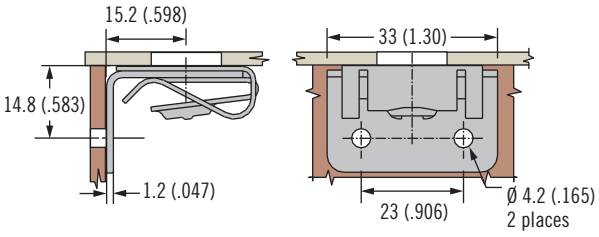
Steel, zinc immersion coating

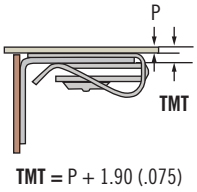
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293



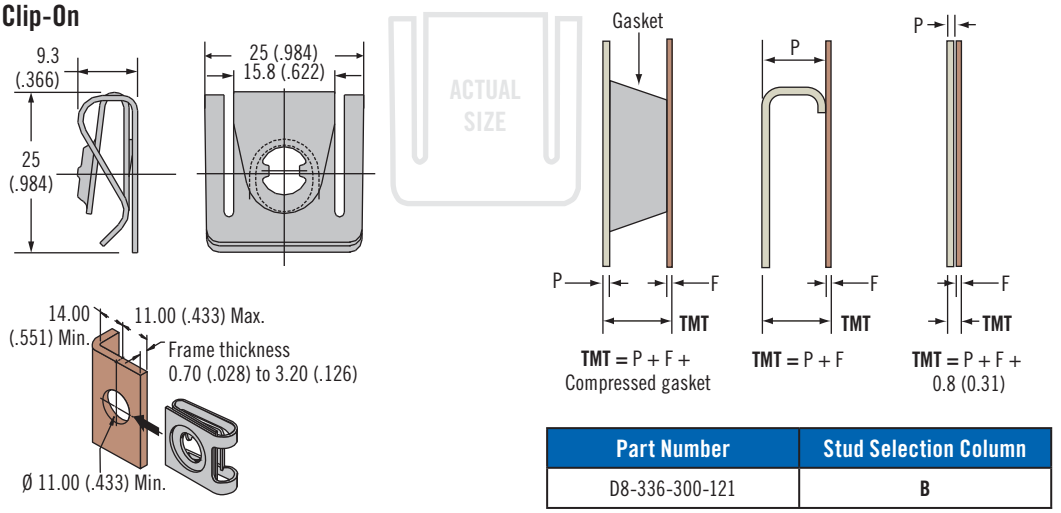


Part Number	Stud Selection Column
D8-336-310-121	B

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 6

Clip-On



Part Number	Stud Selection Column
D8-336-300-121	B

Material and Finish

Steel, zinc immersion coating

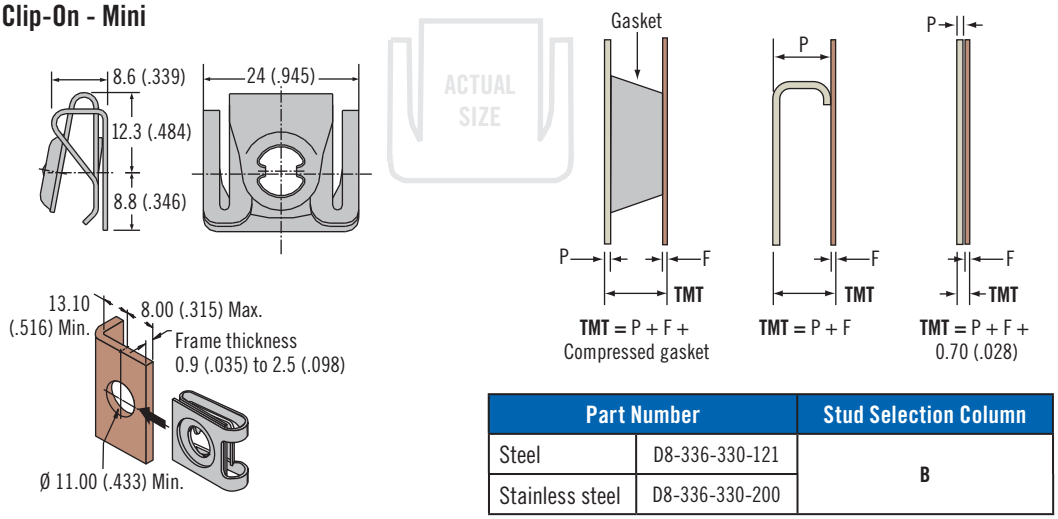
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293

Clip-On - Mini



Part Number		Stud Selection Column
Steel	D8-336-330-121	B
Stainless steel	D8-336-330-200	

Material and Finish

Steel, zinc immersion coating or stainless steel

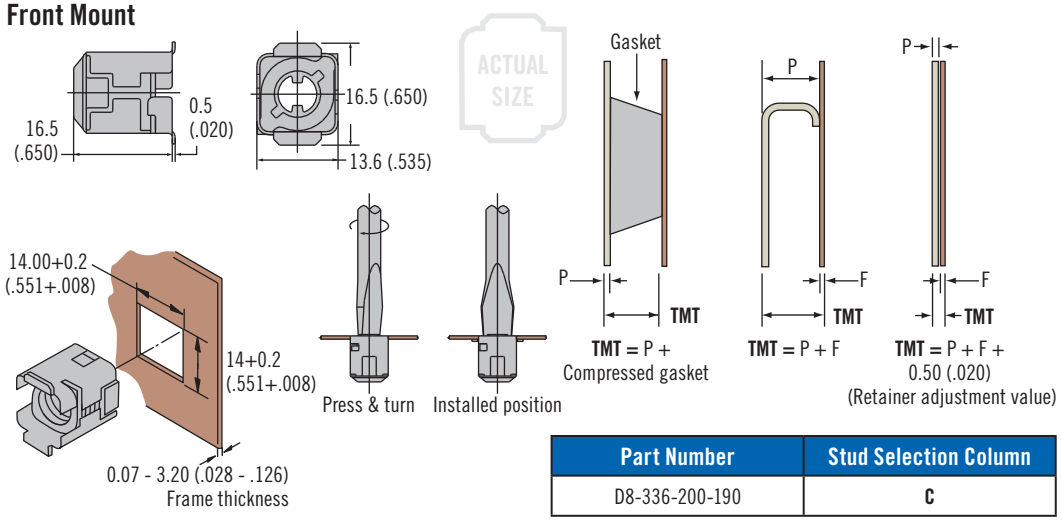
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293

Front Mount



Part Number	Stud Selection Column
D8-336-200-190	C

Material and Finish

Steel, zinc plated and stainless steel

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 6

Material and Finish

Brass and steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

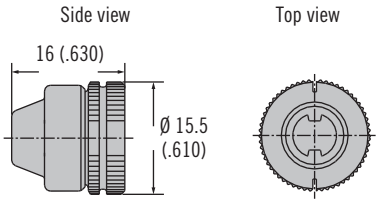
Part Number

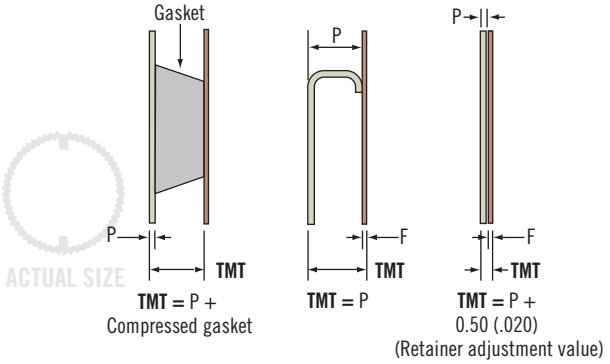
See table

Notes

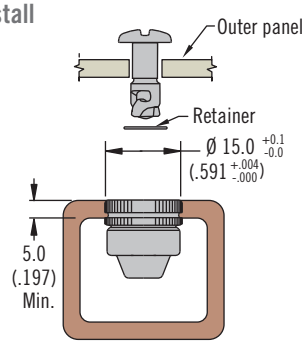
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293

Press-In - Front Mount

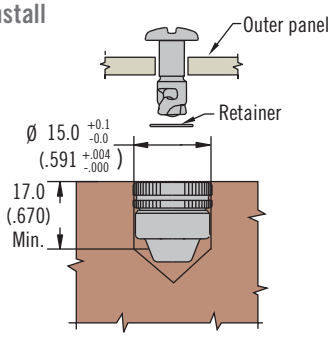




Solid Install



Blind Install



Part Number	Stud Selection Column
D8-336-100-300	D

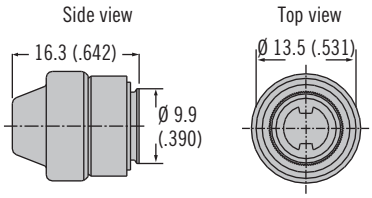
Press-In - Self-Clinching

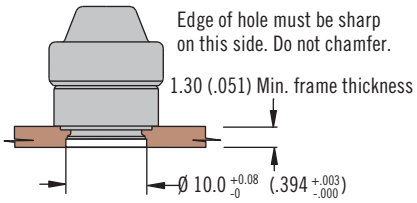
Material and Finish

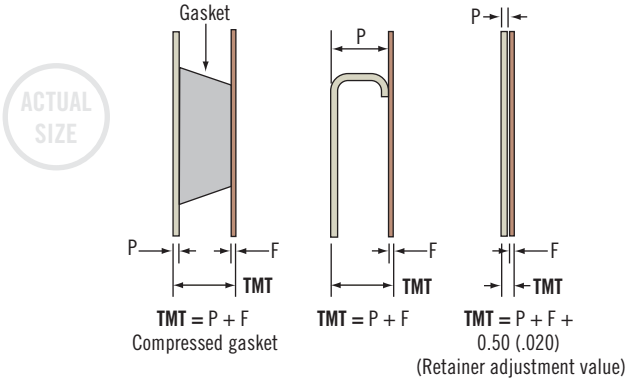
Steel, zinc plated and stainless steel

Installation Notes

See page 497 for installation guidelines







Part Number

See table

Notes

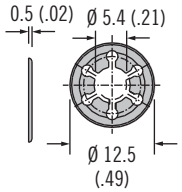
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 293

Part Number	Stud Selection Column
D8-336-110-190	E

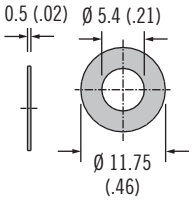
D8 *DZUS® PANEX* Quarter-Turn Fasteners

Retainers and Accessories · Size 6

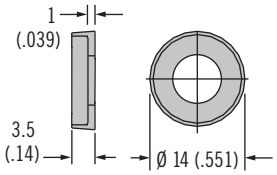
Retainer Push-On, Stainless Steel



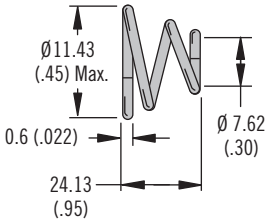
Retainer Push-On, Plastic



Cupped Washer

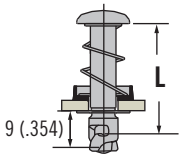


Ejector Spring



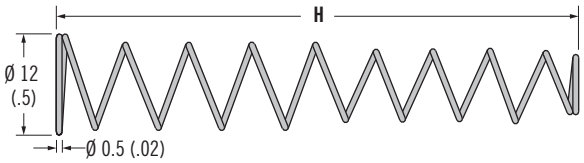
Ejector Spring and Cup Assembly

(Must be secured with stainless steel retainer)

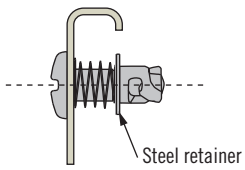


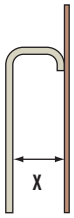
Type	Part Number	Material	Adjustment Value
Push-on plastic	D8-326-100-040	High density polyethylene, black	Included in TMT calculation
Push-on	D8-326-101-200	Stainless steel	
Cupped washer	D8-376-001-049	Thermoplastic, black	Add 1.00 (.039)
Ejector spring	D4-EHF5-3-950QA	Stainless steel	Add 1.00 (.039)

Retainer Spring (Must be secured with steel retainer)

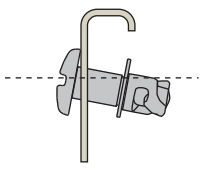


With Retaining Spring





Without Retaining Spring



Part Number	H	X Min.	X Max.
D8-326-200-200	48 (1.89)	19 (.75)	44 (1.73)
D8-326-201-200	25 (.98)	5 (.197)	21 (.83)

Material and Finish

See table

Accessories

When using the ejecting version add 2 (.079) to your TMT

Notes

Cupped washer only available for tool recess head styles (slot, Phillips, hex, tamper resistant)

Assembly consists of spring, cup and stud ordered separately, shipped bulk

Part Number

See table

D8 *DZUS® PANEX* Quarter-Turn Fasteners

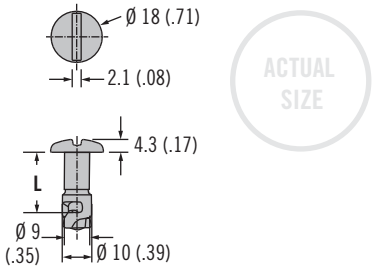
Studs · Size 9

Material and Finish

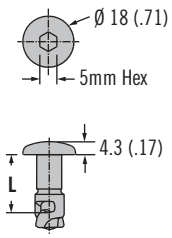
Studs: Steel, zinc plated and chromate or chrome plated

H Head Styles - Tool Actuated

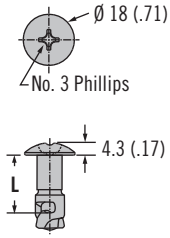
Oval Slot



Hex Recess

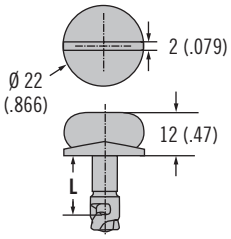


Phillips Recess

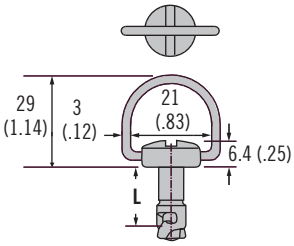


H Head Styles - Hand Actuated

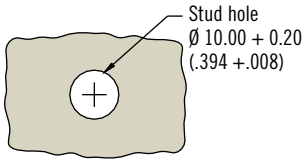
Wing



Bail



Stud Panel Preparation



D8 *DZUS® PANEX* Quarter-Turn Fasteners

Stud selection · Size 9

H Head style
1 Slot recess
2 Hex recess
3 Wing
4 Bail
7 Phillips recess

K Length
Enter number from selection table below

F Finish
170 Chrome plated
190 Zinc plated
191 Zinc plated, black

D8 - 319 - H K - F

Stud Length Table					
A		B		K	L ±.15 (.006)
TMT Range For: D8-339-400-121 D8-339-500-121 D8-339-300-121 D8-339-301-121 D8-339-305-121		TMT Range For: D8-339-200-190			
Min.	Max.	Min.	Max.		
2.0 (.08)	2.9 (.11)	~	~	10	10 (.394)
3.0 (.12)	3.9 (.15)	~	~	11	11 (.433)
4.0 (.16)	4.9 (.19)	~	~	12	12 (.472)
5.0 (.20)	5.9 (.23)	~	~	13	13 (.512)
6.0(.24)	6.9 (.27)	~	~	14	14 (.551)
7.0 (.28)	7.9 (.31)	~	~	15	15 (.591)
8.0 (.31)	8.9 (.35)	~	~	16	16 (.630)
9.0 (.35)	9.9 (.39)	~	~	17	17 (.669)
10.0 (.39)	10.9 (.43)	~	~	18	18 (.709)
11.0 (.43)	11.9 (.47)	~	~	19	19 (.748)
12.0 (.47)	12.9 (.51)	~	~	20	20 (.787)
13.0 (.51)	13.9 (.55)	~	~	21	21 (.827)
14.0 (.55)	14.9 (.59)	2.5 (.10)	3.4 (.13)	22	22 (.866)
15.0 (.59)	15.9 (.63)	3.5 (.14)	4.4 (.17)	23	23 (.906)
16.0 (.63)	16.9 (.67)	4.5 (.18)	5.4 (.21)	24	24 (.945)
17.0 (.67)	17.9 (.70)	5.5 (.22)	6.4 (.25)	25	25 (.984)
18.0 (.71)	18.9 (.74)	6.5 (.26)	7.4 (.29)	26	26 (1.02)
19.0 (.75)	19.9 (.78)	7.5 (.30)	8.4 (.33)	27	27 (1.06)
20.0 (.79)	20.9 (.82)	8.5 (.33)	9.4 (.37)	28	28 (1.10)
21.0 (.83)	21.9 (.86)	9.5 (.37)	10.4 (.41)	29	29 (1.14)
22.0 (.87)	22.9 (.90)	10.5 (.41)	11.4 (.45)	30	30 (1.18)

Part Number Selection

To select correct fastener:

1. Select receptacle
Choose a receptacle from pages 300 - 302

2. Select retainer and accessories
from page 303 and note any adjustment values

3. Specify stud length
Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, or B) given for the receptacle selected.

4. Complete the stud part number
by specifying the head style H, stud length K, and material M

Example:
For rivet-on
D8-339-400-121 use column A
For TMT value calculated as 5.2 (.206), K = 13
For slotted head style in steel, zinc plated material, completed part number: D8-319-113-190
A complete example can be found on page 271.

Notes
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

D8 *DZUS® PANEX* Quarter-Turn Fasteners

Receptacles · Size 9

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with Ø 3 (.125) rivets

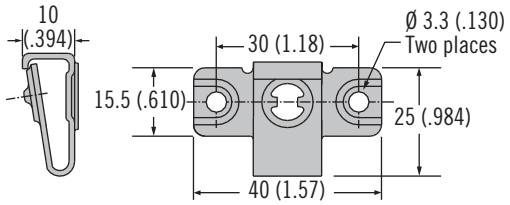
Part Number

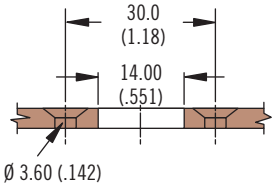
See table

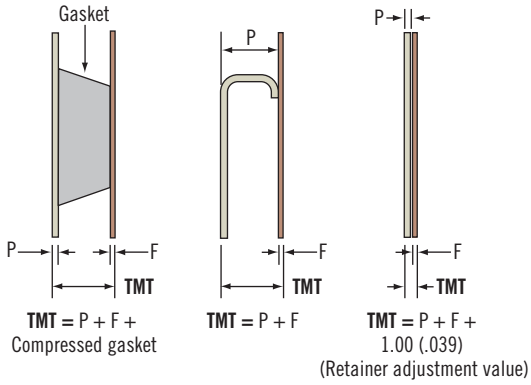
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 299

Rivet-On







Part Number	Stud Selection Column
D8-339-400-121	A

Material and Finish

Steel, zinc immersion coating

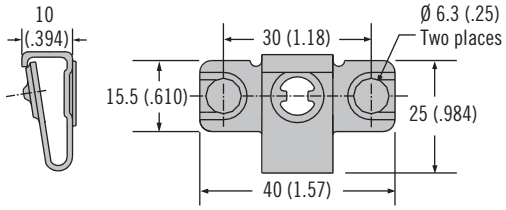
Part Number

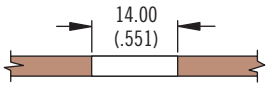
See table

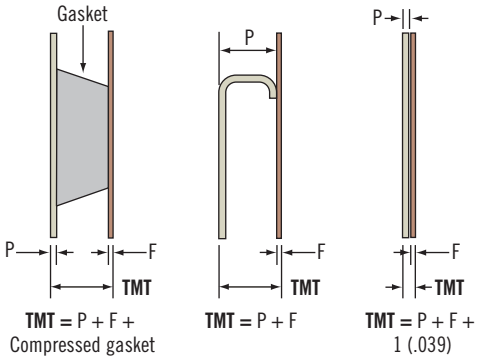
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 299

Weld-On

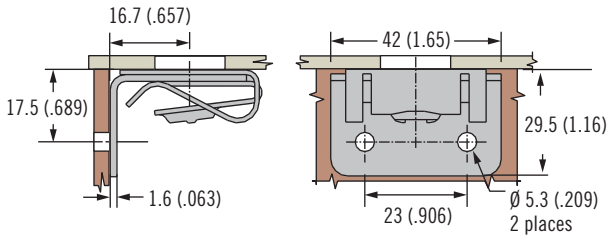


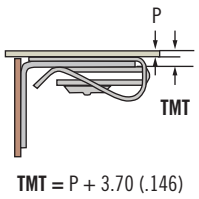




Part Number	Stud Selection Column
D8-339-500-121	A

Side Mount





TMT = P + 3.70 (.146)

Part Number	Stud Selection Column
D8-339-305-121	A

Material and Finish

Steel, zinc immersion coating

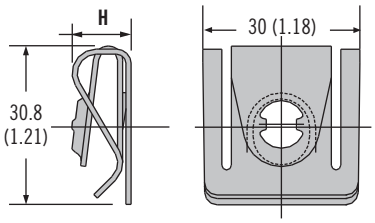
Part Number

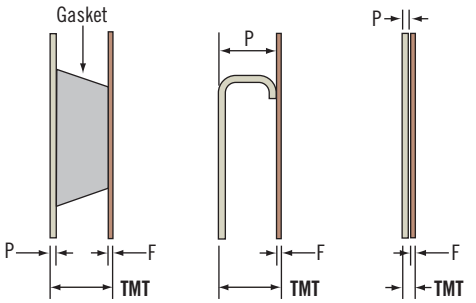
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 299

Clip-On

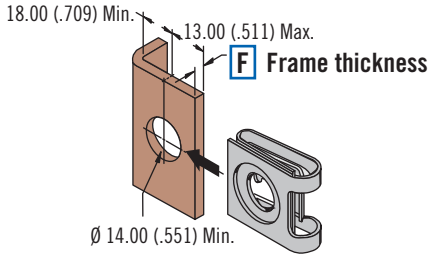




TMT = P + F + Compressed gasket

TMT = P + F

TMT = P + F + 2.10 (.083)



F Frame Thickness Range	Part Number	H	Stud Selection Column
0.7 - 3.2 (.028 - .126)	D8-339-300-121	10.7 (.421)	A
3.2 - 5.5 (.126 - .217)	D8-339-301-121	11.3 (.445)	

Material and Finish

Steel, zinc immersion coating

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 299

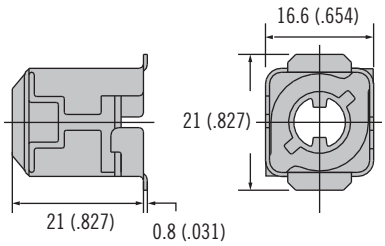
D8 *DZUS® PANEX* Quarter-Turn Fasteners

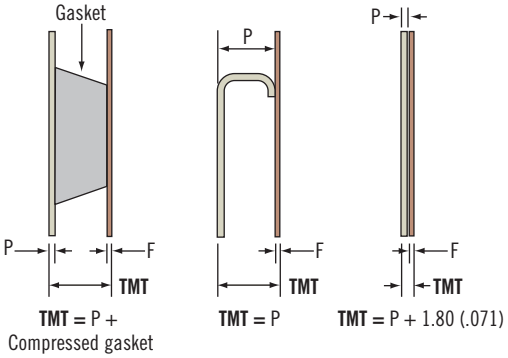
Receptacles · Size 9

Material and Finish

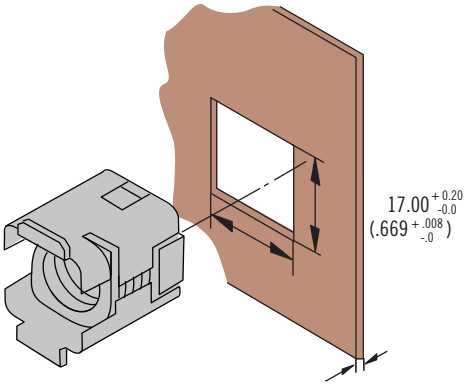
Steel, zinc plated

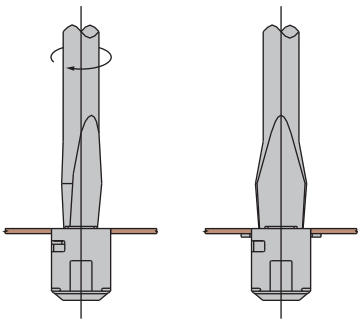
Front Mount





ACTUAL SIZE





Part Number

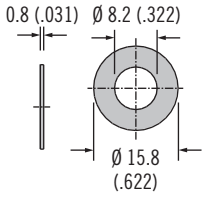
See table

Notes

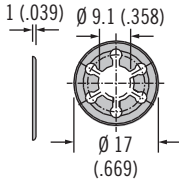
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 299

Type	Part Number	Stud Selection Column
Front mount	D8-339-200-190	**B**

Retainer Push-On, Plastic



Retainer Push-On, Steel

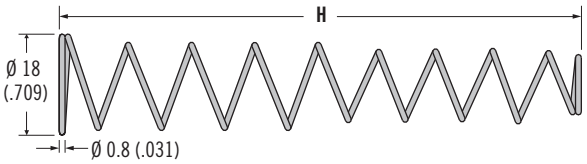


Type	Part Number	Material	Adjustment Value
Push-on Plastic	D8-329-100-040	High density polyethylene, natural	Included in TMT calculation
Push-on	D8-329-101-200	Stainless steel	

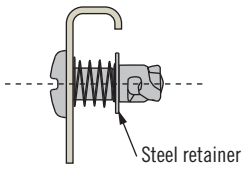
Material and Finish

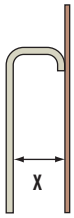
See table

Retainer Spring (Must be secured with steel retainer)

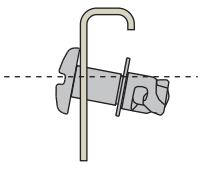


With Retaining Spring





Without Retaining Spring



Part Number	H	X Min.	X Max.
D8-329-200-200	48 (1.89)	7 (.276)	43 (1.69)

D1 *DZUS*® Dart Quarter-Turn Fasteners

Studs

Material and Finish

Glass-filled nylon, black

Adjustment formula

Add 2.3 (.090) to panel thickness and recalculate your TMT when using self-ejecting stud assembly

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 305 - 306

2. Select retainer and accessories

from page 307 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A, B, C, or D) given for the receptacle selected.

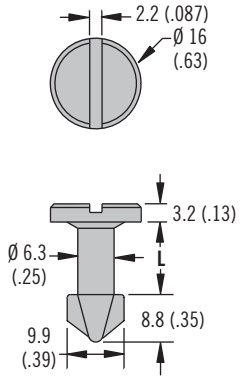
4. Complete the stud part number

by specifying the head style H, stud length K, and material M

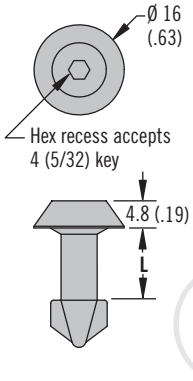
Example: For rivet-on D1-004-001-010 use column **A**
For TMT value calculated as 5.2 (.206), K = 55
For slotted head style, completed part number: D1-004-055-030
A complete example can be found on page 271.

H Head Styles - Tool Actuated

Slot Recess

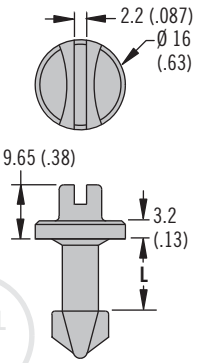


Hex Recess

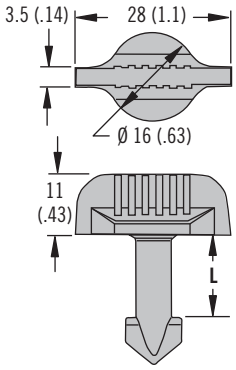


H Head Styles - Hand Actuated

Slotted Recess Knob

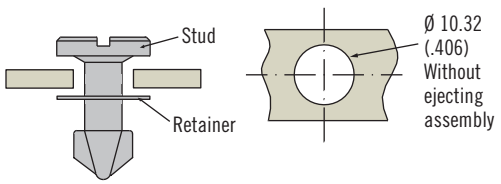


Wing

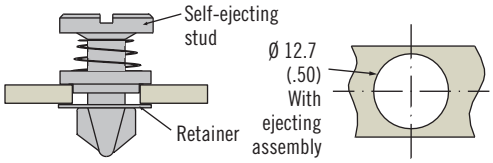


ACTUAL SIZE

Standard Stud Assembly



Self-Ejecting Stud Assembly



Stud Length Table

A		B		C		D		K	L
TMT Range For: D1-004-001-010		TMT Range For: D1-004-00(F)-010		TMT Range For: D1-004-92(F)-010		TMT Range For: D1-004-91(F)-010 D1-004-01(F)-010			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
2.54 (.100)	3.80 (.149)	~	~	4.32 (.170)	5.58 (.219)	4.13 (.163)	5.39 (.212)	**045**	11.4 (.45)
3.81 (.150)	5.07 (.199)	3.81 (.150)	5.07 (.199)	5.59 (.220)	6.85 (.269)	5.40 (.213)	6.66 (.262)	**050**	12.7 (.50)
5.08 (.200)	6.34 (.249)	5.08 (.200)	6.34 (.249)	6.86 (.270)	8.12 (.319)	6.67 (.263)	7.93 (.312)	**055**	14.0 (.55)
6.35 (.250)	7.61 (.299)	6.35 (.250)	7.61 (.299)	8.13 (.320)	9.39 (.369)	7.94 (.313)	9.20 (.362)	**060**	15.2 (.60)
7.62 (.300)	8.88 (.349)	7.62 (.300)	8.88 (.349)	9.40 (.370)	10.66 (.419)	9.21 (.363)	10.47 (.412)	**065**	16.5 (.65)
8.89 (.350)	10.15 (.399)	8.89 (.350)	10.15 (.399)	10.67 (.420)	11.93 (.469)	10.48 (.413)	11.74 (.462)	**070**	17.8 (.70)
10.16 (.400)	11.42 (.449)	10.16 (.400)	11.42 (.449)	11.94 (.470)	13.20 (.519)	11.75 (.463)	13.01 (.512)	**075**	19.1 (.75)
11.43 (.450)	12.69 (.499)	11.43 (.450)	12.69 (.499)	13.21 (.520)	14.47 (.569)	13.02 (.513)	14.28 (.562)	**080**	20.3 (.80)
12.70 (.500)	13.96 (.549)	12.70 (.500)	13.96 (.549)	14.48 (.570)	15.74 (.619)	14.29 (.563)	15.55 (.612)	**085**	21.6 (.85)
13.97 (.550)	15.23 (.599)	13.97 (.550)	15.23 (.599)	15.75 (.620)	17.01 (.669)	15.56 (.613)	16.82 (.662)	**090**	22.9 (.90)
15.24 (.600)	16.50 (.649)	15.24 (.600)	16.50 (.649)	17.02 (.670)	18.28 (.719)	16.83 (.663)	18.09 (.712)	**095**	24.1 (.95)
16.51 (.650)	17.77 (.699)	16.51 (.650)	17.77 (.699)	18.29 (.720)	19.55 (.769)	18.10 (.713)	19.36 (.762)	**100**	25.4 (1.0)

Part Number Selection

H **Head style**
004 Slot recess
125 Wing
166 Hex recess
444 Slot recess knob

D1 - H - K - 030 SE

K **Length**
Enter number from selection table above

SE **Self-ejecting**
SE Self-ejecting assembly
Omit for standard stud only

INFO CLIC www.southco.com/D1

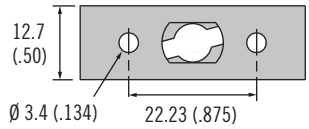
DZUS® Dimensions in millimeters (inch) unless otherwise stated

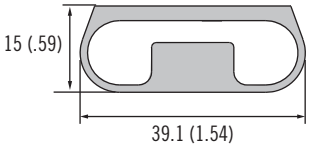
southco® CONNECT · CREATE · INNOVATE

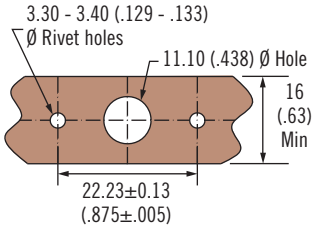
D1 *DZUS*® Dart Quarter-Turn Fasteners

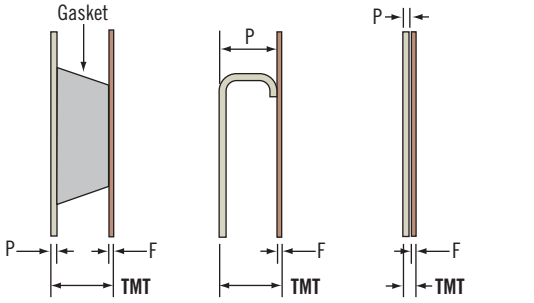
Receptacles

Rivet-On









ACTUAL SIZE

Part Number	Stud Selection Column
D1-004-001-010	A

Material and Finish

Acetal, black

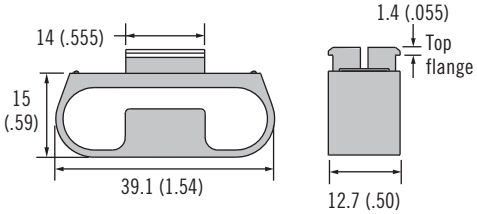
Notes

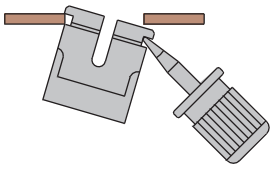
After selecting receptacle use stud selection letter **A** and follow instruction on page 304

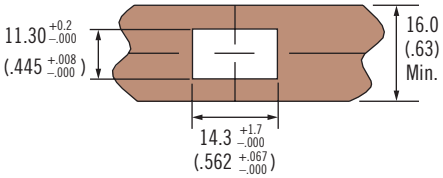
Part Number

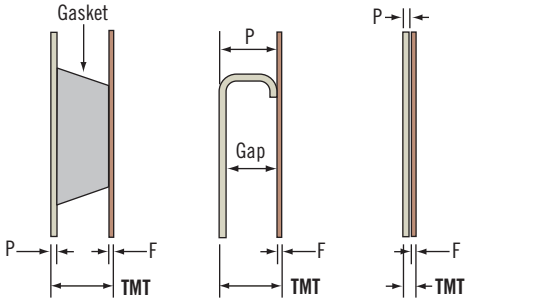
See table

Snap-In Back Load









ACTUAL SIZE

F Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
.90 (.035)	1.27 (.050)	D1-004-002-010	B
1.63 (.064)	2.00 (.080)	D1-004-003-010	
2.30 (.090)	2.64 (.104)	D1-004-004-010	
3.00 (.119)	3.40 (.135)	D1-004-005-010	
3.65 (.144)	4.00 (.158)	D1-004-006-010	

Material and Finish

Acetal black

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 304

Part Number

See table

D1 *DZUS*® Dart Quarter-Turn Fasteners

Receptacles

Material and Finish

Acetal, black

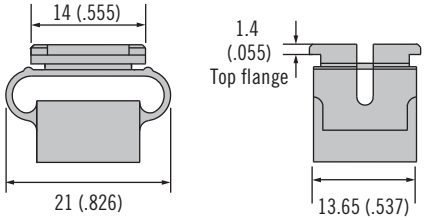
Part Number

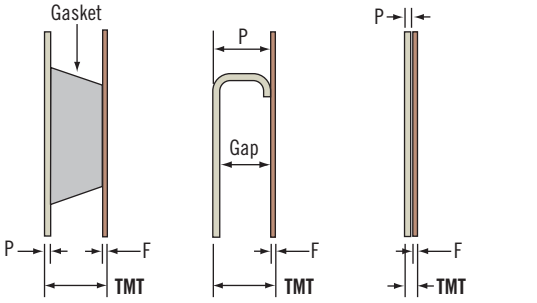
See table

Notes

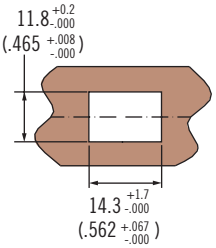
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 304

Mini Snap-In - Back Load





ACTUAL SIZE



Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
0.81 (.032)	1.27 (.050)	D1-004-012-010	D
1.29 (.051)	2.54 (.100)	D1-004-013-010	

Material and Finish

Acetal, black

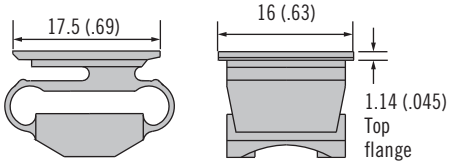
Part Number

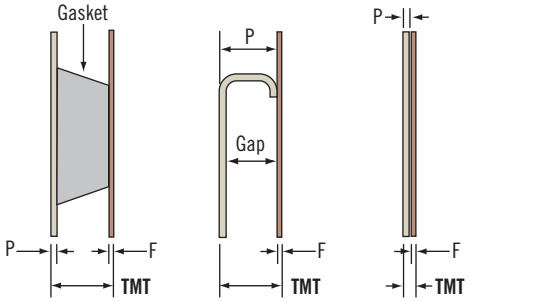
See table

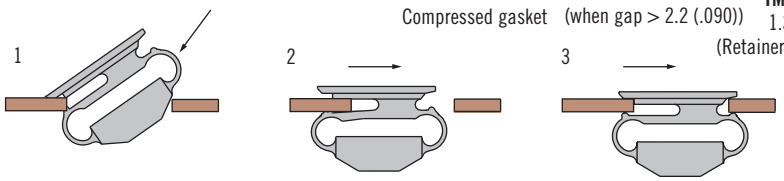
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 304

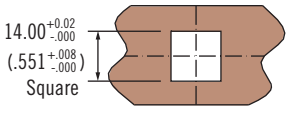
Mini Snap-In - Front Load





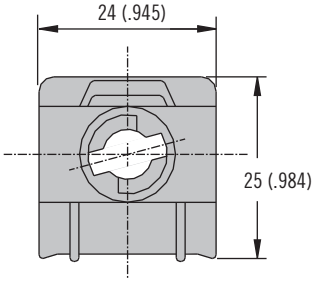


Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
0.90 (.035)	1.25 (.049)	D1-004-911-010	D
1.30 (.051)	1.75 (.069)	D1-004-912-010	
1.80 (.071)	2.25 (.089)	D1-004-913-010	
2.30 (.091)	2.75 (.109)	D1-004-914-010	
2.80 (.111)	3.25 (.129)	D1-004-915-010	

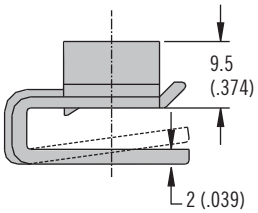


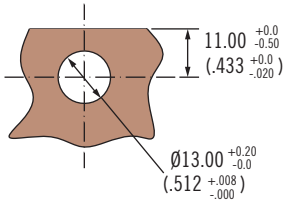
ACTUAL SIZE

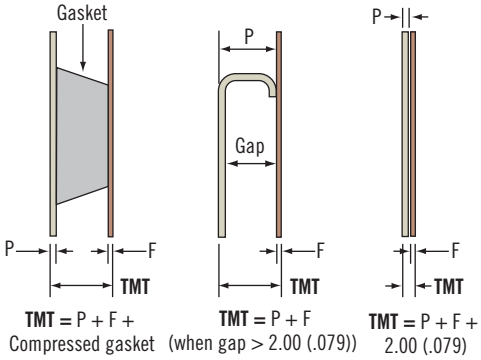
Clip-On



ACTUAL SIZE







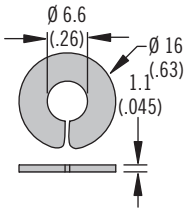
F Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
0.70 (.027)	2.30 (.090)	D1-004-921-010	C
2.30 (.090)	3.90 (.153)	D1-004-922-010	
3.9 (.153)	5.5 (.217)	D1-004-923-010	

Material and Finish
Acetal, black

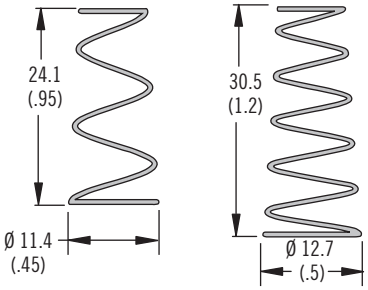
Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 304

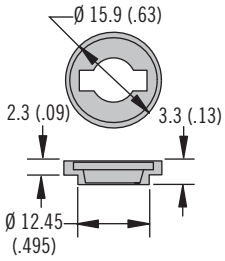
Retainer Split



Self-Ejecting Springs



Self-Ejecting Cup



Material and Finish
See table

Part Number
See table

Notes
Adjustment value:
When using accessories the components increase TMT

Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 271 for example)

Type	K Range	Part Number	Material	Adjustment Value
Retainer split	All	D1-004-000-010	Acetal, black	Add 1.1 (.045)
Self-ejecting springs	045 to 070	D1-X1135-2S	Stainless steel	Add 2.3 (.090)
Self-ejecting springs	075 to 100	D1-X1137-2S	Stainless steel	
Self-ejecting cup	All	D1-X1129	Acetal, black	

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Stud selection · Size 3

Material and Finish

Studs:
Steel, zinc plated or stainless steel

To select correct fastener:

1. Select receptacle

Choose a receptacle from page 309

2. Select retainer and accessories

from pages 310 - 311 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A or B) given for the receptacle selected.

4. Complete the stud part number

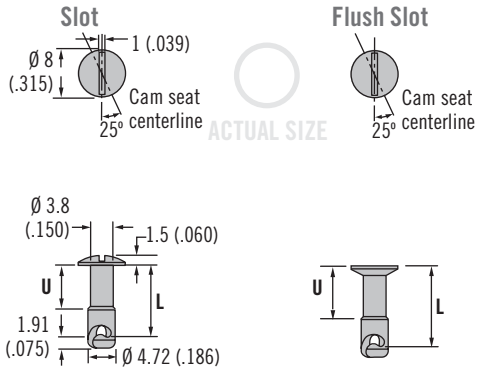
by specifying the head style H, stud length K, and material M

Example: For rivet-on D4-S3-175 use column A
For TMT value calculated as 5.2 (.206), K = 35
For slotted head style in steel material, completed part number: D4-AJ3-35
A complete example can be found on page 271.

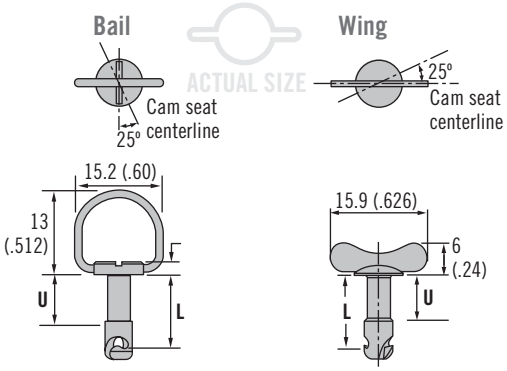
Notes

Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

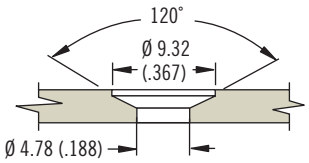
H Head Styles - Tool Actuated



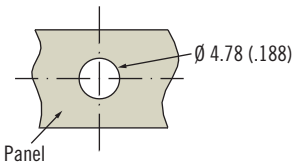
H Head Styles - Hand Actuated



Flush



Standard



H Head style
AJ Slot
AJW Wing head
BJR Bail
FJ Flush slot

K Length
Enter number from selection table below

M Material
SS Stainless steel
Omit for steel, zinc plated

D4 - H 3 - K M

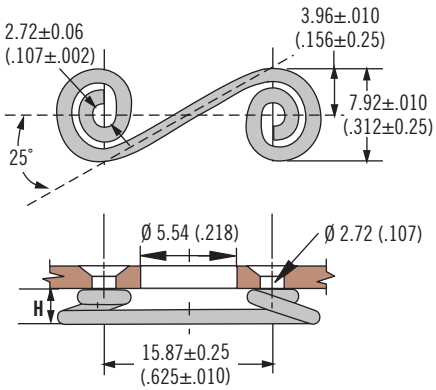
Stud Length Table

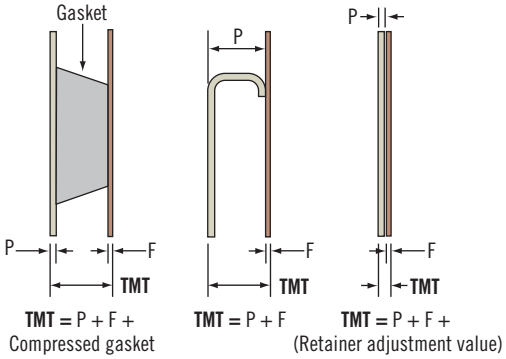
A				B				K	U	L
TMT Range For: Rivet-On Receptacle D4-S3-175		TMT Range For: Rivet-On Receptacle D4-S3-150		TMT Range For: Weld-On Receptacle D4-X735-205		TMT Range For: Weld-On Receptacle D4-X735-180				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
2.41 (.095)	3.02 (.119)	3.05 (.12)	3.66 (.144)	1.65 (.065)	2.26 (.089)	2.29 (.09)	2.9 (.114)	25	1.91 (.075)	6.35 (.250)
3.68 (.145)	4.29 (.169)	4.32 (.17)	4.93 (.194)	2.92 (.115)	3.53 (.139)	3.56 (.14)	4.17 (.164)	30	2.54 (.100)	7.62 (.300)
4.95 (.195)	5.56 (.219)	5.59 (.22)	6.2 (.244)	4.19 (.165)	4.8 (.189)	4.83 (.19)	5.44 (.214)	35	3.81 (.150)	8.89 (.350)
6.22 (.245)	6.83 (.269)	6.86 (.27)	7.47 (.294)	5.46 (.215)	6.07 (.239)	6.1 (.24)	6.71 (.264)	40	5.08 (.200)	10.16 (.400)
7.49 (.295)	8.1 (.319)	8.13 (.32)	8.74 (.344)	6.73 (.265)	7.34 (.289)	7.37 (.29)	7.98 (.314)	45	5.72 (.225)	11.43 (.450)
8.76 (.345)	9.37 (.369)	9.4 (.37)	10.01 (.394)	8.00 (.315)	8.61 (.339)	8.64 (.34)	9.25 (.364)	50	6.35 (.250)	12.70 (.500)
10.03 (.395)	10.64 (.419)	10.67 (.42)	11.28 (.444)	9.27 (.365)	9.88 (.389)	9.91 (.39)	10.52 (.414)	55	6.99 (.275)	13.97 (.550)
11.3 (.445)	11.91 (.469)	11.94 (.47)	12.55 (.494)	10.54 (.415)	11.15 (.439)	11.18 (.44)	11.79 (.464)	60	7.62 (.300)	15.24 (.600)
12.57 (.495)	13.18 (.519)	13.21 (.52)	13.82 (.544)	11.81 (.465)	12.42 (.489)	12.45 (.49)	13.06 (.514)	65	8.89 (.350)	16.51 (.650)
13.84 (.545)	14.45 (.569)	14.48 (.57)	15.09 (.594)	13.08 (.515)	13.69 (.539)	13.72 (.54)	14.33 (.564)	70		17.78 (.700)
15.11 (.595)	15.72 (.619)	15.75 (.62)	16.36 (.644)	14.35 (.565)	14.96 (.589)	14.99 (.59)	15.6 (.614)	75	10.16 (.400)	19.05 (.750)
16.38 (.645)	16.99 (.669)	17.02 (.67)	17.63 (.694)	15.62 (.615)	16.23 (.639)	16.26 (.64)	16.87 (.664)	80		20.32 (.800)

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Receptacles · Size 3

Rivet-On





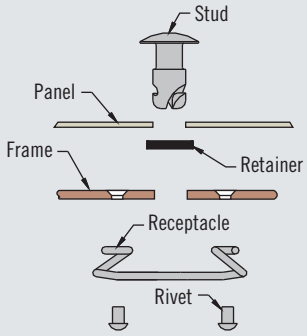
Part Number		H±0.25(.010)	Stud Selection Column
Steel	Stainless Steel		
D4-S3-150	D4-S3-150SS	3.81 (.150)	A
D4-S3-175	D4-S3-175SS	4.45 (.175)	

Material and Finish

Steel, zinc plated or stainless steel

Notes

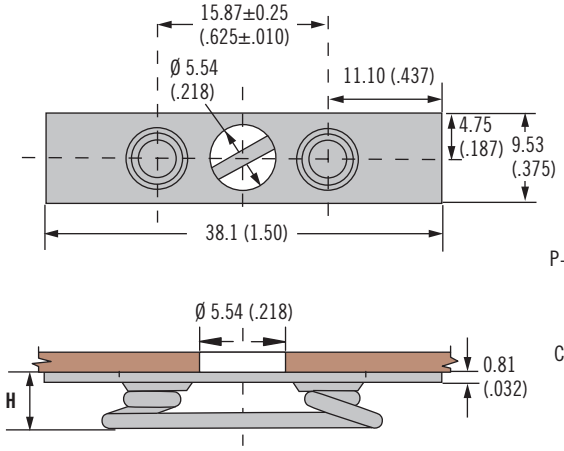
After selecting receptacle use stud selection letter **A** and follow instruction on page 308

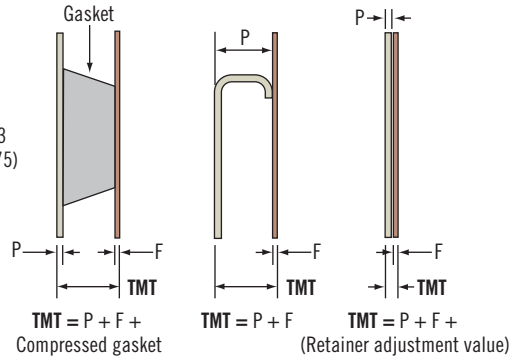


Part Number

See table

Weld-On





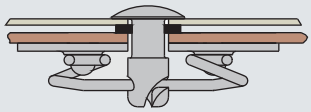
Part Number	H	Stud Selection Column
D4-X735-180	4.57 (.180)	B
D4-X735-205	5.21 (.205)	

Material and Finish

Steel, zinc plated

Notes

After selecting receptacle use stud selection letter **B** and follow instruction on page 308



Part Number

See table

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Retainers · Size 3

Material and Finish

Retaining ring and spring: Stainless steel
Retainer GH: Aluminum, natural
Retainer GP: HD polythene

Installation Notes

1. Place the retainer on the mandrel as shown
2. Align ring or spring ends so that they will miss the stud cam
3. Place mandrel in end of stud cam
4. Place tool over mandrel
5. Push retainer until it is sealed in stud undercut

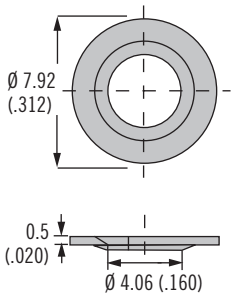
Notes

Tooling:
29 - TFRS hand tool: Spreads the inside diameter of retainers over stud shanks and then pushes them into stud undercuts.
29 - TB1A block: Nests stud heads during installation. (Any flat block may be used for BJR bail head studs).

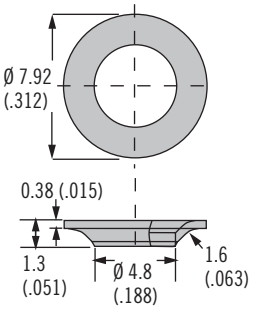
Part Number

See table

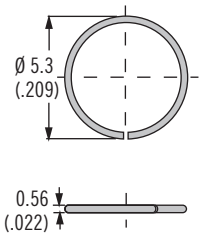
Retainer GP



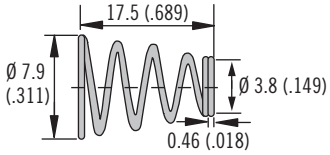
Retainer GH



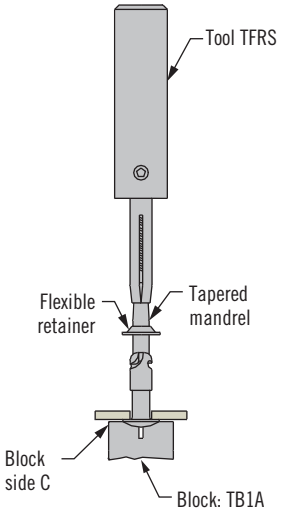
Retaining Ring



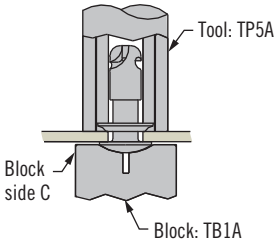
Retaining Spring

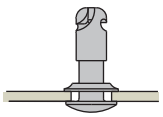


Install Retainer GP, Retaining Ring and SX

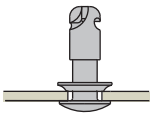


Install Retainer GH





Oversized Hole
Large diameter faces panel



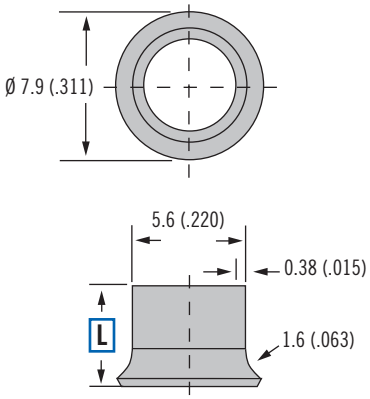
Standard Hole
Small diameter faces panel

Type	Part Number	Adjustment Value	Installation Tool Part Number
Retainer GP, natural	D4-GP3QA	Add 0.51 (.020)	29-TFRS3 and 29-TB1A3 (both required for correct installation - see images above)
Retainer GP, black	D4-GP3BQA		
Retainer GH	D4-GH3QA	Add 0.38 (.015)	29-TP5A3 and 29-TB1A3 (both required for correct installation - see images above)
Retaining ring	D4-RR3QA	Add 0.56 (.022)	29-TFRS3 and 29-TB1A3 (both required for correct installation - see images above)
Retaining spring	D4-SX520QA	Add 0.91 (.036)	

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Retainers · Size 3

Retainer GA



Material and Finish

Retainer GA: Aluminum, natural

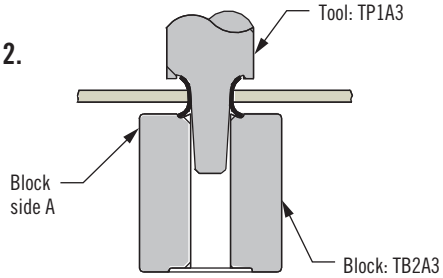
Installation Notes

1. Insert retainer in panel hole
2. Set retainer
3. Insert stud
4. Flatten retainer

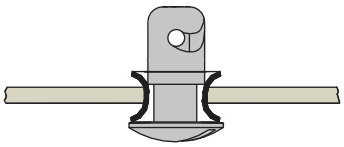
Installation Retainer GA

1.

2.



3.



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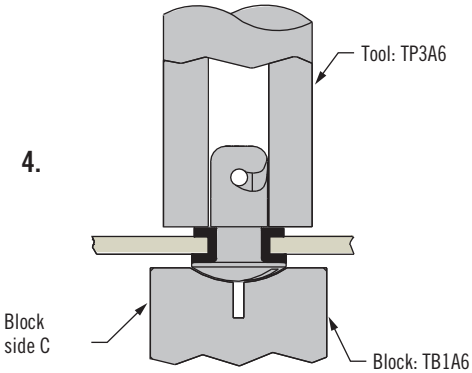


Panel Thickness	L	Part Number	Adjustment Formula	Installation Tool Part Number
0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA3-175	Add 0.38 (.015)	29-TP1A3, 29-TP3A3, 29-TB1A3 and 29-TB2A3 (all four required for correct installation - see images above)
0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA3-200		
1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA3-250		

Part Number

See table

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Stud selection · Size 4

Material and Finish

Studs:
Steel, zinc plated or stainless steel

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 314 - 315

2. Select retainer and accessories

from pages 316 - 317 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A, B, C, or D) given for the receptacle selected.

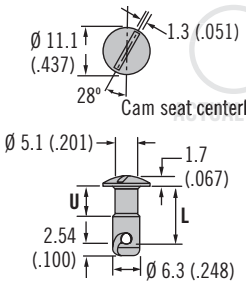
4. Complete the stud part number

by specifying the head style H, stud length K, and material M

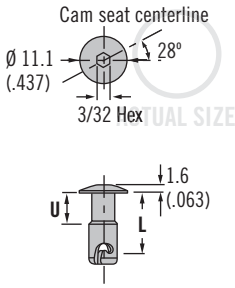
Example:
For rivet-on
D4-S4-225 use column A
For TMT value calculated as 5.2 (.206), K = 40
For slotted head style in steel material, completed part number:
D4-AJ4-40
A complete example can be found on page 271

H Head Styles - Tool Actuated

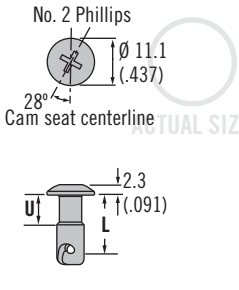
Slot



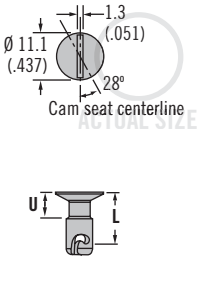
Hex Recess



Phillips Recess

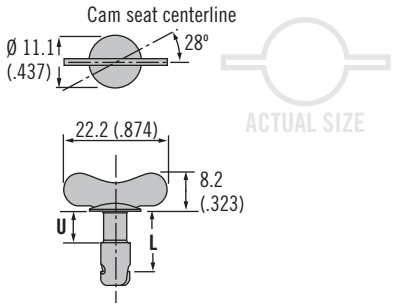


Flush Slot

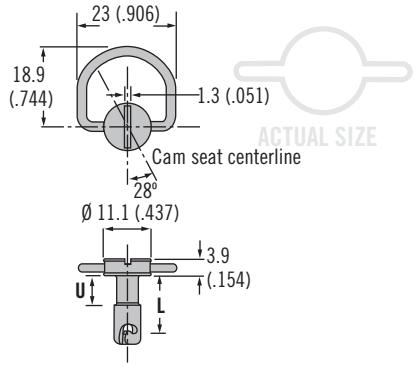


H Head Styles - Hand Actuated

Wing



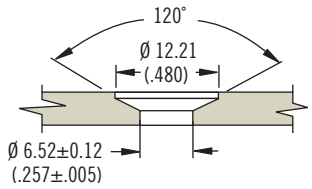
Bail



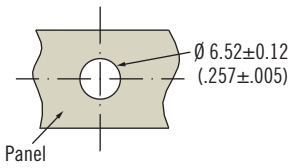
Stud Length Table

A				B				K	U	L
TMT Range For: Rivet-On Receptacle D4-S4-225		TMT Range For: Rivet-On Receptacle D4-S4-200		TMT Range For: Weld-On Receptacle D4-X485-300		TMT Range For: Weld-On Receptacle D4-X485-275				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
1.27 (.050)	1.88 (.074)	1.91 (.075)	2.51 (.099)	~	~	~	~	25	1.91 (.075)	6.35 (.250)
2.54 (.100)	3.15 (.124)	3.18 (.125)	3.78 (.149)	0.64 (.025)	1.24 (.049)	1.27 (.050)	1.88 (.074)	30	2.54 (.100)	7.62 (.300)
3.81 (.150)	4.42 (.174)	4.45 (.175)	5.05 (.199)	1.91 (.075)	2.51 (.099)	2.54 (.100)	3.15 (.124)	35	3.81 (.150)	8.89 (.350)
5.08 (.200)	5.69 (.224)	5.72 (.225)	6.32 (.249)	3.18 (.125)	3.78 (.149)	3.81 (.150)	4.42 (.174)	40	5.08 (.200)	10.16 (.400)
6.35 (.250)	6.96 (.274)	6.99 (.275)	7.59 (.299)	4.45 (.175)	5.05 (.199)	5.08 (.200)	5.69 (.224)	45	5.72 (.225)	11.43 (.450)
7.62 (.300)	8.23 (.324)	8.26 (.325)	8.86 (.349)	5.72 (.225)	6.32 (.249)	6.35 (.250)	6.96 (.274)	50	6.35 (.250)	12.70 (.500)
8.89 (.350)	9.50 (.374)	9.53 (.375)	10.13 (.399)	6.99 (.275)	7.59 (.299)	7.62 (.300)	8.23 (.324)	55	6.99 (.275)	13.97 (.550)
10.16 (.400)	10.77 (.424)	10.80 (.425)	11.40 (.449)	8.26 (.325)	8.86 (.349)	8.89 (.350)	9.50 (.374)	60	7.62 (.300)	15.24 (.600)
11.43 (.450)	12.04 (.474)	12.07 (.475)	12.67 (.499)	9.53 (.375)	10.13 (.399)	10.16 (.400)	10.77 (.424)	65	8.89 (.350)	16.51 (.650)
12.70 (.500)	13.31 (.524)	13.34 (.525)	13.94 (.549)	10.80 (.425)	11.40 (.449)	11.43 (.450)	12.04 (.474)	70		17.78 (.700)
13.97 (.550)	14.58 (.574)	14.61 (.575)	15.21 (.599)	12.07 (.475)	12.67 (.499)	12.70 (.500)	13.31 (.524)	75	10.16 (.400)	19.05 (.750)
15.24 (.600)	15.85 (.624)	15.88 (.625)	16.48 (.649)	13.34 (.525)	13.94 (.549)	13.97 (.550)	14.58 (.574)	80		20.32 (.800)
16.51 (.650)	17.12 (.674)	17.15 (.675)	17.75 (.699)	14.61 (.575)	15.21 (.599)	15.24 (.600)	15.85 (.624)	85	12.7 (.500)	21.59 (.850)
17.78 (.700)	18.39 (.724)	18.42 (.725)	19.02 (.749)	15.88 (.625)	16.48 (.649)	16.51 (.650)	17.12 (.674)	90		22.86 (.900)
19.05 (.750)	19.66 (.774)	19.69 (.775)	20.29 (.799)	17.15 (.675)	17.75 (.699)	17.78 (.700)	18.39 (.724)	95	15.24 (.600)	24.13 (.950)
20.32 (.800)	20.93 (.824)	20.96 (.825)	21.56 (.849)	18.42 (.725)	19.02 (.749)	19.05 (.750)	19.66 (.774)	100		25.40 (1.00)

Flush



Standard



Part Number Selection

H **Head style**
- **AJ** Slot
- **ASHJ** Hex recess
- **APRJ** Phillips recess
- **FJ** Flush slot
- **AJW** Wing head
- **BJR** Ring head

K **Length**
Enter number from selection table on below

M **Material**
SS Stainless steel
Omit for steel, zinc plated

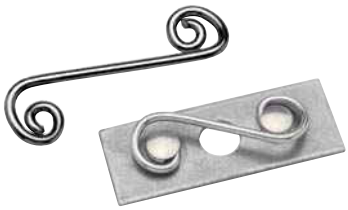
D4 - H 4 - K M

Stud Length Table

C				K	U	L
TMT Range For: Clip-On Receptacle D4-SL4-305		TMT Range For: Clip-On Receptacle D4-SL4-280				
Min.	Max.	Min.	Max.			
~	~	~	~	25	2.54 (.100)	6.35 (.250)
~	~	1.17 (.046)	1.78 (.070)	30		7.62 (.300)
1.80 (.071)	2.41 (.095)	2.44 (.096)	3.05 (.120)	35	3.81 (.150)	8.89 (.350)
3.07 (.121)	3.68 (.145)	3.71 (.146)	4.32 (.170)	40	5.08 (.200)	10.16 (.400)
4.34 (.171)	4.95 (.195)	4.98 (.196)	5.59 (.220)	45	5.72 (.225)	11.43 (.450)
5.61 (.221)	6.22 (.245)	6.25 (.246)	6.86 (.270)	50	6.35 (.250)	12.70 (.500)
6.88 (.271)	7.49 (.295)	7.52 (.296)	8.13 (.320)	55	6.99 (.275)	13.97 (.550)
8.15 (.321)	8.76 (.345)	8.79 (.346)	9.40 (.370)	60	7.62 (.300)	15.24 (.600)
9.42 (.371)	10.03 (.395)	10.06 (.396)	10.67 (.420)	65	8.89 (.350)	16.51 (.650)
10.69 (.421)	11.30 (.445)	11.33 (.446)	11.94 (.470)	70		17.78 (.700)
11.96 (.471)	12.57 (.495)	12.60 (.496)	13.21 (.520)	75	10.16 (.400)	19.05 (.750)
13.23 (.521)	13.84 (.545)	13.87 (.546)	14.48 (.570)	80		20.32 (.800)
14.50 (.571)	15.11 (.595)	15.14 (.596)	15.75 (.620)	85	12.7 (.500)	21.59 (.850)
15.77 (.621)	16.38 (.645)	16.41 (.646)	17.02 (.670)	90		22.86 (.900)
17.04 (.671)	17.65 (.695)	17.68 (.696)	18.29 (.720)	95	15.24 (.600)	24.13 (.950)
18.31 (.721)	18.92 (.745)	18.95 (.746)	19.56 (.770)	100		25.40 (1.00)

Stud Length Table

D			K	U	L
TMT Range For: Snap-In - Rear Mount Receptacle D4-SQC4-F					
Min.	Max.	D4-GP4B			
0.48 (.019)	1.09 (.043)	None	45	5.72 (.225)	11.43 (.450)
1.12 (.044)	1.73 (.068)	One	50	6.35 (.250)	12.70 (.500)
1.75 (.069)	2.36 (.093)	None	50		
2.39 (.094)	3.00 (.118)	One	55	6.99 (.275)	13.97 (.550)
3.02 (.119)	3.63 (.143)	None	55		
3.66 (.144)	4.27 (.168)	One	60	7.62 (.300)	15.24 (.600)
4.29 (.169)	4.90 (.193)	None	60		
4.93 (.194)	5.54 (.218)	One	65	8.89 (.350)	16.51 (.650)
5.56 (.219)	6.17 (.243)	None	65		
6.20 (.244)	6.81 (.268)	One	70		17.78 (.700)
6.83 (.269)	7.44 (.293)	None	70		
7.47 (.294)	8.08 (.318)	One	75	10.16 (.400)	19.05 (.750)
8.10 (.319)	8.71 (.343)	None	75		
8.74 (.344)	9.35 (.368)	One	80		20.32 (.800)
9.37 (.369)	9.98 (.393)	None	80		



D4 *DZUS*® Standard Line Quarter-Turn Fasteners

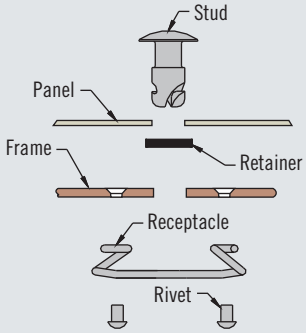
Receptacles · Size 4

Material and Finish

Steel, zinc plated or stainless steel

Notes

After selecting receptacle use stud selection letter **A** and follow instruction on page 312

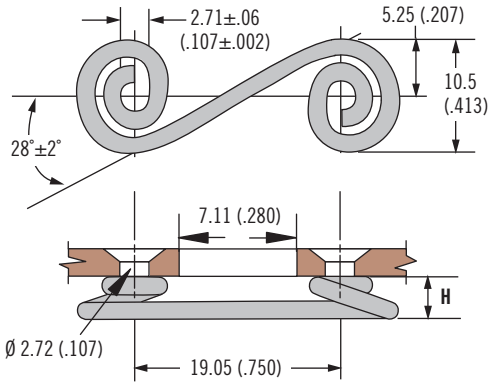


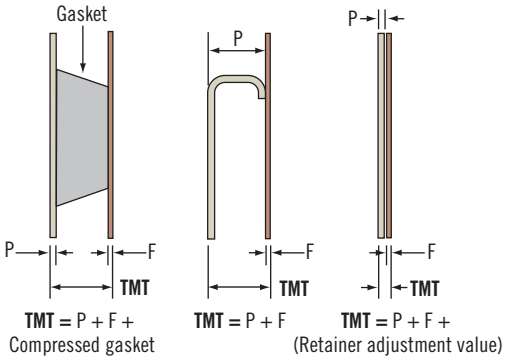
Part Number

See table

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 312 - 313

Rivet-On





ACTUAL SIZE

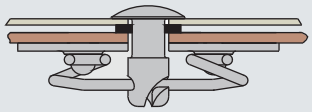
Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-S4-200	D4-S4-200SS	5.08 (.200)	A
D4-S4-225	D4-S4-225SS	5.72 (.225)	

Material and Finish

Steel, zinc plated or stainless steel

Notes

After selecting receptacle use stud selection letter **B** and follow instruction on page 312

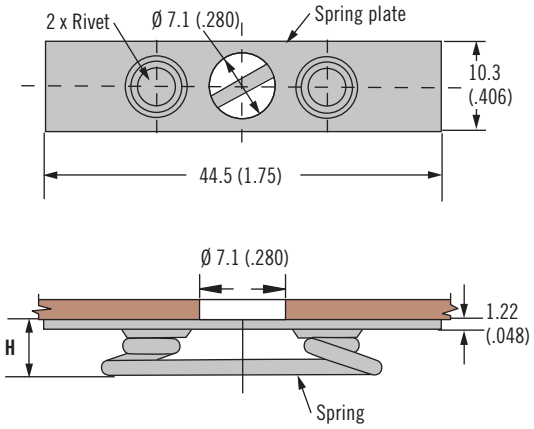


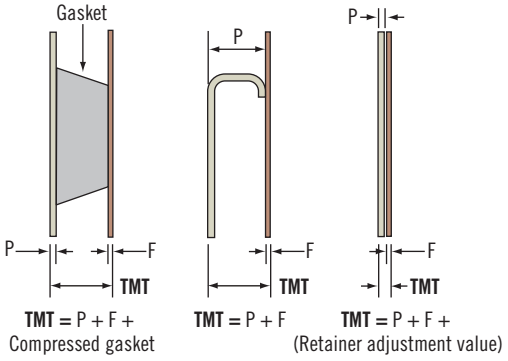
Part Number

See table

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 312 - 313

Weld-On





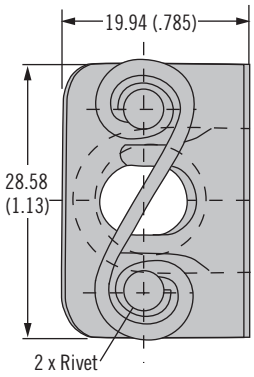
ACTUAL SIZE

Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-X485-275	D4-X485-275SS	6.98 (.275)	B
D4-X485-300	D4-X485-300SS	7.62 (.300)	

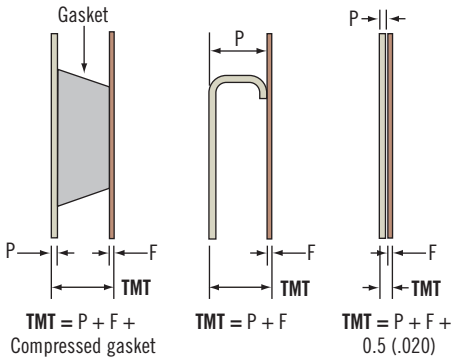
D4 *DZUS®* Standard Line Quarter-Turn Fasteners

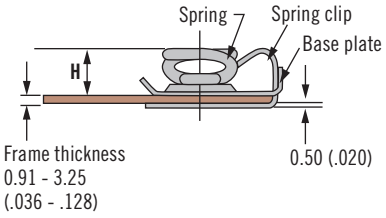
Receptacles · Size 4

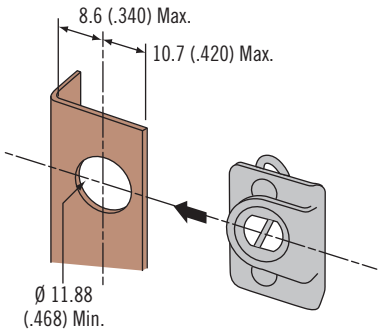
Clip-On



ACTUAL SIZE







Part Number	H	Stud Selection Column
D4-SL4-280	7.11 (.280)	C
D4-SL4-305	7.75 (.305)	

Material and Finish

Steel, zinc plated

Notes

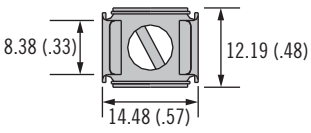
After selecting receptacle use stud selection letter **C** and follow instruction on page 312

Part Number

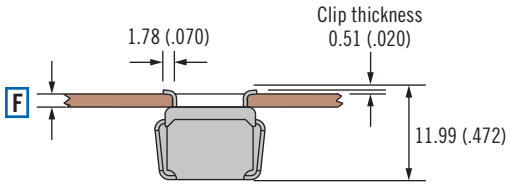
See table

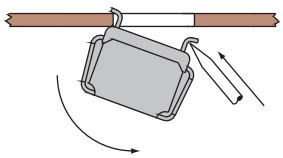
Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 312 - 313

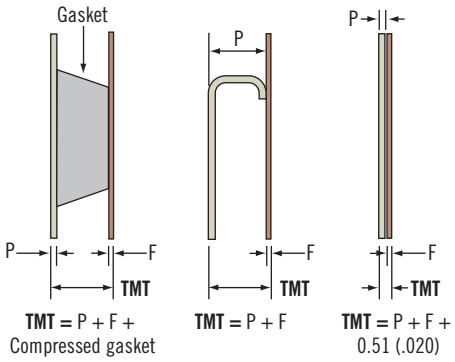
Snap-In – Rear Mount

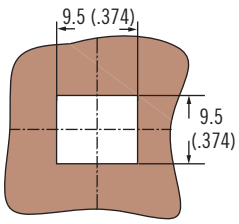


ACTUAL SIZE









Part Number	F Frame Thickness	H	Stud Selection Column
D4-SQC4-16	0.78 - 1.42 (.031 - .056)	11.48 (.452)	D
D4-SQC4-20	1.47 - 1.98 (.058 - .078)	11.48 (.452)	
D4-SQC4-25	2 - 2.49 (.079 - .098)	11.48 (.452)	
D4-SQC4-30	2.59 - 3.18 (.102 - .125)	11.48 (.452)	

Material and Finish

Steel, zinc plated

Installation Notes

For stud retention use only retaining ring part number: D4-RR4

Notes

After selecting receptacle use stud selection letter **D** and follow instruction on page 312

Part Number

See table

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 312 - 313

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Retainers · Size 4

Material and Finish

Retaining ring and spring:
Stainless steel
Retainer GH: Aluminum, natural
Retainer GP: HD polythene

Installation Notes

1. Place the retainer on the mandrel as shown
2. Align ring or spring ends so that they will miss the stud cam
3. Place mandrel in end of stud cam
4. Place tool over mandrel
5. Push retainer until it is sealed in stud undercut

Notes

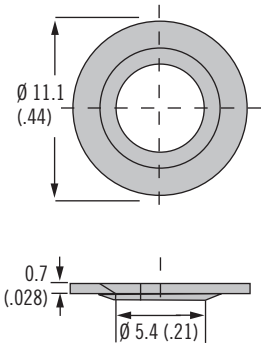
Tooling:
TFRS hand tool: Spreads the inside diameter of retainers over stud shanks and then pushes them into stud undercuts.

TB1A block: Nests stud heads during installation. (Any flat block may be used for BJR bail head studs).

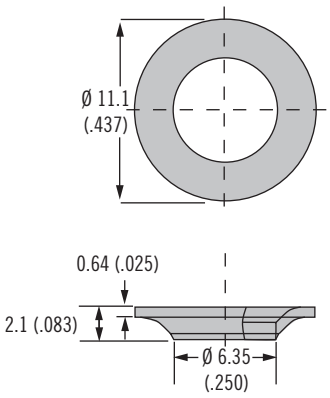
Part Number

see table

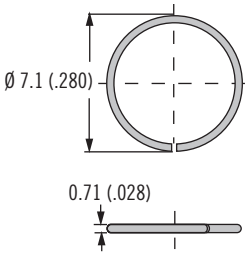
Retainer GP



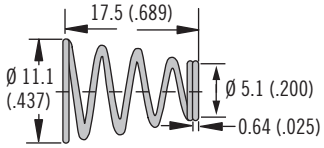
Retainer GH



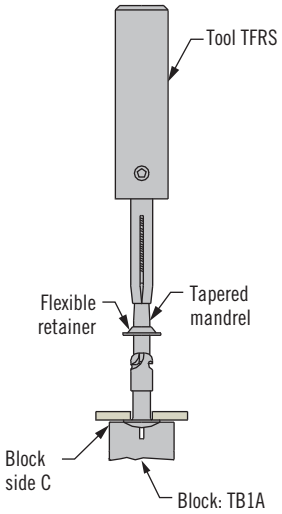
Retainer Ring



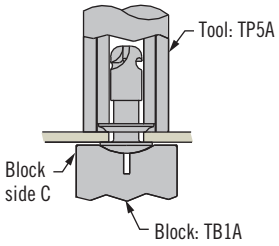
Spring

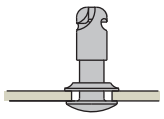


Install Retainer GP, Retaining Ring and SX

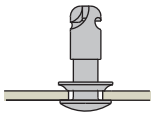


Install Retainer GH





Oversized Hole
Large diameter faces panel



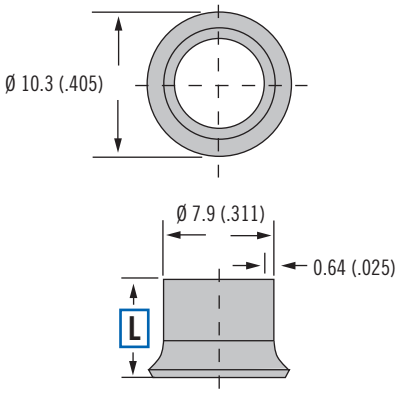
Standard Hole
Small diameter faces panel

Type	Part Number	Adjustment Value	Installation Tool Part Number
Retainer GP, natural	D4-GP4QA	Add 0.7 (.028)	29-TFRS4 and 29-TB1A4 (both required for correct installation - see images above)
Retainer GP, black	D4-GP4BQA		
Retainer GH	D4-GH4QA	Add 0.64 (.025)	29-TP5A4 and 29-TB1A4 (both required for correct installation - see images above)
Retaining ring	D4-RR4QA	Add 0.74 (.029)	29-TFRS4 and 29-TB1A4 (both required for correct installation - see images above)
Retaining spring	D4-SX523QA	Add 1.28 (.050)	

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Retainers · Size 4

Retainer GA



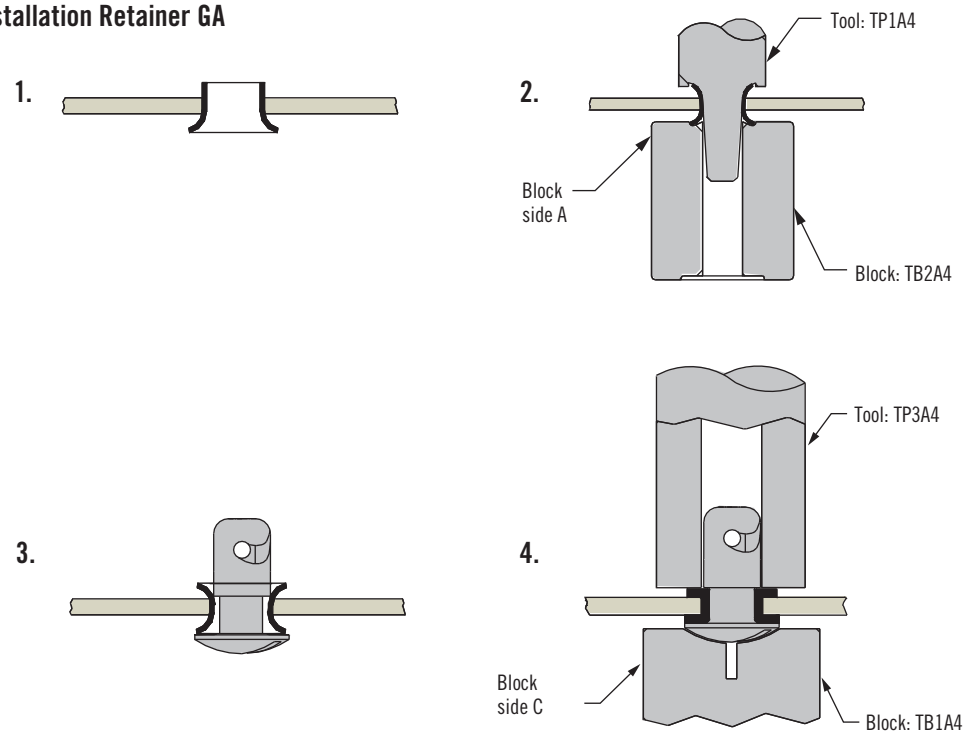
Material and Finish

Retainer GA: Aluminum, natural

Installation Notes

1. Insert retainer in panel hole
2. Set retainer
3. Insert stud
4. Flatten retainer

Installation Retainer GA



Panel Thickness	L	Part Number	Adjustment Value	Installation Tool Part Number
0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA4-175	Add 1.28 (.050)	29-TP1A4, 29-TP3A4 and 29-TB1A4 (all required for correct installation - see images above)
0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA4-200		
1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA4-250		

Part Number

see table

D4 *DZUS®* Standard Line Quarter-Turn Fasteners

Stud selection · Size 5

Material and Finish

Studs:
Steel, zinc plated or stainless steel

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 320 - 321

2. Select retainer and accessories

from pages 322 - 323 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A, B or C) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style H, stud length K, and material M

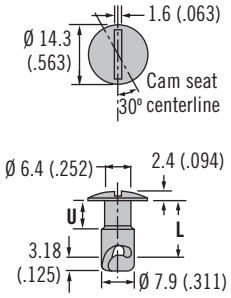
Example:
For rivet-on
D4-S5-225 use column A
For TMT value calculated as 5.21 (.205), K = 40
For slotted head style in steel material, completed part number: D4-AJ5-40
A complete example can be found on page 271.

Notes

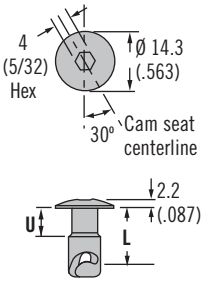
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

H Head Styles - Tool Actuated

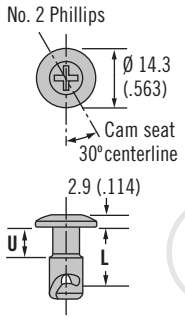
Slot



Hex Recess

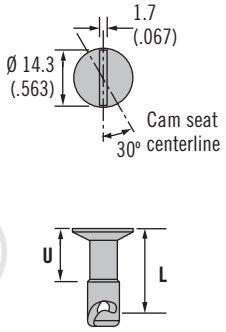


Phillips Recess



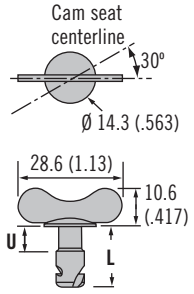
ACTUAL SIZE

Flush slot



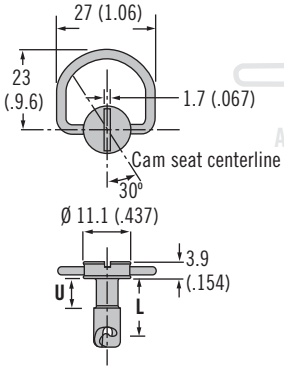
H Head Styles - Hand Actuated

Wing



ACTUAL SIZE

Bail

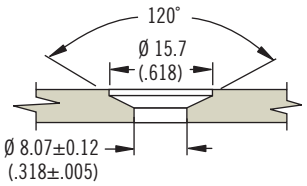


ACTUAL SIZE

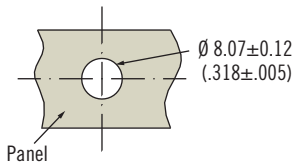
Stud Length Table

A				B				U	L	K
TMT Range For: Rivet-On Receptacle D4-S5-225		TMT Range For: Rivet-On Receptacle D4-S5-200		TMT Range For: Weld-On Receptacle D4-X414-310		TMT Range For: Weld-On Receptacle D4-X414-285				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
2.67 (.105)	3.28 (.129)	3.3 (.13)	3.91 (.154)	~	~	~	~	3.18 (.125)	7.62 (.300)	30
3.94 (.155)	4.55 (.179)	4.57 (.18)	5.18 (.204)	1.65 (.065)	2.26 (.089)	2.29 (.09)	2.9 (.114)	3.81 (.150)	8.89 (.350)	35
5.21 (.205)	5.82 (.229)	5.84 (.23)	6.45 (.254)	2.92 (.115)	3.53 (.139)	3.56 (.14)	4.17 (.164)	5.08 (.200)	10.16 (.400)	40
6.48 (.255)	7.09 (.279)	7.11 (.28)	7.72 (.304)	4.19 (.165)	4.8 (.189)	4.83 (.19)	5.44 (.214)	5.72 (.225)	11.43 (.450)	45
7.75 (.305)	8.36 (.329)	8.38 (.33)	8.99 (.354)	5.46 (.215)	6.07 (.239)	6.1 (.24)	6.71 (.264)	6.35 (.250)	12.70 (.500)	50
9.02 (.355)	9.63 (.379)	9.65 (.38)	10.26 (.404)	6.73 (.265)	7.34 (.289)	7.37 (.29)	7.98 (.314)	6.99 (.275)	13.97 (.550)	55
10.29 (.405)	10.9 (.429)	10.92 (.43)	11.53 (.454)	8.00 (.315)	8.61 (.339)	8.64 (.34)	9.25 (.364)	7.62 (.300)	15.24 (.600)	60
11.56 (.455)	12.17 (.479)	12.19 (.48)	12.8 (.504)	9.27 (.365)	9.88 (.389)	9.91 (.39)	10.52 (.414)	8.89 (.350)	16.51 (.650)	65
12.83 (.505)	13.44 (.529)	13.46 (.53)	14.07 (.554)	10.54 (.415)	11.15 (.439)	11.18 (.44)	11.79 (.464)	10.16 (.400)	17.78 (.700)	70
14.1 (.555)	14.71 (.579)	14.73 (.58)	15.34 (.604)	11.81 (.465)	12.42 (.489)	12.45 (.49)	13.06 (.514)		19.05 (.750)	75
15.37 (.605)	15.98 (.629)	16.00 (.63)	16.61 (.654)	13.08 (.515)	13.69 (.539)	13.72 (.54)	14.33 (.564)	12.7 (.500)	20.32 (.800)	80
16.64 (.655)	17.25 (.679)	17.27 (.68)	17.88 (.704)	14.35 (.565)	14.96 (.589)	14.99 (.59)	15.6 (.614)		21.59 (.850)	85
17.91 (.705)	18.52 (.729)	18.54 (.73)	19.15 (.754)	15.62 (.615)	16.23 (.639)	16.26 (.64)	16.87 (.664)	15.24 (.600)	22.86 (.900)	90
19.18 (.755)	19.79 (.779)	19.81 (.78)	20.42 (.804)	16.89 (.665)	17.5 (.689)	17.53 (.69)	18.14 (.714)		24.13 (.950)	95
20.45 (.805)	21.06 (.829)	21.08 (.83)	21.69 (.854)	18.16 (.715)	18.77 (.739)	18.8 (.74)	19.41 (.764)	17.78 (.70)	25.40 (1.00)	100

Flush



Standard



Part Number Selection

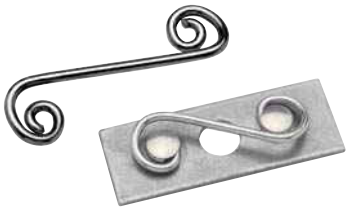
H Head style
- **AJ** Slot
- **ASHJ** Hex recess
- **APRJ** Phillips recess
- **FJ** Flush slot
- **AJW** Wing head
- **BJR** Bail head

K Length
Enter number from selection table below

M Material
- **SS** Stainless steel
- Omit for steel, zinc plated

D4 - H 5 - K M

Stud Length Table						
C				U	L	K
TMT Range For: Clip-On Receptacle D4-SL5-305		TMT Range For: Clip-On Receptacle D5-SL5-280				
Min.	Max.	Min.	Max.			
~	~	1.17 (.046)	1.78 (.07)	3.18 (.125)	7.62 (.300)	**30**
1.8 (.071)	2.41 (.095)	2.44 (.096)	3.05 (.12)	3.81 (.150)	8.89 (.350)	**35**
3.07 (.121)	3.68 (.145)	3.71 (.146)	4.32 (.17)	5.08 (.200)	10.16 (.400)	**40**
4.34 (.171)	4.95 (.195)	4.98 (.196)	5.59 (.22)	5.72 (.225)	11.43 (.450)	**45**
5.61 (.221)	6.22 (.245)	6.25 (.246)	6.86 (.27)	6.35 (.250)	12.70 (.500)	**50**
6.88 (.271)	7.49 (.295)	7.52 (.296)	8.13 (.32)	6.99 (.275)	13.97 (.550)	**55**
8.15 (.321)	8.76 (.345)	8.79 (.346)	9.4 (.37)	7.62 (.300)	15.24 (.600)	**60**
9.42 (.371)	10.03 (.395)	10.06 (.396)	10.67 (.42)	8.89 (.350)	16.51 (.650)	**65**
10.69 (.421)	11.3 (.445)	11.33 (.446)	11.94 (.47)	10.16 (.400)	17.78 (.700)	**70**
11.96 (.471)	12.57 (.495)	12.6 (.496)	13.21 (.52)		19.05 (.750)	**75**
13.23 (.521)	13.84 (.545)	13.87 (.546)	14.48 (.57)	12.7 (.500)	20.32 (.800)	**80**
14.5 (.571)	15.11 (.595)	15.14 (.596)	15.75 (.62)		21.59 (.850)	**85**
15.77 (.621)	16.38 (.645)	16.41 (.646)	17.02 (.67)	15.24 (.600)	22.86 (.900)	**90**
17.04 (.671)	17.65 (.695)	17.68 (.696)	18.29 (.72)		24.13 (.950)	**95**
18.31 (.721)	18.92 (.745)	18.95 (.746)	19.56 (.77)	17.78 (.70)	25.40 (1.00)	**100**

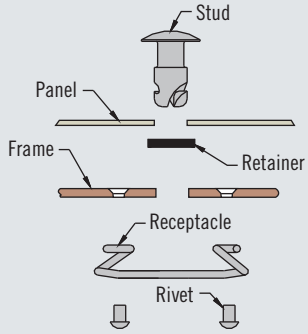


D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Receptacles · Size 5

Material and Finish

Steel, zinc plated or stainless steel



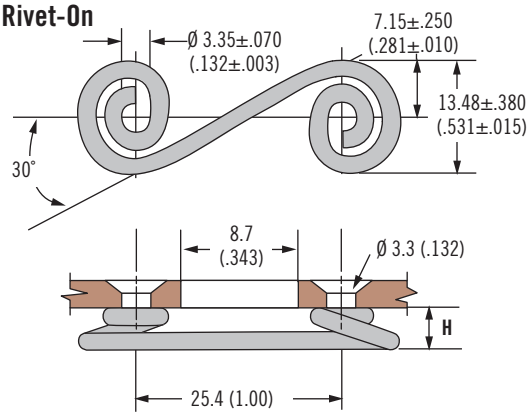
Part Number

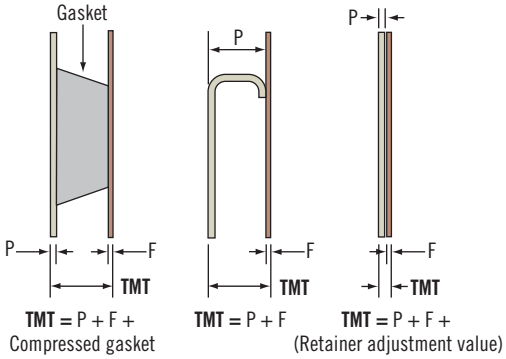
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 318

Rivet-On



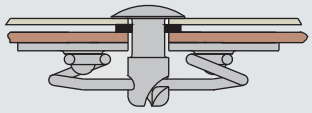


ACTUAL SIZE

Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-S5-200	D4-S5-200SS	5.08 (.200)	A
D4-S5-225	D4-S5-225SS	5.72 (.225)	

Material and Finish

Steel, zinc plated or stainless steel



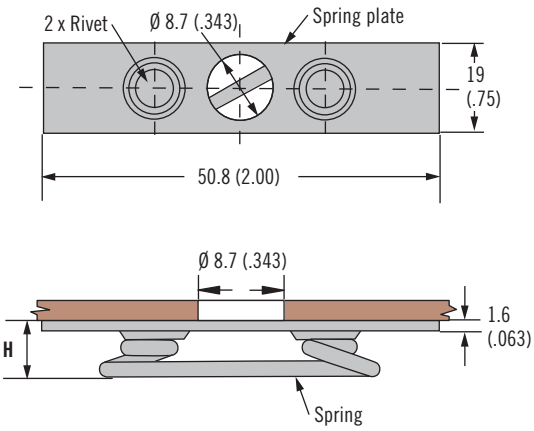
Part Number

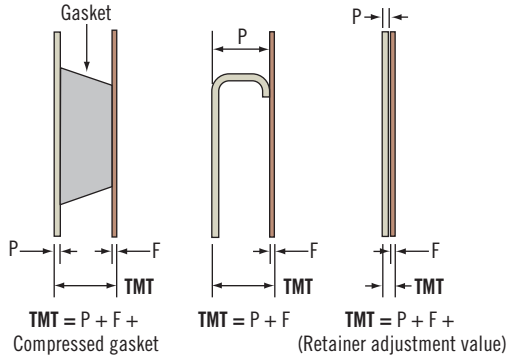
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 318

Weld-On

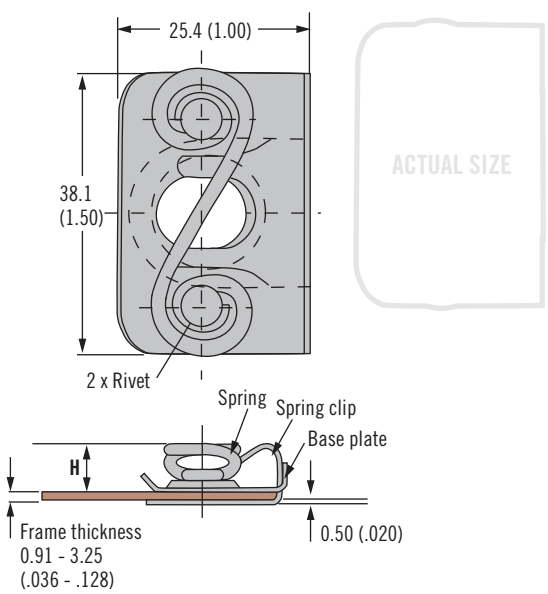


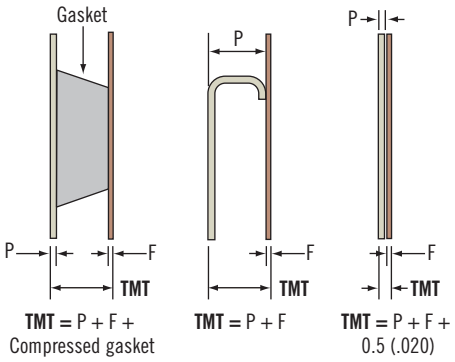


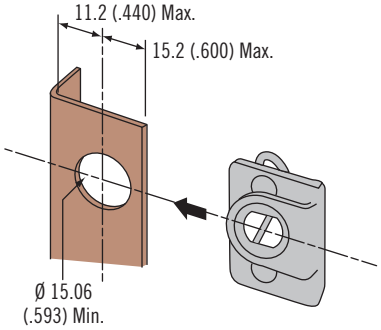
ACTUAL SIZE

Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-X414-285	D4-X414-285SS	7.2 (.285)	B
D4-X414-310	D4-X414-310SS	7.9 (.310)	

Clip-On







Part Number	H	Stud Selection Column
D4-SL5-280	7.11 (.280)	C
D4-SL5-305	7.75 (.305)	

Material and Finish

Studs: Steel, zinc plated

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 318

D4 *DZUS®* Standard Line Quarter-Turn Fasteners

Retainers · Size 5

Material and Finish

Retaining ring and spring: Stainless steel
Retainer GH: Aluminum, natural
Retainer GP: HD polythene

Installation Notes

1. Place the retainer on the mandrel as shown
2. Align ring or spring ends so that they will miss the stud cam
3. Place mandrel in end of stud cam
4. Place tool over mandrel
5. Push retainer until it is sealed in stud undercut

Notes

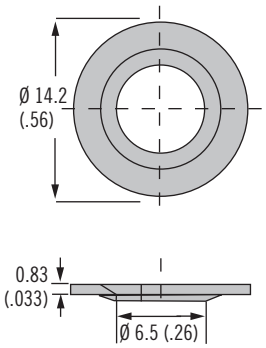
Tooling:
TFRS hand tool: Spreads the inside diameter of retainers over stud shanks and then pushes them into stud undercuts

TB1A block: Nests stud heads during installation. (Any flat block may be used for BJR bail head studs).

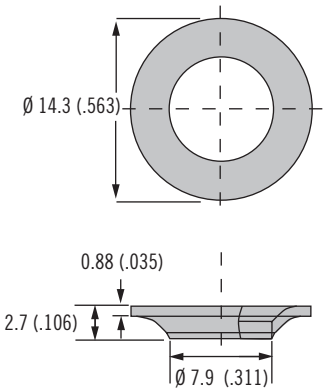
Part Number

See table

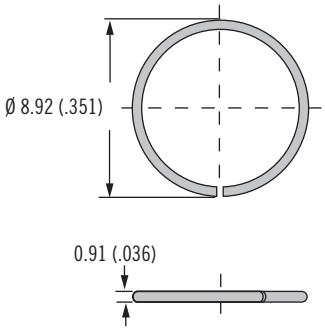
Retainer GP



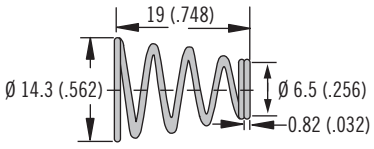
Retainer GH



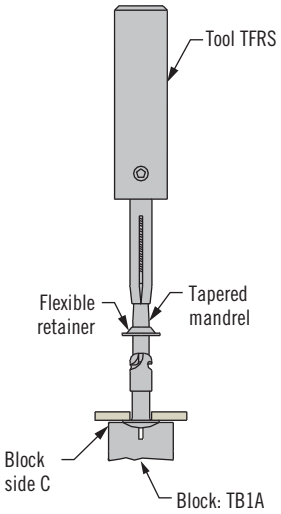
Retainer Ring



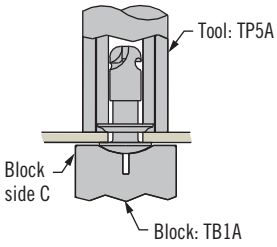
Spring

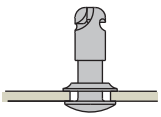


Install Retainer GP, Retaining Ring and SX

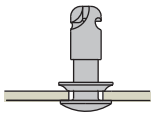


Install Retainer GH





Oversized Hole
Large diameter faces panel



Standard Hole
Small diameter faces panel

Type	Part Number	Adjustment Value	Installation Tool Part Number
Retainer GP, natural	D4-GP5QA	Add 0.86 (.034)	29-TFRS5 and 29-TB1A5 (both required for correct installation - see images above)
Retainer GP, black	D4-GP5BQA		
Retainer GH	D4-GH5QA	Add 0.78 (.031)	29-TP5A5 and 29-TB1A5 (both required for correct installation - see images above)
Retaining ring	D4-RR5QA	Add 0.91 (.035)	29-TFRS5 and 29-TB1A5 (both required for correct installation - see images above)
Retaining spring	D4-SX510QA	Add 1.64 (.064)	

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Retainers · Size 5

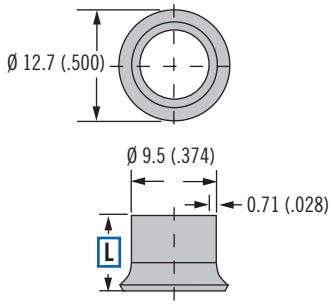
Material and Finish

Retainer GA: Aluminum, natural

Installation Notes

1. Insert retainer in panel hole
2. Set retainer
3. Insert stud
4. Flatten retainer

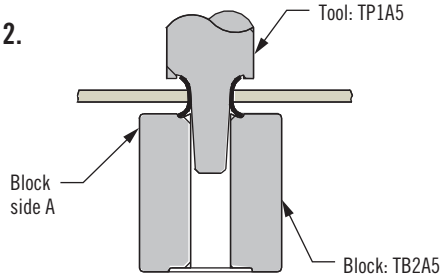
Retainer GA



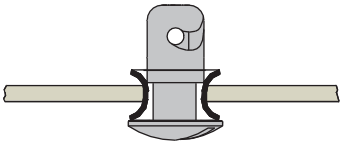
Installation Retainer GA

1.

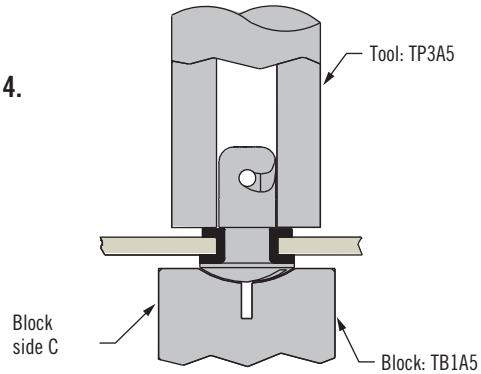
2.



3.



4.



Panel Thickness	L Length	Part Number	Adjustment Value	Installation Tool Part Number
0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA5-175	Add 1.42 (.056)	29-TP1A5, 29-TP3A5, 29-TB1A5 and 29-TB2A5 (all four required for correct installation - see images above)
0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA5-200		
1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA5-250		

Part Number

See table

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Stud selection · Size 6

Material and Finish

Studs:
Steel, zinc plated or stainless steel

To select correct fastener:

1. Select receptacle

Choose a receptacle from page 325

2. Select retainer and accessories

from pages 326 - 327 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A or B) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style H, stud length K, and material M

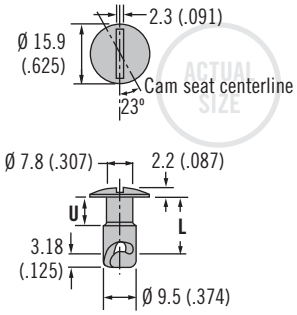
Example:
For rivet-on
D4-S6-300 use column A
For TMT value calculated as 5.2 (.206), K = 45
For slotted head style in steel material, completed part number: D4-AJ6-45
A complete example can be found on page 271.

Notes

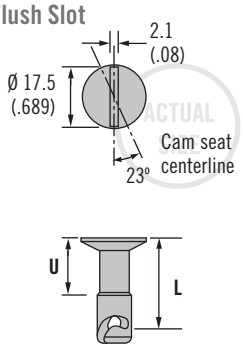
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

H Head Styles - Tool Actuated

Slot

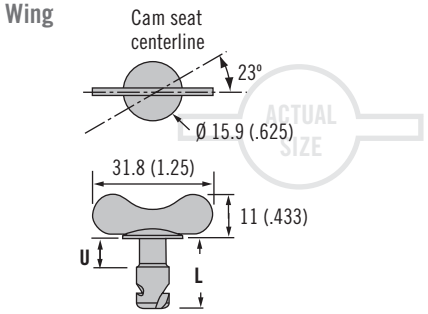


Flush Slot

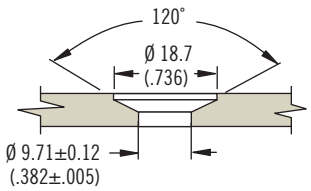


H Head Styles - Hand Actuated

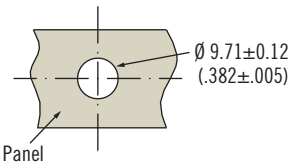
Wing



Flush



Standard



H Head style
AJ Slot recess
AJW Wing head
FJ Flush slot

K Length
Enter number from selection table below

M Material
SS Stainless steel
Omit for steel, zinc plated

D4 - H 6 - K M

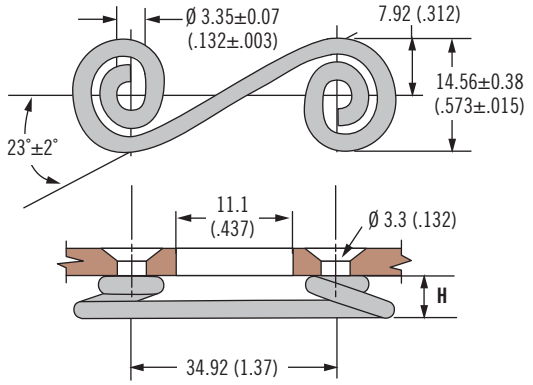
Stud Length Table

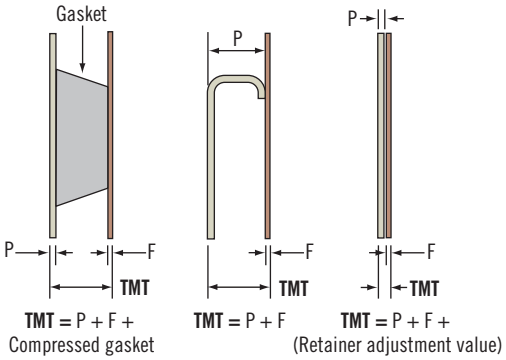
A				B				U	L	K
TMT Range For: Rivet-On Receptacle D4-S6-300		TMT Range For: Rivet-On Receptacle D4-S6-275		TMT Range For: Weld-On Receptacle D4-X441-335		TMT Range For: Weld-On Receptacle D4-X441-310				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
2.29 (.090)	2.90 (.114)	2.92 (.115)	3.53 (.139)	1.40 (.055)	2.01 (.079)	2.03 (.080)	2.64 (.104)	4.45 (.175)	8.89 (.350)	35
3.56 (.140)	4.17 (.164)	4.19 (.165)	4.80 (.189)	2.67 (.105)	3.28 (.129)	3.30 (.130)	3.91 (.154)	5.08 (.200)	10.16 (.400)	40
4.83 (.190)	5.44 (.214)	5.46 (.215)	6.07 (.239)	3.94 (.155)	4.55 (.179)	4.57 (.180)	5.18 (.204)	5.72 (.225)	11.43 (.450)	45
6.10 (.240)	6.71 (.264)	6.73 (.265)	7.34 (.289)	5.21 (.205)	5.82 (.229)	5.84 (.230)	6.45 (.254)	6.35 (.250)	12.70 (.500)	50
7.37 (.290)	7.98 (.314)	8.00 (.315)	8.61 (.339)	6.48 (.255)	7.09 (.279)	7.11 (.280)	7.72 (.304)	6.99 (.275)	13.97 (.550)	55
8.64 (.340)	9.25 (.364)	9.27 (.365)	9.88 (.389)	7.75 (.305)	8.36 (.329)	8.38 (.330)	8.99 (.354)	7.62 (.300)	15.24 (.600)	60
9.91 (.390)	10.52 (.414)	10.54 (.415)	11.15 (.439)	9.02 (.355)	9.63 (.379)	9.65 (.380)	10.26 (.404)	8.89 (.350)	16.51 (.650)	65
11.18 (.440)	11.79 (.464)	11.81 (.465)	12.42 (.489)	10.29 (.405)	10.90 (.429)	10.92 (.430)	11.53 (.454)		17.78 (.700)	70
12.45 (.490)	13.06 (.514)	13.08 (.515)	13.69 (.539)	11.56 (.455)	12.17 (.479)	12.19 (.480)	12.80 (.504)	10.16 (.400)	19.05 (.750)	75
13.72 (.540)	14.33 (.564)	14.35 (.565)	14.96 (.589)	12.83 (.505)	13.44 (.529)	13.46 (.530)	14.07 (.554)	11.43 (.450)	20.32 (.800)	80
14.99 (.590)	15.60 (.614)	15.62 (.615)	16.23 (.639)	14.10 (.555)	14.71 (.579)	14.73 (.580)	15.34 (.604)	12.7 (.500)	21.59 (.850)	85
16.26 (.640)	16.87 (.664)	16.89 (.665)	17.50 (.689)	15.37 (.605)	15.98 (.629)	16.00 (.630)	16.61 (.654)	13.97 (.550)	22.86 (.900)	90
17.53 (.690)	18.14 (.714)	18.16 (.715)	18.77 (.739)	16.64 (.655)	17.25 (.679)	17.27 (.680)	17.88 (.704)	15.24 (.600)	24.13 (.950)	95
18.80 (.740)	19.41 (.764)	19.43 (.765)	20.04 (.789)	17.91 (.705)	18.52 (.729)	18.54 (.730)	19.15 (.754)	16.51 (.650)	25.40 (1.00)	100

D4 *DZUS*® Standard Line Quarter-Turn Fasteners

Receptacles · Size 6

Rivet-On





ACTUAL SIZE

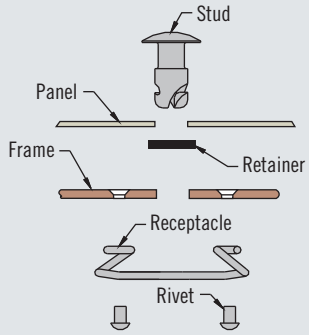
Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-S6-275	D4-S6-275SS	6.99 (.275)	A
D4-S6-300	D4-S6-300SS	7.62 (.300)	

Material and Finish

Steel, zinc plated or stainless steel

Notes

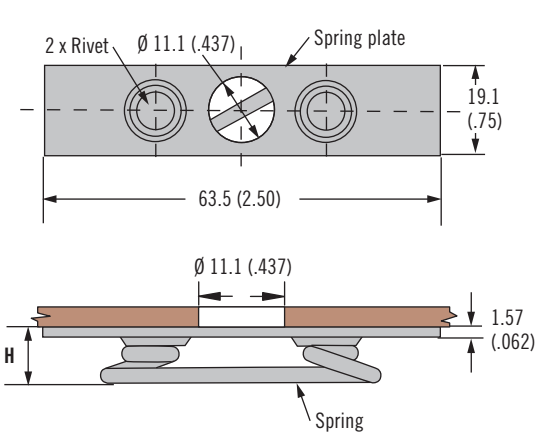
After selecting receptacle use stud selection letter **A** and follow instruction on page 324

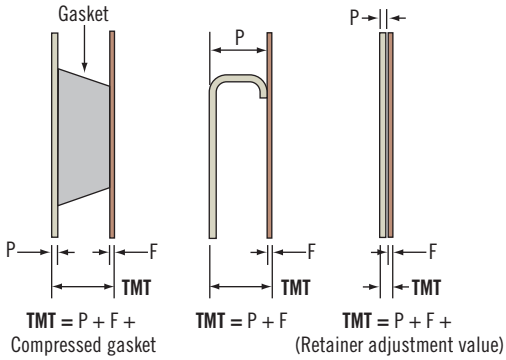


Part Number

See table

Weld-On





ACTUAL SIZE

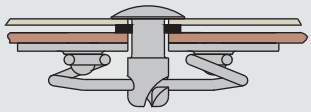
Part Number	H	Stud Selection Column
D4-X441-310	7.87 (.310)	B
D4-X441-335	8.51 (.335)	

Material and Finish

Steel, zinc plated

Notes

After selecting receptacle use stud selection letter **B** and follow instruction on page 324



Part Number

See table

D4 *DZUS®* Standard Line Quarter-Turn Fasteners

Retainers · Size 6

Material and Finish

Retaining ring and spring:
Stainless steel
Retainer GH: Aluminum, natural

Installation Notes

1. Place the retainer on the mandrel as shown
2. Align ring or spring ends so that they will miss the stud cam
3. Place mandrel in end of stud cam
4. Place tool over mandrel
5. Push retainer until it is sealed in stud undercut

Notes

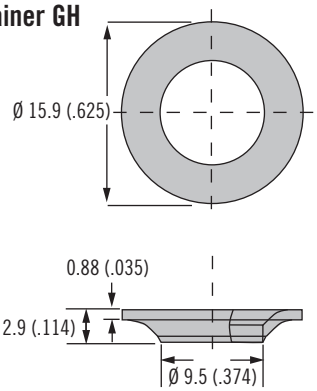
Tooling:
TFRS hand tool: Spreads the inside diameter of retainers over stud shanks and then pushes them into stud undercuts.

TB1A block: Nests stud heads during installation. (Any flat block may be used for BJR bail head studs).

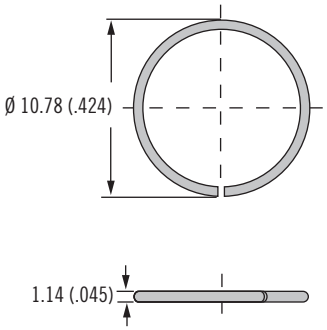
Part Number

See table

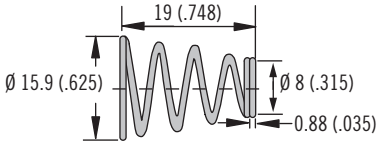
Retainer GH



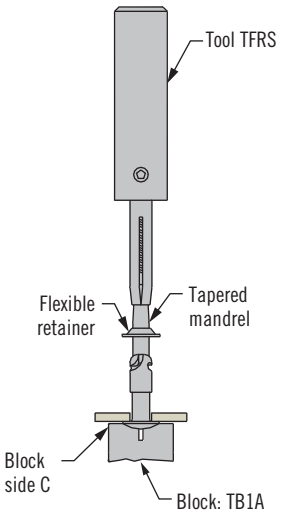
Retainer Ring



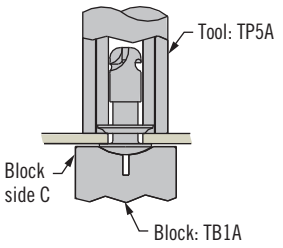
Spring

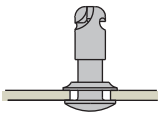


Install Retainer GP, Retaining Ring and SX

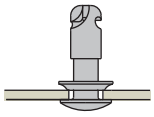


Install Retainer GH





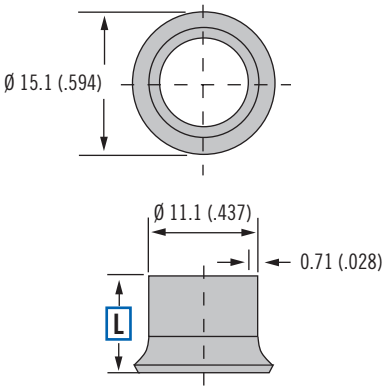
Oversized Hole
Large diameter faces panel



Standard Hole
Small diameter faces panel

Type	Part Number	Adjustment Formula	Installation Tool Part Number
Retainer GH	D4-GH6	Add .88 (.035)	29-TP5A6 and 29-TB1A6 (both required for correct installation - see images above)
Retaining ring	D4-RR6	Add 1.14 (.045)	29-TFRS6 and 29-TB1A6 (both required for correct installation - see images above)
Retaining spring	D4-SX518	Add 1.76 (.070)	

Retainer GA



Material and Finish

Retainer GA: Aluminum, natural

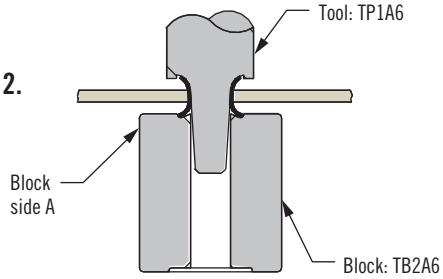
Installation Notes

1. Insert retainer in panel hole
2. Set retainer
3. Insert stud
4. Flatten retainer

Installation Retainer GA

1.

2.



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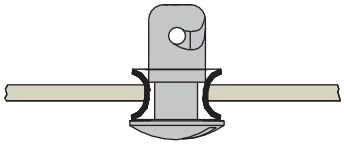

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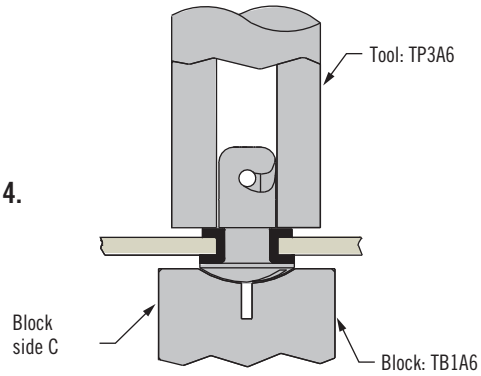


Panel Thickness	L	Part Number	Adjustment Value	Installation Tool Part Number
0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA6-175	Add 1.42 (.056)	29-TP1A6, 29-TP3A6, 29-TB1A6 and 29-TB2A6 (all four required for correct installation - see images above)
0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA6-200		
1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA6-250		

Part Number

See table

D7 *DZUS*® Pilot Quarter-Turn Fasteners

Studs

Material and Finish

Studs: Steel, zinc plated plus chromate
Washer: Neoprene, black

Notes

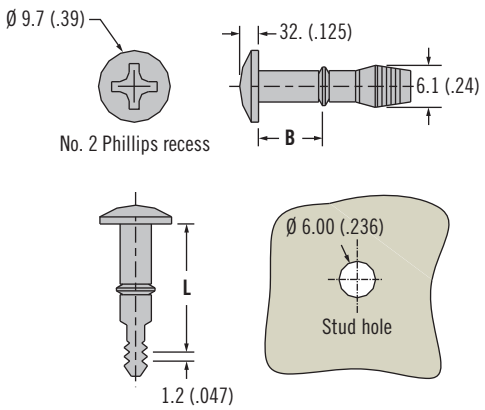
Select stud and washer part number from table based on your panel thickness P

Part Number

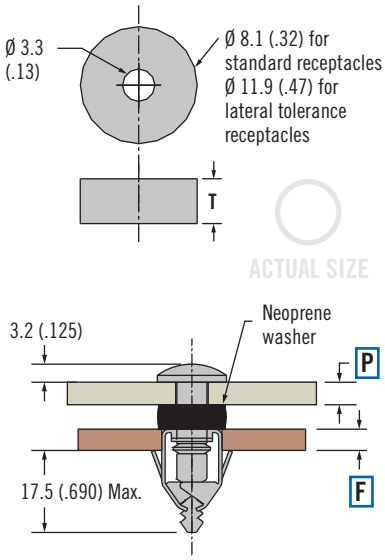
See table

Order stud and washer separately

Studs



Washer



P Panel Thickness	Stud L	Stud B	T Washer Thickness	Part Number			
				Stud		Neoprene Washer	
				Black chromate	Bright chromate	For standard receptacle	For lateral tolerance receptacle
1.3 (.05) to 1.7 (.07)	16 (.63)	7.1 (.28)	4.1 (.16)	D7-265-716-191	D7-265-716-190	D7-275-040-400	D7-275-140-400
1.8 (.07) to 2.2 (.09)	16 (.63)	7.1 (.28)	3.6 (.14)	D7-265-716-191	D7-265-716-190	D7-275-035-400	D7-275-135-400
2.3 (.09) to 2.7 (.11)	17.8 (.70)	8.9 (.35)	5.1 (.20)	D7-265-718-191	D7-265-718-190	D7-275-050-400	D7-275-150-400
2.8 (.11) to 3.2 (.12)	17.8 (.70)	8.9 (.35)	4.6 (.18)	D7-265-718-191	D7-265-718-190	D7-275-045-400	D7-275-145-400
3.3 (.13) to 3.7 (.15)	17.8 (.70)	8.9 (.35)	4.1 (.16)	D7-265-718-191	D7-265-718-190	D7-275-040-400	D7-275-140-400
3.8 (.15) to 4.2 (.17)	17.8 (.70)	8.9 (.35)	3.6 (.14)	D7-265-718-191	D7-265-718-190	D7-275-035-400	D7-275-135-400
4.3 (.17) to 4.8 (.19)	20.0 (.79)	10.9 (.43)	5.1 (.20)	D7-265-720-191	D7-265-720-190	D7-275-050-400	D7-275-150-400

Self-Ejecting Studs

Material and Finish

Steel, zinc plated and thermoplastic black

Notes

Select stud and washer part number from table based on your panel thickness P

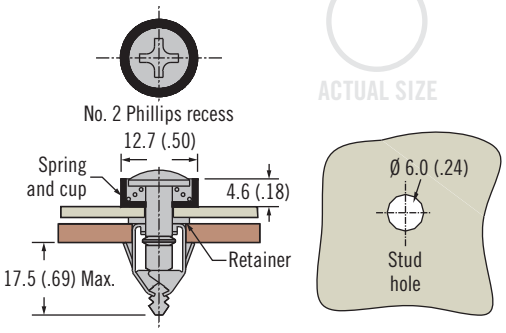
Part Number

See table

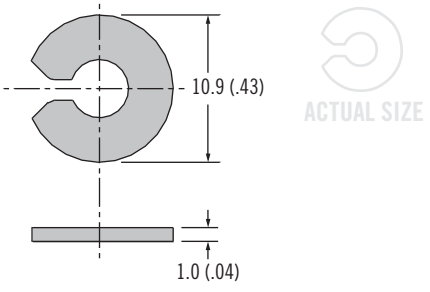
Stud, cup and spring shipped pre-assembled

Order retainer separately

Self-Ejecting Studs



Retainer, Plastic



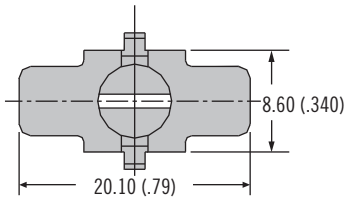
P Panel Thickness	Part Number	
	Black	Bright
0.5 - 3.0 (.02 - .12)	D7-290-718-191	D7-290-718-190
2.5 - 5.1 (.10 - .20)	D7-290-720-191	D7-290-720-190

Part Number
D7-275-203-040

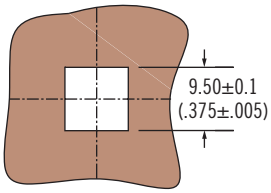
D7 *DZUS®* Pilot Quarter-Turn Fasteners

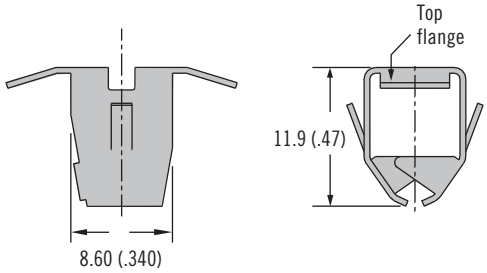
Receptacles

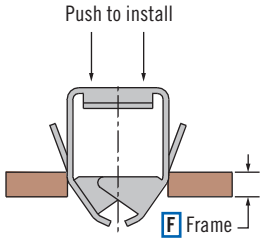
Standard



ACTUAL SIZE







F Frame Thickness		Part Number
Min.	Max.	
0.63 (.025)	1.24 (.049)	D7-285-101-161
1.27 (.050)	1.75 (.069)	D7-285-102-161
1.78 (.070)	2.26 (.089)	D7-285-103-161

Material and Finish

Spring steel, zinc phosphate

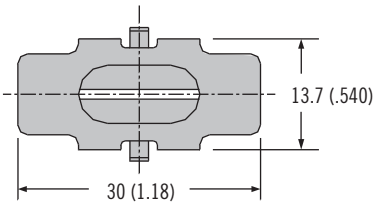
Notes

Select receptacle based on frame thickness F

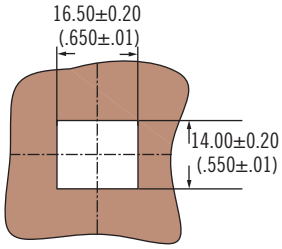
Part Number

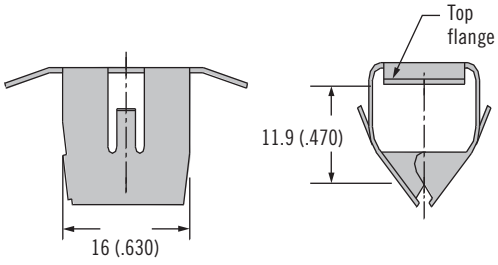
See table

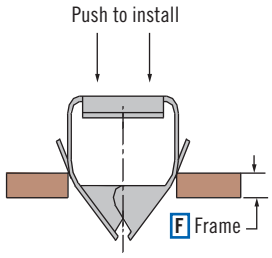
Lateral Tolerance



ACTUAL SIZE







F Frame Thickness		Part Number
Min.	Max.	
0.63 (.025)	1.24 (.049)	D7-285-201-161
1.27 (.050)	1.75 (.069)	D7-285-202-161
1.78 (.070)	2.26 (.089)	D7-285-203-161
2.29 (.090)	2.77 (.109)	D7-285-204-161
2.79 (.110)	3.28 (.129)	D7-285-205-161

Material and Finish

Spring steel, zinc phosphate

Notes

Select receptacle based on frame thickness F

Part Number

See table

D7 DZUS® Arrow Quarter-Turn Fasteners

Assembly

- **Surface install**
- **Panel mounted assembly**

Material and Finish

Acetal, black

Performance Details

Flammability rating: UL94-HB

ASTM E-162 Flame spread Index: 130

D7 Arrow Installation notes

200 series:

1. Press receptacle into outer panel.
2. Press stud into receptacle.
3. Press and turn stud to latch
4. Turn stud 90 degree to unlatch.

2001 series:

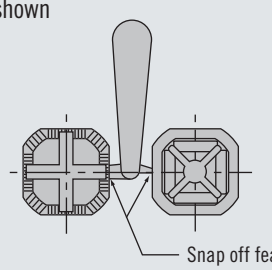
1. Separate Stud and receptacle from runner.
2. Press receptacle into outer panel.
3. Press stud into receptacle.
4. Press and turn stud to latch
5. Turn stud 90 degree to unlatch

Part Number

See table

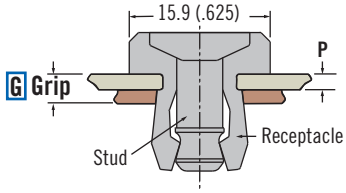
200 Series: Order one receptacle and stud from the same size separately

2001 Series: Complete assembly supplied with runner attached as shown



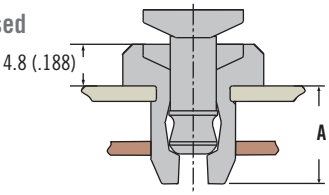
200 Series (order stud and receptacle separately)

Locked

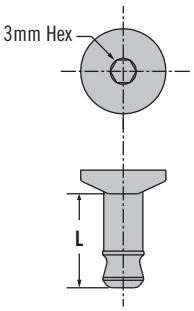


ACTUAL SIZE

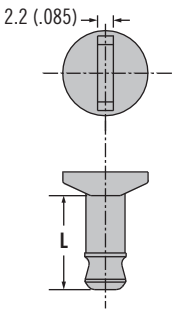
Released



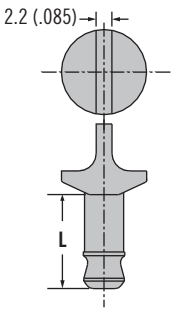
Hex Recess



Slotted

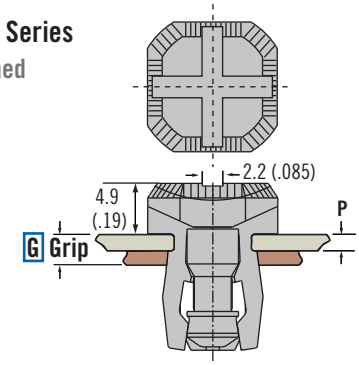


Knob



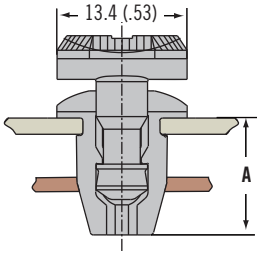
2001 Series

Latched

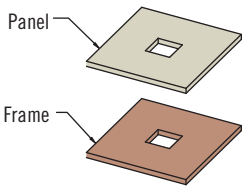


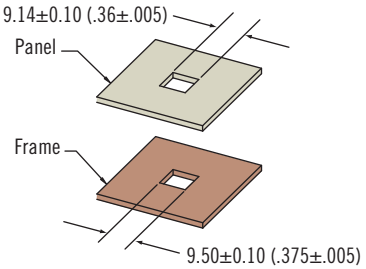
ACTUAL SIZE

Unlatched



Installation





Series	A	Receptacle			Stud				
		P Panel Thickness		Part Number	G Grip Range		Part Number		
		Min.	Max.		Min.	Max.	Hex recess	Slotted recess	Knob
200	12.3 (.48)	0.50 (.020)	1.78 (.070)	D7-200-802-010	2.03 (.080)	5.08 (.200)	D7-200-701-010	D7-200-711-010	D7-200-721-010
	13.7 (.54)	1.80 (.071)	3.10 (.125)	D7-201-802-010	3.43 (.135)	6.35 (.250)	D7-201-701-010	D7-201-711-010	D7-201-721-010
2001	12.0 (.47)	Complete Assembly							
		0.05 (.020)	1.7 (.067)	~	2.5 (.098)	6.7 (.263)	D7-2001-010		

NY DZUS® Q-Latch Quarter-Turn Fasteners

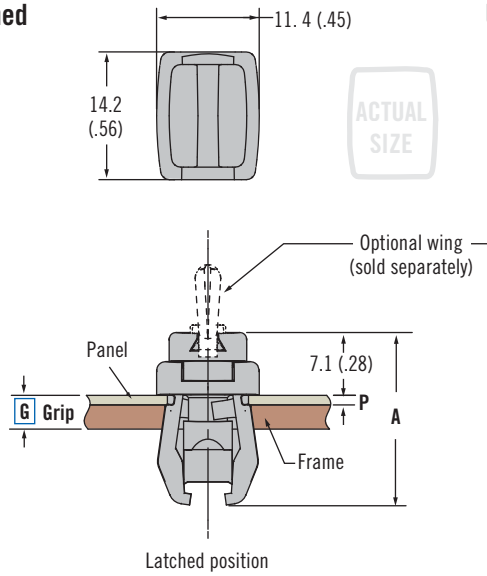
Assembly

- **Surface install**
- **Panel mounted assembly**

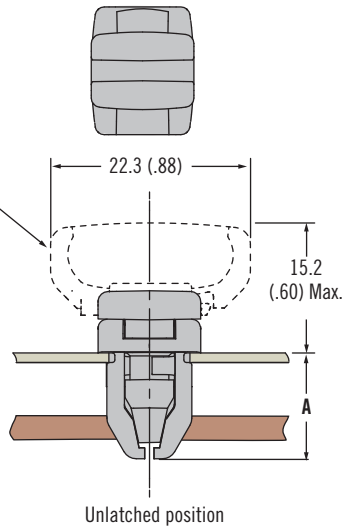
Material and Finish

Acetal copolymer resin, black

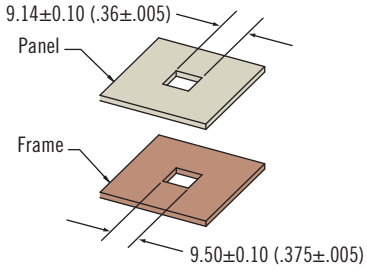
Latched

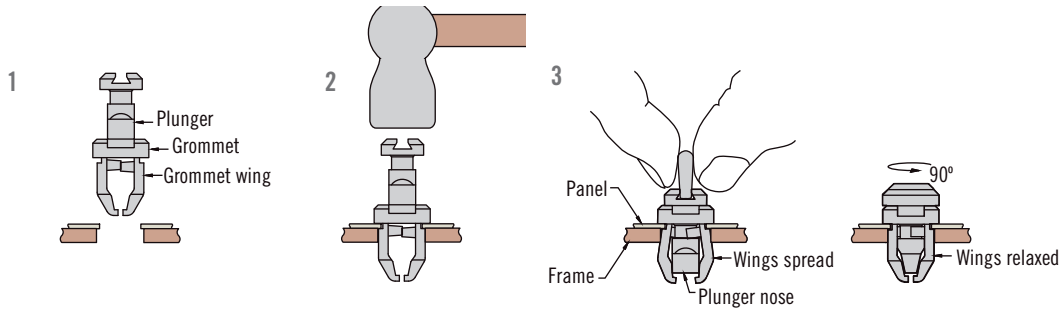


Unlatched



G	Grip Range		P Max.	A
	Min.	Max.		
1	1.50 (.059)	3.76 (148)	1.0 (.042)	12.7 (.50)
2	1.93 (.076)	4.19 (.165)	1.5 (.057)	12.95 (.51)
3	3.00 (.118)	5.26 (.207)	2.5 (.098)	13.97 (.55)
4	4.62 (.182)	6.88 (.271)	4.1 (.162)	15.75 (.62)





NY Q-latch Installation notes

1. Insert assembly into outer panel.
2. Strike head of assembly to captivate assembly into outer panel.
3. Turn stud 90 degree to latch and unlatch.
4. Slide wing into slot

Part Number Selection

Latch assembly shipped as one piece

Wing must be ordered separately

Assembly

NY - N6 - G - F

Optional Wing (order separately)

NY - H6 - F

G Grip range

1 1.50 - 3.76 (.059 - 148)
2 1.93 - 4.19 (.076 - .165)
3 3.00 - 5.26 (.118 - .207)
4 4.62 - 6.88 (.182 - .271)

F Finish

10 Polycarbonate, white
20 Polycarbonate, black
30 Polysulfone, black
31 Polysulfone, white

09 Series Fast-Lead Screws

Studs · Small

Material and Finish

Low carbon steel, case hardened, zinc plated, chromate plus sealer or stainless steel

How to Specify:

1. Determine your outer panel and frame thicknesses:
Outer panel P =
Frame thickness F =
2. Choose your receptacle
3. Choose the retainer style
4. Find the correct constant in table opposite using the receptacle and retainer selected
5. Add outer panel thickness (P), frame thickness (F), and the constant found in step 4 to determine your total material thickness (TMT)
TMT = P+F+Constant
6. Find the TMT value in the ranges given in Column 1 in the part number table
7. Confirm that the outer panel thickness P does not exceed the value given in Column 2. This will confirm that your retainer will install properly beyond the last thread and retain your screw to the outer panel
8. Going across the row in the part number table, find the part number that matches your desired head style

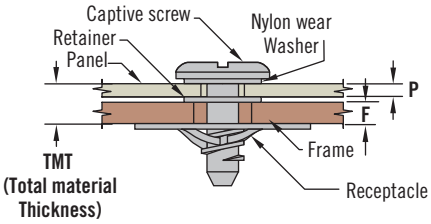
Part Number

See table

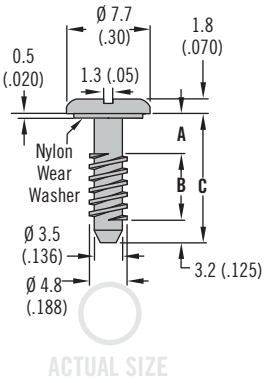
Notes

For full screw retraction, **B** must be less than frame thickness plus receptacle height

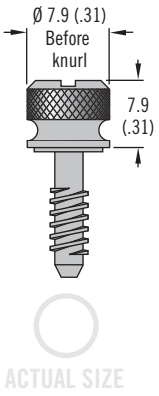
For stainless steel screw (slotted, and knurled ONLY) replace last 2 digits of part number with "26". Example: 09-11-102-26



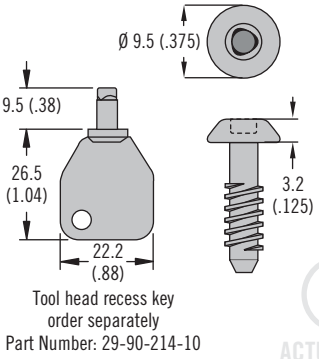
Slot



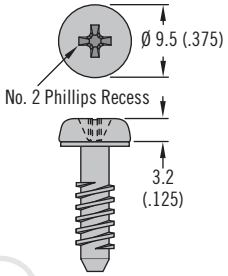
Knurled Head



Tool head Recess



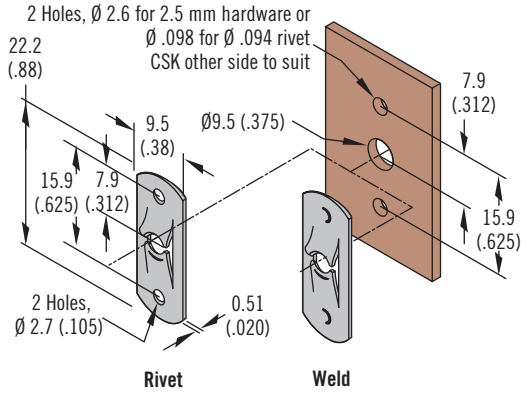
Phillips Recess



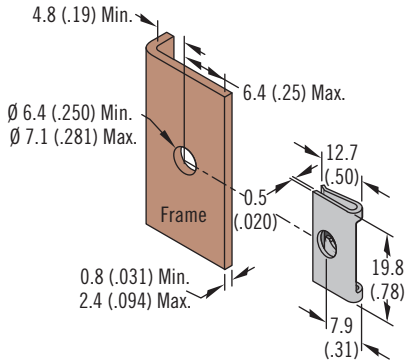
Constant Table				
Retainer Type	Receptacle Type			
	Flat Rivet or Weld	Clip	Saddle	Press-In
Stainless steel	0.3 (.012)	1.0 (.032)	4.5 (.177)	-1.3 (-.050)
Nylon	1.1 (.043)	1.6 (.063)	5.3 (.208)	-0.5 (-.020)

Column 1		Column 2	Screw Assembly Part Number				Dimensions		
TMT		Outer Panel P	Slotted	Knurled	Tool Head Recess	Phillips Recess	A	B	C
Min.	Max.								
1.3 (.050)	3.2 (.125)	0.9 (.035)	09-11-102-11	09-13-102-11	09-T-102	09-P-102	2.5 (.100)	5.0 (.197)	10.7 (.422)
2.5 (.100)	3.2 (.125)	2.2 (.085)	09-11-103-11	09-13-103-11	09-T-103	09-P-103	3.8 (.150)	3.7 (.147)	
1.3 (.050)	6.4 (.250)	0.9 (.035)	09-11-202-11	09-13-202-11	09-T-202	09-P-202	2.5 (.100)	8.2 (.322)	13.9 (.547)
2.5 (.100)	6.4 (.250)	2.2 (.085)	09-11-203-11	09-13-203-11	09-T-203	09-P-203	3.8 (.150)	6.9 (.272)	
3.8 (.150)	6.4 (.250)	3.4 (.135)	09-11-204-11	09-13-204-11	09-T-204	09-P-204	5.1 (.200)	5.6 (.222)	
5.1 (.200)	6.4 (.250)	4.7 (.185)	09-11-205-11	09-13-205-11	09-T-205	09-P-205	6.4 (.250)	4.4 (.172)	
1.3 (.050)	9.5 (.375)	0.9 (.035)	09-11-302-11	09-13-302-11	09-T-302	09-P-302	2.5 (.100)	11.4 (.447)	17.1 (.672)
2.5 (.100)	9.5 (.375)	2.2 (.085)	09-11-303-11	09-13-303-11	09-T-303	09-P-303	3.8 (.150)	10.1 (.397)	
3.8 (.150)	9.5 (.375)	3.4 (.135)	09-11-304-11	09-13-304-11	09-T-304	09-P-304	5.1 (.200)	8.8 (.347)	
5.1 (.200)	9.5 (.375)	4.7 (.185)	09-11-305-11	09-13-305-11	09-T-305	09-P-305	6.4 (.250)	7.3 (.297)	
7.6 (.300)	9.5 (.375)	7.2 (.285)	09-11-307-11	09-13-307-11	09-T-307	09-P-307	8.9 (.350)	5.0 (.197)	

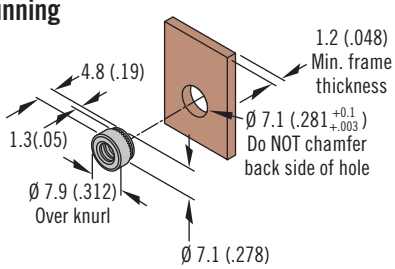
Flat Type Receptacle



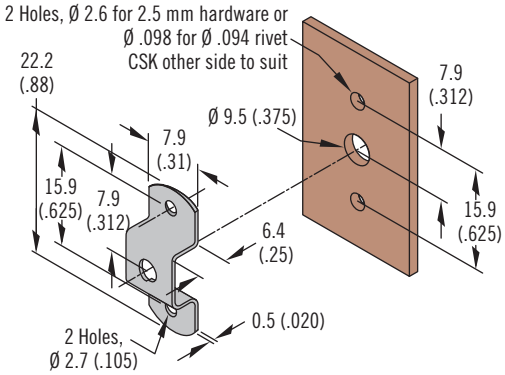
Clip-On Type Receptacle



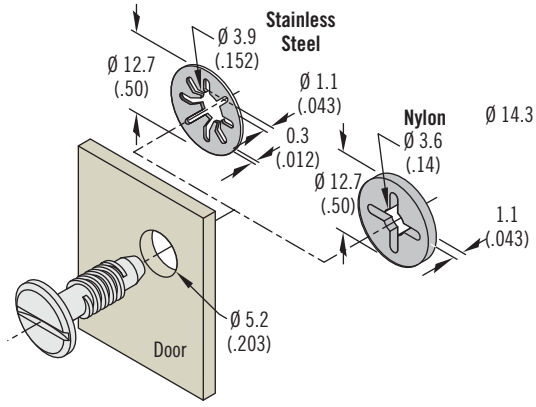
Self-Clinching Receptacle
Free Running

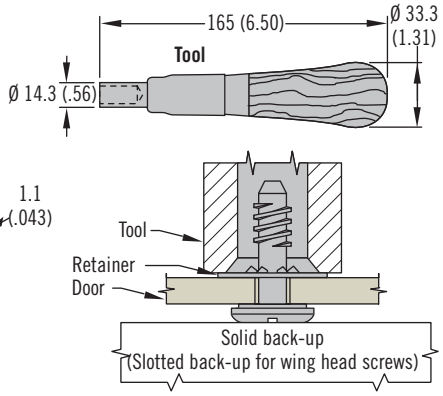


Saddle Type Receptacle



Retainers





Type	Receptacle Part Number	
	Steel	Stainless steel
Flat receptacle rivet-on	09-41-101-11	09-41-101-24
Flat receptacle weld-on	~	09-41-103-24
Clip-on receptacle	09-43-101-11	09-43-101-24
Press-in receptacle	09-44-101-11	~
Saddle type receptacle	09-42-101-11	09-42-101-24

Retainer Style	Retainer Part Number	Tool Part Number
302 Stainless steel, passivated	09-6-1	12-0-20980-11
Nylon, black	09-49-102-42	

Material and Finish
Steel, zinc immersion coating or stainless steel

Installation Notes
See page 497 for self-clinching installation guidelines

Part Number
See table

12 Series Fast-Lead Screws

Studs · Medium

Material and Finish

Low carbon steel, case hardened, zinc plate, chromate plus sealer or stainless steel

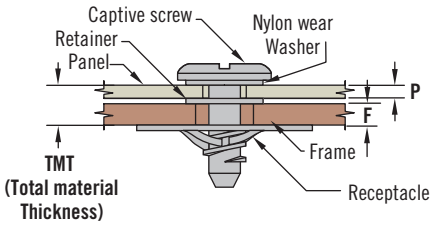
How to Specify:

1. Determine your outer panel and frame thicknesses:
Outer panel P =
Frame thickness F =
2. Choose your receptacle
3. Choose the retainer style
4. Find the correct constant in table opposite using the receptacle and retainer selected
5. Add outer panel thickness (P), frame thickness (F), and the constant found in step 4 to determine your total material thickness (TMT)
TMT = P+F+Constant
6. Find the TMT value in the ranges given in Column 1 in the part number table
7. Confirm that the outer panel thickness P does not exceed the value given in Column 2. This will confirm that your retainer will install properly beyond the last thread and retain your screw to the outer panel
8. Going across the row in the part number table, find the part number that matches your desired head style

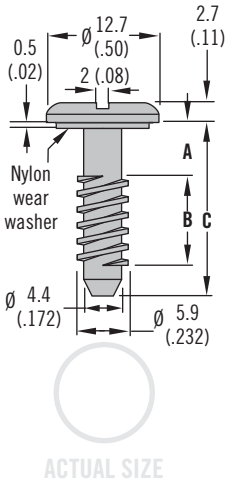
Notes

For full screw retraction, **B** must be less than inner panel thickness plus receptacle height

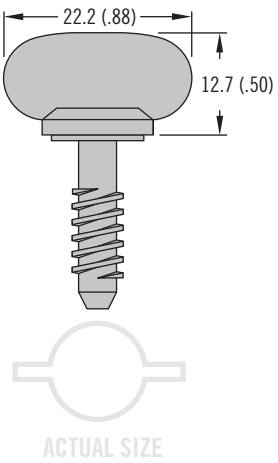
For stainless steel screw (slot, wing and knurled ONLY) replace last 2 digits of part number with "12". Example: 12-11-102-12



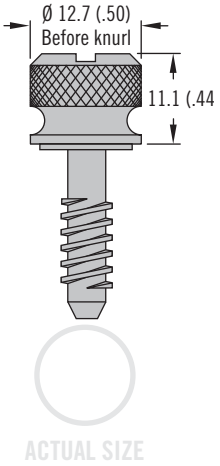
Slot



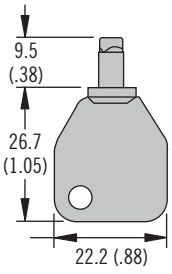
Wing Head



Knurled Head

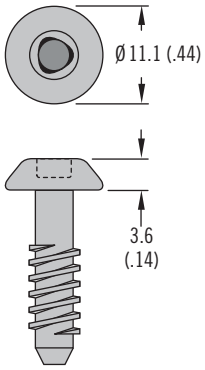


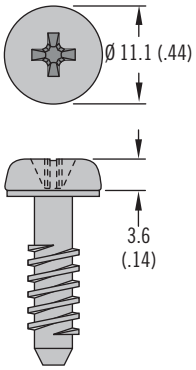
Tool head Recess



Tool head recess key order separately
Part number 29-90-214-10

Phillips Recess





Constant Table					
Retainer type	Receptacle Type				
	Flat	Clip	Saddle	Side	Press-In
Stainless steel	0.38 (.015)	1.1 (.045)	4.0 (.156)	1.5 (.060)	-1.3 (-.050)
Nylon	1.4 (.054)	2.0 (.079)	5.31 (.210)	1.5 (.060)	-0.5 (-.020)

Dimensions in millimeters (inch) unless otherwise stated

Part Number

See table

Column 1		Column 2	Screw Assembly Part Number					Dimensions		
TMT to be Fastened		Max. Thickness of Outer Panel P	Slotted	Wing	Knurled	Tool Head Recess	Phillips Recess	A	B	C
Min.	Max.									
1.3 (.050)	3.2 (.125)	0.6 (.025)	12-11-102-11	12-12-102-11	12-13-102-11	12-T-102	12-P-102	2.5 (.100)	5.8 (.228)	12.3 (.486)
2.5 (.100)		1.9 (.075)	12-11-103-11	12-12-103-11	12-13-103-11	12-T-103	12-P-103	3.8 (.150)	4.5 (.178)	
1.3 (.050)	6.4 (.250)	0.6 (.025)	12-11-202-11	12-12-202-11	12-13-202-11	12-T-202	12-P-202	2.5 (.100)	9.0 (.353)	15.5 (.611)
2.5 (.100)		1.9 (.075)	12-11-203-11	12-12-203-11	12-13-203-11	12-T-203	12-P-203	3.8 (.150)	7.7 (.303)	
3.8 (.150)		3.2 (.125)	12-11-204-11	12-12-204-11	12-13-204-11	12-T-204	12-P-204	5.1 (.200)	6.4 (.253)	
5.1 (.200)		4.5 (.175)	12-11-205-11	12-12-205-11	12-13-205-11	12-T-205	12-P-205	6.4 (.250)	5.2 (.203)	
1.3 (.050)	9.5 (.375)	0.6 (.025)	12-11-302-11	12-12-302-11	12-13-302-11	12-T-302	12-P-302	2.5 (.100)	12.1 (.478)	18.7 (.736)
2.5 (.100)		1.9 (.075)	12-11-303-11	12-12-303-11	12-13-303-11	12-T-303	12-P-303	3.8 (.150)	10.9 (.428)	
3.8 (.150)		3.2 (.125)	12-11-304-11	12-12-304-11	12-13-304-11	12-T-304	12-P-304	5.1 (.200)	9.6 (.378)	
5.1 (.200)		4.5 (.175)	12-11-305-11	12-12-305-11	12-13-305-11	12-T-305	12-P-305	6.4 (.250)	8.3 (.328)	
7.6 (.300)		7.0 (.275)	12-11-307-11	12-12-307-11	12-13-307-11	12-T-307	12-P-307	8.9 (.350)	5.8 (.228)	
2.5 (.100)	12.7 (.500)	1.9 (.075)	12-11-403-11	12-12-403-11	12-13-403-11	12-T-403	12-P-403	3.8 (.150)	14.1 (.553)	21.9 (.861)
3.8 (.150)		3.2 (.125)	12-11-404-11	12-12-404-11	12-13-404-11	12-T-404	12-P-404	5.1 (.200)	12.8 (.503)	
5.1 (.200)		4.5 (.175)	12-11-405-11	12-12-405-11	12-13-405-11	12-T-405	12-P-405	6.4 (.250)	11.5 (.453)	
7.6 (.300)		7.0 (.275)	12-11-407-11	12-12-407-11	12-13-407-11	12-T-407	12-P-407	8.9 (.350)	9.0 (.353)	
10.2 (.400)		9.5 (.375)	12-11-409-11	12-12-409-11	12-13-409-11	12-T-409	12-P-409	11.4 (.450)	6.4 (.253)	
2.5 (.100)	15.9 (.625)	1.9 (.075)	12-11-503-11	12-12-503-11	12-13-503-11	12-T-503	12-P-503	3.8 (.150)	17.2 (.678)	25 (.986)
3.8 (.150)		3.2 (.125)	12-11-504-11	12-12-504-11	12-13-504-11	12-T-504	12-P-504	5.1 (.200)	16.0 (.628)	
5.1 (.200)		4.5 (.175)	12-11-505-11	12-12-505-11	12-13-505-11	12-T-505	12-P-505	6.4 (.250)	14.7 (.578)	
7.6 (.300)		7.0 (.275)	12-11-507-11	12-12-507-11	12-13-507-11	12-T-507	12-P-507	8.9 (.350)	12.1 (.478)	
10.2 (.400)		9.5 (.375)	12-11-509-11	12-12-509-11	12-13-509-11	12-T-509	12-P-509	11.4 (.450)	9.6 (.378)	
12.7 (.500)		12.1 (.475)	12-11-511-11	12-12-511-11	12-13-511-11	12-T-511	12-P-511	14 (.550)	7.1 (.278)	
2.5 (.100)	19.1 (.750)	1.9 (.075)	12-11-603-11	12-12-603-11	12-13-603-11	12-T-603	12-P-603	3.8 (.150)	20.4 (.803)	28.2 (1.111)
3.8 (.150)		3.2 (.125)	12-11-604-11	12-12-604-11	12-13-604-11	12-T-604	12-P-604	5.1 (.200)	19.1 (.753)	
5.1 (.200)		4.5 (.175)	12-11-605-11	12-12-605-11	12-13-605-11	12-T-605	12-P-605	6.4 (.250)	17.9 (.703)	
7.6 (.300)		7.0 (.275)	12-11-607-11	12-12-607-11	12-13-607-11	12-T-607	12-P-607	8.9 (.350)	15.3 (.603)	
10.2 (.400)		9.5 (.375)	12-11-609-11	12-12-609-11	12-13-609-11	12-T-609	12-P-609	11.4 (.450)	12.8 (.503)	
12.7 (.500)		12.1 (.475)	12-11-611-11	12-12-611-11	12-13-611-11	12-T-611	12-P-611	14 (.550)	10.2 (.403)	
15.3 (.600)		14.6 (.575)	12-11-613-11	12-12-613-11	12-13-613-11	12-T-613	12-P-613	16.5 (.650)	7.7 (.303)	
17.8 (.700)		17.2 (.675)	12-11-615-11	12-12-615-11	12-13-615-11	12-T-615	12-P-615	19.1 (.750)	5.2 (.203)	

12 Series Fast-Lead Screws

Receptacles · Medium

Material and Finish

Steel, zinc immersion coating or stainless steel

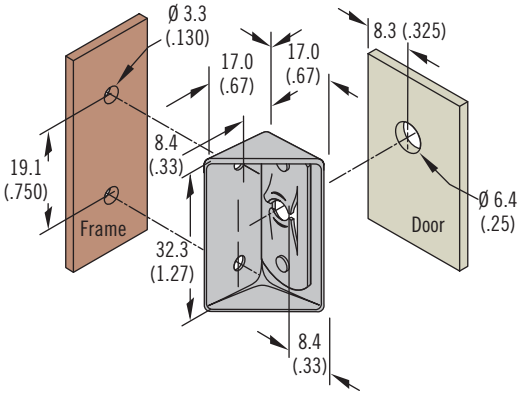
Side mount receptacle: 1064 steel, zinc immersion coating

Press-in receptacle: low carbon steel, case hardened and zinc plate, chromate plus sealer

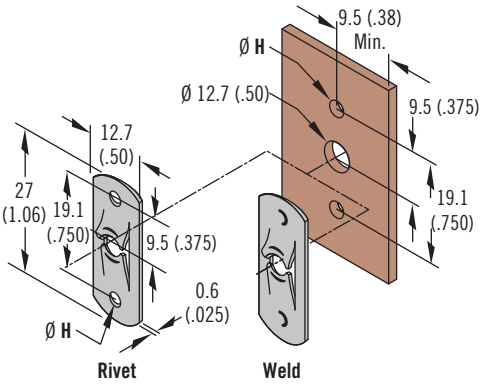
Installation Notes

See page 497 for self-clinching installation guidelines

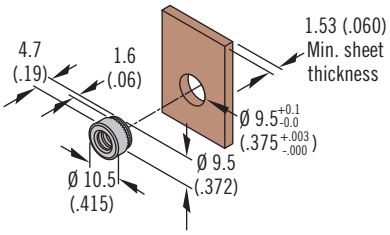
Side Mount Receptacle



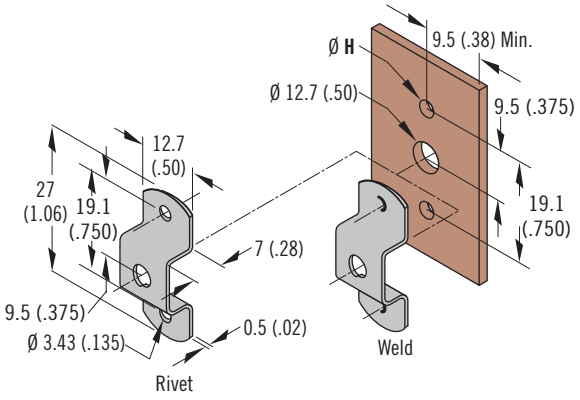
Flat Type Receptacle



Self-Clinching Receptacle Free Running



Saddle Type Receptacle



Part Number

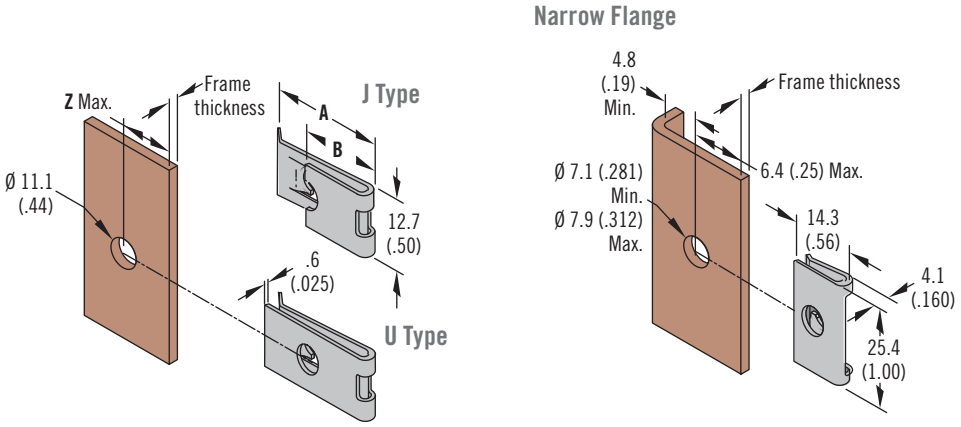
See table

Type	Ø H	Receptacle Part Number	
		Steel	Stainless steel
Side mount receptacle	~	12-90-101-10	~
Flat receptacle rivet	2.7 (.105)	12-11015-13	12-11015-14
	3.4 (.135)	12-11020-11	12-11020-13
Flat receptacle weld-on	~	~	12-11016-11
Press-in receptacle	~	12-44-101-11	~
Saddle receptacle rivet	3.4 (.135)	12-11043-11	12-11043-12
Saddle receptacle weld-on	~	~	12-11044-12

INFO CLIC www.southco.com/12

Dimensions in millimeters (inch) unless otherwise stated

Clip-On Type Receptacle

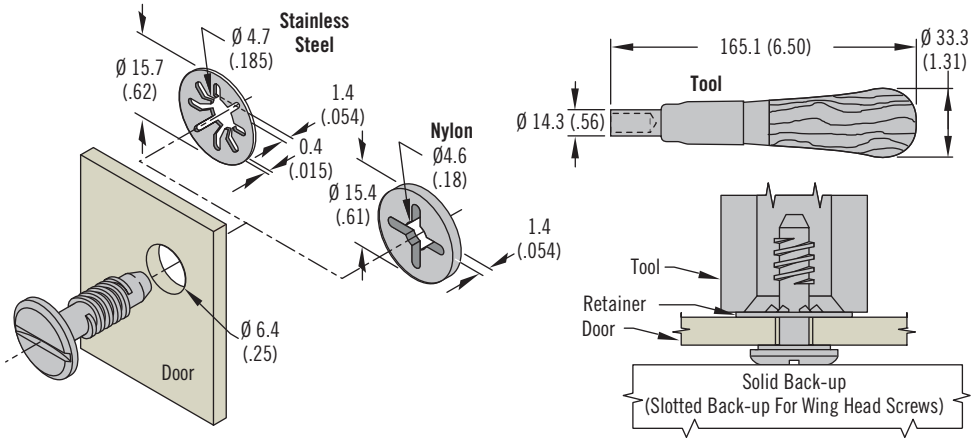


Type	Frame Thickness	A	B	Z Max.	Receptacle Part Number	
					Steel	Stainless steel
Clip-on receptacle - J	.8 (.031) to 2.8 (.109)	24.8 (.98)	14.2 (.56)	12.7 (.50)	12-11025-11	~
Clip-on receptacle - U	.8 (.031) to 2.8 (.109)	25.9 (1.02)			12-11017-11	12-11017-12
	2.8 (.109) - 4.1 (.161)			11.9 (.47)	12-11027-11	~
	2.8 (.109) - 4.1 (.161)				~	12-11027-12
	4.1 (.161) - 5.5 (.213)	24.8 (.98)	13.5 (.53)	11.1 (.44)	12-11029-11	
	5.4 (.213) - 6.7 (.265)	24.5 (.97)	13.01 (.51)		12-11031-11	
Clip-on receptacle - Narrow flange	0.8 (.031) - 2.8 (.109)	~	~	~	12-11050-27	

Material and Finish
Steel, zinc immersion coating or stainless steel

Part Number
See table

Retainers



Retainer Style	Retainer Part Number	Tool Part Number
304 Stainless steel, passivated	12-6-1	12-0-20980-11
Nylon, black	12-11064-42	

Part Number
See table

17 Series Fast-Lead Screws

Studs · Large

Material and Finish

Low carbon steel, case hardened, zinc plated, chromate plus sealer or stainless steel

1. Determine your outer panel and frame thicknesses:
Outer panel P =
Frame thickness F =

2. Choose your receptacle

3. Choose the retainer style

4. Find the correct constant in table opposite using the receptacle and retainer selected

5. Add outer panel thickness (P), frame thickness (F), and the constant found in step 4 to determine your total material thickness (TMT)
TMT = P+F+Constant

6. Find the TMT value in the ranges given in Column 1 in the part number table

7. Confirm that the outer panel thickness P does not exceed the value given in Column 2. This will confirm that your retainer will install properly beyond the last thread and retain your screw to the outer panel

8. Going across the row in the part number table, find the part number that matches your desired head style

Notes

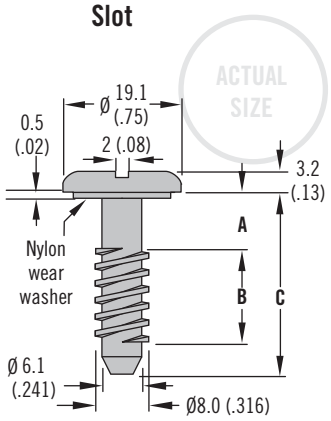
For full screw retraction, **B** must be less than inner panel thickness plus receptacle height

For stainless steel screw (slotted, wing and knurled ONLY) replace last 2 digits of part number with "12". Example: 17-11-104-12

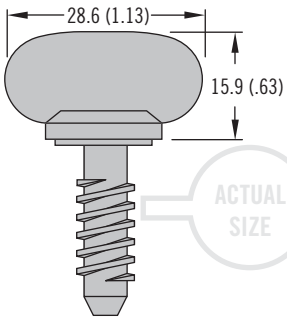
Part Number

See table

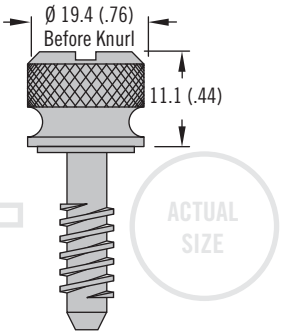
Slot



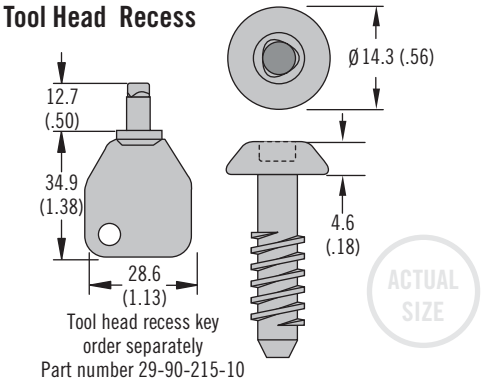
Wing Head



Knurled Head



Tool Head Recess

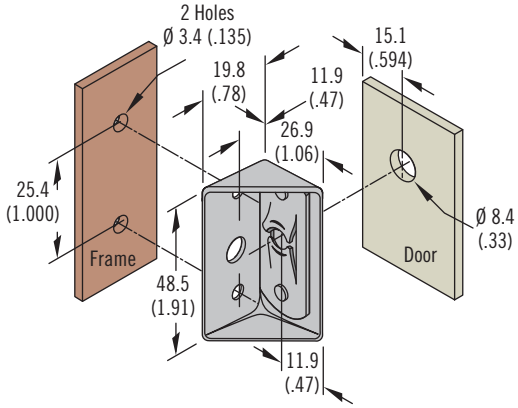


Tool head recess key order separately
Part number 29-90-215-10

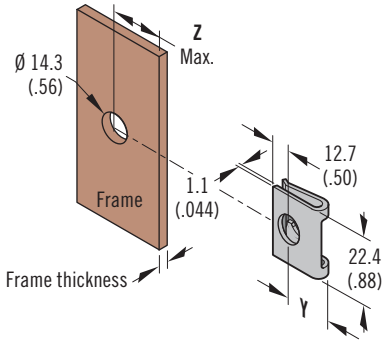
Constant Table			
Retainer type	Receptacle Type		
	Flat	Clip	Side
Stainless steel	0.38 (.015)	2.2 (.086)	1.5 (.060)
Nylon	1.9 (.076)	3.5 (.137)	1.5 (.060)

Column 1		Column 2	Screw Assembly Part Number				Dimensions		
TMT to be Fastened		Max. Thickness Of Outer Panel P	Slotted	Wing	Knurled	Tool Head Recess	A	B	C
Min.	Max.								
2.5 (.100)	6.4 (.250)	3.1 (.120)	17-11-104-11	17-12-104-11	17-13-104-11	17-T-104	5.1 (.200)	9.1 (.360)	19.1 (.751)
5.1 (.200)		5.6 (.220)	17-11-106-11	17-12-106-11	17-13-106-11	17-T-106	7.6 (.300)	6.6 (.260)	
2.5 (.100)	9.5 (.375)	3.1 (.120)	17-11-204-11	17-12-204-11	17-13-204-11	17-T-204	5.1 (.200)	12.3 (.485)	22.3 (.876)
5.1 (.200)		5.6 (.220)	17-11-206-11	17-12-206-11	17-13-206-11	17-T-206	7.6 (.300)	9.8 (.385)	
7.6 (.300)		8.1 (.320)	17-11-208-11	17-12-208-11	17-13-208-11	17-T-208	10.2 (.400)	7.2 (.285)	
2.5 (.100)	12.7 (.500)	3.1 (.120)	17-11-304-11	17-12-304-11	17-13-304-11	17-T-304	5.1 (.200)	15.5 (.610)	25.4 (1.001)
5.1 (.200)		5.6 (.220)	17-11-306-11	17-12-306-11	17-13-306-11	17-T-306	7.6 (.300)	13 (.510)	
7.6 (.300)		8.1 (.320)	17-11-308-11	17-12-308-11	17-13-308-11	17-T-308	10.2 (.400)	10.4 (.410)	
10.2 (.400)		10.7 (.420)	17-11-310-11	17-12-310-11	17-13-310-11	17-T-310	12.7 (.500)	7.9 (.310)	
2.5 (.100)	15.9 (.625)	3.1 (.120)	17-11-404-11	17-12-404-11	17-13-404-11	17-T-404	5.1 (.200)	18.7 (.735)	28.6 (1.126)
5.1 (.200)		5.6 (.220)	17-11-406-11	17-12-406-11	17-13-406-11	17-T-406	7.6 (.300)	16.1 (.635)	
7.6 (.300)		8.1 (.320)	17-11-408-11	17-12-408-11	17-13-408-11	17-T-408	10.2 (.400)	13.6 (.535)	
10.2 (.400)		10.7 (.420)	17-11-410-11	17-12-410-11	17-13-410-11	17-T-410	12.7 (.500)	11.1 (.435)	
12.7 (.500)		13.2 (.520)	17-11-412-11	17-12-412-11	17-13-412-11	17-T-412	15.2 (.600)	8.5 (.335)	
15.2 (.600)		15.8 (.620)	17-11-414-11	17-12-414-11	17-13-414-11	17-T-414	17.8 (.700)	6.0 (.235)	

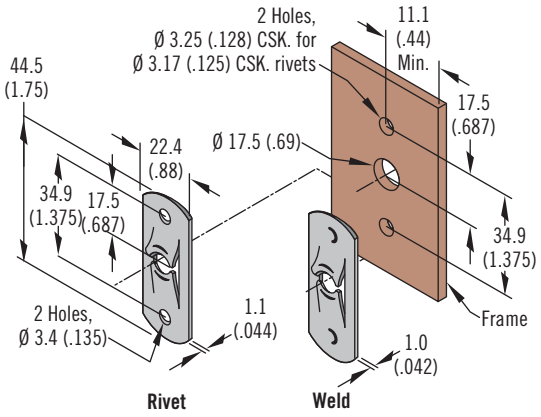
Side Mount Receptacle



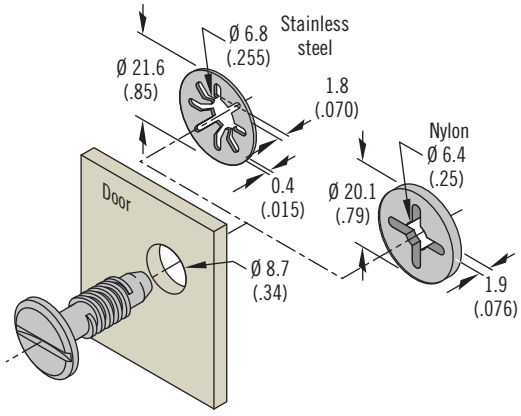
Clip-On Type Receptacle



Flat Type Receptacle



Retainers



Material and Finish

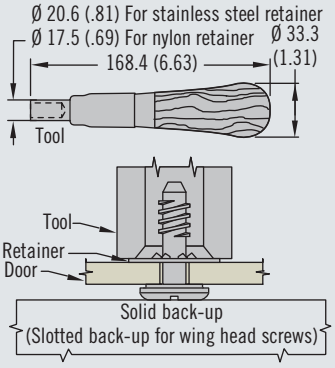
Steel, zinc immersion coating or stainless steel

Type	Frame Thickness	Y	Z Max.	Receptacle Part Number	
				Steel	Stainless steel
Side mount receptacle	~	~	~	17-90-101-10	~
Clip-on type receptacle	1.1 - 2.4 (.045 - .093)	15.7 (.62)	15.0 (.59)	17-10017-11	~
	2.4 - 3.6 (.093 - .142)	14.7 (.58)	14.2 (.56)	17-10027-11	~
	3.6 - 4.9 (.142 - .191)	13.7 (.54)		17-10029-11	~
	4.9 - 6.1 (.191 - .240)	13.5 (.53)	13.5 (.53)	17-10031-11	~
	6.1 - 7.3 (.240 - .289)	13.0 (.51)	12.7 (.50)	17-10033-11	~
Flat type receptacle - Rivet	~	~	~	17-10015-13	17-10015-14
Flat type receptacle - Weld	~	~	~	17-10016-11	~

Retainer Style	Retainer Part Number	Tool Part Number
302 Stainless steel, passivated	17-6-1	17-0-24585-11
Nylon, black	17-10054-42	17-0-21333-11

Part Number

See table



LOCKWELL® QUICK-RELEASE PINS & ...

LOCKWELL® Pins

Pages 344 - 349

LOCKWELL® **Quick-Release Pins are the perfect answer where safety, speed of removal and dependability are of paramount importance.**

Quality construction with maximum strength-to-weight ratio, *LOCKWELL®* Quick-Release Pins offer features such as optional 4-ball construction integral steel shoulder for superior tension properties, ergonomic handles with optimum operational clearances, and large diameter buttons that are easy to operate even with gloved hands.

Southco offers the widest standard line of quick-release pins in three general types:

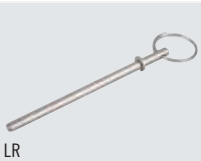
- **Detent**
- **Single acting**
- **Double acting**

LG

LH

LG

LA


LR

LW

...QUICK ACCESS FASTENERS

Southco offers several fastener designs to assist in rapid assembly and positioning applications

- Plungers provide quick installation and removal of components and can serve as a quick-release retractable hinge for removable doors
- Swell latches allow for quick and easy access, with convenient single-hole mounting, plus latch and handle in one assembly
- TL slide latches resist opening under vibration and shock loads

Assembly Fasteners & Positioning Plungers

Pages 350 - 357

TL

19

56

56

56

LOCKWELL® Quick-Release Pins

Overview

When applications require strength, reliability, and speed of removal, *LOCKWELL®* Quick-Release Pins provide the solution. Available in a wide range of sizes, strengths, and activation styles for applications from simple retention, to mission critical, high load situations.

Southco is a QSLM certified manufacturer of quick-release pins. *LOCKWELL®* Quick-Release Pins can be manufactured to a variety of MS and NAS specifications, including NAS 1333 thru NAS 1346, NAS 1353 thru NAS 1366 and MS 17984 thru MS 17990. Parts ordered to MS and NAS specification are certified to NAS 1332 and NASM 23460.

LOCKWELL® Pins

The wide range of *LOCKWELL®* Quick-Release Pins is divided into 4 general categories:

Single Acting Pins (LG Series)

- Provide the highest security
- Precision ground hardened stainless alloy construction
- Locking balls release only when the actuator button is pressed
- Minimal installation and removal effort once the locking balls are released

Double Acting Pins (LH Series)

- Combine high security, with the fastest possible pin removal
- Precision ground hardened stainless alloy construction
- Locking balls release when the actuator is pushed or pulled
- Optional drive out feature allows pins to be pressed out while under shear load

Precision Detent Pins (LA / LJ Series)

- Simple push to install, pull to remove operation
- Precision ground hardened stainless alloy construction
- Spring loaded balls provide excellent pin retention
- Can be driven in, or out under shear load

Standard Detent Pins (LR Series)

- Simple push to install, pull to remove operation
- Corrosion resistant 300 series stainless steel construction
- Spring loaded balls provide excellent pin retention
- Can be driven in, or out under shear load

LOCKWELL® Receptacles

Need to ensure a perfect fit for your *LOCKWELL®* Quick-Release Pin? Receptacles provide a reliable engagement for *LOCKWELL®* single acting and double acting quick-release pins.

- Insure reliable installation in thin or lower strength materials
- Spring loaded to assist pin removal
- Sealed to provide protection against dust and debris

Dimensions in inches unless otherwise stated

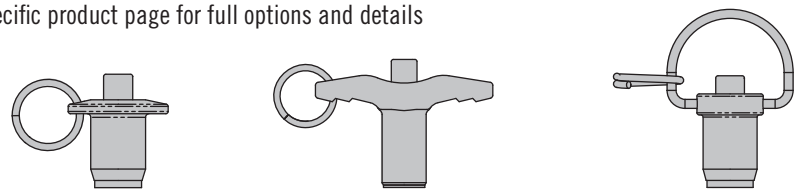
LOCKWELL® Quick-Release Pin Selection Process

1. Select product series based on desired actuation method (see description to the left)

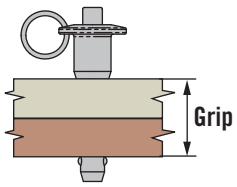
- ➲ Single acting
- ➲ Double acting
- ➲ Detent

2. Choose a handle style

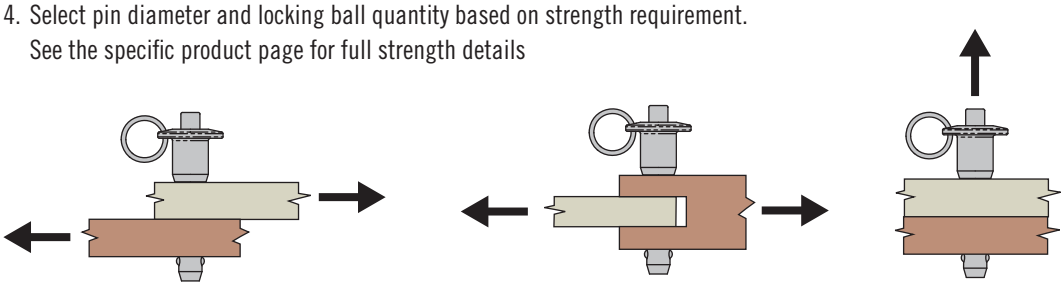
LOCKWELL® Pins are available in a variety of handle styles to satisfy requirements from minimal protrusion, to easy gloved hand access.
See the specific product page for full options and details



3. Determine your grip requirement



4. Select pin diameter and locking ball quantity based on strength requirement.
See the specific product page for full strength details



5. Select your optional features

Complete your *LOCKWELL®* Pin assembly with retention lanyards and streamers. Lanyards secure pins to prevent loss. Custom streamers highlight critical applications, and provide built in user instructions. Contact Southco with your requirements.

6. Select matching receptacle (optional)

Dimensions in inches unless otherwise stated

LG Quick-Release Pins

Single acting pins

- **Positive locking**
- **Push button to release**
- **Hardened and ground for strength and precision**

Material and Finish

Body: Hardened stainless steel
Handle: Aluminum, black anodized or stainless steel passivated

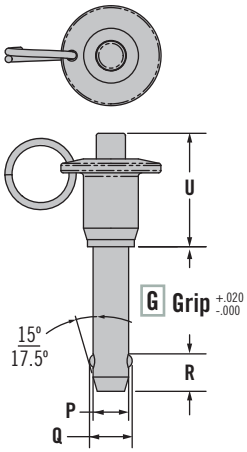
Notes

Southco is a QSLM certified manufacturer of quick-release pins. The *LOCKWELL®* Quick-Release Pins on this page can be manufactured to the specification of NAS 1333 thru NAS 1346 and MS 17984 thru MS 17987. Parts ordered to MS and NAS specification are certified to NAS 1332 and NASM 23460.

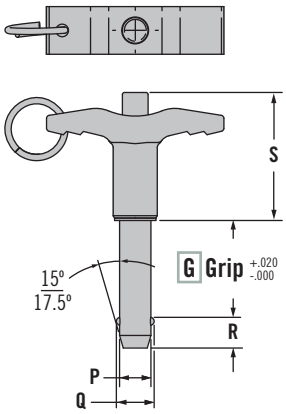
Additional pin configurations and sizes, including metric pins are available on request.

Handles - Aluminum

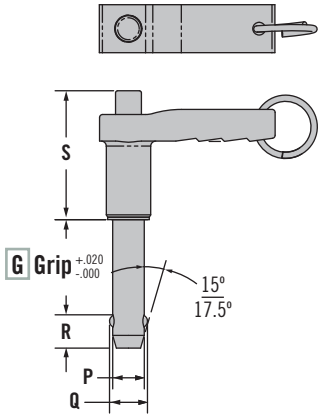
Style BA



Style T

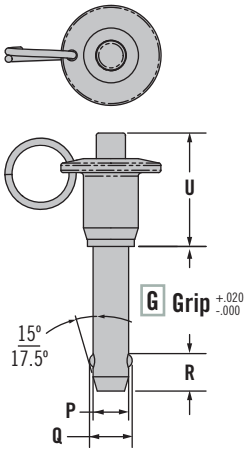


Style L

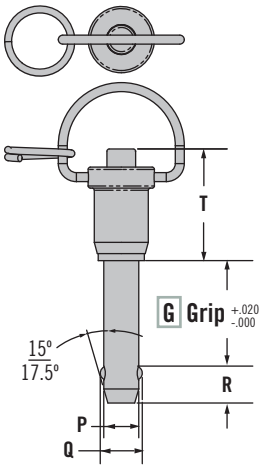


Handles - Stainless steel

Style B



Style R



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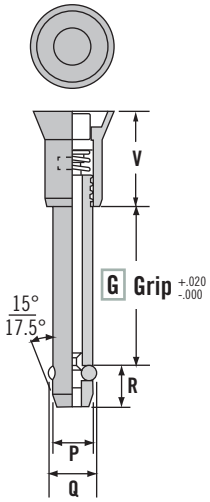


Nominal Pin Diameter	D Pin Size	Min. Tension Load Capabilities		Calculated double shear strength N.m (lbf)	Ø Install Hole	
		2 ball construction N.m (lbf)	4 ball construction N.m (lbf)		Min.	Max.
3/16	3	22.6 (200)	29.4 (260)	581.9 (5150)	.190	.194
1/4	4	26.0 (230)	32.8 (290)	1039.5 (9200)	.250	.254
5/16	5	57.6 (510)	71.2 (630)	1627.0 (14400)	.3125	.3165
3/8	6	65.0 (575)	83.6 (740)	2327.5 (20600)	.375	.379
7/16	7	80.2 (710)	103.9 (920)	3163.6 (28000)	.4375	.4425
1/2	8	131.1 (1160)	169.5 (1500)	4157.8 (36800)	.500	.505
9/16	9	160.4 (1420)	207.9 (1840)	5197.3 (46000)	.5625	.5675
5/8	10	233.9 (2070)	303.9 (2690)	6496.6 (57500)	.625	.630
3/4	12	333.3 (2950)	433.3 (3835)	9321.2 (82500)	.750	.757
7/8	14	440.6 (3900)	572.8(5070)	12710.8 (112500)	.875	.882
1	16	619.2 (5480)	804.5 (7120)	16608.7 (147000)	1.000	1.010

Nominal Pin Diameter	D Pin Size	Dimensions						
		P +0 -.0015	Q ±.005	R	S Max.	T Max.	U Max.	V Max.
3/16	3	.1885	.220	.260	1.270	.730	.830	.890
1/4	4	.2485	.289	.290	1.270	.780	.890	.950
5/16	5	.3110	.375	.330	1.270	.830	.930	.990
3/8	6	.3735	.440	.365	1.450	.940	1.040	1.090
7/16	7	.4360	.509	.380	1.470	.980	1.160	1.220
1/2	8	.4985	.594	.460	1.600	1.140	1.190	1.250
9/16	9	.5610	.666	.510	1.600	1.140	1.410	1.470
5/8	10	.6235	.750	.580	1.700	1.400	1.500	1.560
3/4	12	.7485	.887	.670	1.720	1.625	1.680	1.740
7/8	14	.8735	1.046	.760	2.170	1.875	1.985	2.045
1	16	.9985	1.219	.890	2.170	2.000	2.140	2.200

Part Number Selection

Example: LG-4CBA1000F
1/4 inch diameter, aluminum button handle, 1 inch grip length, 4-ball construction

LG - D C H G F

D Pin size
(see table)

H Handle style
BA Aluminum button style
T T-Handle style
L L-Handle style
B Stainless steel button style
R Ring style
Y Recessed button style

F Retention
F 4-Ball construction
Omit for standard 2-ball construction

G Grip length
Thousandth inch increments
Example: 1.000 inch grip length,
G = 1000

Dimensions in inches unless otherwise stated

LH Quick-Release Pins

Double acting pins

- **Positive locking**
- **Push or pull handle to release for fast removal**
- **Drive out options allows removal under shear load**

Material and Finish

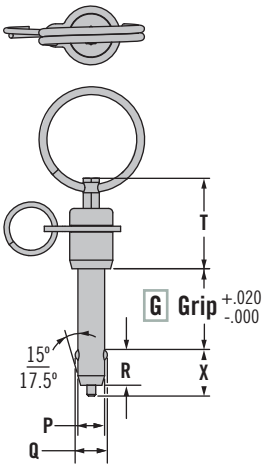
Hardened stainless steel

Notes

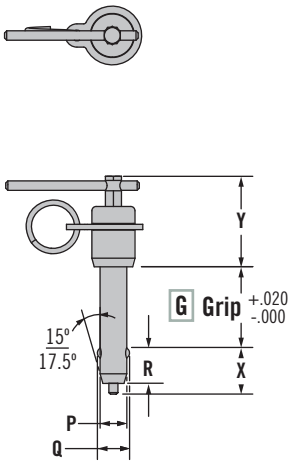
Southco is a QSLM certified manufacturer of quick-release pins. The *LOCKWELL®* Quick-Release Pins on this page can be manufactured to the specification of NAS 1353 thru NAS 1366 and MS 17988 thru MS 17990. Parts ordered to MS and NAS specification are certified to NAS 1332 and NASM 23460.

Additional pin configurations and sizes, including metric pins are available on request.

Style R



Style L



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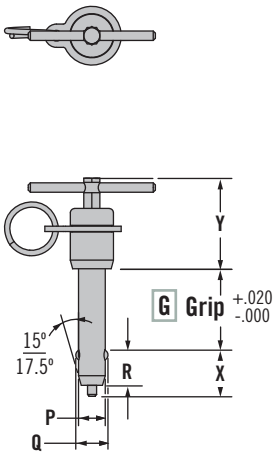


Nominal Pin Diameter	D Pin Size	Dimensions					
		P +0 -.0015	Q ±.005	R Max.	T Min.	X Max. Drive Out Only	Y Max.
3/16	3	.1885	.220	.410	.935	.50	1.030
1/4	4	.2485	.289	.410	.935	.50	1.030
5/16	5	.3110	.375	.440	.935	.55	1.030
3/8	6	.3735	.440	.510	1.000	.64	1.090
7/16	7	.4360	.509	.510	1.000	.64	1.090
1/2	8	.4985	.594	.590	1.070	.75	1.270
9/16	9	.5610	.666	.660	1.070	.82	1.270
5/8	10	.6235	.750	.750	1.250	.93	1.465
3/4	12	.7485	.887	.790	1.250	.97	1.465
7/8	14	.8735	1.046	.950	1.500	1.18	1.640
1	16	.9985	1.219	1.100	1.700	1.35	1.830

Part Number Selection

Example: LH-4CR1000F
1/4 inch diameter, ring style handle, 1 inch grip length, 4-ball construction

LH - D C H G X F

D Pin size
(see table)

H Handle style
R Ring style
L L-handle style
T T-handle style

F Retention
F 4-Ball construction
Omit for standard 2-ball construction

X Drive out
D Drive out
Omit for standard non drive out construction

G Grip length
Thousandth inch increments
Example: 1.000 inch grip length, G = 1000

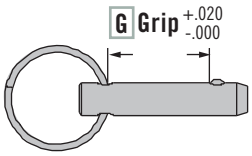
Dimensions in inches unless otherwise stated

southco® CONNECT · CREATE · INNOVATE

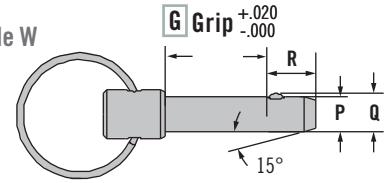
LA/LJ Quick-Release Pins

Precision detent pins

Style R



Style W



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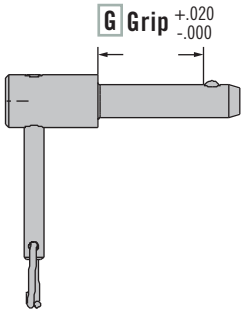
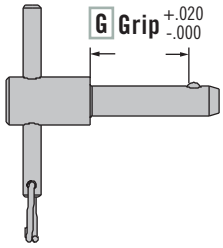


Style T



- **Spring-loaded ball detent**
- **Hardened and ground for strength and precision**
- **Push to install, pull to remove**

Material and Finish

Hardened stainless steel

Notes

*Shear values based on 60% of ultimate tensile strength of material

Additional pin configurations and sizes, including metric pins are available on request.

Nominal Pin Diameter	D Pin Size	Dimensions			Calculated Double Shear* (lbf)
		P +0 -.0015	Q±.010	R Max.	
3/16	3	.1885	.213	.219	5280
1/4	4	.2485	.280	.282	9200
5/16	5	.3110	.350	.343	14440
3/8	6	.3735	.421	.391	20860
7/16	7	.4360	.491	.436	28460
1/2	8	.4985	.562	.500	37240
9/16	9	.5610	.631	.562	47200
5/8	10	.6235	.702	.624	58340
3/4	12	.7485	.843	.718	84140
7/8	14	.8735	.983	.843	114660
1	16	.9985	1.124	.968	149900

Part Number Selection

Example: LA-8CR1000
1/2 inch diameter, ring style handle, 1 inch grip length, single ball detent

L S - D C H G

S Style
A Single ball detent pin
J Two ball detent pin

D Pin size
(see table)
(size 3 is not available for LJ series pins)

G Grip length
Thousandth inch increments
Example: 1.000 inch grip length, G = 1000

H Handle style
R Ring handle style
W Ring handle with shoulder
L L-handle style
T T-handle style

LR Quick-Release Pins

Detent pins

- **Spring-loaded ball detent**
- **Corrosion resistant 300 series stainless steel**
- **Push to install, pull to remove**

Material and Finish

300 Series stainless steel

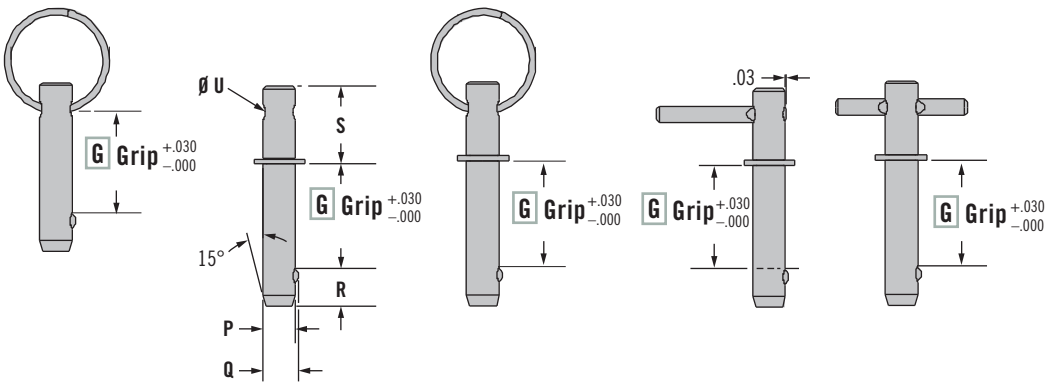
Notes

*Shear values based on 60% of ultimate tensile strength of material

Additional pin configurations and sizes, including metric pins are available on request.

Handles

Style N Style X Style R Style L Style T



Nominal Pin Diameter	D Pin Size	Dimensions					Calculated Double Shear* (lbf)
		P +0 -.003	Q ±.010	R Max.	S	ø U	
3/16	3	.188	.200	.200	.750	.096	2560
1/4	4	.250	.286	.312	.750	.128	4600
5/16	5	.313	.358	.375	.750	.159	7220
3/8	6	.375	.426	.500	.750	.159	10440
7/16	7	.438	.496	.562	1.000	.159	14240
1/2	8	.500	.570	.625	1.062	.191	18620
9/16	9	.563	.642	.687	1.062	.191	23600
5/8	10	.625	.710	.750	1.125	.253	29180
3/4	12	.750	.856	.937	1.375	.253	42080
7/8	14	.875	.996	1.000	1.500	.379	57340
1	16	1.000	1.140	1.250	1.500	.379	74940

Part Number Selection

Example: LR-5DX1000
5/16 inch diameter, plain style shouldered handle, 1 inch grip length

LR - D D H G

D Pin size
(see table)

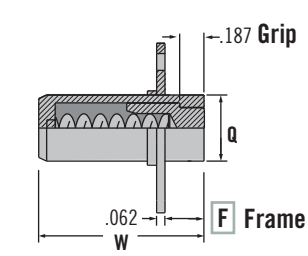
H Handle style
X Plain style shouldered
L L-handle style
T T-handle style
R Ring handle with shoulder
N Ring handle

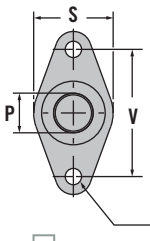
G Grip length
Thousandth inch increments
Example: 1.000 inch grip length, G = 1000

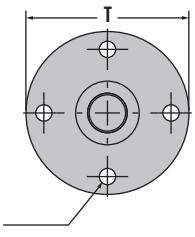
INFO CLIC www.southco.com/LR

Dimensions in inches unless otherwise stated

LW Receptacle Assemblies







LW - 1981 - D C B - F

B Base
1 2 hole
2 4 hole

F Frame thickness - in thousands of an inch
(.032 to .500 inch standard, example inch 048 = .048 inch)

Nominal Receptacle Inside Diameter	D Size	Dimensions					
		Ø P +.001 -.000	Ø Q +.001 -.004	S	Ø T	V	W
3/16	3	.190	.375	.625	1.281	1.000	1.25
1/4	4	.250	.375	.625	1.281	1.000	1.25
5/16	5	.312	.500	.625	1.281	1.000	1.25
3/8	6	.375	.625	.750	1.406	1.125	1.31

- **Provides secure engagement in thin or soft materials**
- **Spring-loaded for assisted pin removal**
- **Provides dust / weather seal**

Material and Finish

Stainless steel

Part Number Selection

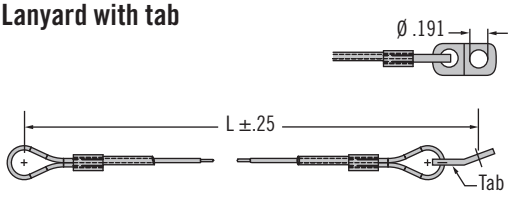
Example: LW-1981-3C1-250
Receptacle, Ø 3/16 inch, 2 hole mount, .250 inch frame thickness

Other options available. For complete details on variety, part numbers, installation and specification, go to

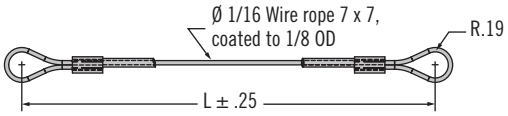
INFO CLIC *www.southco.com/LW*

LW Lanyard Assemblies

Lanyard with tab



Lanyard no tab



Material and Finish

Cable: 300 Series stainless steel, vinyl coated
Tab: Aluminum

Part Number Selection

Example: LW-1023-1-5-50
Lanyard, with tab, green vinyl coated, 5.5 inch long

LW - 10 S - F - L - L

S Style
23 With tab
36 No tab

F Finish
1 Green
2 Red
3 Black
4 Clear
5 Bare

L Length
(Part inches .99 inch max.)

L Length
(Full inches 4 inch min.)

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/LW*

Dimensions in inches unless otherwise stated

56 Spring-Loaded Plunger

Flare-in style

- **Simplified positioning of sliding components**
- **Quick-release hinge for removable door**
- **Fast installation and removal of components**
- **Designate access with color**

Material and Finish

Stud: Steel, zinc plated, chromate, plus sealed
Ferrule: Aluminum, natural
End cap: Steel, case hardened, zinc plated, chromate, plus sealer

Knob: (Prism plungers only)
PC/ABS

Spring: 300 series stainless steel, passivated

Performance Details

Minimum ultimate shear load in hardened steel: 5400 N (1200 lbf)

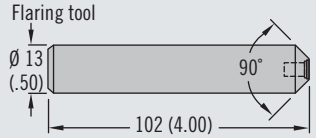
Installation Notes

Press with approximately 2,500 N (562 lbf) until ferrule is flared into the countersink in the panel.
A solid back-up tool must be used for proper installation

Part Number

See table

Installation Tool



Part number: 56-7-Tool

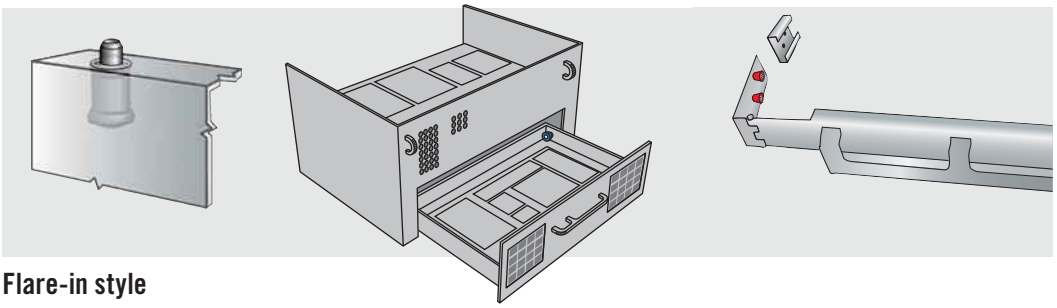
Specifying Prism Color

To indicate color, change the last three digits of the part number.
Example:
56-161-000, black
56-161-013, red

INFO CLIC www.southco.com/56

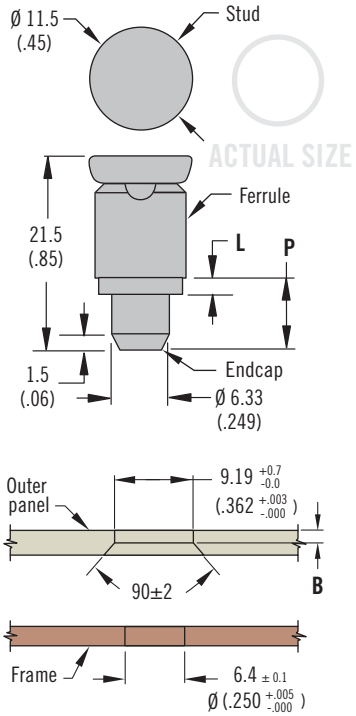
Applications

Retractable Hinge | Positioning / Secondary Catch | Quick Installation

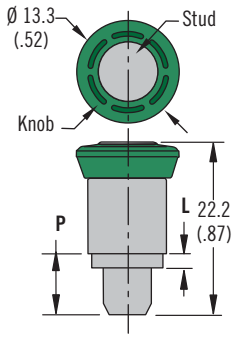


Flare-in style

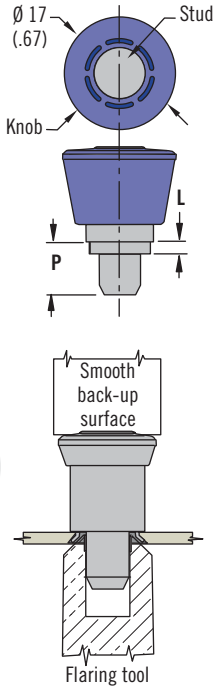
Bright



Prism - Small



Prism -Large



Outer Panel Thickness		P	Knob Style	Part Number		H1 Closed	H2 Open	B	L
Min.	Max.			Hold-Open	Without Hold-Open				
1.52 (.06)	3.17 (.125)	7.9 (.31)	Bright	56-71-1-15	56-70-1-15	13.7 (.54)	19.8 (.78)	0.41 (.016)	1.78 (.07)
			Prism - Small	56-171-1-**000**	56-170-1-**000**	14.5 (.57)	20.5 (.81)		
			Prism- Large	56-271-1-**000**	56-270-1-**000**	14.5 (.57)	20.5 (.81)		
3.17 (.125)	4.7 (.185)	9.4 (.37)	Bright	56-71-2-15	56-70-2-15	12.2 (.48)	18.2 (.72)	1.52 (.06)	3.3 (.13)
			Prism- Small	56-171-2-**000**	56-170-2-**000**	12.9 (.51)	19 (.75)		
			Prism- Large	56-271-2-**000**	56-270-2-**000**	12.9 (.51)	19 (.75)		

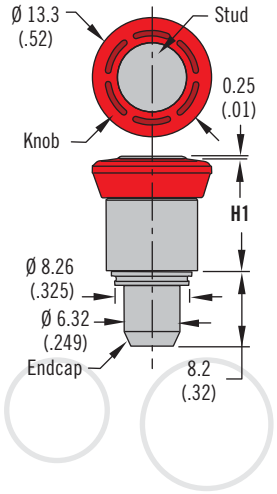
000 Black (shown in table)
008 Blue
012 Purple
013 Red
014 Green
Your color contact Southco

Dimensions in millimeters (inch) unless otherwise stated

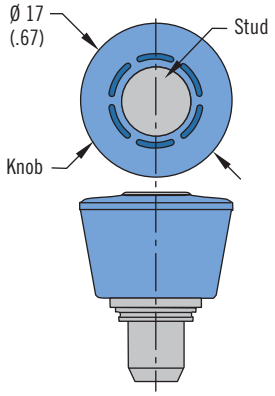
56 Spring-Loaded Plunger
Press-in style

Press-In Style

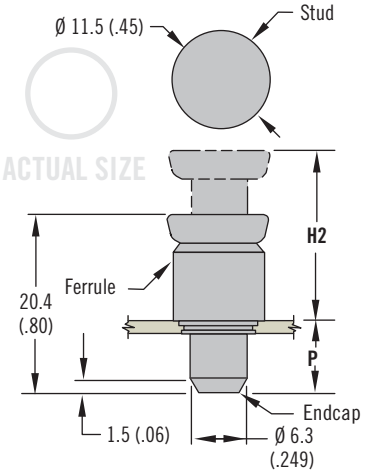
Prism - Small

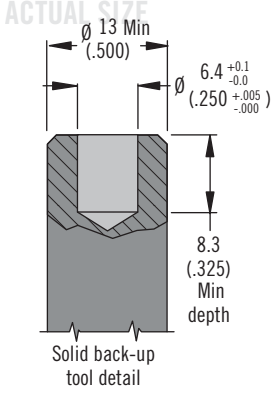


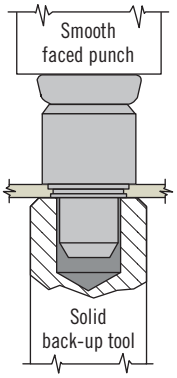
Prism -Large

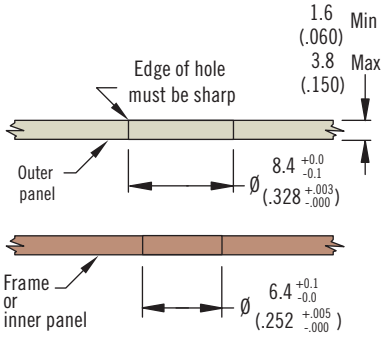


Bright









(Customer Supplied)

Panel Thickness		P	Knob Style	Part Number		H1 Closed	H2 Open
Min.	Max.			Hold-Open	Without Hold-Open		
1.52 (0.06)	3.81 (0.15)	8.2 (0.32)	Bright	56-61-15	56-60-15	12.2 (.48)	19.3 (.76)
			Prism - Small	56-161-000	56-160-000	13 (.51)	20 (.79)
			Prism - Large	56-261-000	56-260-000	13 (.51)	20 (.79)

000 Black (shown in table)
008 Blue
012 Purple
013 Red
014 Green
Your color contact Southco

- **Simplified positioning of sliding components**
- **Quick-release hinge for removable door**
- **Fast installation and removal of components**
- **Designate access with color**

Material and Finish

Stud: Steel, zinc plated, chromate, plus sealer

Ferrule and end cap: Steel, case hardened, zinc plated, chromate, plus sealer

Knob: (Prism plungers only) PC/ABS, black

Spring: 300 series stainless steel, passivated

Performance Details

Minimum ultimate shear load in hardened steel: 5400 N (1200 lbf.)

Installation Notes

Press knob with approximately 13,400 N (3000 lbf.) for steel, 6700 N (1500 lbf.) for aluminum panels until ferrule sits flush with panel. A solid back-up tool must be used for proper installation.

Recommended minimum distance from edge of panel to center line of hole is 9.6 (.375).

For use in material hardnesses R_B70 or less, such as low carbon steels that are half hard or softer, stainless steel in the annealed condition and aluminum.

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

56 Spring-Loaded Plunger

Thread-in style

- **Simplified positioning of sliding components**
- **Quick-release hinge for removable door**
- **Fast installation and removal of components**

Material and Finish

Knob: Aluminum

Stud: Low carbon steel, case hardened, zinc plated, chromate plus sealer

Shell and sleeve: Steel, zinc plated, chromate plus sealer

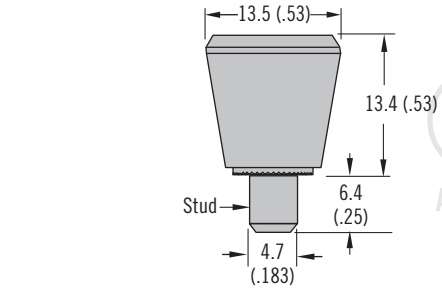
Spring: Stainless steel, passivated

Detent washer: Steel, zinc plated (Hold-open only)

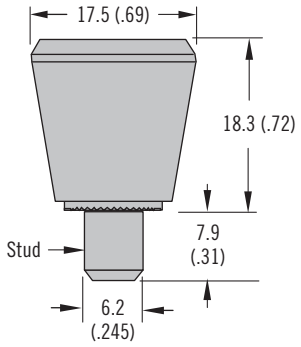
Part Number

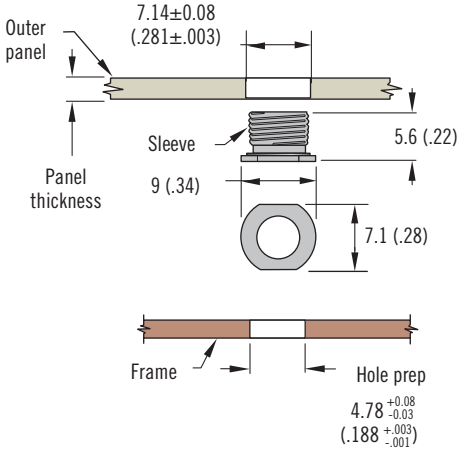
See table

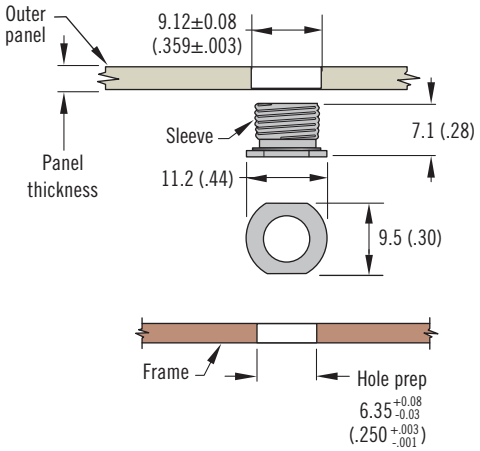
300 Series



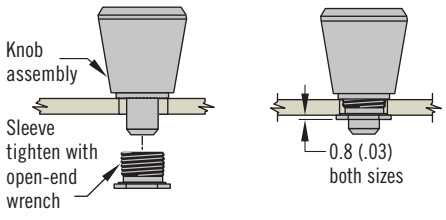
400 Series



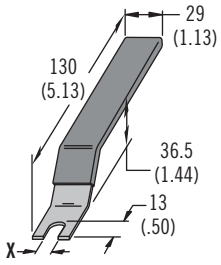




Series	Panel Thickness		Part Number	
	Min.	Max.	With Hold Open Feature	Without Hold Open Feature
300	0.64 (.025)	1.52 (.060)	56-10-301-20	56-99-196-20
400	0.79 (.031)	3.18 (.125)	56-10-401-20	56-99-197-20



Installation tool



Part Number

See table

Series	X (Tool)	Tool Part Number
300	7.1 (.28)	56-0-22041-03
400	9.5 (.38)	56-0-22041-04

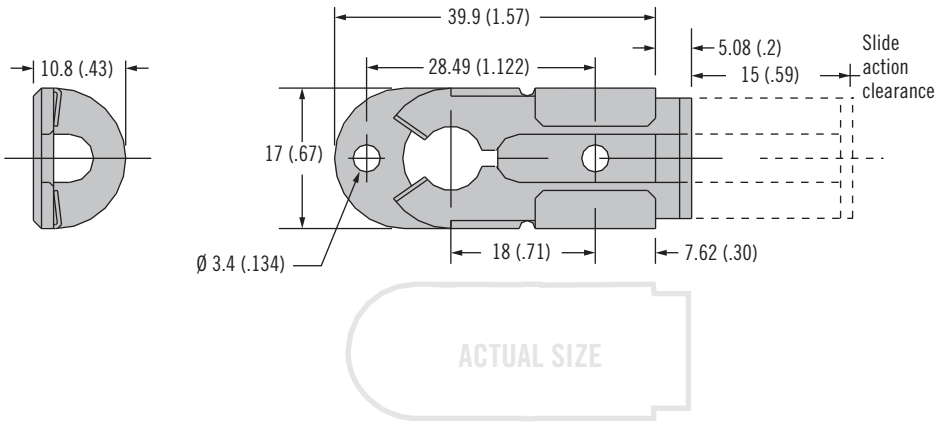
TL Slide Latch

Steel · Slide to close

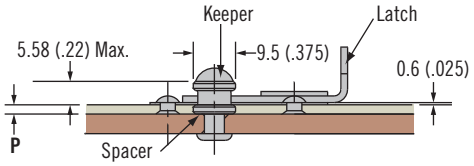
- **Slide to secure**
- **Vibration dampening**

Material and Finish

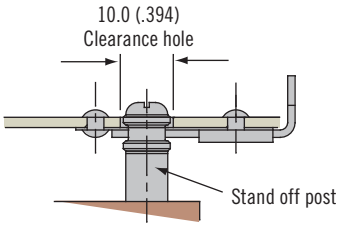
Steel, zinc plated



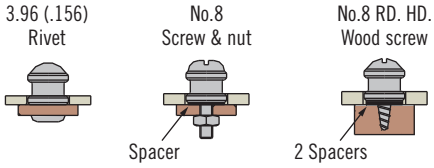
Surface Mount



Concealed Mount



Panel Thickness	Required Number of Spacers
1.17 - 2.03 (.046 - .080)	None
2.05 - 3.25 (.081 - .128)	One
3.28 - 4.06 (.129 - .160)	Two



Inside diameter of keeper and spacer: 4.4 (0.17)

Part Number

See table

Material	Latch		Keeper	Spacer
	Surface Mount	Concealed Mount		
Steel, zinc plated	TL-05-100-07	TL-05-110-07	TL-05-117-07	TL-05-114-07
Stainless Steel	TL-05-100-52	TL-05-110-52	TL-05-117-52	~

19 Swell Action Latch

Plastic · Light-duty

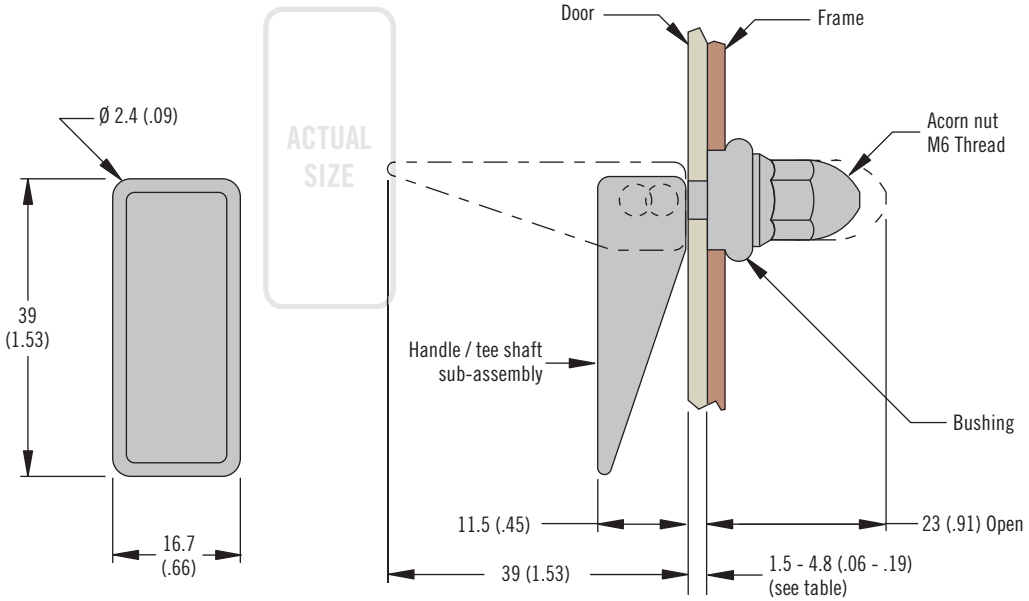
- **Accommodates misalignment**
- **Vibration dampening**

Material and Finish

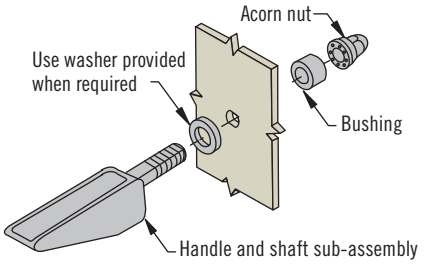
Nylon and glass-filled nylon black with SBR rubber bushing

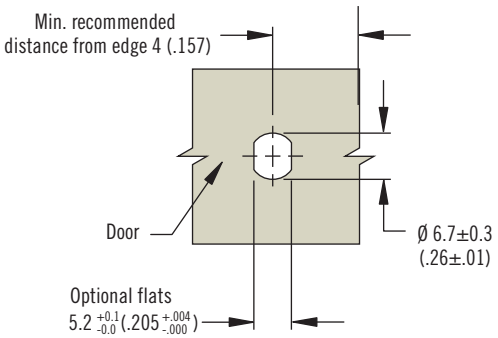
Performance Details

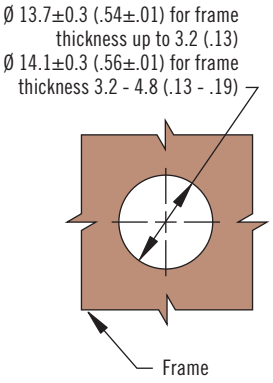
Frame thickness	Rated load (short term)
1.5 (.059)	400 N (90lbf)
2.5 (.098)	690 N (155lbf)
3.2 (.125)	620 N (140lbf)
4.8 (.190)	190 N (43lbf)



Door Thickness	Use Washer?	Adjustment Required
1.7±0.2 (.07±.01)	Yes	No
1.9 - 2.3 (.08 - .09)	Yes	Yes
2.5±0.2 (.10±.01)	No	No
2.7 - 4.8 (.11 - .19)	No	Yes







Part Number

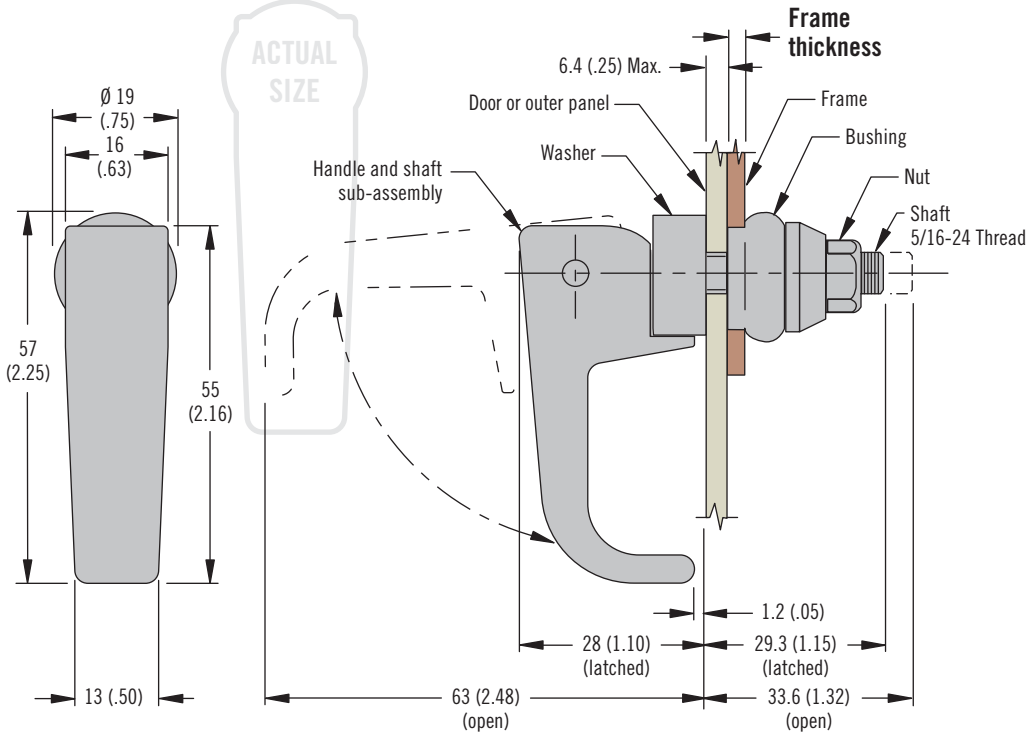
See table

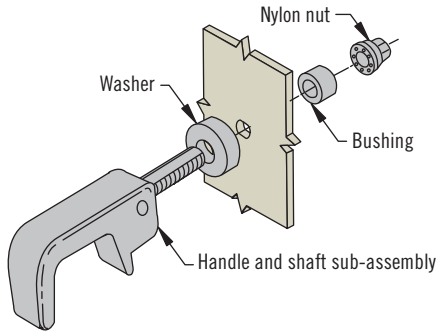
Part Number	Packaging
19-51-01	Components bulk packaged
19-54-01	1 Assembly per bag

Dimensions in millimeters (inch) unless otherwise stated

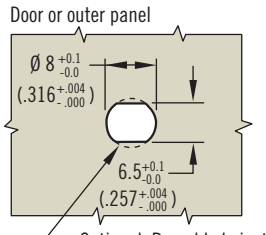
19 Swell Action Latch

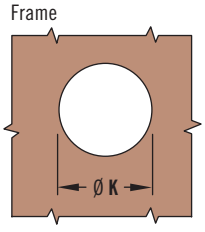
Stainless Steel · Zinc · Heavy-duty





Frame Thickness	Ø K +0.5 (.031) -0.0 (.000)
1.2 - 3.2 (.05 - .13)	19 (.750)
3.2 - 4.8 (.13 - .19)	19.5 (.766)
4.8 - 6.4 (.19 - .25)	20 (.781)
6.4 (.25) and up	20.5 (.797)





Material	Part Number	Finish
Zinc alloy	19-14-10	Black powder coated
Stainless Steel	19-14-23	Natural
Stainless Steel	19-14-24	Polished

- **Accommodates misalignment**
- **Vibration dampening**

Material and Finish

Zinc alloy, black powder coated, acetal and SBR rubber bushing

Stainless steel, natural or polished, acetal and SBR rubber bushing.

Performance Details

Frame thickness	Rated load (short term)
1.2 (.05) to 3.2 (.13)	330 N (75 lbf)
3.2 (.13) to 4.8 (.19)	660 N (150 lbf)
4.8 (.19) to 6.4 (.25)	550 N (125 lbf)
6.4 (.25) and Up	220 N (50 lbf)

Installation Notes

Max. tightening torque on mounting nut: 1.0 N·m (9 in·lbf)

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

19 Swell Action Latch

Plastic · Flush

- **Flush low profile design**
- **Accommodates misalignment**
- **Vibration resistant**

Material and Finish

Nylon black with stainless steel mounting bracket and SBR rubber bushing

Set tool: 1095 Steel, zinc plated

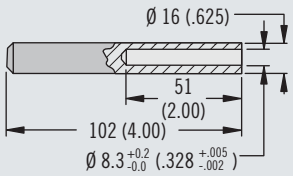
Performance Details

Series	Frame thickness	Rated load (short term)
19-83-10	0.5 - 3.2 (.016 - .13)	180 N (40lbf)
19-93-10	0.5 - 3.2 (.016 - .13)	440 N (100lbf)
	3.2 - 4.8 (.125 - .19)	330 N (75lbf)

Installation notes

Position bracket and retainer over stud and strike set tool. Adjust mounting nut to set latching tension.

Set tool

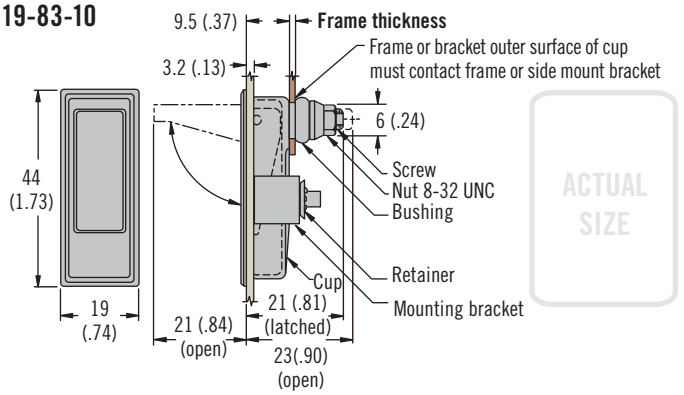


Tool part number: 17-10019-11

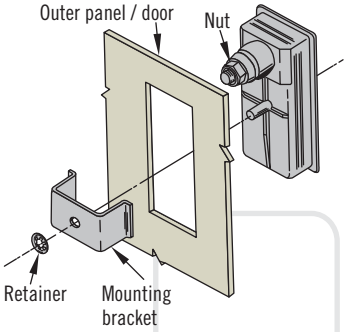
Part Number

See table

19-83-10

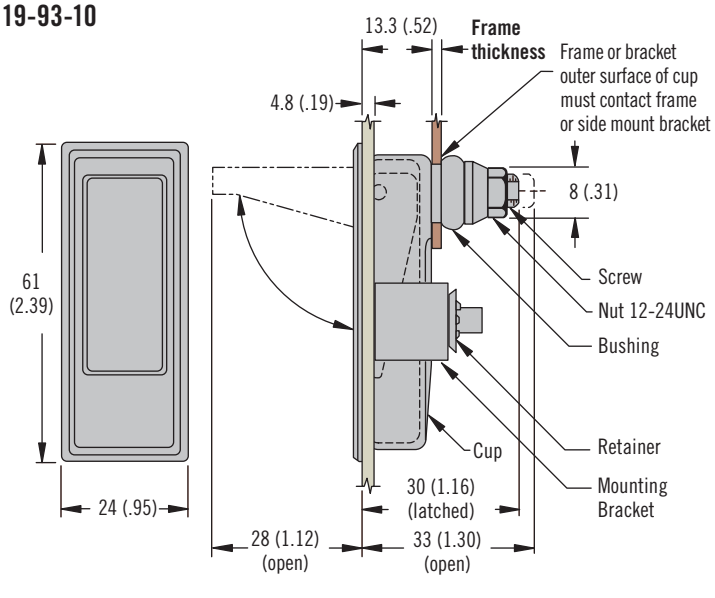


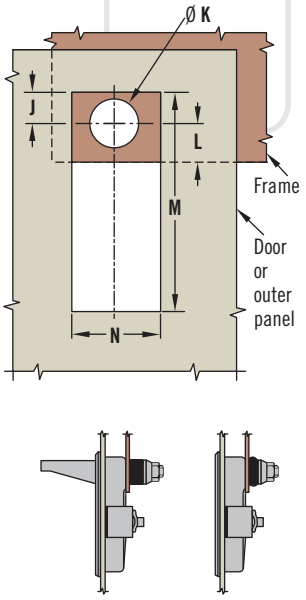
ACTUAL SIZE



ACTUAL SIZE

19-93-10





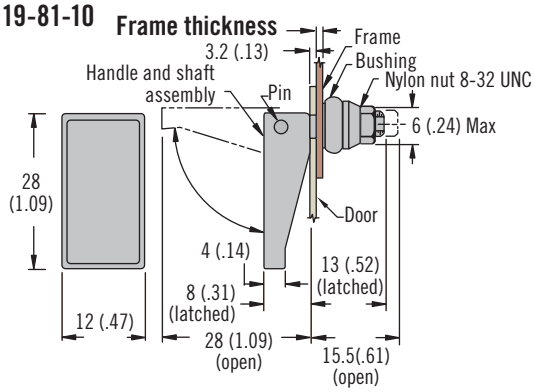
Part Number	Max. Misalignment Between Centerlines of Panel Hole and Frame Hole	Frame or Bracket					Outer Panel / Door	
		Rated Load (Short Term)	Frame Thickness	J±0.3 (.010)	Ø K +0.5 (.020) -0.0 (.000)	L Max.	M	N
19-83-10	0.4 (.015)	180 N (40lbf)	3.2 (.13) Max.	6 (.234)	9.5 (.375)	11 (.45)	41.5 +0.4 -0.0 (1.64 +.005 -.0)	16.5 +0 -0.4 (.640 +0 -.005)
19-93-10	0.6 (.025)	440 N (100lbf)	Up to 3.2 (.13)	8 (.312)	13.5 (.531)	15.(.56)	57.5±.02 (2.265±.005)	20.5 +0.4 -0.0 (.812 +0 -.005)
	0.8 (.030)	330 N (75lbf)	3.2 - 4.8 (.13 - .19)		14 (.56)			

Dimensions in millimeters (inch) unless otherwise stated

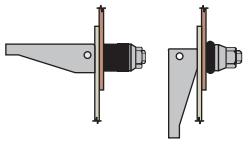
19 Swell Action Latch

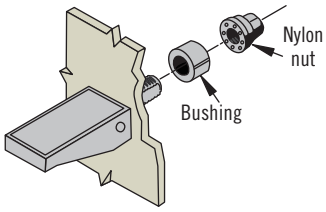
Plastic Light-duty

19-81-10

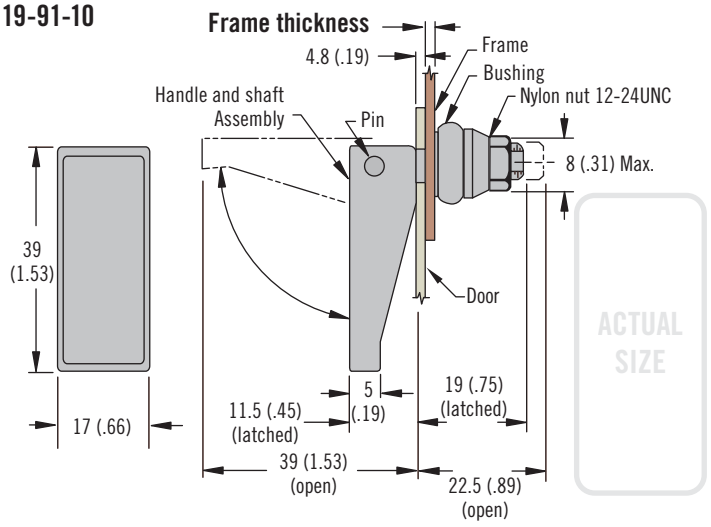


ACTUAL SIZE

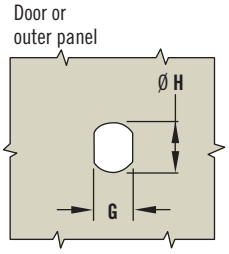


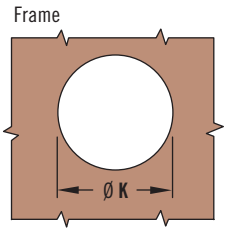


19-91-10



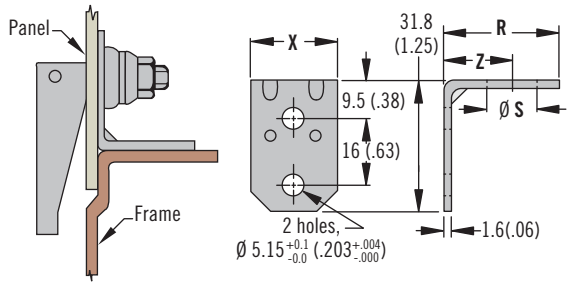
ACTUAL SIZE





Part Number	G +0.1 (+.004) -0.0 (-.000)	H +0.1 (+.004) -0.0 (-.000)	Frame Thickness	K +0.5 (+.030) -0.0 (-.000)
19-81-10	3.3 (.130)	4.1 (.161)	3.2 (.13) Max.	9.5 (.375)
19-91-10	4.5 (.177)	5.8 (.228)	Up to 3.2 (.13)	13.5 (.531)
			3.2 - 4.8 (.13 - .19)	14 (.547)

Accessories - Side mount bracket



Latch Part Number	Ø S	R	X	Z	Bracket Part Number
19-81-10 and 19-83-10	9.5 (.38)	27 (1.06)	20.5 (.81)	16.7 (.66)	19-0-15666-11
19-91-10 and 19-93-10	13.5 (.53)				19-0-15665-11

- **Accommodates misalignment**
- **Vibration dampening**

Material and Finish

Nylon and glass-filled nylon black with SBR rubber bushing

Performance Details

Series	Frame thickness	Rated load (short term)
19-81-10	0.5 - 3.2 (.016 - .13)	180 N (40lbf)
19-91-10	0.5 - 3.2 (.016 - .13)	440 N (100lbf)
	3.2 - 4.8 (.125 - .19)	330 N (75lbf)

Installation notes

Max. tightening torque on mounting nut: 1 N•m (9 in•lbf)

Part Number

See table

CAPTIVE SCREWS

Threaded Fasteners

Pages 364 - 398

Captivating fasteners to panels prevents the loss of hardware and the potential damage caused by dropping fasteners into operating equipment. Captive screws are especially useful for applications requiring repetitive fastening. Numerous Southco styles are available to suit specific space and access requirements.

SOUTHCO® Captive Screws are available in a variety of panel mounting styles and head styles to suit industry-standard and application requirements. The overmolded 4C Captive Screws are available in several screw sizes and feature colored molded polycarbonate / ABS knobs that enable you to coordinate color to design schemes or to differentiate access points for quick identification.

- High strength screws for use with high torque drivers
- Increased strength and corrosion-resistance
- Standard and custom colors available
- Variety of installation styles
- Tool or hand operation
- Modifications and custom solutions are available to suit individual application requirements

F5

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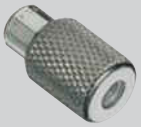
5T


N7

4C

47

Captive Screws

Selection guide

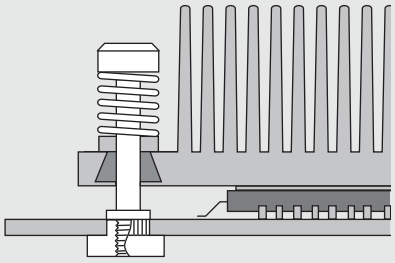
Use this selection guide to help make the right choice of captive screw for your application

Contact Southco

Design Considerations:

- Panel Material
- Panel Thickness
- Environment
- Alignment Tolerance
- Space Available
- Recess Requirements
- Strength Required

Heat Sink Installation



		Product Class	THREADED SIZE										TOOL RECESS				
			M3	M3.5	M4	M5	M6	4-40	6-32	8-32	10-32	1/4-20	Slot	Phillips	*TORX®*	*TORX®* / Slot	Phillips / Slot
PAGES 364 - 383		47	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
PAGES 384 - 387		4C	✔		✔	✔		✔	✔		✔			✔		✔	✔
PAGES 388 - 391		47 Restricted access			✔	✔		✔	✔	✔	✔		✔	✔	✔		
PAGES 394 - 395		52	✔		✔			✔	✔							✔	✔
PAGE 397		5T	✔	✔				✔	✔							✔	✔
PAGE 396		F5	✔		✔			✔	✔	✔			✔	✔			
PAGE 398		N7 Captive Nut	✔		✔	✔	✔	✔	✔	✔	✔	✔					

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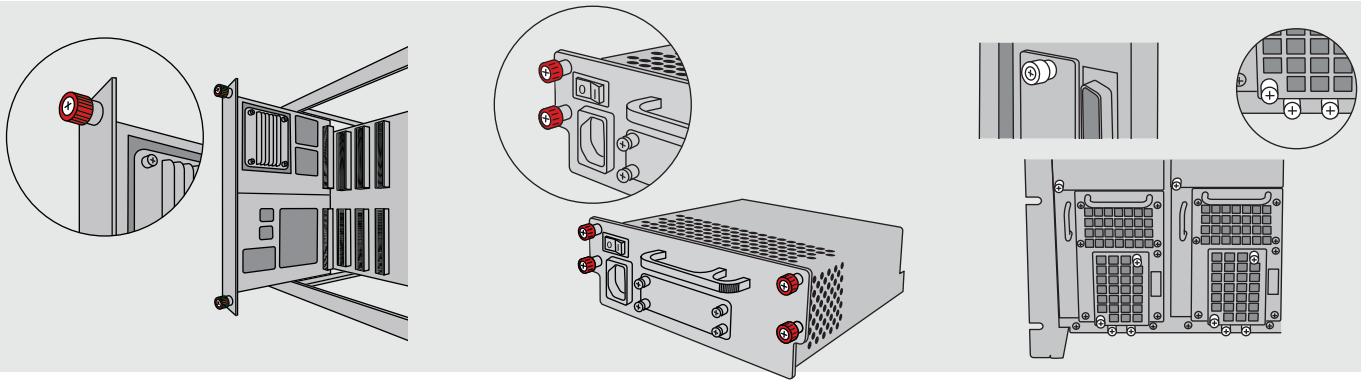
Dimensions in millimeters (inch) unless otherwise stated

Rapid Assembly Serviceability **Color Coded** **Restricted Access** **Limited Space**



INSTALLATION					APPLICATION REQUIREMENTS								
Self Clinching (Press-In)	Flare-In	Floating	PCB	Snap-In	Stainless Steel	Low Profile	Flush	Hand Operable	Black Finish	Color Coded Knob	Restricted Access UL-1950	High Strength Screw	Fixed Spring Preload
✔	✔	✔	✔	✔				✔	✔		Smooth knob, 4-40, 6-32 ✔	✔	
✔	✔	✔	✔					✔	Knob only as standard	✔		✔	
✔	✔	✔						✔	✔		✔	✔	
✔	✔					✔		✔				✔	
	✔											✔	✔
✔					✔		✔						
✔								✔	✔				

Dimensions in millimeters (inch) unless otherwise stated

Captive Screws Specification

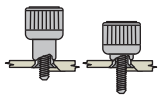
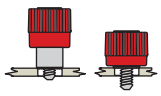
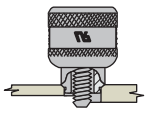
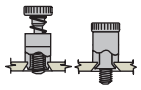
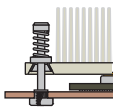
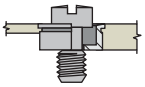
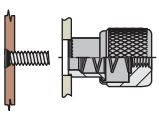
Selection guide

How to specify *SOUTHCO®* Captive Screws

1. Choose the product type that best suits your application using the product benefits table.
2. Select your product features: Recess, installation style, color, size.
3. Specify the final part numbers using the tables found with each product style.
4. You can also specify your *SOUTHCO®* Hardware on the web. Simply enter your product type into the search engine and configure online.

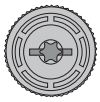
SOUTHCO® Captive Screws are available in a variety of sizes and configurations to give you endless options to control or enable access in your applications. Specifying *SOUTHCO®* Captive Screws is easy. Just follow the instructions below or go to www.southco.com.

Product benefits table: Determine the product that best fits your application requirements. Additional information is available in the selection table on pages 360 - 361.

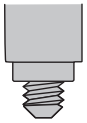
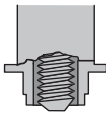
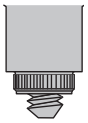
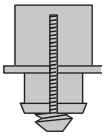
47	• Stylized designer knob • Installation for a wide variety of material configurations • Knurled knob for easy, hand operation • Custom powder coat color matching		
4C	• Define access points with color • Color match to your industrial design		
47	• Restrict access to service areas with tighten by hand, tool to release options • Meets service access standards		
52	• Lower profile knob for tight spaces • High strength screw for fast assembly		
5T	• Maximize heat transfer • Screw sets defined preload • Maintain contact under vibration • Allows for thermal expansion while maintaining preload to defined range		
F5	• Flush recessed captive design • Tool only access • All stainless steel design		
N7	• Fastens to thread stud for a flush panel configuration • Available with blind threaded hole for a finished appearance		

Select the product features that you need

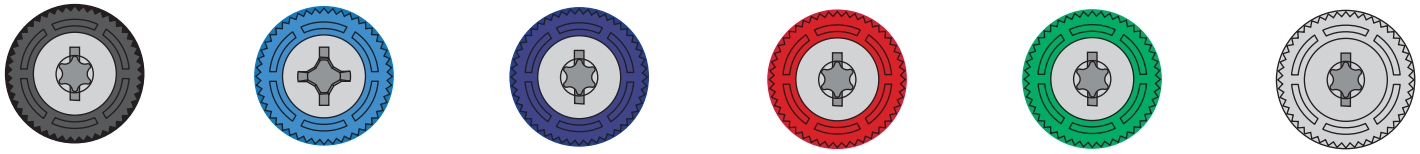
Tool Recess

Which access is best for your application?				
Slotted: Common recess	**Phillips:** Better tool retention Meets certain limited-access restrictions	**Phillips / Slot:** Combine the better tool retention of Phillips with the convenience of a slotted recess	**Torx®:** Higher torque transfer Reduced cam-out and end load High speed assembly Longer tool life	**Torx®/ Slot:** Combine the benefits of TORX® with the convenience of a slotted recess
				

Installation Style

Which installation method is best for your application?				
Self-Clinching, Press-In: One-step press operation stays flush with the bottom of the sheet metal panel	**Flare-In:** Near edge installation in plastics, castings and other non-sheet metal materials	**Floating:** Provides additional radial float to accommodate a significant amount of misalignment	**P.C. Board:** Designed for use in P.C. boards and other composites such as fiberglass	**Snap-In:** Install by hand, no special tools required
				

Color



When an off-the-shelf design doesn't quite meet your needs....

Lower profile, ergonomic, extended reach, small space envelope...no problem!

Speed up service and decrease assembly time in tight spaces!

Have a wish list?
Southco can give you the solution.

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CONNECT · CREATE · INNOVATE

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Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · M3 thread size

- **Smooth knob meets UL-1950**
- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plated, chromate, plus sealer
Flare-in and Floating:
Aluminum, natural
P.C. board style: 300 Series stainless steel, passivated

Knob:
Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 392 - 393, 497

Notes

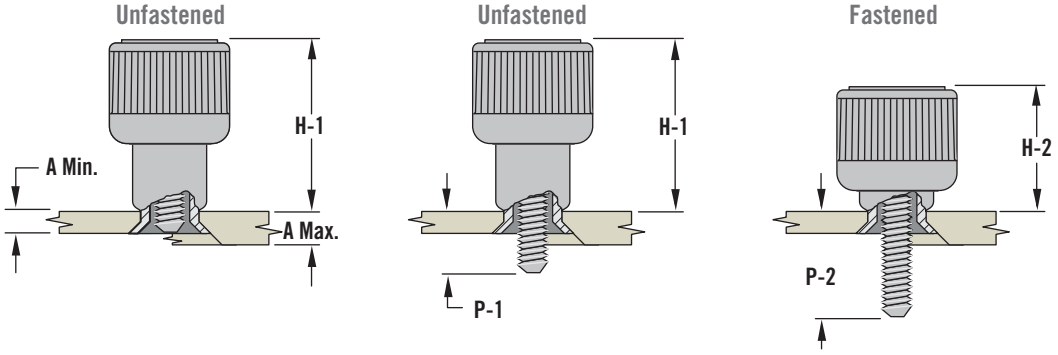
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

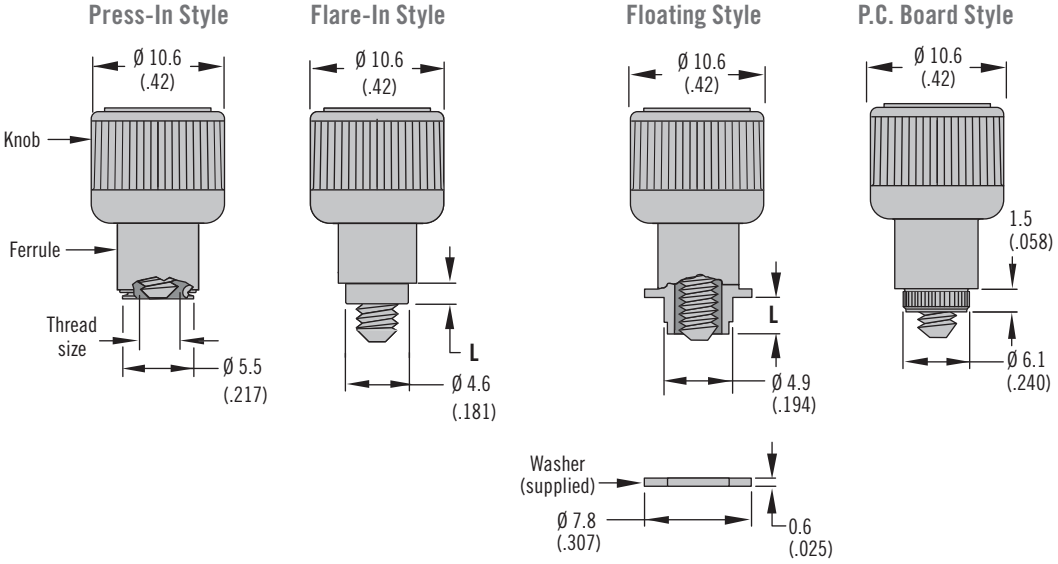
Slotted | No. 1 Phillips | T10 *TORX®* | T10 *TORX®* / Slot Combination | No. 1 Phillips / Slot Combination

Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Dimensions in millimeters (inch) unless otherwise stated

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Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX®* Recess	*TORX®* / Slot Combination	Phillips / Slot Combination
Press-In Style	11.3 (.45)	8.3 (.33)	0.9 (.036)	~	~	0.7 (.03)	~	0.8 (.03)	3.8 (.15)	47-90-101-24	47-90-121-24	47-90-141-24	47-90-161-20	47-90-181-24
								2.5 (.10)	5.5 (.22)	47-91-101-24	47-91-121-24	47-91-141-24	47-91-161-20	47-91-181-24
								4 (.16)	7 (.28)	47-92-101-24	47-92-121-24	47-92-141-24	47-92-161-20	47-92-181-24
								5.6 (.22)	8.6 (.34)	47-93-101-24	47-93-121-24	47-93-141-24	47-93-161-20	47-93-181-24
P.C. Board Style	11.5 (.45)	8.3 (.33)	1.6 (.061)	~	~	0.7 (.03)	~	1.5 (.06)	4.5 (.18)	47-95-101-34	47-95-121-34	47-95-141-34	47-95-161-30	47-95-181-34
Flare-In Style	11.5 (.45)	8.1 (.32)	0.8 (.031)	1.5 (.058)	0.4 (.015)	0.7 (.03)	1.0 (.041)	0.8 (.03)	4 (.16)	47-80-101-14	47-80-121-14	47-80-141-14	47-80-161-10	47-80-181-14
			1.5 (.059)	2.5 (.098)	0.4 (.015)		1.8 (.070)	1.5 (.06)	4.7 (.19)	47-80-102-14	47-80-122-14	47-80-142-14	47-80-162-10	47-80-182-14
			2.5 (.098)	4 (.156)	0.8 (.031)		2.6 (.104)	2.5 (.10)	5.7 (.22)	47-80-103-14	47-80-123-14	47-80-143-14	47-80-163-10	47-80-183-14
			4 (.157)	5.6 (.219)	2.4 (.093)		4.2 (.166)	4 (.16)	7.2 (.28)	47-80-105-14	47-80-125-14	47-80-145-14	47-80-165-10	47-80-185-14
			5.6 (.220)	7.1 (.281)	4 (.156)		5.8 (.299)	5.6 (.22)	8.8 (.35)	47-80-107-14	47-80-127-14	47-80-147-14	47-80-167-10	47-80-187-14
			0.8 (.031)	1.5 (.058)	0.4 (.015)		1.0 (.041)	2.5 (.10)	5.7 (.22)	47-81-101-14	47-81-121-14	47-81-141-14	47-81-161-10	47-81-181-14
								4 (.16)	7.2 (.28)	47-82-101-14	47-82-121-14	47-82-141-14	47-82-161-10	47-82-181-14
								5.6 (.22)	8.8 (.35)	47-83-101-14	47-83-121-14	47-83-141-14	47-83-161-10	47-83-181-14
			1.5 (.058)	2.5 (.098)	0.4 (.015)		1.8 (.070)	3.2 (.13)	6.4 (.25)	47-81-102-14	47-81-122-14	47-81-142-14	47-81-162-10	47-81-182-14
								4.7 (.19)	7.9 (.31)	47-82-102-14	47-82-122-14	47-82-142-14	47-82-162-10	47-82-182-14
								6.3 (.25)	9.5 (.37)	47-83-102-14	47-83-122-14	47-83-142-14	47-83-162-10	47-83-182-14
Floating Style	11.4 (.45)	8.6 (.34)	~	0.8 (.031)	2 (.080)	2.0 (.08)	2.6 (.101)	1.9 (.07)	5.1 (.20)	47-80-110-14	47-80-130-14	47-80-150-14	47-80-170-10	47-80-190-14
								3.4 (.13)	6.6 (.26)	47-81-110-14	47-81-130-14	47-81-150-14	47-81-170-10	47-81-190-14
								5 (.19)	8.2 (.32)	47-82-110-14	47-82-130-14	47-82-150-14	47-82-170-10	47-82-190-14
			0.8 (.031)	1.6 (.063)	2.8 (.111)		3.4 (.132)	1.9 (.07)	5.1 (.20)	47-80-111-14	47-80-131-14	47-80-151-14	47-80-171-10	47-80-191-14
								3.4 (.13)	6.6 (.26)	47-81-111-14	47-81-131-14	47-81-151-14	47-81-171-10	47-81-191-14
								5 (.19)	8.2 (.32)	47-82-111-14	47-82-131-14	47-82-151-14	47-82-171-10	47-82-191-14
			1.6 (.063)	2.4 (.094)	3.6 (.143)		4.2 (.164)	3.4 (.13)	6.6 (.26)	47-80-112-14	47-80-132-14	47-80-152-14	47-80-172-10	47-80-192-14
								5 (.19)	8.2 (.32)	47-81-112-14	47-81-132-14	47-81-152-14	47-81-172-10	47-81-192-14

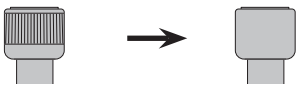
Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

Change 3 to 7: 47-80-102-**3**4
47-80-102-**7**4



For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-**2**0
47-90-161-**2**1

Change 4 to 5: 47-90-101-**2**4
47-90-101-**2**5

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

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INFO CLIC www.southco.com/47

47 Captive Screws

Styled knob series · M3.5 thread size

- **Smooth knob meets UL-1950**
- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
P.C. board: 300 Series stainless steel, passivated
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

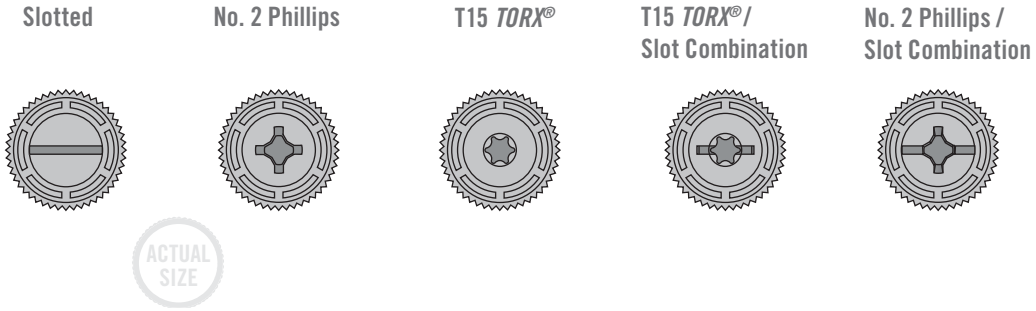
Installation Notes

See pages 392 - 393, 497

Notes

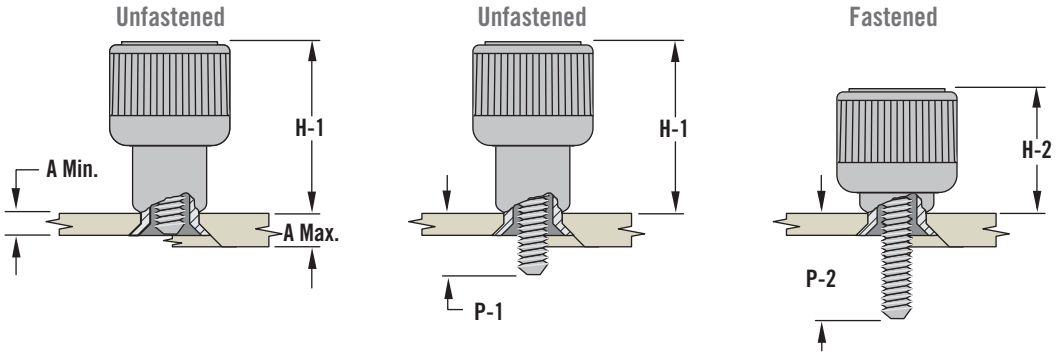
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

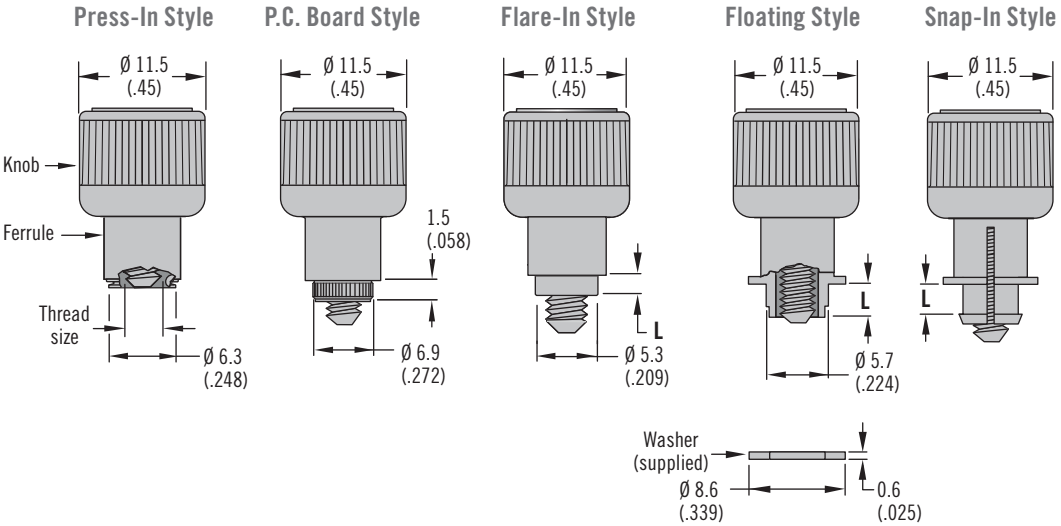


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	15.9 (.63)	11.2 (.44)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	5.3 (.21)	47-90-201-24	47-90-221-24	47-90-241-24	47-90-261-20	47-90-281-24
								2.1 (.09)	6.9 (.27)	47-91-201-24	47-91-221-24	47-91-241-24	47-91-261-20	47-91-281-24
								3.7 (.15)	8.5 (.33)	47-92-201-24	47-92-221-24	47-92-241-24	47-92-261-20	47-92-281-24
								5.3 (.21)	10.1 (.40)	47-93-201-24	47-93-221-24	47-93-241-24	47-93-261-20	47-93-281-24
P.C. Board Style	14.8 (.58)	10 (.39)	1.6 (.061)	~	~	0.8 (.03)	~	1.4 (.06)	6.2 (.24)	47-95-201-34	47-95-221-34	47-95-241-34	47-95-261-30	47-95-281-34
Flare-In Style	15.3 (.60)	10.4 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.8 (.03)	1.8 (.07)	1.1 (.04)	6 (.24)	47-80-202-14	47-80-222-14	47-80-242-14	47-80-262-10	47-80-282-14
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.7 (.11)	7.6 (.30)	47-80-204-14	47-80-224-14	47-80-244-14	47-80-264-10	47-80-284-14
			4.8(.188)	6.4 (.250)	3.2 (.125)		5 (.197)	4.3 (.17)	9.2 (.36)	47-80-206-14	47-80-226-14	47-80-246-14	47-80-266-10	47-80-286-14
			6.4 (.252)	7.9 (.312)	4.8 (.189)		6.6 (.26)	5.9 (.23)	10.8 (.43)	47-80-208-14	47-80-228-14	47-80-248-14	47-80-268-10	47-80-288-14
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.7 (.11)	7.6 (.30)	47-81-202-14	47-81-222-14	47-81-242-14	47-81-262-10	47-81-282-14
								4.3 (.17)	9.2 (.36)	47-82-202-14	47-82-222-14	47-82-242-14	47-82-262-10	47-82-282-14
								5.9 (.23)	10.8 (.43)	47-83-202-14	47-83-222-14	47-83-242-14	47-83-262-10	47-83-282-14
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-81-204-14	47-81-224-14	47-81-244-14	47-81-264-10	47-81-284-14
								5.9 (.23)	10.8 (.43)	47-82-204-14	47-82-224-14	47-82-244-14	47-82-264-10	47-82-284-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.9 (.23)	10.8 (.43)	47-81-206-14	47-81-226-14	47-81-246-14	47-81-266-10	47-81-286-14
Floating Style	15.4 (.60)	10.6 (.42)	~	0.8 (.031)	2.1 (.083)	2.2 (.09)	2.9 (.113)	2.4 (.09)	7.2 (.28)	47-80-210-14	47-80-230-14	47-80-250-14	47-80-270-10	47-80-290-14
								4 (.16)	8.8 (.35)	47-81-210-14	47-81-230-14	47-81-250-14	47-81-270-10	47-81-290-14
								5.6 (.22)	10.4 (.41)	47-82-210-14	47-82-230-14	47-82-250-14	47-82-270-10	47-82-290-14
			0.8 (.031)	1.6 (.063)	2.9 (.114)		3.7 (.144)	2.4 (.09)	7.2 (.28)	47-80-211-14	47-80-231-14	47-80-251-14	47-80-271-10	47-80-291-14
								4 (.16)	8.8 (.35)	47-81-211-14	47-81-231-14	47-81-251-14	47-81-271-10	47-81-291-14
								5.6 (.22)	10.4 (.41)	47-82-211-14	47-82-231-14	47-82-251-14	47-82-271-10	47-82-291-14
			1.6 (.063)	2.4 (.094)	3.7 (.146)		4.5 (.176)	4 (.16)	8.8 (.35)	47-80-212-14	47-80-232-14	47-80-252-14	47-80-272-10	47-80-292-14
								5.6 (.22)	10.4 (.41)	47-81-212-14	47-81-232-14	47-81-252-14	47-81-272-10	47-81-292-14
Snap-In Style	15.4 (.60)	10.6 (.42)	0.5 (.02)	1 (.039)	2 (.079)	0.8 (.03)	1.1 (.044)	0.8 (.03)	5.6 (.22)	47-90-210-14	47-90-230-14	47-90-250-14	47-90-270-10	47-90-290-14
								2.4 (.09)	7.2 (.28)	47-91-210-14	47-91-230-14	47-91-250-14	47-91-270-10	47-91-290-14
								4 (.16)	8.8 (.35)	47-92-210-14	47-92-230-14	47-92-250-14	47-92-270-10	47-92-290-14
								5.6 (.22)	10.4 (.41)	47-93-210-14	47-93-230-14	47-93-250-14	47-93-270-10	47-93-290-14
			1 (.039)	1.6 (.063)	2.6 (.103)		1.7 (.067)	2.4 (.09)	7.2 (.28)	47-90-212-14	47-90-232-14	47-90-252-14	47-90-272-10	47-90-292-14
								4 (.16)	8.8 (.35)	47-91-212-14	47-91-232-14	47-91-252-14	47-91-272-10	47-91-292-14
								5.6 (.22)	10.4 (.41)	47-92-212-14	47-92-232-14	47-92-252-14	47-92-272-10	47-92-292-14

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

Change 3 to 7: 47-80-102-**3**4
47-80-102-**7**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · M4 thread size

- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 392 - 393, 497

Notes

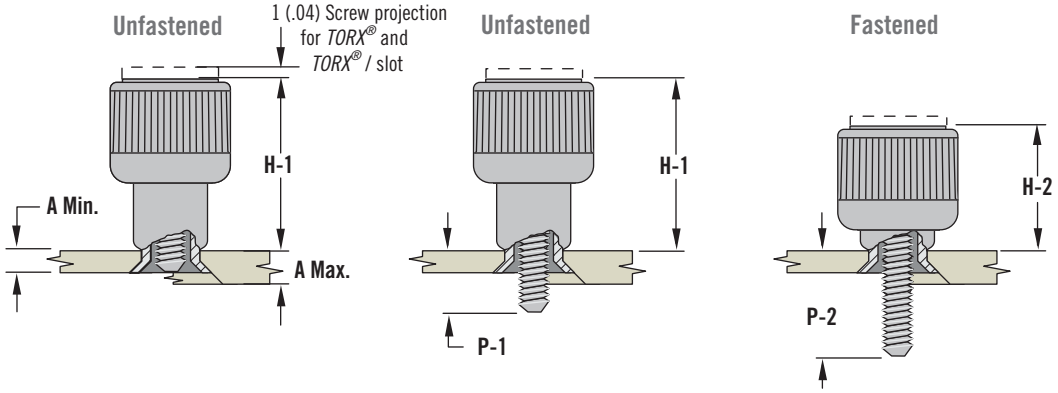
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

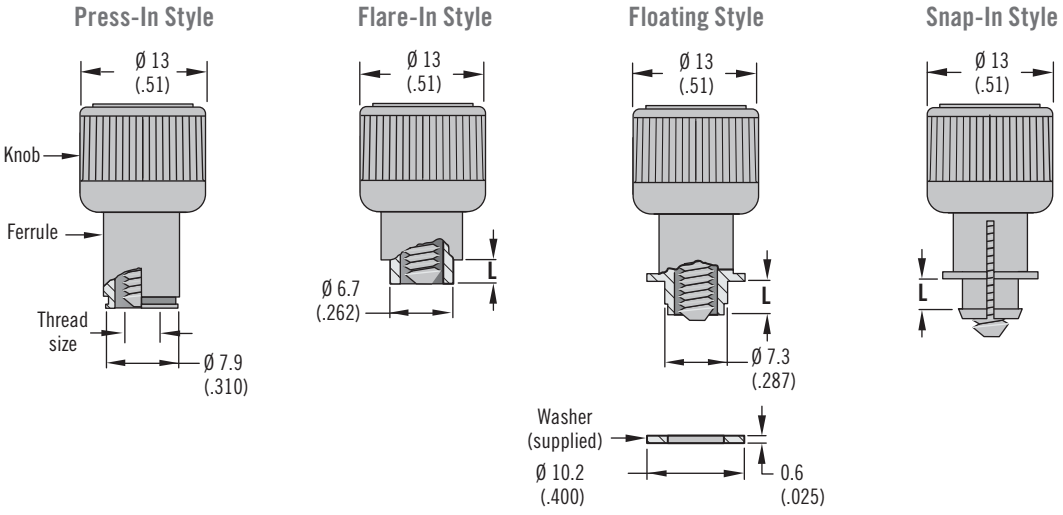
Slotted | No. 2 Phillips | T25 *TORX®* | T25 *TORX®* / Slot Combination | No. 2 Phillips / Slot Combination

Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	16.2 (.64)	11.3 (.45)	0.9 (.036)	~	~	0.8 (.03)	~	0.6 (.02)	5.6 (.22)	47-90-301-24	47-90-321-24	47-90-341-20	47-90-361-20	47-90-381-20
								2.2 (.09)	7.2 (.28)	47-91-301-24	47-91-321-24	47-91-341-20	47-91-361-20	47-91-381-20
								3.8 (.15)	8.7 (.34)	47-92-301-24	47-92-321-24	47-92-341-20	47-92-361-20	47-92-381-20
								5.4 (.21)	10.3 (.41)	47-93-301-24	47-93-321-24	47-93-341-20	47-93-361-20	47-93-381-20
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1.2 (.05)	6.3 (.25)	47-80-302-14	47-80-322-14	47-80-342-10	47-80-362-10	47-80-382-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.9 (.31)	47-80-304-14	47-80-324-14	47-80-344-10	47-80-364-10	47-80-384-10
			4.8 (.189)	6.4 (.251)	3.2 (.125)		5 (.197)	4.4 (.17)	9.5 (.37)	47-80-306-14	47-80-326-14	47-80-346-10	47-80-366-10	47-80-386-10
			6.4 (.251)	7.9 (.312)	4.8 (.187)		6.6 (.26)	6 (.24)	11.1 (.44)	47-80-308-14	47-80-328-14	47-80-348-10	47-80-368-10	47-80-388-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.8 (.11)	7.9 (.31)	47-81-302-14	47-81-322-14	47-81-342-10	47-81-362-10	47-81-382-10
								4.4 (.17)	9.5 (.37)	47-82-302-14	47-82-322-14	47-82-342-10	47-82-362-10	47-82-382-10
								6 (.24)	11.1 (.44)	47-83-302-14	47-83-322-14	47-83-342-10	47-83-362-10	47-83-382-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.4 (.17)	9.5 (.37)	47-81-304-14	47-81-324-14	47-81-344-10	47-81-364-10	47-81-384-10
								6 (.24)	11.1 (.44)	47-82-304-14	47-82-324-14	47-82-344-10	47-82-364-10	47-82-384-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	11.1 (.44)	47-81-306-14	47-81-326-14	47-81-346-10	47-81-366-10	47-81-386-10
Floating Style	16.2 (.64)	11.2 (.44)	~	0.8 (.031)	2.3 (.09)	2.3 (.09)	3.2 (.127)	2.4 (.09)	7.2 (.28)	47-80-310-14	47-80-330-14	47-80-350-10	47-80-370-10	47-80-390-10
								4 (.16)	8.8 (.35)	47-81-310-14	47-81-330-14	47-81-350-10	47-81-370-10	47-81-390-10
								5.6 (.22)	10.4 (.41)	47-82-310-14	47-82-330-14	47-82-350-10	47-82-370-10	47-82-390-10
			0.8 (.031)	1.6 (.063)	3.1 (.121)		4 (.158)	2.4 (.09)	7.2 (.28)	47-80-311-14	47-80-331-14	47-80-351-10	47-80-371-10	47-80-391-10
								4 (.16)	8.8 (.35)	47-81-311-14	47-81-331-14	47-81-351-10	47-81-371-10	47-81-391-10
								5.6 (.22)	10.4 (.41)	47-82-311-14	47-82-331-14	47-82-351-10	47-82-371-10	47-82-391-10
			1.6 (.063)	2.4 (.094)	3.9 (.153)		4.8 (.190)	4 (.16)	7.2 (.28)	47-80-312-14	47-80-332-14	47-80-352-10	47-80-372-10	47-80-392-10
								5.6 (.22)	8.8 (.35)	47-81-312-14	47-81-332-14	47-81-352-10	47-81-372-10	47-81-392-10
Snap-In Style	15.7 (.62)	11.2 (.44)	0.5 (.02)	1 (.039)	2 (.079)	0.9 (.03)	1.1 (.044)	1.1 (.04)	5.6 (.22)	47-90-310-14	47-90-330-14	47-90-350-10	47-90-370-10	47-90-390-10
								2.7 (.11)	7.2 (.28)	47-91-310-14	47-91-330-14	47-91-350-10	47-91-370-10	47-91-390-10
								4.3 (.17)	8.8 (.35)	47-93-310-14	47-92-330-14	47-92-350-10	47-92-370-10	47-92-390-10
								5.8 (.23)	10.4 (.41)	47-93-310-14	47-93-330-14	47-93-350-10	47-93-370-10	47-93-390-10
			1 (.039)	1.6 (.063)	2.6 (.102)		1.7 (.068)	2.7 (.11)	7.2 (.28)	47-90-312-14	47-90-332-14	47-90-352-10	47-90-372-10	47-90-392-10
								4.3 (.17)	8.8 (.35)	47-91-312-14	47-91-332-14	47-91-352-10	47-91-372-10	47-91-392-10
								5.9 (.23)	10.4 (.41)	47-92-312-14	47-92-332-14	47-92-352-10	47-92-372-10	47-92-392-10
			1.6 (.063)	2.5 (.098)	3.5 (.138)		2.6 (.103)	2.7 (.11)	7.2 (.28)	47-90-314-14	47-90-334-14	47-90-354-10	47-90-374-10	47-90-394-10
								4.3 (.17)	8.8 (.35)	47-91-314-14	47-91-334-14	47-91-354-10	47-91-374-10	47-91-394-10
								5.9 (.23)	10.4 (.41)	47-92-314-14	47-92-334-14	47-92-354-10	47-92-374-10	47-92-394-10

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · M5 thread size

- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

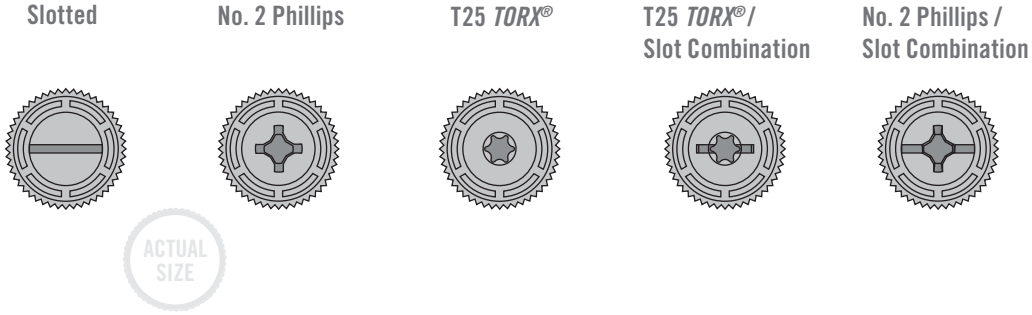
Installation Notes

See pages 392 - 393, 497

Notes

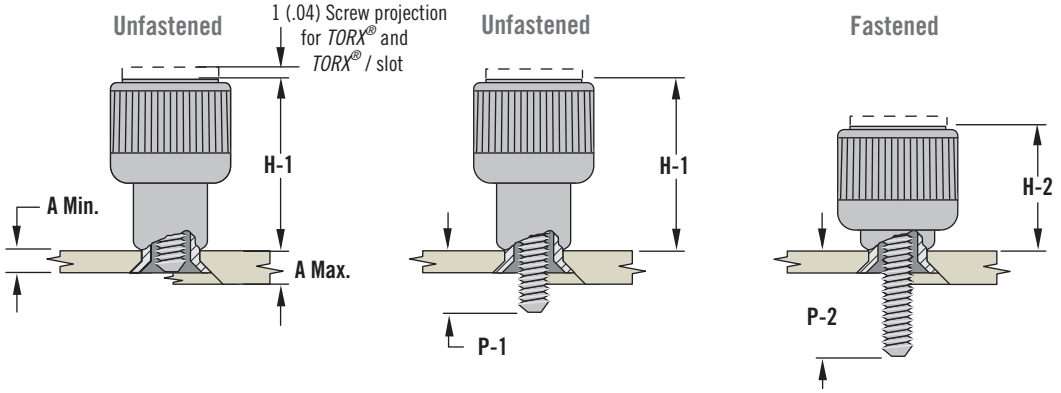
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

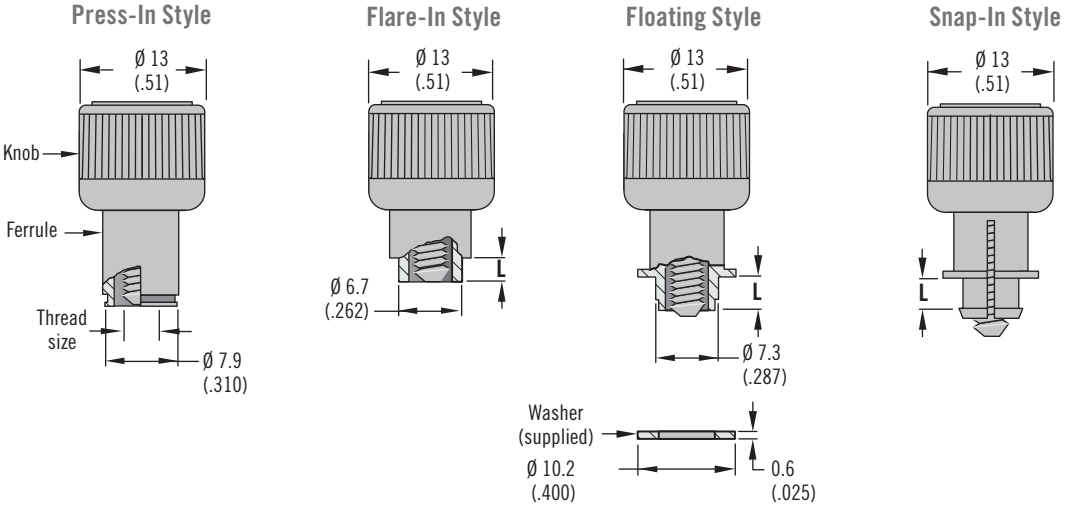


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions			Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.	B			P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	16.2 (.64)	11.3 (.45)	0.9 (.036)	~	~	0.6 (.02)	~	0.6 (.024)	5.5 (.22)	47-90-501-24	47-90-521-24	47-90-541-20	47-90-561-20	47-90-581-20
								2.2 (.087)	7.1 (.28)	47-91-501-24	47-91-521-24	47-91-541-20	47-91-561-20	47-91-581-20
								3.8 (.15)	8.7 (.34)	47-92-501-24	47-92-521-24	47-92-541-20	47-92-561-20	47-92-581-20
								5.4 (.21)	10.3 (.41)	47-93-501-24	47-93-521-24	47-93-541-20	47-93-561-20	47-93-581-20
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.6 (.02)	1.8 (.070)	1.2 (.05)	6.3 (.25)	47-80-502-14	47-80-522-14	47-80-542-10	47-80-562-10	47-80-582-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.9 (.31)	47-80-504-14	47-80-524-14	47-80-544-10	47-80-564-10	47-80-584-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	9.5 (.37)	47-80-506-14	47-80-526-14	47-80-546-10	47-80-566-10	47-80-586-10
			6.3 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	6 (.24)	11.1 (.44)	47-80-508-14	47-80-528-14	47-80-548-10	47-80-568-10	47-80-588-10
								2.8 (.11)	7.9 (.31)	47-81-502-14	47-81-522-14	47-81-542-10	47-81-562-10	47-81-582-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	4.4 (.17)	9.5 (.37)	47-82-502-14	47-82-522-14	47-82-542-10	47-82-562-10	47-82-582-10
								6 (.24)	11.1 (.44)	47-83-502-14	47-83-522-14	47-83-542-10	47-83-562-10	47-83-582-10
								4.4 (.17)	9.5 (.37)	47-81-504-14	47-81-524-14	47-81-544-10	47-81-564-10	47-81-584-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	6 (.24)	11.1 (.44)	47-82-504-14	47-82-524-14	47-82-544-10	47-82-564-10	47-82-584-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	11.1 (.44)	47-81-506-14	47-81-526-14	47-81-546-10	47-81-566-10	47-81-586-10
Floating Style	16 (.63)	11.2 (.44)	~	0.8 (.031)	2.3 (.090)	2.3 (.09)	3.2 (.127)	2.4 (.09)	7.2 (.28)	47-80-510-14	47-80-530-14	47-80-550-10	47-80-570-10	47-80-590-10
								4 (.16)	8.8 (.35)	47-81-510-14	47-81-530-14	47-81-550-10	47-81-570-10	47-81-590-10
								5.6 (.22)	10.4 (.41)	47-82-510-14	47-82-530-14	47-82-550-10	47-82-570-10	47-82-590-10
			0.8 (.031)	1.6 (.063)	3.1 (.121)		4 (.158)	2.4 (.09)	7.2 (.28)	47-80-511-14	47-80-531-14	47-80-551-10	47-80-571-10	47-80-591-10
								4 (.16)	8.8 (.35)	47-81-511-14	47-81-531-14	47-81-551-10	47-81-571-10	47-81-591-10
								5.6 (.22)	10.4 (.41)	47-82-511-14	47-82-531-14	47-82-551-10	47-82-571-10	47-82-591-10
			1.6 (.063)	2.4 (.094)	3.9 (.153)		4.8 (.190)	4 (.16)	8.8 (.35)	47-80-512-14	47-80-532-14	47-80-552-10	47-80-572-10	47-80-592-10
								5.6 (.22)	10.4 (.41)	47-81-512-14	47-81-532-14	47-81-552-10	47-81-572-10	47-81-592-10
Snap-In Style	15.7 (.62)	11.2 (.44)	0.5 (.020)	1 (.039)	2 (.079)	.9 (.04)	1.1 (.044)	1.1 (.04)	5.6 (.22)	47-90-510-14	47-90-530-14	47-90-550-10	47-90-570-10	47-90-590-10
								2.7 (.11)	7.2 (.28)	47-91-510-14	47-91-530-14	47-91-550-10	47-91-570-10	47-91-590-10
								4.3 (.17)	8.8 (.35)	47-92-510-14	47-92-530-14	47-92-550-10	47-92-570-10	47-92-590-10
								5.9 (.23)	10.4 (.41)	47-93-510-14	47-93-530-14	47-93-550-10	47-93-570-10	47-93-590-10
			1 (.039)	1.6 (.063)	2.6 (.013)		1.7 (.068)	2.7 (.11)	7.2 (.28)	47-90-512-14	47-90-532-14	47-90-552-10	47-90-572-10	47-90-592-10
								4.3 (.17)	8.8 (.35)	47-91-512-14	47-91-532-14	47-91-552-10	47-91-572-10	47-91-592-10
								5.9 (.23)	10.4 (.41)	47-92-512-14	47-92-532-14	47-92-552-10	47-92-572-10	47-92-592-10
			1.6 (.063)	2.5 (.098)	3.5 (.138)		2.6 (.103)	2.7 (.11)	7.2 (.28)	47-90-514-14	47-90-534-14	47-90-554-10	47-90-574-10	47-90-594-10
								4.3 (.17)	8.8 (.35)	47-91-514-14	47-91-534-14	47-91-554-10	47-91-574-10	47-91-594-10
								5.9 (.23)	10.4 (.41)	47-92-514-14	47-92-534-14	47-92-554-10	47-92-574-10	47-92-594-10

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · M6 thread size

- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating:
Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

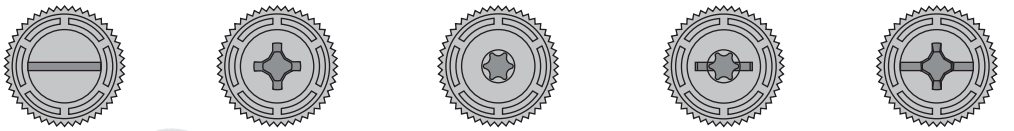
See pages 392 - 393, 497

Notes

To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

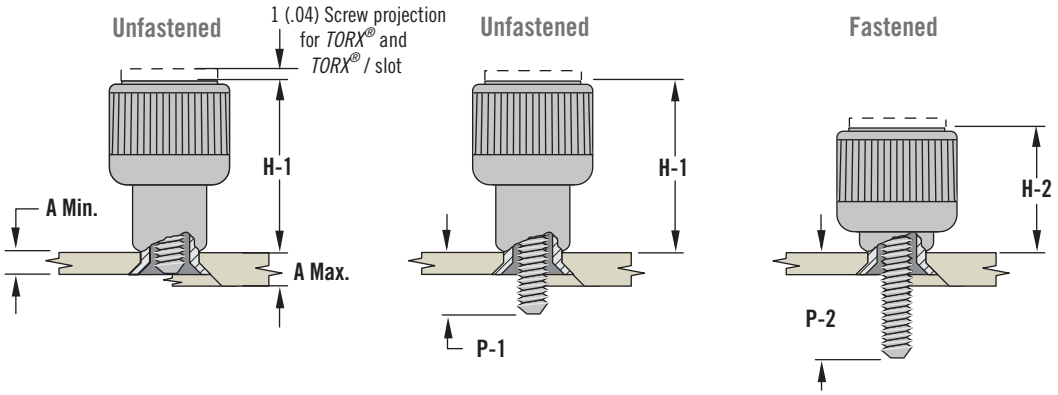
Slotted | No. 2 Phillips | T30 *TORX®* | T30 *TORX®* / Slot Combination | No. 2 Phillips / Slot Combination



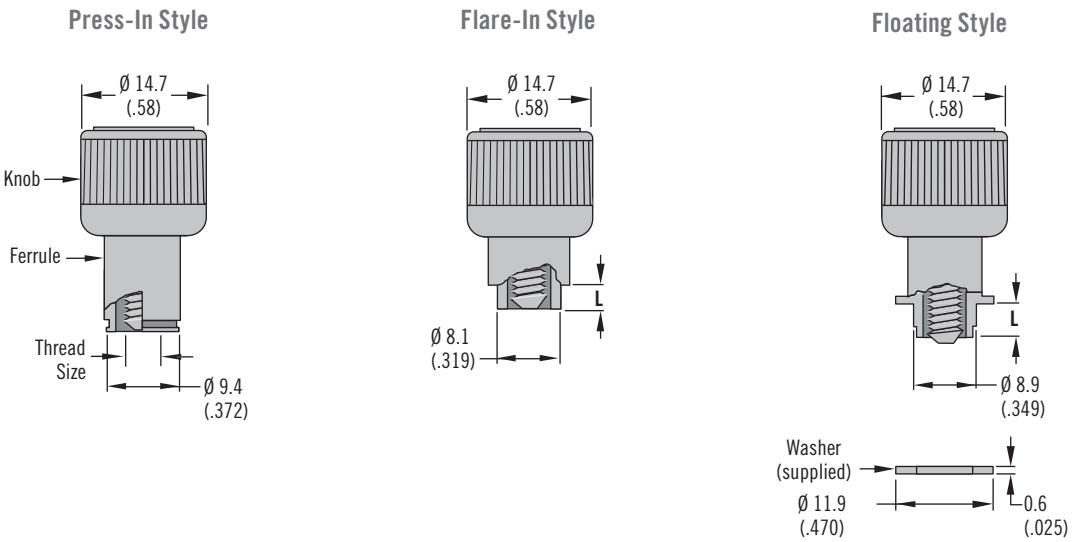
ACTUAL SIZE

Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Dimensions in millimeters (inch) unless otherwise stated

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Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	20 (.79)	13.4 (.53)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	7.1 (.28)	47-90-601-24	47-90-621-24	47-90-641-20	47-90-661-20	47-90-681-20
								2.1 (.08)	8.7 (.34)	47-91-601-24	47-91-621-24	47-91-641-20	47-91-661-20	47-91-681-20
								3.7 (.15)	10.3 (.41)	47-92-601-24	47-92-621-24	47-92-641-20	47-92-661-20	47-92-681-20
								5.3 (.21)	11.9(.47)	47-93-601-24	47-93-621-24	47-93-641-20	47-93-661-20	47-93-681-20
Flare-In Style	19.3 (.76)	12.7 (.50)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1.2 (.05)	7.8 (.31)	47-80-602-14	47-80-622-14	47-80-642-10	47-80-662-10	47-80-682-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	9.4 (.31)	47-80-604-14	47-80-624-14	47-80-644-10	47-80-664-10	47-80-684-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	11 (.43)	47-80-606-14	47-80-626-14	47-80-646-10	47-80-666-10	47-80-686-10
			6.4 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	6 (.24)	12.6 (.50)	47-80-608-14	47-80-628-14	47-80-648-10	47-80-668-10	47-80-688-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	9.4 (.37)	47-81-602-14	47-81-622-14	47-81-642-10	47-81-662-10	47-81-682-10
								4.4 (.17)	11 (.43)	47-82-602-14	47-82-622-14	47-82-642-10	47-82-662-10	47-82-682-10
								6 (.24)	12.6 (.50)	47-83-602-14	47-83-622-14	47-83-642-10	47-83-662-10	47-83-682-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.4 (.17)	11 (.43)	47-81-604-14	47-81-624-14	47-81-644-10	47-81-664-10	47-81-684-10
								6 (.24)	12.6 (.50)	47-82-604-14	47-82-624-14	47-82-644-10	47-82-664-10	47-82-684-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	12.6 (.50)	47-81-606-14	47-81-626-14	47-81-646-10	47-81-666-10	47-81-686-10
Floating Style	20 (.79)	13.3 (.52)	~	0.8 (.031)	2.5 (.097)	2.3 (.09)	3.2 (.127)	2.1 (.08)	8.8 (.35)	47-80-610-14	47-80-630-14	47-80-650-10	47-80-670-10	47-80-690-10
								3.7 (.15)	10.4 (.41)	47-81-610-14	47-81-630-14	47-81-650-10	47-81-670-10	47-81-690-10
								5.3 (.21)	12 (.47)	47-82-610-14	47-82-630-14	47-82-650-10	47-82-670-10	47-82-690-10
			0.8 (.031)	1.6 (.063)	3.3 (.128)		4 (.158)	2.1 (.08)	8.8 (.35)	47-80-611-14	47-80-631-14	47-80-651-10	47-80-671-10	47-80-691-10
								3.7 (.15)	10.4 (.41)	47-81-611-14	47-81-631-14	47-81-651-10	47-81-671-10	47-81-691-10
								5.3 (.21)	12 (.47)	47-82-611-14	47-82-631-14	47-82-651-10	47-82-671-10	47-82-691-10
			1.6 (.063)	2.4 (.094)	4.1 (.160)		4.8 (.189)	3.7 (.15)	10.4 (.41)	47-80-612-14	47-80-632-14	47-80-652-10	47-80-672-10	47-80-692-10
								5.3 (.21)	12 (.47)	47-81-612-14	47-81-632-14	47-81-652-10	47-81-672-10	47-81-692-10

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · 4-40 thread size

- **Smooth knob meets UL-1950**
- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
P.C. board style:
300 Series stainless steel
Flare-in and Floating:
Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

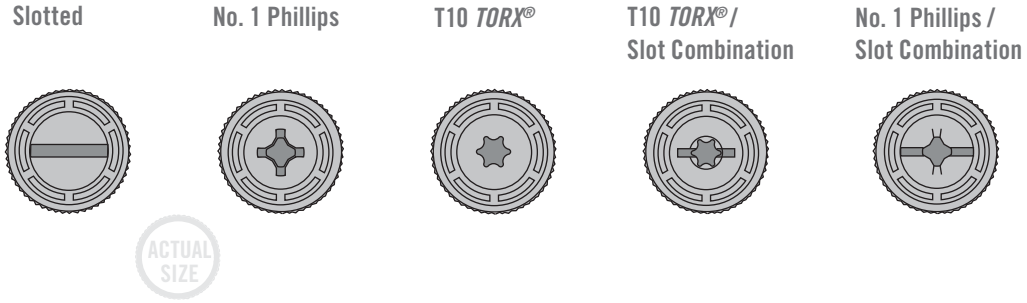
Installation Notes

See pages 392 - 393, 497

Notes

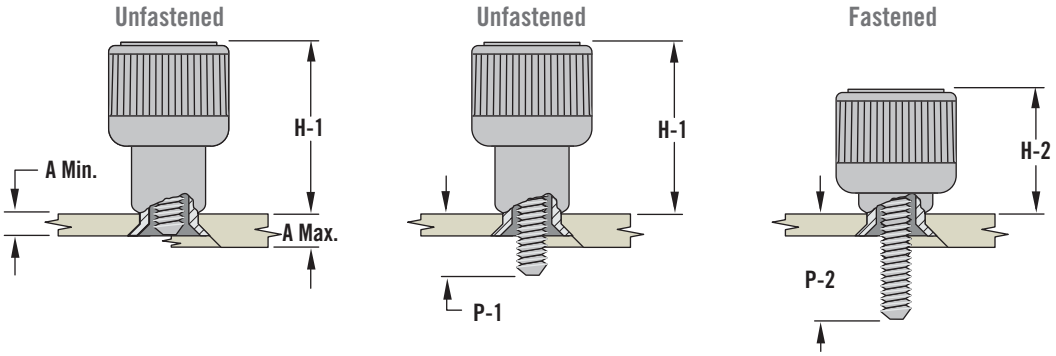
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

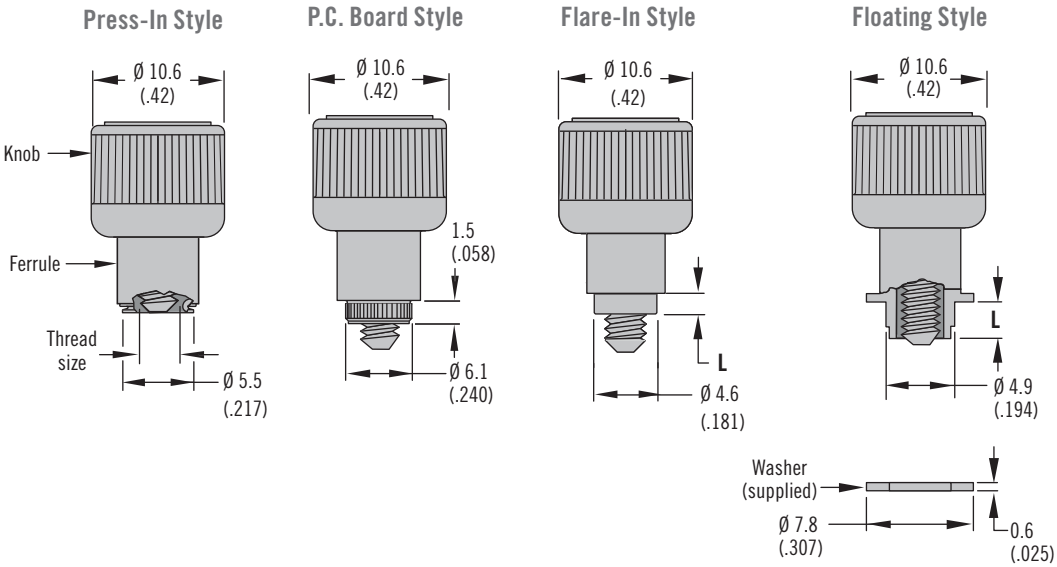


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Dimensions in millimeters (inch) unless otherwise stated

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Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	11.3 (.45)	8.3 (.33)	0.9 (.036)	~	~	0.8 (.03)	~	0.8 (.03)	3.8 (.15)	47-60-101-24	47-60-121-24	47-60-141-24	47-60-161-20	47-60-181-24
								2.5 (.10)	5.5 (.22)	47-61-101-24	47-61-121-24	47-61-141-24	47-61-161-20	47-61-181-24
								4 (.16)	7 (.28)	47-62-101-24	47-62-121-24	47-62-141-24	47-62-161-20	47-62-181-24
								5.6 (.22)	8.6 (.34)	47-63-101-24	47-63-121-24	47-63-141-24	47-63-161-20	47-63-181-24
P.C. Board Style	11.5 (.45)	8.3 (.33)	1.6 (.061)	~	~	0.8 (.03)	~	1.5 (.06)	4.5 (.18)	47-65-101-34	47-65-121-34	47-65-141-34	47-65-161-30	47-65-181-34
Flare-In Style	11.5 (.45)	8.1 (.32)	0.8 (.031)	1.5 (.058)	0.4 (.015)	0.6 (.03)	1 (.041)	0.8 (.03)	4 (.16)	47-10-101-14	47-10-121-14	47-10-141-14	47-10-161-10	47-10-181-14
			1.5 (.059)	2.5 (.100)	0.4 (.015)		1.8 (.070)	1.5 (.06)	4.7 (.19)	47-10-102-14	47-10-122-14	47-10-142-14	47-10-162-10	47-10-182-14
			2.5 (.1)	4 (.156)	0.8 (.031)		2.6 (.104	2.5 (.10)	5.7 (.22)	47-10-103-14	47-10-123-14	47-10-143-14	47-10-163-10	47-10-183-14
			4 (.157)	5.6 (.219)	2.4 (.093)		4.2 (.166)	4 (.16)	7.2 (.28)	47-10-105-14	47-10-125-14	47-10-145-14	47-10-165-10	47-10-185-14
			5.6 (.220)	7.1 (.281)	4 (.156)		5.8 (.229)	5.6 (.22)	8.8 (.35)	47-10-107-14	47-10-127-14	47-10-147-14	47-10-167-10	47-10-187-14
			0.8 (.031)	1.5 (.058)	0.4 (.015)		1 (.041)	2.5 (.10)	5.7 (.22)	47-11-101-14	47-11-121-14	47-11-141-14	47-11-161-10	47-11-181-14
								4 (.16)	7.2 (.28)	47-12-101-14	47-12-121-14	47-12-141-14	47-12-161-10	47-12-181-14
								5.6 (.22)	8.8 (.35)	47-13-101-14	47-13-121-14	47-13-141-14	47-13-161-10	47-13-181-14
			1.5 (.059)	2.5 (.100)	0.4 (.015)		1.8 (.070)	3.2 (.13)	6.4 (.25)	47-11-102-14	47-11-122-14	47-11-142-14	47-11-162-10	47-11-182-14
								4.7 (.19)	7.9 (.31)	47-12-102-14	47-12-122-14	47-12-142-14	47-12-162-10	47-12-182-14
								6.3 (.25)	9.5 (.37)	47-13-102-14	47-13-122-14	47-13-142-14	47-13-162-10	47-13-182-14
Floating Style	11.4 (.45)	8.6 (.34)	~	0.8 (.031)	2 (.080)	2.1 (.08)	2.6 (.101)	1.9 (.07)	5.1 (.20)	47-10-110-14	47-10-130-14	47-10-150-14	47-10-170-10	47-10-190-10
								3.4 (.13)	6.6 (.26)	47-11-110-14	47-11-130-14	47-11-150-14	47-11-170-10	47-11-190-14
								5 (.19)	8.2 (.32)	47-12-110-14	47-12-130-14	47-12-150-14	47-12-170-10	47-12-190-14
			0.8 (.031)	1.6 (.063)	2.8 (.111)		3.4 (.132)	1.9 (.07)	5.1 (.20)	47-10-111-14	47-10-131-14	47-10-151-14	47-10-171-10	47-10-191-14
								3.4 (.13)	6.6 (.26)	47-11-111-14	47-11-131-14	47-11-151-14	47-11-171-10	47-11-191-14
								5 (.19)	8.2 (.32)	47-12-111-14	47-12-131-14	47-12-151-14	47-12-171-10	47-12-191-14
			1.6 (.063)	2.4 (.094)	3.6 (.143)		4.2 (.164)	3.4 (.13)	6.6 (.26)	47-10-112-14	47-10-132-14	47-10-152-14	47-10-172-10	47-10-192-14
								5 (.19)	8.2 (.32)	47-11-112-14	47-11-132-14	47-11-152-14	47-11-172-10	47-11-192-14

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

Change 3 to 7: 47-80-102-**3**4
47-80-102-**7**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

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Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · 6-32 thread size

- **Smooth knob meets UL-1950**
- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
P.C. board style: 300 Series stainless steel, passivated
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

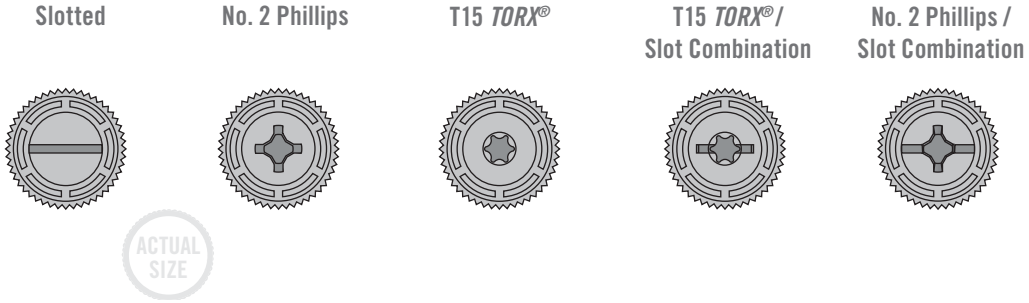
Installation Notes

See pages 392 - 393, 497

Notes

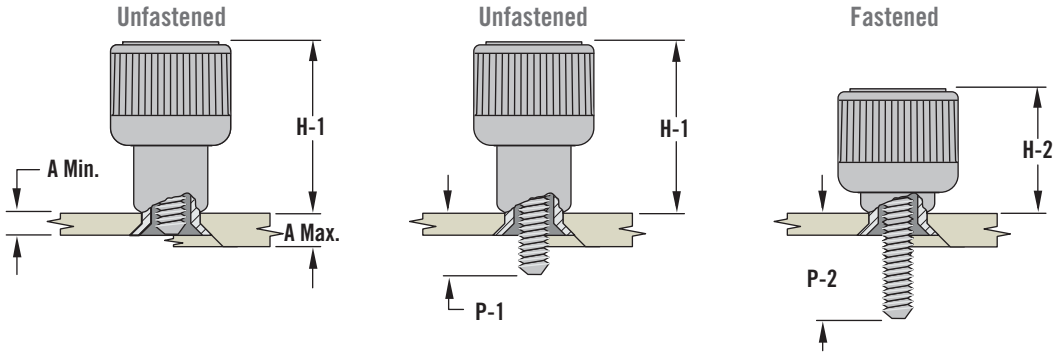
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

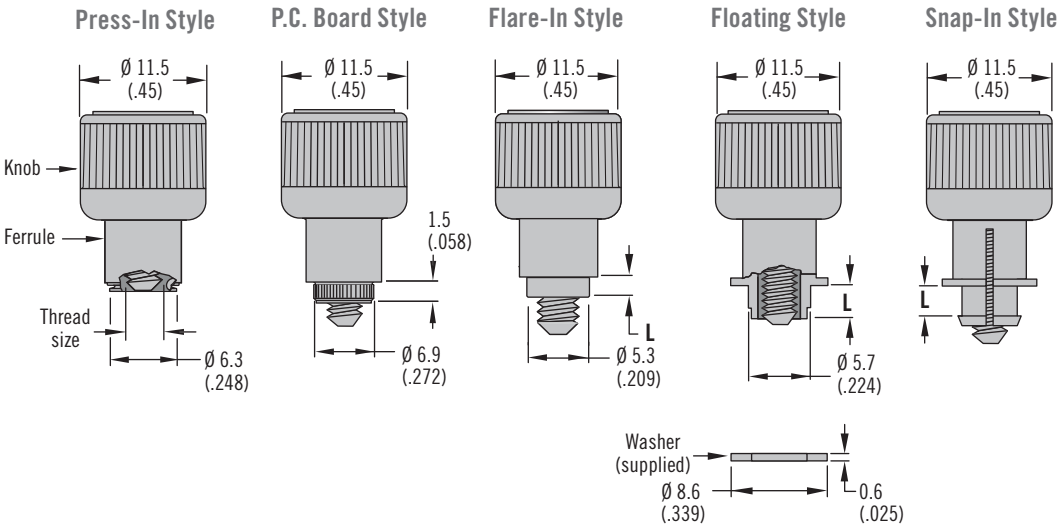


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	15.9 (.63)	11.2 (.44)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	5.3 (.21)	47-60-201-24	47-60-221-24	47-60-241-24	47-60-261-20	47-60-281-24
								2.1 (.08)	6.9 (.27)	47-61-201-24	47-61-221-24	47-61-241-24	47-61-261-20	47-61-281-24
								3.7 (.15)	8.5 (.33)	47-62-201-24	47-62-221-24	47-62-241-24	47-62-261-20	47-62-281-24
								5.3 (.21)	10.1 (.40)	47-63-201-24	47-63-221-24	47-63-241-24	47-63-261-20	47-63-281-24
P.C. Board Style	14.8 (.58)	10 (.39)	1.6 (.061)	~	~	0.8 (.03)	~	1.4 (.06)	6.1 (.24)	47-65-201-34	47-65-221-34	47-65-241-34	47-65-261-30	47-65-281-34
Flare-In Style	15.3 (.60)	10.4 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.8 (.03)	1.8 (.07)	1.1 (.04)	6 (.24)	47-10-202-14	47-10-222-14	47-10-242-14	47-10-262-10	47-10-282-14
			3.2 (.125)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.7 (.11)	7.6 (.30)	47-10-204-14	47-10-224-14	47-10-244-14	47-10-264-10	47-10-284-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.3 (.17)	9.2 (.36)	47-10-206-14	47-10-226-14	47-10-246-14	47-10-266-10	47-10-286-14
			6.4 (.250)	7.9 (.312)	4.8 (.189)		6.1 (.26)	5.9 (.23)	10.8 (.43)	47-10-208-14	47-10-228-14	47-10-248-14	47-10-268-10	47-10-288-14
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.7 (.11)	7.6 (.30)	47-11-202-14	47-11-222-14	47-11-242-14	47-11-262-10	47-11-282-14
								4.3 (.17)	9.2 (.36)	47-12-202-14	47-12-222-14	47-12-242-14	47-12-262-10	47-12-282-14
								5.9 (.23)	10.8 (.43)	47-13-202-14	47-13-222-14	47-13-242-14	47-13-262-10	47-13-282-14
			3.2 (.125)	4.8 (.189)	1.6 (.062)		3.4 (.135)	1.6 (.062)	4.8 (.189)	47-11-204-14	47-11-224-14	47-11-244-14	47-11-264-10	47-11-284-14
								5.9 (.23)	10.8 (.43)	47-12-204-14	47-12-224-14	47-12-244-14	47-12-264-10	47-12-284-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.9 (.23)	10.8 (.43)	47-11-206-14	47-11-226-14	47-11-246-14	47-11-266-10	47-11-286-14
Floating Style	15.3 (.60)	10.6 (.42)	~	0.8 (.031)	2.1 (.083)	2.2 (.09)	2.9 (.113)	2.4 (.09)	7.2 (.28)	47-10-210-14	47-10-230-14	47-10-250-14	47-10-270-10	47-10-290-14
								4 (.16)	8.8 (.35)	47-11-210-14	47-11-230-14	47-11-250-14	47-11-270-10	47-11-290-14
								5.6 (.22)	10.4 (.41)	47-12-210-14	47-12-230-14	47-12-250-14	47-12-270-10	47-12-290-14
			0.8 (.031)	1.6 (.063)	2.9 (.114)		3.7 (.144)	2.4 (.09)	7.2 (.28)	47-10-211-14	47-10-231-14	47-10-251-14	47-10-271-10	47-10-291-14
								4 (.16)	8.8 (.35)	47-11-211-14	47-11-231-14	47-11-251-14	47-11-271-10	47-11-291-14
								5.6 (.22)	10.4 (.41)	47-12-211-14	47-12-231-14	47-12-251-14	47-12-271-10	47-12-291-14
			1.6 (.063)	2.4 (.094)	3.7 (.146)		4.5 (.176)	4 (.16)	8.8 (.35)	47-10-212-14	47-10-232-14	47-10-252-14	47-10-272-10	47-10-292-14
								5.6 (.22)	10.4 (.41)	47-11-212-14	47-11-232-14	47-11-252-14	47-11-272-10	47-11-292-14
Snap-In Style	15.3 (.60)	10.6 (.42)	0.5 (.020)	1 (.039)	2 (.079)	0.8 (.03)	1.1 (.044)	0.8 (.03)	5.6 (.22)	47-60-210-14	47-60-230-14	47-60-250-14	47-60-270-10	47-60-290-14
								2.4 (.09)	7.2 (.28)	47-61-210-14	47-61-230-14	47-61-250-14	47-61-270-10	47-61-290-14
								4 (.16)	8.8 (.35)	47-62-210-14	47-62-230-14	47-62-250-14	47-62-270-10	47-62-290-14
								5.6 (.22)	10.4 (.41)	47-63-210-14	47-63-230-14	47-63-250-14	47-63-270-10	47-63-290-14
			1 (.039)	1.6 (.063)	2.6 (.103)		1.7 (.067)	2.4 (.09)	7.2 (.28)	47-60-212-14	47-60-232-14	47-60-252-14	47-60-272-10	47-60-292-14
								4 (.16)	8.8 (.35)	47-61-212-14	47-61-232-14	47-61-252-14	47-61-272-10	47-61-292-14
								5.6 (.22)	10.4 (.41)	47-62-212-14	47-62-232-14	47-62-252-14	47-62-272-10	47-62-292-14

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

Change 3 to 7: 47-80-102-**3**4
47-80-102-**7**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

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TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

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47 Captive Screws

Styled knob series · 8-32 thread size

- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

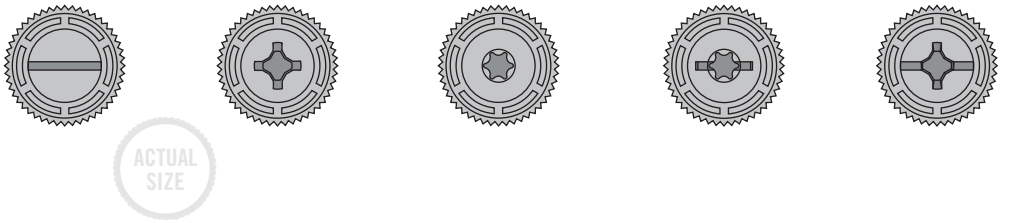
See pages 392 - 393, 497

Notes

To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

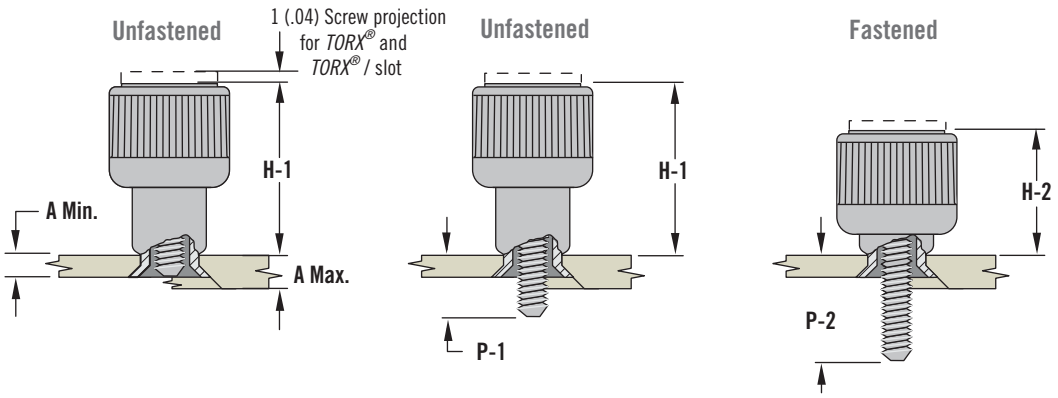
Recess Styles

Slotted | No. 2 Phillips | T25 *TORX®* | T25 *TORX®* / Slot Combination | No. 2 Phillips / Slot Combination

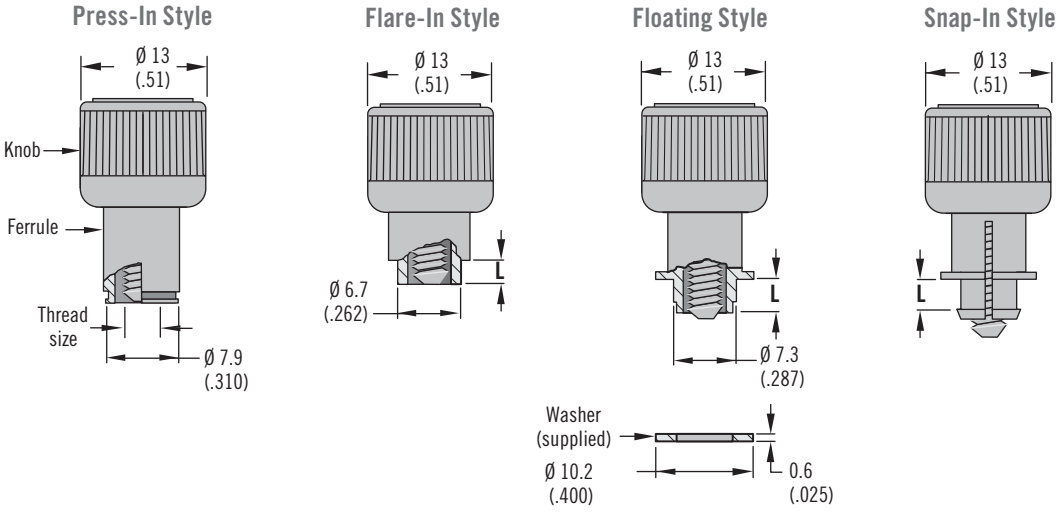


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	16.2 (.64)	11.2 (.44)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	5.6 (.22)	47-60-301-24	47-60-321-24	47-60-341-20	47-60-361-20	47-60-381-20
								2 (.08)	7.1 (.28)	47-61-301-24	47-61-321-24	47-61-341-20	47-61-361-20	47-61-381-20
								3.8 (.15)	8.9 (.35)	47-62-301-24	47-62-321-24	47-62-341-20	47-62-361-20	47-62-381-20
								5.3 (.21)	10.4 (.41)	47-63-301-24	47-63-321-24	47-63-341-20	47-63-361-20	47-63-381-20
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1 (.04)	6 (.24)	47-10-302-14	47-10-322-14	47-10-342-10	47-10-362-10	47-10-382-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.6 (.3)	47-10-304-14	47-10-324-14	47-10-344-10	47-10-364-10	47-10-384-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.3 (.17)	9.2 (.36)	47-10-306-14	47-10-326-14	47-10-346-10	47-10-366-10	47-10-386-10
			6.3 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	5.8 (.23)	10.8 (.43)	47-10-308-14	47-10-328-14	47-10-348-10	47-10-368-10	47-10-388-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.8 (.11)	7.6 (.3)	47-11-302-14	47-11-322-14	47-11-342-10	47-11-362-10	47-11-382-10
								4.3 (.17)	9.2 (.36)	47-12-302-14	47-12-322-14	47-12-342-10	47-12-362-10	47-12-382-10
								5.8 (.23)	10.8 (.43)	47-13-302-14	47-13-322-14	47-13-342-10	47-13-362-10	47-13-382-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-11-304-14	47-11-324-14	47-11-344-10	47-11-364-10	47-11-384-10
								5.8 (.23)	10.8 (.43)	47-12-304-14	47-12-324-14	47-12-344-10	47-12-364-10	47-12-384-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.8 (.23)	10.8 (.43)	47-11-306-14	47-11-326-14	47-11-346-10	47-11-366-10	47-11-386-10
Floating Style	16 (.63)	11.2 (.44)	~	0.8 (.031)	2.3 (.09)	2.3 (.09)	3.2 (.127)	2.3 (.09)	7.1 (.28)	47-10-310-14	47-10-330-14	47-10-350-10	47-10-370-10	47-10-390-10
								3.8 (.15)	8.9 (.35)	47-11-310-14	47-11-330-14	47-11-350-10	47-11-370-10	47-11-390-10
								5.6 (.22)	10.4 (.41)	47-12-310-14	47-12-330-14	47-12-350-10	47-12-370-10	47-12-390-10
			0.8 (.031)	1.6 (.063)	3.1 (.121)		4 (.158)	2.3 (.09)	7.1 (.28)	47-10-311-14	47-10-331-14	47-10-351-10	47-10-371-10	47-10-391-10
								3.8 (.15)	8.9 (.35)	47-11-311-14	47-11-331-14	47-11-351-10	47-11-371-10	47-11-391-10
								5.6 (.22)	10.4 (.41)	47-12-311-14	47-12-331-14	47-12-351-10	47-12-371-10	47-12-391-10
			1.6 (.063)	2.4 (.094)	3.9 (.153)		4.8 (.190)	3.8 (.15)	8.9 (.35)	47-10-312-14	47-10-332-14	47-10-352-10	47-10-372-10	47-10-392-10
								5.6 (.22)	10.4 (.41)	47-11-312-14	47-11-332-14	47-11-352-10	47-11-372-10	47-11-392-10
Snap-In Style	15.7 (.62)	11.2 (.44)	0.5 (.020)	1 (.039)	2 (.079)	0.9 (.03)	1.1 (.044)	1 (.04)	3 (.22)	47-60-310-14	47-60-330-14	47-60-350-10	47-60-370-10	47-60-390-10
								2.8 (.11)	7.1 (.28)	47-61-310-14	47-61-330-14	47-61-350-10	47-61-370-10	47-61-390-10
								4.3 (.17)	8.9 (.35)	47-63-310-14	47-62-330-14	47-62-350-10	47-62-370-10	47-62-390-10
								5.8 (.23)	10.4 (.41)	47-63-310-14	47-63-330-14	47-63-350-10	47-63-370-10	47-63-390-10
			1 (.039)	1.6 (.063)	2.6 (.103)		1.7 (.068)	2.8 (.11)	7.1 (.28)	47-60-312-14	47-60-332-14	47-60-352-10	47-60-372-10	47-60-392-10
								4.3 (.17)	8.9 (.35)	47-61-312-14	47-61-332-14	47-61-352-10	47-61-372-10	47-61-392-10
								5.8 (.23)	10.4 (.41)	47-62-312-14	47-62-332-14	47-62-352-10	47-62-372-10	47-62-392-10
			1.6 (.063)	2.5 (.098)	3.5 (.138)		2.6 (.103)	2.8 (.11)	7.1 (.28)	47-60-314-14	47-60-334-14	47-60-354-10	47-60-374-10	47-60-394-10
								4.3 (.17)	8.9 (.35)	47-61-314-14	47-61-334-14	47-61-354-10	47-61-374-10	47-61-394-10
								5.8 (.23)	10.4 (.41)	47-62-314-14	47-62-334-14	47-62-354-10	47-62-374-10	47-62-394-10

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · 10-32 thread size

- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

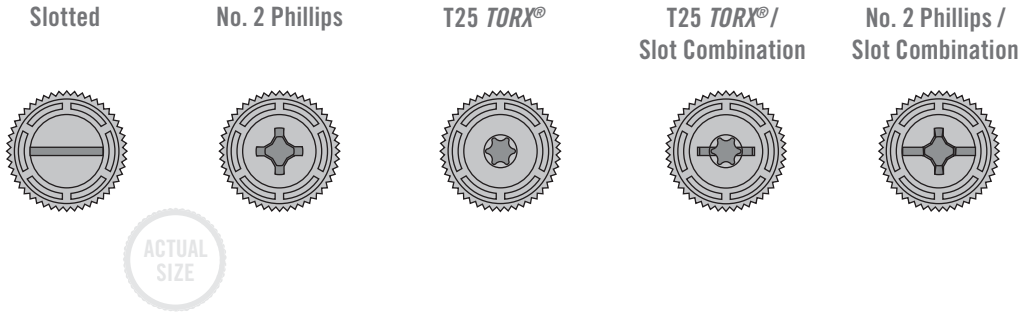
Installation Notes

See pages 392 - 393, 497

Notes

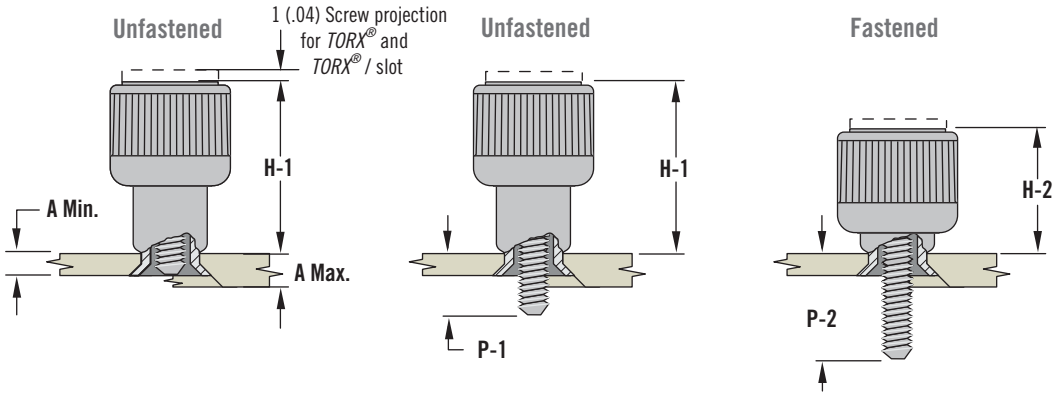
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

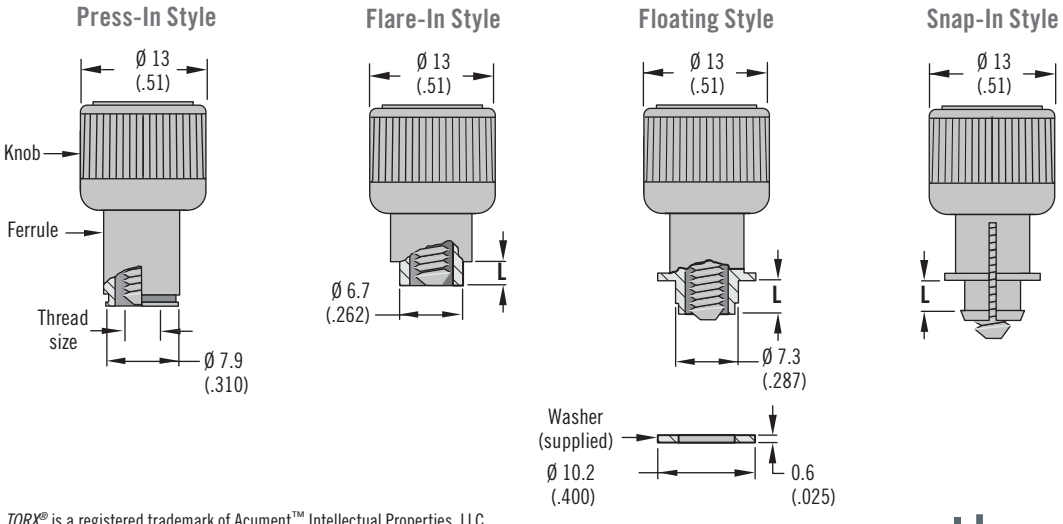


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Dimensions in millimeters (inch) unless otherwise stated

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Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	16.2 (.64)	11.2 (.44)	0.9 (.036)	~	~	0.6 (.02)	~	0.6 (.02)	5.5 (.22)	47-60-501-24	47-60-521-24	47-60-541-20	47-60-561-20	47-60-581-20
								2.2 (.09)	7.2 (.28)	47-61-501-24	47-61-521-24	47-61-541-20	47-61-561-20	47-61-581-20
								3.8 (.15)	8.9 (.35)	47-62-501-24	47-62-521-24	47-62-541-20	47-62-561-20	47-62-581-20
								5.4 (.21)	10.3 (.41)	47-63-501-24	47-63-521-24	47-63-541-20	47-63-561-20	47-63-581-20
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.6 (.02)	1.8 (.070)	1.2 (.05)	6.3 (.25)	47-10-502-14	47-10-522-14	47-10-542-10	47-10-562-10	47-10-582-10
			3.2 (.125)	4.7 (.187)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.9 (.31)	47-10-504-14	47-10-524-14	47-10-544-10	47-10-564-10	47-10-584-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	9.5 (.37)	47-10-506-14	47-10-526-14	47-10-546-10	47-10-566-10	47-10-586-10
			6.3 (.251)	7.9 (.312)	4.8 (.187)		6.6 (.260)	6 (.24)	11.1 (.44)	47-10-508-14	47-10-528-14	47-10-548-10	47-10-568-10	47-10-588-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	7.9 (.31)	47-11-502-14	47-11-522-14	47-11-542-10	47-11-562-10	47-11-582-10
								4.4 (.17)	9.5 (.37)	47-12-502-14	47-12-522-14	47-12-542-10	47-12-562-10	47-12-582-10
								6 (.24)	11.1 (.44)	47-13-502-14	47-13-522-14	47-13-542-10	47-13-562-10	47-13-582-10
			3.2 (.125)	4.8 (.187)	1.6 (.062)		3.4 (.135)	4.4 (.17)	9.5 (.37)	47-11-504-14	47-11-524-14	47-11-544-10	47-11-564-10	47-11-584-10
								6 (.24)	11.1 (.44)	47-12-504-14	47-12-524-14	47-12-544-10	47-12-564-10	47-12-584-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	11.1 (.44)	47-11-506-14	47-11-526-14	47-11-546-10	47-11-566-10	47-11-586-10
Floating Style	16 (.63)	11.2 (.44)	~	0.8 (.031)	2.3 (.090)	2.3 (.09)	3.2 (.127)	2.3 (.09)	7.1 (.28)	47-10-510-14	47-10-530-14	47-10-550-10	47-10-570-10	47-10-590-10
								4 (.16)	8.8 (.35)	47-11-510-14	47-11-530-14	47-11-550-10	47-11-570-10	47-11-590-10
								5.6 (.22)	10.4 (.41)	47-12-510-14	47-12-530-14	47-12-550-10	47-12-570-10	47-12-590-10
			0.8 (.031)	1.6 (.063)	3.1 (.122)		4 (.158)	2.4 (.09)	7.1 (.28)	47-10-511-14	47-10-531-14	47-10-551-10	47-10-571-10	47-10-591-10
								4 (.16)	8.8 (.35)	47-11-511-14	47-11-531-14	47-11-551-10	47-11-571-10	47-11-591-10
								5.6 (.22)	10.4 (.41)	47-12-511-14	47-12-531-14	47-12-551-10	47-12-571-10	47-12-591-10
			1.6 (.063)	2.4 (.094)	3.9 (.153)		4.8 (.190)	4 (.16)	8.8 (.35)	47-10-512-14	47-10-532-14	47-10-552-10	47-10-572-10	47-10-592-10
								5.6 (.22)	10.4 (.41)	47-11-512-14	47-11-532-14	47-11-552-10	47-11-572-10	47-11-592-10
Snap-In Style	15.7 (.62)	11.2 (.44)	0.5 (.020)	1 (.039)	2 (.079)	.9 (.04)	1.1 (.044)	1.2 (.04)	5.6 (.22)	47-60-510-14	47-60-530-14	47-60-550-10	47-60-570-10	47-60-590-10
								2.8 (.11)	7.1 (.28)	47-61-510-14	47-61-530-14	47-61-550-10	47-61-570-10	47-61-590-10
								4.3 (.17)	8.8 (.35)	47-63-510-14	47-62-530-14	47-62-550-10	47-62-570-10	47-62-590-10
								5.9 (.23)	10.4 (.41)	47-63-510-14	47-63-530-14	47-63-550-10	47-63-570-10	47-63-590-10
			1 (.039)	1.6 (.063)	2.6 (.103)		1.7 (.068)	2.8 (.11)	7.1 (.28)	47-60-512-14	47-60-532-14	47-60-552-10	47-60-572-10	47-60-592-10
								4.3 (.17)	8.8 (.35)	47-61-512-14	47-61-532-14	47-61-552-10	47-61-572-10	47-61-592-10
								5.9 (.23)	10.4 (.41)	47-62-512-14	47-62-532-14	47-62-552-10	47-62-572-10	47-62-592-10
			1.6 (.063)	2.5 (.098)	3.5 (.138)		2.6 (.103)	2.8 (.11)	7.1 (.28)	47-60-514-14	47-60-534-14	47-60-554-10	47-60-574-10	47-60-594-10
								4.3 (.17)	8.8 (.35)	47-61-514-14	47-61-534-14	47-61-554-10	47-61-574-10	47-61-594-10
								5.9 (.23)	10.4 (.41)	47-62-514-14	47-62-534-14	47-62-554-10	47-62-574-10	47-62-594-10

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Styled knob series · 1/4-20 thread size

- **Designed for hand operation**
- **Spring ejected**
- **Wide variety of sizes, recesses and installation options**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

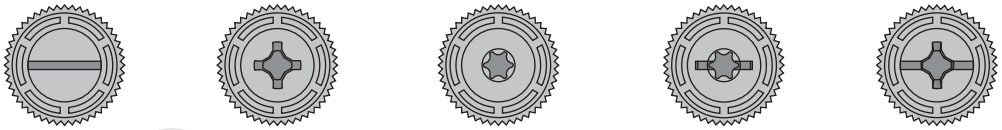
See pages 392 - 393, 497

Notes

To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle

Recess Styles

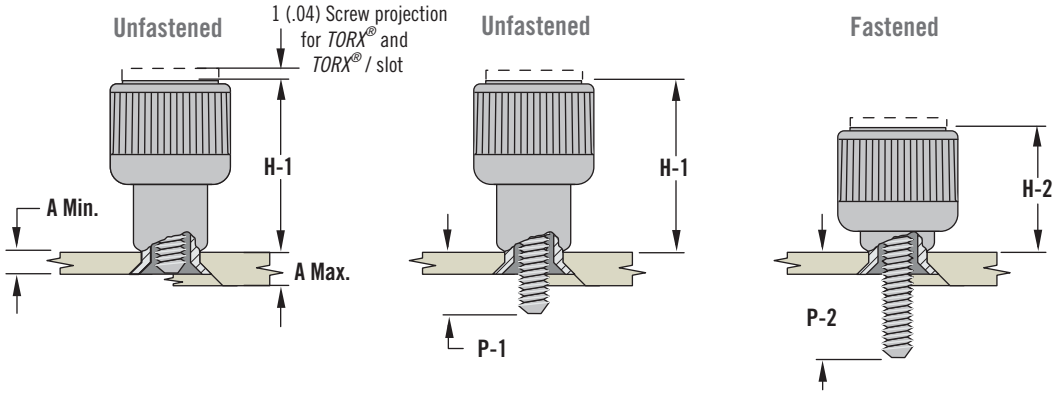
Slotted | No. 2 Phillips | T30 *TORX®* | T30 *TORX®* / Slot Combination | No. 2 Phillips / Slot Combination



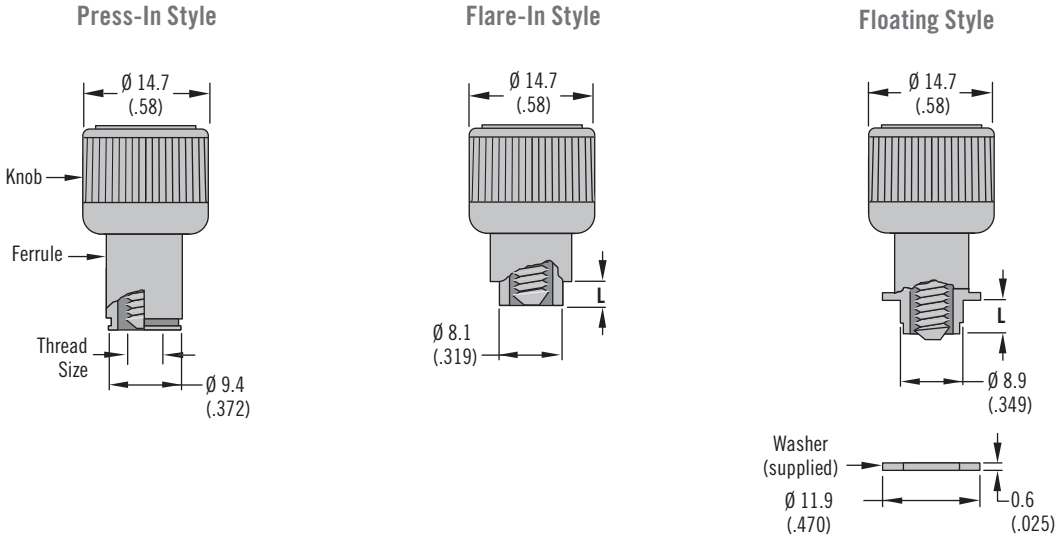
ACTUAL SIZE

Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



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Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess	*TORX*® / Slot Combination	Phillips / Slot Combination
Press-In Style	20 (.79)	13.4 (.53)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	7.1 (.28)	47-60-601-24	47-60-621-24	47-60-641-20	47-60-661-20	47-60-681-20
								2.1 (.08)	8.7 (.34)	47-61-601-24	47-61-621-24	47-61-641-20	47-61-661-20	47-61-681-20
								3.7 (.15)	10.3 (.41)	47-62-601-24	47-62-621-24	47-62-641-20	47-62-661-20	47-62-681-20
								5.3 (.21)	11.9(.47)	47-63-601-24	47-63-621-24	47-63-641-20	47-63-661-20	47-63-681-20
Flare-In Style	19.3 (.76)	12.7 (.50)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1.2 (.05)	7.8 (.31)	47-10-602-14	47-10-622-14	47-10-642-10	47-10-662-10	47-10-682-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	9.4 (.37)	47-10-604-14	47-10-624-14	47-10-644-10	47-10-664-10	47-10-684-10
			4.8 (.188)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	11 (.43)	47-10-606-14	47-10-626-14	47-10-646-10	47-10-666-10	47-10-686-10
			6.4 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	6 (.24)	12.6 (.50)	47-10-608-14	47-10-628-14	47-10-648-10	47-10-668-10	47-10-688-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	9.4 (.37)	47-11-602-14	47-11-622-14	47-11-642-10	47-11-662-10	47-11-682-10
								4.4 (.17)	11 (.43)	47-12-602-14	47-12-622-14	47-12-642-10	47-12-662-10	47-12-682-10
								6 (.24)	12.6 (.50)	47-13-602-14	47-13-622-14	47-13-642-10	47-13-662-10	47-13-682-10
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.4 (.17)	11 (.43)	47-11-604-14	47-11-624-14	47-11-644-10	47-11-664-10	47-11-684-10
								6 (.24)	12.6 (.50)	47-12-604-14	47-12-624-14	47-12-644-10	47-12-664-10	47-12-684-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	12.6 (.50)	47-11-606-14	47-11-626-14	47-11-646-10	47-11-666-10	47-11-686-10
Floating Style	20 (.79)	13.3 (.52)	~	0.8 (.031)	2.3 (.090)	2.3 (.09)	3.2 (.127)	2.1 (.08)	8.8 (.35)	47-10-610-14	47-10-630-14	47-10-650-10	47-10-670-10	47-10-690-10
								3.7 (.15)	10.4 (.41)	47-11-610-14	47-11-630-14	47-11-650-10	47-11-670-10	47-11-690-10
								5.3 (.21)	12 (.47)	47-12-610-14	47-12-630-14	47-12-650-10	47-12-670-10	47-12-690-10
			0.8 (.031)	1.6 (.063)	3.1 (.122)		4 (.158)	2.1 (.08)	8.8 (.35)	47-10-611-14	47-10-631-14	47-10-651-10	47-10-671-10	47-10-691-10
								3.7 (.15)	10.4 (.41)	47-11-611-14	47-11-631-14	47-11-651-10	47-11-671-10	47-11-691-10
								5.3 (.21)	12 (.47)	47-12-611-14	47-12-631-14	47-12-651-10	47-12-671-10	47-12-691-10
			1.6 (.063)	2.4 (.094)	3.9 (.153)		4.8 (.190)	3.7 (.15)	10.4 (.41)	47-10-612-14	47-10-632-14	47-10-652-10	47-10-672-10	47-10-692-10
								5.3 (.21)	12 (.47)	47-11-610-14	47-11-632-14	47-11-652-10	47-11-672-10	47-11-692-10

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black powder coated finish, change the part number from the table as shown:

Change 1 to 5: 47-80-102-**1**4
47-80-102-**5**4

Change 2 to 6: 47-80-102-**2**4
47-80-102-**6**4

For a smooth knob, change the part number from the table as shown:

Change 0 to 1: 47-90-161-2**0**
47-90-161-2**1**

Change 4 to 5: 47-90-101-2**4**
47-90-101-2**5**

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply

TORX® is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

4C Captive Screws

Prism series · M3, M4 and M5 thread size

- **Designate access points with color**
- **Color match captive screws to your industrial design**
- **High strength screw for use with high torque drivers**

Material and Finish

Knob: PC/ABS

Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff:
Press-in: Carbon steel, zinc plate, chromate, plus sealer
PCB: Stainless steel
Flare-in and Floating: Aluminum, natural

Performance Details

Flammability Rating: UL94-V0

Installation Notes

See pages 392 - 393, 497

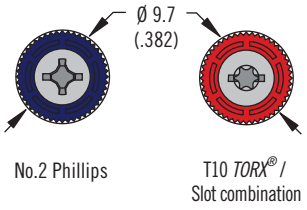
Notes

Press-in: Max. panel hardness 170 HV (85 HRB)

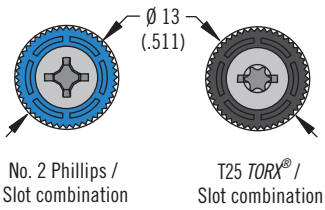
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle.

Recess Styles

M3

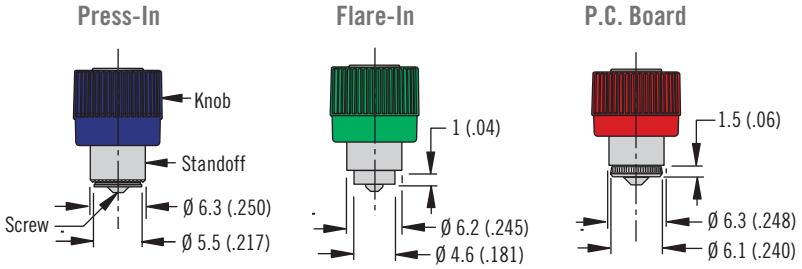


M4 and M5

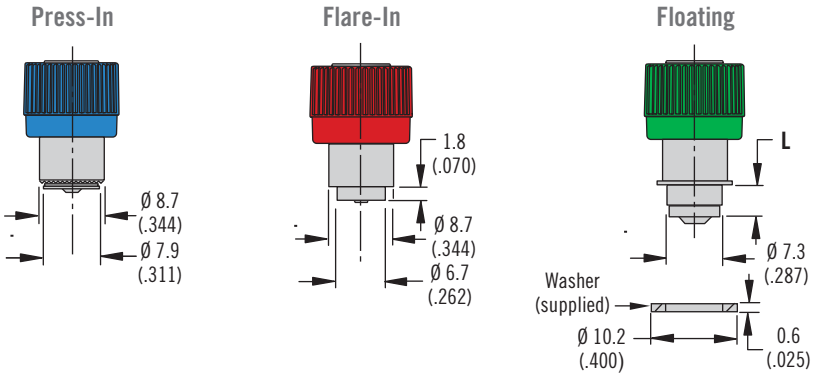


Installation Styles

M3

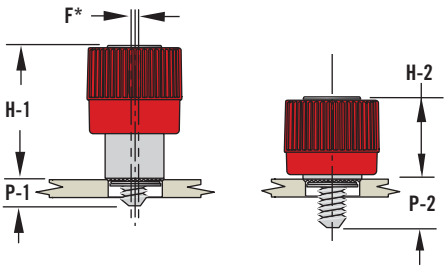


M4 and M5



Knob Height and Screw Projection

(Press-in style shown)



TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

M3 Thread Size

Installation Style	Outer Panel Dimensions		B	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.		Phillips Recess	*TORX®* / Slot Combination	P-1	P-2	H-1	H-2	F*	Ø D	Ø Z
Press-In Style	0.9 (.036)	~	~	4C-PH-M3-1P0-K000	4C-TS-M3-1P0-K000	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	$5.6^{+0.04}_{-0.04}$ ($.219^{+.003}_{-0}$)	$3.2^{+0.2}_{-0.1}$ ($.125^{+.008}_{-.004}$)
				4C-PH-M3-2P0-K000	4C-TS-M3-2P0-K000	2.5 (.10)	5.4 (.21)					
P.C. Board Style	1.6 (.063)	~	~	4C-PH-M3-1B0-K000	4C-TS-M3-1B0-K000	1.5 (.06)	3.8 (.15)	10.9 (.43)	8.5 (.33)	0.7 (.03)	$5.6^{+0.1}_{-0.05}$ ($.220^{+.004}_{-.002}$)	$3.2^{+0.2}_{-0.1}$ ($.220^{+.008}_{-.004}$)
Flare-In Style	0.8 (.031)	1.5 (.058)	0.4 (.016)	4C-PH-M3-1F1-K000	4C-TS-M3-1F1-K000	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	$4.8^{+0.08}_{-0.05}$ ($.189^{+.003}_{-.002}$)	$3.0^{+0.2}_{-0.1}$ ($.125^{+.008}_{-.004}$)
				4C-PH-M3-2F1-K000	4C-TS-M3-2F1-K000	1.5 (.06)	5.4 (.21)					

M4 Thread Size

Installation Style	Outer Panel Dimensions		B	L	Part Number		Screw Projection Beyond Outer Surface Of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.			Phillips / Slot Combination	*TORX®* / Slot Combination	P-1	P-2	H-1	H-2	F*	Ø D	Ø Z
Press-In Style	0.9 (.036)†	~	~	~	4C-PS-M4-1P0-K000	4C-TS-M4-1P0-K000	0.5 (.02)	5.6 (.22)	16.3 (.64)	11.3 (.45)	0.7 (.03)	$8^{+0}_{-0.08}$ ($.315^{+0}_{-.003}$)	$4.4^{+0.2}_{-0.1}$ ($.173^{+.008}_{-.004}$)
					4C-PS-M4-2P0-K000	4C-TS-M4-2P0-K000	2 (.08)	7.1 (.28)					
Flare-In Style	1.5 (.060)	3.2 (.058)	0.4 (.016)	~	4C-PS-M4-1F1-K000	4C-TS-M4-1F1-K000	0.6 (.02)	5.6 (.22)	16.3 (.64)	11.3 (.45)	0.6 (.02)	$6.8^{+0.08}_{-0.04}$ ($.266^{+.005}_{-.0}$)	$4.2^{+0.05}_{-0}$ ($.165^{+.002}_{-.0}$)
					4C-PS-M4-2F1-K000	4C-TS-M4-2F1-K000	2.1 (.08)	7.1 (.28)					
Floating Style	0.8 (.031)	1.6 (.063)	3.1 (.122)	4 (.158)	4C-PS-M4-3T2-K000	4C-TS-M4-3T2-K000	3.8 (.15)	8.8 (.35)	16.2 (.64)	11.2 (.44)	2.3 (.09)	$8.8^{+0.08}_{-0.03}$ ($.346^{+.003}_{-.001}$)	~
					4C-PS-M4-4T2-K000	4C-TS-M4-4T2-K000	5.4 (.21)	10.4 (.41)					
	1.6 (.063)	2.4 (.094)	3.9 (.153)	4.8 (.190)	4C-PS-M4-3T3-K000	4C-TS-M4-3T3-K000	3.8 (.15)	8.8 (.35)					
					4C-PS-M4-4T3-K000	4C-TS-M4-4T3-K000	5.4 (.21)	10.4 (.41)					

M5 Thread Size

Installation Style	Outer Panel Dimensions		B	L	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.			Phillips / Slot Combination	*TORX®* / Slot Combination	P-1	P-2	H-1	H-2	F*	Ø D	Ø Z
Press-In Style	0.9 (.036)†	~	~	~	4C-PS-M5-1P0-K000	4C-TS-M5-1P0-K000	0.4 (.2)	5.6 (.22)	16.4 (.65)	11.3 (.45)	0.8 (.03)	$8^{+0}_{-0.08}$ ($.315^{+0}_{-.003}$)	$5.2^{+0.2}_{-0.1}$ ($.205^{+.008}_{-.004}$)
					4C-PS-M5-2P0-K000	4C-TS-M5-2P0-K000	2 (.08)	7.2 (.28)					
Flare-In Style	1.5 (.06)	3.2 (.058)	0.4 (.016)	~	4C-PS-M5-1F1-K000	4C-TS-M5-1F1-K000	0.5 (.02)	5.6 (.22)	16.4 (.65)	11.3 (.45)	0.7 (.03)	$6.8^{+0.08}_{-0.04}$ ($.266^{+.005}_{-.0}$)	$4.9^{+0.05}_{-0}$ ($.191^{+.002}_{-.0}$)
					4C-PS-M5-2F1-K000	4C-TS-M5-2F1-K000	2.1 (.08)	7.2 (.28)					
Floating Style	0.8 (.031)	1.6 (.063)	3.1 (.122)	4 (.158)	4C-PS-M5-3T2-K000	4C-TS-M5-3T2-K000	3.7 (.15)	8.9 (.35)	16.3 (.64)	11.2 (.44)	2.3 (.09)	$8.8^{+0.08}_{-0.03}$ ($.346^{+.003}_{-.001}$)	~
					4C-PS-M5-4T2-K000	4C-TS-M5-4T2-K000	5.3 (.21)	10.5 (.41)					

(shown in table)

000
Black

008
Blue

012
Purple

013
Red

014
Green

Your Color
Contact Southco

Notes: *F indicates the maximum float in the unfastened position.
† For panels thinner than 0.9 (.036), contact Southco.

TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Part Number

See table

Specifying Color:
To indicate color, change the last three digits of the part number.

Example:
4C-PS-06-1P0-K000, black
4C-PS-06-1P0-K013, red

INFO CLIC www.southco.com/4C

4C Captive Screws

Prism series · 4-40, 6-32 and 10-32 thread size

- **Designate access points with color**
- **Color match captive screws to your industrial design**
- **High strength screw for use with high torque drivers**

Material and Finish

Knob: PC/ABS

Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff:
Press-in: Carbon steel, zinc plate, chromate, plus sealer
PCB: Stainless steel
Flare-in and Floating: Aluminum, natural

Performance Details

Flammability Rating: UL94-V0

Installation Notes

See pages 392 - 393, 497

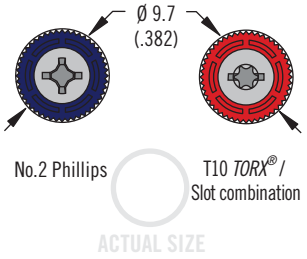
Notes

Press-in: Max. panel hardness 170 HV (85 HRB)

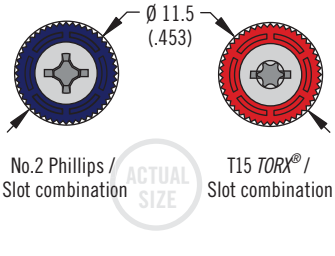
To ensure you receive *SOUTHCO®* quality parts, look for the segmented circle.

Recess Styles

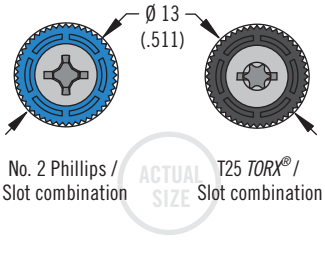
4-40



6-32

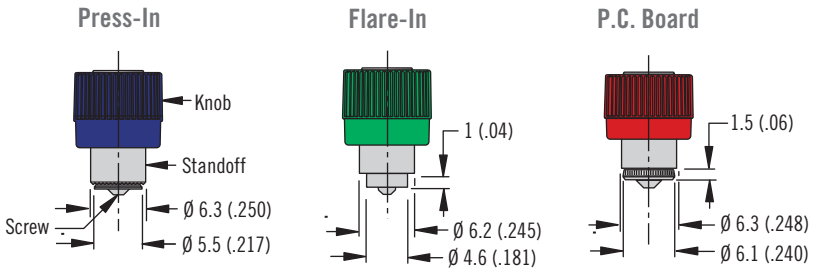


10-32

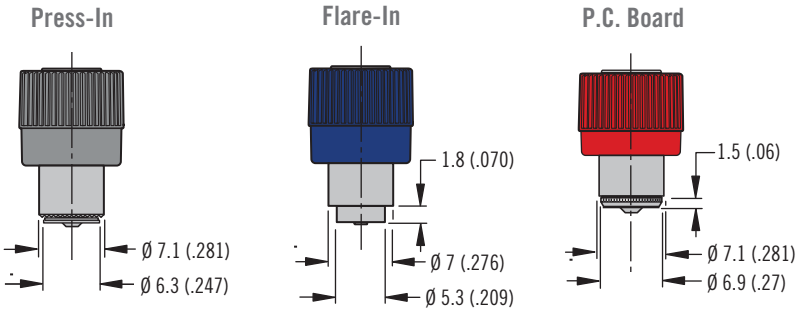


Installation Styles

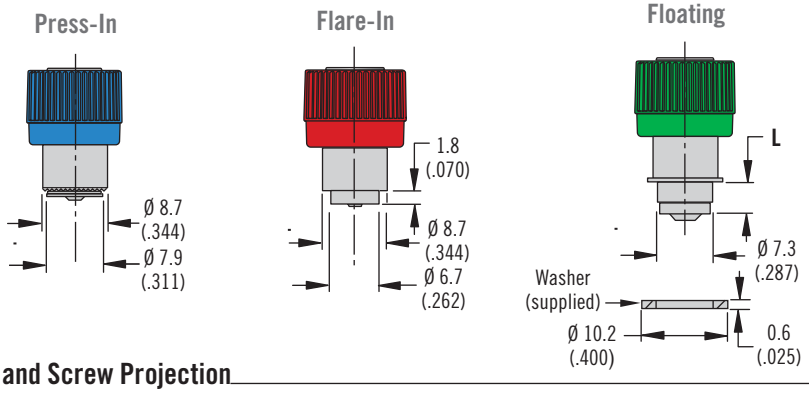
4-40



6-32

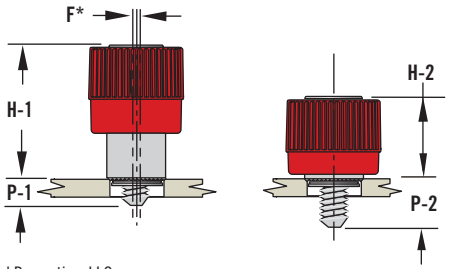


10-32



Knob Height and Screw Projection

(Press-in style shown)



TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

INFO CLIC www.southco.com/4C

southco® CONNECT · CREATE · INNOVATE

4-40 Thread Size

Installation Style	Outer Panel Dimensions		B	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.		Phillips Recess	*TORX®* / Slot Combination	P-1	P-2	H-1	H-2	F*	Ø D	Ø Z
Press-In Style	0.9† (.036)	~	~	4C-PH-04-1P0-K**000**	4C-TS-04-1P0-K**000**	0.8 (.03)	3.8 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	5.6 $^{+.04}_{-.04}$ (.219 $^{+.003}_{-0}$)	3.2 $^{+0.2}_{-0.1}$ (.125 $^{+.008}_{-.004}$)
				4C-PH-04-2P0-K**000**	4C-TS-04-2P0-K**000**	2.5 (.10)	5.3 (.21)					
P.C. Board Style	1.6 (.063)	~	~	4C-PH-04-1B0-K**000**	4C-TS-04-1B0-K**000**	1.5 (.06)	3.8 (.15)	10.9 (.43)	8.5 (.33)	0.7 (.03)	5.6 $^{+0.1}_{-0.05}$ (.220 $^{+.004}_{-.002}$)	3.2 $^{+0.2}_{-0.1}$ (.220 $^{+.008}_{-.004}$)
				4C-PH-04-2B0-K**000**	4C-TS-04-2B0-K**000**	3.3 (.13)	5.5 (.22)					
Flare-In Style	0.8 (.031)	1.5 (.059)	0.4 (.016)	4C-PH-04-1F1-K**000**	4C-TS-04-1F1-K**000**	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	4.8 $^{+0.08}_{-0.05}$ (.187 $^{+.005}_{-.000}$)	3.0 $^{+0.2}_{-0.1}$ (.125 $^{+.008}_{-.004}$)
				4C-PH-04-2F1-K**000**	4C-TS-04-2F1-K**000**	2.5 (.10)	5.4 (.21)					

6-32 Thread Size

Installation Style	Outer Panel Dimensions		B	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.		Phillips / Slot Combination	*TORX®* / Slot Combination	P-1	P-2	H-1	H-2	F*	Ø D	Ø Z
Press-In Style	0.9† (.036)	~	~	4C-PS-06-1P0-K**000**	4C-TS-06-1P0-K**000**	0.7 (.03)	5 (.20)	15.5 (.61)	11.3 (.44)	0.7 (.03)	6.4 $^{+0.03}_{-0.05}$ (.250 $^{+.003}_{-0}$)	3.7 $^{+0.2}_{-0.1}$ (.146 $^{+.008}_{-.004}$)
				4C-PS-06-2P0-K**000**	4C-TS-06-2P0-K**000**	2.3 (.09)	6.6 (.26)					
P.C. Board Style	1.5 (.06)	~	~	4C-PS-06-1B0-K**000**	4C-TS-06-1B0-K**000**	1.7 (.07)	6.2 (.25)	14.5 (.57)	10 (.39)	0.7 (.03)	6.4 ± 0.1 (.252 ± .004)	3.7 $^{+0.2}_{-0.1}$ (.146 $^{+.008}_{-.004}$)
Flare-In Style	1.5 (.059)	3.2 (.125)	0.4 (.016)	4C-PS-06-1F1-K**000**	4C-TS-06-1F1-K**000**	0.8 (.03)	5 (.20)	15.5 (.61)	11.3 (.44)	0.7 (.03)	5.4 $^{+0.1}_{-0}$ (.213 $^{+.005}_{-.000}$)	3.7 $^{+0.2}_{-0.1}$ (.146 $^{+.008}_{-.004}$)
				4C-PS-06-2F1-K**000**	4C-TS-06-2F1-K**000**	2.3 (.09)	6.6 (.26)					

10-32 Thread Size

Installation Style	Outer Panel Dimensions		B	L	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.			Phillips / Slot Combination	*TORX®* / Slot Combination	P-1	P-2	H-1	H-2	F*	Ø D	Ø Z
Press-In Style	0.9† (.036)	~	~	~	4C-PS-10-1P0-K**000**	4C-TS-10-1P0-K**000**	0.5 (.02)	5.6 (.22)	16.3 (.64)	11.3 (.45)	0.6 (.02)	8 $^{+0}_{-0.08}$ (.315 $^{+0}_{-.003}$)	5.2 $^{+0.2}_{-0.1}$ (.205 $^{+.008}_{-.004}$)
					4C-PS-10-2P0-K**000**	4C-TS-10-2P0-K**000**	2 (.08)	7.1 (.28)					
Flare-In Style	1.5 (.058)	3.2 (.125)	0.4 (.016)	1.8 (.070)	4C-PS-10-1F1-K**000**	4C-TS-10-1F1-K**000**	0.6 (.02)	5.6 (.22)		11.3 (.45)	0.6 (.02)	6.8 $^{+0.08}_{-0.04}$ (.266 $^{+.005}_{-.0}$)	4.9 $^{+0.05}_{-0}$ (.191 $^{+.002}_{-.0}$)
					4C-PS-10-2F1-K**000**	4C-TS-10-2F1-K**000**	2.1 (.08)	7.1 (.28)					
Floating Style	0.8 (.031)	1.6 (.063)	3.1 (.122)	4 (.158)	4C-PS-10-3T2-K**000**	4C-TS-10-3T2-K**000**	3.8 (.15)	8.8 (.35)		11.2 (.44)	2.3 (.09)	8.8 $^{+0.08}_{-0.03}$ (.346 $^{+.003}_{-.001}$)	~
					4C-PS-10-4T2-K**000**	4C-TS-10-4T2-K**000**	5.4 (.21)	10.4 (.41)					
	1.6 (.063)	2.4 (.094)	3.9 (.153)	4.8 (.190)	4C-PS-10-3T3-K**000**	4C-TS-10-3T3-K**000**	3.8 (.15)	8.8 (.35)					
					4C-PS-10-4T3-K**000**	4C-TS-10-4T3-K**000**	5.4 (.21)	10.4 (.41)					

(shown in table)

000 Black

008 Blue

012 Purple

013 Red

014 Green

Your Color Contact Southco

Notes: *F indicates the maximum float in the unfastened position.
† For panels thinner than 0.9 (.036), contact Southco.

TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Part Number

See table

Specifying color:
To indicate color, change the last three digits of the part number.

Example:
4C-PS-06-1P0-K000, black
4C-PS-06-1P0-K013, red

INFO CLIC www.southco.com/4C

47 Captive Screws

Restricted access series · M4 and M5 thread size

- **Reduces risk of unauthorized access**
- **Meets UL-1950, IEC 950 and EN-60950**
- **Hand operation with tool-only removal**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating: Aluminum, natural

Knob: Aluminum, natural or black organic coating

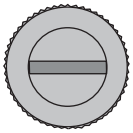
Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Installation Notes

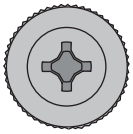
See pages 392 - 393, 497

Recess Styles

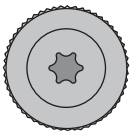
Slotted



No. 2 Phillips



T25 *TORX®*

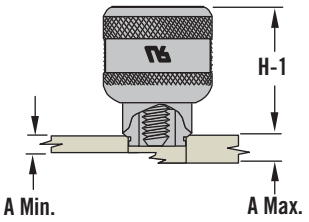


ACTUAL SIZE

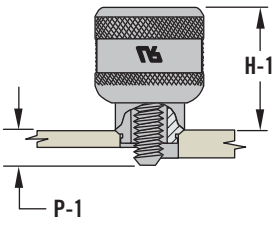
Knob Height and Screw Projection

(Press-in style shown)

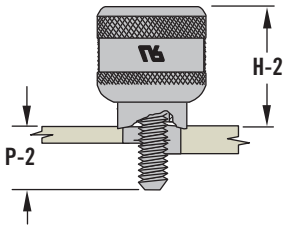
Unfastened



Unfastened

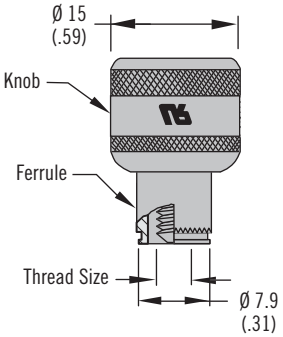


Fastened

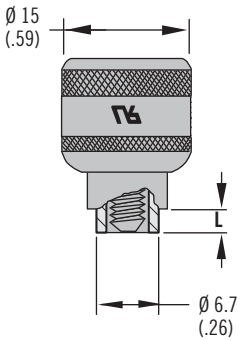


Installation Styles

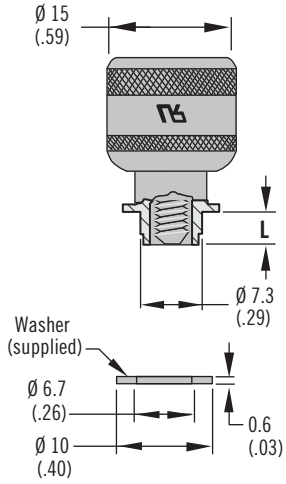
Press-In Style



Flare-In Style



Floating Style



TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

M4 Thread Size

Installation Style	Knob Height		Outer Panel Dimensions		Dimension B*	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number		
	H-1	H-2	A Min.	A Max.			P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess
Press-In Style	18.5 (.73)	14 (.55)	0.9 (.036)	~	~	~	0.7 (.03)	5.6 (.22)	47-90-301-22	47-90-321-22	47-90-341-22
							2.3 (.09)	7.2 (.28)	47-91-301-22	47-91-321-22	47-91-341-22
							3.8 (.15)	8.7 (.34)	47-92-301-22	47-92-321-22	47-92-341-22
							5.4 (.21)	10.3 (.41)	47-93-301-22	47-93-321-22	47-93-341-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-80-302-22	47-80-322-22	47-80-342-22
			3.2 (.125)	4.8 (.188)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-80-304-22	47-80-324-22	47-80-344-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-81-302-22	47-81-322-22	47-81-342-22
							4.1 (.16)	8.9 (.35)	47-82-302-22	47-82-322-22	47-82-342-22
							6.1 (.24)	10.9 (.43)	47-83-302-22	47-83-322-22	47-83-342-22
Floating Style	18 (.70)	14 (.55)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	2.4 (.09)	7.2 (.28)	47-80-310-22	47-80-330-22	47-80-350-22
							3.4 (.13)	8.2 (.32)	47-81-310-22	47-81-330-22	47-81-350-22
							5.4 (.21)	10.2 (.40)	47-82-310-22	47-82-330-22	47-82-350-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	2.4 (.09)	7.2 (.22)	47-80-311-22	47-80-331-22	47-80-351-22
							3.4 (.13)	8.2 (.32)	47-81-311-22	47-81-331-22	47-81-351-22
							5.4 (.21)	10.2 (.40)	47-82-311-22	47-82-331-22	47-82-351-22

M5 Thread Size

Installation Style	Knob Height		Outer Panel Dimensions		Dimension B*	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number		
	H-1	H-2	A Min.	A Max.			P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess
Press-In Style	18.5 (.73)	14 (.55)	0.9 (.036)	~	~	~	0.7 (.03)	5.6 (.22)	47-90-501-22	47-90-521-22	47-90-541-22
							2.3 (.09)	7.2 (.28)	47-91-501-22	47-91-521-22	47-91-541-22
							3.8 (.15)	8.7 (.34)	47-92-501-22	47-92-521-22	47-92-541-22
							5.4 (.21)	10.3 (.41)	47-93-501-22	47-93-521-22	47-93-541-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-80-502-22	47-80-522-22	47-80-542-22
			3.2 (.125)	4.8 (.188)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-80-504-22	47-80-524-22	47-80-544-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-81-502-22	47-81-522-22	47-81-542-22
							4.1 (.16)	8.9 (.35)	47-82-502-22	47-82-522-22	47-82-542-22
							6.1 (.24)	10.9 (.43)	47-83-502-22	47-83-522-22	47-83-542-22
			3.2 (.125)	4.8 (.188)	1.6 (.062)	3.4 (.14)	4.1 (.16)	8.9 (.35)	47-81-504-22	47-81-524-22	47-81-544-22
							6.1 (.24)	10.9 (.43)	47-82-504-22	47-82-524-22	47-82-544-22
Floating Style	18 (.70)	14 (.55)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	2.4 (.09)	7.2 (.28)	47-80-510-22	47-80-530-22	47-80-550-22
							3.4 (.13)	8.2 (.32)	47-81-510-22	47-81-530-22	47-81-550-22
							5.4 (.21)	10.2 (.40)	47-82-510-22	47-82-530-22	47-82-550-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	2.4 (.09)	7.2 (.28)	47-80-511-22	47-80-531-22	47-80-551-22
							3.4 (.13)	8.2 (.32)	47-81-511-22	47-81-531-22	47-81-551-22
							5.4 (.21)	10.4 (.40)	47-82-511-22	47-82-531-22	47-82-551-22
			1.6 (.063)	2.4 (.094)	3.9 (.15)	4.8 (.19)	3.4 (.15)	8.2 (.35)	47-80-512-22	47-80-532-22	47-80-552-22
							5.4 (.21)	10.2 (.40)	47-81-512-22	47-81-532-22	47-81-552-22

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black finish, change the part number from the table as shown:

Change 2 to 6: 47-80-102-**2**2
47-80-102-**6**2

Part Number

See table

All screw part numbers shown in table are for a natural finish

For black finish minimums may apply

TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47 Captive Screws

Restricted access series · 6-32 and 10-32 thread size

- **Reduces risk of unauthorized access**
- **Meets UL-1950, IEC 950 and EN-60950**
- **Hand operation with tool-only removal**

Material and Finish

Ferrule:
Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating: Aluminum, natural

Knob: Aluminum, natural or black organic coating

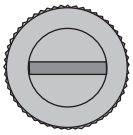
Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Installation Notes

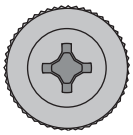
See pages 392 - 393, 497

Recess Styles

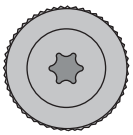
Slotted



No. 2 Phillips



T 15 *TORX*® - 6-32
T 25 *TORX*® - 10-32

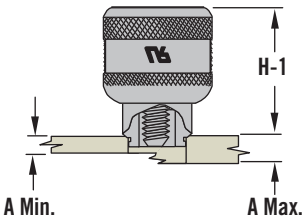


ACTUAL SIZE

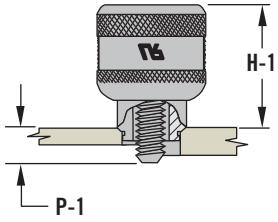
Knob Height and Screw Projection

(Press-in style shown)

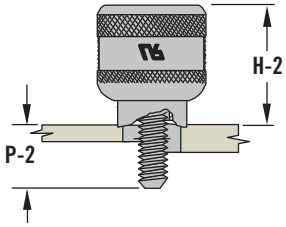
Unfastened



Unfastened

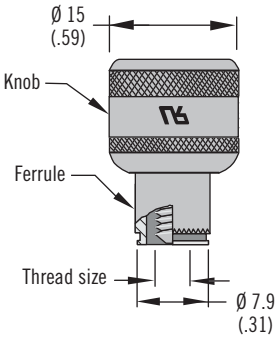


Fastened

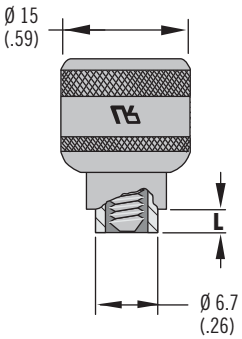


Installation Styles

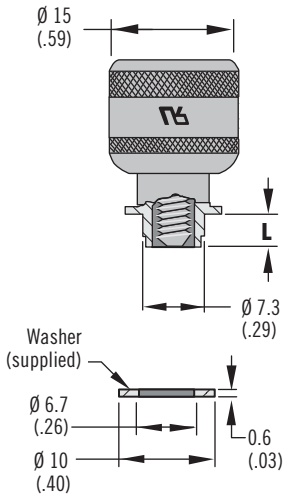
Press-In Style



Flare-In Style



Floating Style



TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

6-32 Thread Size

Installation Style	Knob Height†		Outer Panel Dimensions		Dimension B*	Flange Length L	Screw Projection Beyond Outer Surface Of Panel		Part Number		
	H-1	H-2	A Min.	A Max.			P-1	P-2	Slotted Recess	Phillips Recess	*TORX*® Recess
Press-In Style	18.5 (.73)	14 (.54)	0.9 (.036)	~	~	~	0.5 (.02)	5.3 (.21)	47-60-201-22	47-60-221-22	47-60-241-22
							2.3 (.09)	6.9 (.27)	47-61-201-22	47-61-221-22	47-61-241-22
							3.8 (.15)	8.3 (.33)	47-62-201-22	47-62-221-22	47-62-241-22
							5.3 (.21)	10.1 (.41)	47-63-201-22	47-63-221-22	47-63-241-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-10-202-22	47-10-222-22	47-10-242-22
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-10-204-22	47-10-224-22	47-10-244-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-11-202-22	47-11-222-22	47-11-242-22
							4.1 (.16)	8.9 (.35)	47-12-202-22	47-12-222-22	47-12-242-22
							6.1 (.24)	10.9 (.43)	47-13-202-22	47-13-222-22	47-13-242-22
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.4 (.14)	4.1 (.16)	8.9 (.35)	47-11-204-22	47-11-224-22	47-11-244-22
							6.1 (.24)	10.9 (.43)	47-12-204-22	47-12-224-22	47-12-244-22
Floating Style	18 (.70)	14 (.54)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	2.4 (.09)	7.2 (.28)	47-10-210-22	47-10-230-22	47-10-250-22
							3.4 (.13)	8.2 (.32)	47-11-210-22	47-11-230-22	47-11-250-22
							5.4 (.21)	10.2 (.40)	47-12-210-22	47-12-230-22	47-12-250-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	2.4 (.09)	7.2 (.22)	47-10-211-22	47-10-231-22	47-10-251-22
							3.4 (.13)	8.2 (.32)	47-11-211-22	47-11-231-22	47-11-251-22
							5.4 (.21)	10.2 (.40)	47-12-211-22	47-12-231-22	47-12-251-22
			1.6 (.063)	2.4 (.094)	3.9 (.15)	4.8 (.19)	3.4 (.13)	8.2 (.32)	47-10-212-22	47-10-232-22	47-10-252-22
							5.4 (.21)	10.2 (.40)	47-11-212-22	47-11-232-22	47-11-252-22

10-32 Thread Size

Press-In Style	18.5 (.73)	14 (.54)	0.9 (.036)	~	~	~	0.7 (.03)	5.6 (.22)	47-60-501-22	47-60-521-22	47-60-541-22
							2.3 (.09)	7.2 (.28)	47-61-501-22	47-61-521-22	47-61-541-22
							3.8 (.15)	8.7 (.34)	47-62-501-22	47-62-521-22	47-62-541-22
							5.4 (.21)	10.3 (.41)	47-63-501-22	47-63-521-22	47-63-541-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-10-502-22	47-10-522-22	47-10-542-22
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-10-504-22	47-10-524-22	47-10-544-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-11-502-22	47-11-522-22	47-11-542-22
							4.1 (.16)	8.9 (.35)	47-12-502-22	47-12-522-22	47-12-542-22
							6.1 (.24)	10.9 (.43)	47-13-502-22	47-13-522-22	47-13-542-22
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.2 (.14)	4.1 (.16)	8.9 (.35)	47-11-504-22	47-11-524-22	47-11-544-22
							6.1 (.24)	10.9 (.43)	47-12-504-22	47-12-524-22	47-12-544-22
Floating Style	18 (.70)	14 (.54)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	2.4 (.09)	7.2 (.28)	47-10-510-22	47-10-530-22	47-10-550-22
							3.4 (.13)	8.2 (.32)	47-11-510-22	47-11-530-22	47-11-550-22
							5.4 (.21)	10.2 (.40)	47-12-510-22	47-12-530-22	47-12-550-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	2.4 (.09)	7.2 (.28)	47-10-511-22	47-10-531-22	47-10-551-22
							3.4 (.13)	8.2 (.32)	47-11-511-22	47-11-531-22	47-11-551-22
							5.4 (.21)	10.2 (.40)	47-12-511-22	47-12-531-22	47-12-551-22
			1.6 (.063)	2.4 (.094)	3.9 (.15)	4.8 (.19)	3.4 (.13)	8.2 (.32)	47-10-512-22	47-10-532-22	47-10-552-22
							5.4 (.21)	10.2 (.40)	47-11-512-22	47-11-532-22	47-11-552-22

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness

To add a black finish, change the part number from the table as shown:

Change 2 to 6: 47-80-102-**2**2

47-80-102-**6**2

Part Number

See table

All screw part numbers shown in table are for a natural finish

For black finish minimums may apply

TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

47/4C Captive Screws

Panel preparation and installation

Installation Notes

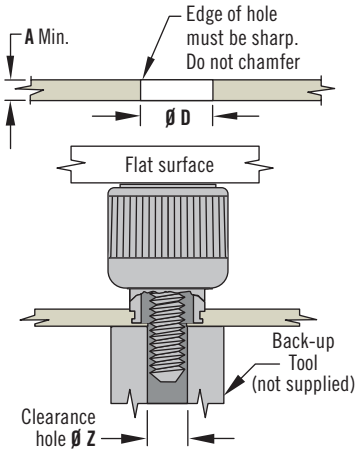
1. Prepare panel as shown. Top edge of hole should be sharp
2. Press captive screw into panel until ferrule is installed as shown

Installation closer to the panel edge requires a fixture to constrain the panel edges

Notes

Recommended minimum distance from edge of panel to centerline of hole is 1.5 x Ø D

Press-In Style



See page 497 for additional installation guidelines

Thread Size	Ø D	Clearance Hole Ø Z $^{+0.2}_{-0.1}$ ($^{+.008}_{-.004}$)
M3 or 4-40	$5.6^{+0.03}_{-0.05}$ ($.219^{+.003}_{-0}$)	3.2 (.125)
M3.5 or 6-32	$6.4^{+0.03}_{-0.05}$ ($.250^{+.003}_{-0}$)	3.7 (.146)
M4 or 8-32	$8^{+0}_{-0.08}$ ($.315^{+0}_{-0.003}$)	4.4 (.173)
M5 or 10-32	$8^{+0}_{-0.08}$ ($.315^{+0}_{-0.003}$)	5.2 (.205)
M6 or 1/4-20	$9.5^{+0.1}_{-0}$ ($.375^{+.003}_{-0}$)	6.2 (.260)

Notes: For use in material hardnesses RB85 or less, such as low carbon steels that are half hard or softer, stainless steels in the annealed condition and aluminum.

Performance Details

Pullout force: 360 N (80 lbf)
Side load against unfastened knob: 200 N (45 lbf)

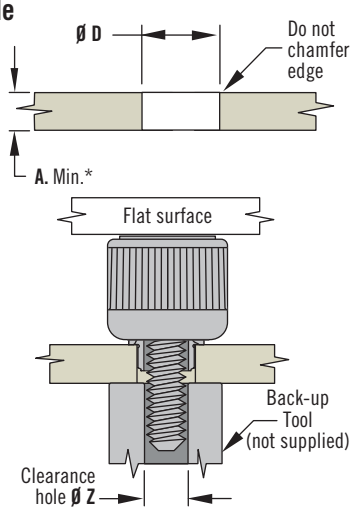
Installation Notes

1. Prepare panel as shown.
2. Use pilot lead-in to guide assembly into hole and press knurl into panel until ferrule shoulder contacts surface

Notes

Strength data based on drilled holes in G-10 P.C. Board

P.C. Board Style



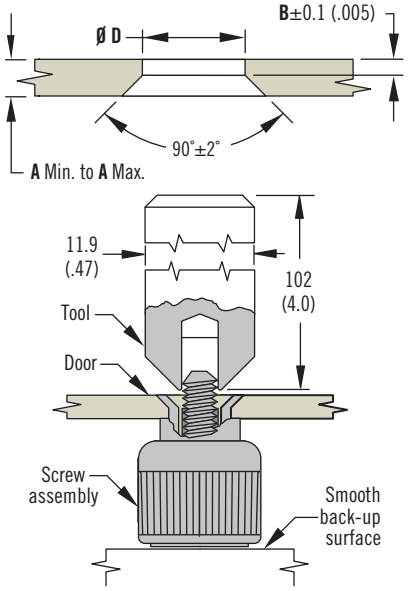
Thread Size	Ø D	Clearance Hole Ø Z $^{+0.2}_{-0.1}$ ($^{+.008}_{-.004}$)
M3 or 4-40	$5.6^{+0.1}_{-0.05}$ ($.219^{+.004}_{-.002}$)	3.2 (.125)
M3.5 or 6-32	6.4±1 (.252±.004)	3.7 (.146)

Installation Notes

1. Prepare panel as shown.
2. Install tool in suitable press. Only LIGHT pressure will be required
3. Insert screw assembly into prepared hole in panel
4. Place work under press, center tool over screw thread and flare ferrule into counter-sink in panel. Use LIGHT pressure

Installation Force:
1600 N (350 lbf) to 2500 N (550 lbf)
Installation force depends on thread size

Flare-In Style

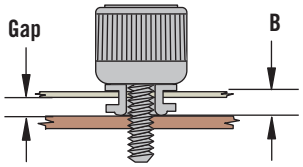


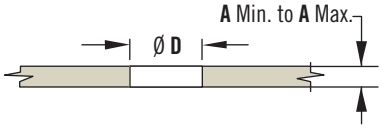
Thread Size	Ø D	Tool Part Number
M3 or 4-40	$4.8^{+0.08}_{-0.05}$ ($.187^{+.005}_{-0}$)	47-104
M3.5 or 6-32	$5.4^{+0.1}_{-0}$ ($.213^{+.005}_{-0}$)	47-106
M4 or 8-32	$6.8^{+.008}_{-0.04}$ ($.266^{+.005}_{-0}$)	47-108
10-32	$6.8^{+.008}_{-0.04}$ ($.266^{+.005}_{-0}$)	47-110
M5	$6.8^{+.008}_{-0.04}$ ($.266^{+.005}_{-0}$)	47-115
M6 or 1/4-20	$8.2^{+0.1}_{-0}$ ($.323^{+.005}_{-0}$)	47-125

Dimensions in millimeters (inch) unless otherwise stated

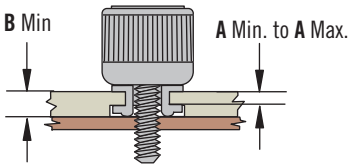
Floating Style

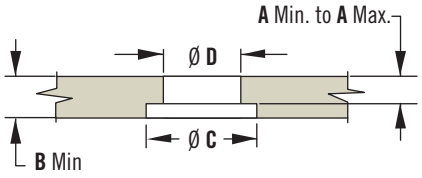
Panel preparation 1





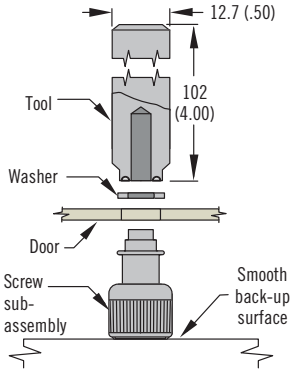
Panel preparation 2





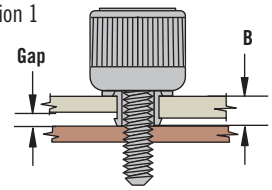
Thread Size	Tool Part Number
M3 or 4-40	47-04
M3.5 or 6-32	47-06
M4 or 8-32	47-08
M5é	47-05
10-32	47-10
M6 or 1/4-20	47-25

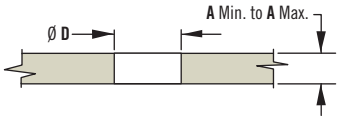
Thread Size	Ø D $^{+.008}_{-0.03}$ ($^{+.003}_{-.001}$)	Counterbore Min. Ø C
M3 or 4-40	6.4 (.250)	9.4 (.375)
M3.5 or 6-32	7.2 (.283)	10.5 (.413)
M4 or 8-32	8.8 (.346)	12 (.469)
M5 or 10-32	8.8 (.346)	12 (.469)
M6 or 1/4-20	10.5 (.413)	13.5 (.531)



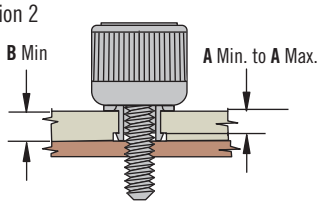
Snap-In Style

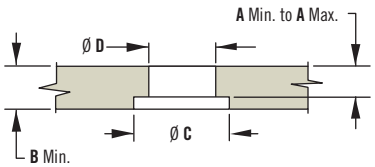
Panel preparation 1



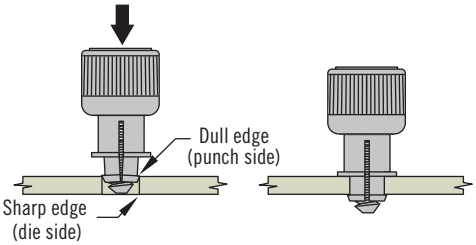


Panel preparation 2





Thread Size	Ø D $^{+0}_{-0.1}$ (± .002)	Counterbore Min. Ø C
M3.5 or 6-32	6.4 (.250)	7.5 (.295)
M4 or 8-32	6.4 (.250)	7.5 (.295)
M5 or 10-32	6.4 (.250)	7.5 (.295)



Dimensions in millimeters (inch) unless otherwise stated

Installation Notes

Floating and Snap-in style:
Panel preparation 1:
Requires space between inner and outer panels.
Specify the fastener for panel thickness A to fall between the range A Min. to A Max.:
gap = B - A outer panel thickness

Panel preparation 2:
Counter bore the panel (B = Min. panel thickness) to a thickness (A) between the range of A Min. and A Max.

Minimum bore depth = panel thickness - A Max.

For gap = Ø, panel thickness must be ≥ to B value (before counterbore) for the given part number

Notes

B and A Max. values are provided in the corresponding fastener selection tables for each part number

If holes are drilled, top edge of hole should be chamfered

52 Captive Screws

Miniature series · Flare-in style

- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff: Aluminum natural

Installation tool: Hardened carbon steel, zinc plated, chromate, plus sealer

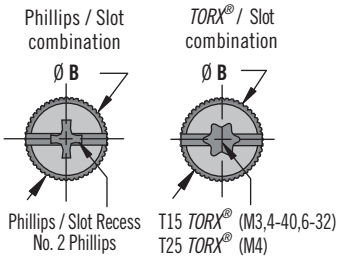
Installation Notes

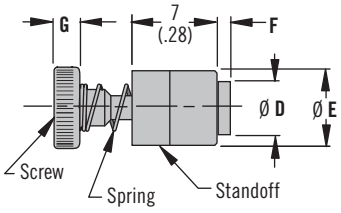
1. Prepare panel as shown
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool

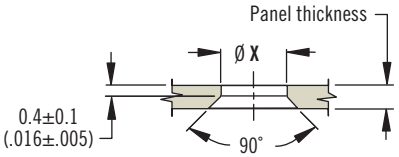
Part Number

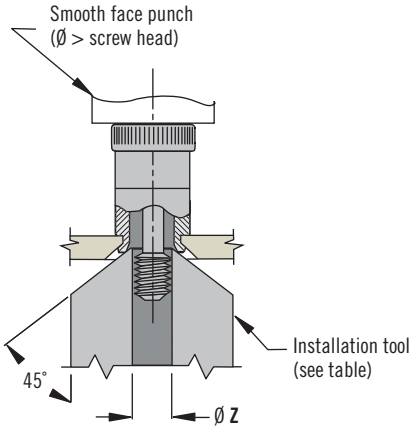
See table

Recess Styles

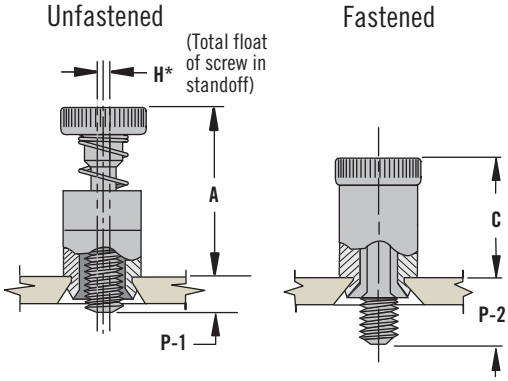








Knob Height and Screw Projection



H* - Value represents float in unfastened position

Notes: P-1, P-2 measured from the top side of panel

Thread Size	Panel Thickness		Part Number				A	Ø B	C	Ø D	Ø E	F	G	H	P-1	P-2	Panel Preparation		Tool Part No.
			Knurled Head		Smooth Head												Ø X	Ø Z	
	Min.	Max.	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted													
4-40	0.8 (.031)	2.4 (.094)	52-19-11-4	52-17-11-4	52-1A-11-4	52-18-11-4	14 (.55)	7 (.28)	9.6 (.38)	4.6 (.183)	6.4 (.25)	1 (.041)	2.5 (.1)	0.5 (.018)	0.8 (.031)	5.3 (.21)	$4.8^{+0.09}_{-0}$ ($.187^{+.003}_{-0}$)	3 (.120)	47-104
6-32	1.5 (.058)	3.2 (.125)	52-29-21-4	52-27-21-4	52-2A-21-4	52-28-21-4	15 (.59)	8 (.31)	9.6 (.38)	5.3 (.209)	7 (.28)	1.8 (.07)	2.5 (.1)	0.7 (.028)	1.8 (.07)	6.8 (.27)	$5.4^{+0.09}_{-0}$ ($.213^{+.003}_{-0}$)	3.6 (.141)	47-106
M3 x 0.5	0.8 (.031)	2.4 (.094)	52-39-11-4	52-37-11-4	52-3A-11-4	52-38-11-4	14 (.55)	7 (.28)	9.6 (.38)	4.6 (.183)	6.4 (.25)	1 (.041)	2.5 (.1)	0.6 (.023)	0.8 (.031)	5.3 (.21)	$4.8^{+0.09}_{-0}$ ($.187^{+.003}_{-0}$)	3 (.120)	47-104
M4 x 0.7	1.5 (.058)	3.2 (.125)	52-49-21-4	52-47-21-4	52-4A-21-4	52-48-21-4	15.2 (.60)	9.4 (.37)	10.1 (.40)	6.7 (.26)	8.6 (.34)	1.8 (.07)	3 (.12)	0.7 (.028)	1.8 (.07)	6.8 (.27)	$6.8^{+0.08}_{-0.04}$ ($.266^{+.005}_{-0}$)	4.2 (.166)	47-108

Note: Subtract .25 (.01) from **Ø B** for smooth head style.

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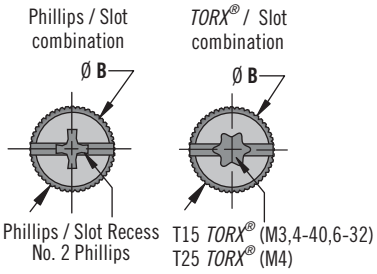
Dimensions in millimeters (inch) unless otherwise stated

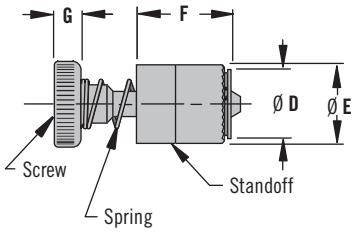
52 Captive Screws

Miniature series · Press-in style

- **Smaller footprint for limited space applications**
- **Heat treated steel screw for optimum strength**

Recess Styles





Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

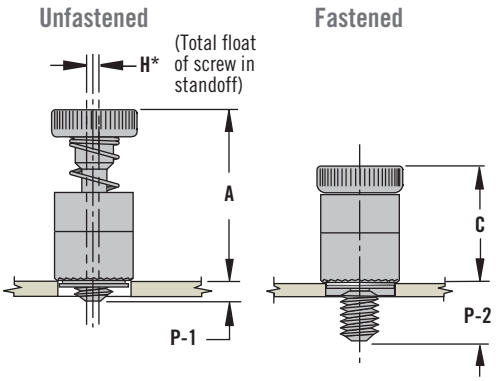
Spring: 300 series stainless steel, passivated

Standoff: Carbon steel, zinc plated, chromate, plus sealer

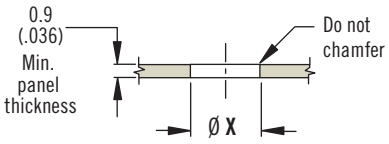
Installation Notes

For use in most aluminum or in low carbon steels that are 1/4 hard or softer

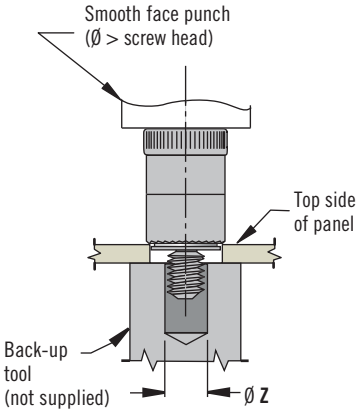
Knob Height and Screw Projection



* Value represents float in unfastened position
Notes: P-1, P-2 measured from the top side of panel



Notes: Recommended minimum distance from edge of panel to centerline of hole is 1.5 x Ø X for press-in version.



See page 497 for additional installation guidelines

Part Number

See table

Thread Size	Part Number				A	Ø B	C	Ø D	Ø E	F	G	H*	P-1	P-2	Panel Preparation	
	Knurled Head		Smooth Head												Ø X	Ø Z
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted												
4-40	52-19-51-4	52-17-51-4	52-1A-51-4	52-18-51-4	14 (.55)	7 (.28)	9.6 (.38)	5.5 (.217)	6.4 (.25)	7.9 (.31)	2.5 (.1)	0.5 (.018)	0.9 (.036)	5.3 (.21)	5.6 ±0.04 (.219 ±0.02)	3 (.120)
	52-19-53-4	52-17-53-4	52-1A-53-4	52-18-53-4									2.5 (.1)	6.8 (.27)		
6-32	52-29-51-4	52-27-51-4	52-2A-51-4	52-28-51-4	15.5 (.61)	8 (.31)	10.4 (.41)	6.3 (.247)	7 (.28)	8.6 (.34)	2.5 (.1)	0.7 (.028)	0.9 (.036)	6.1 (.24)	6.4 ±0.04 (.250 ±0.02)	3.7 (.144)
	52-29-53-4	52-27-53-4	52-2A-53-4	52-28-53-4									2.5 (.1)	7.6 (.30)		
M3 X 0.5	52-39-51-4	52-37-51-4	52-3A-51-4	52-38-51-4	14 (.55)	7 (.28)	9.6 (.38)	5.5 (.217)	6.4 (.25)	7.9 (.31)	2.5 (.1)	0.6 (.023)	0.9 (.036)	5.3 (.21)	5.6 ±0.04 (.219±0.02)	3.2 (.126)
	52-39-53-4	52-37-53-4	52-3A-53-4	52-38-53-4									2.5 (.1)	6.8 (.27)		
M4 X 0.7	52-49-51-4	52-47-51-4	52-4A-51-4	52-48-51-4	16 (.63)	9.4 (.37)	10.8 (.43)	7.9 (.31)	8.7 (.34)	8.6 (.34)	3 (.12)	0.7 (.028)	0.9 (.036)	6.1 (.24)	$8^{+0}_{-0.08}$ ($.315^{+0}_{-.003}$)	4.4 (.173)
	52-49-53-4	52-47-53-4	52-4A-53-4	52-48-53-4									2.5 (.1)	7.6 (.30)		

TORX is a registered trademark of Acument™ Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

F5 Captive Screws

Flush series

- **Flush when fastened**

Material and Finish

Shell: 303 Stainless steel, passivated

Screw:
Slotted: 303 stainless steel, passivated.
Phillips: 430 stainless steel, passivated

Notes

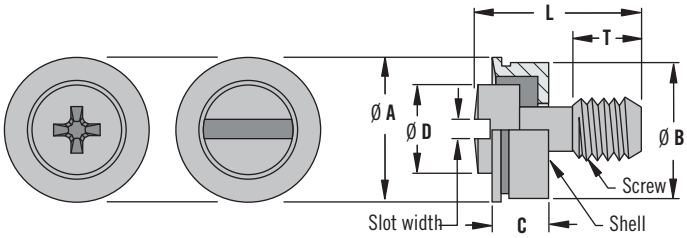
For use in most aluminums or in low carbon steels that are 1/4 hard or softer

Screws will float 0.5 (.02) total movement

Shipped assembled

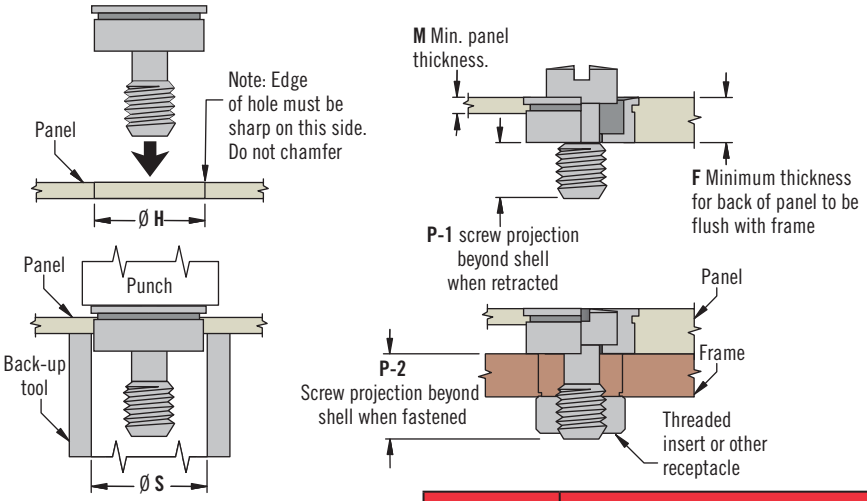
Part Number

See table



ACTUAL SIZE

Installation

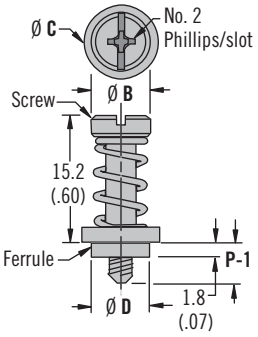


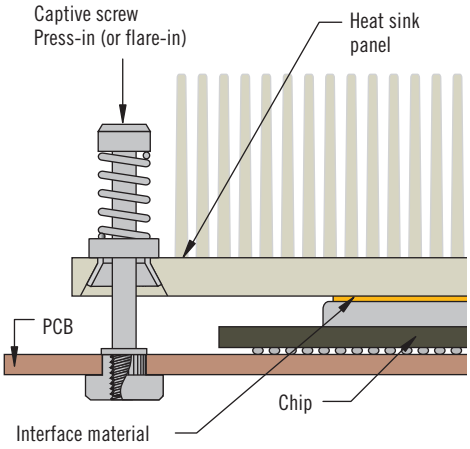
Thread Size	Max. Recommended Tightening Torque
M3/ 4-40	0.6 N•m (5in•lbf)
6-32	1.6 N•m (14in•lbf)
M4/ 8-32	2.8 N•m (25in•lbf)

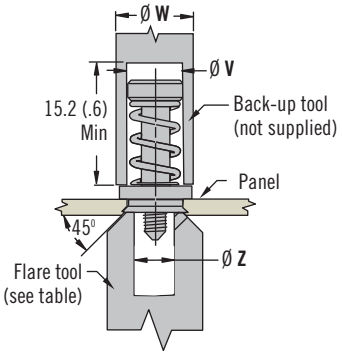
See page 497 for additional installation guidelines

Recess Style	Thread Size	Screw Dimensions					Slot Width	Screw Length L	Part Number		Screw Projection Beyond Outer Surface of Panel		Installation Dimensions			
		Ø A	Ø B	C	Ø D	T			Metric	Imperial	P-1	P-2	Ø H	M	F	Ø S
Phillips	M4 x 0.7 or UNC 8-32	10.1 (.40)	9.45 (.373)	3.1 (.122)	6.4 (.25)	4.3 (.17)	~	8.6 (.34)	F5-M4-P2	F5-832-P2	4.3 (.17)	5.6 (.22)	$9.5^{+0.08}_{-0}$ ($.375^{+.003}_{-0}$)	1.5 (.060)	3.2 (.125)	$9.6^{+0.1}_{-0.05}$ ($.379^{+.004}_{-.002}$)
								9.6 (.38)	F5-M4-P4	F5-832-P4		6.6 (.26)				
								10.6 (.42)	F5-M4-P6	F5-832-P6		7.6 (.30)				
								11.6 (.46)	F5-M4-P8	F5-832-P8		8.6 (.34)				
Slotted	M3 x 0.5 or UNC 4-40	7.1 (.28)	6.45 (.254)	1.7 (.067)	4 (.16)	3.8 (.15)	0.9 (.035)	5.8 (.23)	F5-90-402-20	F5-60-402-20	3.8 (.15)	4.1 (.16)	$6.5^{+0.08}_{-0}$ ($.257^{+.002}_{-.001}$)	1.3 (.050)	1.8 (.070)	$6.6^{+0.1}_{-0.05}$ ($.260^{+.004}_{-.002}$)
								7.9 (.31)	F5-90-406-20	F5-60-406-20		6.1 (.24)				
	UNC 6-32	8.1 (.32)	7.44 (.293)	2 (.082)	4.8 (.19)	3.8 (.15)	1 (.039)	6.4 (.25)	~	F5-60-602-20	3.8 (.15)	4.3 (.17)	$7.5^{+0.08}_{-0}$ ($.295^{+.003}_{-0}$)	1.4 (.055)	2.2 (.085)	$7.6^{+0.1}_{-0.05}$ ($.299^{+.004}_{-.002}$)
								8.4 (.33)	~	F5-60-606-20		6.4 (.25)				
								9.4 (.37)	~	F5-60-608-20		7.4 (.29)				
	M4 x 0.7 or UNC 8-32	10.1 (.40)	9.45 (.373)	2.34 (.092)	6.4 (.25)	5.1 (.20)	1.1 (.045)	8.9 (.35)	F5-M40-14	F5-832-14	5.1 (.20)	6.6 (.26)	$9.5^{+0.08}_{-0}$ ($.375^{+.003}_{-0}$)	1.5 (.060)	2.4 (.095)	$9.6^{+0.1}_{-0.05}$ ($.379^{+.004}_{-.002}$)
								9.9 (.39)	F5-M40-16	F5-832-16		7.6 (.30)				
								10.9 (.43)	F5-M40-18	F5-832-18		8.6 (.34)				

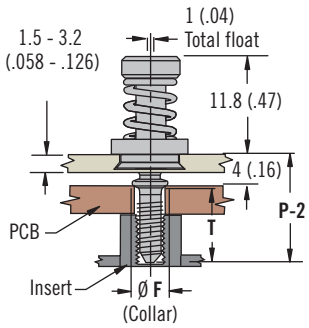
Unfastened





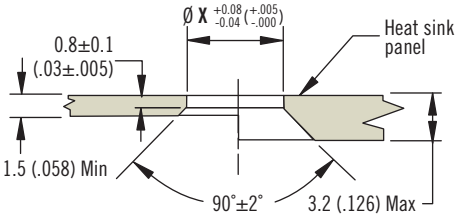


Fastened

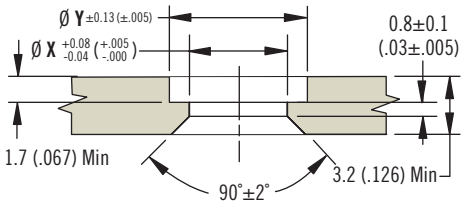


ACTUAL SIZE

Standard



Alternate



Thread Size	Ø V	Ø X	Ø Y	Ø W Min.	Ø Z	Tool Part Number
M3 or 4-40	7.1 (.28)	6.8 (.27)	9.5 (.37)	9.5 (.37)	5.1 (.2)	47-115
M3.5 or 6-32	7.9 (.31)	7.1 (.28)	10.7 (.46)	10.7 (.42)	5.6 (.22)	5T-06-Tool

- **Maximize heat transfer from components to heatsink**
- **Positive fastening under shock and vibration**
- **Fastener allows for thermal expansion of components under a set preload**

Material and Finish

Screw: Hardened carbon steel, zinc plate, chromate plus sealer

Spring: 300 series stainless steel, passivated

Ferrule: Aluminum, natural

Performance Details

M3/4-40 Recommended Torque: 0.6 N•m (5.3 in•lbf)
M3.5/6-32 Recommended Torque: 1.08 N•m (9.6 in•lbf)

Installation Notes

1. Drill then countersink according to the required dimensions.
2. Insert screw assembly into prepared hole in panel. Place back-up tool as shown.
3. Place work under press, center tool over screw thread and flare ferrule into countersink in panel. Recommended load 2200 N.

Notes

Load applied by each screw: [3.4 (.13) * K] +7.57 N (1.7 lb)
Standard K value shown in the table. Load at given deflection
*shown in the fastened position above.

Part Number

See table

Thread Size	Part Number	Panel Thickness		Screw Projection		T	Ø B	Ø C	Ø D	Ø F	Spring Rate K N/mm (lbf/in)	Load Max.* N (lbf)
		Min.	Max.	P1	P-2							
M3	5T-11-M3-222-5	1.5 (.058)	3.2 (.126)	5.9 (.232)	8.4 (331)	5 (.197)	6.8 (.27)	9 (.35)	6.7 (.294)	4.7 (.185)	4.45 (25.4)	22.5 (5)
4-40	5T-11-04-222-5											
M3.5	5T-11-M35-222-5			6.6 (.26)	9.9 (.39)	5.7 (.224)	7.6 (.30)	10.4 (.41)	7 (.275)	5 (.2)		
6-32	5T-11-06-222-5											

N7 Captive Nut

Thru hole and blind styles

- **Spring ejected**
- **Knurled knob provides solid grip**
- **Fastens to externally threaded studs**
- **Helps speed panel replacement**

Material and Finish

Knob: Aluminum, natural

Ferrule: Hardened steel, zinc plate, chromate plus sealer

Spring: 302 Stainless steel, passivated

Installation Notes

1. Prepare hole in panel as shown
2. Provide a solid back-up surface behind the panel
3. Press the assembly into the panel until only the top of the knurl on the ferrule is visible

Threadstud insert selection for blind hole applications

Frame thickness + panel thickness + P Min. = X Min.

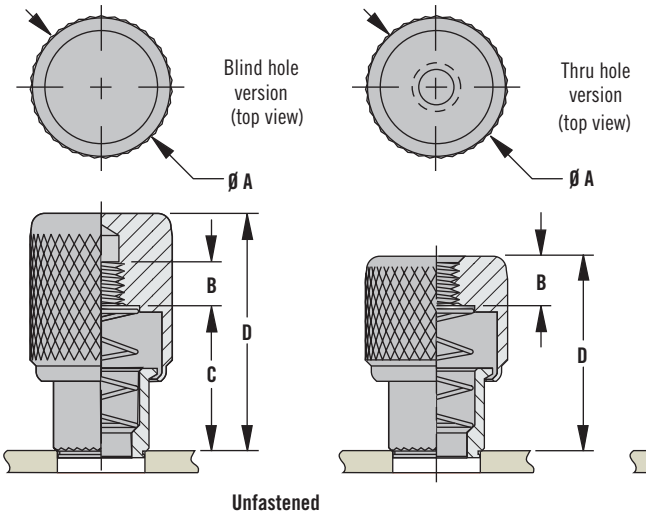
Frame thickness + panel thickness + P Max. = X Max.

Threadstud insert length (L): X Min. < "L" > X Max.

"L" values greater than X Max. must use the thru hole version

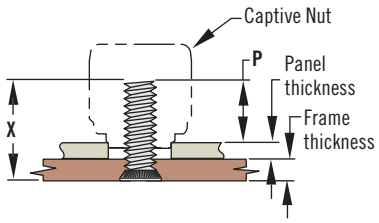
If a weld stud is used, omit the frame thickness from the calculations (see the table and diagram to the right)

*The above dimensions are for blind hole captive nuts

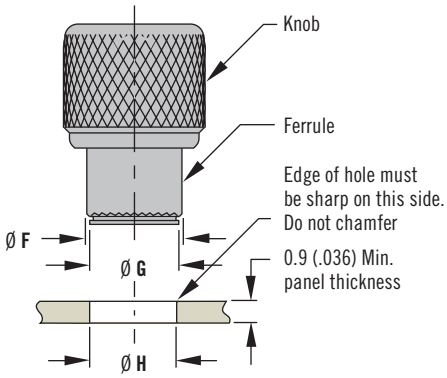


ACTUAL SIZE

Notes: For use in material hardnesses RB85 or less, such as low carbon steels that are half hard or softer, stainless steels in the annealed condition and aluminum.



Thread Size	P Min.	P Max.
M3	7.1 (.28)	9.5 (.37)
M4	10 (.40)	12.1 (.47)
M5	10.2 (.41)	12.2 (.48)
M6	12.4 (.49)	16.7 (.66)
4-40	7.3 (.29)	9.4 (.37)
6-32	9.9 (.39)	13.1 (.51)
8-32	10.1 (.40)	13.3 (.52)
10-32	10.3 (.41)	13.5 (.53)
1/4-20	13 (.51)	16.5 (.65)



See page 497 for additional installation guidelines

Notes: Recommended minimum distance from edge of panel to centerline of hole is 1.5 x Ø H.

Thread Size	Knob Style	Part Number		Ø A	B (Thread Length)	C	D	E	Ø F	Ø G	Ø H
		Metric	Inch								
	Min.	Natural	Natural								
M3 or 4-40	Thru hole	N7-02-10	N7-52-10	10.6 (.42)	3.6 (.14)	~	12.8 (.50)	9.3 (.37)	6.4 (.25)	5.5 (.22)	5.6±0.04 (.220±.002)
	Blind hole	N7-02-11	N7-52-11		4 (.16)	9.2 (.36)	16.8 (.66)	13.3 (.52)			
6-32 UNC	Thru hole	~	N7-62-10	11.4 (.45)	4.7 (.19)	~	17.7 (.70)	12.5 (.49)	7.1 (.28)	6.3 (.25)	$6.4^{+0.03}_{-0.05}$ ($.252^{+.001}_{-.002}$)
	Blind hole	~	N7-62-11		5.4 (.21)	13 (.51)	23 (.91)	17.9 (.70)			
M4 or 8-32	Thru hole	N7-22-10	N7-72-10	13 (.51)	4.5 (.180	~	17.7 (.70)	12.5 (.49)	8.7 (.34)	7.9 (.31)	$8^{+0}_{-0.08}$ ($.315^{+0}_{-.003}$)
	Blind hole	N7-22-11	N7-72-11		5.4 (.21)	13.2 (.52)	23 (.91)	17.9 (.70)			
M5 or 10-32	Thru hole	N7-32-10	N7-82-10	13 (.51)	4.5 (.180	~	17.7 (.70)	12.5 (.49)	9 (.35)	7.9 (.31)	$8^{+0}_{-0.08}$ ($.315^{+0}_{-.003}$)
	Blind hole	N7-32-11	N7-82-11		5.4 (.21)	13.2 (.52)	23 (.91)	17.9 (.70)			
M6 or 1/4-20	Thru hole	N7-42-10	N7-92-10	14.6 (.58)	6.4 (.25)	~	22.8 (.90)	16 (.63)	10 (.39)	9.4 (.37)	$9.5^{+0.1}_{-0}$ ($.374^{+.004}_{-0}$)
	Blind hole	N7-42-11	N7-92-11		7 (.28)	16.4 (.65)	29.5 (1.16)	23 (.91)			

INFO CLIC www.southco.com/N7

Dimensions in millimeters (inch) unless otherwise stated

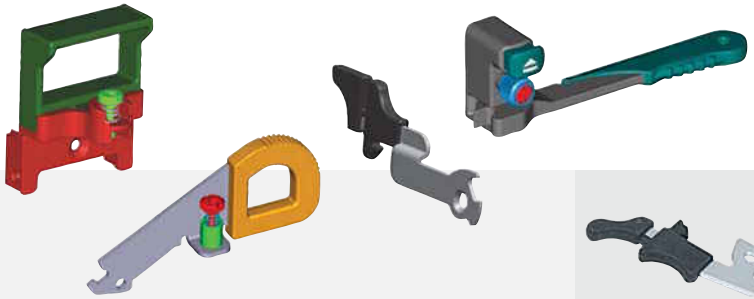
INJECT / EJECT MECHANISMS

Inject / eject mechanisms provide hardware necessary for the insertion and extraction of PC boards, modules and faceplates. In addition, they provide microswitch activation for hot swap.

The PICMG (PCI Industrial Computer Manufacturer´s Group) organization has developed several standards for commercial-off-the-shelf solutions including, ATCA, AMC, µTCA and cPCI to regulate the format and interconnection of telecommunication server equipment.

Southco offers many inject / eject mechanisms that are PICMG-compliant.

Our technical design team has also developed custom solutions for many of the top global OEM's. If one of these standard solutions does not meet your needs, a custom solution can.



Custom Solutions

Industry Standard Ejectors

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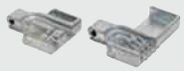

P7

P7

Inject / Eject device designs are largely driven by customer needs in the following areas:

- Hot swap capability
- Greater pin tension
- More weight on PC board
- Ever-increasing demands for smaller profiles and less protrusion on boards and faceplates
- Higher pin density interconnects
- Higher insertion / extraction forces
- Secondary locking devices
- Proper grounding and alignment

Inject / Eject Solutions

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CN

CN

CN

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P7

Inject / Eject Mechanisms

Selection guide

Use this selection guide to choose the right inject / eject mechanism for your application

		Product Class	MATERIAL: Plated Steel and Plastic	Die-Cast Zinc	Die-Cast Zinc and Plastic	Plastic
ATCA PAGES 402 - 407		P7-A-513-11	✔			
		P7-A-523-11	✔			
		P7-A-533-11	✔			
		P7-A-543-11	✔			
AMC PAGES 410 - 413		P7-M-811-000		✔		
		P7-M-812-000		✔		
		P7-M-813-000		✔		
		P7-M-822-000		✔		
		P7-M-823-000		✔		
cPCI PAGES 408 - 409		P7-1-981-10			✔	
		P7-1-991-10			✔	
OTHER PAGES 414 - 415		CN-10-3-A			✔	
		CN-10-9-A				✔
		CN-11			✔	
		P7-99-103-53		✔		
		P7-1-30X-X5	✔			

Dimensions in millimeters (inch) unless otherwise stated

PERFORMANCE						ENVELOPE SIZE	
Max. Insertion Load per Ejector	250 Cycles Minimum	V0 Flammability Rating	Secondary Catch	Activates Microswitch	Compliant with PICMG Standard	Outside of Faceplate (L x W x H)	Inside of Faceplate (L x W x H)
320 N (72 lbf)	✔	✔	✔	✔	✔	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	39.92 x 2.50 x 13.00 (1.57 x 0.10 x 0.51)
320 N (72 lbf)	✔	✔	✔	✔	✔	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	39.92 x 2.50 x 13.00 (1.57 x 0.10 x 0.51)
320 N (72 lbf)	✔	✔	✔	✔	✔	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	38.62 x 2.50 x 13.00 (1.52 x 0.10 x 0.51)
320 N (72 lbf)	✔	✔	✔	✔	✔	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	38.62 x 2.50 x 13.00 (1.52 x 0.10 x 0.51)
N/A	✔	✔	✔	✔	✔	19.55 x 5.65 x 8.86 (0.77 x 0.22 x 0.35)	33.85 x 5.65 x 12.50 (1.33 x 0.22 x 0.49)
N/A	✔	✔	✔	✔	✔	19.55 x 5.65 x 8.86 (0.77 x 0.22 x 0.35)	33.85 x 5.65 x 12.50 (1.33 x 0.22 x 0.49)
N/A	✔	✔	✔	✔	✔	19.55 x 5.65 x 8.86 (0.77 x 0.22 x 0.35)	33.85 x 5.65 x 12.50 (1.33 x 0.22 x 0.49)
N/A	✔	✔	✔	✔	✔	5.05 x 5.65 x 14.50 (0.20 x 0.22 x 0.57)	39.70 x 6.18 x 17.55 (1.56 x 0.24 x 0.69)
N/A	✔	✔	✔	✔	✔	5.05 x 5.65 x 14.50 (0.20 x 0.22 x 0.57)	39.70 x 6.18 x 17.55 (1.56 x 0.24 x 0.69)
117 N (26 lbf)	✔	✔	✔	✔	✔	36.00 x 25.00 x 19.90 (1.42 x 0.98 x 0.78)	25.25 x 25.00 x 19.90 (0.99 x 0.98 x 0.78)
117 N (26 lbf)	✔	✔	✔	✔	✔	25.00 x 19.90 x 36.00 (0.98 x 0.78 x 1.42)	25.25 x 25.00 x 19.90 (0.99 x 0.98 x 0.78)
220 N (50 lbf)	✔	✔	✔	✔		62 x 18 x 18 (2.44 x .71 x .71)	14 x 10 x 18 (.55 x .39 x .71)
110 N (24.7 lbf)	✔	✔	✔	✔		62 x 18 x 18 (2.44 x .71 x .71)	Flush
200 N (45 lbf)	✔	✔	✔			35 x 15 x 30 (1.38 x .59 x 1.18)	19 x 5 x 15 (.75 x .20 x .59)
400 N (90 lbf)	✔	✔	✔			52 x 23 x 3 (2.05 x .91 x .12)	52 x 23 x 21 (2.05 x .91 x .83)
325 N (72 lbf)	✔	✔	✔			54 x 17 x 22.5 (2.13 x .67 x .89)	15.5 x 10.35 x 7 (.61 x .41 x .28)

Dimensions in millimeters (inch) unless otherwise stated

P7 ATCA Inject / Eject Mechanism

Ejectors

- **Ergonomic inject / eject lever designed for easy operation**
- **Secondary catch on inject / eject operates microswitch to permit hot-swapping**

Material and Finish

Steel plated and glass-filled nylon, black
Washers: Stainless steel

Performance Details

Flammability rating: UL94-V0

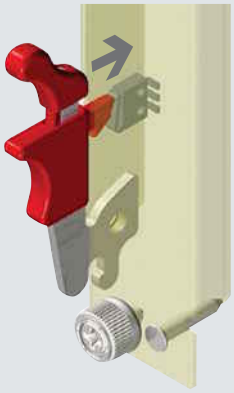
Installation Notes

See page 405

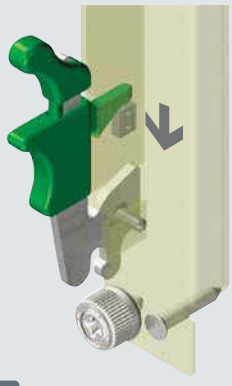
Notes

Custom colors available, please contact Southco

Lever Style Switch Operation

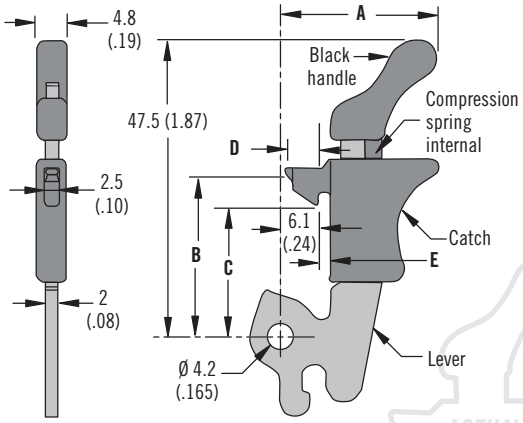


Plunger Style Switch Operation

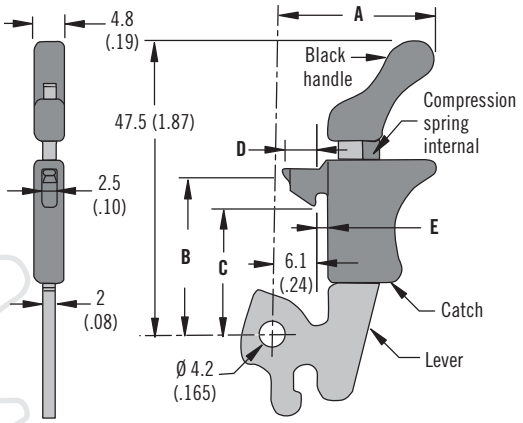


Lever Style Switch

Panel thickness 0.8 - 1.5 (.031 - .059)

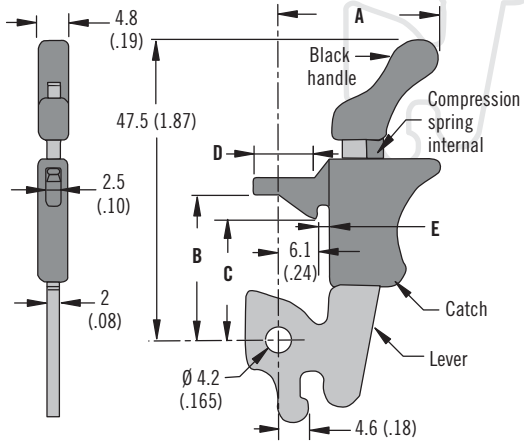


Panel thickness 2 - 2.5 (.078 - .098)

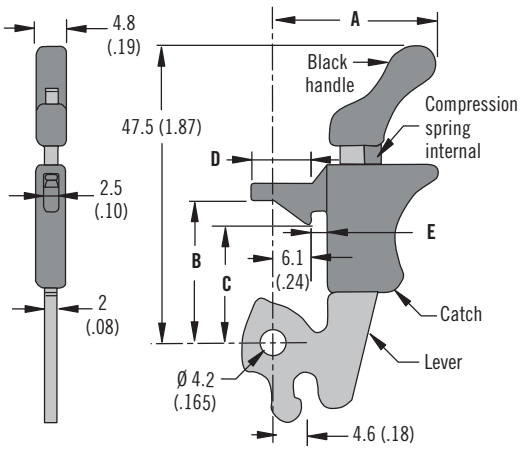


Plunger Style Switch

Panel thickness 0.8 - 1.5 (.031 - .059)

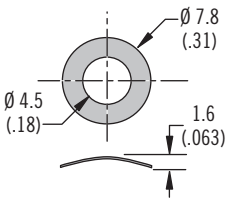


Panel thickness 2 - 2.5 (.078 - .098)

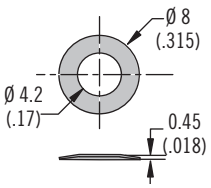


Style	Panel Thickness	Part Number	A	B	C	D	E
Lever style complete with u-bent washer	0.8 - 1.5 (.031 - .059)	P7-A-513-11	25.2 (.99)	26.1 (1.03)	20.8 (.82)	5.4 (.21)	1.9 (.07)
	2 - 2.5 (.078 - .098)	P7-A-523-11	26.2 (1.03)	26.1 (1.03)	20.8 (.82)	5.4 (.21)	2.9 (.11)
Plunger style complete with belleville washer	0.8 - 1.5 (.031 - .059)	P7-A-533-11	25.2 (.99)	23 (.90)	19 (.75)	9.6 (.38)	1.9 (.07)
	2 - 2.5 (.078 - .098)	P7-A-543-11	25.2 (.99)	23 (.90)	19 (.75)	9.6 (.38)	2.9 (.11)

U-Bent Washer (supplied)



Belleville Washer (supplied)



INFO CLIC www.southco.com/P7

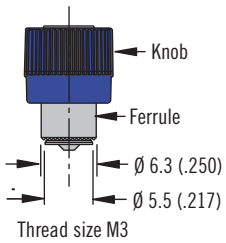
Dimensions in millimeters (inch) unless otherwise stated

P7 ATCA Inject / Eject Mechanism

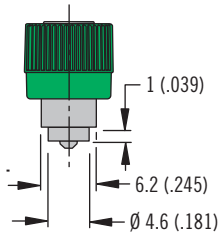
Captive screws

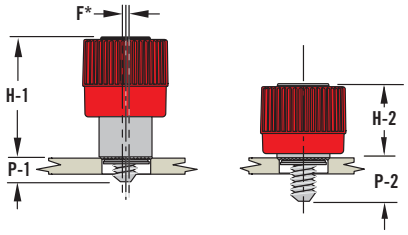
4C Series

Press-In



Flare-In



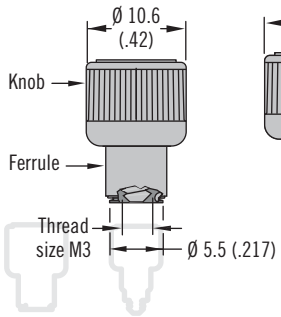


ACTUAL SIZE

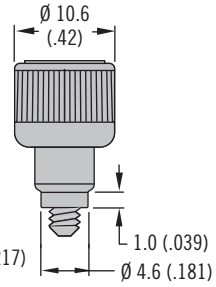
000 Black | 008 Blue | 012 Purple | 013 Red | 014 Green | Your color (contact Southco)

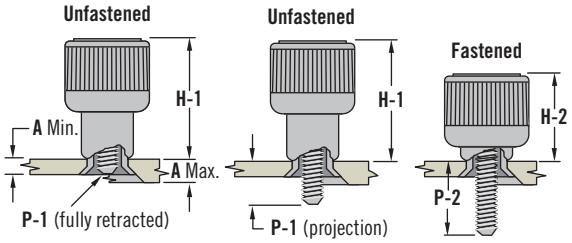
47 Series

Press-In



Flare-In





ACTUAL SIZE

- **M3 thread**
- **No. 2 Phillips recess**
- **Color match available**

Material and Finish

Screw and ferrule steel plated knob aluminum or PC/ABS

Performance Details

Flammability rating: UL94-V0

Installation Notes

Please refer to installation drawings on page 405 for reference on dimensions **B***, **Ø D*** and **Ø Z***

Notes

New ATCA R3.0 compliant screw, see www.southco.com for latest details

F* indicates maximum float in the unfastened position

Part Number

See table

Series	Installation Method	Panel Thickness			Part Number	P-1	P-2	H-1	H-2	F*	Panel Preparation	
		A Min.	A Max.	B*	No. 2 Phillips						Ø D*	Ø Z*
ATCA compliant screw	Press-in	0.9 (.036)	~	~	47-99-945-1P0	1.0 (.39)	5.0 (.20)	14.3 (.56)	10.1 (.40)	1 (.39)	5.95 ±0.04 (.23±.002)	$3.2^{+0.2}_{-0.1}$ ($.13^{+.008}_{-.004}$)
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1	1.0 (.39)	5.0 (.20)	14.3 (.56)	10.1 (.40)	1 (.39)	$5.1^{+0.1}_{-0}$ ($.20^{+.004}_{-0}$)	$3.0^{+0.1}_{-0}$ ($.12^{+.004}_{-.000}$)
4C	Press-in	0.9 (.036)	~	~	4C-PH-M3-1P0-K000	0.8 (.03)	3.8 (.15)	11.5 (.45)	8.5 (.33)	0.7 (.028)	5.6±0.04 ($.219^{+.003}_{-.000}$)	$3.2^{+0.2}_{-0.1}$ ($.219^{+.008}_{-.004}$)
					4C-PH-M3-2P0-K000	2.5 (.10)	5.5 (.22)					
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	4C-PH-M3-1F1-K000	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.028)	$4.8^{+0.08}_{-0.05}$ ($.187^{+.005}_{-.000}$)	$3.0^{+0.2}_{-0.1}$ ($.118^{+.008}_{-.004}$)
					4C-PH-M3-2F1-K000	2.5 (.10)	5.4 (.21)					
47	Press-in	0.9 (.036)	~	~	47-99-828-1P0	0.8 (.03)	3.8 (.15)	11.2 (.44)	8.5 (.33)	0.7 (.028)	5.6±0.04 ($.219^{+.003}_{-.000}$)	$3.2^{+0.2}_{-0.1}$ ($.219^{+.008}_{-.004}$)
					47-99-828-2P0	2.5 (.10)	5.5 (.22)					
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-829-1F1	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.028)	$4.8^{+0.08}_{-0.05}$ ($.187^{+.005}_{-.000}$)	$3.0^{+0.2}_{-0.1}$ ($.118^{+.008}_{-.004}$)
					47-99-829-2F1	2.5 (.10)	5.6 (.22)					

P7 ATCA Inject / Eject Mechanism

Guide pin

- **Bullet tip for better engagement**
- **Self-clinching style for easy installation**

Material and Finish

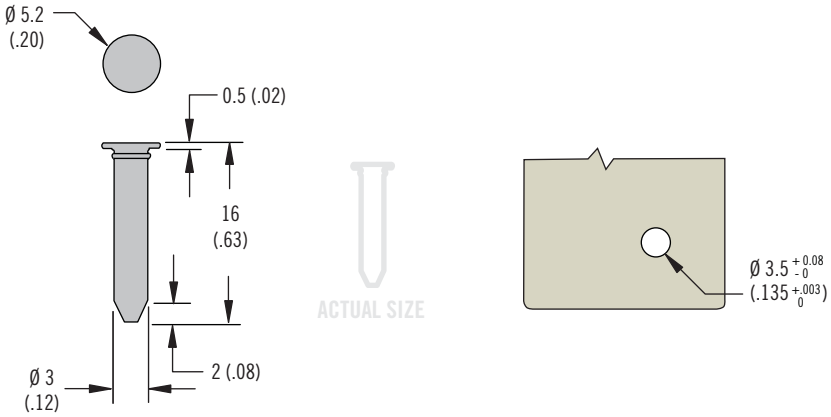
Stainless steel

Installation Notes

Edge of hole must be sharp do not chamfer.

See page 405 for reference on usage of guide pin.

Self-clinching install details see page 497



Part Number
77-0-40552

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/P7*

P7 ATCA

Mounting screws M 2.5

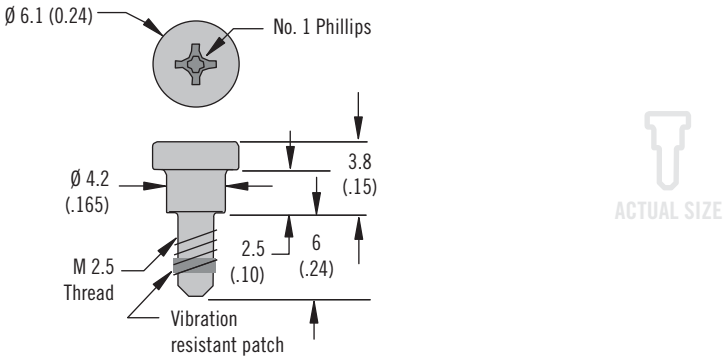
- **Accommodates all standard ATCA PC board thicknesses**
- **Vibration-resistant nylon patch**

Material and Finish

Steel zinc plated

Installation Notes

Please refer to installation drawings on page 405 for reference on usage of mounting screws



Part Number
P7-0-41665-1

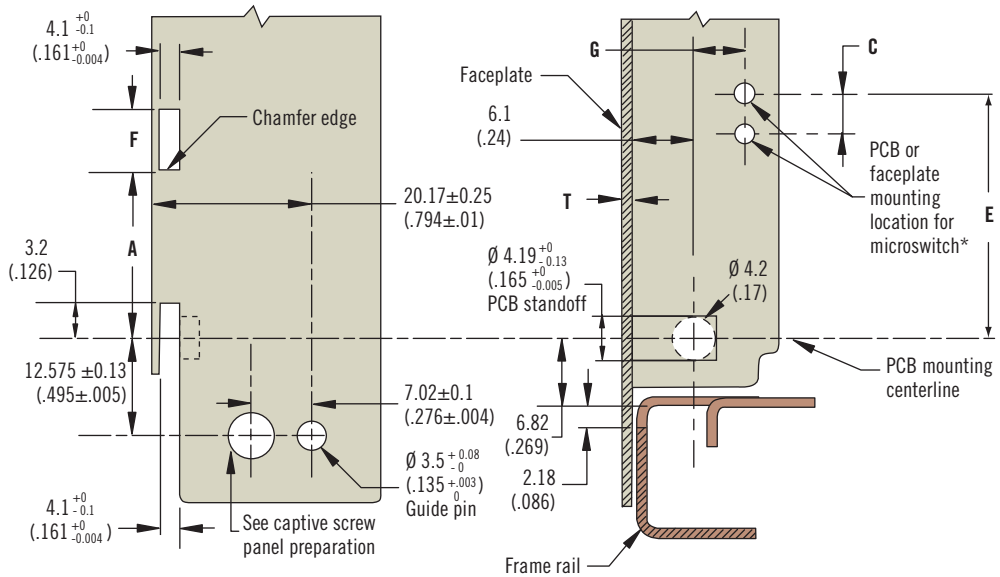
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/P7*

Dimensions in millimeters (inch) unless otherwise stated

P7 ATCA Inject / Eject Mechanism

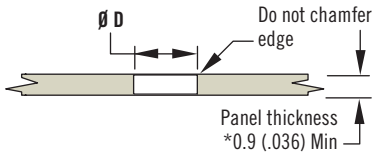
Faceplate panel preparation (with PCB mounting tab fabrication)

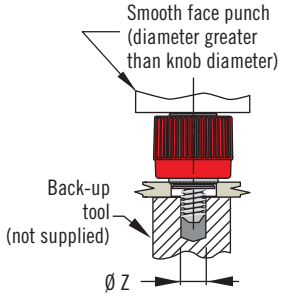


Switch Styles	Part Number	A	F	C	G	E	T
Lever	P7-A-513-11	22 (.866)	7.5 (.296)	4 (.16)	25.4 (1.0)	5.2 (.2)	0.8 - 1.5 (.031 - .059)
	P7-A-523-11	21.7 (.85)	7.8 (.31)				2 - 2.5 (.078 - .098)
Plunger	P7-A-533-11	20.2 (.795)	9 (.354)	3 (.12)	20.4 (.8)	1.9 (.07)	0.8 - 1.5 (.031 - .059)
	P7-A-543-11						2 - 2.5 (.078 - .098)

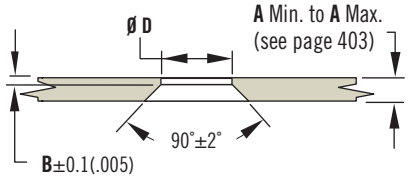
Captive Screw Panel Preparation and Installation (see page 403 for selection of captive screws)

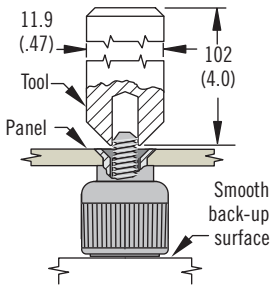
Press-In





Flare-In





Flare-In Tool Part Number (M3 Thread Size)
47-104

Installation Notes

Select ejector, guide pin and mounting screw part number.

Select captive screw best suited to your application.

Notes

Faceplates generally require two ejectors, two captive screws, two mounting screws and two guide pins.

*Microswitch lever style operation ITT MD002 or plunger style operation ITT SD002

See page 403 for ejector selection

Installation Notes

See page 403 for **B, Ø D** and **Ø Z** dimensions.

Press-in:

1. Prepare panel as shown, do not chamfer edge.
2. Place standoff into installation hole.
3. Provide solid back-up behind hole with clearance hole for screw.
4. Press part into panel. Punch must not touch plastic knob during installation.

Recommended minimum distance from the panel edge to the centerline of the installation hole is 1.5 x Ø D. * For panels thinner than 0.9 (.036) contact Southco.

Flare-in

1. Prepare panel as shown.
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool. Installation force depends on screw size.
3. Punch cannot touch plastic during installation.

CN ATCA Inject / Eject Mechanism

Alignment keying modules

- **CN-80 robust design passes the NEBS drop test**
- **Multiple pin positions ensure proper board mating**

Material and Finish

Dual pin CN68 and CN78:
Die-cast zinc, nickel plated

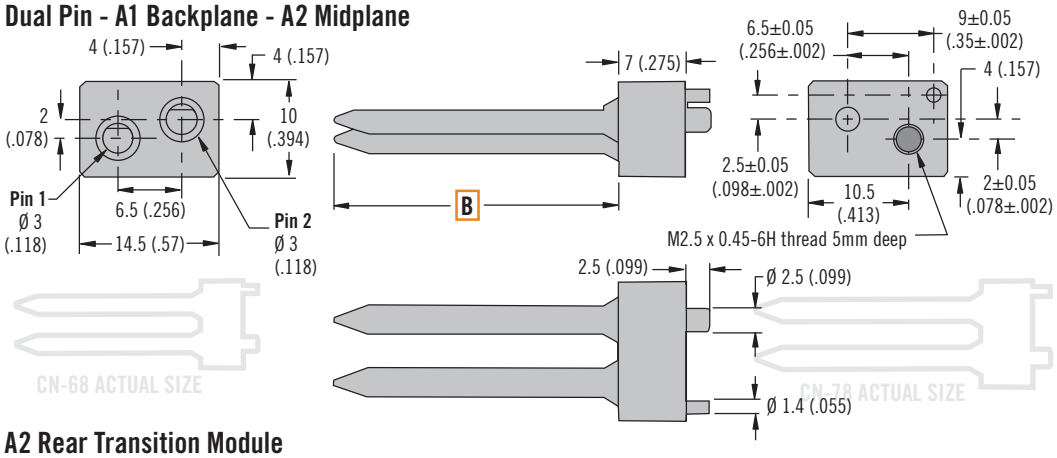
Dual pin CN80:
Die-cast zinc, hardened steel, nickel plated

Single pin:
Brass, nickel plate

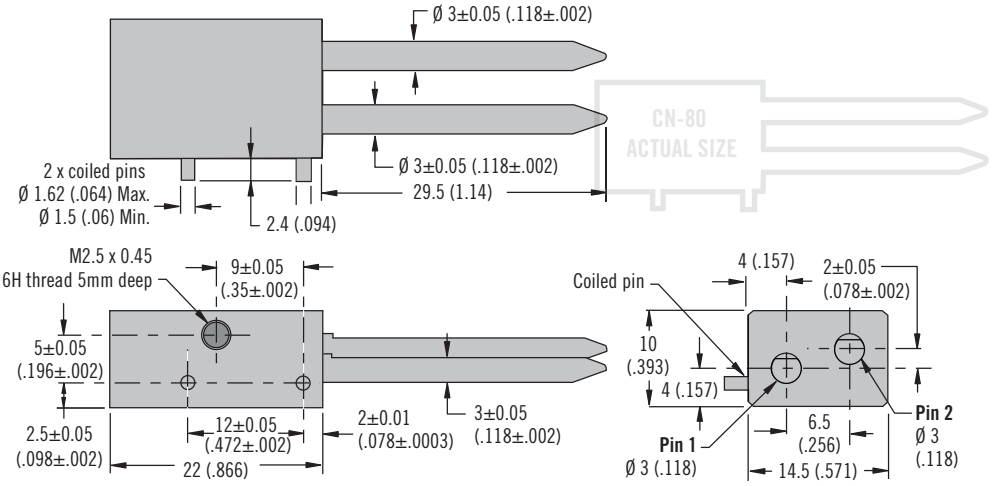
Notes

Keying module rotation position must mate with receptacle module rotation position

Dual Pin - A1 Backplane - A2 Midplane



A2 Rear Transition Module



Dual Pin Part Number

CN - B - X - Y

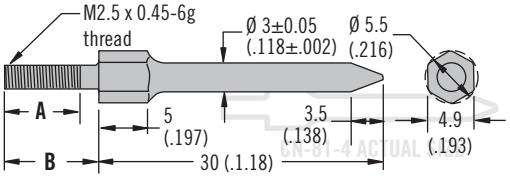
B Pin length
68 A1 backplane 22.5 (.885)
78 A2 midplane 29.5 (1.16)

A2 Rear Transition Module Part Number

CN - 80 - X - Y

X Pin 1 Position / Y Pin 2 Position	Rotation	Keying Position
1	0°	
2	45°	
3	90°	
4	135°	
5	180°	
6	225°	
7	270°	
8	315°	

Single Pin - A1 Backplane

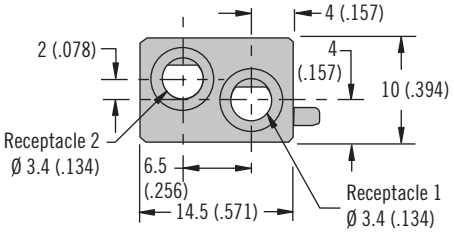


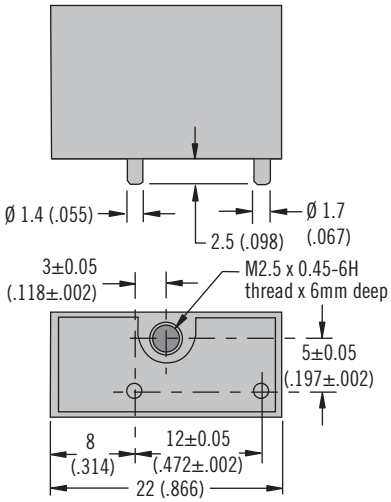
Single Pin Part Number	A	B
CN-81-4	4 (.157)	6 (.236)
CN-81-6	6 (.236)	8 (.315)
CN-81-8	8 (.315)	10 (.394)

INFO CLIC www.southco.com/CN

Dimensions in millimeters (inch) unless otherwise stated

K1 - K2 Front Board

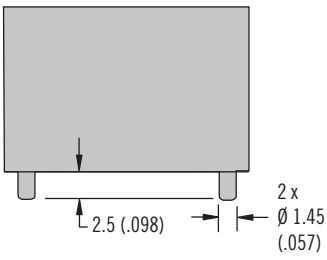


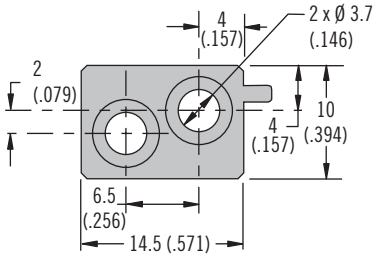


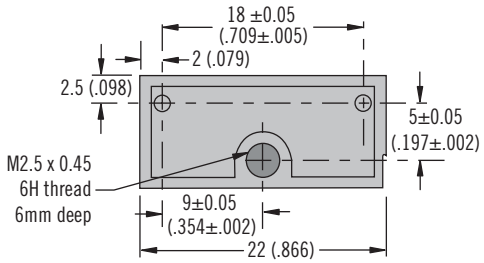
CN - 69 - X - Y

X Receptacle 1 Position Y Receptacle 2 Position	Rotation	Receptacle Position
1	0°	
2	45°	
3	90°	
4	135°	
5	180°	
6	225°	
7	270°	
8	315°	
0	N/A	

rK1 Rear Transition Module







Part Number
CN-79

- **Mates with pins**

Material and Finish

Die-cast zinc, nickel plate

Notes

Receptacle module rotation position must mate with keying module rotation position

P7 cPCI Inject / Eject Mechanism

Ejectors

- **Ergonomic design for easy operation**
- **Button protected to prevent accidental operation**
- **Button disengages microswitch prior to rotation of ejector handle**
- **Optional integrated microswitch**

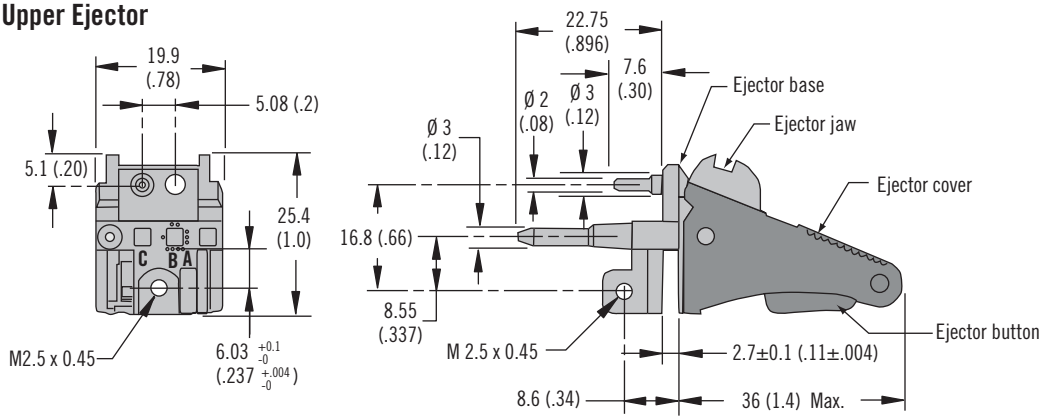
Material and Finish

Ejector base and jaws:
Zinc die-cast, nickel plated
Ejector cover: PC/ABS black
Ejector button: PC/ABS red
Torsion spring: Stainless steel
Pin and faceplate mounting screws:
Steel, zinc plated

Performance Details

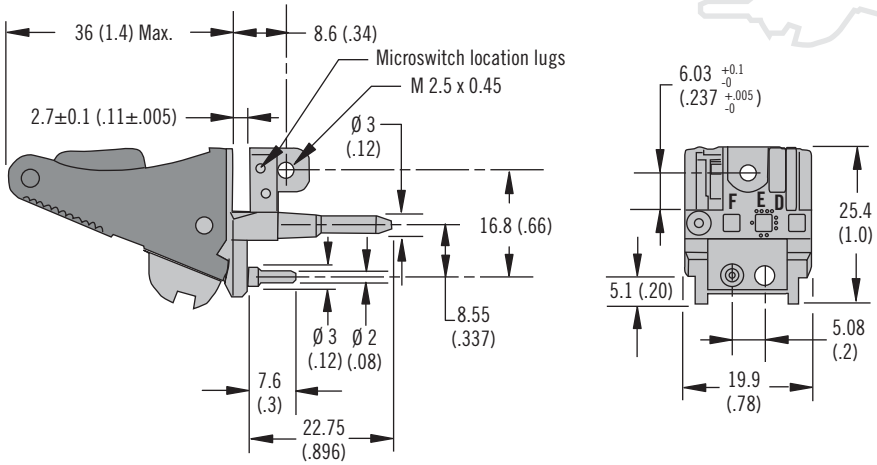
Flammability rating: UL94-V0

Upper Ejector



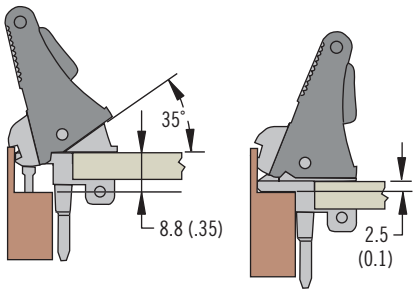
Part Number
P7-1-981-10

Lower Ejector (for use with microswitch)



Part Number
P7-1-991-10

Faceplate Travel

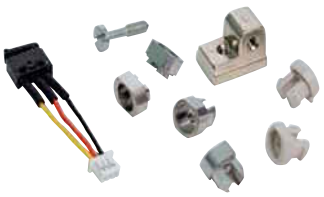


Note: 6.3 (0.24) total travel

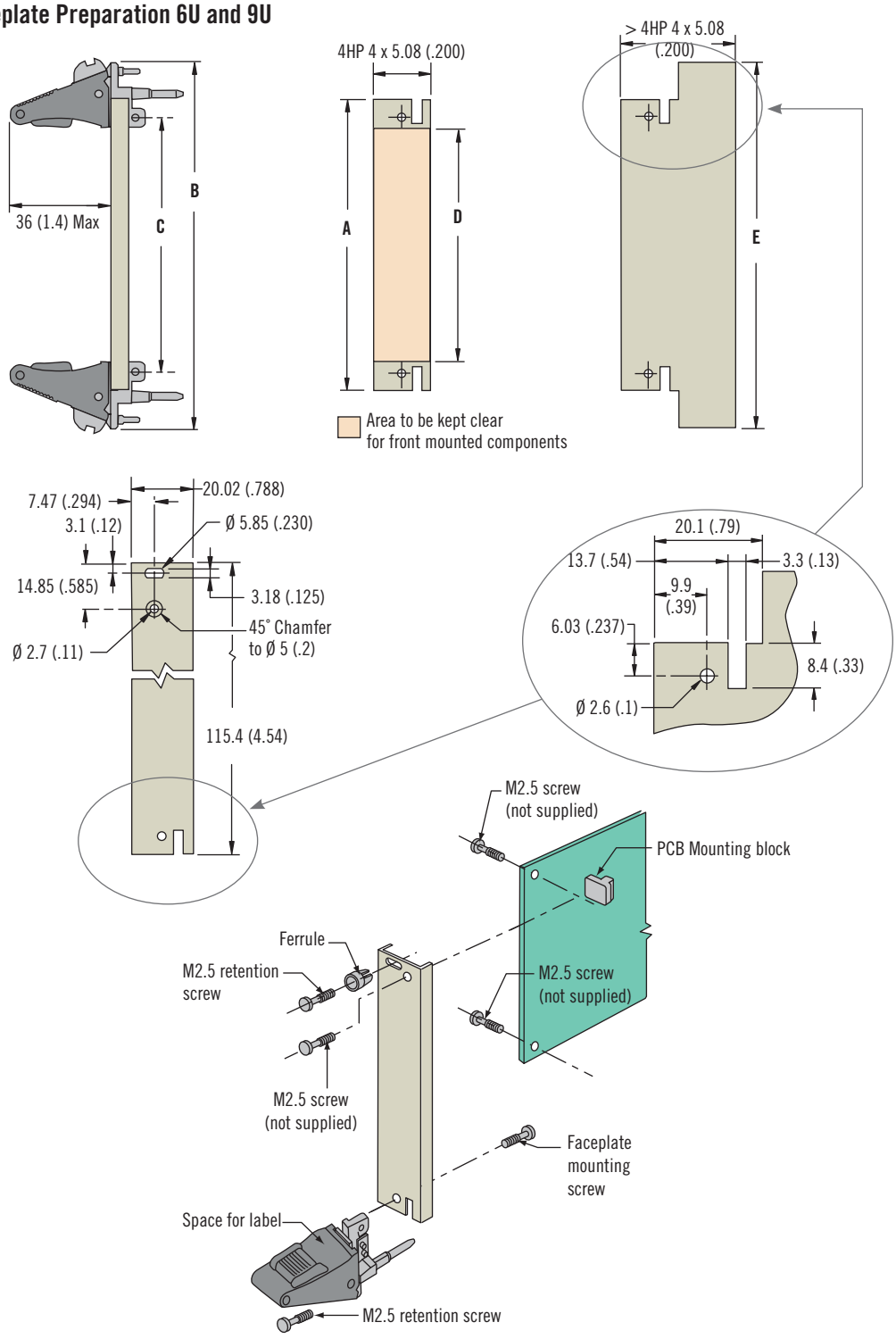
Dimensions in millimeters (inch) unless otherwise stated

P7 cPCI Inject / Eject Mechanism

Faceplate mounting hardware accessories



Faceplate Preparation 6U and 9U



Style	A	B	C	D	E
6U	235.4 (9.27)	255.85 (10.073)	222.25 (8.750)	214.65 (8.451)	262.05 (10.317)
9U	368.75 (14.518)	389.2 (15.323)	355.6 (14.00)	348 (13.701)	395.4 (15.567)

Microswitch assembly:
Attaches to ejector, allows for hot swap
Part number: P7-0-46720

M2.5 Retention screw:
Used with ferrules and ejectors
Material and finish: Steel plated
Part number: P7-0-45297

3U Hardware

Captivates M2.5 screw on faceplate

Snap-in ferrule:
Faceplate thickness
1.6 - 2.5 (.063 - .098)
Material and finish: ABS
Part number: P7-0-45227

Press-in ferrule:
Faceplate thickness
1.5 - 2.4 (.059 - .094)
Material and finish: Steel, Plated
Part number: P7-0-45302

Press-in ferrule flush:
Min. panel thickness 0.9 (.035)
Material and finish: Steel plated
Part number: P7-0-45244

PCB Mounting block:
Used to mount PCB in place of ejector
Material and finish: Zinc plated
Part number: P7-0-45234

Notes

All panel preparation tolerances ±0.1 (.004)

Dimensions in millimeters (inch) unless otherwise stated

P7 AMC Inject / Eject Mechanism

Pull module handle

- **Die-cast construction for robust performance**
- **Positive detent at three distinct positions**
- **Fits all current microswitch locations**
- **Custom colors available**

Material and Finish

Handle/shaft, housing and catch: Die-cast zinc, bright chromate

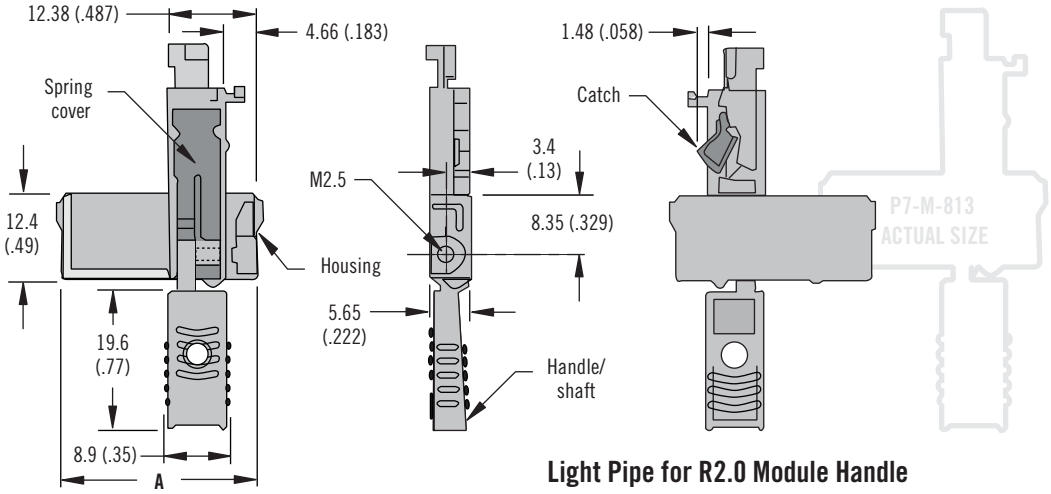
Notes

*Order light pipes separately

Other options available. For complete details on variety, part numbers, installation and specification, go to

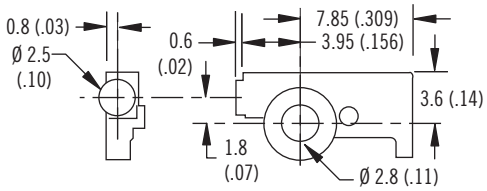
INFO CLIC

www.southco.com/P7



Part Number		Handle Size	A
Module handle	R2.0 Light pipe*		
P7-M-811-000	P7-10-812	Compact 3HP	12.50 (.492)
P7-M-812-000	P7-10-812	Mid size 4HP	17.55 (.691)
P7-M-813-000	P7-10-812	Full size 6HP	27.55 (1.085)

Light Pipe for R2.0 Module Handle



P7 AMC Inject / Eject Mechanism

Flush module handle

- **Flush button prevents snagging of handle**
- **Flush button allows for better aesthetics**
- **Locking pin feature**

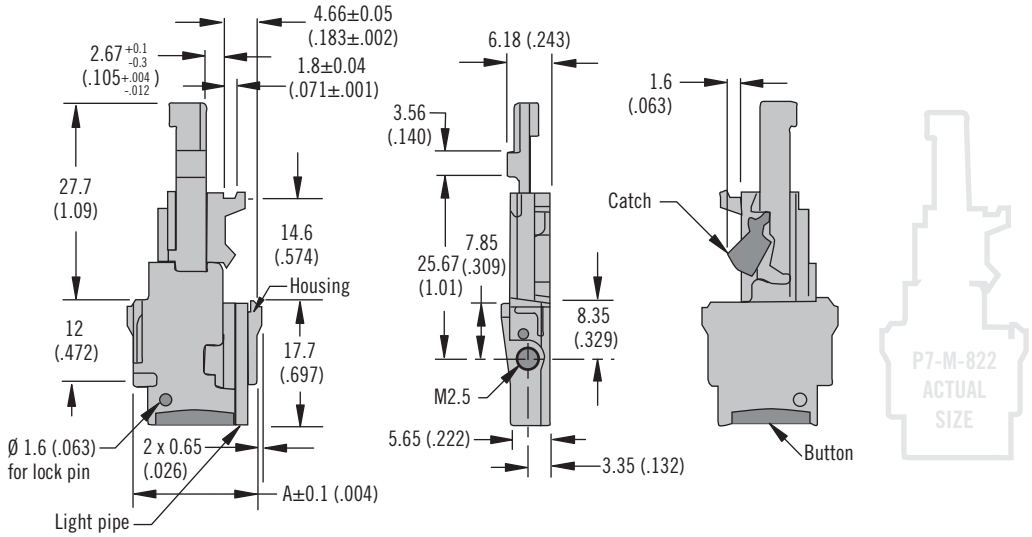
Material and Finish

Handle/shaft: Die-cast zinc, black epoxy coat
Housing, cover and catch: Die-cast zinc, bright nickel plate
Light pipe: Polycarbonate clear

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/P7



Part Number	Handle Size	A
P7-M-822	Mid size 4HP	17.55 (.691)
P7-M-823	Full size 6HP	27.55 (1.085)

Dimensions in millimeters (inch) unless otherwise stated

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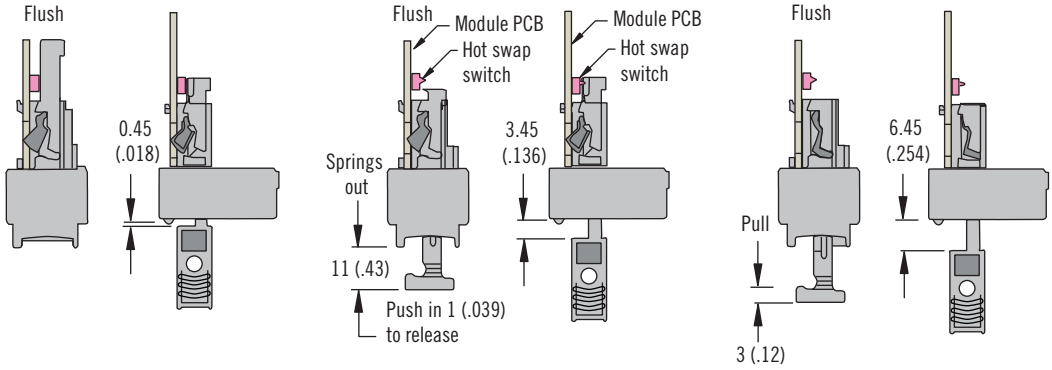
P7 AMC Inject / Eject Mechanism

Operation

Operation



Module Latched Switch Actuated

Module Latched Switch Released

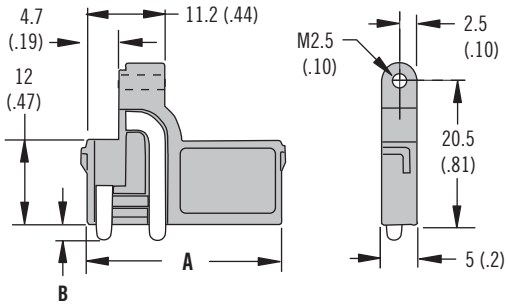
Module Unlatched Switch Released

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/P7*

P7 AMC Light Pipe Bracket

R2.0



Part Number	Bracket Size	A	B
P7-L-811	Compact	12.50 (.492)	2.1 (.08)
P7-L-812	Mid size	17.55 (.691)	
P7-L-813	Full size	27.55 (1.085)	
P7-L-811-11	Compact flush	12.50 (.492)	0.3 (.012)
P7-L-812-11	Mid size flush	17.55 (.691)	
P7-L-813-11	Full size flush	27.55 (1.085)	

- **Easily snaps into faceplate**
- **Bracket includes light pipe and housing**
- **Compatibility with all standard Advanced MC faceplates**

Material and Finish

Light pipe housing: Die-cast zinc, bright chromate
Light pipe: Polycarbonate, clear

Notes

For R1.0 light pipe bracket go to www.southco.com

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/P7*

Dimensions in millimeters (inch) unless otherwise stated

P7 AMC Inject / Eject Mechanism

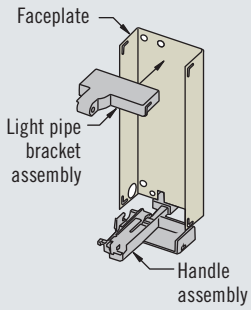
Module handle & light pipe bracket panel preparation

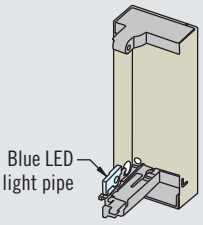
Installation Notes

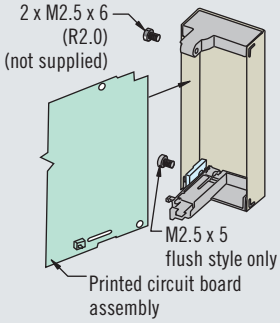
1. Snap handle assembly and light pipe bracket into faceplate.
2. For R2.0, position blue LED light pipe into handle assembly and faceplate. Light pipe should be positioned against outside wall of handle assembly.
3. Slide PCB in place and secure with screws. Blue LED light pipe is located on component side 2 of the PCB.

Notes

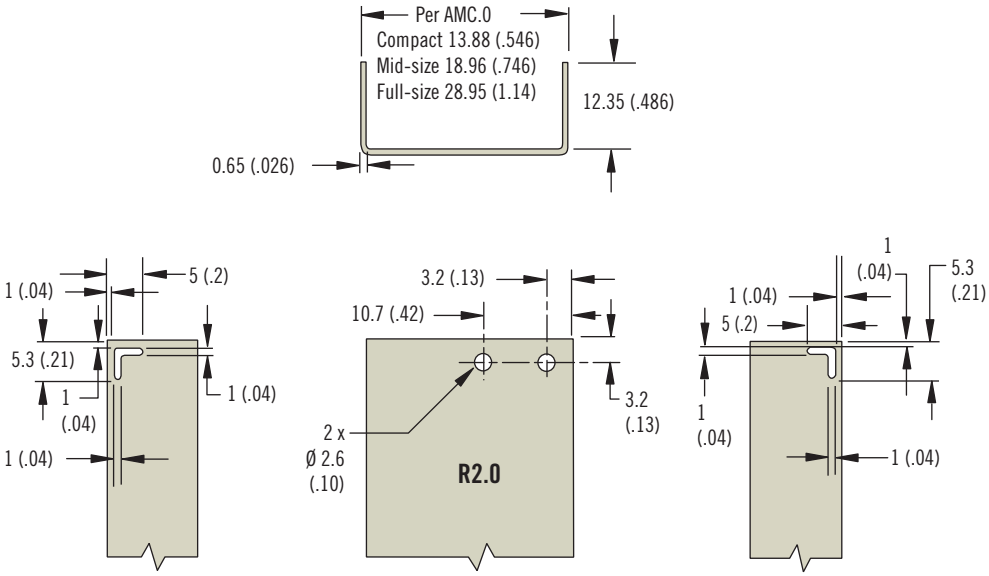
All panel preparation tolerances ±0.1 (.004)



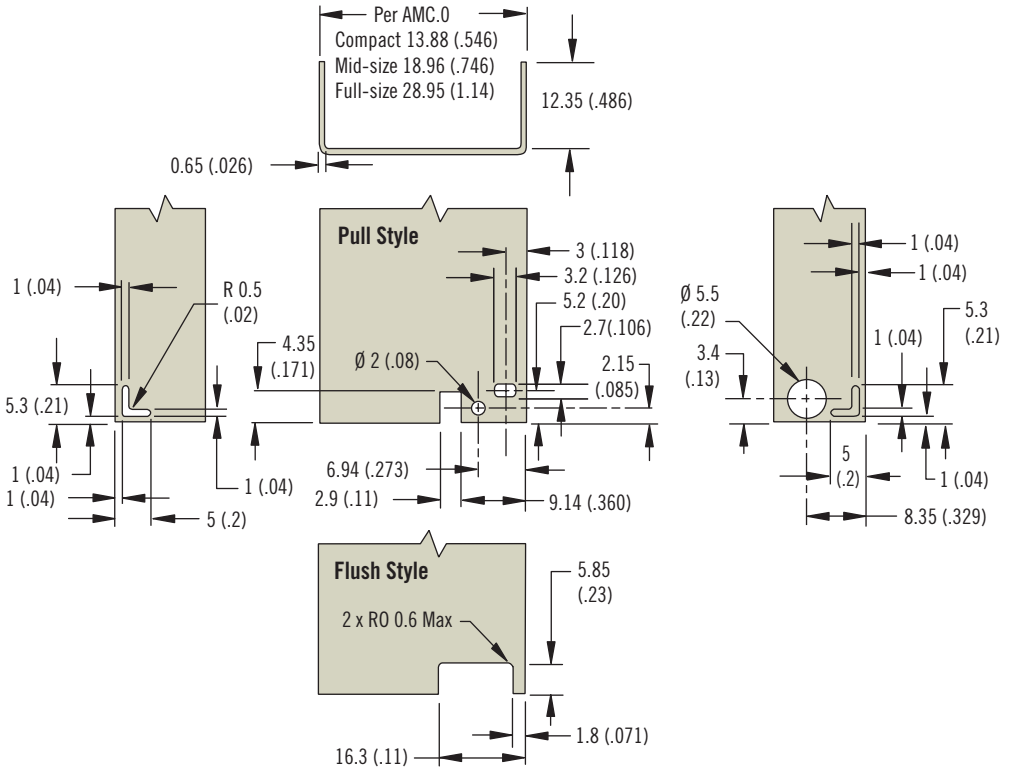




Panel Preparation Light Pipe Brackets



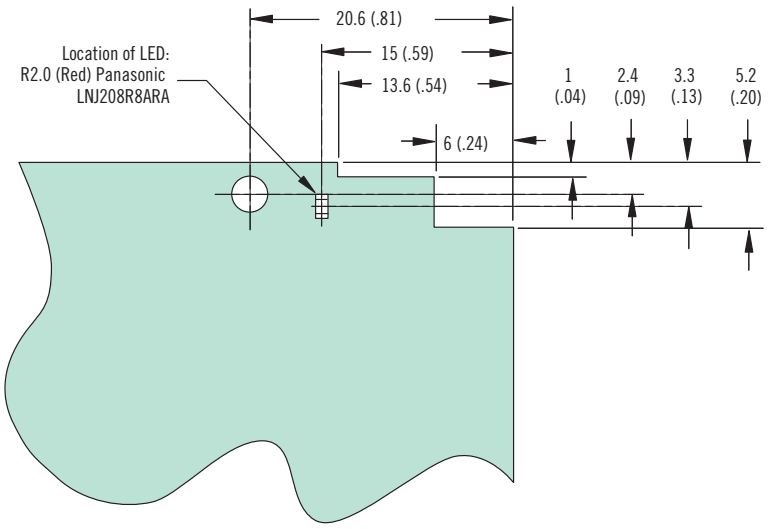
Panel Preparation Module Handles



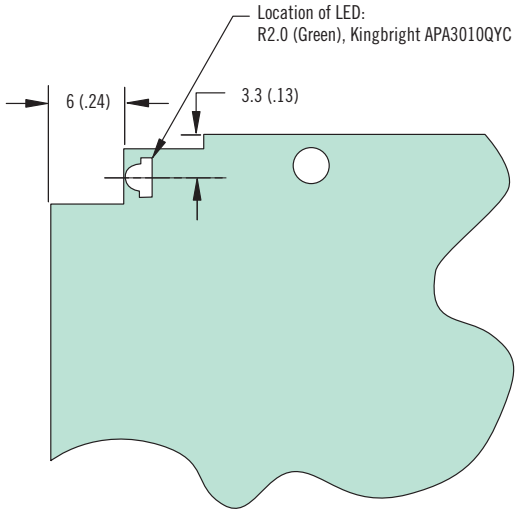
Dimensions in millimeters (inch) unless otherwise stated

PCB Preparation

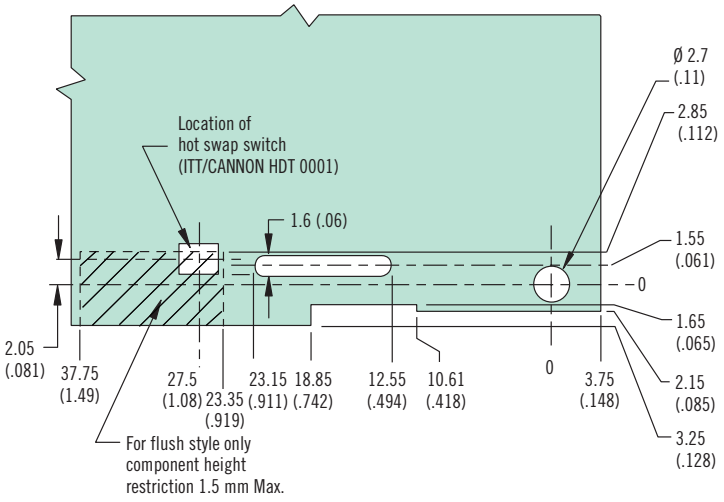
Printed Circuit Board Component Side 1



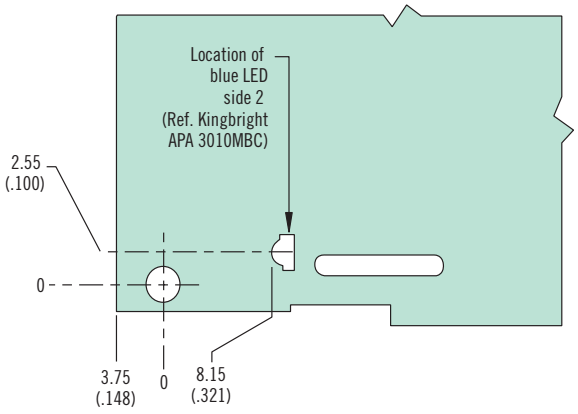
Printed Circuit Board Component Side 2



Printed Circuit Board Component Side 1



Printed Circuit Board Component Side 2



CN Inject / Eject Mechanism

Ejectors

Material and Finish

Module ejector:
Lever and slide:
Glass-filled nylon, white
Base: Die-cast zinc, nickel plated
Pin and spring: Stainless steel, passivated

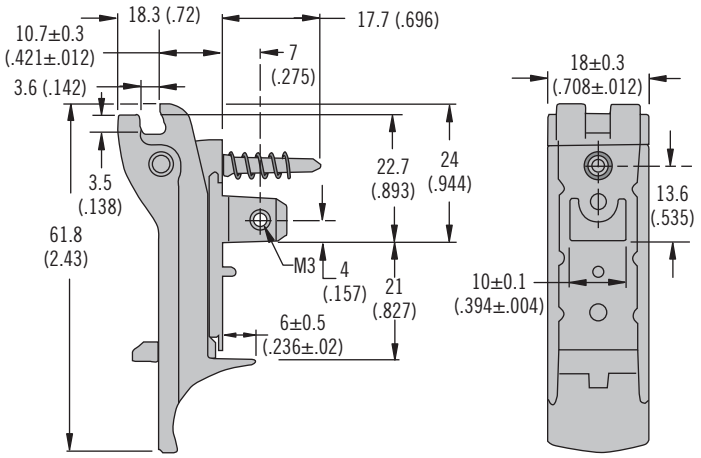
Blanking panel ejector:
Lever: Glass-filled nylon, white
Base: Polycarbonate, white
Pin: Stainless steel, passivated

Mini module ejector:
Lever and catch:
Polycarbonate, gray
Base: Die-cast zinc, natural
Pin: Stainless steel, passivated

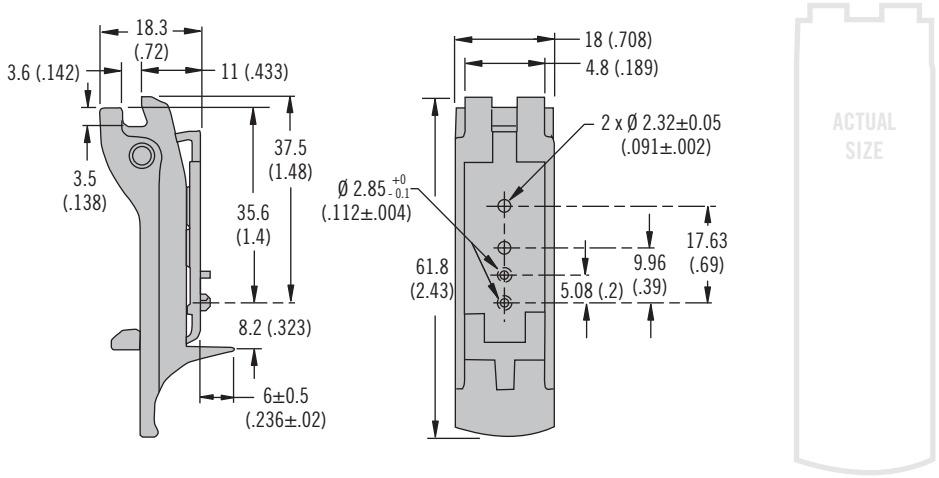
Performance Details

Flammability rating: UL94-V0 rated plastic components

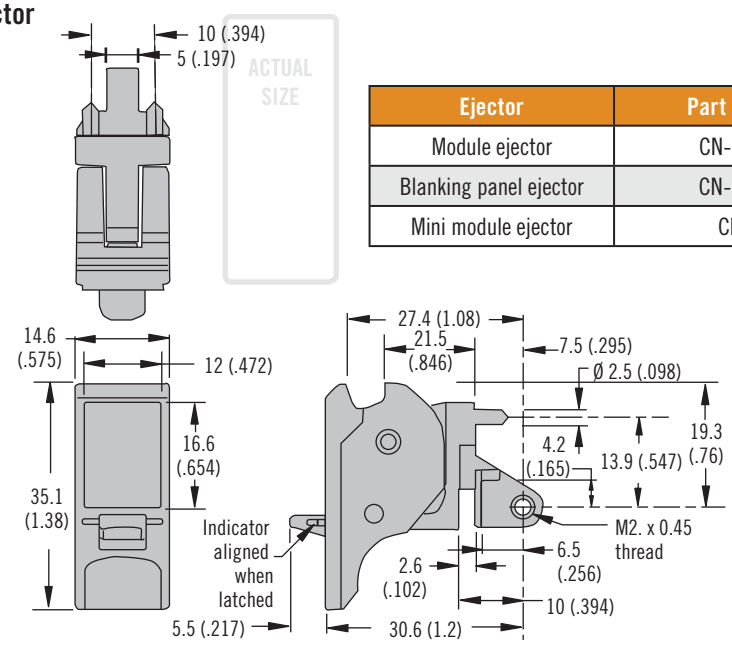
Module Ejector



Blanking Panel Ejector



Mini Module Ejector



Ejector	Part Number
Module ejector	CN-10-3-A
Blanking panel ejector	CN-10-9-A
Mini module ejector	CN-11

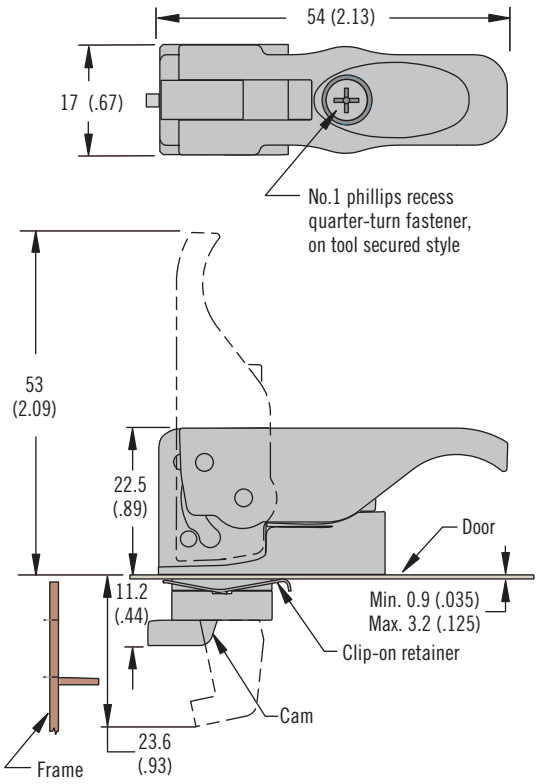
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com/CN

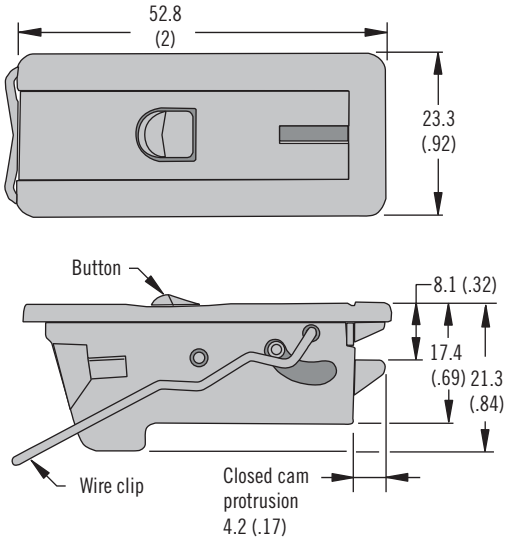
Dimensions in millimeters (inch) unless otherwise stated

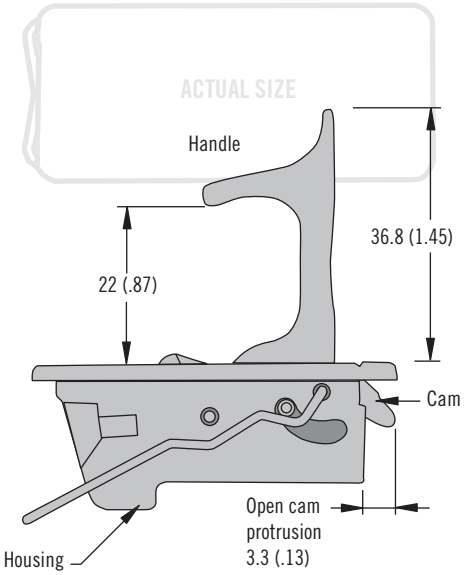
Handle



Part Number			
Panel Thickness	**Non Tool Secured**	**Tool Secured**	**Secondary Catch**
0.9 - 1.6 (.035 - .063)	P7-1-301-15	P7-1-302-15	P7-1-303-15
1.7 - 2.4 (.067 - .094)	P7-1-301-25	P7-1-302-25	P7-1-303-25
2.5 - 3.2 (.098 - .125)	P7-1-301-35	P7-1-302-35	P7-1-303-35

Flush





Part Number
P7-99-103-53

Material and Finish

Handle
Housing, lever: Polyester, black
Cam: Low carbon steel, zinc plated, chromate plus sealer
Pins: 302 Stainless steel, passivated
Clip-on retainer: 301 Stainless steel, passivated

Flush:
Housing, button and handle: Die-cast zinc, black powder coated
Cam: Steel, black zinc phosphate
Wire clip, torsion springs and pins: Stainless steel, natural

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/P7

Dimensions in millimeters (inch) unless otherwise stated

HINGES & POSITION CONTROL DEVICES

Hinges

Need to tilt or swivel a flat panel display to eliminate glare? Adjust a headrest for comfort? Position a keyboard angle for optimal ergonomics? Southco's range of hinges and positioning mechanisms go well beyond a simple hinge. Our extensive range of solutions for managing door and panel motion can bring new functionality and performance to any application.

Need to attach or remove a door without tools, hold it open or closed? Southco has a hinge solution for you. How strong a hinge do you need? With materials ranging from light-weight plastics to heavy-duty cast stainless steel, and a wide range of sizes and installation styles, Southco has a hinge sized to your application needs. Flush door, offset door, wood panel, or metal panel? We have a hinge style to fit most common door and frame configurations.

Don't see what you need? All of Southco's hinge solutions can be customized to suit the specific needs of individual applications.

Positioning Mechanisms

When the requirement for motion management goes beyond a simple rotational motion, Southco's custom engineered positioning mechanisms can provide new levels of refinement and functionality to answer any motion management challenge. Need a tilt and swivel mechanism to control rotation in multiple axes? Need to make a heavy object easier to move? Need an object to deploy automatically when a latch is released? Southco can solve these challenges and more. Explore a few applications of our custom positioning technology on page 423, or contact a Southco expert with the specifics of your challenge.

Southco's broad line of external hinges provides an easy-to-install solution.

- External mounting maximizes available space inside the enclosure
- Wide range of mounting options to suit most door and frame configurations

External Hinges

Pages 424 - 451

E6

ST

C6

G6

96

EH

SOUTHCO® embedded hinges can be designed-in to become an integral part of any application.

- Shapes and sizes designed specifically to allow easy packaging within the envelope of the application
- Mold-in or conceal with snap-on covers
- Seamlessly integrate position control features into any application

Embedded Hinges

Pages 452 - 462

G7

ST

ST

SOUTHCO® concealed hinges are mounted inside the application, making the hinges invisible when the door is closed.

- Allow the application's industrial design goals to shine through
- Combine hidden mounting with simple installation

Concealed Hinges

Pages 463 - 469

F6

F6

R6

Hinges and Position Control Devices

Selection guide

Use this selection guide to choose the right hinge for your application

- Stainless Steel
- External
- Embedded
- Concealed
- Torque
- Detent
- Removable

HINGE SERIES			MATERIAL				
			Aluminum	Zinc	Steel	Stainless Steel	Plastic
EXTERNAL Pages 424 - 451		E6 Constant Torque	✔	✔			
		E6 Adjustable Torque					✔
		ST 8 / 11		✔			
		C6 & G6					✔
		96		✔	✔	✔	✔
		EH		✔		✔	✔
		N6				✔	
		KH		✔			✔
EMBEDDED PAGES 452 - 462		ST 4 / 7 / 10 / 12	✔	✔			
		ST 8P / 11P	✔				
		G7					✔
CONCEALED PAGES 463 - 469		F6			✔	✔	✔
		R6			✔	✔	

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Dimensions in millimeters (inch) unless otherwise stated

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OPERATION				
Constant Torque	Adjustable Torque	Detent	Free Operating	Removable
✔			✔	
	✔		✔	
✔				
		✔	✔	
			✔	✔
			✔	
			✔	
			✔	✔
✔				
✔				
		✔		
			✔	✔
		✔	✔	

Hinges and Position Control Devices

Overview

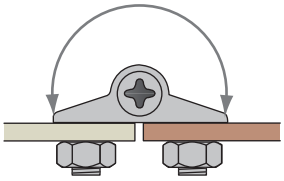
Versatility and simplicity in action

Hinging requirements vary significantly for different construction methods and aesthetic goals. Use the guide below to find the right hinge for your application.

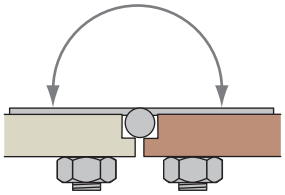
Application Styles

External Hinges

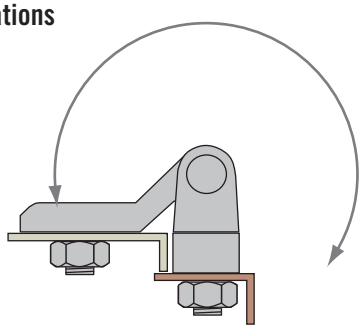
- A variety of styles and materials to complement all applications
- Maximize interior space within the application



Surface Mount



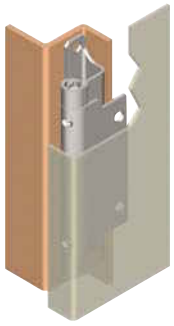
Flush Mount



Offset Mount

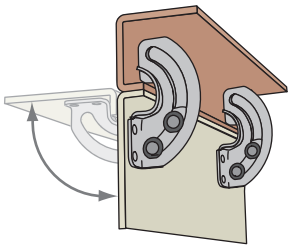
Concealed Hinges

- Hidden to let you control the aesthetics
- Eliminate visible attack points for vandal resistance



C-Frame
Concealed Pivot

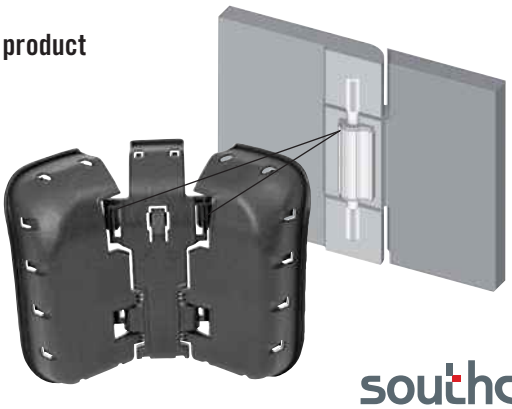
End Mount
Concealed Pivot



Virtual
Pivot

Embedded Hinges

- An integral part of the solution
- Add positioning features to enhance your product



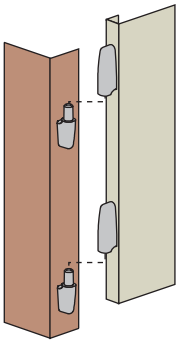
Dimensions in millimeters (inch) unless otherwise stated

Product Features

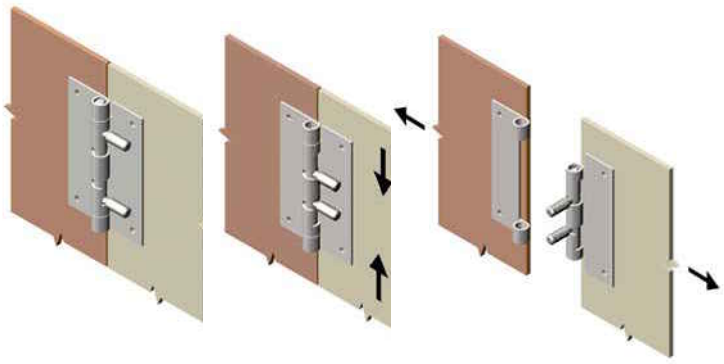
Door Removal

- Removable hinges allow doors to be easily removed without tools
- Hinges with door removal feature assist the assembly, service and installation of doors

Southco offers two types of door removal hinges:



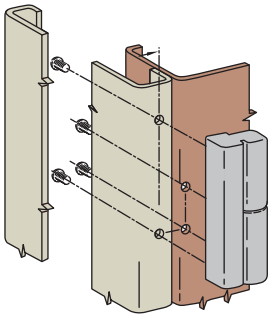
Lift-Off



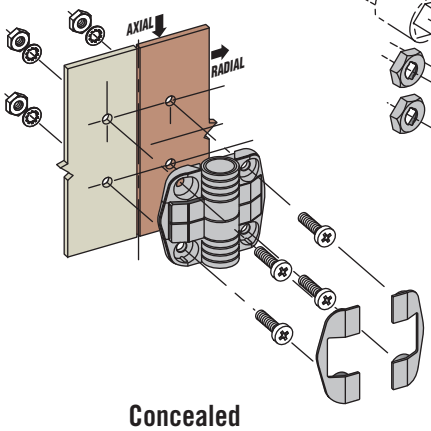
Removable / Retracting Pin

Installation Method

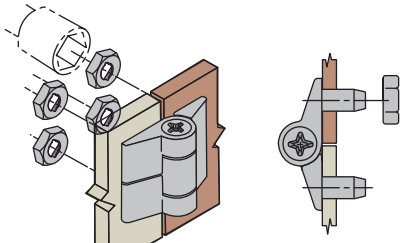
- *SOUTHCO®* hinges offer a range of installation methods to suit the application construction



Tapped Hole / Rear Mount Hardware



Concealed Hardware



With Integrated Mounting Studs

Hinges and Position Control Devices

Overview

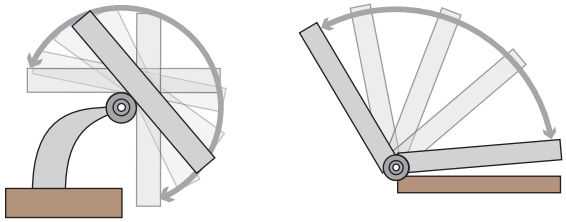
Positioning Technology

Southco´s wide range of solutions for controlling motion can be used to enhance functionality in almost any application. The range of solutions can be as simple as the integration of constant torque systems into a standard hinge, or as sophisticated as a fully customized system for positioning or deployment. Backed by Southco´s reputation for engineered reliability, most positioning technology solutions have life-long performance with no requirement for maintenance or adjustment.

SOUTHCO® position control hinges are available in various styles:

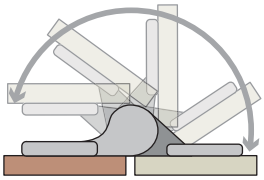
Torque Hinges

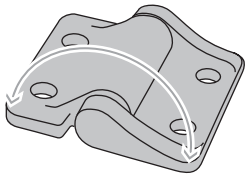
- Allow for infinitely variable positioning
- Holds securely at all positions



Constant Torque

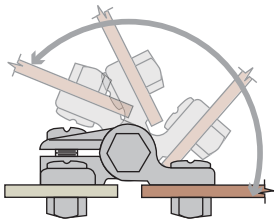
- Pre-set at precise torque values
- Maximum reliability, with no need for adjustment

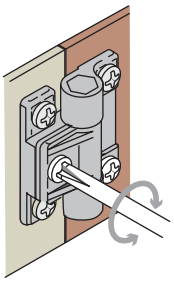




Adjustable Torque

- Allow end user customization





Detent / Bi-Stable Hinges

- Hold or seek a pre-defined position
- Can be used to hold door shut without a latch

Counterbalance & Stored Energy Hinges

- Enable heavy panels to operate with ease
- Allow panels to "pop open" when a latch is released

Customized solutions

When the requirements of your application go beyond our standard product line, Southco´s global engineering team is available to create a customized solution to meet your needs.

Overhead infotainment deployment system

- Stored energy allows for self-opening to 20 degrees
- Constant torque provides infinitely adjustable viewing angle
- Detent click provides a signal to prevent over-travel
- Integrated display power switching

Pop-up display screen

- Stored energy drives screen deployment
- Deploys vertically with controlled speed
- Constant torque allows for infinite positioning

Tilt and swivel devices

- Safety feature activates display only when rear facing
- Constant torque provides multi-axis positioning
- Lock out device ensures correct folding sequence

Integrated headrest assembly

Display mounts

- Integrated counterbalance allows for fingertip tilt, swivel and pan adjustment
- Structural design provides mechanical support and integrated cable management
- Adapted to suit challenges from home interiors to harsh service environments

EH and N6 Hinges

Surface mount · Stainless steel

Southco offers a full range of cast and stamped stainless steel hinges to fit almost any application. With multiple installation options, and an easy-to-clean polished finish, there is a ***SOUTHCO®*** hinge for your application.

Stamped hinges are available in both 304 and 316 stainless steel construction. Polished to a mirror finish, they offer a strong, effective hinge solution for doors in applications where corrosion resistance and a decorative finish is required.

Cast hinges provide a wide range of looks to complement any product. Their heavy construction withstands the worst abuse and lends a sense of robustness to any product.

Many of Southco's hinges are available with self-adhesive stainless steel covers. These covered hinges combine ease of installation with a smooth finished appearance.

Our range of hinges is constantly expanding. For the full range of standard hinge sizes visit our website:

For stamped construction, go to: www.southco.com/N6
For cast construction, go to: www.southco.com/EH

Don't see what you need, we can easily customize a hinge for your application. Contact your local Southco representative for further information.

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com

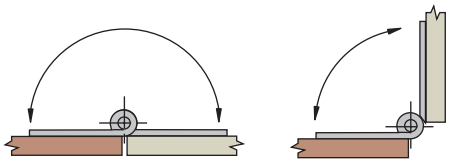
Dimensions in millimeters (inch) unless otherwise stated

EH and N6 Hinges

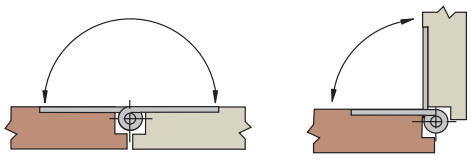
Surface mount · Stainless steel

There is an installation style available to suit almost any application. Some of our most common styles are shown below.

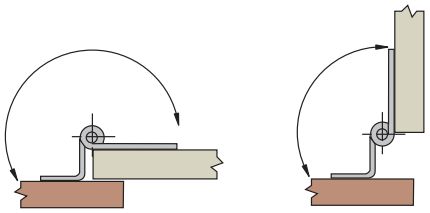
Surface Mount: Easy installation and 180⁰ opening angle



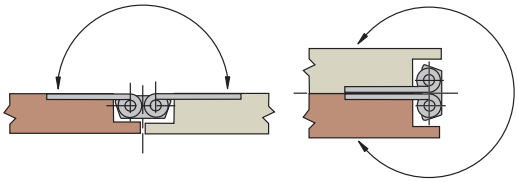
Flush Mount: Low profile provides clean exterior lines



Offset Mount: Easy installation of overlay doors



Two Pivot Mount: Low profile with 180⁰ opening angle



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Dimensions in millimeters (inch) unless otherwise stated

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC

www.southco.com

E6 Hinge

Position control · Adjustable torque

- **Hold doors open, in position**
- **User-adjusted holding torque**

Material and Finish

Leaves: Acetal
Pin: Polycarbonate
Adjustment screw & nut: Stainless steel

Performance Details

Radial load:
Large: 3110 N (700 lbf)
Medium: 1780 N (400 lbf)

Axial load:
Large: 2000 N (450 lbf)
Medium: 890 N (200 lbf)

Max. prevailing torque of hinge:
Large: 4 N•m (35 in•lbf)
Medium: 0.8 N•m (7 in•lbf)

Operating temperature range:
-5°C (20°F) to 65°C (150°F)

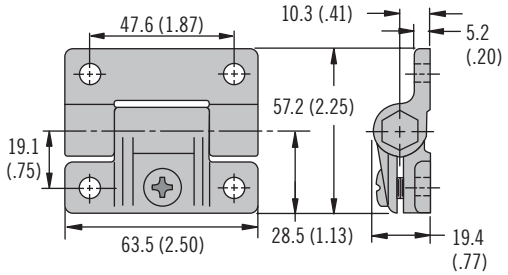
Installation Notes

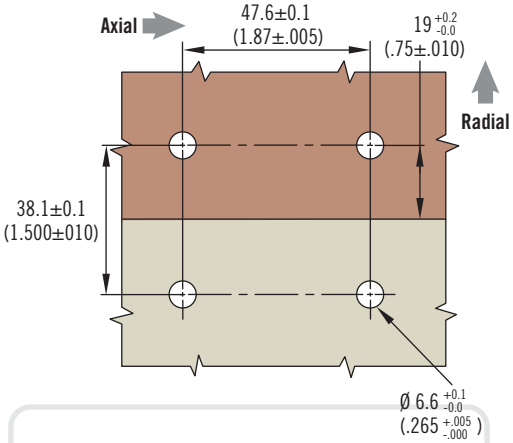
Mount with:
Large: M6 (1/4-20)
Medium: M4 (8-32)
(screws not supplied)

Part Number

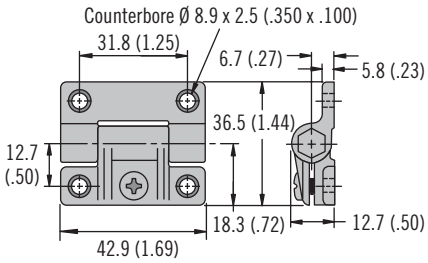
See table

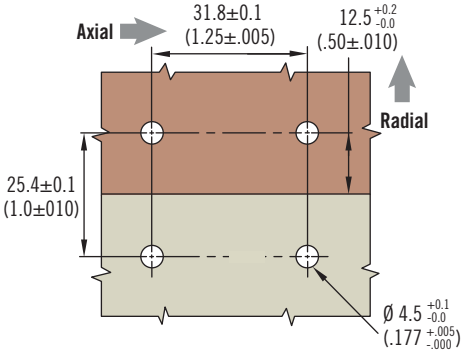
Large



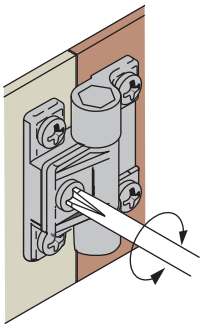


Medium





Torque Adjustment



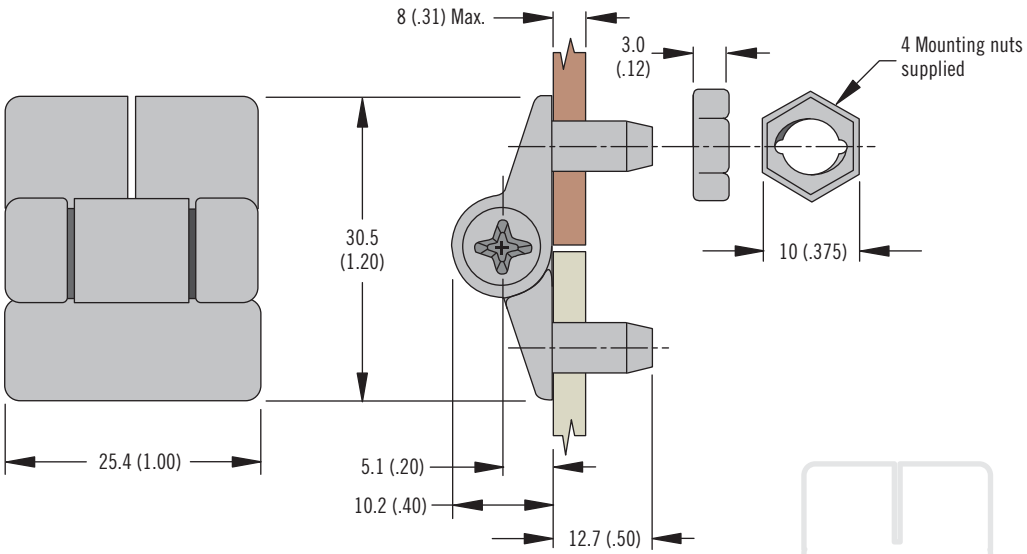
Part Number		
Color	**Large**	**Medium**
Black	E6-10-501-20	E6-10-301-20
White	E6-10-501-10	E6-10-301-10

Dimensions in millimeters (inch) unless otherwise stated

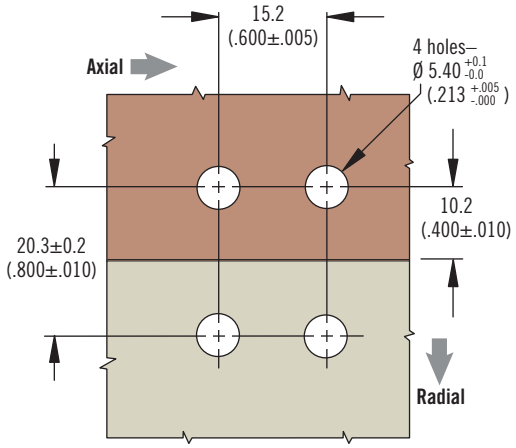
E6 Hinge

Position control · Adjustable torque

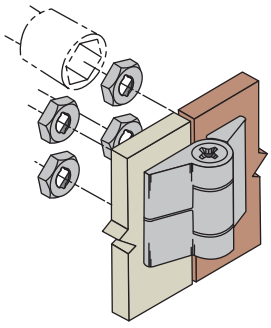
- **Hold doors open, in position**
- **User-adjusted holding torque**



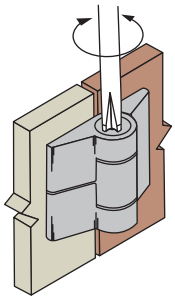
1. Prepare door and frame



2. Mount



3. Adjust torque



Material and Finish

Acetal, nylon
Mounting hardware:
Steel, zinc plated

Performance Details

Radial load:
Average ultimate load:
1150 N (260 lbf)

Axial load:
Average ultimate load:
950 N (214 lbf)

Max. prevailing torque of hinge:
0.25 N•m (2.2 in•lbf)

Operating temperature range:
-5°C (-20°F) to 65°C (150°F)

Notes

Packaging: One hinge and four mounting nuts per bag

Color	Part Number
Black	E6-10-101-20
White	E6-10-101-30

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

ST-11A Hinge

Position control · Constant torque

- **Holds in every position**
- **No adjustment required**
- **Long cycle life**

Material and Finish

Zinc alloy, black paint

Performance Details

Cycle performance
20,000 cycles within ±20% of static torque specification

Installation Notes

Thread stud install with M5 nuts (not supplied)

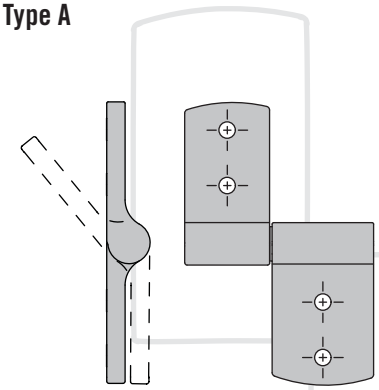
Thru hole install with M5 (No. 10) screws (not supplied)

To ensure proper function, assembly must include a minimum of one Type **A** and one Type **B** hinge

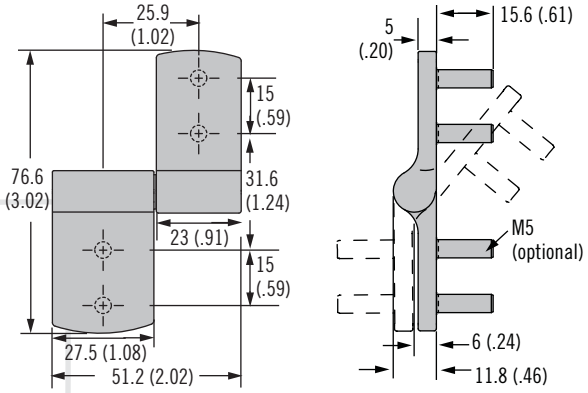
Part Number

See table

Type A

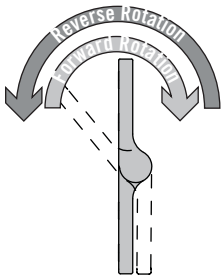


Type B

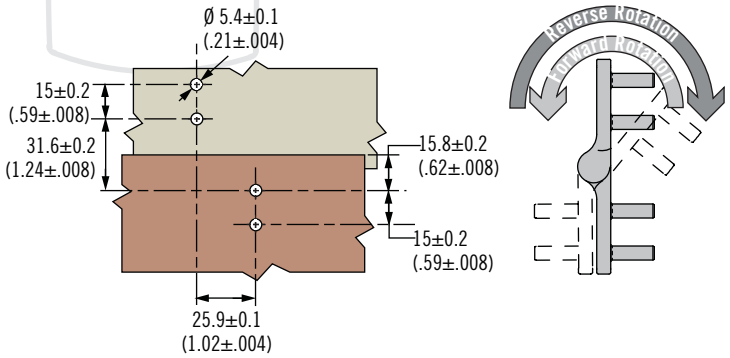


ACTUAL SIZE

Thru Hole Version Shown



Thread Stud Version Shown



Symmetric Torque Version				
Part Number				Static Torque (forward and reverse) N·m (in·lbf)
M5 Thread Stud		Thru Hole		
Type A	Type B	Type A	Type B	
ST-11A1-140SA-50	ST-11A1-140SB-50	ST-11A-140SA-50	ST-11A-140SB-50	1.58 (14)
ST-11A1-200SA-50	ST-11A1-200SB-50	ST-11A-200SA-50	ST-11A-200SB-50	2.26 (20)
ST-11A1-260SA-50	ST-11A1-260SB-50	ST-11A-260SA-50	ST-11A-260SB-50	2.94 (26)

Asymmetric Torque Version					
Part Number				Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
M5 Thread Stud		Thru Hole			
Type A	Type B	Type A	Type B		
ST-11A1-140FA-50	ST-11A1-140FB-50	ST-11A-140FA-50	ST-11A-140FB-50	1.58 (14)	0.95 (8.4)
ST-11A1-200FA-50	ST-11A1-200FB-50	ST-11A-200FA-50	ST-11A-200FB-50	2.26 (20)	1.36 (12)
ST-11A1-260FA-50	ST-11A1-260FB-50	ST-11A-260FA-50	ST-11A-260FB-50	2.94 (26)	1.76 (15.6)
ST-11A1-320FA-50	ST-11A1-320FB-50	ST-11A-320FA-50	ST-11A-320FB-50	3.62 (32)	2.17 (19.2)
ST-11A1-140RA-50	ST-11A1-140RB-50	ST-11A-140RA-50	ST-11A-140RB-50	0.95 (8.4)	1.58 (14)
ST-11A1-200RA-50	ST-11A1-200RB-50	ST-11A-200RA-50	ST-11A-200RB-50	1.36 (12)	2.26 (20)
ST-11A1-260RA-50	ST-11A1-260RB-50	ST-11A-260RA-50	ST-11A-260RB-50	1.76 (15.6)	2.94 (26)
ST-11A1-320RA-50	ST-11A1-320RB-50	ST-11A-320RA-50	ST-11A-320RB-50	2.17 (19.2)	3.62 (32)

ST-8A Hinge

Position control · Constant torque

- **Holds in every position**
- **No adjustment required**
- **Long cycle life**

Material and Finish

Zinc alloy, black paint

Performance Details

Cycle performance
20,000 cycles within ±20% of static torque specification

Installation Notes

Thread stud install with M3 nuts (not supplied)

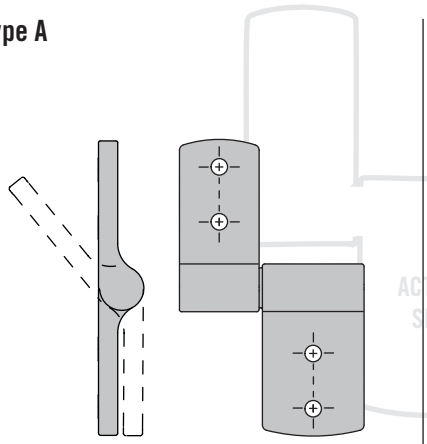
Thru hole install with M3 (No. 4) screws (not supplied)

To ensure proper function, assembly must include a minimum of one Type **A** and one Type **B** hinge

Part Number

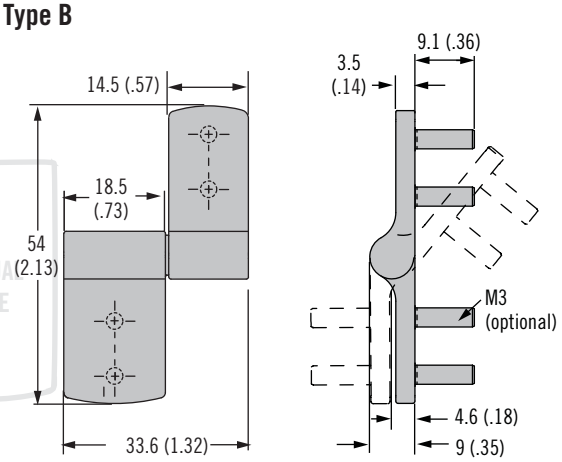
See table

Type A

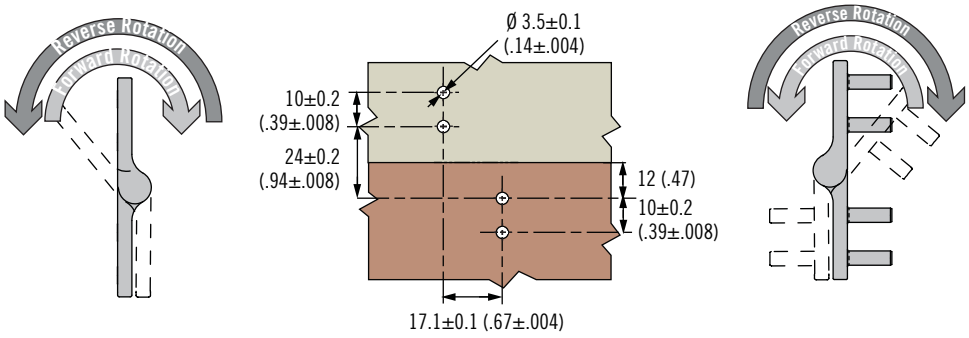


Thru Hole Version Shown

Type B



Thread Stud Version Shown



Symmetric Torque Version				
Part Number				Static Torque (forward and reverse) N·m (in·lbf)
M3 Thread Stud		Thru Hole		
Type A	Type B	Type A	Type B	
ST-8A1-40SA-50	ST-8A1-40SB-50	ST-8A-40SA-50	ST-8A-40SB-50	0.45 (4)
ST-8A1-60SA-50	ST-8A1-60SB-50	ST-8A-60SA-50	ST-8A-60SB-50	0.68 (6)
ST-8A1-80SA-50	ST-8A1-80SB-50	ST-8A-80SA-50	ST-8A-80SB-50	0.9 (8)

Asymmetric Torque Version					
Part Number				Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
M3 Thread Stud		Thru Hole			
Type A	Type B	Type A	Type B		
ST-8A1-40FA-50	ST-8A1-40FB-50	ST-8A-40FA-50	ST-8A-40FB-50	0.45 (4)	0.27 (2.4)
ST-8A1-60FA-50	ST-8A1-60FB-50	ST-8A-60FA-50	ST-8A-60FB-50	0.68 (6)	0.41 (3.6)
ST-8A1-80FA-50	ST-8A1-80FB-50	ST-8A-80FA-50	ST-8A-80FB-50	0.90 (8)	0.54 (4.8)
ST-8A1-100FA-50	ST-8A1-100FB-50	ST-8A-100FA-50	ST-8A-100FB-50	1.13 (10)	0.68 (6)
ST-8A1-40RA-50	ST-8A1-40RB-50	ST-8A-40RA-50	ST-8A-40RB-50	0.27 (2.4)	0.45 (4)
ST-8A1-60RA-50	ST-8A1-60RB-50	ST-8A-60RA-50	ST-8A-60RB-50	0.41 (3.6)	0.68 (6)
ST-8A1-80RA-50	ST-8A1-80RB-50	ST-8A-80RA-50	ST-8A-80RB-50	0.54 (4.8)	0.9 (8)
ST-8A1-100RA-50	ST-8A1-100RB-50	ST-8A-100RA-50	ST-8A-100RB-50	0.68 (6)	1.13 (10)

E6 Hinge

Position control · Constant torque

- **Holds in every position**
- **No adjustment required**
- **Long cycle life**

Material and Finish

Large: Zinc alloy, black paint
Medium: Aluminum alloy, black paint

Performance Details

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Radial load:
Large:
Max. static load: 200 N (45 lbf)
Average ultimate load:
11000 N (2470 lbf)

Medium:
Max. static load: 155 N (35 lbf)
Average ultimate load:
3000 N (675 lbf)

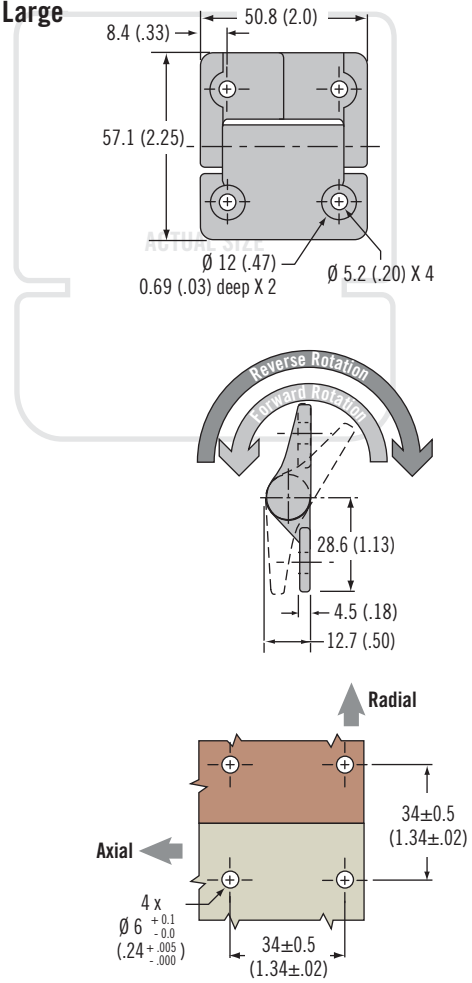
Axial load:
Large:
Max. static load: 200 N (45 lbf)
Average ultimate load:
2800 N (630 lbf)

Medium:
Max. static load: 155 N (35 lbf)
Average ultimate load:
1600 N (360 lbf)

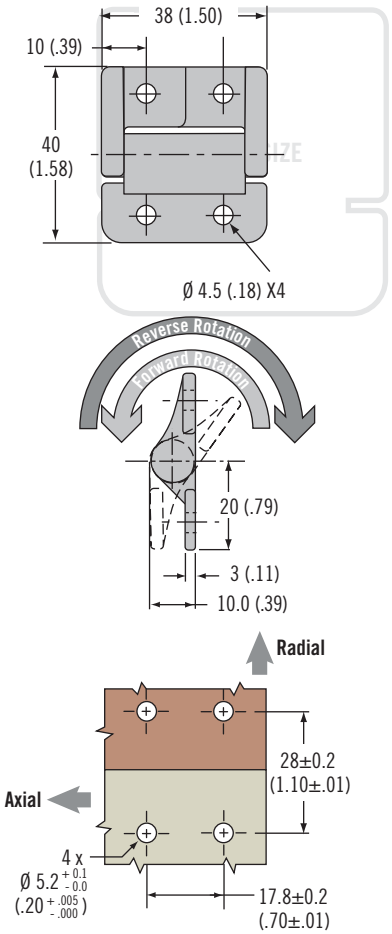
Part Number

See table

Large



Medium



Symmetric

Part Number	Symmetric Torque N·m (in·lbf)
E6-10-400-50	Free operating
E6-10-416-50	1.8 (16)
E6-10-420-50	2.3 (20)
E6-10-430-50	3.4 (30)

Asymmetric

Part Number	Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
E6-10-420F-50	2.3 (20)	1.4 (12)
E6-10-430F-50	3.4 (30)	2.0 (18)
E6-10-440F-50	4.5 (40)	2.7 (24)
E6-10-420R-50	1.4 (12)	2.3 (20)
E6-10-430R-50	2.0 (18)	3.4 (30)
E6-10-440R-50	2.7 (24)	4.5 (40)

Symmetric

Part Number	Symmetric Torque N·m (in·lbf)
E6-10-200-50	Free operating
E6-10-208-50	0.9 (8)
E6-10-212-50	1.4 (12)
E6-10-216-50	1.8 (16)
E6-10-220-50	2.3 (20)

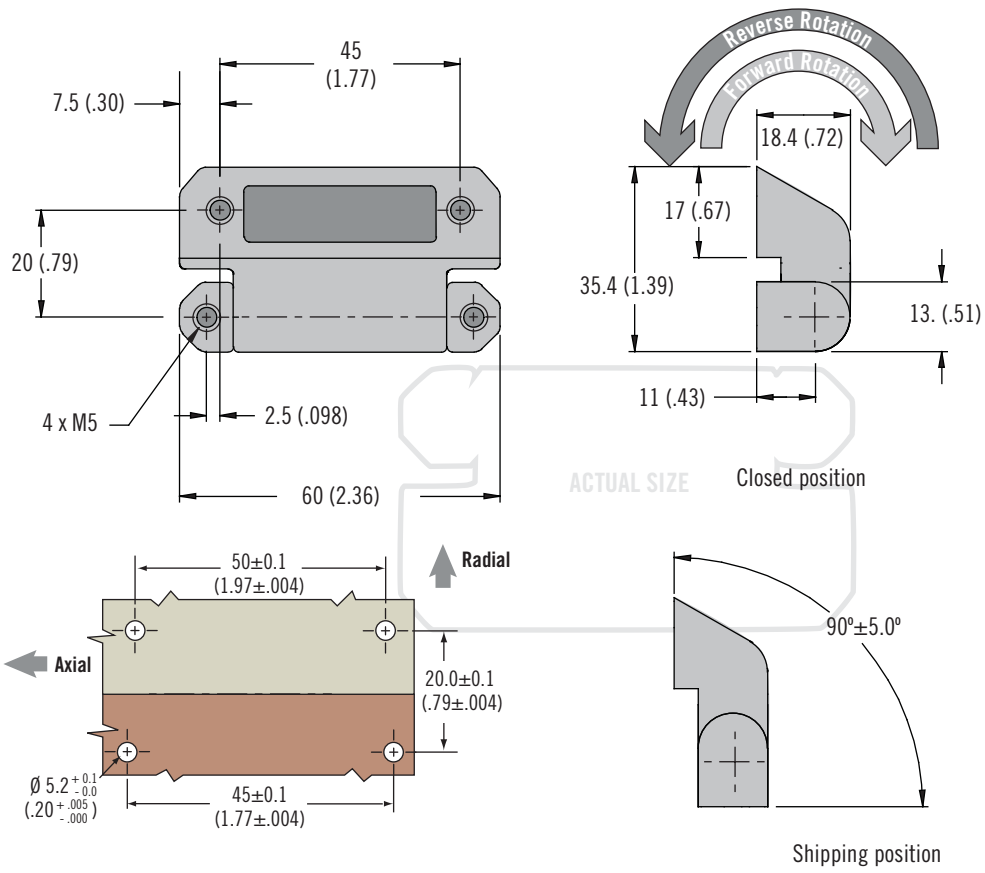
Asymmetric

Part Number	Forward Torque N·m (in·lbf)	Reverse torque N·m (in·lbf)
E6-10-212F-50	1.4 (12)	0.8 (7.2)
E6-10-216F-50	1.8 (16)	1.1 (9.6)
E6-10-220F-50	2.3 (20)	1.4 (12)
E6-10-224-F-50	2.7 (24)	1.6 (14.4)
E6-10-212R-50	0.8 (7.2)	1.4 (12)
E6-10-216R-50	1.1 (9.6)	1.8 (16)
E6-10-220R-50	1.4 (12)	2.3 (20)
E6-10-224R-50	1.6 (14.4)	2.7 (24)

Dimensions in millimeters (inch) unless otherwise stated

E6 Hinge

Position control · Constant torque



- **Holds in every position**
- **No adjustment required**
- **Long cycle life**

Material and Finish

Zinc alloy body with hardened steel internal components

Performance Details

20,000 cycles within ±20% of static torque specification

Installation Notes

Screws not supplied

Calculate screw length using the following formula:
Door thickness + 6 (.236)

Part Number

See table

Symmetric

Part Number		Symmetric Torque N·m (in·lbf)
Black	Satin Chrome	
E6-60-400-50	E6-60-400-20	Free operating
E6-60-412S-50	E6-60-412S-20	1.36 N·m (12 in·lbf)
E6-60-420S-50	E6-60-420S-20	2.26 N·m (20 in·lbf)
E6-60-428S-50	E6-60-428S-20	3.16 N·m (28 in·lbf)
E6-60-436S-50	E6-60-436S-20	4.07 N·m (36 in·lbf)

Asymmetric

Part Number		Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
Black	Satin Chrome		
E6-60-420F-50	E6-60-420F-20	2.3 (20)	1.4 (12)
E6-60-428F-50	E6-60-428F-20	3.2 (28)	1.9 (16.8)
E6-60-436F-50	E6-60-436F-20	4.1 (36)	2.4 (21.6)
E6-60-444F-50	E6-60-444F-20	5 (44)	3 (26.4)
E6-60-420R-50	E6-60-420R-20	1.4 (12)	2.3 (20)
E6-60-428R-50	E6-60-428R-20	1.9 (16.8)	3.2 (28)
E6-60-436R-50	E6-60-436R-20	2.4 (21.6)	4.1 (36)
E6-60-444R-50	E6-60-444R-20	3 (26.4)	5 (44)

Dimensions in millimeters (inch) unless otherwise stated

G6 Hinge

Position control · Detent

- **Holds doors open without secondary mechanical support**
- **Detent holds door at 120° and 170°**
- **Can be opened to 180°**

Material and Finish

Acetal and nylon, black

Performance Details

Radial load:
Max. static load: 130 N (30 lbf)
Average ultimate load:
970 N (220 lbf)

Axial load:
Max. static load: 130 N (30 lbf)
Average ultimate load:
1450 N (325 lbf)

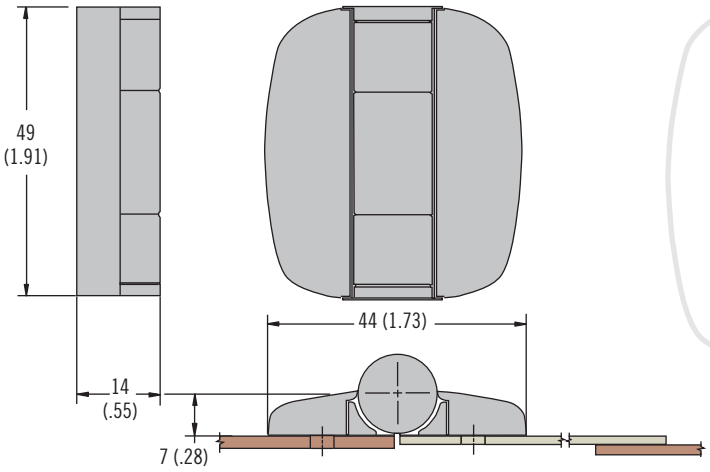
Cycle life: 10,000 cycles

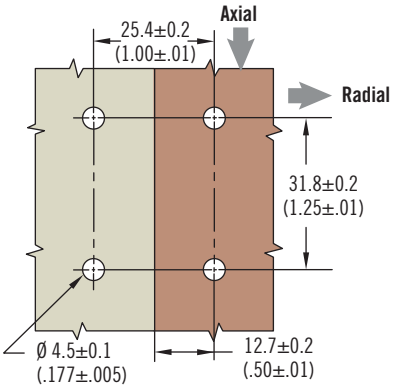
Operating temperature range:
-20 °C (0° F) to 80° C (180° F)

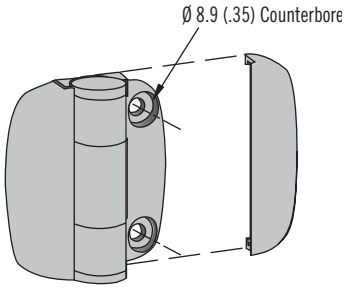
Installation Notes

Screws not supplied

Hinge designed to accommodate M4 (No. 8) size Pan Head mounting hardware.

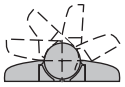
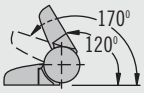






Part Number

See table

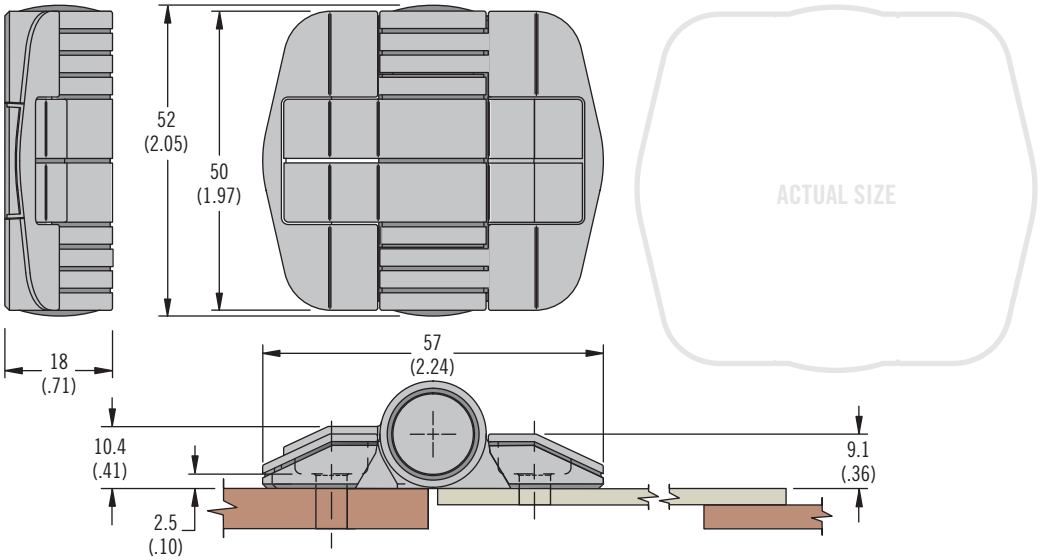
Part Number	Detent Angle	Positioning Torque
G6-0-1	 Free swinging (no detents)	~
G6-5-1		1.1 N•m (10 in•lbf)

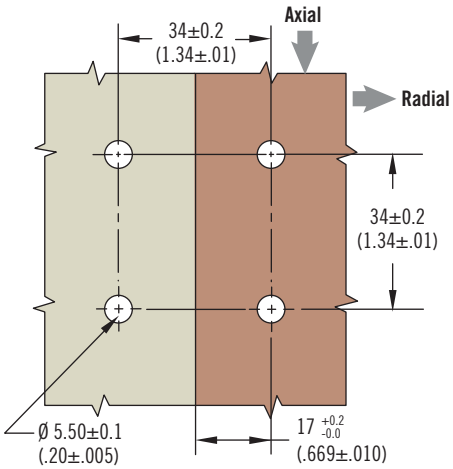
INFO CLIC www.southco.com/G6

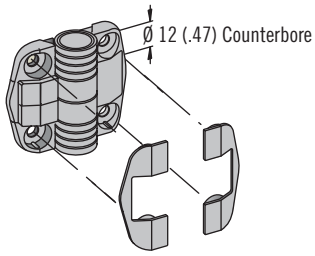
Dimensions in millimeters (inch) unless otherwise stated

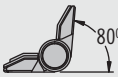
C6 Hinge

Position control · Detent







Type	Positioning Torque N·m (in·lbf)	Part Number	
		Stainless Steel Detent Tube	Hardened Steel Detent Tube
No Detents	Free operating	C6-20	C6-0
 80 Degree	0.7 (6)	C6-21	C6-1
	1.1 (10)	C6-22	C6-2
	1.7 (15)	C6-23	C6-3
115 Degree	0.7 (6)	C6-24	C6-4
	1.1 (10)	C6-25	C6-5
	1.7 (15)	C6-26	C6-6
150 Degree	0.7 (6)	C6-27	C6-7
	1.1 (10)	C6-28	C6-8
	1.7 (15)	C6-29	C6-9

- **Holds doors open without secondary mechanical support**
- **Detents holds door at 80°, 115° or 150°**
- **All versions can be further opened to 180°**

Material and Finish

Acetal, black
Internal components:
Hardened steel on stainless steel

Performance Details

Radial load:
Max. static load: 450 N (100 lbf)
Average ultimate load:
2600 N (575 lbf)

Axial load:
Max. static load: 450 N (100 lbf)
Average ultimate load:
1800 N (400 lbf)

Cycle life:
Stainless steel: Up to 5000
Hardened steel: Up to 20,000

Operating temperature range:
-40°C (-40°F) to 80°C (180°F)

Installation Notes

Designed to accommodate M5 (No. 10) mounting hardware with a maximum head diameter of 10.1 (.40) and a maximum head height of 4 (.16).

Part Number

See table

96 Hinge

Lift-off · In-line · Zinc

- **Allows for quick, easy door removal**
- **Door can also be permanently installed**

Material and Finish

Zinc alloy, black powder coated

Performance Details

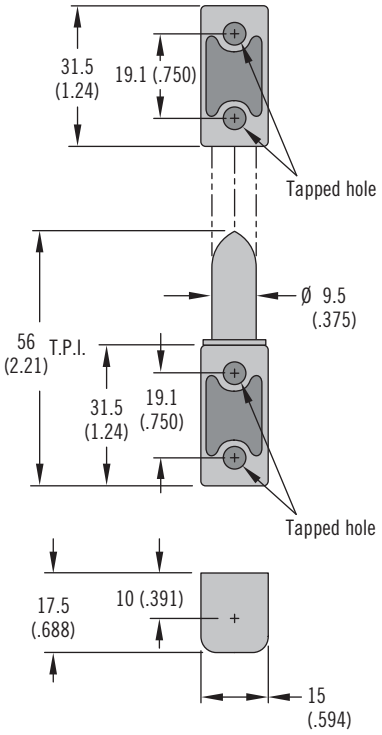
	Radial Load	Axial Load
Max. static load	1300 N (300 lbf)	2200 N (500 lbf)
Average ultimate load	3300 N (750 lbf)	9300 N (2100 lbf)

Installation Notes

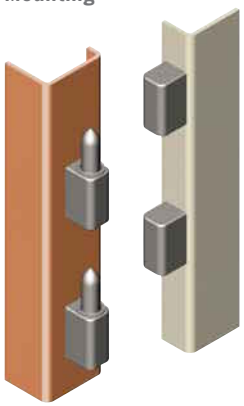
Screws not supplied.
Max. tightening torque of screw: 8.5 N•m (75 in•lbf)

Calculate screw length using the following formula:
Door thickness + 5 (.200)

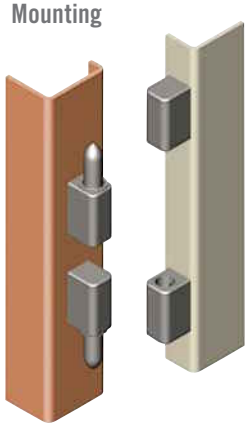
In-line mount preparation:
To allow for 180° rotation R or S must be < 25.4 (1.00).

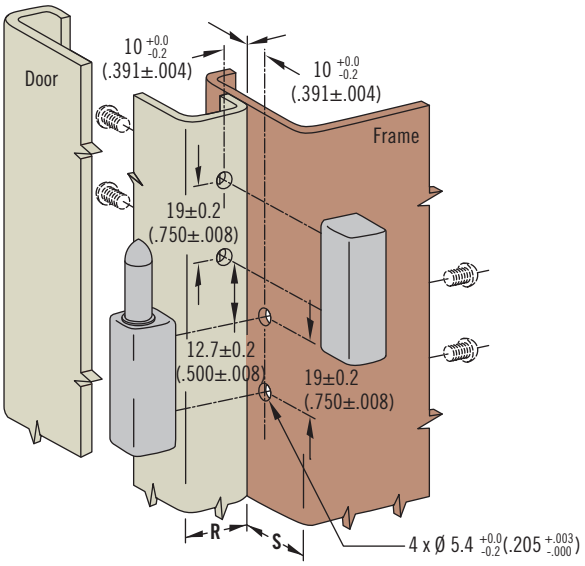


For Lift-Off Mounting

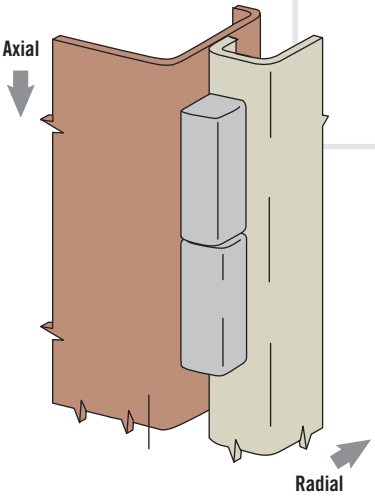


For Non Lift-Off Mounting





ACTUAL SIZE



Part Number

See Table

Tapped Hole	Part Number
Imperial 10-32	96-10-500-50
Metric M5 x 0.8	96-50-500-50

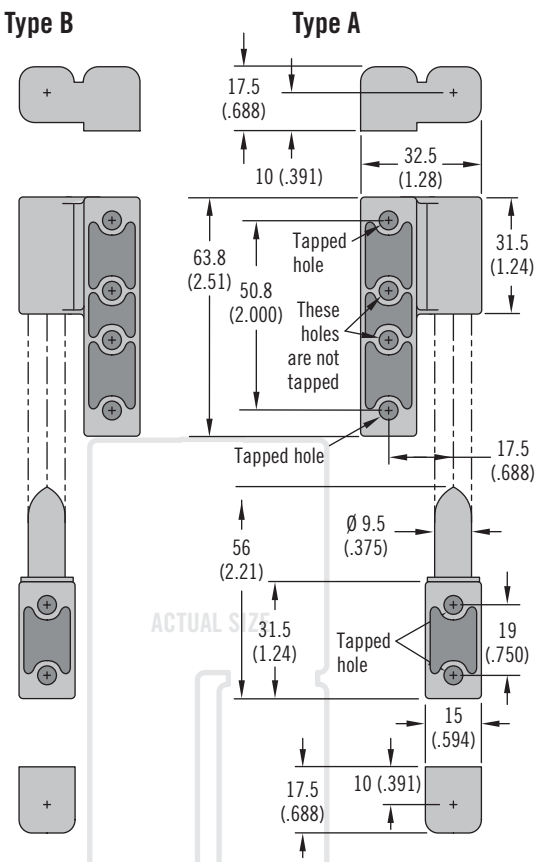
INFO CLIC www.southco.com/96

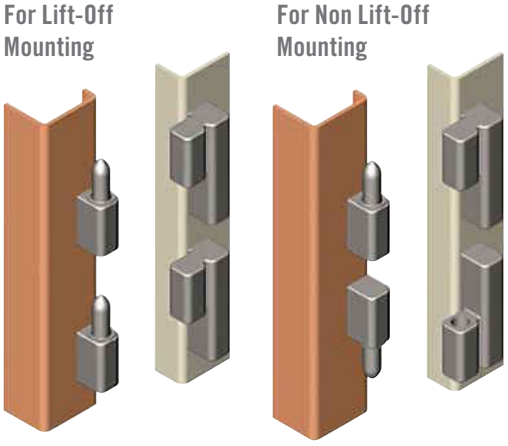
Dimensions in millimeters (inch) unless otherwise stated

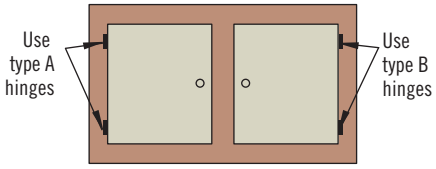
96 Hinge

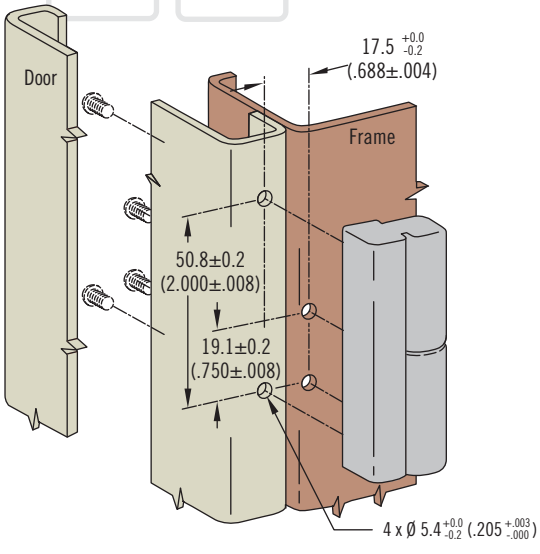
Lift-off · Offset · Zinc

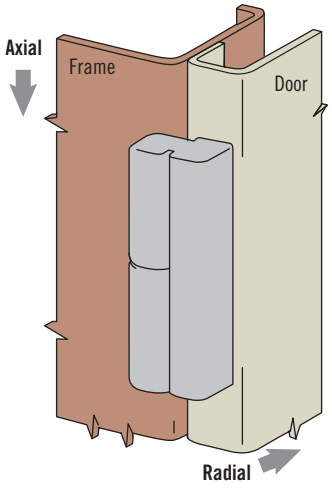
- **Allows for quick, easy door removal**
- **Door can also be permanently installed**











Tapped Hole	Part Number	
	Type A	Type B
Imperial 10-32	96-10-510-50	96-10-520-50
Metric M5 x 0.8	96-50-510-50	96-50-520-50

Material and Finish

Zinc alloy, black powder coated

Performance Details

	Radial Load	Axial Load
Max. static load	1300 N (300 lbf)	2200 N (500 lbf)
Average ultimate load	3300 N (750 lbf)	9300 N (2100 lbf)

Installation Notes

Screws not supplied.
Max. tightening torque of screw: 8.5 N•m (75 in•lbf)

Calculate screw length using the following formula:
Door thickness + 10 (.400)

Part Number

See table

96 Hinge

Lift-off · In-line · Zinc and stainless steel

- **Allows for quick, easy door removal**
- **Door can also be permanently installed**

Material and Finish

Zinc alloy, chrome plated, powder coated or stainless steel

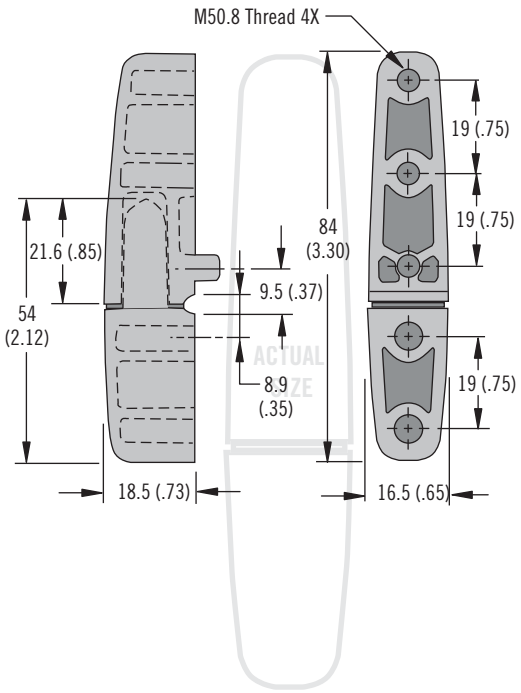
Performance Details

Radial load
Max. static load:
Zinc alloy: 1300 N (300 lbf)
Stainless steel: 3000 N (670 lbf)

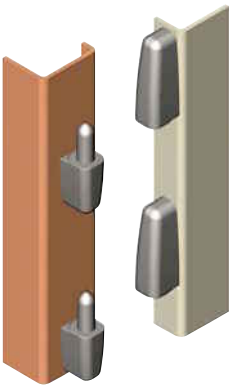
Axial Load
Max. static load:
Zinc alloy: 2200 N (500 lbf)
Stainless steel: 5000 N (1120 lbf)

Installation Notes

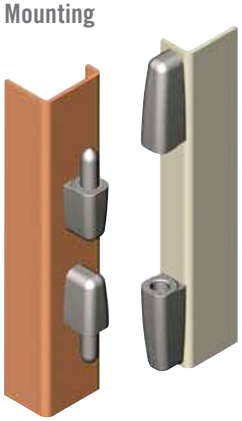
Screws not supplied.
Attach hinge with four M5 x 0.8
Max. screw length = door
(or frame) thickness + 10 (.400)

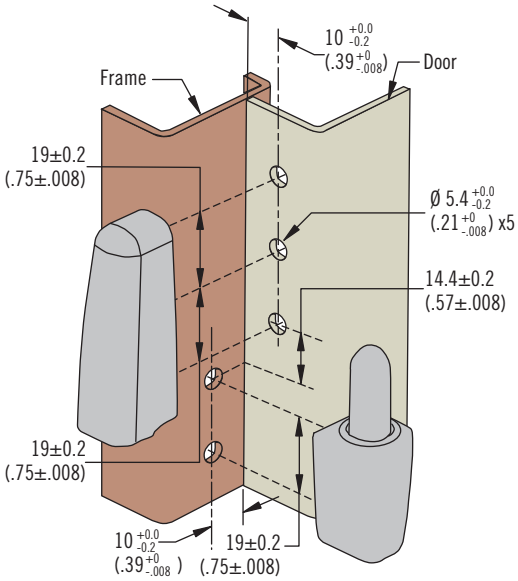


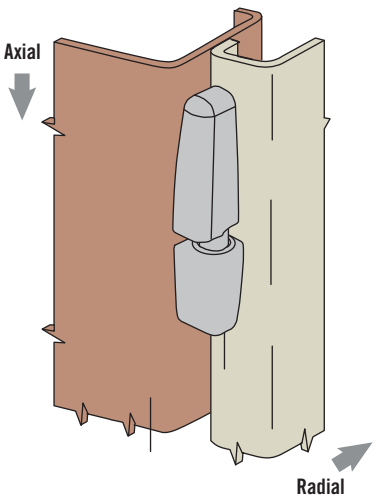
For Lift-Off Mounting



For Non Lift-Off Mounting







Part Number

See table

Material & Finish	Part Number
Zinc alloy, bright chrome	96-MA-80-10
Zinc alloy, black powder coated	96-MA-80-50
Zinc alloy, satin chrome	96-MA-80-20
Stainless steel, polished	96-MA-80-24

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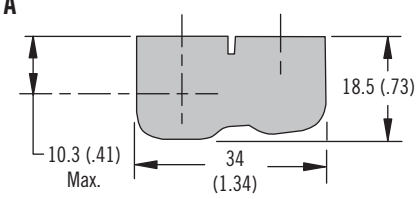
Dimensions in millimeters (inch) unless otherwise stated

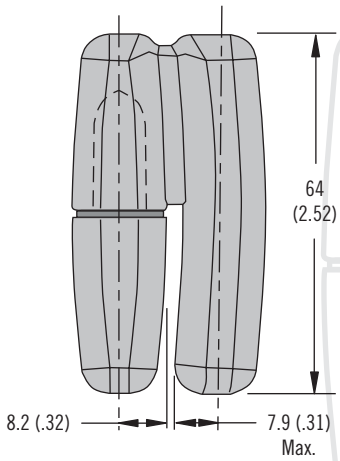
southco® CONNECT · CREATE · INNOVATE

96 Hinge

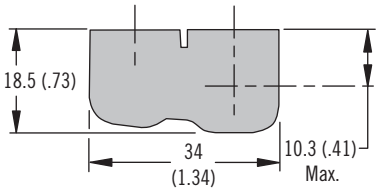
Lift-off · Offset · Zinc and stainless steel

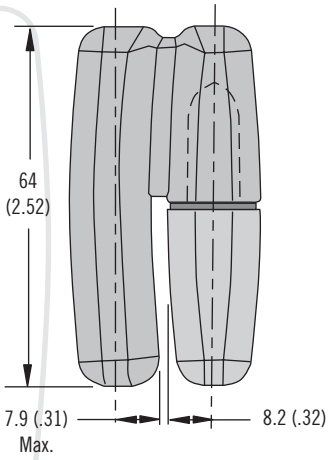
Type A



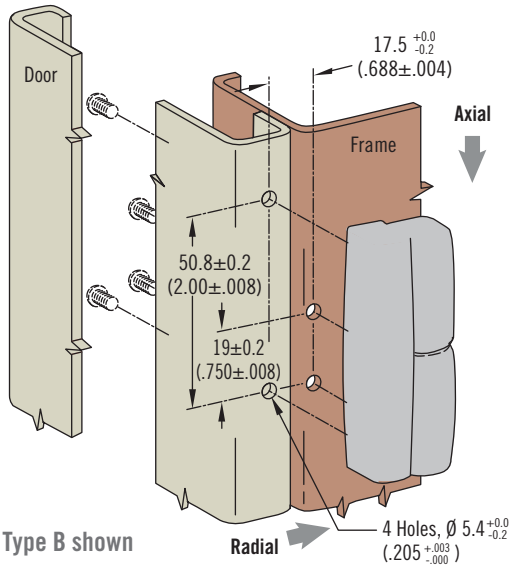


Type B

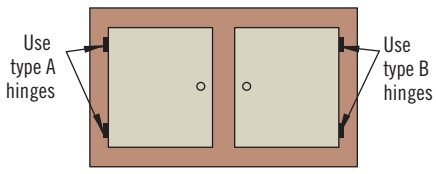




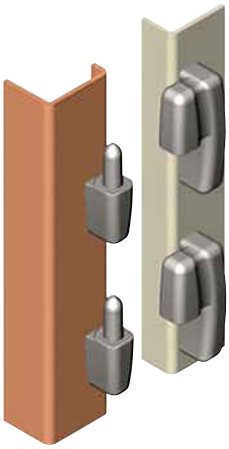
ACTUAL SIZE



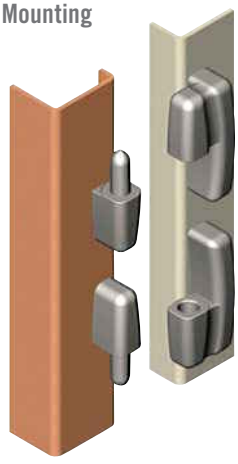
Type B shown



For Lift-Off Mounting



For Non Lift-Off Mounting



Material & Finish	Part Number	
	Type A	Type B
Zinc alloy, bright chrome	96-MA-8A-10	96-MA-8B-10
Zinc alloy, black powder coated	96-MA-8A-50	96-MA-8B-50
Zinc alloy, satin chrome	96-MA-8A-20	96-MA-8B-20
Stainless steel, polished	96-MA-8A-24	96-MA-8B-24

- **Allows for quick, easy door removal**
- **Door can also be permanently installed**

Material and Finish

Zinc alloy, chrome plated, powder coated or stainless steel

Performance Details

Radial load
Max. static load:
Zinc alloy: 1300 N (300 lbf)
Stainless steel: 3000 N (670 lbf)

Axial Load
Max. static load:
Zinc alloy: 2200 N (500 lbf)
Stainless steel: 5000 N (1120 lbf)

Installation Notes

Screws not supplied.
Attach hinge with four M5 x 0.8
Max. screw length = door (or frame) thickness + 10 (.400)

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

96 Hinge

Lift-off · In-line · Offset · Plastic

- Allows for quick, easy door removal
- Corrosion-resistant materials
- Door can also be permanently installed

Material and Finish

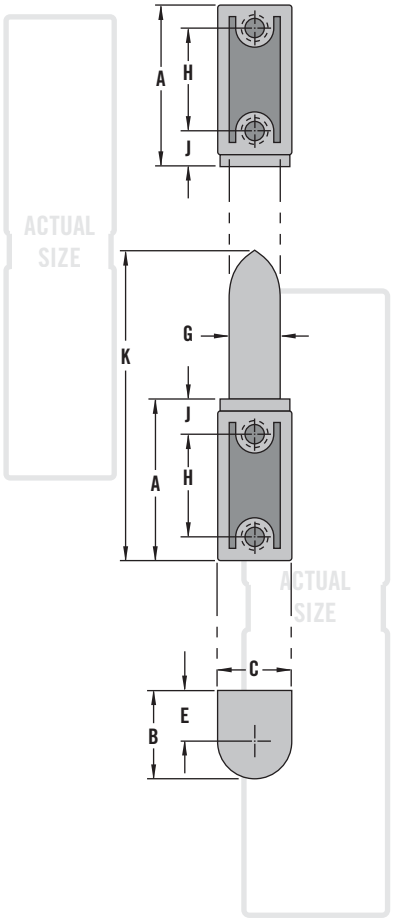
Glass reinforced nylon, black

Performance Details

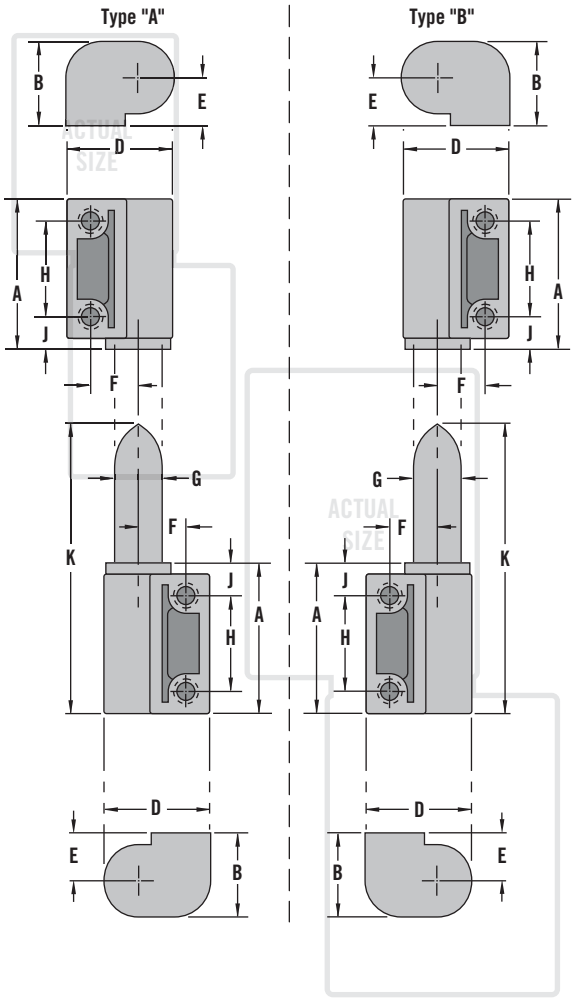
300 Series	Radial Load	Axial Load
Max. static load	670 N (150 lbf)	1100 N (250 lbf)
Average ultimate load	1300 N (290 lbf)	2500 N (550 lbf)

400 Series	Radial Load	Axial Load
Max. static load	1300 N (300lbf)	2200 N (500lbf)
Average ultimate load	2600 N (600lbf)	5000 N (600lbf)

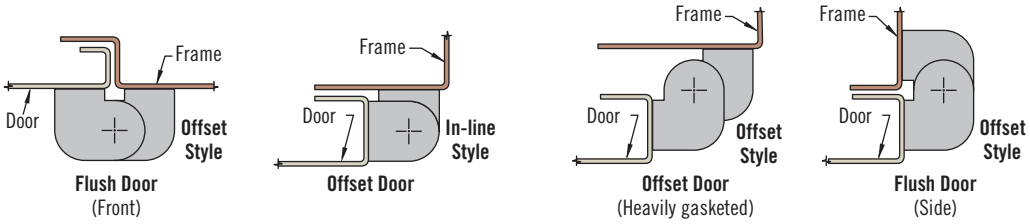
In-Line Knuckle Style



Offset Knuckle Style



Mounting variations



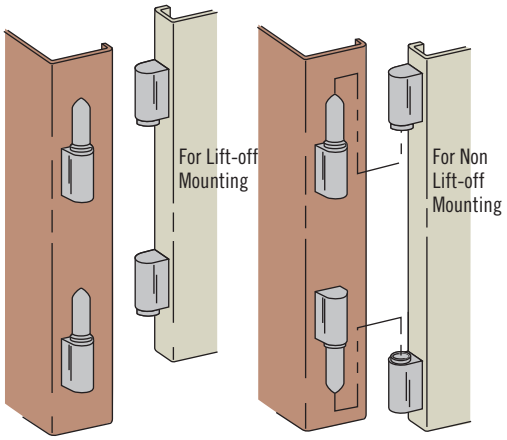
Part Number

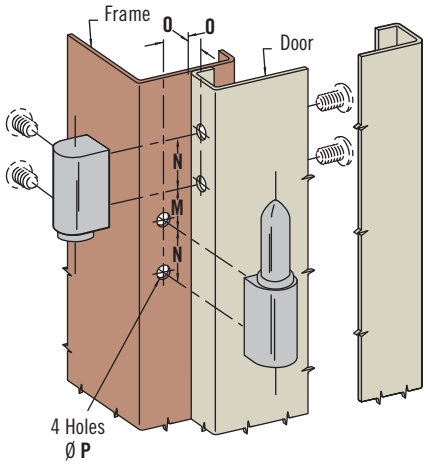
See table

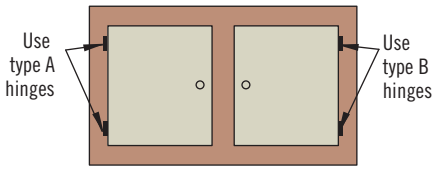
Series	Tapped Hole	Dimensions								Part Number		
		A	B	C	D	E, F & G	H	J	K	In-Line Knuckle Style	Offset Knuckle Style	
											Type "A"	Type "B"
300	M5	31 (1.22)	16.7 (.66)	14.3 (.56)	21.5 (.84)	9.5 (.38)	19 (.75)	7 (.28)	58 (2.28)	96-50-300-11	96-50-310-11	96-50-320-11
	10-24									96-10-300-11	96-10-310-11	96-10-320-11
400	M6	41.3 (1.63)	22.2 (.88)	19 (.75)	28.5 (1.13)	12.7 (.50)	25.5 (1.00)	9.5 (.38)	78 (3.06)	96-50-400-11	96-50-410-11	96-50-420-11
	1/4-20									96-10-400-11	96-10-410-11	96-10-420-11

Dimensions in millimeters (inch) unless otherwise stated

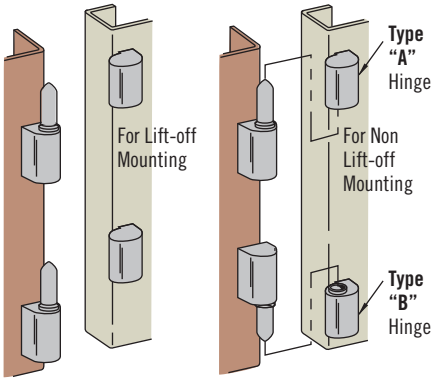
In-Line Knuckle Style

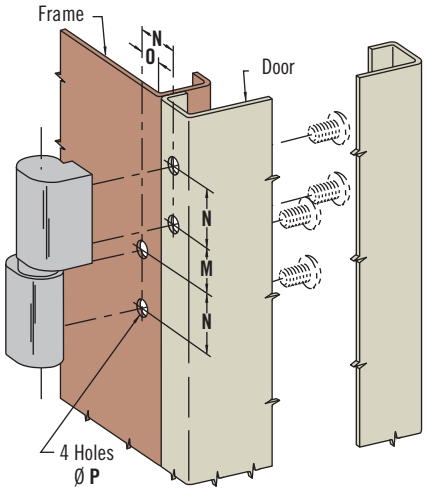


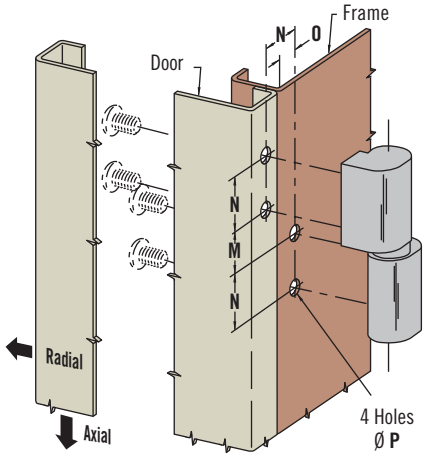




Offset Knuckle Style







Installation Notes

Screws not supplied
Max. tightening torque of screw:
2.8 N•m (25 in•lbf)

Calculate screw length using the following formula:
Door thickness + adjustment value

Series	Adjustment Value	
	In-Line	Offset
300	4.8 (.19)	6.5 (.25) Min. to 9.5 (.38) Max.
400	6.4 (.25)	9.5 (.38) Min. to 12.7 (.50) Max.

Series	Installation Dimensions			
	M	N	O	P
300	14.3 $^{+0.0}_{-0.3}$ (.563±.008)	19 $^{+0.2}_{-0.1}$ (.750±.008)	9.5 $^{+0.3}_{-0.1}$ (.375±.005)	5.4 $^{+0.1}_{-0.0}$ (.205 $^{+.003}_{-.000}$)
400	19.0 $^{+0.0}_{-0.3}$ (.750±.008)	25.5 $^{+0.1}_{-0.2}$ (1.000±.008)	12.7 $^{+0.2}_{-0.1}$ (.500±.005)	6.7 $^{+0.1}_{-0.0}$ (.264 $^{+.003}_{-.000}$)

96 Hinge

Lift-off · In-line · Plastic

- **Allows for quick, easy door removal**
- **Door can also be permanently installed**

Material and Finish

Black: Glass reinforced nylon
Chrome: PC/ABS blend, chrome

Performance Details

Black	Radial Load	Axial Load
Max. static load	700 N (155 lbf)	1200 N (270 lbf)
Average Ultimate load	1000 N (224 lbf)	3500 N (785 lbf)

Chrome	Radial load	Axial load
Max. static load	350 N (79 lbf)	900 N (202 lbf)
Average ultimate load	600 N (135 lbf)	2200 N (495 lbf)

Installation Notes

Recommended tightening torque for mounting screws:
1.6 N•m (14 in•lbf)

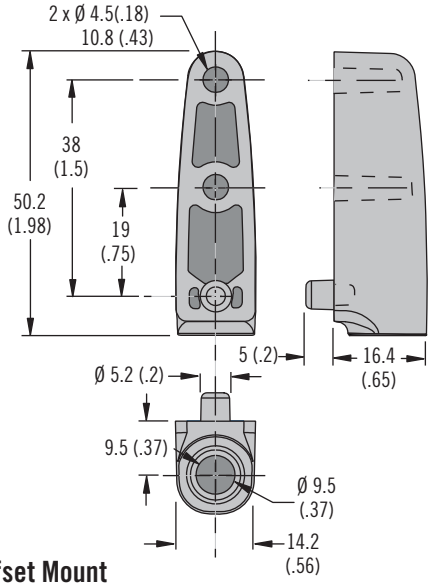
Offset mount preparation:
To allow for 180° rotation A or B must be 8.5±1 (.33±.04)

Part Number

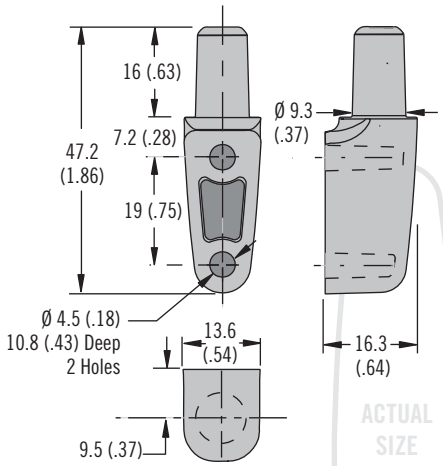
See table

Order pin, receiver and screws separately

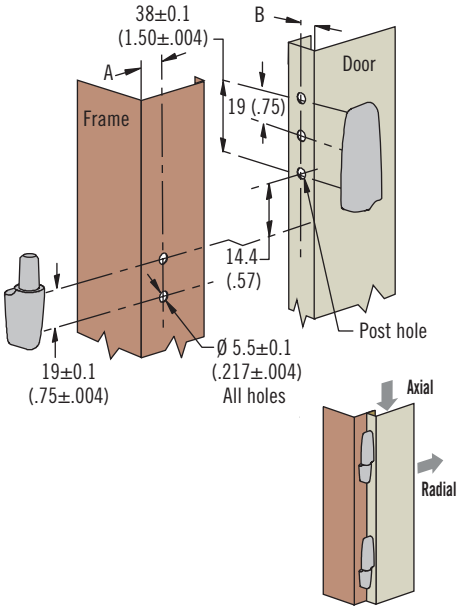
Receiver



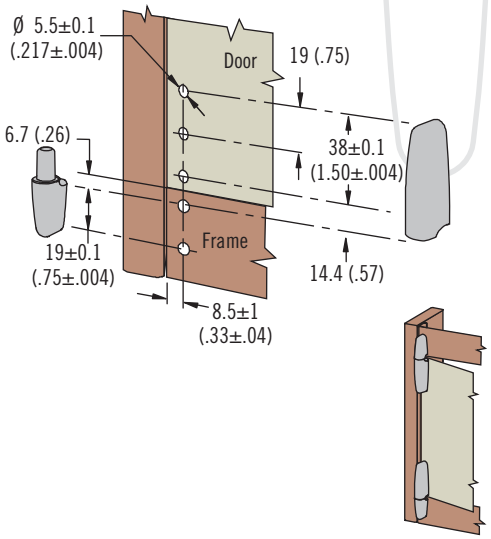
Pin

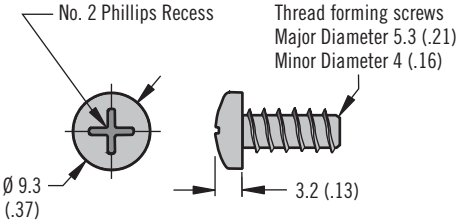


Offset Mount



Flush Mount





Door Thickness	Part Number
	Screws (4 per bag)
1 - 4 (.04 - .16)	96-79-1
4 - 7 (.16 - .28)	96-79-2
7 - 10 (.28 - .39)	96-79-3
10 - 13 (.39 - .51)	96-79-4

Finish	Part Number	
	Pin	Receiver
Black	96-710	96-720
Chrome	96-711	96-721

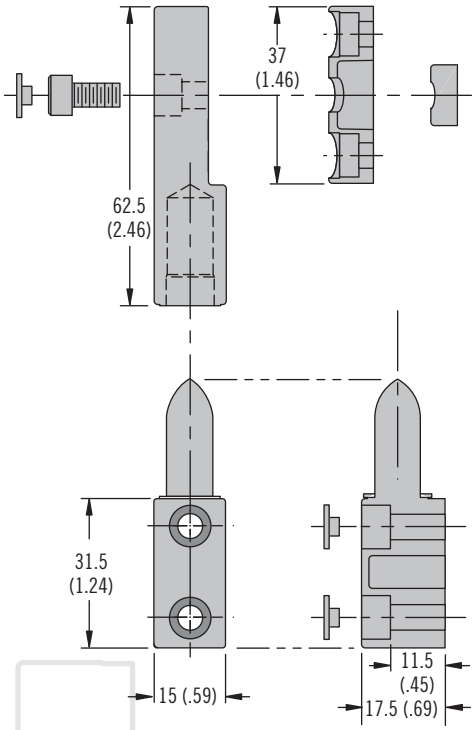
INFO CLIC www.southco.com/96

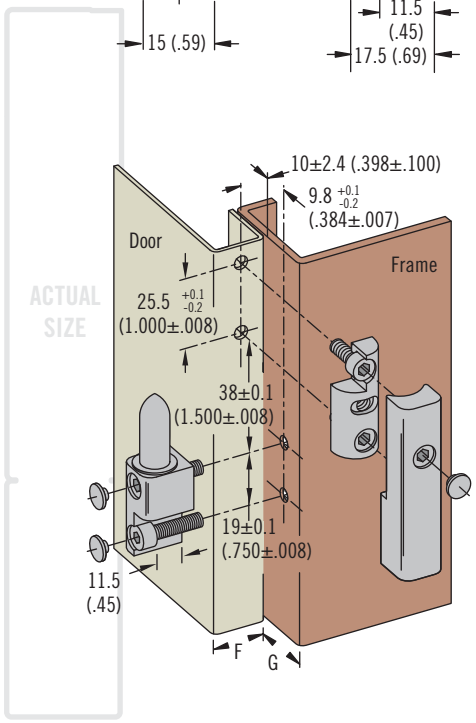
Dimensions in millimeters (inch) unless otherwise stated

96 Hinge

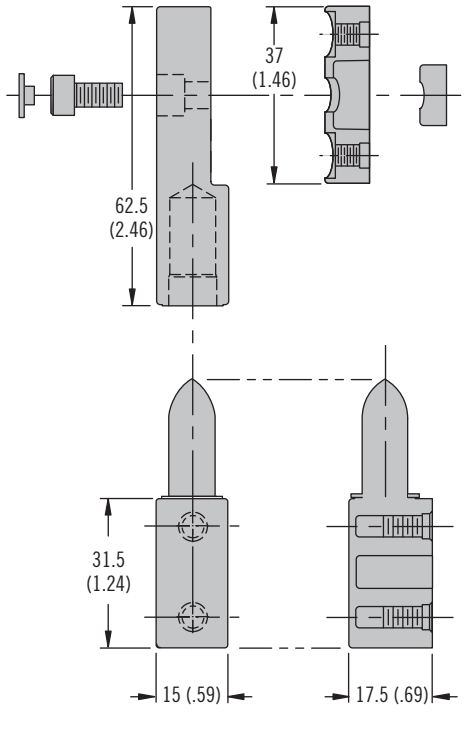
Lift-off · Adjustable compression · In-line · Zinc

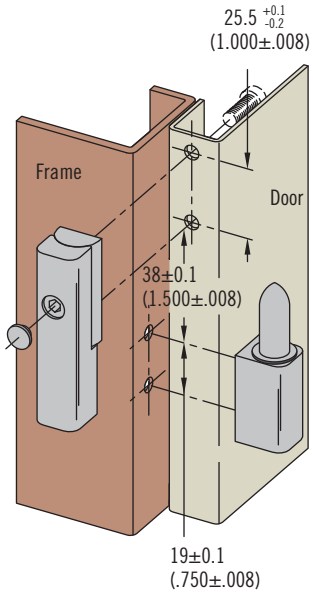
Front Mount





Concealed Mount





Install Style	Tapped Hole	Part Number
Front mount	Thru hole	96-10-572
Concealed mount	10-32 Imperial	96-10-570
	M5 x 0.8 Metric	96-50-570

- **Adjusts to ensure gasket compression**
- **Allows for quick, easy door removal**

Material and Finish

Zinc alloy, black powder coated

Installation Notes

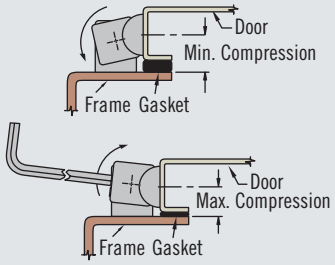
Screws not supplied.
Max. screw length equals door or frame thickness plus 7.5 (.30)

Performance Details

	Radial Load	Axial Load
Max. static load	1000 N (255 lbf)	2220 N (500 lbf)
Average ultimate load	1550 N (350 lbf)	14,000 N (3200 lbf)

Notes

Hinges provide 5 (.20) of total adjustment
Either F Dimension or G dimension must be less than 19.8 (.78) for the door to open a full 180°



Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

96 Hinge

Lift-off · In-line · Zinc

- **Allows for quick, easy door removal**
- **Concealed installation**

Material and Finish

Zinc alloy, black powder coated

Performance Details

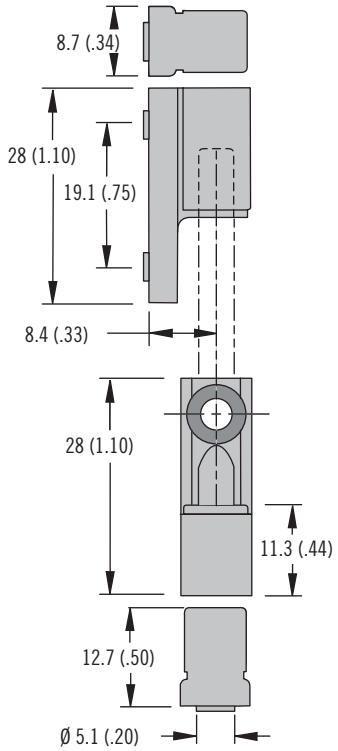
	Radial Load	Axial Load
Max. static load	1100 N (250 lbf)	1250 N (280 lbf)
Average ultimate load	2400 N (530 lbf)	2600 N (580 lbf)

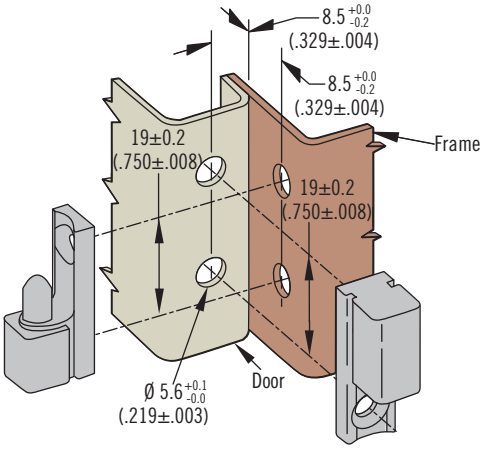
Installation Notes

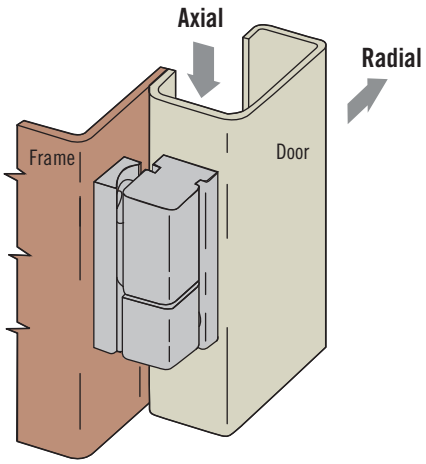
Screws not supplied.
Recommended tightening torque for mounting screws:
1.1 N•m (10 in•lbf)

Calculate screw length using the following formula:
Door / frame thickness +5 (.20)

In-Line







Part Number

See table

Tapped Hole	Part Number
Imperial 6-32	96-110
Metric M4 x 0.7	96-140

INFO CLIC www.southco.com/96

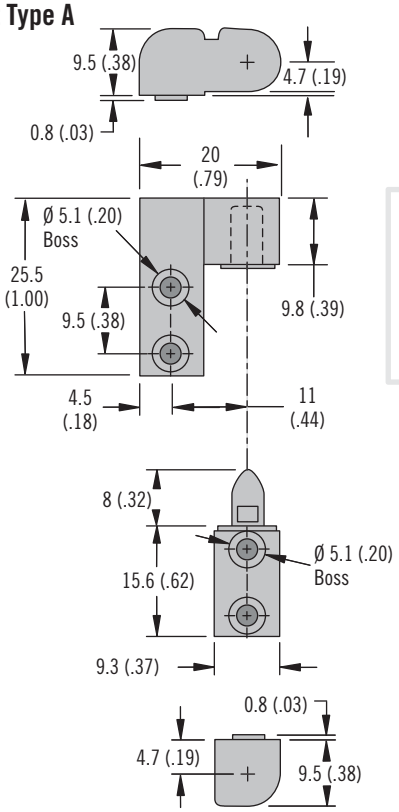
Dimensions in millimeters (inch) unless otherwise stated

96 Hinge

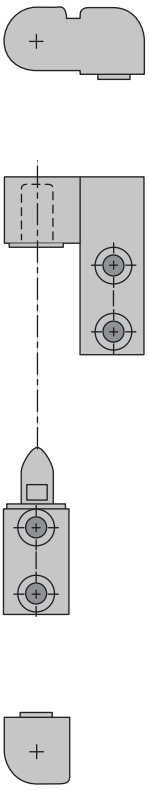
Lift-off · Offset · Zinc

- **Allows for quick, easy door removal**
- **Door can also be permanently installed**

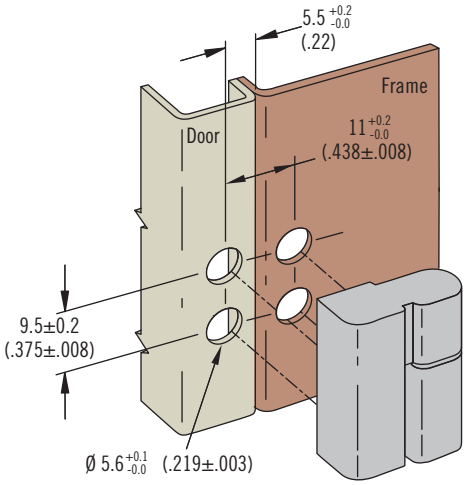
Offset Type A

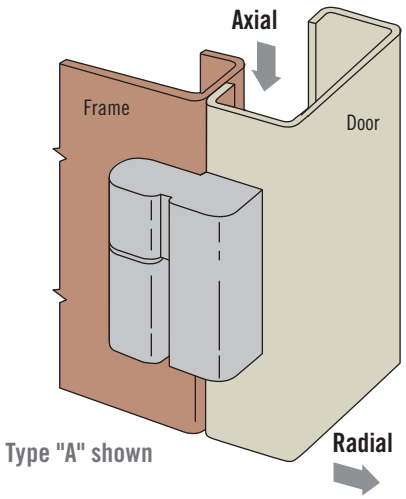


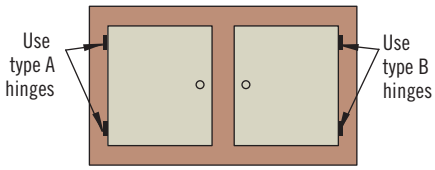
Offset Type B



ACTUAL SIZE







Tapped Hole	Part Number	
	Type A	Type B
Imperial 6-32	96-111	96-112
Metric M4 x 0.7	96-141	96-142

Material and Finish

Zinc alloy, black powder coated

Performance Details

	Radial Load	Axial Load
Max. static load	1100 N (250 lbf)	1250 N (280 lbf)
Average ultimate load	3300 N (750 lbf)	2600 N (580 lbf)

Installation Notes

Screws not supplied.
Recommended tightening torque for mounting screws:
1.1 N•m (10 in•lbf)

Calculate screw length using the following formula:
Door / frame thickness +5 (.20)

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

96 Hinge

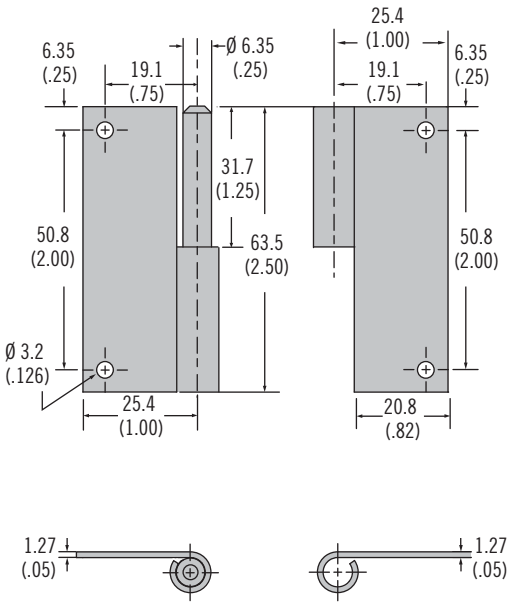
Lift-off

- Allows for quick, easy door removal
- All metal construction

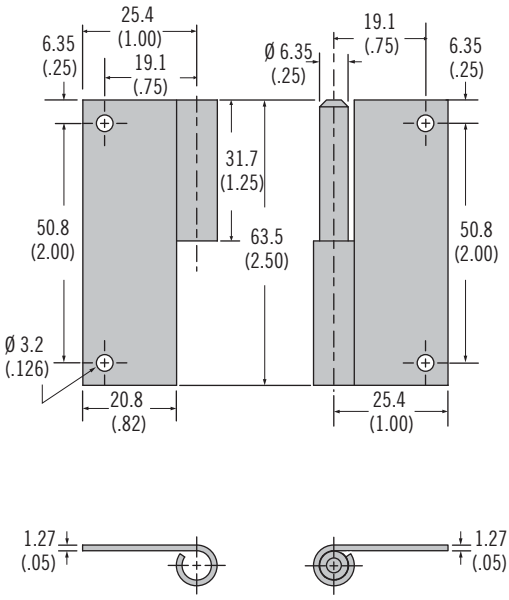
Material and Finish

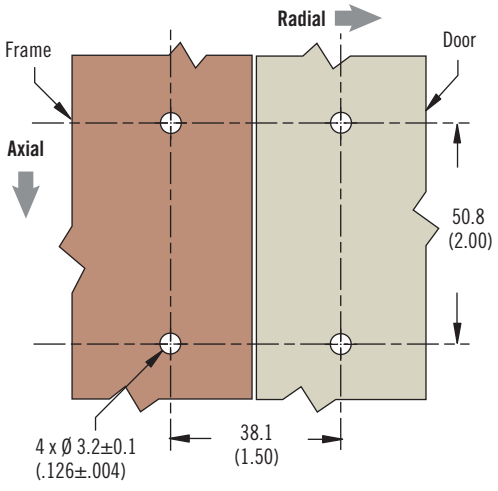
Steel, zinc plated or stainless steel

Type A



Type B





Type "A" application shown

Part Number

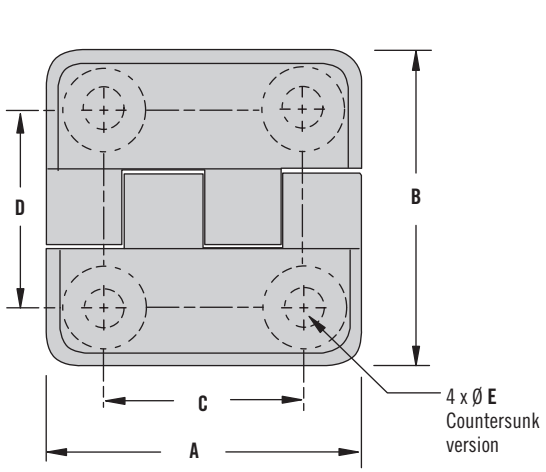
See table

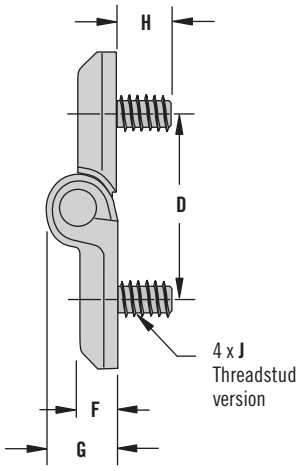
Material	Part Number	
	Type A	Type B
Steel	96-04-N1WL	96-04-N1WR
Stainless Steel	96-04-S1WL	96-04-S1WR

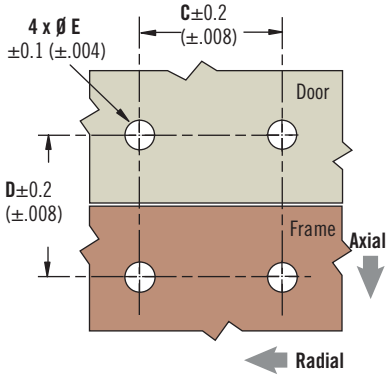
INFO CLIC www.southco.com/96A

Dimensions in millimeters (inch) unless otherwise stated

EH Hinge
Surface mount







- **Multiple size and mounting options**
- **Concealed mounting hardware**

Material and Finish

Leaf: Zinc alloy black powder coated, chrome plated or nylon black
Pin: Stainless steel
Thread studs: Steel, zinc plated

Performance Details

Size	Radial Load	Axial Load
40 Zinc	1330 N (298 lbf)	2220N (500 lbf)
50 Zinc	2140 N (481 lbf)	3560 N (800 lbf)
50 Nylon	890 N (200 lbf)	1230N (276 lbf)

Installation Notes

Countersunk version:
40 Size M5 (No. 10) CSK screw
50/60 Size M6 (No. 1/4 - 20) CSK screw (not supplied)

Threadstud version:
40 Size M5 nuts (not supplied)
50/60 Size M6 nuts (not supplied)

Part Number

See table

A	B	Thread Stud Part Number			C	D	Ø E	F	G	H	Thread stud J
		Zinc chrome	Zinc black	Nylon black							
40 (1.57)		EH-5A-4G4-38	EH-5A-4G4-50	~	25 (.984)		5.4 (.213)	5 (.20)	9 (.35)	8.5 (.35)	M5
50 (1.97)		EH-6A-5G5-38	EH-6A-5G5-50	EH-6A-5G5-20	30 (1.181)		6.4 (.252)	6 (.24)	11 (.43)	8 (.31)	M6

A	B	Countersunk Thru-Hole Part Number			C	D	Ø E	F	G
		Zinc chrome	Zinc black	Nylon black					
40 (1.57)		EH-5A-4V4-38	EH-5A-4V4-50	~	25 (.984)		5.4 (.213)	5 (.20)	9 (.35)
50 (1.97)		EH-6A-5V5-38	EH-6A-5V5-50	EH-6A-5V5-20	30 (1.181)		6.4 (.252)	6 (.24)	11 (.43)
60 (2.36)	76 (2.99)	EH-7A-6V8-38	EH-7A-6V8-50	~	36 (1.42)	56 (2.20)		8 (.31)	15 (.59)

Dimensions in millimeters (inch) unless otherwise stated

EH Hinge

Surface mount · Offset

- **Allows 180 degree opening**
- **Offset pivot maximizes cabinet access**
- **Ideal for closely spaced enclosures**

Material and Finish

Zinc alloy, black powder coated or bright chrome plated
Pin: Stainless steel

Product Strength Guidelines

Radial load:
Max. static load: 2670 N (600 lbf)

Axial load:
Max. static load: 2670 N (600 lbf)

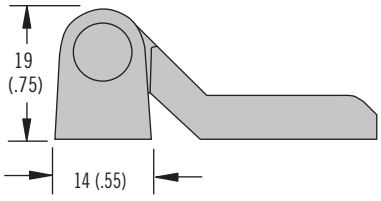
Installation Notes

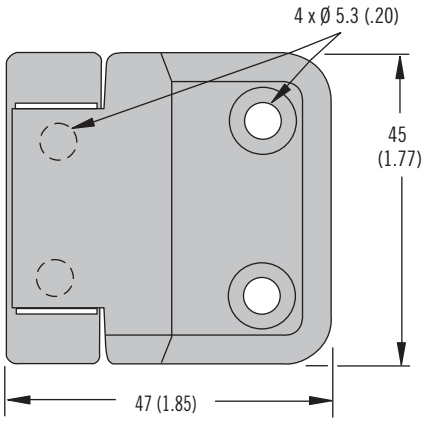
Screws not supplied.
Attach hinge with M5 (No. 10) CSK

Part Number

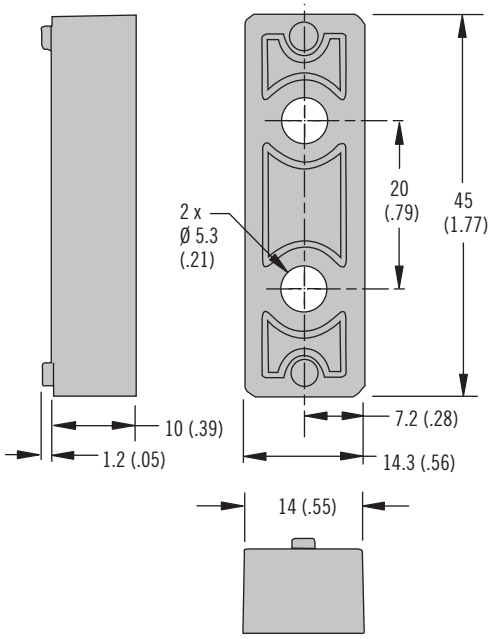
See table

Hinge

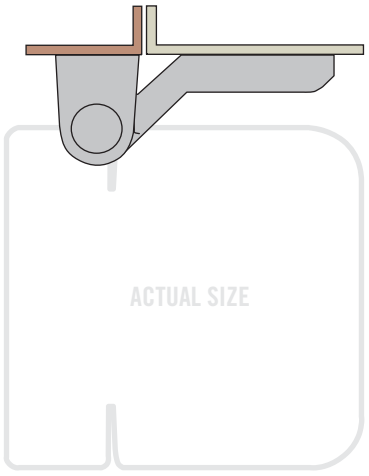




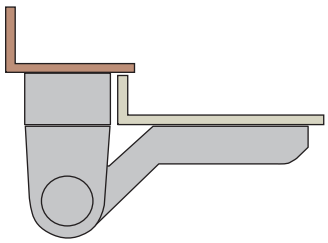
Spacer

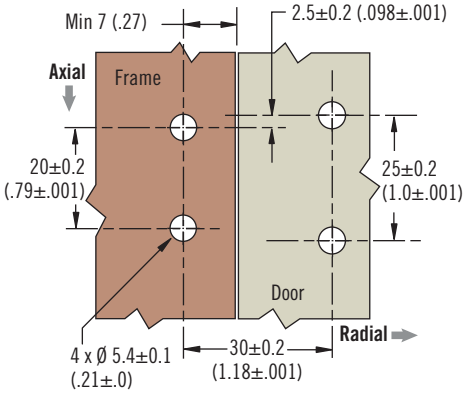


Standard Flush Mount



Offset Mount with Spacer

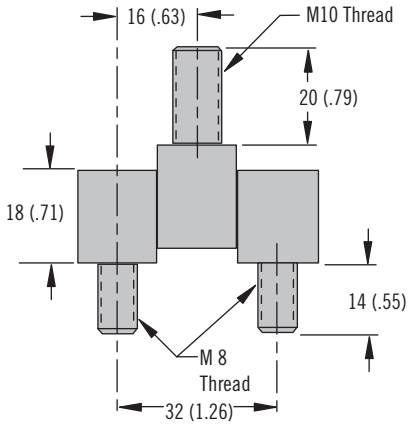


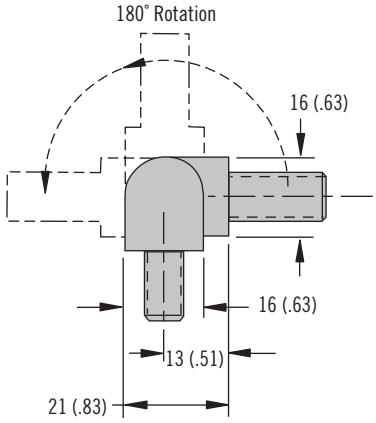


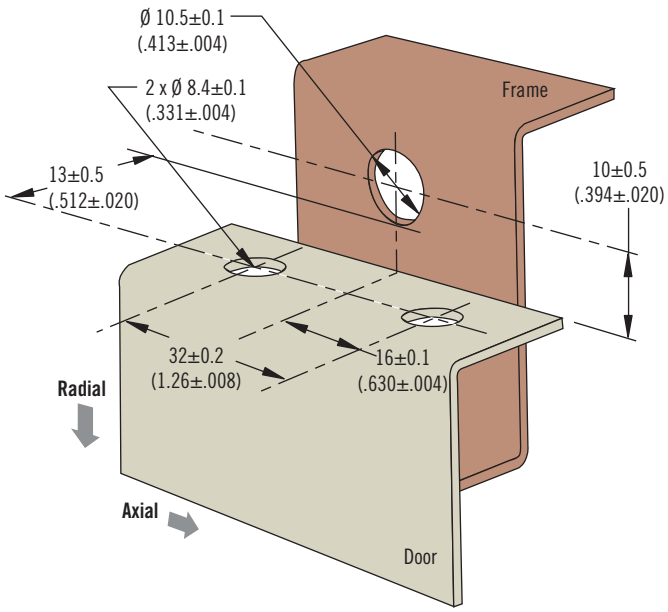
Finish	Part Number	
	Hinge	Spacer
Chrome	EH-6C-5V4-38	EH-6C-B-38
Black	EH-6C-5V4-50	EH-6C-B-50

Dimensions in millimeters (inch) unless otherwise stated

EH Hinge
In-line







- **Robust design withstands severe applications**
- **Concealed mounting hardware for added security**
- **Simple 3 hole installation**

Material and Finish
Brass and steel, chrome plated

Performance Details
Radial load:
Max. working load:
5000 N (1120 lbf)

Axial load:
Max. working load:
5000 N (1120 lbf)

Installation Notes
Screws not supplied.
Attach with M10 and M8 mounting nuts.
M10 stud Max. frame thickness:
10 (.39)
M8 stud Max. door thickness:
7 (.276)

Part Number
EH-8R-5G-38

Part Number
See table

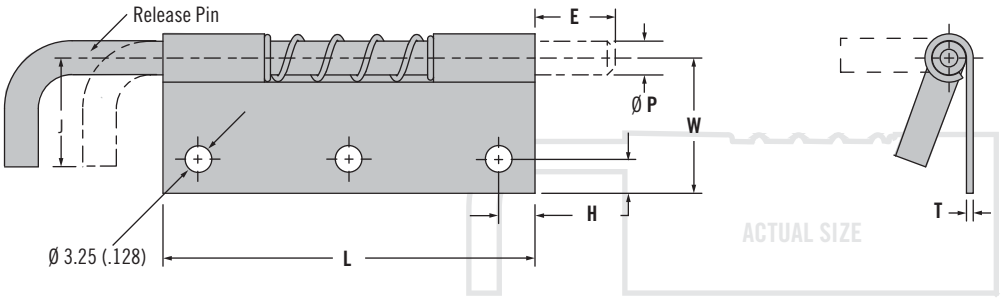
Dimensions in millimeters (inch) unless otherwise stated

F6 Hinge

Door removal

Material and Finish

Steel, zinc plated or stainless steel



S Size	L	E	H	J	P	T	W
3 - 4	22.2 (.88)	4 (.16)	4.0 (.16)	10 (.39)	3.0 (.12)	0.8 (.03)	13 (.50)
7 - 8	34.9 (1.38)	6.4 (.25)	4.8 (.19)	13 (.50)	4.0 (.15)	1.0 (.04)	19 (.75)
11 - 12	50.8 (2.00)	9.5 (.38)	6.4 (.25)	16 (.63)	4.5 (.18)	1.3 (.05)	22 (.87)
15 - 16	69.9 (2.75)	12.7 (.50)	6.4 (.25)	19 (.75)	6.4 (.25)	1.5 (.06)	25.5 (1.00)

Part Number Selection

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/F6*

M Material and Finish
- **N** Steel, zinc plated
- **S** Stainless steel

S Size
- **3** 22 (0.87) Left Hand
- **4** 22 (0.87) Right Hand
- **7** 35 (1.38) Left Hand
- **8** 35 (1.38) Right Hand
- **11** 51 (2.00) Left Hand
- **12** 51 (2.00) Right Hand
- **15** 70 (2.75) Left Hand
- **16** 70 (2.75) Right Hand (shown)

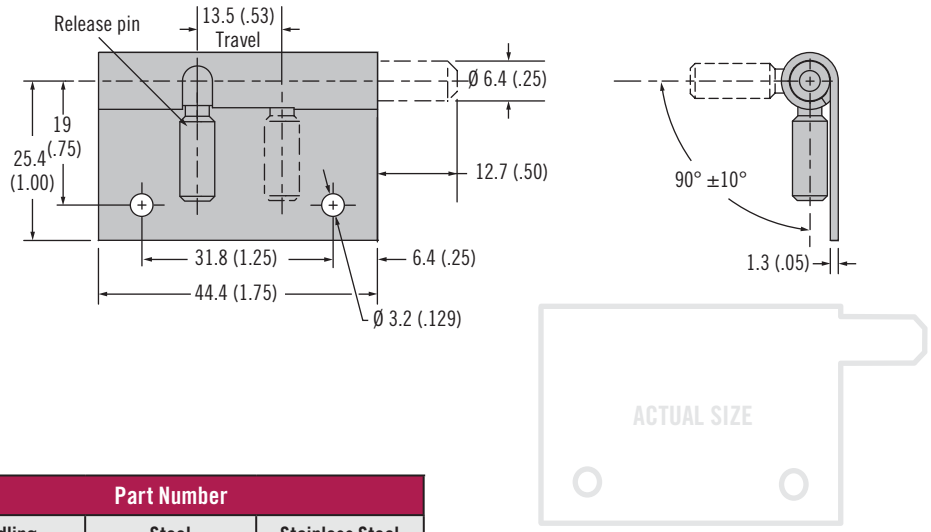
F6 - 23 - M S AW

F6 Hinge

Door removal

Material and Finish

Steel, zinc plated or stainless steel



Part Number

See table

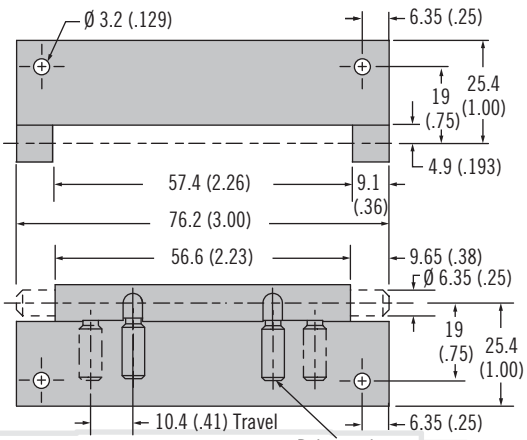
Part Number		
Handling	Steel	Stainless Steel
Right (shown)	F6-20-N1A50WR	F6-20-S1A50WR
Left	F6-20-N1A50WL	F6-20-S1A50WL

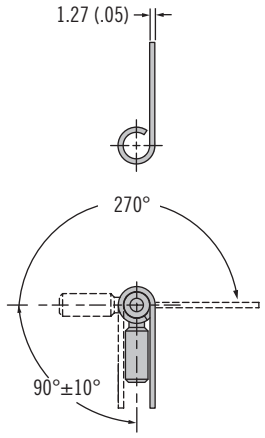
Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC *www.southco.com/F6*

Dimensions in millimeters (inch) unless otherwise stated

F6 Hinge
Door removal





Material	Part Number
Steel	F6-22-N1-3W1
Stainless steel	F6-22-S1-3W1

- **Easy to install and operate**
- **Locking feature for simple removal and replacement**

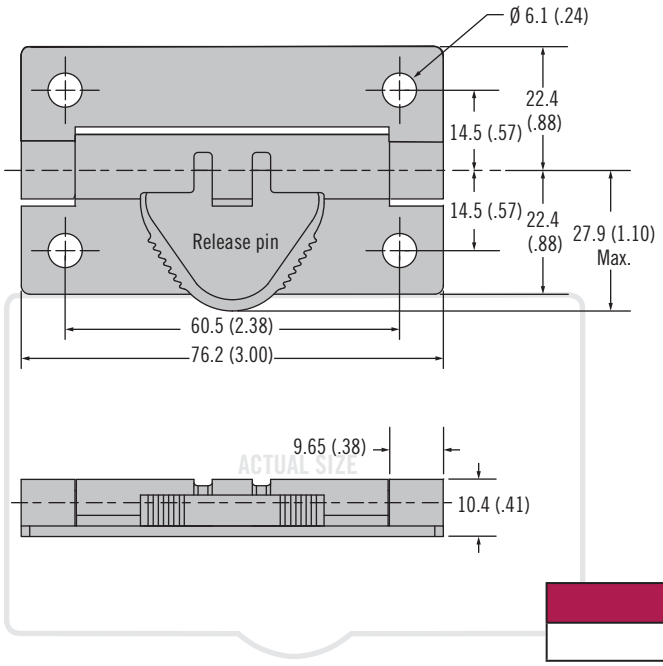
Material and Finish
Steel, zinc plated or stainless steel

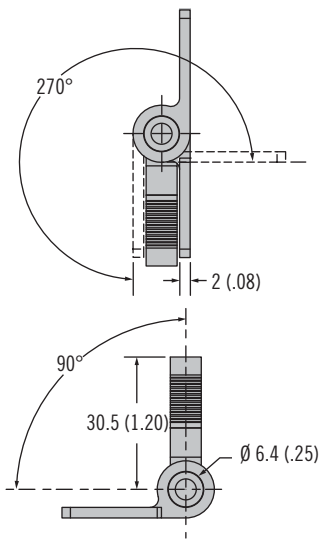
Part Number
See table

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/F6**

F6 Hinge
Door removal





Part Number
F6-35-1

- **Light-weight**
- **Made from non-conducting, non-corrosive materials**

Material and Finish
ABS, nylon and acetal, black

Part Number
See table

Other options available. For complete details on variety, part numbers, installation and specification, go to

INFO CLIC **www.southco.com/F6**

Dimensions in millimeters (inch) unless otherwise stated

KH Hinge

Corner mount

- **Fits flush while allowing full 180° rotation**
- **Dual mounting screws provide added security**
- **Allows door removal for service and access**

Material and Finish

Leaf: Zinc alloy, black powder coated or chrome plated
Pin: Steel, zinc plated

Performance Details

Zinc

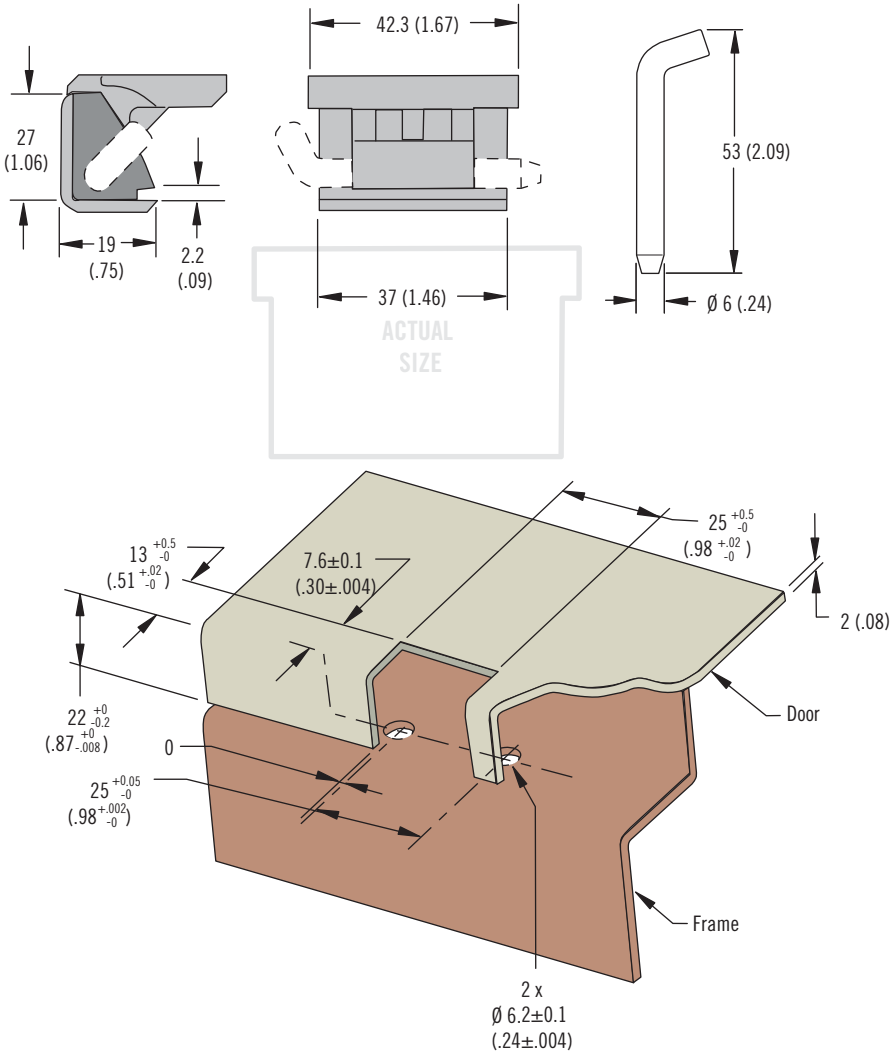
Radial load:
Max. static load: 3000 N (670 lbf)

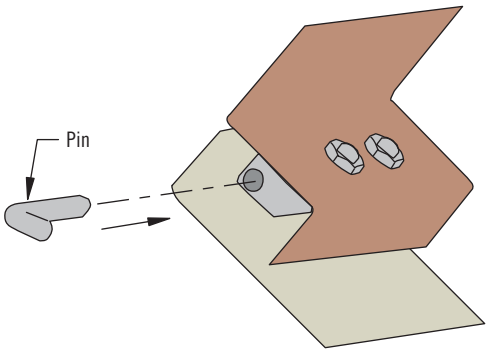
Axial load:
Max. static load: 3000 N (670 lbf)

Installation Notes

Attach hinge with M6 screws and nuts (not supplied)

Max. tightening torque of screw: 5 N•m (45 in•lbf)





Part Number

See table

Order hinge and hinge pin separately

Part Number	
Bright Chrome	**Black Powder Coated**
KH-62-V1-38	KH-62-V1-50

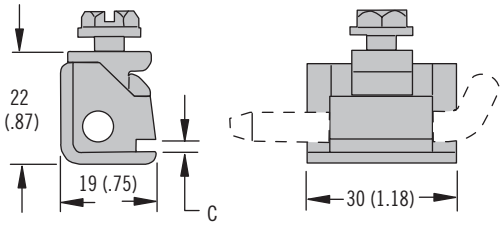
Part Number
Steel Hinge Pin
KH-G

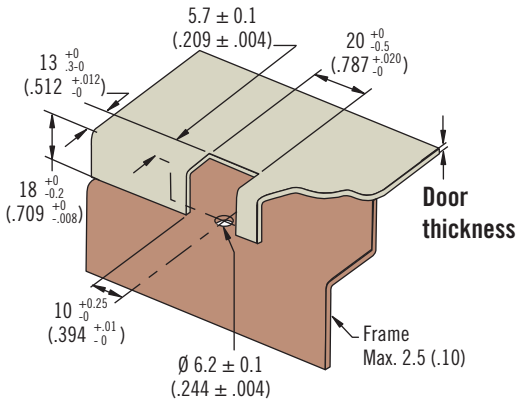
INFO CLIC www.southco.com/KH

Dimensions in millimeters (inch) unless otherwise stated

KH Hinge
Corner mount

- Fits flush while allowing full 180° rotation
- Installs quickly with only one mounting screw
- Allows door removal for service and access





Material and Finish

Leaf: Zinc alloy, black powder coated or chrome plated
Pin: Steel, zinc plated, plastic

Performance Details

Zinc

Radial load:
Max. static load: 1200 N (270 lbf)

Axial load:
Max. static load: 1200 N (270 lbf)

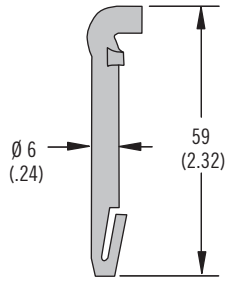
Installation Notes

Screw supplied
Attach hinge with M6 x 10

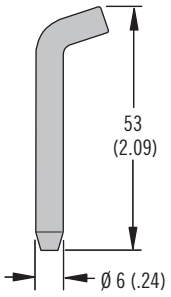
Max. screw length equals frame thickness plus 7.5 (.30)

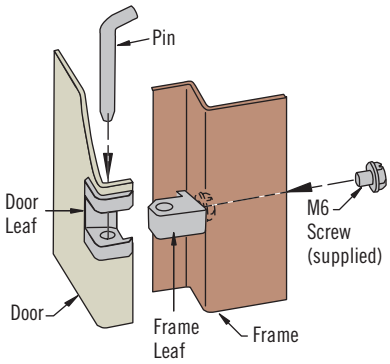
Max. tightening torque of screw:
5 N•m (45 in•lbf)

Plastic



Steel





D Door Thickness	Part Number	
	Bright Chrome	Black Powder Coated
1 - 1.2 (.04 - .05)	KH-41-T1-38	KH-41-T1-50
1.5 - 2 (.06 - .08)	KH-42-T1-38	KH-42-T1-50

Part Number	
Plastic Hinge Pin	Steel Hinge Pin
KH-P	KH-G

Part Number

See table

Order hinge and hinge pin separately

ST-4A Hinge

Position control · Constant torque

- **Smooth consistent operation**
- **Extremely compact, fits the smallest applications**
- **Never requires adjustment**

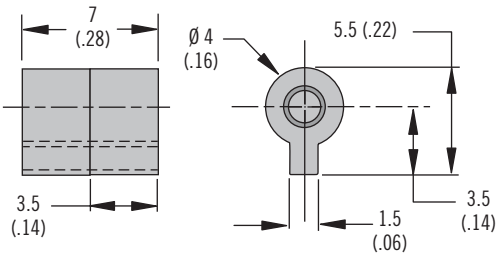
Material and Finish

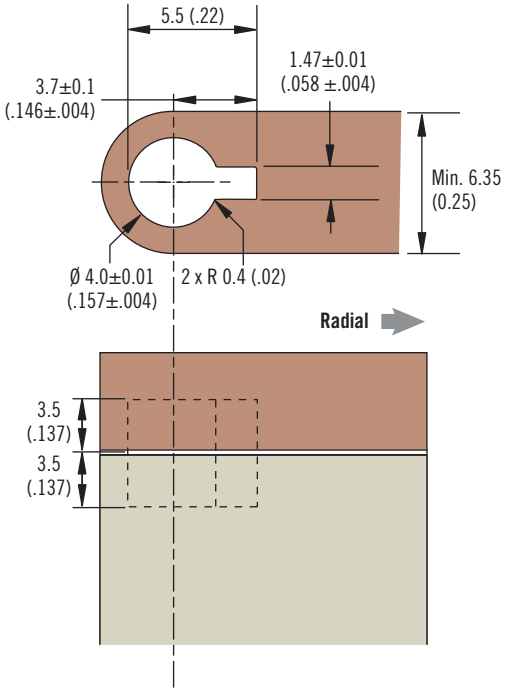
Aluminum, zinc alloy and steel, natural

Performance Details

Radial load:
Max. static load: 200 N (45 lbf)

Cycle performance:
20,000 cycles within 0.023 N•m (.2 in•lbf) of static torque specification





ACTUAL SIZE

Part Number

See table

Part Number	Static Torque
ST-4A-3S-33	0.034 N•m (.3 in•lbf)

INFO CLIC www.southco.com/ST

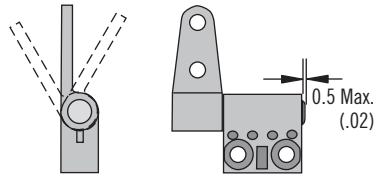
Dimensions in millimeters (inch) unless otherwise stated

ST-7A Hinge

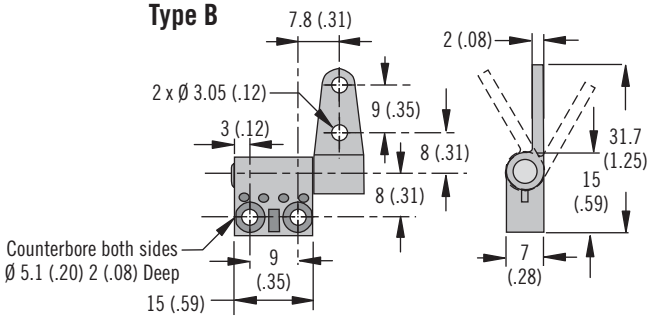
Position control · Constant torque

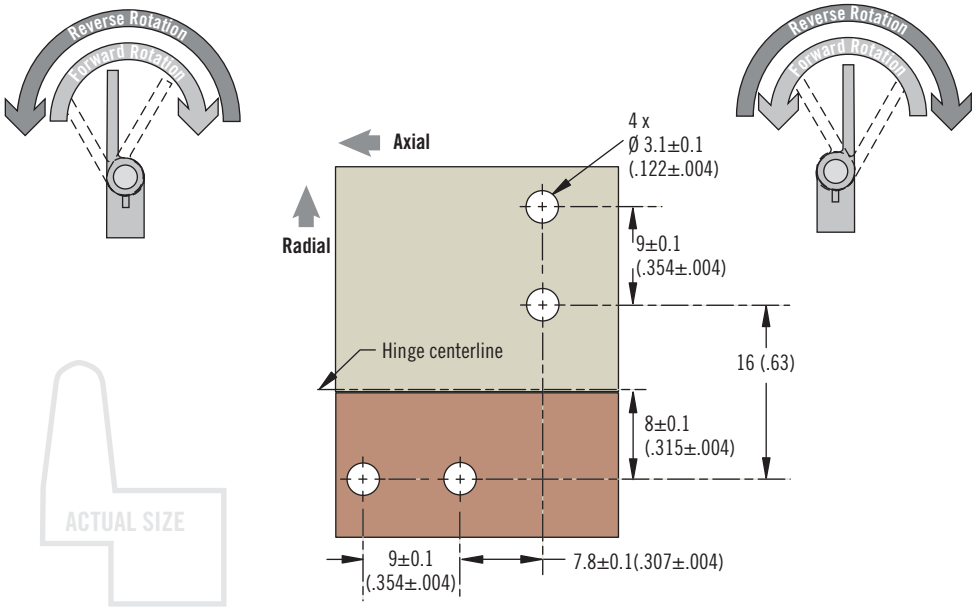
- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Type A



Type B





Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:
Max. static load: 400 N (90 lbf)

Axial load:
Max. static load: 300 N (67 lbf)

Cycle performance:
20,000 cycles within ±20% of static torque specification

Installation Notes

1. Install hinge using No. 4 socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

Part Number

See table

Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-7A-30SA-33	ST-7A-30SB-33	0.34 (3)
ST-7A-40SA-33	ST-7A-40SB-33	0.45 (4)
ST-7A-50SA-33	ST-7A-50SB-33	0.56 (5)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-7A-40FA-33	ST-7A-40FB-33	0.45 (4)	0.27 (2.4)
ST-7A-50FA-33	ST-7A-50FB-33	0.56 (5)	0.37 (3)
ST-7A-60FA-33	ST-7A-60FB-33	0.68 (6)	0.41 (3.6)
ST-7A-40RA-33	ST-7A-40RB-33	0.27 (2.4)	0.45 (4)
ST-7A-50RA-33	ST-7A-50RB-33	0.34 (3)	0.56 (5)
ST-7A-60RA-33	ST-7A-60RB-33	0.41 (3.6)	0.68 (6)

ST-10A Hinge

Position control · Constant torque

- **Smooth, zero backlash operation**
- **Space efficient design provides high torque in minimum space**
- **Constant torque, never needs adjusting**

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:
Max. static load: 500 N (112 lbf)

Axial load:
Max. static load: 1000 N (225 lbf)

Cycle performance:
20,000 cycles within ±20% of static torque specification

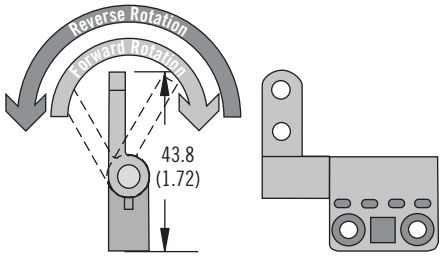
Installation Notes

1. Install hinge using M4 (No.8) socket head cap screw.
2. For proper function, assembly must include(1) type A and (1) type B hinge.

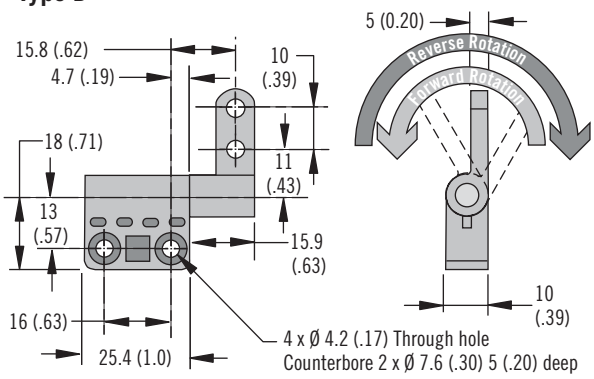
Part Number

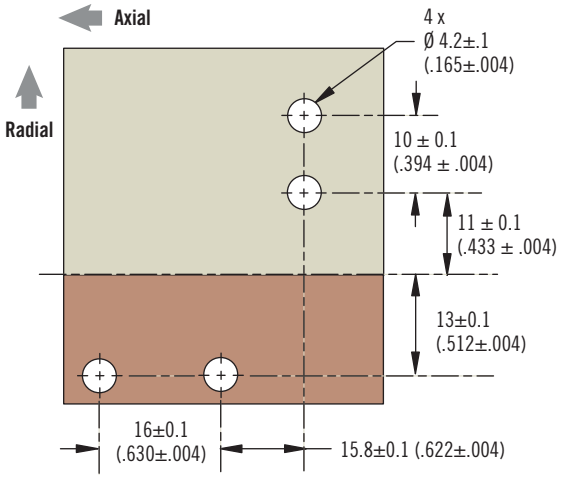
See table

Type A



Type B





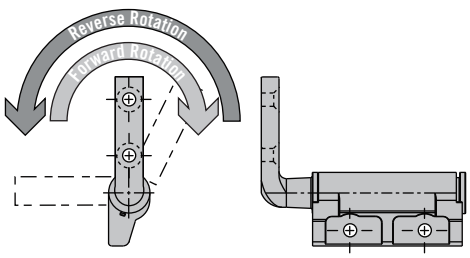
Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-10A-80SA-33	ST-10A-80SB-33	0.90 (8)
ST-10A-120SA-33	ST-10A-120SB-33	1.36 (12)
ST-10A-160SA-33	ST-10A-160SB-33	1.81 (16)
ST-10A-200SA-33	ST-10A-200SB-33	2.26 (20)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10A-120FA-33	ST-10A-120FB-33	1.36 (12)	0.81 (7.2)
ST-10A-160FA-33	ST-10A-160FB-33	1.81 (16)	1.08 (9.6)
ST-10A-200FA-33	ST-10A-200FB-33	2.26 (20)	1.36 (12)
ST-10A-120RA-33	ST-10A-120RB-33	0.81 (7.2)	1.34 (12)
ST-10A-160RA-33	ST-10A-160RB-33	1.08 (9.6)	1.84 (16)
ST-10A-200RA-33	ST-10A-200RB-33	1.36 (12)	2.26 (20)

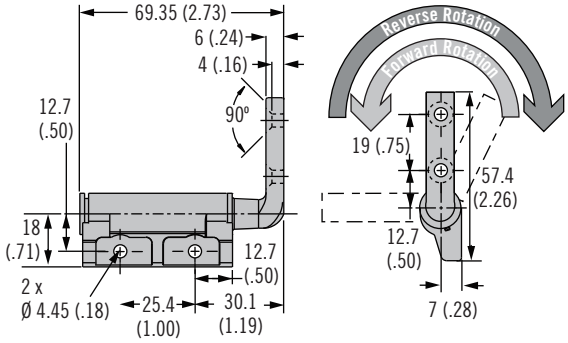
ST-10E Hinge

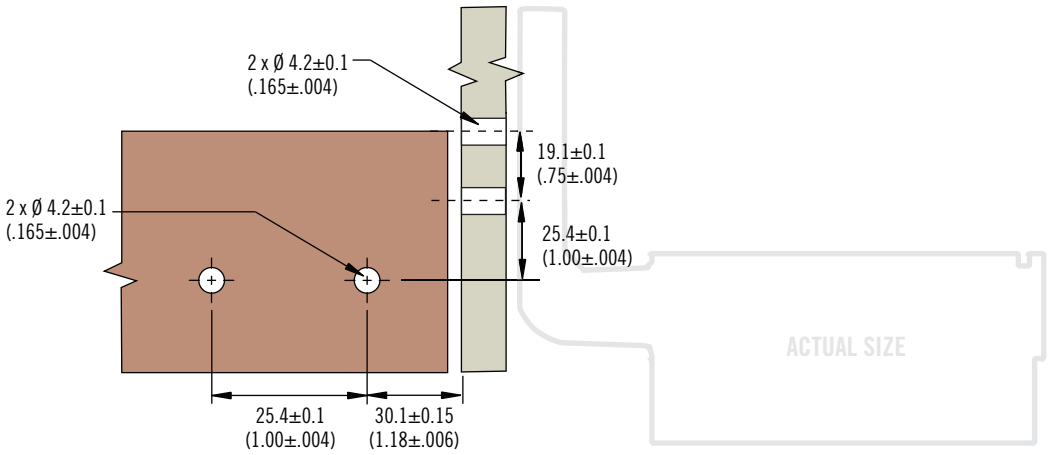
Position control · Constant torque

Type A



Type B





Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-10E-120SE-33	ST-10E-120SG-33	1.35 (12)
ST-10E-200SE-33	ST-10E-200SG-33	2.26 (20)
ST-10E-280SE-33	ST-10E-280SG-33	3.16 (28)
ST-10E-360SE-33	ST-10E-360SG-33	4.06 (36)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10E-200FE-33	ST-10E-200FG-33	2.26 (20)	1.35 (12)
ST-10E-280FE-33	ST-10E-280FG-33	3.16 (28)	2.26 (20)
ST-10E-360FE-33	ST-10E-360FG-33	4.06 (36)	2.44 (21.6)
ST-10E-440FE-33	ST-10E-440FG-33	4.97 (44)	2.93 (26)
ST-10E-200RE-33	ST-10E-200RG-33	1.35 (12)	2.26 (20)
ST-10E-280RE-33	ST-10E-280RG-33	2.26 (20)	3.16 (28)
ST-10E-360RE-33	ST-10E-360RG-33	2.44 (21.6)	4.06 (36)
ST-10E-440RE-33	ST-10E-440RG-33	2.93 (26)	4.97 (44)

- **Smooth, zero backlash operation**
- **Space efficient design provides high torque in minimum space**
- **Constant torque, never needs adjusting**

Material and Finish

Zinc alloy and steel, natural

Performance Details

Cycle performance:
20,000 cycles within ±20% of static torque specification

Installation Notes

1. Install hinge using M4 (No.8) socket head cap screw.
2. For proper function, assembly must include(1) type A and (1) type B hinge.

Part Number

See table

ST-10E Hinge

Position control · Constant torque

- **Smooth, zero backlash operation**
- **Space efficient design provides high torque in minimum space**
- **Constant torque, never needs adjusting**

Material and Finish

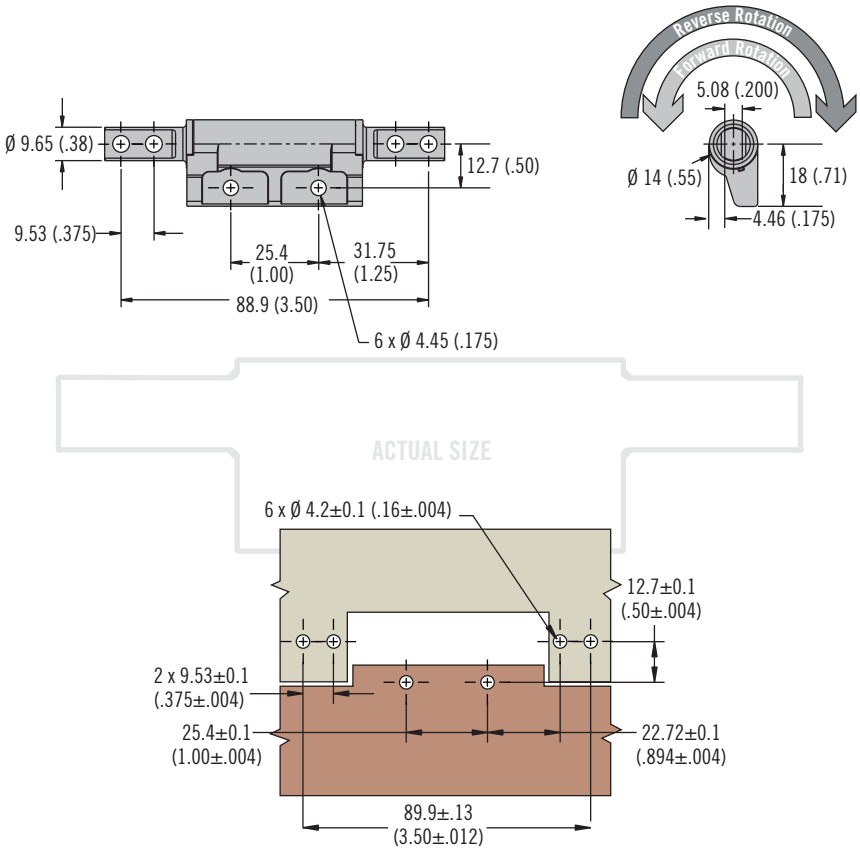
Zinc alloy and steel, natural

Performance Details

Cycle performance:
20,000 cycles within ±20% of static torque specification

Installation Notes

Install hinge using M4 (No.8) socket head cap screw



Part Number

See table

Symmetric Torque Versions	
Part Number	**Static Torque (Forward and Reverse) N·m (in·lbf)**
ST-10E-120SH-33	1.35 (12)
ST-10E-200SH-33	2.26 (20)
ST-10E-280SH-33	3.16 (28)
ST-10E-360SH-33	4.06 (36)

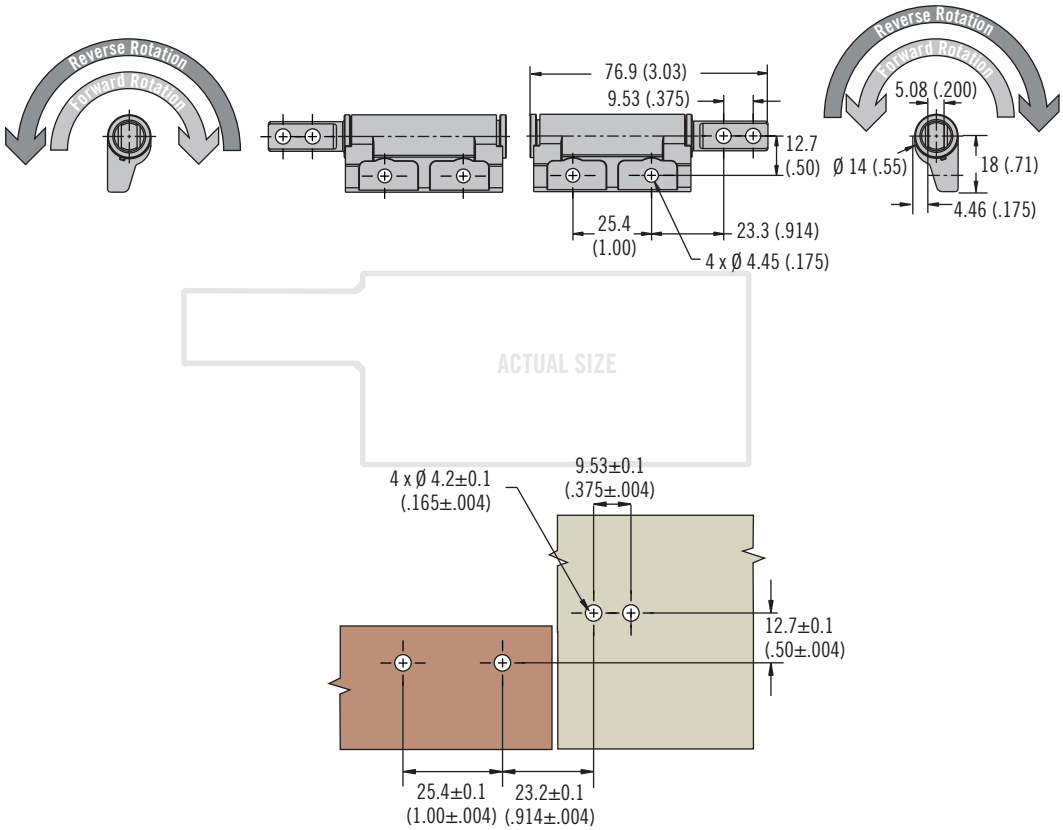
Asymmetric Torque Versions		
Part Number	**Static Torque N·m (in·lbf)**	
	Forward N·m (in·lbf)	**Reverse N·m (in·lbf)**
ST-10E-200FH-33	2.26 (20)	1.35 (12)
ST-10E-280FH-33	3.16 (28)	1.89 (16.8)
ST-10E-360FH-33	4.06 (36)	2.44 (21.6)
ST-10E-440FH-33	4.97 (44)	2.93 (26)
ST-10E-200RH-33	1.35 (12)	2.26 (20)
ST-10E-280RH-33	1.89 (16.8)	3.16 (28)
ST-10E-360RH-33	2.44 (21.6)	4.06 (36)
ST-10E-440RH-33	2.93 (26)	4.97 (44)

ST-10E Hinge

Position control · Constant torque

Type A

Type B



- **Smooth, zero backlash operation**
- **Space efficient design provides high torque in minimum space**
- **Constant torque, never needs adjusting**

Material and Finish

Zinc alloy and steel, natural

Performance Details

Cycle performance:
20,000 cycles within ±20% of static torque specification

Installation Notes

1. Install hinge using M4 (No. 8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

Part Number

See table

Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-10E-120SJ-33	ST-10E-120SK-33	1.35 (12)
ST-10E-200SJ-33	ST-10E-200SK-33	2.26 (20)
ST-10E-280SJ-33	ST-10E-280SK-33	3.16 (28)
ST-10E-360SJ-33	ST-10E-360SK-33	4.06 (36)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10E-200FJ-33	ST-10E-200FK-33	2.26 (20)	1.35 (12)
ST-10E-280FJ-33	ST-10E-280FK-33	3.16 (28)	1.89 (16.8)
ST-10E-360FJ-33	ST-10E-360FK-33	4.06 (36)	2.44 (21.6)
ST-10E-440FJ-33	ST-10E-440FK-33	4.97 (44)	2.93 (26)
ST-10E-200RJ-33	ST-10E-200RK-33	1.35 (12)	2.26 (20)
ST-10E-280RJ-33	ST-10E-280RK-33	1.89 (16.8)	3.16 (28)
ST-10E-360RJ-33	ST-10E-360RK-33	2.44 (21.6)	4.06 (36)
ST-10E-440RJ-33	ST-10E-440RK-33	2.93 (26)	4.97 (44)

ST-12A Hinge

Position control · Constant torque

- **Smooth, zero backlash operation**
- **Space efficient design provides high torque in minimum space**
- **Constant torque, never needs adjusting**

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:
Max. static load: 1000 N (225 lbf)

Axial load:
Max. static load: 1200 N (270 lbf)

Cycle performance:
20,000 cycles within ±20% of static torque specification

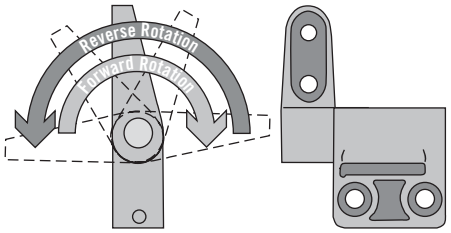
Installation Notes

1. Install hinge using M4 (No. 8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

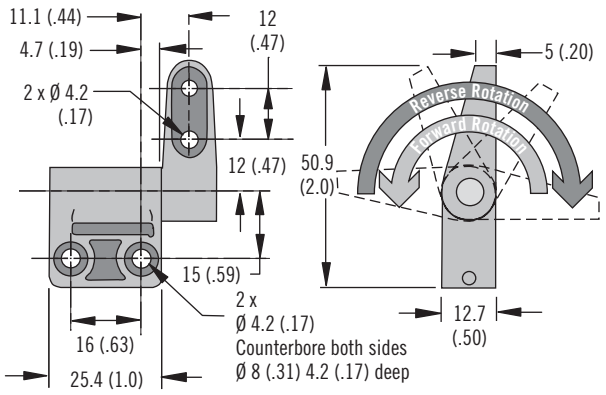
Part Number

See table

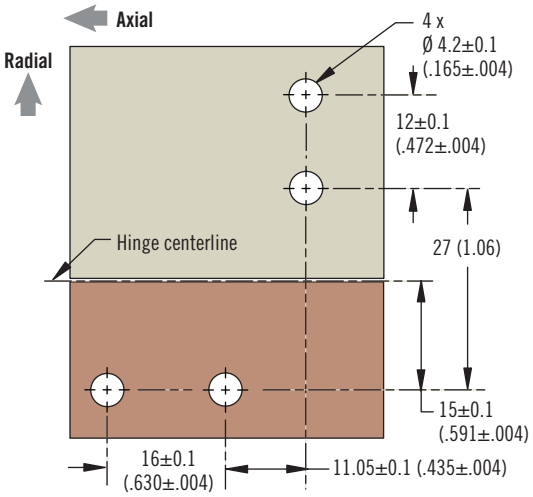
Type A



Type B



ACTUAL SIZE



Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-12A-120SA-33	ST-12A-120SB-33	1.4 (12)
ST-12A-200SA-33	ST-12A-200SB-33	2.3 (20)
ST-12A-280SA-33	ST-12A-280SB-33	3.2 (28)
ST-12A-360SA-33	ST-12A-360SB-33	4.1 (36)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-12A-200FA-33	ST-12A-200FB-33	2.3 (20)	1.5 (13.6)
ST-12A-280FA-33	ST-12A-280FB-33	3.2 (28)	2.2 (19.1)
ST-12A-360FA-33	ST-12A-360FB-33	4.1 (36)	2.8 (24.6)
ST-12A-440FA-33	ST-12A-440FB-33	5 (44)	3.4 (30)
ST-12A-200RA-33	ST-12A-200RB-33	1.5 (13.6)	2.3 (20)
ST-12A-280RA-33	ST-12A-280RB-33	2.2 (19.1)	3.2 (28)
ST-12A-360RA-33	ST-12A-360RB-33	2.8 (24.6)	4.1 (36)
ST-12A-440RA-33	ST-12A-440RB-33	3.4 (30)	5 (44)

ST-12C Hinge

Position control · Constant torque · Counterbalanced

- **Counterbalance spring allows easy opening**
- **Space efficient design provides high torque in minimum space**
- **Constant torque, never needs adjusting**

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:
Max. static load: 1000 N (225 lbf)

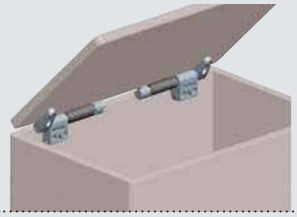
Axial load:
Max. static load: 1200 N (270 lbf)

Cycle performance:
20,000 cycles within ±20% of static torque specification

Installation Notes

1. Install hinge using M4 (No. 8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.
3. Application must limit rotation ±90° from shipping position.

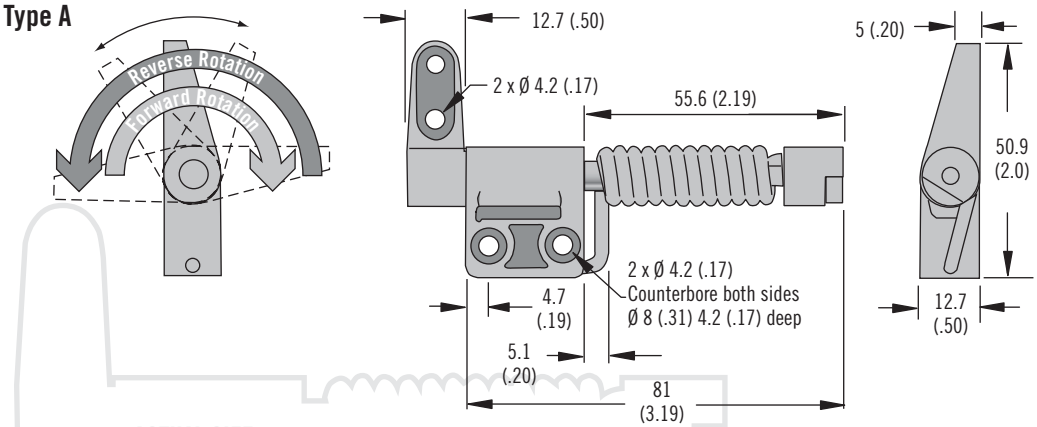
Application



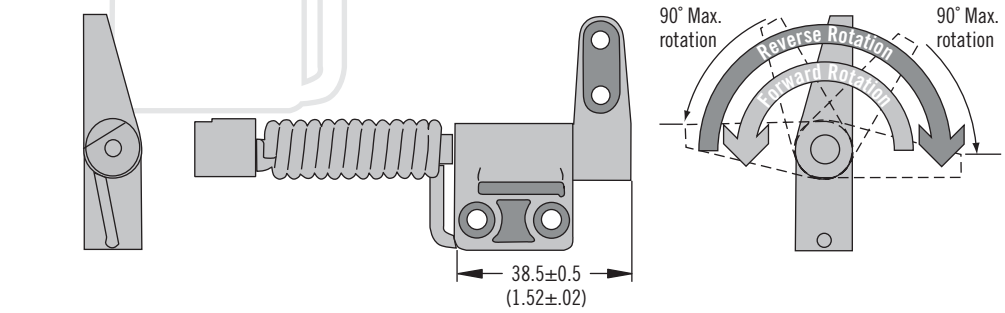
Part Number

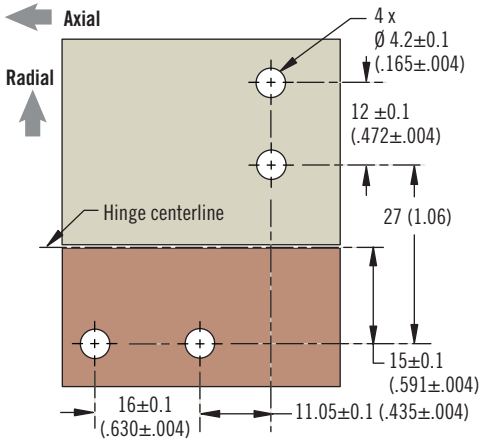
See table

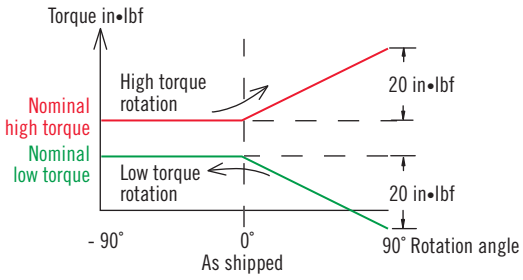
Type A



Type B







Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-12C-200FA1-33	ST-12C-200FB1-33	2.3 (20)	1.5 (13.6)
ST-12C-280FA1-33	ST-12C-280FB1-33	3.2 (28)	2.2 (19.1)
ST-12C-360FA1-33	ST-12C-360FB1-33	4.1 (36)	2.8 (24.6)
ST-12C-440FA1-33	ST-12C-440FB1-33	5 (44)	3.4 (30)
ST-12C-200RA1-33	ST-12C-200RB1-33	1.5 (13.6)	2.3 (20)
ST-12C-280RA1-33	ST-12C-280RB1-33	2.2 (19.1)	3.2 (28)
ST-12C-360RA1-33	ST-12C-360RB1-33	2.8 (24.6)	4.1 (36)
ST-12C-440RA1-33	ST-12C-440RB1-33	3.4 (30)	5 (44)

ST-11P Hinge

Position control · Constant torque

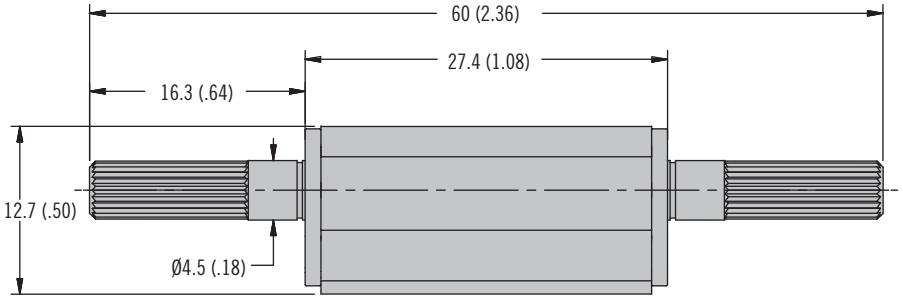
- **Designed for overmolding**
- **Brings constant torque performance to a wide range of applications**
- **Space efficient design provides high torque in minimum space**
- **Never requires adjustment**

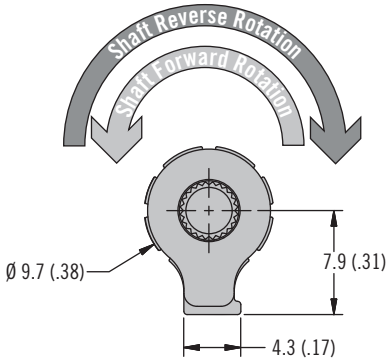
Material and Finish

Aluminum, plastic and hardened steel

Performance Details

Cycle performance:
20,000 cycles within ± 20% of static torque specification





ACTUAL SIZE

Part Number

See table

Symmetric Torque Versions	
Part Number	**Static Torque (Forward and Reverse) N·m (in·lbf)**
ST-11P-140SA-50	1.58 (14)
ST-11P-200SA-50	2.26 (20)
ST-11P-260SA-50	2.9 (26)

Asymmetric Torque Versions		
Part Number	**Static Torque N·m (in·lbf)**	
	Forward N·m (in·lbf)	**Reverse N·m (in·lbf)**
ST-11P-140FA-50	1.58 (14)	0.95 (8.4)
ST-11P-200FA-50	2.26 (20)	1.36 (12)
ST-11P-260FA-50	2.94 (26)	1.76 (15.6)
ST-11P-320FA-50	3.62 (32)	2.17 (19.2)
ST-11P-140RA-50	0.95 (8.4)	1.58 (14)
ST-11P-200RA-50	1.36 (12)	2.26 (20)
ST-11P-260RA-50	1.76 (15.6)	2.94 (26)
ST-11P-320RA-50	2.17 (19.2)	3.62 (32)

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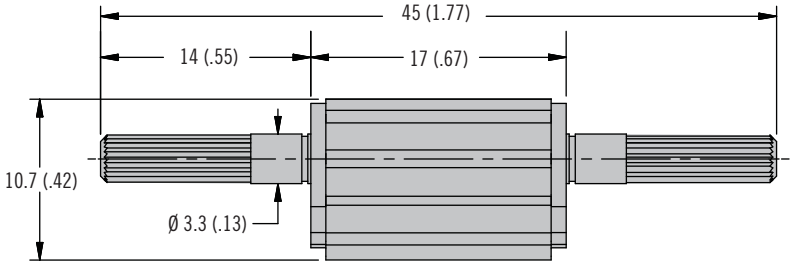
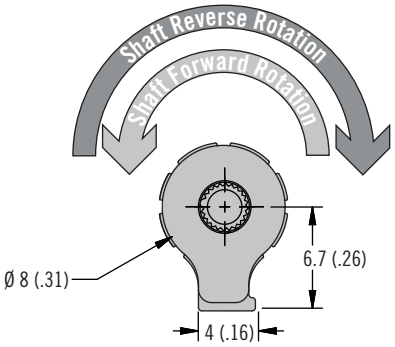
Dimensions in millimeters (inch) unless otherwise stated

ST-8P Hinge

Position control · Constant torque





ACTUAL SIZE

- **Designed for overmolding**
- **Brings constant torque performance to a wide range of applications**
- **Space efficient design provides high torque in minimum space**
- **Never requires adjustment**

Material and Finish

Aluminum, plastic and hardened steel

Performance Details

Cycle performance:
20,000 cycles within ± 20% of static torque specification

Part Number

See table

Symmetric Torque Versions	
Part Number	**Static Torque (Forward and Reverse) N·m (in·lbf)**
ST-8P-40SA-50	0.45 (4)
ST-8P-60SA-50	0.68 (6)
ST-8P-80SA-50	0.9 (8)

Asymmetric Torque Versions		
Part Number	**Static Torque N·m (in·lbf)**	
	Forward N·m (in·lbf)	**Reverse N·m (in·lbf)**
ST-8P-40FA-50	0.45 (4.0)	0.27 (2.4)
ST-8P-60FA-50	0.68 (6.0)	0.41 (3.6)
ST-8P-80FA-50	0.90 (8.0)	0.54 (4.8)
ST-8P-100FA-50	1.13 (10.0)	0.68 (6)
ST-8P-40RA-50	0.27 (2.4)	0.45 (4)
ST-8P-60RA-50	0.41 (3.6)	0.68 (6)
ST-8P-80RA-50	0.54 (4.8)	0.9 (8)
ST-8P-100RA-50	0.68 (6.0)	1.13 (10)

G7 Hinge

Bi-stable

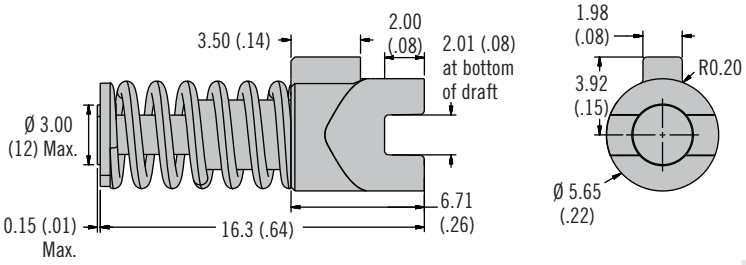
- **Automatically drives to one of two preferred positions**
- **Invisible when installed**

Material and Finish

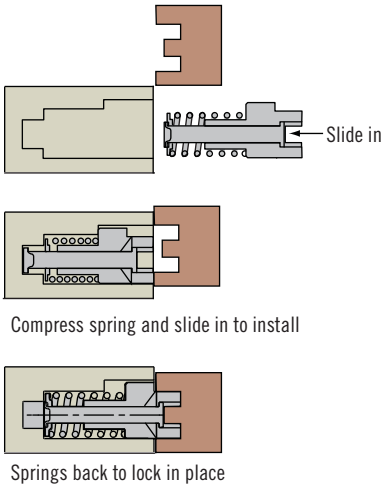
Acetal black, steel, zinc plated

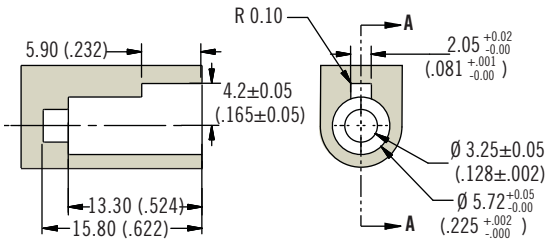
Performance Details

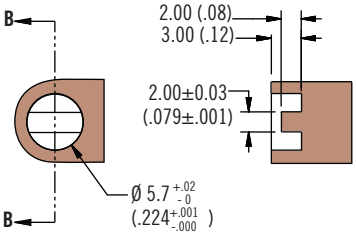
Cycle performance: 20,000 cycles within ± 20% of normal torque specification

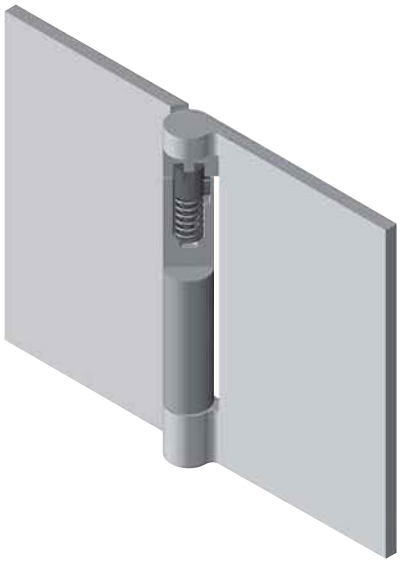


ACTUAL SIZE









Part Number

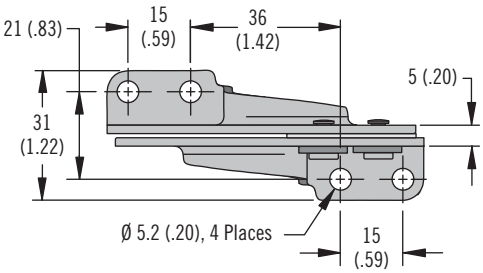
See table

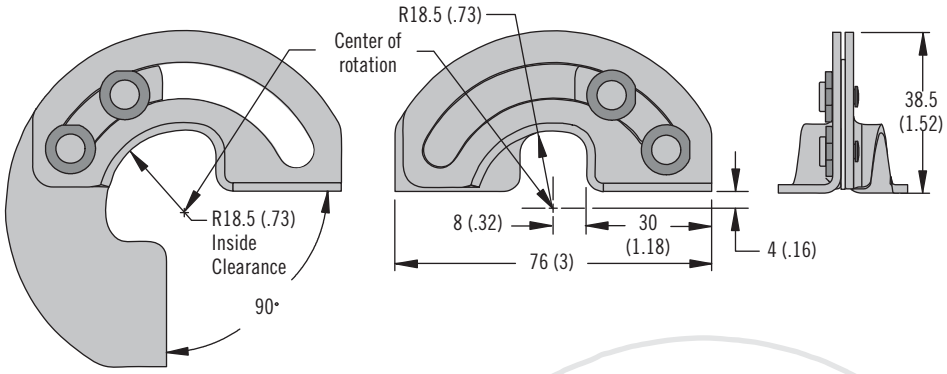
Part Number	Max. Torque N·m (in·lbf)
G7-6A-3P-1	0.035 (.3)

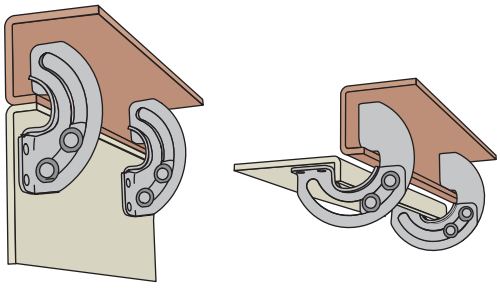
Dimensions in millimeters (inch) unless otherwise stated

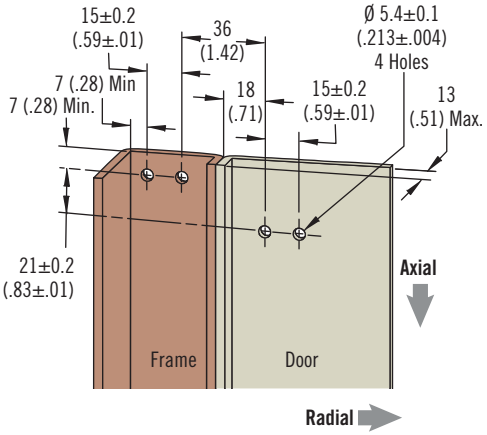
R6 Hinge

Concealed · 90° Opening









Part Number	
Steel	R6-21-11
Stainless steel	R6-21-23

- **Invisible when door is closed**

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

Zinc Plated Steel

Radial load:
Max. static load: 625 N (140 lbf)
Average ultimate load:
2235 N (502 lbf)

Axial load:
Max. static load: 205 N (46 lbf)
Average ultimate load:
420 N (94 lbf)

Stainless Steel

Radial load:
Max. static load: 525 N (118 lbf)
Average ultimate load:
3035 N (682 lbf)

Axial load:
Max. static load: 185 N (42 lbf)
Average ultimate load:
475 N (107 lbf)
Max. holding torque:
18.2 N•m (161 in•lbf)

Operating temperature range:
-40° C (-40° F) to 85° C (185° F)

Installation Notes

Panel thickness exceeding 4 (.16) will require a 45° chamfer on both door and frame.

Screws not supplied.
Install using M5 (No. 10)

Part Number

See table

R6 Hinge

Concealed · 180º Opening

- **Invisible when door is closed**
- **Door-stay for horizontal door & lid applications**
- **Corrosion-resistant materials available**

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

Zinc Plated Steel

Radial load:
Max. static load: 485 N (109 lbf)
Average ultimate load:
710 N (160 lbf)

Axial load:
Max. static load: 100 N (23 lbf)
Average ultimate load:
295 N (66 lbf)

Max. holding torque:
11.8 N•m (104 in•lbf)

Stainless Steel

Radial load:
Max. static load: 505 N (114 lbf)
Average ultimate load:
1085 N (244 lbf)

Axial load:
Max. static load: 165 N (37 lbf)
Average ultimate load:
345 N (78 lbf)

Operating temperature range:
-40º C (-40º F) to 85º C (185º F)

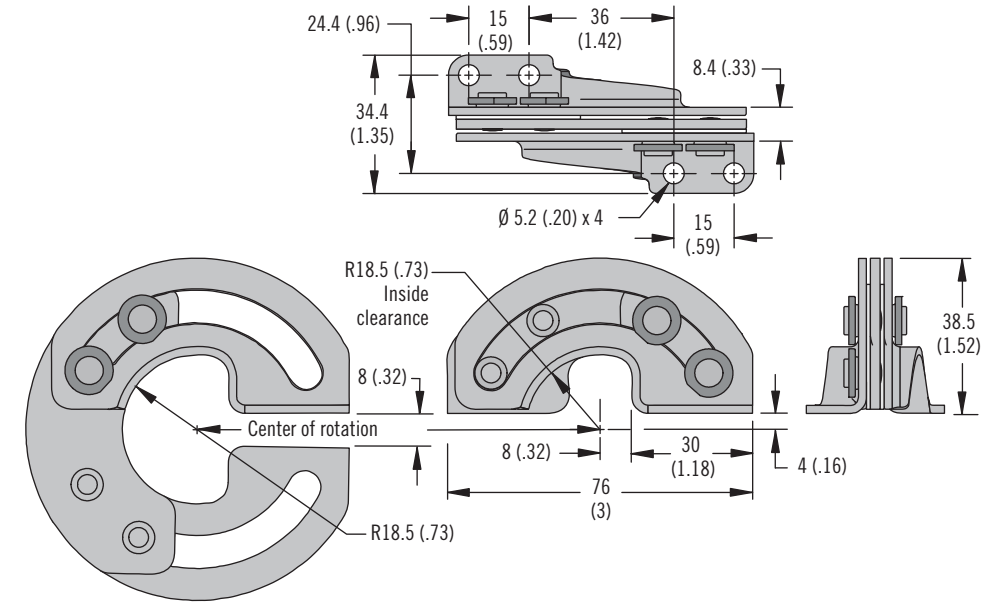
Installation Notes

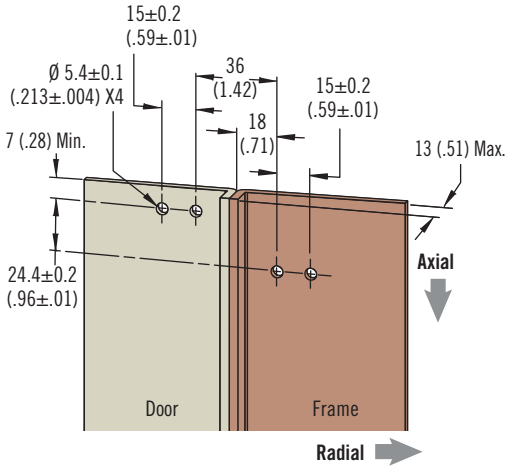
Screws not supplied.
Install using M5 (No. 10) screws or by welding.

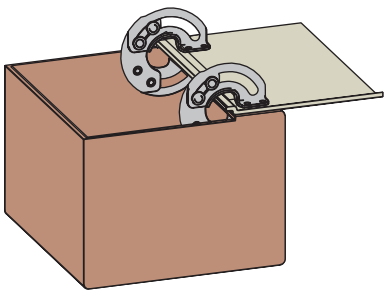
Maximum panel thickness is
4 (.16)

Part Number

See table





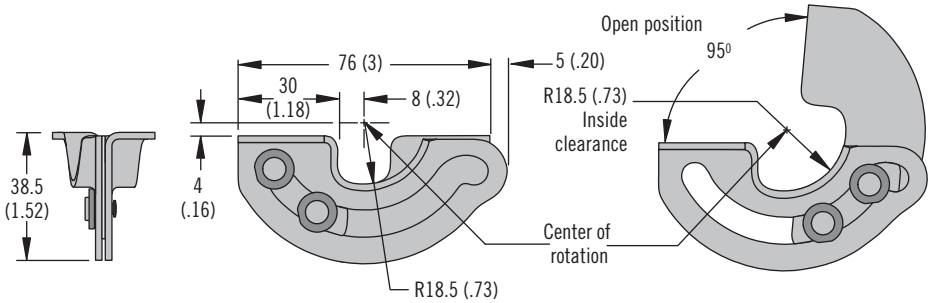


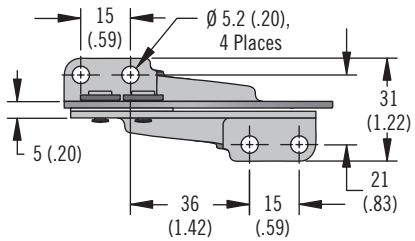
Part Number	
Steel	R6-20-11
Stainless steel	R6-20-23

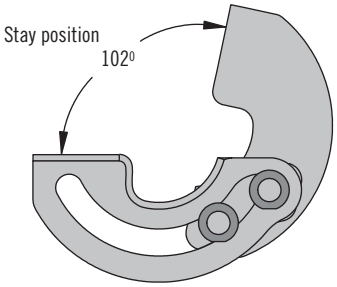
Dimensions in millimeters (inch) unless otherwise stated

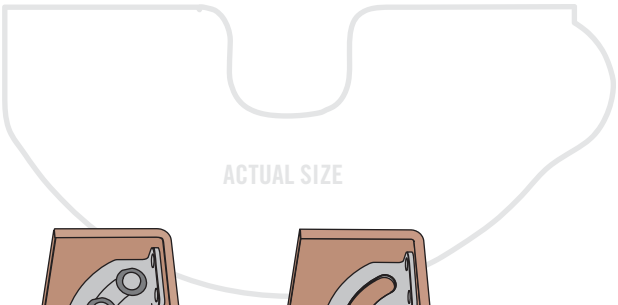
R6 Hinge

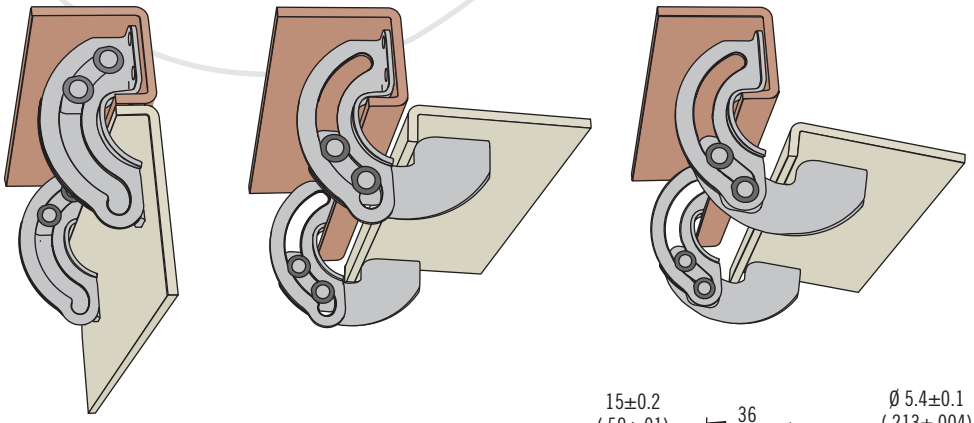
Concealed · Hold-open style

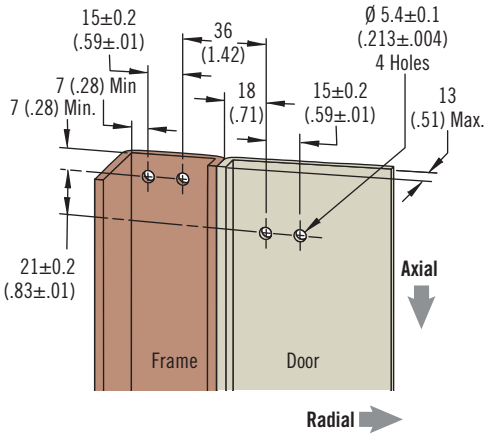












Part Number	
Steel	R6-22-11
Stainless steel	R6-22-23

- **Invisible when door is closed**
- **Holds doors open without secondary mechanical support**

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

*(loads applied with hinge in stay position)

Zinc Plated Steel

Radial load:
Max. static load: 155 N (35 lbf)
Average ultimate load: 405 N (91 lbf)

Axial load:
Max. static load: 200 N (45 lbf)
Average ultimate load: 415 N (93 lbf)

Max. holding torque:
11.8 N•m (104 in•lbf)

Operating temperature range:
-40°C (-40°F) to 85°C (185°F)

Stainless Steel

Radial load:
Max. static load: 280 N (63 lbf)
Average ultimate load:
570 N (128 lbf)*

Axial load:
Max. static load: 305 N (69 lbf)
Average ultimate load:
430 N (97 lbf)

Max. holding torque:
18.2 N•m (161 in•lbf)*

Operating temperature range:
-40° C (-40° F) to 85° C (185° F)

Installation Notes

Panel thickness exceeding 4 (.16) will require a 45° chamfer on both door and frame.

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

F6 Hinge

Removable style · Concealed

- **Hinge and hardware are concealed**
- **Allows for quick easy door removal**
- **Three styles**

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

Steel

Radial load:

Max. static load: 300 N (65 lbf)

Axial load:

Max. static load: 500 N (112 lbf)

Stainless Steel

Radial load:

Max. static load: 300 N (65 lbf)

Axial load:

Max. static load: 800 N (180 lbf)

Installation Notes

1. Select frame and door leaf separately for bulk packaging.
2. Select assembly for individual packaging (consists of 1 frame leaf and door leaf per bag)

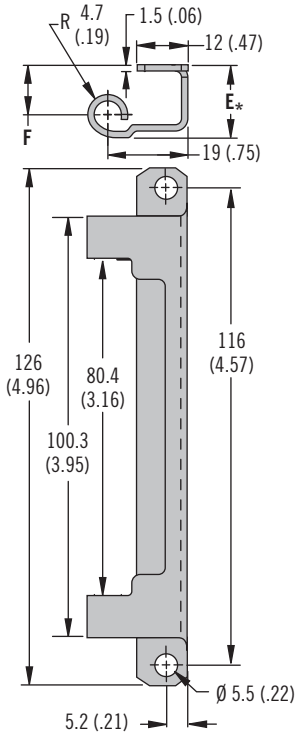
Screws not supplied.
Use M5 (No. 10) hardware

Machine screws are recommended for mounting frame leaf

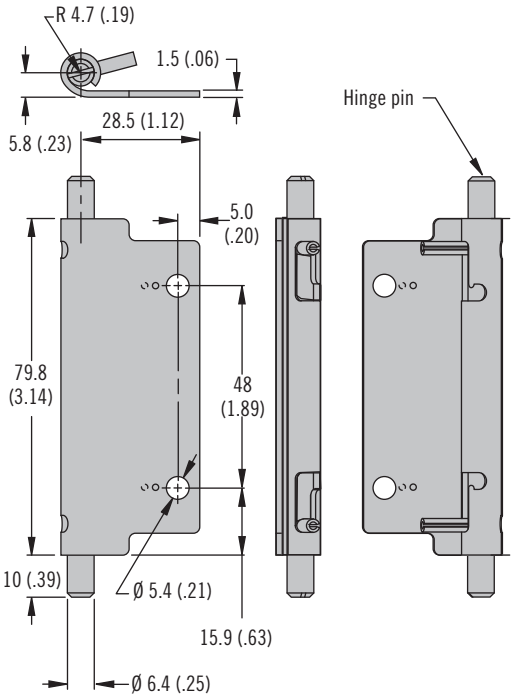
Part Number

See table

Frame Leaf



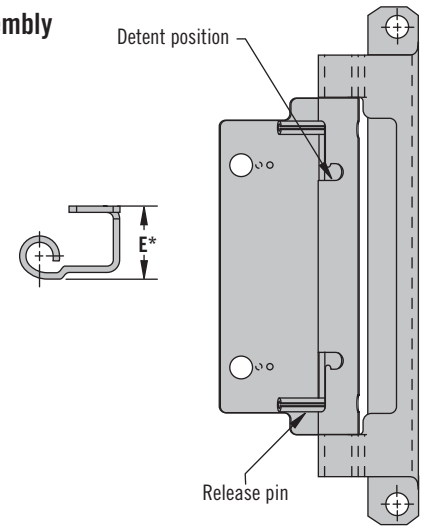
Door Leaf



Frame Leaf Part Number				
Series	E	F	Steel	Stainless Steel
1	17 (.67)	11.8 (.47)	F6-901	F6-901-1
2	20 (.79)	14.8 (.58)	F6-902	F6-902-1
3	23.4 (.92)	18.2 (.72)	F6-903	F6-903-1

Door Leaf Part Number		
Door Leaf	Steel	Stainless Steel
	F6-940	F6-940-1

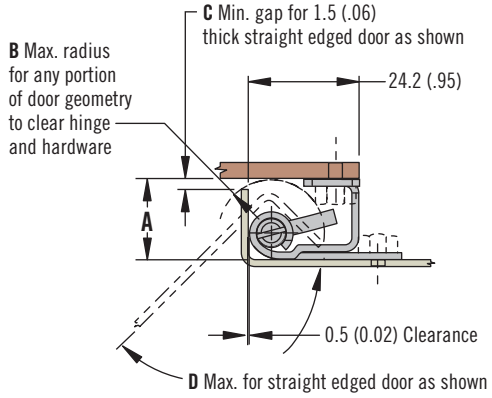
Assembly



Part Number Assembled				
Assembly			Steel	Stainless Steel
Series	E	F		
1	17 (.67)	11.8 (.47)	F6-1	F6-1-1
2	20 (.79)	14.8 (.58)	F6-2	F6-2-1
3	23.4 (.92)	18.2 (.72)	F6-3	F6-3-1

INFO CLIC www.southco.com/F6

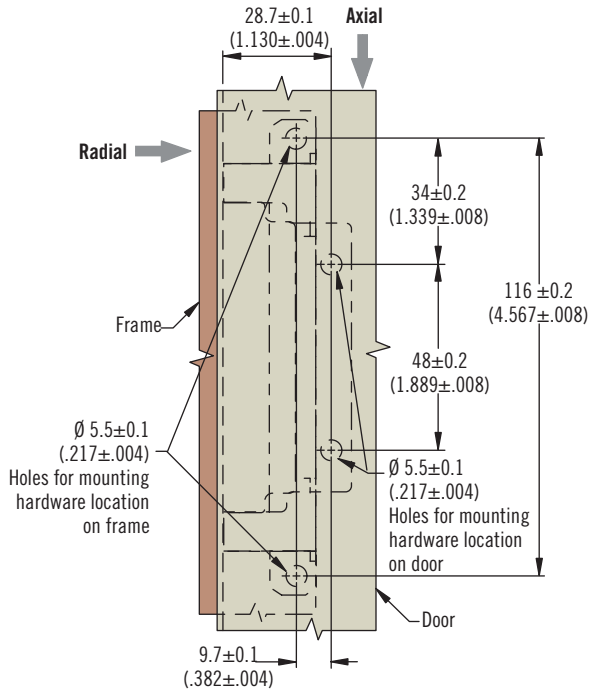
Dimensions in millimeters (inch) unless otherwise stated



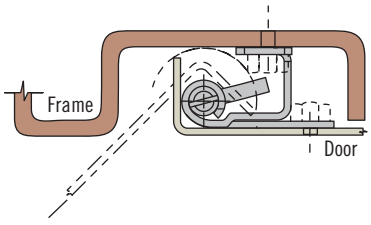
Hinges may be fastened to door and frame by:

- M5 (No. 10) hardware. Machine screws are recommended for mounting frame leaf.
- *Hex jam nuts. Verify clearance with door edge. Depending on jam nut orientation, full rotation may be obstructed.
- Welding.

Series	Panel Preparations Dimensions			
	A	B	C	D
1	17.6 (.69)	10.9 (.43)	3.2 (.13)	132°
2	20.6 (.81)	12.7 (.50)	3.9 (.15)	125°
3	24 (.95)	15.3 (.60)	4.4 (.17)	118°



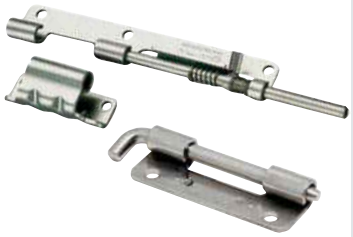
Additional Mounting Options



Notes

Mounting:

* Select the frame leaf with a value of **E** best suited to the configuration of your door. The dimension **E** + 0.6 (.02) = the distance from the outside surface of your frame to the inside surface of your door.



F6 Hinge

Removable style · Concealed · Heavy-duty

- **High strength and durability**
- **Allows door removal without using tools**
- **Retractable pin version resists vibration and prevents pin loss**

Material and Finish

Steel, zinc plated or stainless steel, natural

Performance Details

Steel

Radial load:
Max. static load: 1000 N (225 lbf)
Average ultimate load:
2100 N (472 lbf)

Axial load:
Max. static load: 2900 N (650 lbf)
Average ultimate load:
4900 N (1100 lbf)

Stainless Steel

Radial load:
Max. static load: 1300 N (292 lbf)
Average ultimate load:
2800 N (629 lbf)

Axial load:
Max. static load: 3600 N (809 lbf)
Average ultimate load:
6000 N (1350 lbf)

Operating temperature range:
-40° C (-40° F) to 85° C (185° F)

Installation Notes

Order separately 1 door leaf and 1 frame leaf for a complete assembly

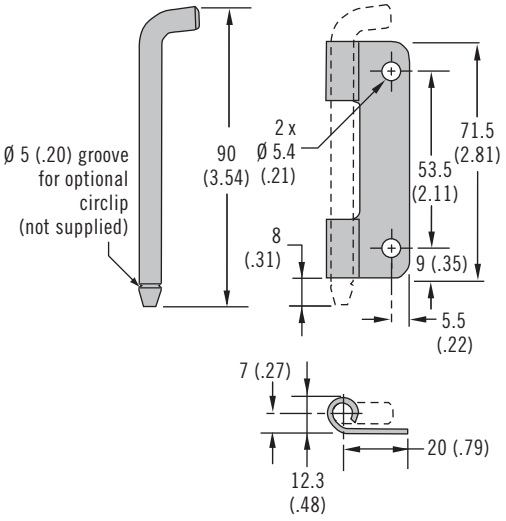
Screws not supplied.
Hinge Leaves may be fastened to the door and the frame by: M5 (No. 10) hardware (machine screws are recommended) or by welding.

Part Number

See table

Door Leaf

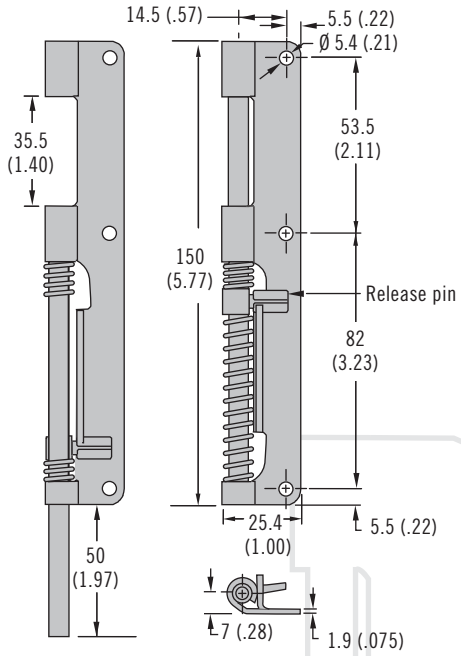
Removable Pin Style



Part Number		
Styles	Material	
	Steel	Stainless steel
Removable pin	F6-946	F6-946-5
Retractable pin type A	~	F6-941-5
Retractable pin type B	~	F6-942-5

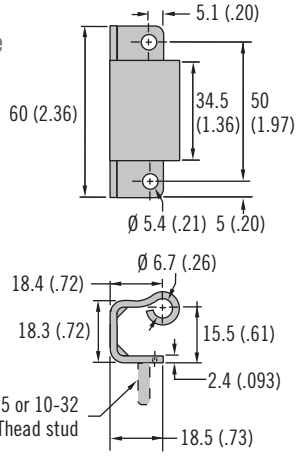
Retractable Pin Style

Type A shown, Type B mirror image



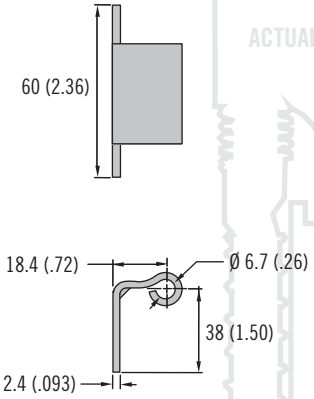
Frame Leaf

Formed Style



Part Number			
Style	Installation	Material	
		Steel	Stainless steel
Formed	Thru hole	F6-905	F6-905-5
Formed	M5 thread stud	F6-908	F6-908-5
Formed	10-32 thread stud	F6-907	F6-907-5
Flat	Weld	F6-904	F6-904-5

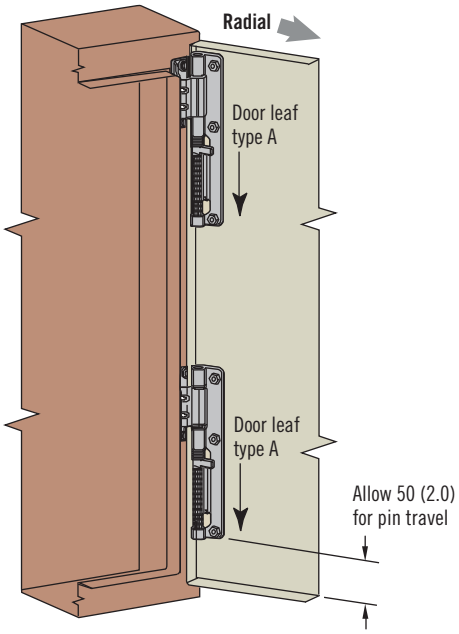
Flat Style

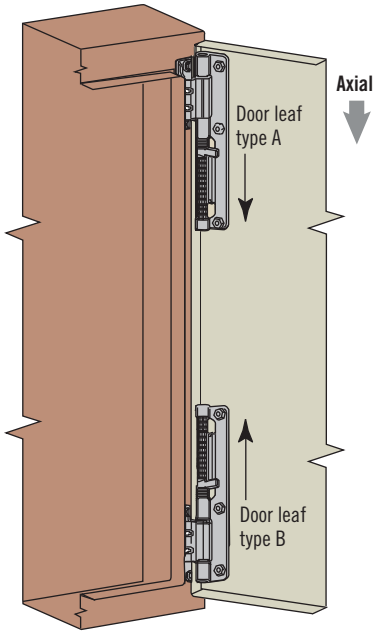


ACTUAL SIZE

Dimensions in millimeters (inch) unless otherwise stated

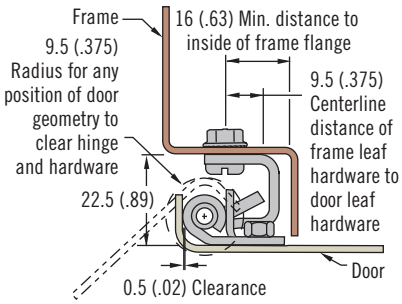
Formed Frame Leaf



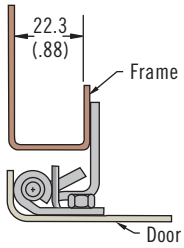


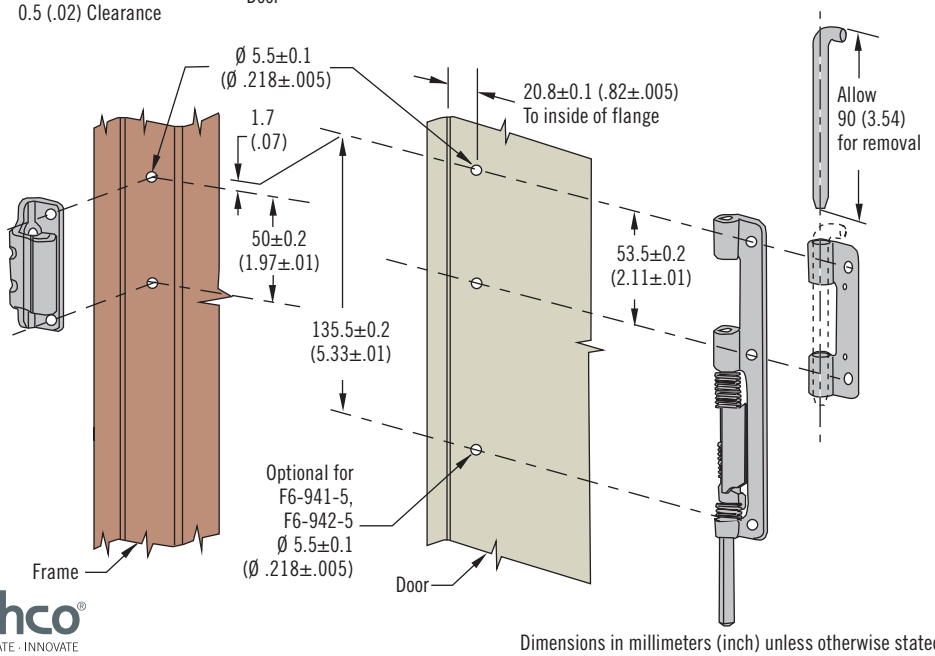
Installation

Typical door and frame installation using formed frame leaf



Typical door and frame installation using flat frame leaf





Dimensions in millimeters (inch) unless otherwise stated

INSERTS, STANDOFFS & ASSEMBLY COMPONENTS

MonoSert and DuoSert Inserts

Pages 472 - 473

SOUTHCO® MonoSert and DuoSert Inserts provide simple front mount installation, solid connections, and interchangeability for thin panel rack attach and enclosure installations. They are an ideal fit for IT-style racks, with a lower installed cost than cage nuts and with greater flexibility for reconfiguration in the field.

DM

DM

Standoffs and Assembly Components

Pages 474 - 480

Southco's range of standoffs and assembly components provide a range of benefits including:

- NY Nylatch panel fasteners use a retractable plunger and fixed grommet for a fast, repeatable panel assembly
- Push rivets combine a plunger and grommet in a light-weight, easy install configuration
- Standoffs in multiple styles, sizes, and strengths install with a snap, to provide a platform for convenient attachment and replacement of PC boards
- Reusable cable clamps combine a reusable nylon strap mated with a plunger fastener to provide convenient access while managing cables, tubing, conduit, or wire bundles
- Bushings are designed to protect wires, tubing, and fasteners from contact with rough edges or repetitive abrasion where they pass through the panels

BC

30

NY

NY

NY-S4

NY

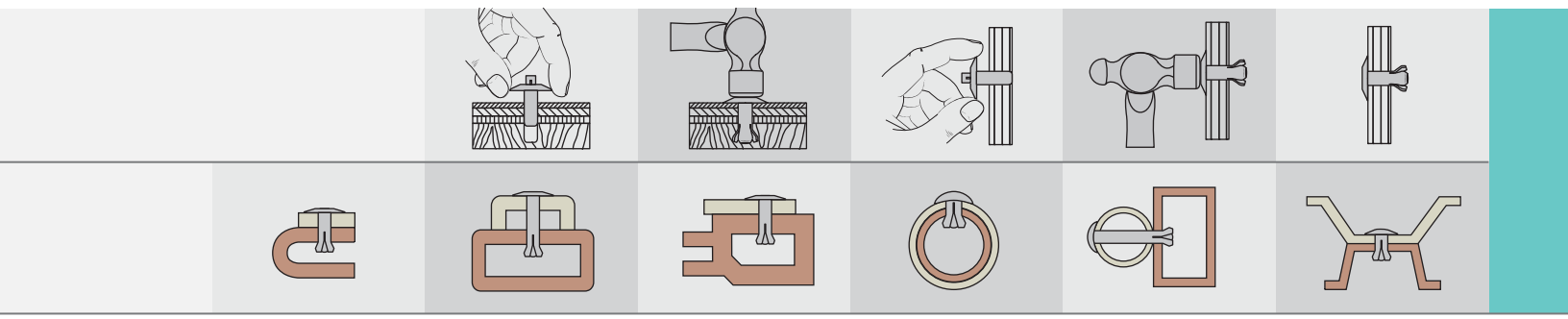
Drive Rivets

The use of blind drive rivets installed with only an ordinary hammer from one side of the job offers a highly simplified method of fastening. Speed, convenience and low installed cost make drive riveting preferable not only for blind joints but for fastening many parts that can be reached from either side.

SOUTHCO® drive rivets have a cored slotted body with a grooved pin protruding from its head. When the rivet is inserted through parts to be fastened the pin is driven flush with the rivet head causing the expanding prongs to form a blind head behind the rear sheet.

- Pull-up action, built into the rivet design, clinches fastened materials together as rivet is attached
- Grip capabilities range from 1.2 mm (.047") to 36.1 mm (1.421") thick
- Multiple diameters and numerous lengths for a wide variety of material and grip requirements
- Corrosion-resistant aluminum and stainless steel materials
- Tamper-resistant / tamper-evident designs resist being driven through or drilled out
- Long-shaft part numbers designated for masonry use
- Trailer liner style designed for quick replacement of plywood trailer linings

Other options available. For complete details on variety, part numbers, installation and specification, go to www.southco.com/38



DM Inserts

MonoSert rack attach

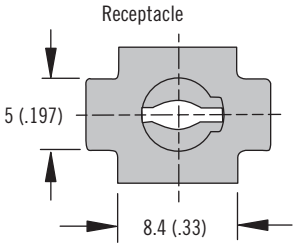
- **Front install insert for rack attach applications**

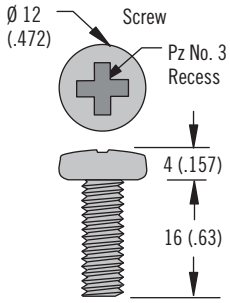
Material and Finish

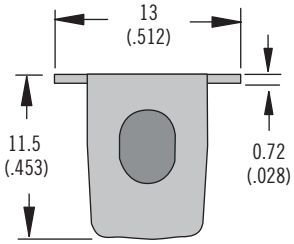
Steel, zinc plated

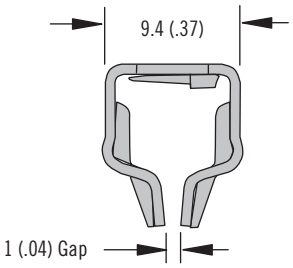
Installation Notes

Max. tightening torque:
2 N•m (17.7 in•lbf)

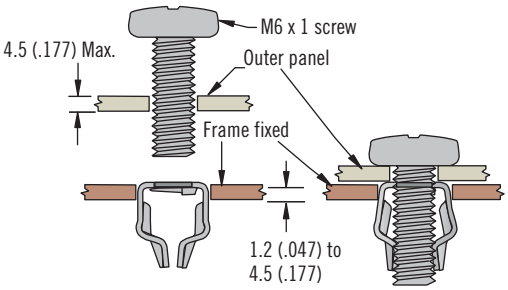




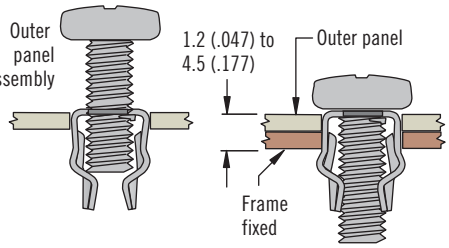




Standard Installation



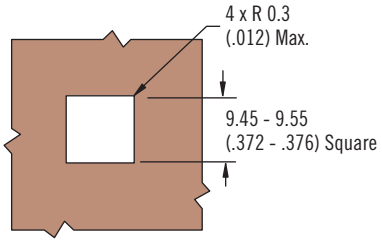
Alternative Installation



Part Number

See table

Part Number
DM-10-10216-10



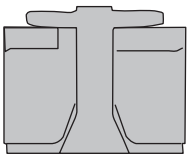
Other options available. For complete details on variety, part numbers, installation and specification, go to

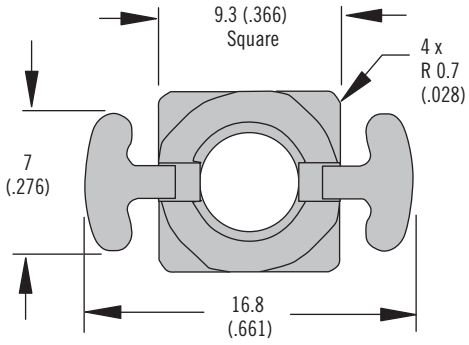
INFO CLIC *www.southco.com/DM*

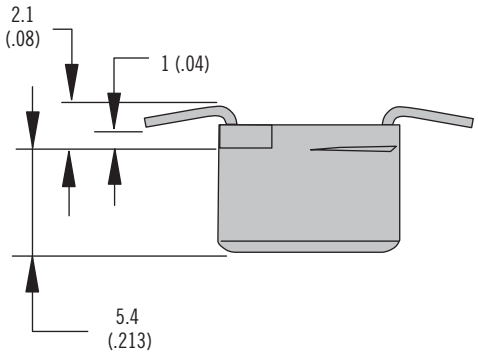
Dimensions in millimeters (inch) unless otherwise stated

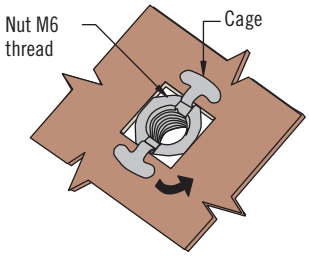
- **Front install insert for rack attach applications**

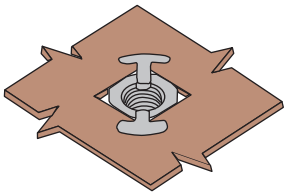
ACTUAL SIZE

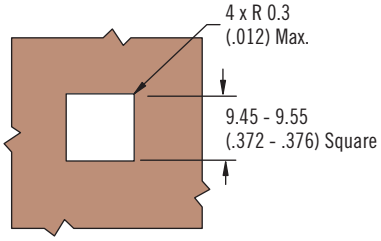












Part Number
DM-95-10-12-11

Receptacle only. (Screw not supplied)

Material and Finish

Zinc alloy and stainless steel, natural

Installation Notes

Max. tightening torque:
10 N•m (88.5 in•lbf)
Max. panel thickness:
1 - 1.2 (.039 - .047)

Recommended installation tool requires a flat blade screwdriver

Part Number

See table

Other options available. For complete details on variety, part numbers, installation and specification, go to
www.southco.com/DM

NY Nylatch Panel Fastener

Push / pull style

- **Simple reusable panel fastener**
- **Multiple styles and sizes**
- **Non-conductive and non-corrosive materials**

Material and Finish

Grommet: Polycarbonate, black or white, or polysulfone, black

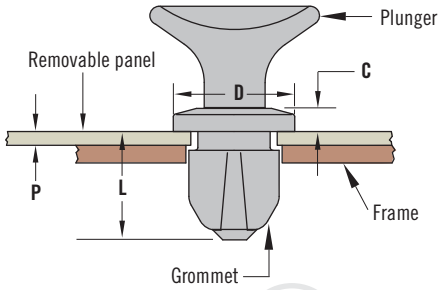
Plunger: Nylon, black or white, or polyester, black

Performance Details

Ultimate shear load:
4.8 (3/16): 200 N (45 lbf)
6.4 (1/4): 330 N (75 lbf)
7.9 (5/16): 667 N (150 lbf)

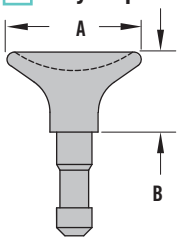
Max. operating temperature:
85°C (185°F)

Flammability rating:
See part number selection

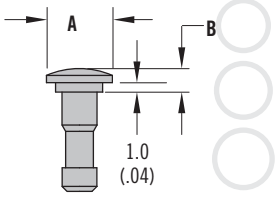


Head Style Code	Plunger Size					
	4.8 (3/16)		6.4 (1/4)		7.9 (5/16)	
	A	B	A	B	A	B
Easy Grip	12.7 (.50)	8.1 (.32)	14.4 (.57)	8.6 (.34)	16.0 (.63)	9.6 (.38)
Low Profile	6.6 (.26)	2.5 (.10)	7.1 (.28)	2.5 (.10)	7.6 (.30)	2.8 (.11)
Mini Grip	6.3 (.25)	6.6 (.26)	8.1 (.32)	7.1 (.28)	9.6 (.38)	7.6 (.30)

H Easy Grip

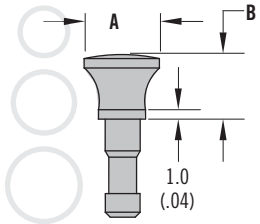


H Low Profile



ACTUAL SIZE

H Mini Grip



ACTUAL SIZE

3/16" Sizes Ø 4.8 (.188)

ACTUAL SIZE

Sheet Capacity		Dimensions			Length Number	
G Range	P Max.	C Max.	L Max.	Ø D	G Grommet	L Plunger
1.4 - 3.9 (.056 - .153)	1.0 (.042)	1.6 (.065)	8.4 (.330)	6.5 (.255)	-31	-32
2.0 - 4.5 (.079 - .176)	1.6 (.065)	1.3 (.050)	8.8 (.346)		-32	-32
2.8 - 5.3 (.112 - .209)	2.5 (.098)		9.9 (.390)		-33	-33
3.9 - 6.3 (.152 - .249)	3.5 (.138)		10.9 (.430)		-34	-34

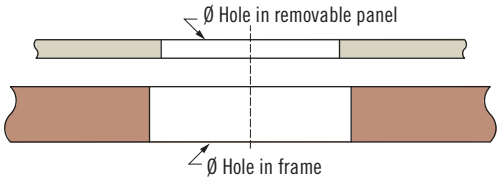
1/4" Sizes Ø 6.4 (.250)

Sheet Capacity		Dimensions			Length Number	
G Range	P Max.	C Max.	L Max.	Ø D	G Grommet	L Plunger
1.5 - 3.8 (.059 - .148)	1.0 (.042)	2.0 (.079)	9.4 (.371)	8.5 (.336)	-41	-42
2.1 - 4.4 (.084 - .173)	1.6 (.065)	1.6 (.064)	9.8 (.386)		-42	-42
3.0 - 5.3 (.118 - .207)	2.5 (.098)		10.9 (.430)		-43	-43
4.6 - 6.9 (.182 - .271)	4.1 (.162)		12.5 (.494)		-44	-44

5/16" Sizes Ø 7.9 (.313)

Sheet Capacity		Dimensions			Length Number	
G Range	P Max.	C Max.	L Max.	Ø D	G Grommet	L Plunger
1.5 - 3.8 (.059 - .148)	1.0 (.042)	2.4 (.095)	9.4 (.371)	10.7 (.420)	-51	-52
2.1 - 4.4 (.084 - .173)	1.6 (.065)	2.0 (.080)	9.8 (.386)		-52	-52
3.0 - 5.3 (.118 - .207)	2.5 (.098)		10.9 (.430)		-53	-53
4.6 - 6.9 (.182 - .271)	4.1 (.162)		12.5 (.494)		-54	-54
5.8 - 8.1 (.230 - .319)	5.3 (.210)		13.8 (.542)		-55	-55

Dimensions in millimeters (inch) unless otherwise stated



Size	Ø Removable Panel Hole	Ø Frame Hole
4.8 (3/16)	4.57 - 4.65 (.180 - .183)	4.8 - 4.88 (.189 - .192)
6.4 (1/4)	6.04 - 6.15 (.238 - .242)	6.35 - 6.45 (.250 - .254)
7.9 (5/16)	7.47 - 7.59 (.294 - .299)	8.03 - 8.2 (.316 - .323)

Part Number Selection

Order grommet and plunger separately

Plunger and grommet size code must match

Grommet Part Number

S Size code
- **3** Ø 4.8 (.188)
- **4** Ø 6.4 (.250)
- **5** Ø 7.9 (.313)

M Material and finish
- **20** Polycarbonate (UL 94 V-2) black
- **10** Polycarbonate (UL 94 V-2) white
- **30** Polysulfone (UL 94 V-0) black

NY - S G - G - M

G Grommet length
Grommet length number
(See grommet and plunger tables on page 474)

Plunger Part Number

S Size code
- **3** Ø 4.8 (.188)
- **4** Ø 6.4 (.250)
- **5** Ø 7.9 (.313)

M Material and finish
- **50** Nylon (UL 94 V-2) black
- **51** Nylon (UL 94 V-2) white
- **60** Polyester (UL 94 V-0) black

NY - S P - L - H - M

L Plunger length
Plunger length number
(See grommet and plunger tables on page 474)

H Head style
- **1** Easy grip
- **3** Low profile
- **4** Mini grip

(Refer to the plunger length table for the head style availability)

NY Standoff

Quarter-turn style · Push / pull style

- Quick to install and quick to release
- Light, tough and impact resistant
- Non-conductive, non-corrosive materials

Material and Finish

Polysulfone, black

Performance Details

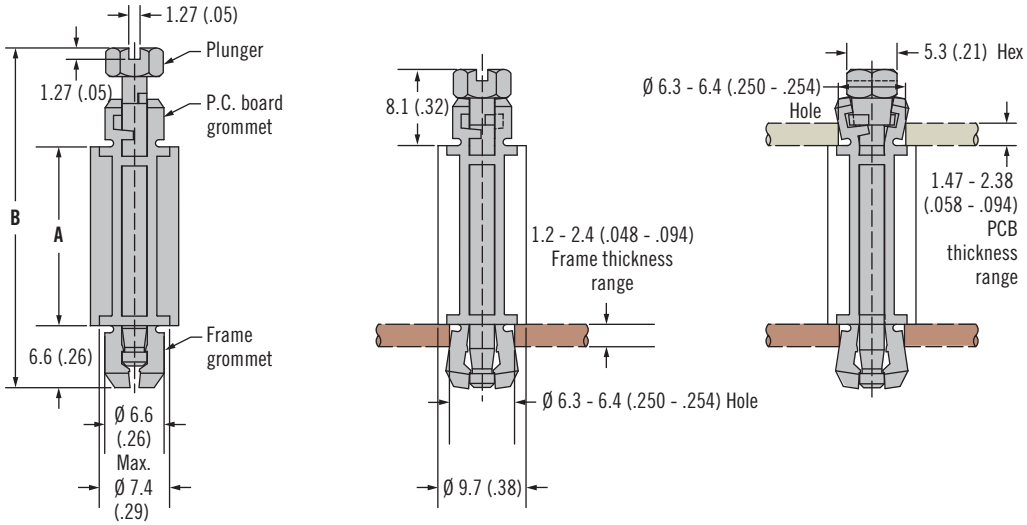
Max. operating temperature: 177°C (350°F)

Flammability rating: UL94-V0

Part Number

See table

Quarter-Turn Style



Standoff as Received | Installed in Frame | With PCB in Place

Part Number	Dimensions	
	A ± .1 (.003)	B Max.
NY-S4-188-30	4.8 (.188)	22.6 (.890)
NY-S4-250-30	6.4 (.250)	24.1 (.952)
NY-S4-375-30	9.5 (.375)	27.4 (1.077)
NY-S4-500-30	12.7 (.500)	30.5 (1.202)
NY-S4-625-30	15.8 (.625)	33.7 (1.327)
NY-S4-750-30	19.0 (.750)	36.8 (1.452)

- Tool-free installation and operation
- Standoff provides 360° support / stability
- Tough and impact resistant materials
- Non-conductive, non-corrosive materials

Material and Finish

Polycarbonate, natural

Performance Details

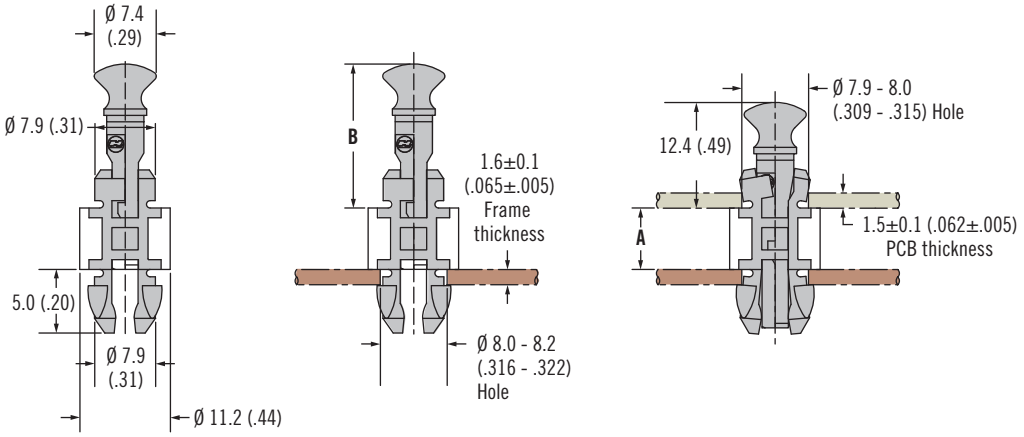
Max. operating temperature: 85°C (185°F)

Flammability rating: UL94-V2

Part Number

See table

Push / Pull Style



Standoff as Received | Installed in Frame | With PCB in Place

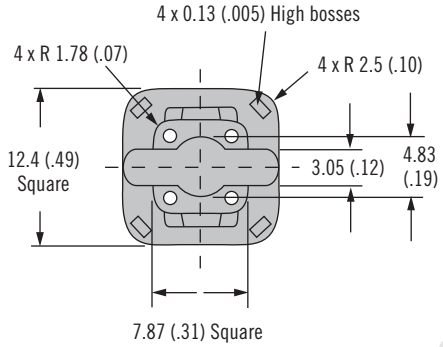
Part Number	A	B
NY-S5-1-15	5.0 (.197)	17 (.67)
NY-S5-3-15	9.5 (.374)	17 (.67)

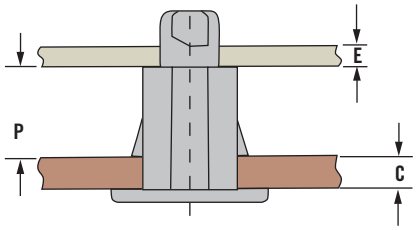
INFO CLIC www.southco.com/NY1

Dimensions in millimeters (inch) unless otherwise stated

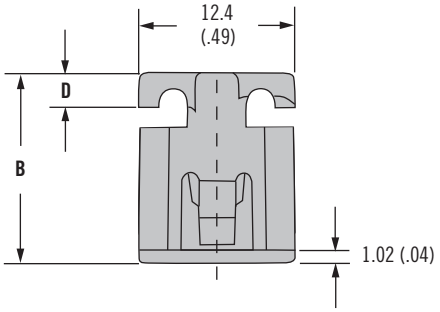
NY Standoff
Low profile style

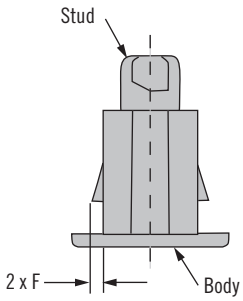
- **One piece design eliminates loose hardware**
- **Tool-free installation and operation**
- **Non-conductive, non-corrosive materials**



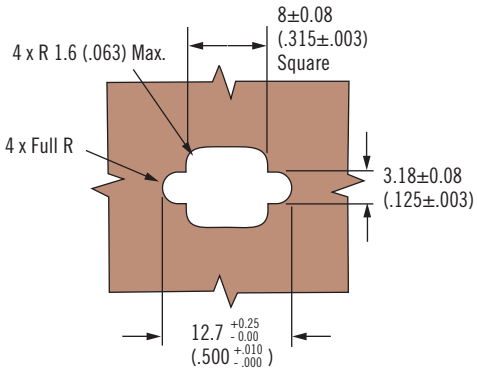


ACTUAL SIZE

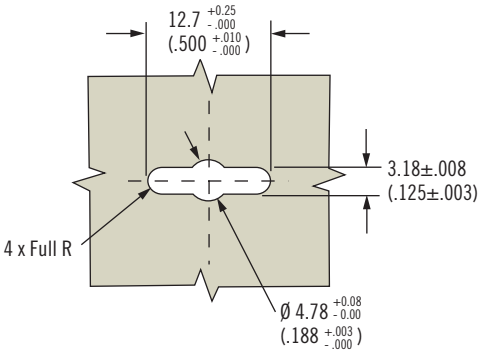




Fixed Hole



Removable Hole



Part Number	P	B	C	D	E	F
NY-S6-24	10 (.394)	19.7 (.774)	1.68 (.066)	3.8 (.15)	2.1 (.084)	0.9 (.035)
NY-S6-25	13 (.511)	22.5 (.884)			2.3 (.092)	
NY-S6-27	13 (.51)	22.7 (.895)	2.3 (.090)		2.4 (.093)	0.8 (.030)
NY-S6-31	11 (.435)	19.6 (.770)	1.65 (.065)		1.8 (.070)	1 (.040)
NY-S6-32						

Material and Finish

Polycarbonate black or white

Performance Details

Max. operating temperature: 85°C (185°F)

Flammability rating: UL94-V2

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

NY Cable Clamp

Push / pull style

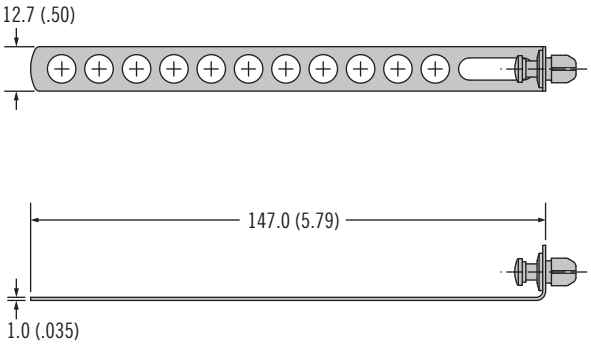
- **Reusable one piece design**
- **Tool-free installation and operation**
- **Non-conductive, non-corrosive materials**

Material and Finish

Nylon and polycarbonate white or black

Performance Details

Flammability rating: UL94-V2



Ø D	E	F
6.0 - 36.0 (.25 - 1.50)	11.0 - 27.0 (.44 - 1.07)	9.0 - 116.0 (.35 - 4.55)

ACTUAL SIZE

Part Number Selection

G Grip range

200 0.4 - 2.6 (.014 - .103)
300 1.2 - 3.5 (.048 - .137)
400 2.8 - 5.1 (.112 - .201)

F Finish

10 White
20 Black

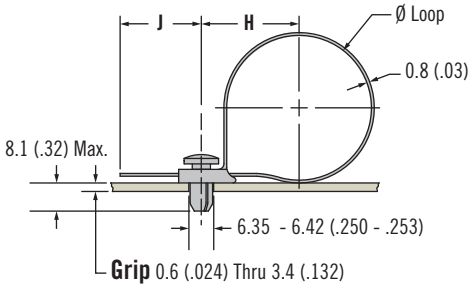
NY - CC - G - F

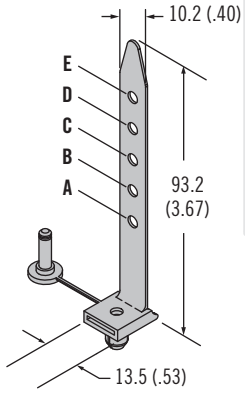
Material and Finish

Nylon, white

Performance Details

Flammability rating: UL94-V2



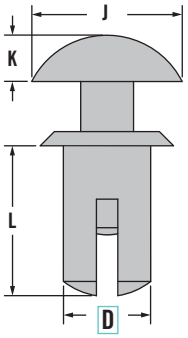


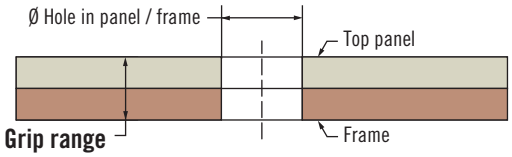
Part Number	Dimensions	A	B	C	D	E
NY-CC-775-1	Ø Loop	6.35 (.25)	9.65 (.38)	12.7 (.50)	16.0 (.63)	19.1 (.75)
	H	10.4 (.41)	11.9 (.47)	13.5 (.53)	15.2 (.60)	16.8 (.66)
	J	61.7 (2.43)	51.1 (2.01)	40.4 (1.59)	29.7 (1.17)	19.1 (.75)

INFO CLIC www.southco.com/NY2

Dimensions in millimeters (inch) unless otherwise stated

30 Push Rivet
Push style





- **Easy to install or remove**
- **Non-conductive, non-corrosive materials**

Material and Finish

Nylon, black or white

D Rivet Shell Ø	Ø Hole in panel / frame	J Head Ø Max.	Grip Range	G	K Head Thickness	L Shaft Length (Min.)	Shaft Slots
3 (.118)	3.05 (.120)	6.5 (.256)	1.0 - 2.0 (.039 - .078)	015	2.0 (.078) Max.	3.5 (.137)	2
			2.0 - 3.0 (.078 - .118)	025		4.5 (.177)	2
			3.0 - 4.0 (.118 - .157)	035		5.5 (.216)	2
			4.0 - 5.0 (.157 - .197)	045		6.5 (.256)	2
			5.0 - 6.0 (.197 - .236)	055		8.0 (.315)	2
4 (.157)	4.05 (.159)	8.0 (.315)	1.5 - 2.5 (.06 - .098)	020	2.0 (.078) Max.	4.5 (.177)	4
			2.5 - 3.5 (.098 - .137)	030		5.5 (.216)	4
			3.5 - 4.5 (.137 - .177)	040		6.5 (.256)	4
			4.5 - 5.5 (.177 - .216)	050		7.5 (.295)	4
			5.5 - 6.5 (.216 - .256)	060		8.5 (.335)	4
5 (.197)	5.05 (.199)	9.0 (.354)	1.5 - 2.5 (.06 - .098)	020	2.0 (.078) Max.	4.5 (.177)	5
			2.5 - 3.5 (.098 - .137)	030		5.5 (.216)	5
			3.5 - 4.5 (.137 - .177)	040		6.5 (.256)	5
			4.5 - 5.5 (.177 - .216)	050		7.5 (.295)	5
			5.5 - 6.5 (.216 - .256)	060		8.5 (.335)	5
			6.5 - 7.5 (.256 - .295)	070		9.5 (.374)	5
			7.5 - 8.5 (.295 - .335)	080		10.5 (.413)	5
6 (.236)	6.05 (.238)	11.0 (.433)	1.5 - 2.5 (.06 - .098)	020	3.0 (.078) Max.	4.5 (.177)	5
			2.5 - 3.5 (.098 - .137)	030		5.5 (.216)	5
			3.5 - 4.5 (.137 - .177)	040		6.5 (.256)	5
			4.5 - 5.5 (.177 - .216)	050		7.5 (.295)	5
			5.5 - 6.5 (.216 - .256)	060		8.5 (.335)	5
			6.5 - 7.5 (.256 - .295)	070		9.5 (.374)	5
			7.5 - 8.5 (.295 - .335)	080		10.5 (.413)	5

Part Number Selection

D **Diameter**
Ø Rivet shell (mm)

M **Material**
10 Nylon, natural
20 Nylon, black

30 - 36 - D G - M

G **Grip range**
Nominal grip range (mm) (see table above)

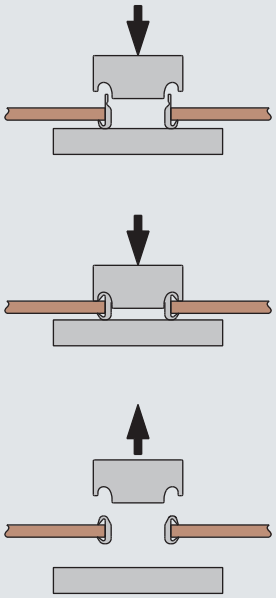
Dimensions in millimeters (inch) unless otherwise stated

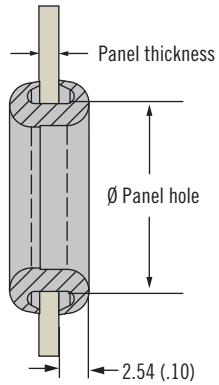
BC Bushing
Flip lock

- **Installs with permanent retention without use of heat or adhesive**

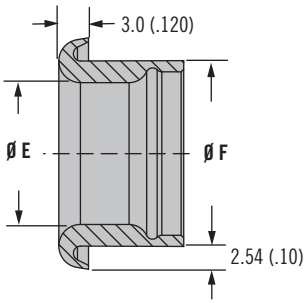
Material and Finish
Thermoplastic black

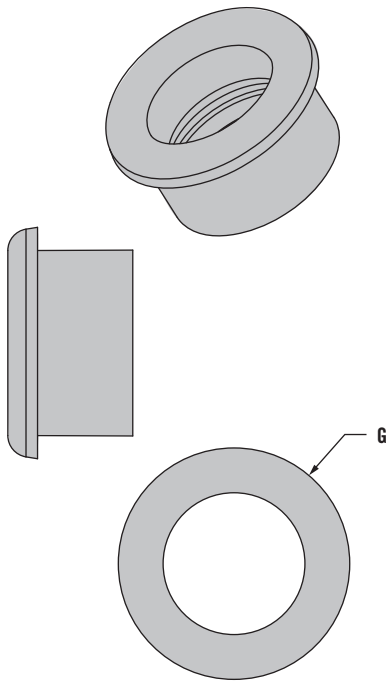
Notes
Install tool available (see table)





Installed





Ø E	Ø F	G	Ø Panel Hole +.010 -.005
9.52 (.375)	12.4 (.49)	17.5 (.69)	12.7 (.500)
12.7 (.500)	15.5 (.61)	20.8 (.82)	15.9 (.625)
15.9 (.625)	20 (.79)	24.6 (.97)	20.6 (.812)

Part Number Selection

BC - S L

L Length	Panel Thickness
A	0.64 - 2.03 (.025 - .080)
B	2.05 - 3.56 (.081 - .140)
C	3.58 - 5.08 (.141 - .200)
D	5.10 - 6.35 (.201 - .250)

S	Ø Internal	Tool Part Number
6	9.52 (.375)	29-BC-6
8	12.7 (.500)	29-BC-8
10	15.9 (.625)	29-BC-10

Dimensions in millimeters (inch) unless otherwise stated

HANDLES AND PULLS

Pulls

Pages 482 - 486

Flush mount pull designs provide ergonomic grip without protruding hardware disrupting door, drawer, or panel surfaces.

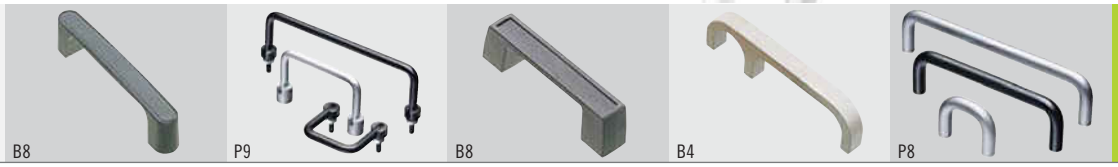
- Concealed styles rotate outward to provide a fully accessible handgrip.
- All styles install easily in a single mounting hole

Handles

Pages 487 - 491

SOUTHCO® handles install quickly and easily to provide comfortable ergonomic grip points for opening enclosure doors or drawers, and for removing mounted panels.

- Available in a variety of styles and strength options
- A variety of standard lengths to provide the appropriate grip required for the size of the door, drawer, or rack



P1 Flush Pull

Low profile · Lift or pull · Single hole mount

- **Easy installation**
- **Deep pocket**

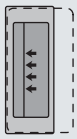
Material and Finish

Pull and cup: ABS plastic, black
Screws: Steel, zinc plated

Performance Details

Max. static load:
Lifting / pulling: 1300 N (300 lbf)

Pushing / sliding: 450 N (100 lbf)

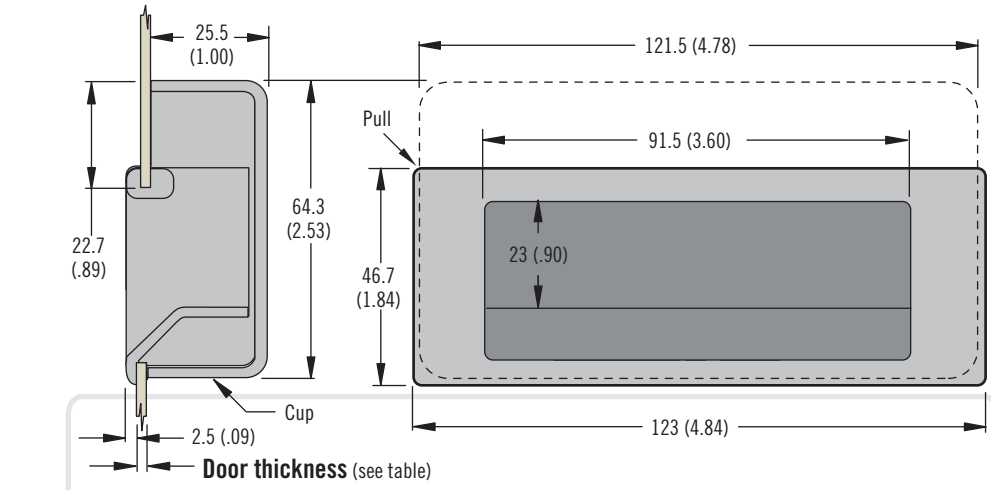


Flammability rating:
UL94-HB or UL94-V0

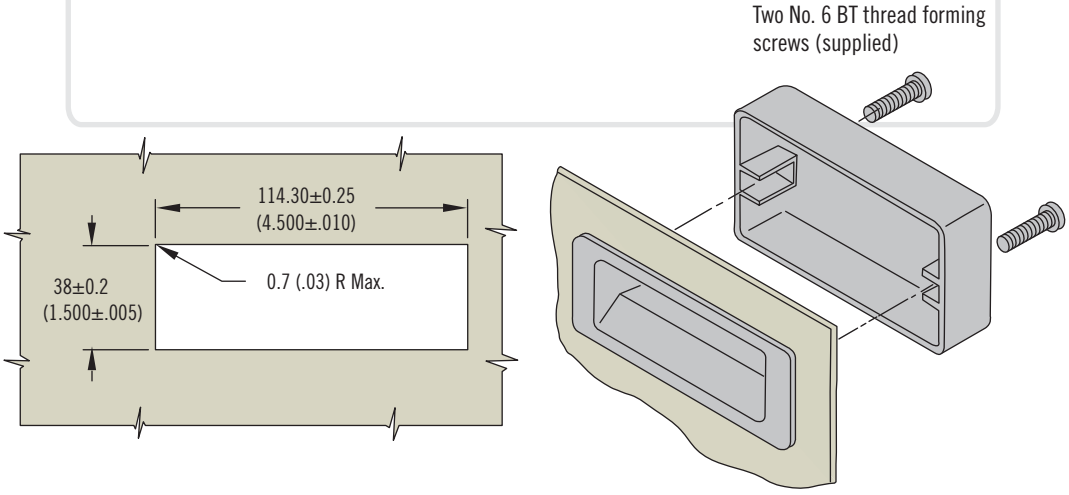
Operating temperature range:
-50°C (-60°F) to 60°C (140°F)

Installation Notes

Mounting screws supplied.
Door thickness less than the minimum for each range allows some movement of the pull.
Max. torque for mounting screws is 0.5 N•m (5 in•lbf)



ACTUAL SIZE



Part Number

See table

Door Thickness Range		Part Number	
Min.	Max.	UL94-HB	UL94-V0
1.0 (.040)	1.8 (.070)	P1-30-101-11	P1-31
1.8 (.070)	3.3 (.130)	P1-30-103-11	P1-33
3.3 (.130)	4.8 (.190)	P1-30-105-11	P1-35
4.8 (.190)	6.3 (.250)	P1-30-107-11	P1-37

P2 Flush Pull

Low profile · Lift or pull · Single hole mount

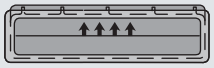
- **Snap-in installation**
- **2 sizes**

Material and Finish

ABS plastic, black

Performance Details

Max. static load:
Lifting / pulling: 1300 N (300 lbf)



Pushing / sliding: 450 N (100 lbf)

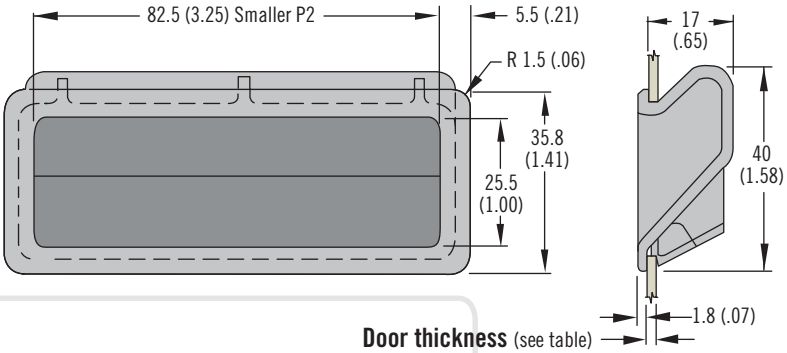
Flammability rating:
UL94-HB or UL94-V0

Operating temperature range:
-50°C (-60°F) to 60°C (140°F)

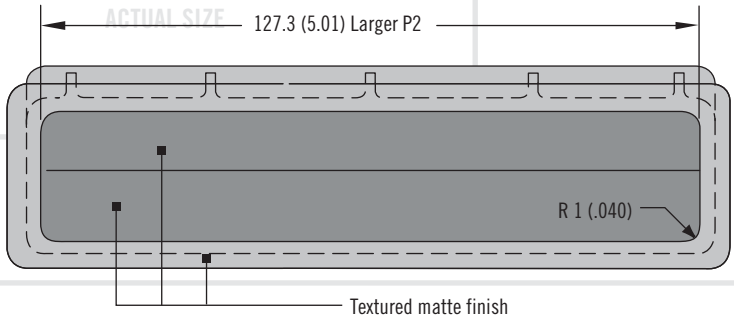
Notes

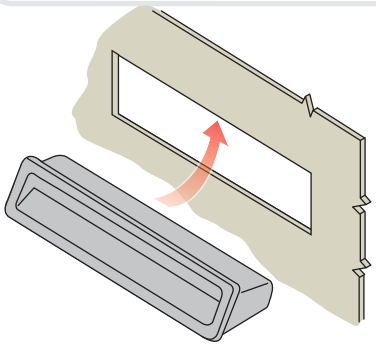
Performance details are based on installation in a 1.2 (.048) steel door. Max. loads are limited by door strength.

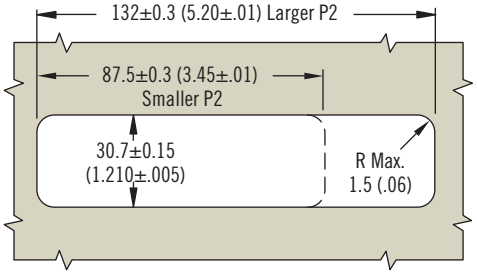
Small



Large







Door Thickness Range		Part Number			
		Small		Large	
Min.	Max.	UL94-HB	UL94-V0	UL94-HB	UL94-V0
1.0 (.040)	1.4 (.055)	P2-41	P2-41-1	P2-51	P2-51-1
1.4 (.055)	1.8 (.070)	P2-42	P2-42-1	P2-52	P2-52-1
1.8 (.070)	2.1 (.085)	P2-43	P2-43-1	P2-53	P2-53-1
2.1 (.085)	2.5 (.100)	P2-44	P2-44-1	P2-54	P2-54-1

Part Number

See table

67 Concealed Pull

Surface mount

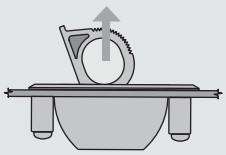
- **Flush mounting**
- **Enclosed housing**

Material and Finish

10 series: Plastic, black
20 & 40 series:
Handle: Aluminum, Silver or black powder coated
Housing and bushing: Plastic, black
Screws: Stainless steel, passivated

Performance Details

Max. static load:
10 series: 620 N (140 lbf)
20 series: 440 N (100 lbf)
40 series: 580 N (130 lbf)



Flammability rating:
Housing & bushing: UL94-HB
Handle (10 Series only): UL94-V2

Operating temperature range:
10 Series:
-20°C (0°F) to 65°C (150°F)
20 and 40 Series:
-20°C (0°F) to 80°C (180°F)

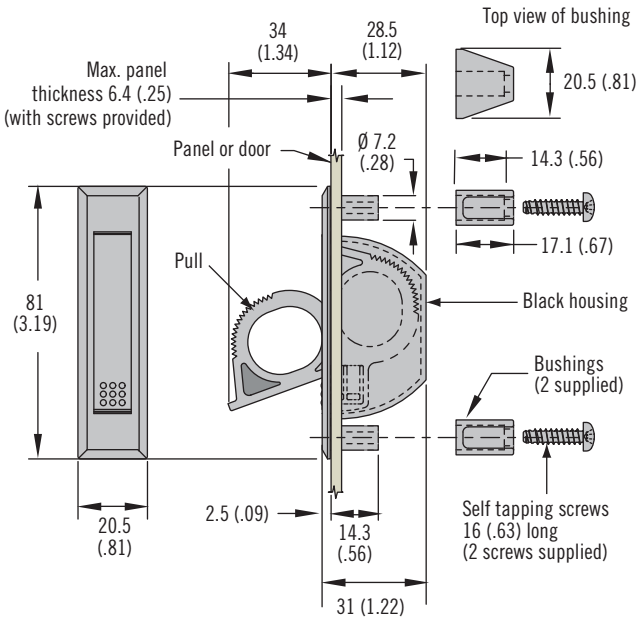
Installation Notes

Thread forming screw
(M 4.2 x 1.4 x 16) supplied for door thickness 6.4 (.25) Max.
For thicker doors calculate screw length using the following formula:
Door thickness + 10 (.40)

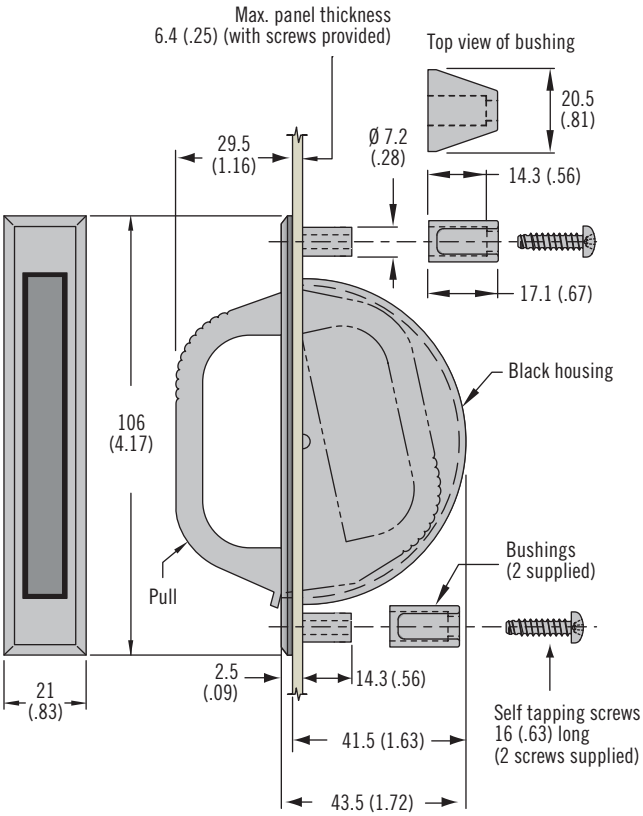
Notes

Max. tightening torque of mounting screws: 0.5 N•m (5 in•lbf)

10 Series

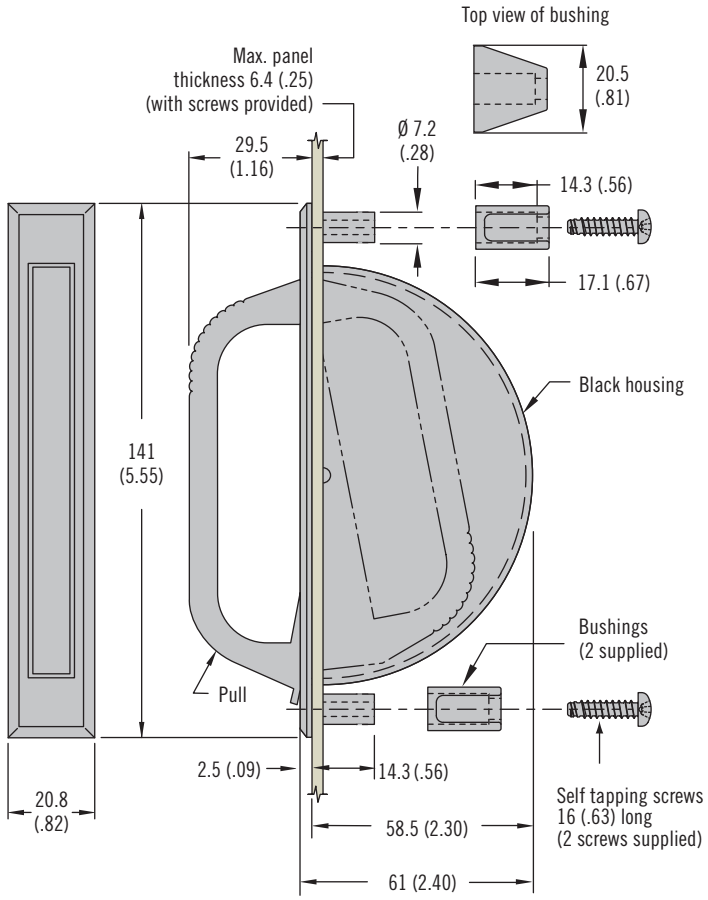


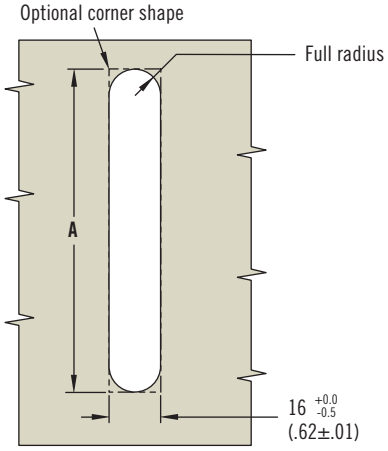
20 Series



Dimensions in millimeters (inch) unless otherwise stated

40 Series





Series	Part Number		Installation
	Silver Handle	Black Handle	A
10	~	67-10	76 +1.0 -.00 (3.00 +.04 -.00)
20	67-27	67-25	102 +1.0 -.00 (4.00 +.04 -.00)
40	67-47	67-45	136 +1.0 -.00 (5.35 +.04 -.00)

Part Number

See table

Dimensions in millimeters (inch) unless otherwise stated

MP Point Pull

Surface mount

- **Stylish knob design**
- **Finish and flange shape flexibility**

Material and Finish

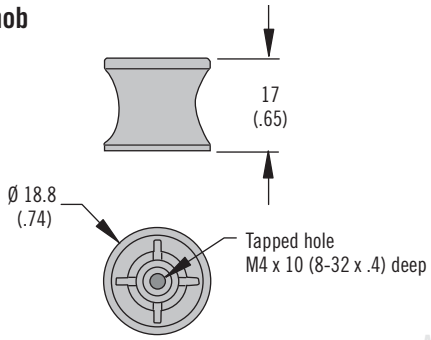
Zinc alloy, plated or powder coated

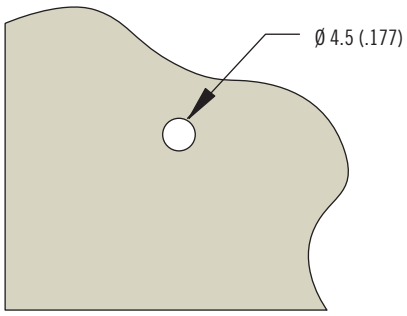
Installation Notes

Screws not supplied.
Calculate screw length using the following formula:
Door thickness + 6 (.25)
Max. tightening torque of mounting screws: 1.7 N•m(15 in•lbf)

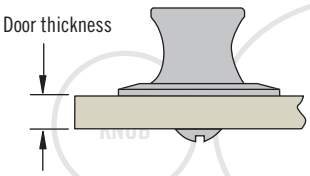
Style matches MP push-to-close latch on page 156

Knob



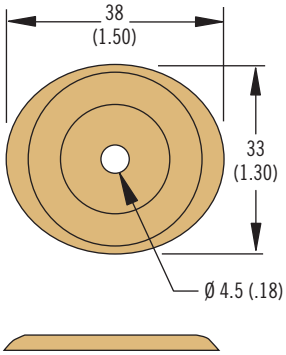


ACTUAL SIZE

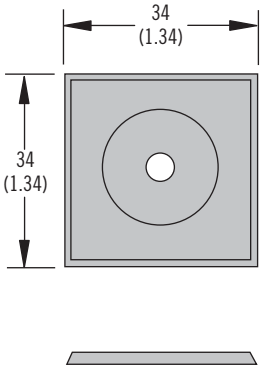


KNOB OVAL SQUARE ROUND

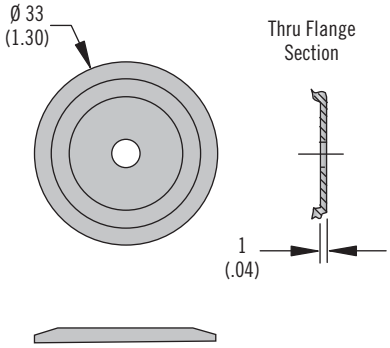
Oval flange



Square flange



Round flange



Part Number Selection

Choose knob separately

S Style
- **00** Imperial 8 -32 mounting hole
- **40** Metric M4 mounting hole

Knob Part Number

MP - 06 - 1 S - F

F Finish
- **10** Chrome, polished
- **20** Chrome, satin
- **30** Nickel, brushed
- **40** Diamond brass
- **50** Powder coated, black
- **60** Nickel, satin
- **70** Powder coated, white

Part Number Selection

Choose flange separately

S Style
- **10** Oval flange
- **20** Square flange
- **30** Round flange

Flange Part Number

MP - 06 - 1 S - F

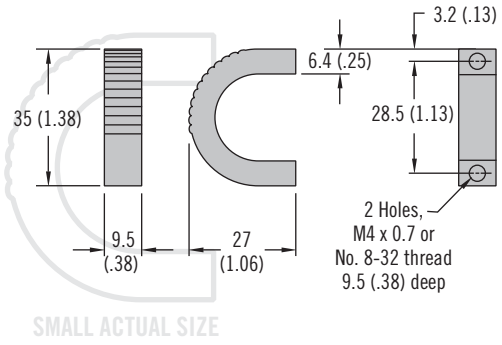
F Finish
- **10** Chrome, polished
- **20** Chrome, satin
- **30** Nickel, brushed
- **40** Diamond brass
- **50** Powder coated, black
- **60** Nickel, satin
- **70** Powder coated, white

INFO CLIC www.southco.com/MP1

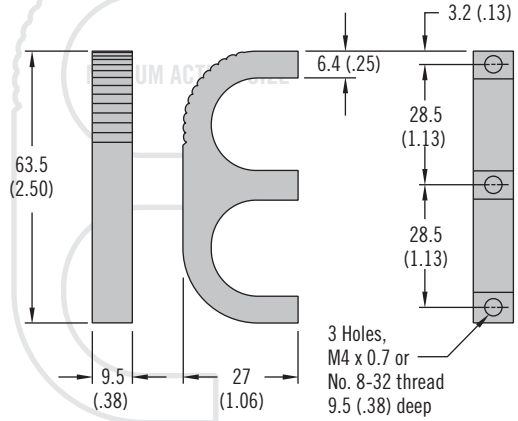
Dimensions in millimeters (inch) unless otherwise stated

B4 Handle
Surface mount

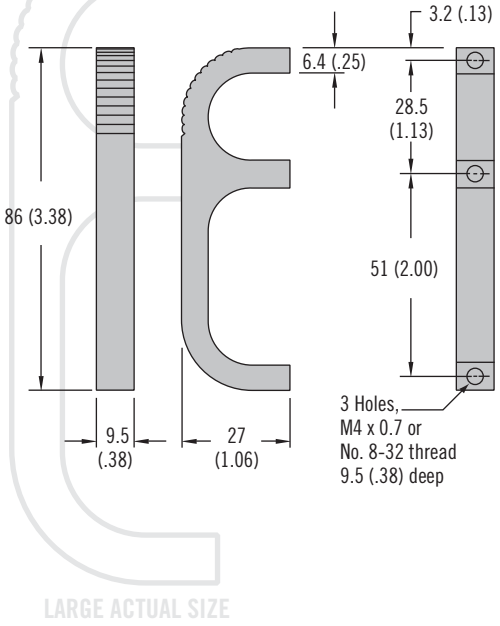
Small



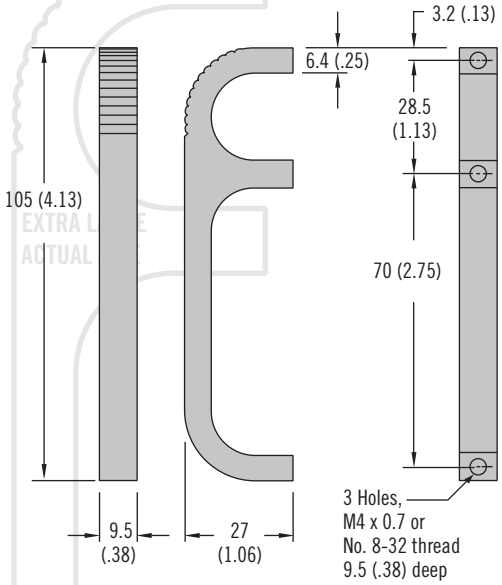
Medium



Large



Extra Large



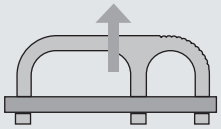
- **Easy concealed installation**
- **Light-weight**

Material and Finish

Aluminum, anodized, clear or black

Performance Details

Max. static load: 5560 N (1250 lbf)



Installation Notes

Screws not supplied.
Calculate screw length using the following formula:
Door thickness + 9.5 (.38)
Center screw may be eliminated if desired (200, 300 and 400 Series)

Max. recommended tightening torque of mounting screws:
2.3 N•m (20 in•lbf) (not supplied)

Part Number Selection

B4 - T - S 0 3 - 1 F - P

T Tapped mounting hole
10 Imperial 8-32
50 Metric M4 x 0.7

S Size
1 Small
2 Medium
3 Large
4 Extra large

P Packing option
Omit for individual packaging
3 Layer packaged contact Southco

F Finish
1 Clear anodized
5 Black anodized

B8 Grab Handle

Large · Surface mount

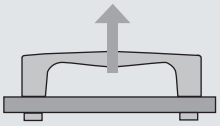
- **Front or rear concealed installation**
- **Ergonomic, comfortable grip**
- **High strength, light-weight solution**

Material and Finish

Handle: ABS plastic, black
Screws: Steel, zinc plated

Performance Details

Max. static load: 775 N (175 lbf)



Flammability rating: UL94-HB

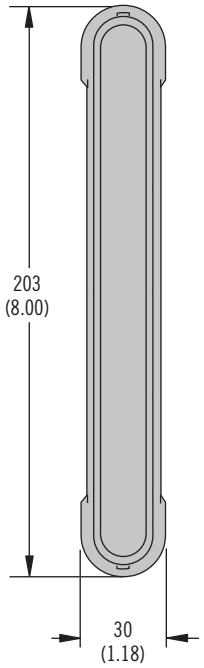
Operating temperature range:
-40°C (-40°F) to 60°C (140°F)

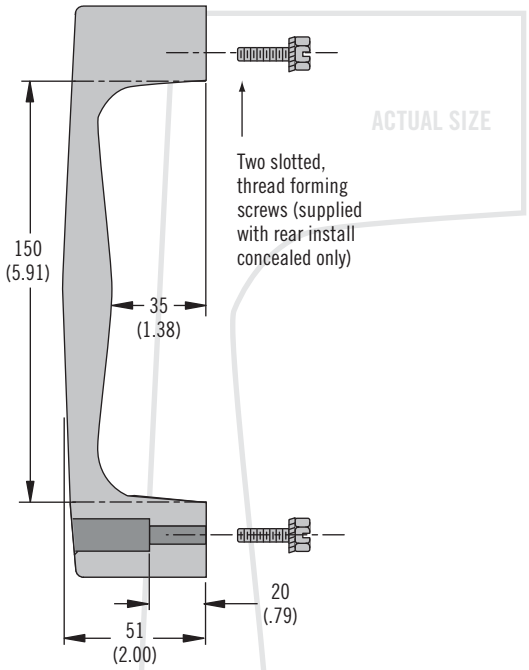
Installation Notes

Max. tightening torque of screws:
Rear install concealed only
4.0 N•m (35 in•lbf)

Notes

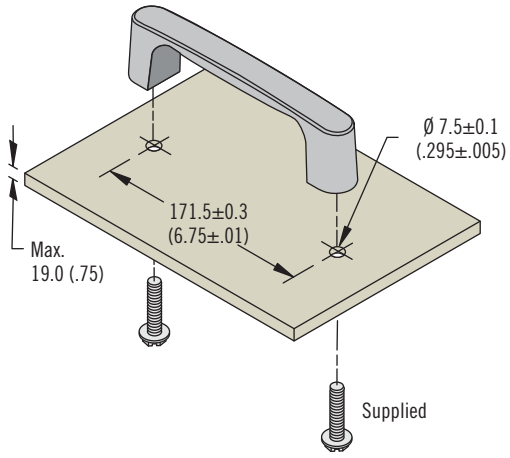
Bulk packaged



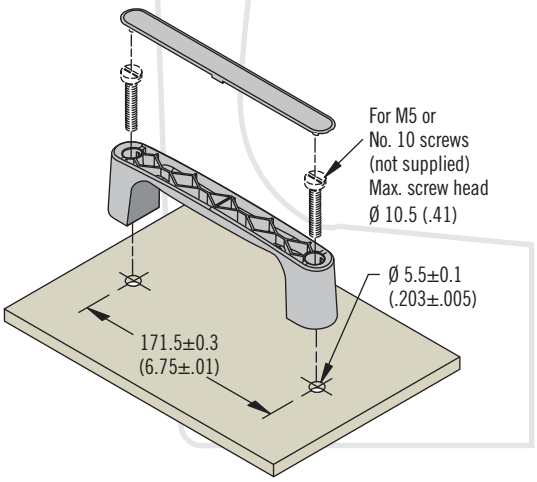


Part Number	
Rear Install Concealed	**Front Install Concealed**
B8-66-3	B8-63-3

Rear Install Concealed



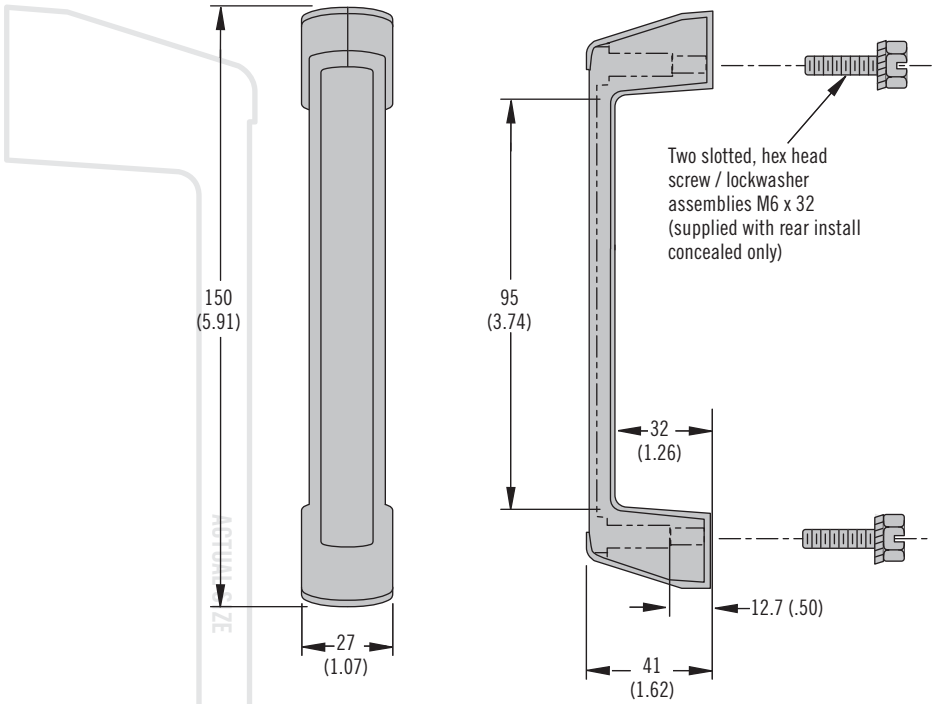
Front Install Concealed



Dimensions in millimeters (inch) unless otherwise stated

B8 Grab Handle

Small · Surface mount



Part Number	
Rear Install Concealed	**Front Install Concealed**
B8-45-3	B8-43-3

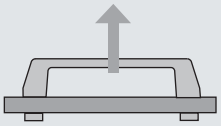
- **Front or rear concealed installation**
- **Light-weight**

Material and Finish

Handle: ABS plastic, black
Screws: Steel, zinc plated

Performance Details

Max. static load: 550 N (125 lbf)



Flammability rating: UL94-HB

Operating temperature range:
-50°C (-60°F) to 60°C (140°F)

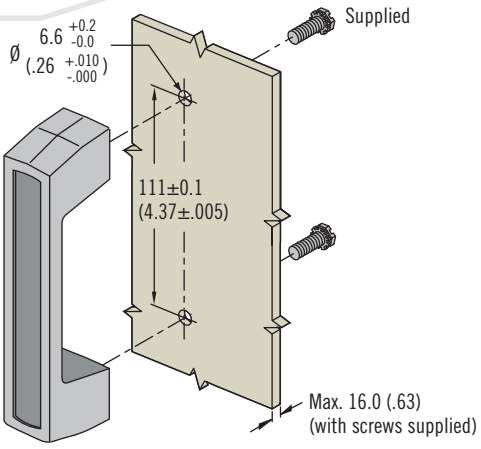
Installation Notes

Rear install concealed:
M6 x 32 screw assembly supplied.
Max. tightening torque of screws:
4.0 N•m (35 in•lbf).
For door thickness greater than 16 (.63) calculate screw length using the following formula:
Door thickness + 16 (.63)

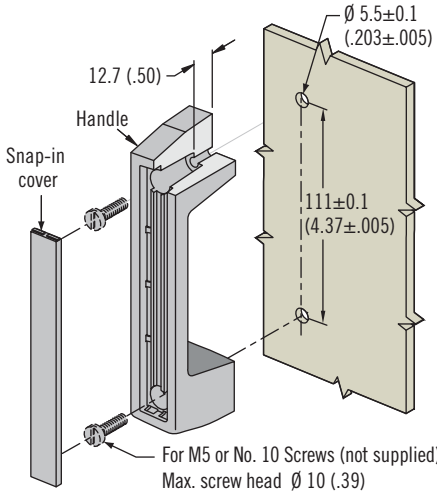
Notes

Bulk packaged

Rear Install Concealed



Front Install Concealed



P8 Grab Handle

Surface mount

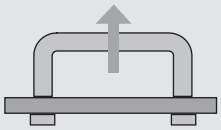
- **Two styles and color options available**
- **Concealed installation**
- **Four standard lengths**

Material and Finish

Aluminum, anodized, clear or black

Performance Details

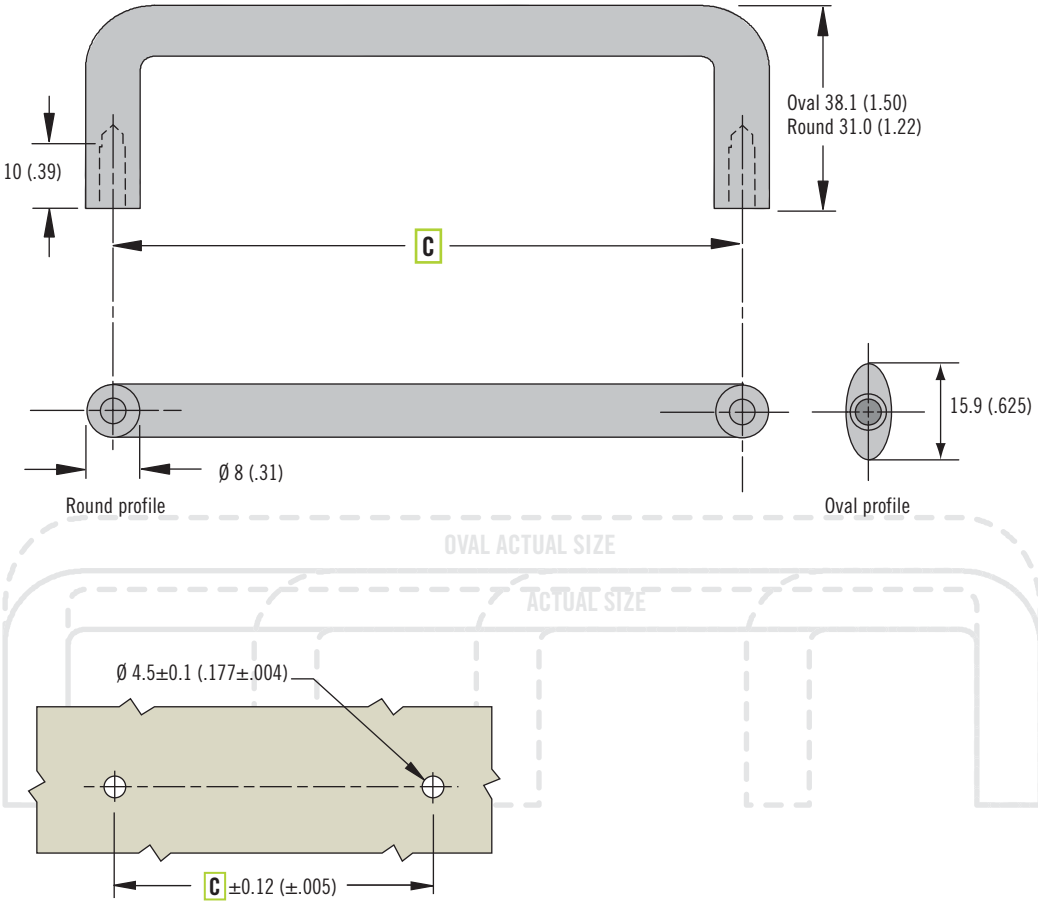
Max. working load: 1500 N (335 lbf)



Installation Notes

Screws not supplied.
Calculate screw length using the following formula:
Door thickness + 5 (.20)

Max. tightening torque of mounting screws: 1.7 N•m (15 in•lbf)



Part Number Selection

For visual identification:
M4 products have a counterbored hole.
8-32 products have a countersink hole

Round Profile

P8 - C - 31 - T - 1 F - P

C Centers
- **030** 30 (1.18) Hole centers
- **064** 64 (2.52) Hole centers
- **096** 96 (3.78) Hole centers
- **128** 128 (5.04) H ole centers

T Tapped mounting hole
- **08** Imperial 8-32
- **M4** Metric M4 x 0.7

P Packing option
Omit for individual packaging (1 per bag)
- **3** Layer packaging contact Southco

F Finish
- **1** Clear anodized
- **5** Black anodized

Part Number

Oval profile handles are currently offered in a 10-32 thread only.

Oval Profile

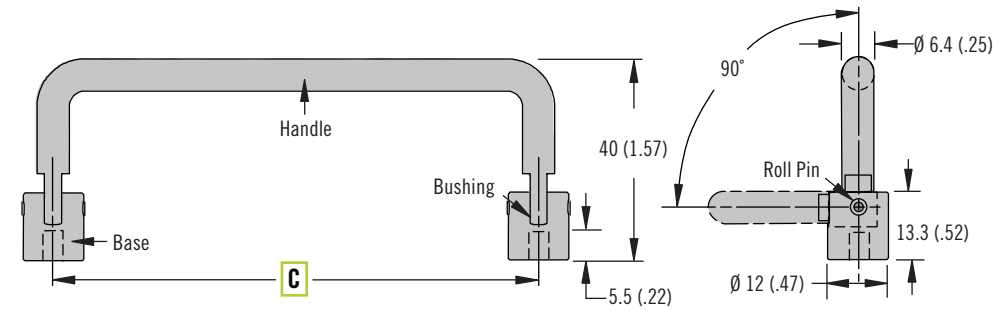
Finish	Part Number		C
	Bulk Packaged	Individually Packaged (1 per bag)	
Clear anodized	P8-128-38-10V-11-3	P8-128-38-10V-11	128 (5.04)
Black anodized	P8-128-38-10V-15-3	P8-128-38-10V-15	

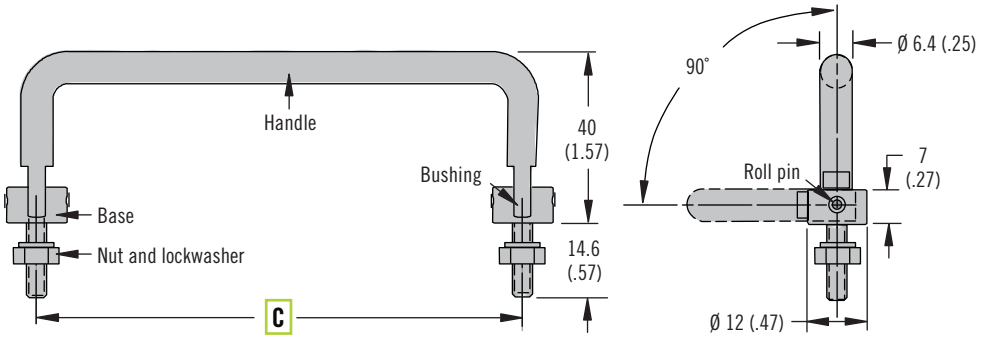
INFO CLIC www.southco.com/P8

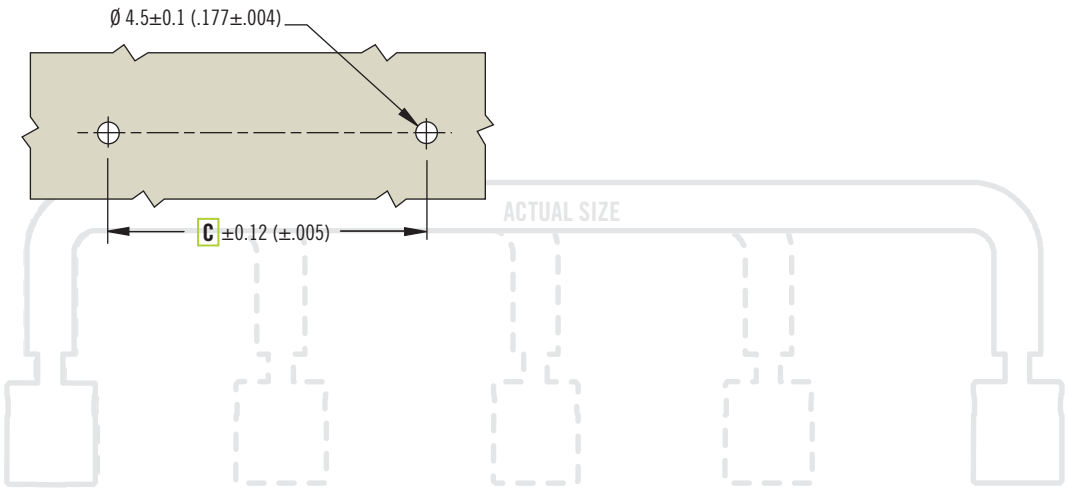
Dimensions in millimeters (inch) unless otherwise stated

P9 Grab Handle

Folding · Surface mount







P9 - C - 40 - T B - 1 F - P

C Centers
- **040** 40 (1.57) Hole centers
- **064** 64 (2.52) Hole centers
- **096** 96 (3.78) Hole centers
- **128** 128 (5.04) Hole centers

T Thread
- **08** Imperial 8-32
- **M4** Metric M4 x 0.7

B Base type
- **N** Internal thread
- **X** External thread

F Finish
- **1** Clear anodized
- **5** Black anodized

P Packing option
Omit for individual packaging (1 per bag)
- **3** Layer packaging contact Southco

Dimensions in millimeters (inch) unless otherwise stated

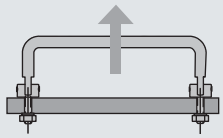
- **Low profile folding style**
- **Concealed installation**
- **Anti-rattle friction feature**

Material and Finish

Handle and base:
Aluminum, anodized, clear or black
Roll pin, mounting nuts and lockwashers:
Stainless steel passivated
Bushing: Nylon

Performance Details

Max. static load:
Internal threaded version
600 N (135 lbf)
External thread version
400 N (90 lbf)



Installation Notes

Internal thread:
Screws not supplied.
Calculate screw length using the following formula:
Door thickness + 5 (.20)

Max. tightening torque of mounting screws: 1.7 N•m (15 in•lbf)

External thread:
Max. door thickness 8.4 (.33)
Mounting nuts supplied.
Max. tightening torque of nuts:
11.5 N•m (10 in•lbf)

Part Number Selection

For visual identification:
M4 products have a counterbored hole.
8-32 products have a countersink hole

INFO CLIC www.southco.com/P9

MARINE HARDWARE

Door Hardware

Southco Marine offers a broad range of door hardware to suit a wide variety of access door configurations. Aesthetically pleasing, innovative designs allow for an integrated, yet distinctive look and feel for cabin and entry doors. Constructed from marine grade materials, these products offer long-lasting durability and performance.

Contact a Southco Marine sales representative or visit us online at www.southcomarine.com. to view our comprehensive range of products.

MA

MA

MM

MG

MF

MR

SOUTHCO® Warranty

Seller warrants that the products manufactured and sold by Seller shall be in accordance with Seller's published specifications and free from defects in material and workmanship for a period of one (1) year from the date of delivery to Buyer if used under normal circumstances and provided any defect(s) are not the result of: (i) installation method; (ii) customer or third-party abuse or misuse; (iii) failure to adhere to Seller's instructions; or (iv) except as otherwise may be specifically stated in Seller's product literature, wear or deterioration due to environmental conditions. Buyer shall give written notice to Seller within 20 days of the discovery of any alleged defect within such one (1) year period, and any action shall be brought within one (1) year after such breach of warranty is or should have been discovered.

This is the sole and exclusive warranty of Seller; there are no other warranties, either express or implied, as to any matter whatsoever, including, without limitation, the ***implied warranties of merchantability or fitness for particular purpose.*** The sole and exclusive remedy of Buyer for any breach of warranty by Seller shall be that Seller shall provide, upon confirmation of the defective condition of the subject part, at no cost to Buyer, a replacement part for each defective part manufactured and sold by Seller to Buyer, or at Buyer's choice, Buyer shall receive a credit toward a future purchase in an amount equal to the purchase price paid by Seller for defective parts.

In no event shall seller be liable for consequential or indirect damages, or economic losses, loss of use, lost profits, down time or damages due to delay, whether by reason of breach of warranty, breach of contract, negligence, strict liability or otherwise, whether forseeable or not and whether or not seller has been advised of the possibility of such damage.

Performance and Application Guidelines

Southco designs and manufactures a broad range of products for general industry applications. Because every application cannot be anticipated, users must test potential product solutions under the actual application conditions and environment to determine the suitability of the product for the purpose and function intended by the user and to assure desired performance.

SOUTHCO® Performance and Application Guidelines are supplied as general guides only, as conditions vary with each application and installation method. Strength data given is for failure of the product or where sufficient deformation occurs to make the product inoperable. No safety factor has been applied. Product strength and cycle life data presented are developed from products tested at ambient temperature, unless otherwise specified.

Flammability ratings presented are for material properties only and are not specific to the dimensions or performance of the actual product, unless otherwise specified. Temperature ranges presented as Material Temperature Range are for material properties only. Dimensions are furnished for the sole purpose of enabling the user to determine envelope sizes and to install the product properly. SOUTHCO MAKES NO WARRANTIES OR REPRESENTATIONS WITH RESPECT TO ERRORS OR OMISSIONS THAT MAY BE CONTAINED WITHIN SUCH INFORMATION, THE ACCURACY OF SUCH INFORMATION, OR OTHERWISE. THE RISK OF USE OF SUCH INFORMATION IS SOLELY UPON THE USER.

SOUTHCO® products are subject to changes at any time in design, dimensions, specifications, material and/or finish without notice. You should confirm the current product characteristics before making a selection. For performance guidelines for each *SOUTHCO®* product, contact your local *SOUTHCO®* customer service and technical support center or e-mail us at info@southco.com.

Glossary of *SOUTHCO®* Standard Terms

Average Ultimate Load:
The average load that causes failure or excessive deformation which renders the product inoperable.

Clamping Force:
The force exerted on the panels when drawn together at the nominal mounting dimensions.

Detent:
A pre-set, internal positioning feature that allows a fastener or hinge to rotate into fractional positions and/or to hold panel(s) or door(s) in a full/partially opened position. Also used to indicate the full-opened or closed position of some latching mechanisms. In hinges, also called Door Positioning or Hold-open feature.

EMI / RFI:
Electromagnetic interference or radio frequency interference is a (usually undesirable) disturbance that affects an electrical circuit due to electromagnetic radiation emitted from an external source.

EMI / RFI Shielding:
The capability to reduce the transmission of electromagnetic or radio energy into or out of an enclosure

Ferrule:
The component of a Captive Fastener/Quarter-Turn Fastener that is captivated to the panel.

Frame:
The surface or "inner panel" against which a door closes. Consideration of frame thickness / geometry is an important part of the latch selection process.

Fully-Retractable:
The ability of a Captive Fastener to be withdrawn so that no portion of the screw threads protrude beyond the inner surface of the outer panel when disengaged.

Grip:
Generally, the total thickness being fastened. Usually defined as the dimension from the outer surface of the door or outer panel to the inside surface of the frame or inner panel. For *DZUS®* Quarter Turn Fasteners, grip is denoted as "Total Material Thickness" (TMT) which is defined as the thickness of outer panel, frame and accessory items.

Grip Range:
The Minimum to Maximum allowable total material thickness for a given product that provides for proper operation.

Keeper/Keeper Plate:
A component used to engage with the primary latch mechanism.

Key-Choice System:
The *SOUTHCO®* Key-Choice System features a common lock core that fits a wide range of latches. This system allows for the independent selection of the latch and the lock core required to manage the security of the end product (see page 182).

Machinery Directive:
The EU Machinery Directive 2006/42/EC, in effect from 29 December 2009, is the regulatory basis for essential health and safety requirements for machinery at European Union level. Southco recommends a range of access hardware solutions to comply with the requirements of this law. (see page 498).

Material and Finish:
The base (primary) material used in the product and any supplementary coating applied to provide protection and to enhance the product appearance.

Maximum Dynamic Working Load:
The maximum recommended load at which the product continues to function properly throughout its intended cycle life.

Maximum Static Load:
The maximum recommended load after one time application and removal of which the product continues to function properly.

Multi-Point System:
A multi-point latching system requiring the actuator, rods and guide to be ordered from the same product family.

NEMA/IP:
Refers to standards for an enclosure's resistance to dust, rain, hose-directed water, and/or ice damage. Individual components (latches, etc.) are not certified to NEMA or IP, but can help the entire enclosure achieve certification. All latches and other components should always be tested in the individual application.

Over-Center/Under-Center:
Two types of *SOUTHCO®* draw latches, described on page 196.
Over-center: During actuation, the moving pin rotates *above* the stationary pin.
Under-center: During actuation, the moving pin rotates *below* the stationary pin.

Receptacle:
The component that accepts a Quarter-turn stud or Fast-lead Thread screw and provides for positive fastening. Receptacle selection is a critical feature when designing in a Quarter-turn Fastener or Fast-lead Thread screw.

Secondary Catch:
An optional component of draw latches that provides added resistance to vibration, accidental opening, and shock load.

Spring Loaded:
A latch assembly in which the latching force is provided by an integral spring component which allows for vibration and gasket relaxation.

Tightening Torque:
The maximum recommended torque to be applied to the mounting hardware or to the latch itself. Tightening torque should not exceed recommended values, or latch damage/failure may occur.

Type A/Type B:
Generally describes right- or left-handed operation and/or installation of latches or hinges. Also described as clockwise/counterclockwise latch operation.

Rod System:
A multi-point accessory that can be added to a range of standard single point Southco latches.

Two / Three Point Latching:
A latching arrangement having latching and or compression capabilities in two or three areas of a door and frame (see overview on pages 242 - 243).

Standard Finishes

The following information is intended to provide general guidelines regarding performance characteristics of Southco's standard finishes. Southco is committed to protecting the environment and promoting the use of environmentally friendly finishes that meet the requirements of the industries we serve. All standard *SOUTHCO®* finishes are compliant with environmental regulations and directives such as REACH, RoHS, POHS, ELV and WEEE. Visit our website at www.southco.com for more details. Please contact a *SOUTHCO®* Applications Engineer with questions or concerns related to standard or custom *SOUTHCO®* finishes.

ZINC PLATING WITH TRIVALENT CHROMATE AND SEALER - This is currently Southco's standard finish of choice for steel base metal. A metallic (inorganic) sacrificial finish, which primarily provides excellent corrosion protection. Available in bright metallic and black.

ZINC-ALLOY PLATING - A metallic (inorganic) sacrificial finish, which primarily provides excellent corrosion protection to steel base metal. This finish is recommended where superior corrosion resistance over zinc plating is desired. Small additions of nickel or iron to zinc result in greatly enhanced corrosion performance of zinc-alloy plating over zinc plating. Additional improvement in corrosion performance can be imparted by treating with chromate and sealer. Available in bright metallic and black. Zinc alloy plating to meet automotive or other industry specific corrosion resistance is available on special order.

ZINC PLATING - A metallic (inorganic) sacrificial finish, which provides good corrosion protection. It secondarily provides an attractive, bright, metallic finish to steel components. Zinc plating is available with various chromate and phosphate passivates in bright metallic and black colors.

ZINC IMMERSION COATING - A zinc and aluminum flake dispersion in polymer or inorganic binder. The flakes align in multiple layers, forming a metallic silver-gray coating over ferrous metal parts for very good corrosion protection. Top coats of various colors further enhance color choices for this finish.

CHROMIUM PLATING - Offers excellent appearance along with corrosion resistance for steel, zinc, aluminum and polymer base materials. A hard, durable finish that is preferred when cosmetic appearance is the primary determinant for finish selection. Available in bright and satin appearance.

NICKEL PLATING - Offers both functional and cosmetic characteristics at a relatively low cost. Nickel plating is available both via electro- and electroless deposition processes. The finish is highly tailorable and can be produced at different hardness levels, friction characteristics and colors. Available in bright metallic, satin, black on steel, zinc aluminum and polymer base materials.

BLACK OXIDE COATINGS - An inorganic finish for steel and stainless steel base metal. Primarily a cosmetic finish that can be supplemented with an oil, wax or polymer top coat.

PHYSICAL VAPOR DEPOSITION (PVD) COATINGS - Hard, corrosion resistant and attractive finishes that mimic the appearance of metal but have properties of ceramics. Applied over chromium plating, nickel plating or bare metal, the coatings can have appearance of gold, brass, bronze or chromium, depending on the chemistry of the PVD ceramic. A very popular finish for marine hardware.

POWDER COATINGS - An organic finish, which provides an attractive finish in a wide variety of colors and glosses. This finish can be applied over various pre-treatments, such as zinc plating, zinc-alloy plating, chromating and phosphating, for additional corrosion protection.

ELECTROPHORETIC (E-COAT) COATINGS - Environmentally friendly finish with a wide variety of color and gloss choices for steel, stainless steel, zinc and aluminum base materials. The coating offers excellent coverage, a very uniform thickness, excellent adhesion to the base metal and superior abrasion resistance.

ANODIZED COATINGS - Formed on aluminum base metal, these coatings impart corrosion and wear resistance to the base metal. Thickness can be varied from a few nanometers (soft) to several microns (hard). Corrosion resistance can be further enhanced by treating with various passivates.

ELECTROPOLISHING AND PASSIVATION - Applied to stainless steels to enhance appearance and corrosion resistance.

PAINTS AND BAKED FLUOROPOLYMER COATINGS - Applied to various base materials, paints offer an attractive appearance and corrosion resistance. Can be applied on various painted primers or treatments such as chromate and phosphate dip. A wide selection of colors is available upon request. Baked fluoropolymer offer a more durable, hard coating in a variety of colors. These finishes are preferred by food and medical industry due to their inertness.

Not all finishes can be applied to all base materials or substrates. Other treatments and finishes are available. Contact a SOUTHCO® Application Engineer to discuss finishing options.

Conversion Charts

To Convert	Into	Multiply By
Feet	Inches	12
Feet	Millimeters	304.8
Feet	Meters	0.3048
Foot-Pounds	Newton-Meters	1.356
Inches	Millimeters	25.4
Inches	Meters	0.0254
Inches	Feet	0.08333
Inch-Pounds	Newton-Meters	0.113
Kilograms (force)	Newtons	9.807
Kilograms (mass)	Pounds (mass)	2.205
Meters	Millimeters	1000

To Convert	Into	Multiply By
Meters	Inches	39.37
Meters	Feet	3.281
Millimeters	Meters	0.001
Millimeters	Inches	0.03937
Millimeters	Feet	0.003281
Newtons	Kilograms (force)	0.102
Newtons	Pounds (force)	0.2248
Newton-Meters	Inch-Pounds	8.851
Newton-Meters	Foot-Pounds	0.7376
Pounds (mass)	Kilograms (mass)	0.4536
Pounds (force)	Newtons	4.448

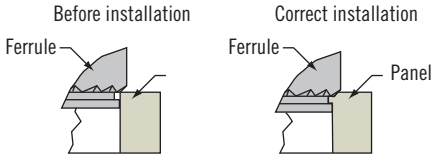
Installation Guidelines

for *SOUTHCO®* Self-Clinching products

Self-clinching product installation is offered on these *SOUTHCO®* products, making them easy-to-use captive panel fasteners:

- **Captive Screws**
- **Receptacles for Quarter-turn Fasteners**
- **Receptacles for Fast-lead Thread Screws**
- **Spring-loaded Plungers**
- **Captive Nuts**
- **Threaded Inserts**

When pressed into a properly prepared hole, self-clinching captive fasteners cold-flow (move) the panel material into the retaining groove of the fastener. This material then retains the fastener in the panel.



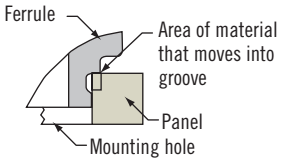
Successful press-in installations depend on:

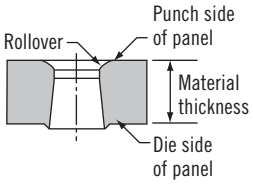
Material:

The hardness of the panel material must not exceed *SOUTHCO®* recommendations. If the panel is too hard, the fastener will not install correctly.

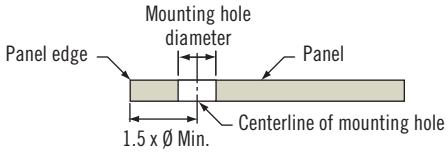
Installation Holes:

Mounting holes may be drilled, punched, or cast.





- Hole edge: the top hole edge must be sharp but with no broken edges. Do not chamfer or debur edge.
- Punched holes: use a punch and die with a small clearance to minimize the rollover and fracture angle.
- Hole diameter: measure the hole diameter at the panel surface on the side on which the fastener will be installed. The diameter must be within *SOUTHCO®* specifications for that product.
  - If the hole is too large, not enough material will flow into the retaining groove and the fastener may not be retained adequately.
  - If the hole is too small, the fastener will not fit and installation may become difficult and unsafe.
- Hole distance from the edge of panel: the minimum recommended distance is 1.5 x the diameter of the mounting hole, unless otherwise indicated.
  - Installing too close to the edge will cause the material to flow in the opposite direction, deforming the edge of the panel. To install closer to the edge, you may need to restrain the panel edge.



Panel Thickness:

The thickness of the panel at the mounting hole location must meet or exceed Southco's stated minimum recommendations.
If the material is too thin, panel deformation and/or damage to the fastener may result.

Installation is fast and easy if you follow these tips:

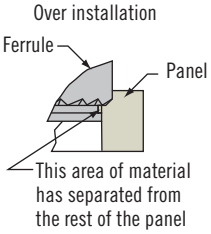
How to install: Use the recommended force where noted and a proper back-up tool.
- use any parallel-acting press
- use a punch whose diameter is larger than the head of the fastener

Installation Force: Proper installation requires an even distribution of adequate force. It does not depend on the distance the fastener is pressed into the panel.
- Southco does not recommend using a hammer. The impact force does not provide an even distribution of force to allow the panel material to completely flow into the fastener's retaining groove.
- Installation force varies from application to application, depending on the criteria noted above.
- On parts without a collar to provide a hard stop, press-in until the edge of the knurl is just barely visible.

When to Install:

Installation is recommended after plating or finishing has been applied to the panel.

The hole diameter must meet specifications before finish or plating is applied.
- Do not over-install parts. This interupts the material and will reduce the retention strength.



Product Attributes Index

This page provides an overview of key product features with a reference to the corresponding *SOUTHCO*® PRODUCT CLASS. Please refer to page 499 to find the corresponding page number(s) for each PRODUCT CLASS.

Product Features	Product Class																																
AMC	P7																																
ATCA	CN	P7	4C	47	77																												
Concealed (hidden) products	A4	C3	E2	E4	F6	MT	R2	R4	R5	R6	ST	T9	02																				
cPCI	P7																																
Door positioning hinges	C6	E6	G6	G7	ST																												
FMVSS206	R4																																
IP65 / NEMA4 rated	CM	C5	E3	E5	H3	M1	M3																										
Key-Choice System (see page 182)	AC	CM	C2	C5	E5	H3	R3	62																									
Key-locking	AC	A3	A7	CM	CR	C2	C5	E3	E5	F2	H3	K4	K5	MP	M1	M3	N2	PK	PT	R3	R4	V7	01	24	62	64	92	93					
Machinery directive compatible (see page 495)	C2	C5	D1	D4	D8	E3	E5	N7	09	12	14	17	4C	43	44	47	52	57	62	82	85	82	85										
Multi-point compatible	AC	E2	E3	E5	H3	M1	R3	R4	01	24	62	64	68	92																			
Multi-point systems	CR	F2	M3																														
Padlocking	A1	A2	E3	E5	H3	K3	K5	M3	MT	TL	V2	91	97																				
Positioning plungers	56																																
Rack attach products	D4	D7	D8	DM	NY	19	47	4C																									
Round hole installation	A1	A2	A7	BC	C6	C7	D8	E3	E5	E6	EH	F5	G6	G7	MP	MT	M1	NY	N6	T6	ST	02	07	09	12	14	17	19	37	4C	43	44	
	47	5T	52	56	57	68	82	85	91	92	96	97	97																				
Secondary catch	P7	TL	07	91	92	96	97																										
Stainless steel	A1	D4	E3	E5	EH	F5	F6	K2	K3	K5	LA	LG	LH	LJ	LR	MP	MT	M1	N6	R6	TL	V2	V4	V7	09	12	17	24	37	44	52	57	
	64	82	85	91	96	97																											
Surface mounting	A1	A2	A7	B4	B8	C6	C7	E6	E8	EH	F6	F7	G6	KH	N6	K2	K3	K4	K5	P8	P9	ST	TL	V2	V4	V7	07	37	91	96	97		
Swinghandles	CR	H3																															
Tool access	AC	A6	C2	C5	CM	D1	D4	D7	D8	E3	E5	F5	H3	LA	LG	LH	LJ	LR	M2	M3	NY	PK	R3	14	16	27	4C	43	44	47	48	57	
	62	82	85																														
UL1950	47	52																															
UL94-V0	A3	C3	NY	P1	P2	P7	4C	56	64																								

Product Class Index

This page lists all standard *SOUTHCO*® latching solutions by PRODUCT CLASS. The first two characters of every part number refer to the PRODUCT CLASS. All products within a given PRODUCT CLASS have similar characteristics and are grouped together.

Product class	Page
AC	130-132
A1	212-214
A3	158-161
A4	139
A5	262-265
A7	75
BC	480
B4	487
B8	488-489
CM	186-193
CN	406-407, 414
CR	252-255
C2	74
C3	133-135
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