Project:
Pathy Florida
2812 N. ATLANTIC BOULEVARD
FT. LAUDERDALE, 33308

Architect:
Architem
4920 de Maisonneuve O.
#500
Montreal QC H3Z 1N1
514-934-1744

Contractor:
Bomar Builders
230 SW Natura Avenue
Deerfield Beach, FL 33441
Contact: Hal Yoshida
haly@bomarbuilders.com
954-275-3969

Hardware consultant:
absupply.net
3435 Enterprise Ave
#1
Naples, FL 34104
Rich Howard
rhoward@abasupply.net
773-809-3667

Qty 1 Front Single Gate tag North Gate 3/6 x 6/0 x 4” x 2” x aluminum tube x 1” Thermory Clad both faces RHR

1 - Floor Closer H28 x S x 95° x SC x 2” extended spindle x 4” door x LTP x wood & machine screws x RHR x 630 - Rixson

1 - Top Pivot 340 x AP3 x wood & machine screws x 630 - Rixson

1 - Storeroom Function Mortise Cassette Only 9159M x 2-1/2” backset x LxL x Baldwin hubs x armor front x AMS x less strike x RHR x 630

1 - Weldable Gate Lock Box K-BXMOR4-AL - Keedex

1 - Mortise Cylinder 609B2 x MOR8 x PCY-CT-MORCAM03 x 861D x AA x 2 - cut change keys x 1 credential card - Mul-T-Lock

1 - Mortise Thumbturn ADA7321 x 19 x 861D x US26D - Kaba Ilco

1 - Electric Strike EN400 x 24vdc x .15 amp x RHR x 32D - Trine

1 - Weldable Gate Strike Box K-BXES-EN400-AL - Keedex

1 - Key Pad 923P x 24VDC x .15 amp - SDC

1- Power Supply 510 x 24vdc x 2 amp - Locknetics

1 - Applied Door Stop 1801 x standard fastener package x US32D - ABH

Operational description: Gate is normally closed and secured. Egress is by rotating inside thumbturn. Ingress is by authorized credential or key override. Upon the absence of power the gate remains closed and secured.

Edge pull function to be rabbeted into gate edge

Qty 1 Front Double Gate tag Double Gates 7/0 x 6/0 x 4” x 2” x aluminum tube x 1” Thermory Clad both faces x equal leaf
RHRA

1 - Floor Closer H28 x S x 95° x SC x 2” extended spindle x 4” door x LTP x wood & machine screws x RHRA x 630 - Rixson

1 - Floor Closer EH28 x S x 95° x SC x 2” extended spindle x 4” door x LTP x wood & machine screws x LHRI x 630 - Rixson

2 - Top Pivot 340 x AP3 x wood & machine screws x 630 - Rixson

1 - Storeroom Function Mortise Cassette Only 9159M x 2-1/2” backset x LxL x Baldwin hubs x armor front x AMS x less strike x RHRA x 630

1 - Weldable Gate Lock Box K-BXMOR4-AL - Keedex

1 - Mortise Cylinder 609B2 x MOR8 x PCY-CT-MORCAM03 x 1/8” cylinder trim ring x 1AA x 2 - cut change keys x 1 credential card - Mul-T-Lock

1 - Mortise Thumbturn ADA7321 x 19 x 861D x US26D - Kaba Ilco

1 - Electric Strike EN400 x 24vdc x .15 amp x RHR x 32D - Trine

1 - Weldable Gate Strike Box K-BXES-EN400-AL - Keedex

1 - Key Pad 923P x 24VDC x .15 amp - SDC

1- Power Supply 510 x 24vdc x 2 amp - Locknetics

1 - Applied Door Stop 1801 x standard fastener package x US32D - ABH

1 - Surface Bolt 582 x 12 x 9/16” shackle ID x standard fastener package x 32D - Rockwood

1 - Padlock NE12SB 609B2 x AA x 2 - cut change keys x 1 credential card - Mul-T-Lock

Operational description: Gate is normally closed and secured. Egress is by rotating inside thumbturn. Ingress is by authorized credential or key override. Upon the absence of power the gate remains closed and secured.

Edge pull function to be rabbeted into gate edge

Qty 1 Beach Side Single Gate Tag Beach Side 3/6 x 6/0 x 4” x 2” x aluminum tube x 1” Thermory Clad both faces LHR

1 - Floor Closer H28 x S x 95° x SC x 2” extended spindle x 4” door x LTP x wood & machine screws x LHR x 630 - Rixson

1 - Top Pivot 340 x AP3 x wood & machine screws x 630 - Rixson

1 - Storeroom Function Mortise Cassette Only 9159M x 2-1/2” backset x LxL x Baldwin hubs x armor front x AMS x less strike x LHR x 630

1 - Weldable Gate Lock Box K-BXMOR4-AL - Keedex

1 - Mortise Cylinder 609B2 x MOR8 x PCY-CT-MORCAM03 x 1/8” cylinder trim ring x AA x 2 - cut change keys x 1 credential card - Mul-T-Lock

1 - Mortise Thumbturn ADA7321 x 19 x 861D x US26D - Kaba Ilco

1 - Electric Strike EN400 x 24vdc x .15 amp x LHR x 32D - Trine

1 - Weldable Gate Strike Box K-BXES-EN400-AL - Keedex

1 - Key Pad 923P x 24VDC x .15 amp - SDC

1- Power Supply 510 x 24vdc x 2 amp - Locknetics

1 - Applied Door Stop 1801 x standard fastener package x US32D - ABH

Operational description: Gate is normally closed and secured. Egress is by rotating inside thumbturn. Ingress is by authorized credential or key override. Upon the absence of power the gate remains closed and secured.

Edge pull function to be rabbeted into gate edge

Installation Accessories:

1 - Quickspotter Installation Tool 1859001 - Rixson
1 - Closer Alignment Tool 2604 - Rixson

Notes:

1. The floor closers are written with a 2” extended spindle. Please ask the gate manufacturer to verify the ideal spindle length for the application vis-a-view the construction of the gate. This question pertains to the net clearance that will be designed and achieved.
2. Review the attached Voltage Drop data regarding distances from power supply to load vis-a-vie gauge of conductor to be sure you have adequate amperage at load.
3. Please verify swings and opening tag numbers.
4. These hardware sets are suggested and a “conversation starter” regarding specific hardware and operational function.

MODEL H28

Application
- Single Acting, Handed
- Exterior or Interior Doors
- Extra Heavy High Traffic Doors
- Weight to 1000 lbs.
- Sizes up to 4'0" x 8'6"* (1219 x 2591mm)

Product Description & Features
- H340 top pivot included
- Available non-hold open (N) or selective hold open (S) at same degree as dead stop
- Built-in positive dead stop prevents door from swinging beyond the desired opening degree (specify 85°, 90°, 95° or 105°)
- For high traffic or extra heavy doors (2" min. thickness)
- Additional thrust bearing for greater load capacity
- Separate and independent valves for closing speed, latch speed and backcheck
- Available with floor plate or threshold installation (floor plate shown)
- Cast iron cement case
- Not allowed for fire rated doors
- Frame stop required at header on lock side. If not supplied by frame manufacturer, Norton Rixson 60131 recommended. Consult Door Control Accessories Catalog.
- Furnished with wood and machine screws

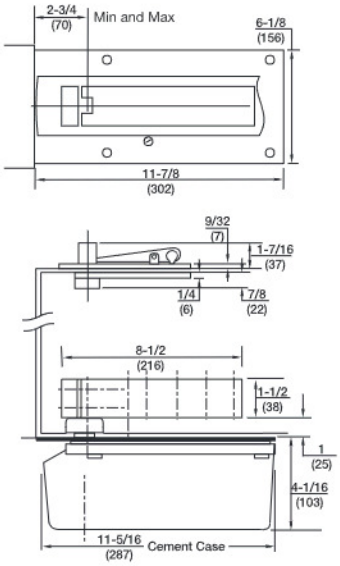
Optional Features
- Delayed action option – prefix "DA" (non-hold open closers only)
- Cold weather fluid option – specify "CWF" (not available for closers with "DA")
- Sealed closer option – specify "SC"
- Extended spindles available in 1/2" increments up to 2" longer than standard

Compliance
- Models available to meet ICC/ANSI A117.1 low opening force requirements, prefix "PH". (For 8-1/2 lbs. of opening force prefix "PH" and suffix "8-1/2 lbs.")
- ANSI/C06061
- ANSI/BHMA A156.4, Grade 1

** For doors taller than 8'6" use top pivot H345 in lieu of H340*

Technical Information

(Frame stop required at lock edge)



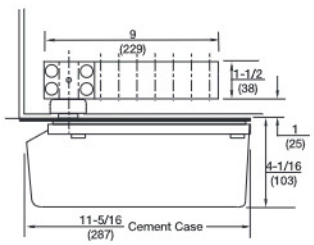
Pivot edge of door must be radiused.

MODEL H28 X 587 ARM

Product Description & Features

Identical to Model H28 except:
- Special side load arm for 1-3/4" thick doors
- Allows pivot point to be moved away from pivot edge of door minimum 2-3/4" backset

Technical Information



H28 Floor Closer

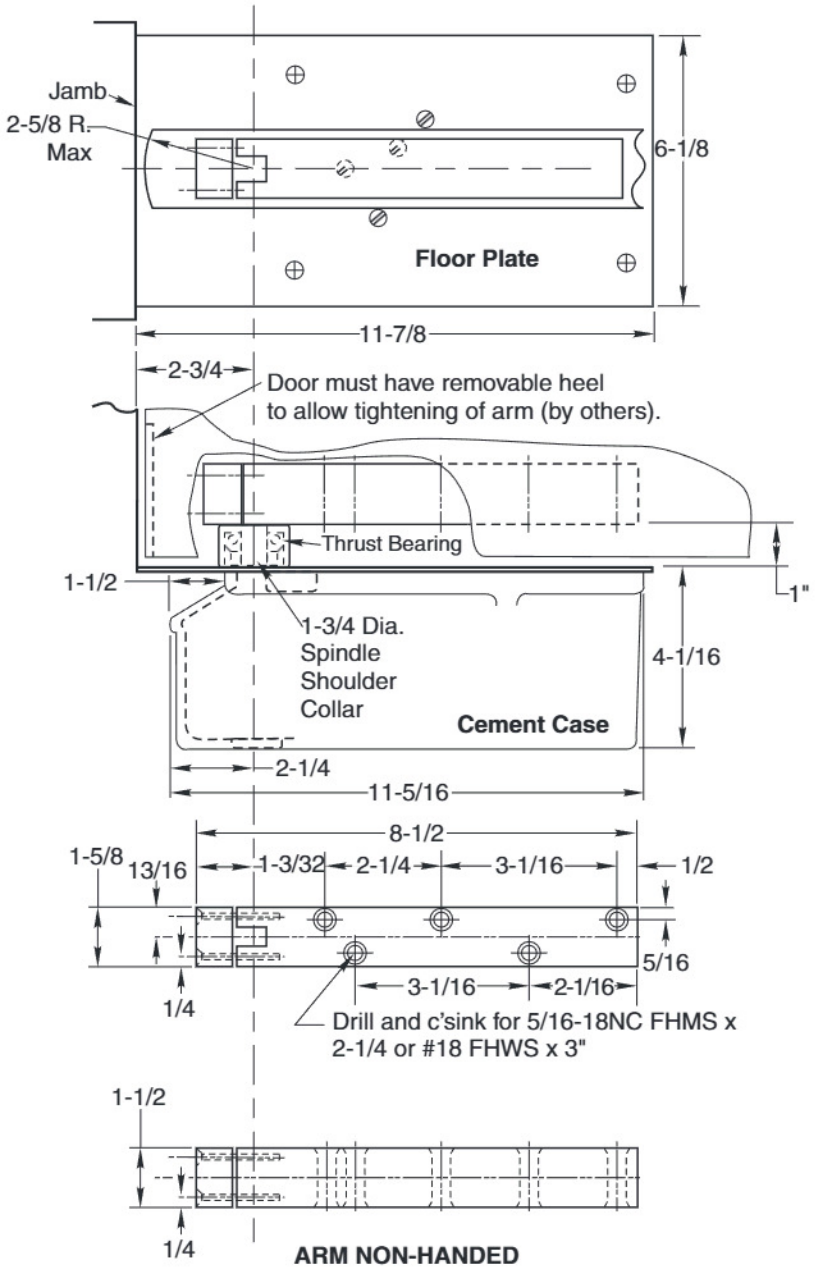
Center Hung, Single Acting - Handed
H340 Top Pivot - Non Handed
Installation Instructions

NORTON RIXSON

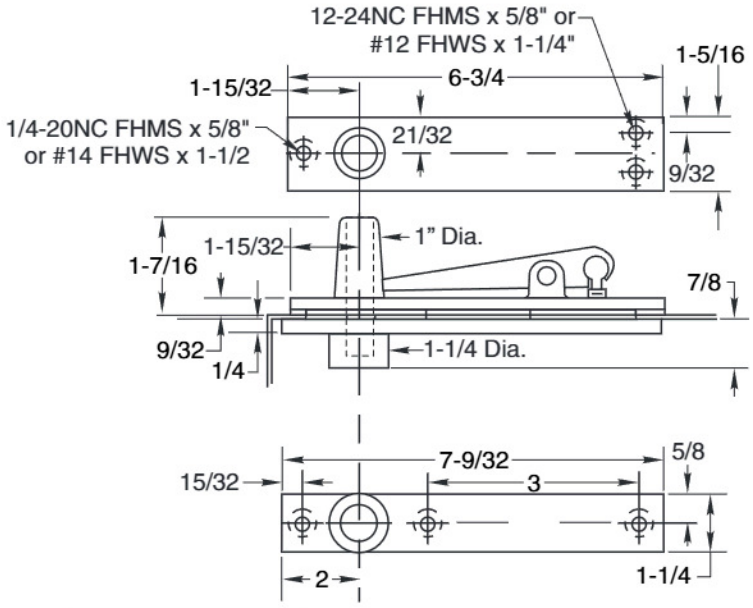
ASSA ABLOY

⚠ WARNING

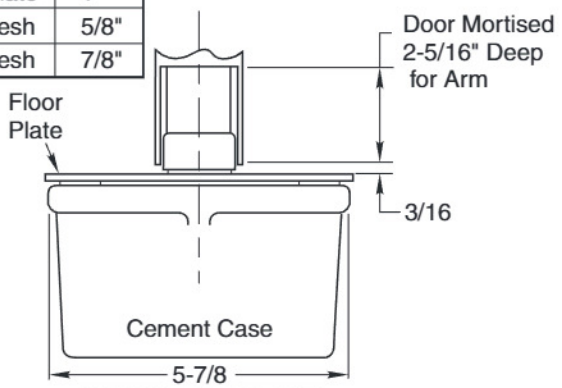
This product can expose you to lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65warnings.ca.gov.



ARM NON-HANDED

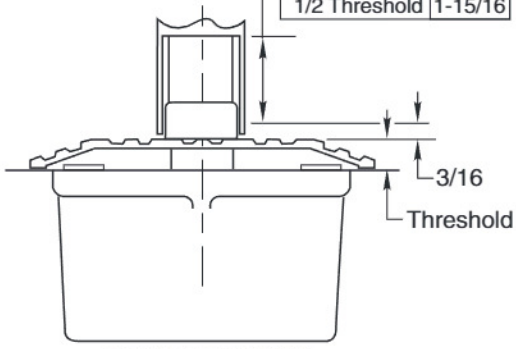


Max. Door Clearance	
Floor Plate	1"
1/2 Thresh	5/8"
1/4 Thresh	7/8"



WITH FLOOR PLATE
Set Cement Case 1/8" Below Surface of Finished Floor

Door Mortised "A" Deep for Arm	"A"
1/4 Threshold	2-3/16
1/2 Threshold	1-15/16



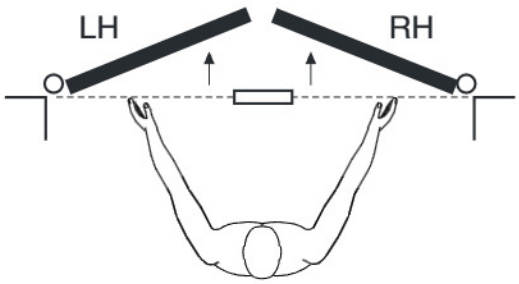
WITH THRESHOLD
Set Cement Case Flush with Finished Floor

Conversion from inches to metric: inch x 25.4.
Suitable reinforcing by others.
Norton Rixson designed threshold available on request.
This template is for a 2" thick door or larger.
For 1-3/4" thick doors specify SP Layout 587.
For Wood Doors: Pre-drill arm and top pivot holes to prevent splitting.

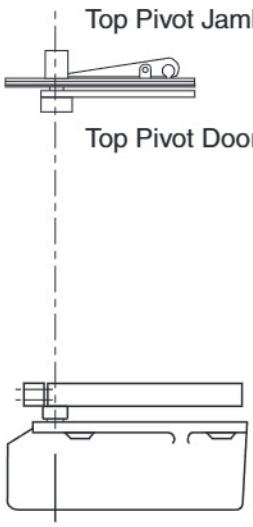
2800H Rev 3 02/22

Experience a safer and more open world

How To Determine Hand of Door



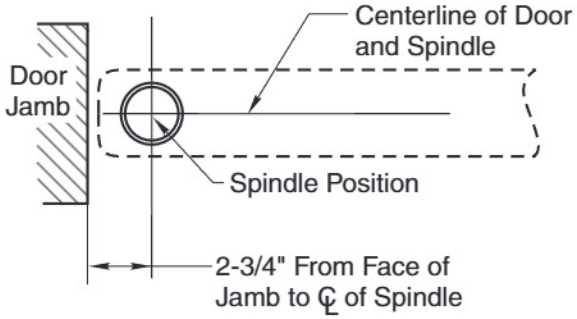
Face a door swinging open away from you. If it opens to the right, it is right hand. If it opens to the left, it is left hand.



IMPORTANT:

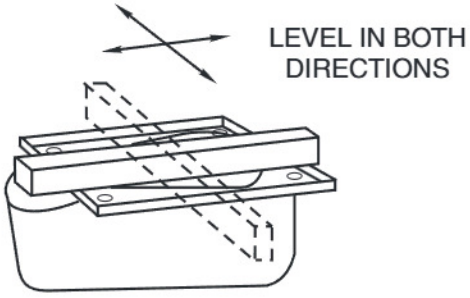
Use plumb line to make sure that center line of top pivot pin lines up with center line of closer spindle.

1. Locating Closer



A. Measure 2-3/4" out from door jamb on centerline of door. This is the location of the spindle center.

2. Install Cement Case in Floor



A. For floor plate application: Cement case is set 1/8" (3.2mm) below floor level.

B. For threshold application: Cement case is set flush with floor.

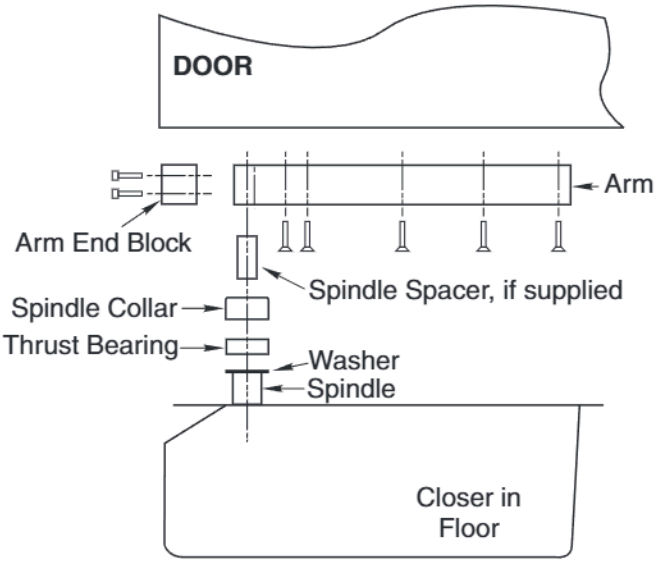
C. Set cement case in floor and block in position.

D. Case should be parallel with center line of door.

E. CEMENT CASE SHOULD BE LEVEL. Place levels per Illustration.

F. Grout in cement case with closer. Cement should not get between closer and case.

3. Install Pivot and Closer Arm



A. Install top pivot in door per template.

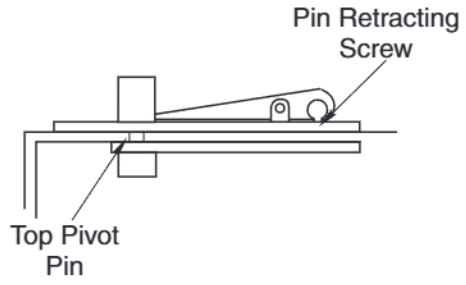
B. Install top pivot in jamb per template.

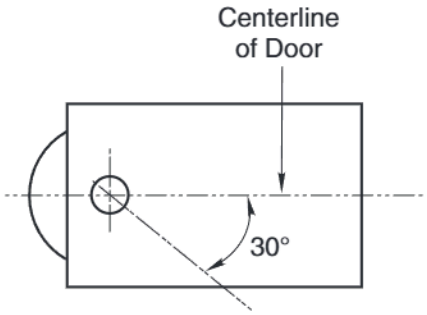
C. Centerline of pivot pin should line up with centerline of spindle. Use plumb line to assure accuracy.

D. Mortise door for arm.

E. Install arm in bottom of door.

4. Hang Door





CAUTION: Closer is shipped with valve screws down. DO NOT FORCE VALVES DOWN.

A. Retract top pivot pin by turning retracting pin screw counterclockwise. (see illustration)

B. Turn spindle to 30° open position. (see illustration)

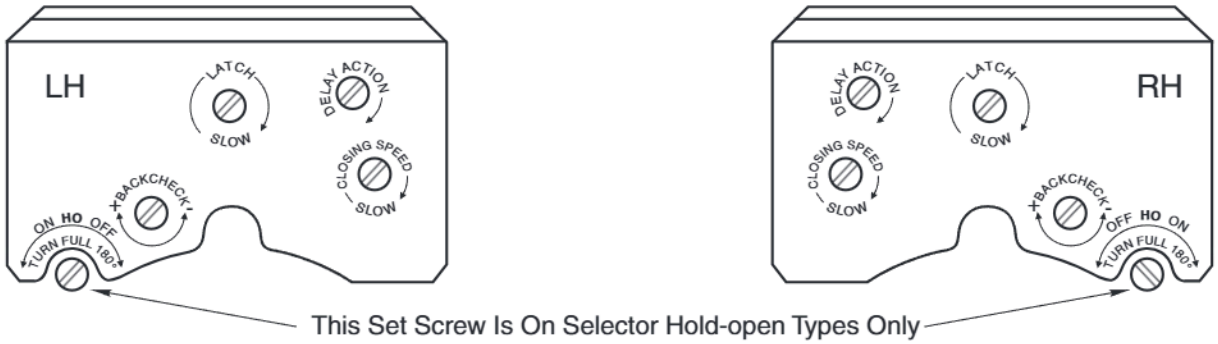
C. Slide door on spindle. DO NOT ATTEMPT TO CLOSE DOOR. Attach arm cap but do not tighten.

D. Line up two portions of top pivot and turn pin retracting screw clockwise.

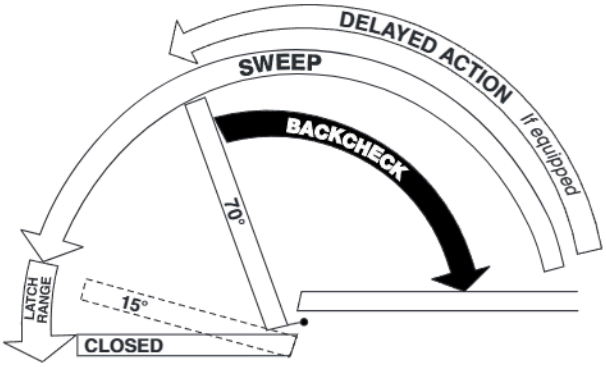
E. Tighten arm end block screws.

F. Open door to 60° or more and open screw valve by turning screw counterclockwise. Door will then close.

Closer Adjustment



Closing speeds can be adjusted to suit local conditions and requirements. Label on closer face designates the purpose of each adjustment screw. Adjustments are for speed control.



A. The Delay Action valve allows adjustment from full open to 65° closed position. (Optional)

B. The Closing Speed valve allows adjustment from full open to 15° on units without the Delay Action feature.

C. The Closing Speed valve allows adjustment from 65° to 15° closed position on closers with Delay Action feature.

D. Latch valve allows adjustment from 15° to closed position.

E. Important: Backcheck adjustment must be adjusted to vary resistance from light to firm at 60° of door open. Do not use Backcheck as deadstop. This is an intensity valve not speed control.

Closer Type

This closer is one of three types as follows:

1. Non hold-open factory set. No hold-open adjustments.

2. Automatic hold-open factory set. No hold-open adjustment.

3. Selective (on-off) hold-open label will indicate position of on-off selector screw. When turned “on”, closer has automatic hold-open: turned “off”, hold-open will not function. Turn full 180°.

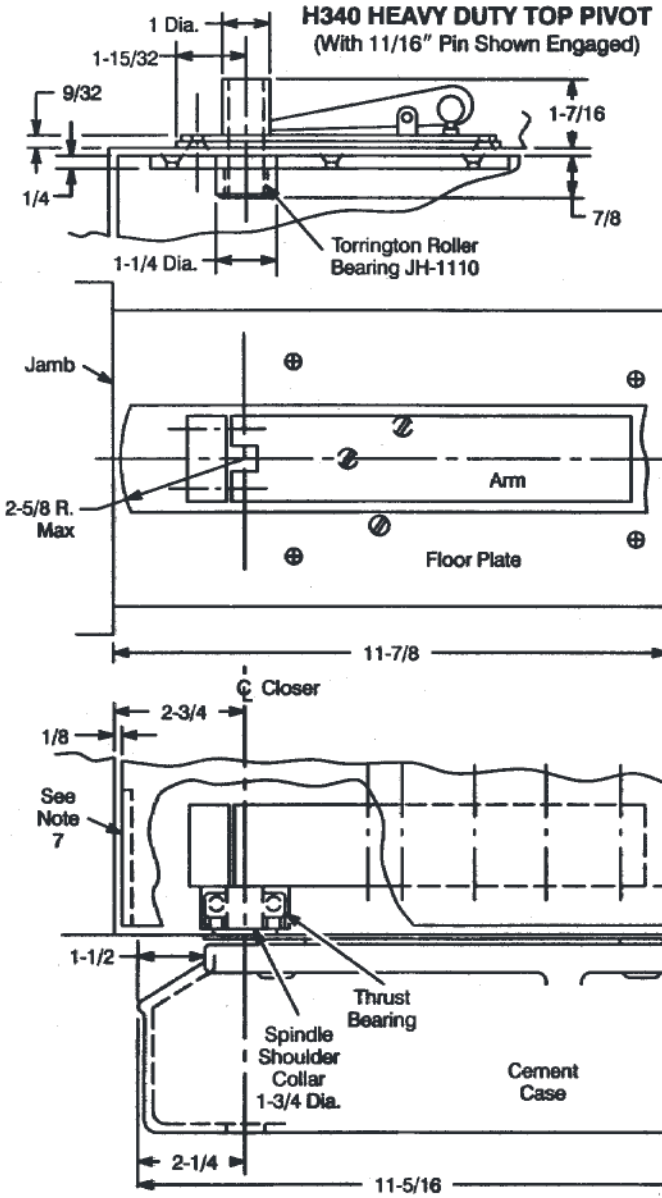
Spring Power Adjustments

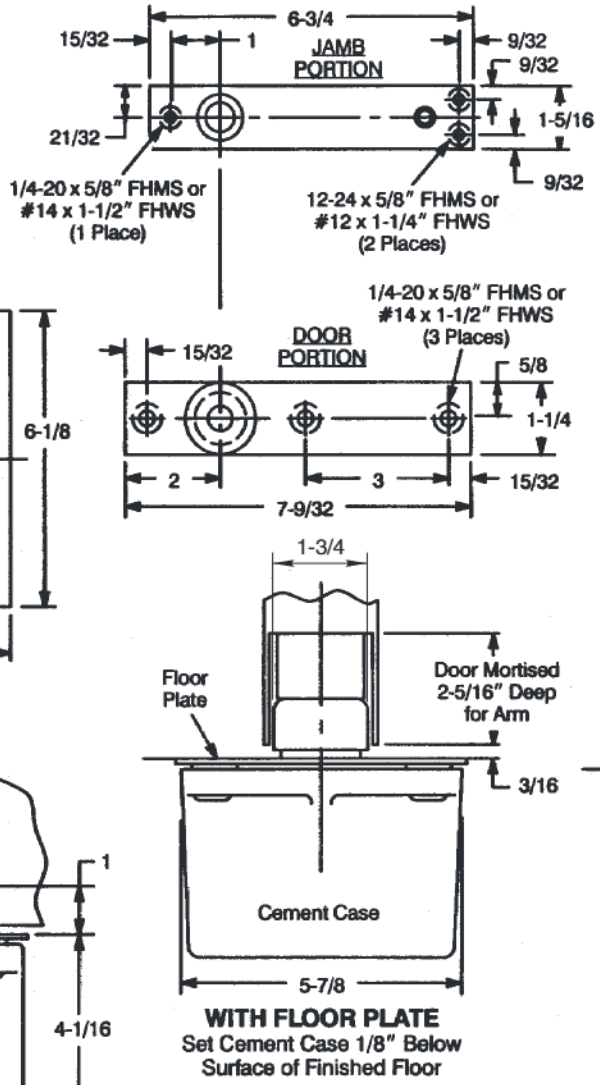
This closer can be adjusted for increased or decreased spring power.

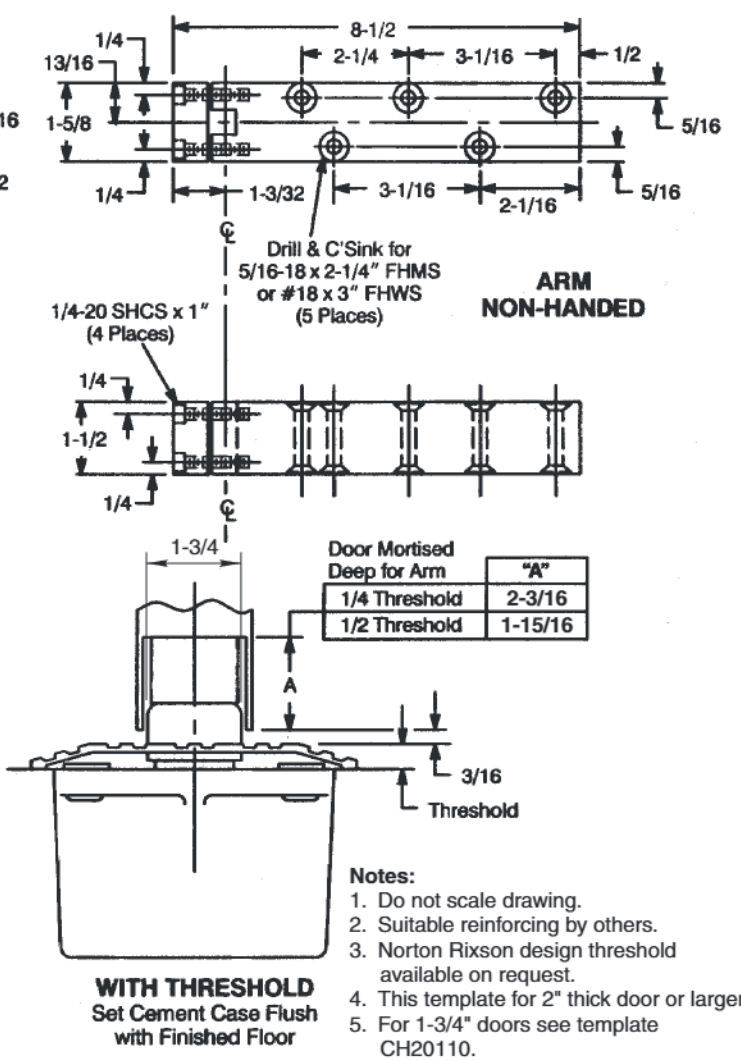
These adjustments if required should be done by an authorized repair agency.

Repairs, parts replacement or internal adjustments must be done by a Norton Rixson authorized repair agency. Consult nortonrixson.com for an authorized repair agency in your area.

Technical Product Support:
Monroe, NC 28112 USA
Phone: 800.438.1951 ext: 6030
Techsupport.NortonRixson@assaabloy.com
NortonRixson.com







Notes:

1. Do not scale drawing.
2. Suitable reinforcing by others.
3. Norton Rixson design threshold available on request.
4. This template for 2" thick door or larger.
5. For 1-3/4" doors see template CH20110.
6. For wood doors pre-drill arm and top pivot holes to prevent splitting.
7. Door must have removable heel to allow tightening of arm (by others). Access panel must go from top of arm to bottom of door.
8. All dimensions given in inches.

H28 Floor Closer
Single Acting, Center Hung
For Minimum 2" Thick Door

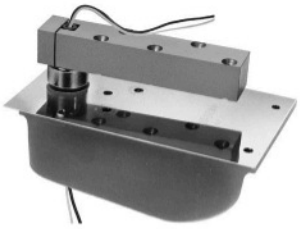
Approved 2023-12-15

NORTON RIXSON
ASSA ABLOY

TEMPLATE NUMBER	REV	DATE
CH20200	3	12/21

CENTER HUNG, SINGLE ACTING
FLOOR CLOSERS

MODEL EH28



Application
- Single Acting, Handed
- Interior or Exterior Doors
- Floor Closer for Power Transfer
- Weight to 500 lbs.
- Sizes up to 4'0" x 8'6"* (1219 x 2591mm)

Product Description & Features
- H340 top pivot included
- Available non-hold open (N) or selective hold open (S) at same degree as dead stop
- Built-in positive dead stop prevents door from swinging beyond the desired opening degree (specify 85°, 90°, 95° or 105°)
- Provides power transfer through closer spindle. Low voltage, Class II wiring (2 wire, 18 gauge only)
- 2" min. door thickness
- Additional thrust bearing for greater load capacity
- Separate and independent valves for closing speed, latch speed and backcheck
- Available with floor plate or threshold installation (floor plate shown)
- Cast iron cement case
- Not allowed for fire rated doors
- Frame stop required on header on lock side. If not supplied by frame manufactuer, Norton Rixson 60131 recommended. Consult Door Control Accessories Catalog.
- Furnished with wood and machine screws

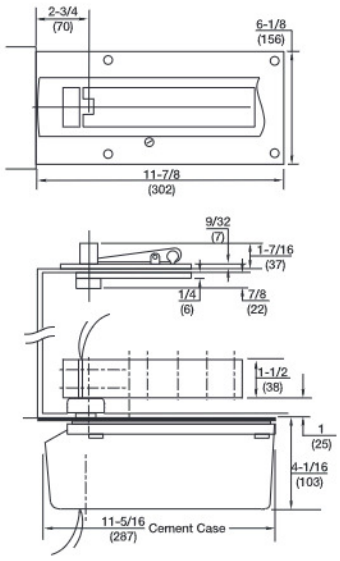
Optional Features
- Delayed action option – prefix "DA"
- Cold weather fluid option – specify "CWF" (not available for closers with "DA")
- Sealed closer option – specify "SC"
- Extended spindles available in 1/2" increments up to 2" longer than standard

Compliance
- Models available to meet ICC/ANSI A117.1 low opening force requirements, prefix "PH". (For 8-1/2 lbs. of opening force prefix "PH" and suffix "8-1/2 lbs.")
- ANSI/C06061
- ANSI/BHMA A156.4, Grade 1

** For doors taller than 8'6" use top pivot H345 in lieu of H340*

Technical Information

(Frame stop required at lock edge)

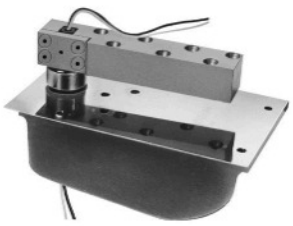


Not available with ElectroLynx®

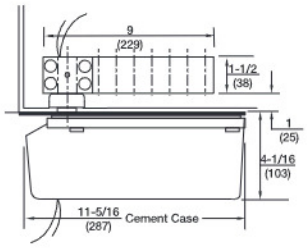
Pivot edge of door must be radiused.

MODEL EH28 X 587 ARM

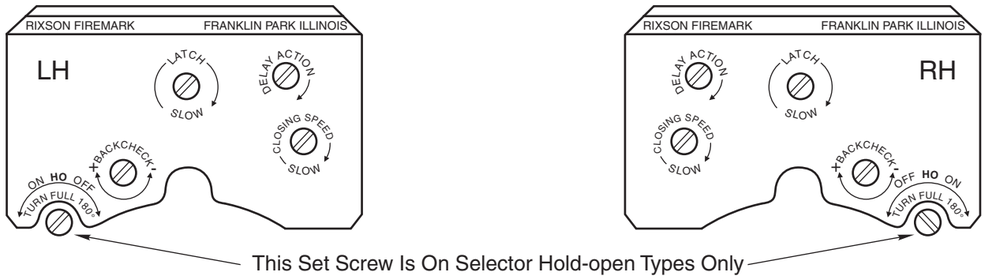
Product Description & Features
Identical to Model EH28 except:
- Special side load arm for 1-3/4" thick doors
- Allows pivot point to be moved away from pivot edge of door – minimum 2-3/4" backset



Technical Information



Closer Adjustment



Closing speeds can be adjusted to suit local conditions and requirements. Label on closer face designates the purpose of each adjustment screw. Adjustments are for speed control.

A. The Delay Action valve allows adjustment from full open to 65° closed position. (Optional)

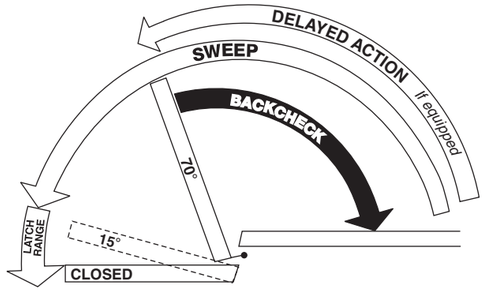
B. The Closing Speed valve allows adjustment from full open to 15° on units without the Delay Action feature.

C. The Closing Speed valve allows adjustment from 65° to 15° closed position on closers with Delay Action feature.

D. Latch valve allows adjustment from 15° to closed position.

E. Important: Backcheck adjustment must be adjusted to vary resistance from light to firm at 60° of door open.

Do not use Backcheck as deadstop. This is an intensity valve not speed control.



Closer Type

This closer is one of three types as follows:

1. Non hold-open factory set. No hold-open adjustments.

2. Automatic hold-open factory set. No hold-open adjustment.

3. Selective (on-off) hold-open label will indicate position of on-off selector screw. When turned “on”, closer has automatic hold-open: turned “off”, hold-open will not function. Turn full 180°.

Spring Power Adjustments

This closer can be adjusted for increased or decreased spring power.

These adjustments if required should be done by an authorized repair agency.

Repairs, parts replacement or internal adjustments must be done by a Rixson authorized repair agency. Consult www.rixson.com for an authorized repair agency in your area.

RIXSON®
ASSA ABLOY

RIXSON
ASSA ABLOY

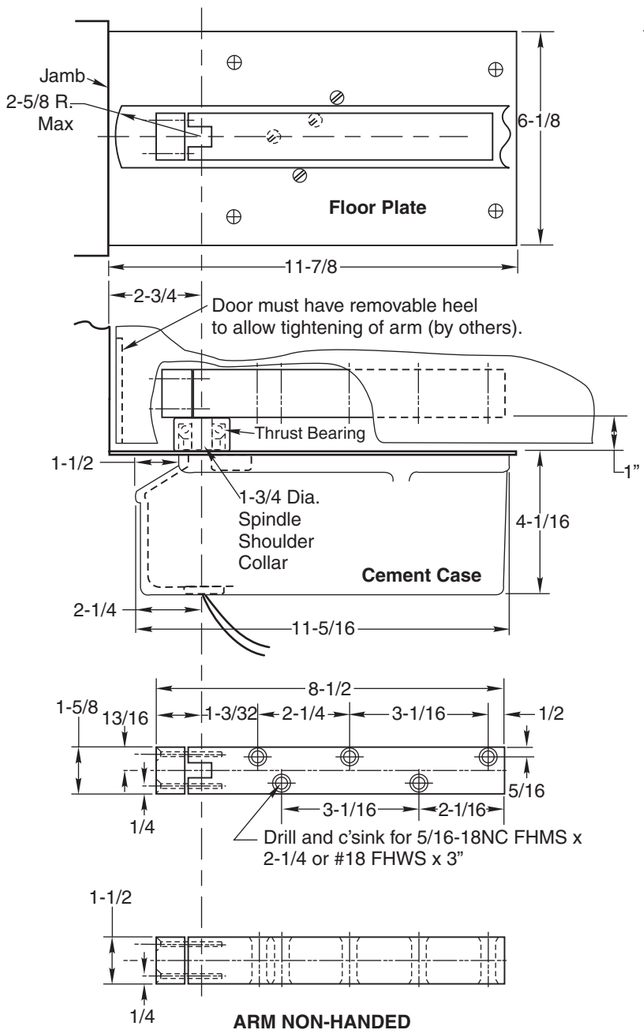
EH28 Floor Closer

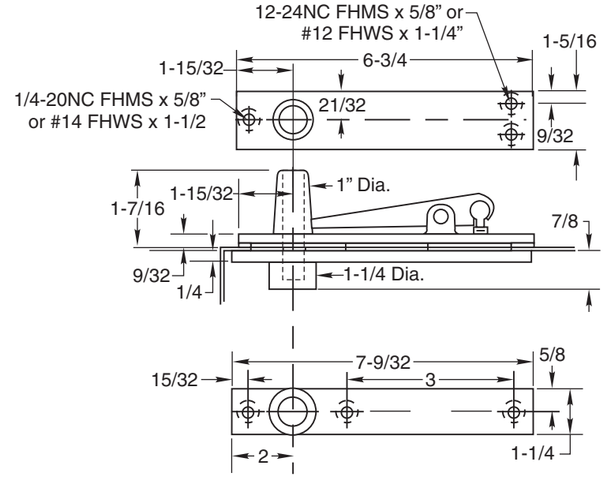
Center Hung Single Acting – Handed
H340 Top Pivot – Non Handed

Installation Instructions

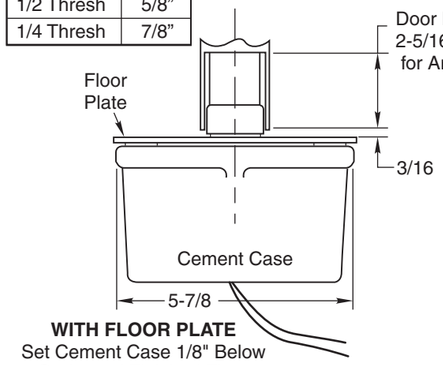
EH2800 (07-09)

Template



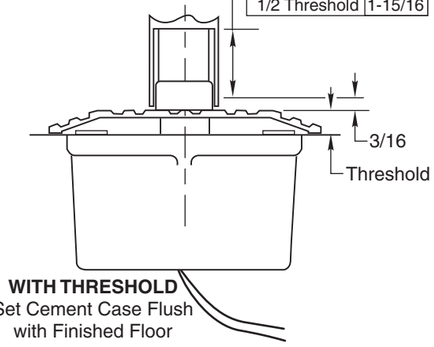


Max. Door Clearance	
Floor Plate	1”
1/2 Thresh	5/8”
1/4 Thresh	7/8”



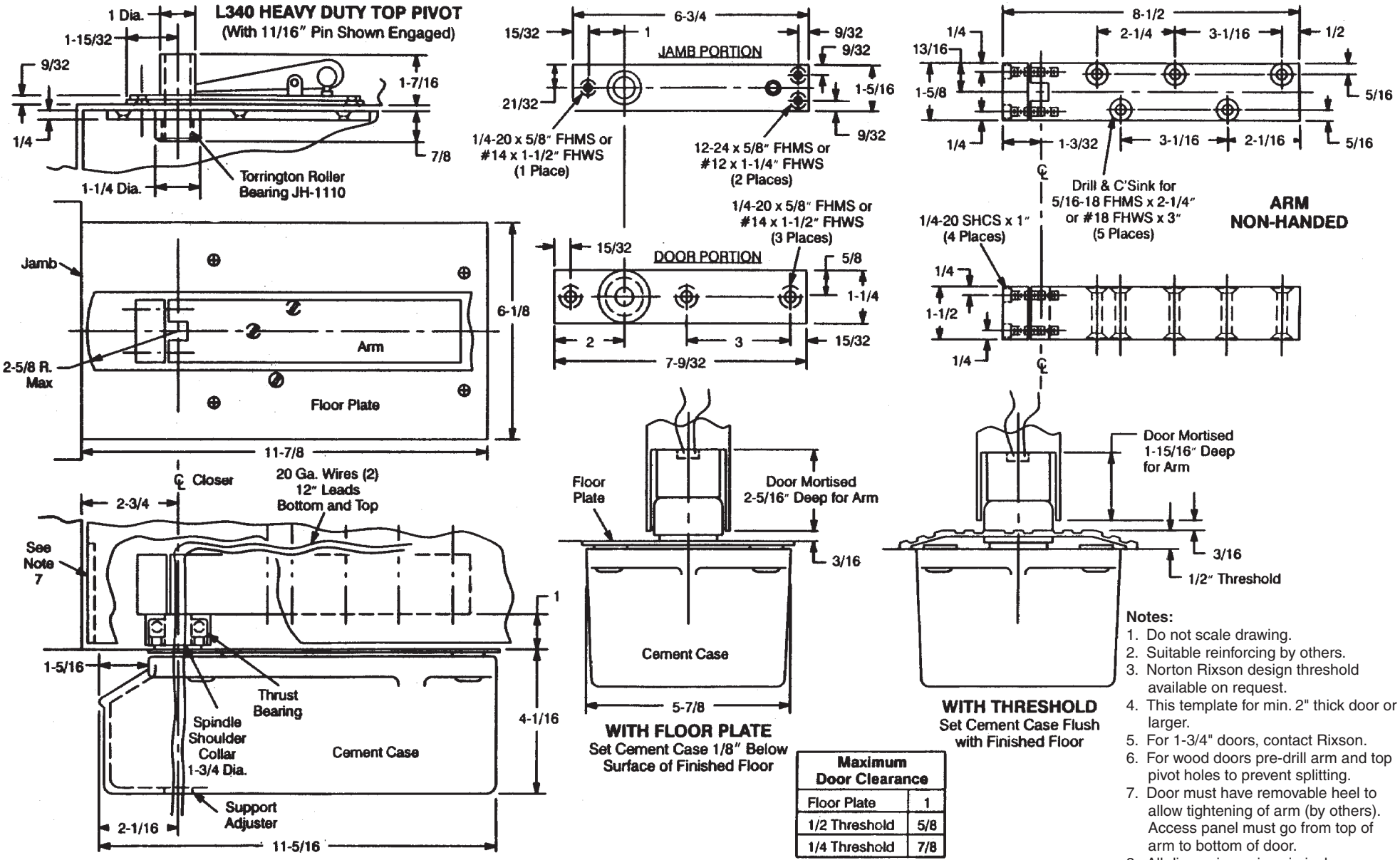
WITH FLOOR PLATE
Set Cement Case 1/8" Below Surface of Finished Floor

Door Mortised "A" Deep for Arm	"A"
1/4 Threshold	2-3/16
1/2 Threshold	1-15/16



WITH THRESHOLD
Set Cement Case Flush with Finished Floor

Conversion from inches to metric: inch x 25.4.
Suitable reinforcing by others.
Rixson designed threshold available on request.
This template is for a 2” thick door or larger.
For 1-3/4” thick doors specify SP Layout 587.
For Wood Doors: Pre-drill arm and top pivot holes to prevent splitting.



Maximum Door Clearance	
Floor Plate	1
1/2 Threshold	5/8
1/4 Threshold	7/8

Notes:

1. Do not scale drawing.
2. Suitable reinforcing by others.
3. Norton Rixson design threshold available on request.
4. This template for min. 2" thick door or larger.
5. For 1-3/4" doors, contact Rixson.
6. For wood doors pre-drill arm and top pivot holes to prevent splitting.
7. Door must have removable heel to allow tightening of arm (by others). Access panel must go from top of arm to bottom of door.
8. All dimensions given in inches.

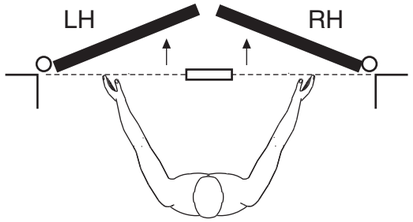
EH28 Floor Closer
Single Acting, Center Hung
For Heavy Doors

Approved 2023-12-15

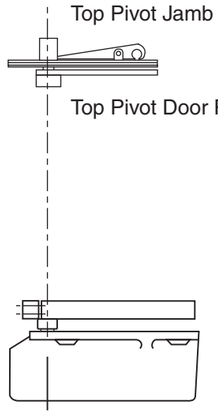
NORTON RIXSON
ASSA ABLOY

TEMPLATE NUMBER	REV	DATE
CH20650	3	12/21

How To Determine Hand of Door



Face a door swinging open away from you. If it opens to the right, it is right hand. If it opens to the left, it is left hand.

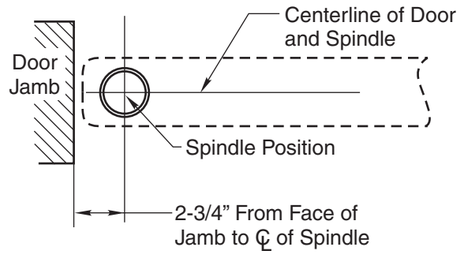


IMPORTANT:

Use plumb line to make sure that center line of top pivot pin lines up with center line of closer spindle.

Installation Instructions

1. Locating Closer

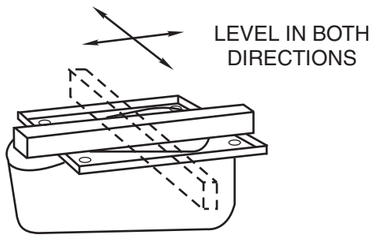


A. Measure 2-3/4" out from door jamb on centerline of door. This is the location of the spindle center.

B. Run conduit to closer cutout.

C. Attach building wires to wires coming out of underside of closer.

2. Install Cement Case in Floor



A. For floor plate application: Cement case is set 1/8" (3.2mm) below floor level.

B. For threshold application: Cement case is set flush with floor.

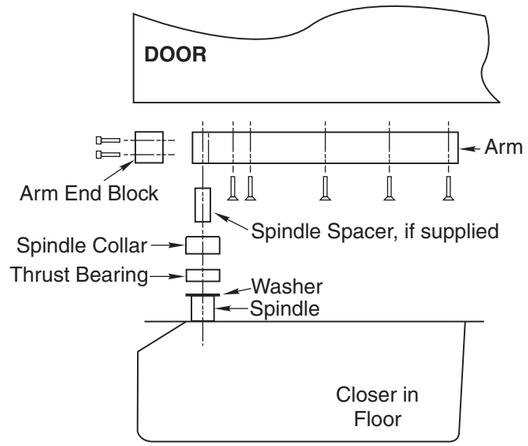
C. Set cement case in floor and block in position.

D. Case should be parallel with center line of door.

E. CEMENT CASE SHOULD BE LEVEL. Place levels per Illustration.

F. Grout in cement case with closer. Cement should not get between closer and case.

3. Install Pivot and Closer Arm



A. Install top pivot in door per template.

B. Install top pivot in jamb per template.

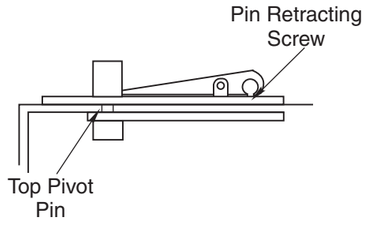
C. Centerline of pivot pin should line up with centerline of spindle. Use plumb line to assure accuracy.

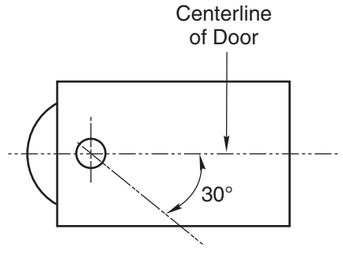
D. Mortise door for arm.

E. Attach wires from door to wires in spindle.

F. Install arm in bottom of door.

4. Hang Door





CAUTION: Closer is shipped with valve screws down. DO NOT FORCE VALVES DOWN.

A. Retract top pivot pin by turning retracting pin screw counterclockwise. (see illustration)

B. Turn spindle to 30° open position. (see illustration)

C. Slide door on spindle. DO NOT ATTEMPT TO CLOSE DOOR. Attach arm cap but do not tighten.

D. Line up two portions of top pivot and turn pin retracting screw clockwise.

E. Tighten arm end block screws.

F. Open door to 60° or more and open screw valve by turning screw counterclockwise. Door will then close.

9000M / 9100M Series MARINE GRADE Mortise Locks

U/L Listed 3 Hour (R13846)
Grade 1 certified to ANSI/BHMA A156.13.2005 standard

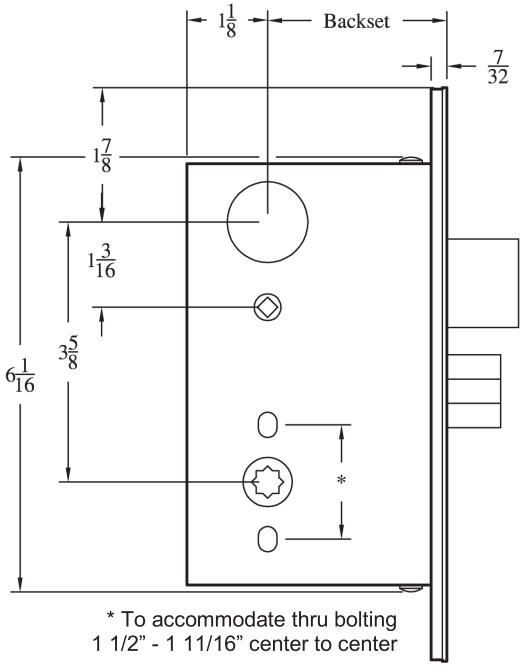
Please specify backset
2 1/2", 2 3/4"

Please specify sectional (rose) trim being used:
L x L = Lever x Lever
K x K = Knob x Knob

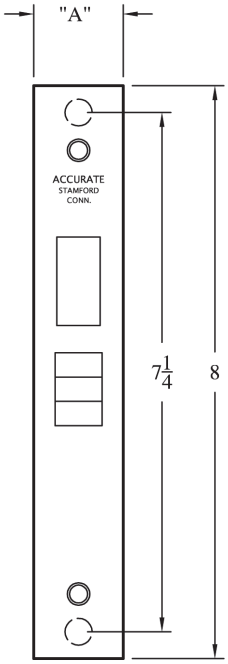
* Knob x Lever configuration also available

#9024M

CASE:
316 SS
ARMOR FRONT:
316 SS—Adjustable bevel
LATCH BOLT: 316
SS-Anti friction type
3/4" throw
DEADBOLT:
Brass-chrome plated with saw proof pins, 1" throw
STRIKE:
316 SS, 4 7/8" ASA
HUBS:
Available in different sizes to be compatible with various trims
THUMB TURN HUB:
3/16" (5mm) on the diamond
DUST BOX:
Stainless steel



* To accommodate thru bolting
1 1/2" - 1 11/16" center to center



"A" **9100M SERIES—1 1/4"**
9000M SERIES—1"

1 Annie Place • Stamford, CT 06902 • P: 203.348.8865 • F: 203.348.5234 • E: *sales@accuratelockandhardware.com*

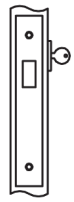
MADE IN USA

9000M / 9100M Series MARINE GRADE Mortise Locks

Functions

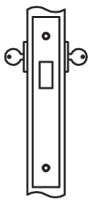
For use with lever handles, knobs

Cylinders and trim shown for illustration purposes only (supplied by others)



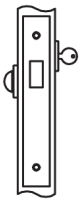
9101M for doors 1 3/4" minimum
(1 1/4" armor front)
9001M for doors 1 3/8" minimum
(1" armor front)

Deadlock (ANSI SERIES 1000-F18)
Dead bolt by key outside
No inside operation



9102M for doors 1 3/4" minimum
(1 1/4" armor front)
9002M for doors 1 3/8" minimum
(1" armor front)

Deadlock (ANSI SERIES 1000-F16)
Dead bolt by key either side

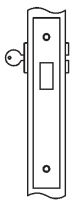


9103M for doors 1 3/4" minimum
(1 1/4" armor front)
9003M for doors 1 3/8" minimum
(1" armor front)

Deadlock (ANSI SERIES 1000-F17)
Dead bolt by key outside and turn piece inside

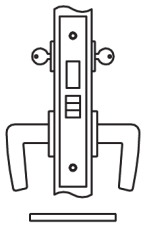
9104M for doors 1 3/4" minimum
(1 1/4" armor front)
9004M for doors 1 3/8" minimum
(1" armor front)

Deadlock
Dead bolt by turn piece inside
No outside operation



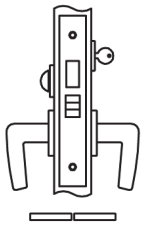
9105M for doors 1 3/4" minimum
(1 1/4" armor front)
9005M for doors 1 3/8" minimum
(1" armor front)

Deadlock
Dead bolt by turn piece inside and emergency key outside



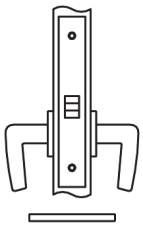
9122M for doors 1 3/4" minimum
(1 1/4" armor front)
9022M for doors 1 3/8" minimum
(1" armor front)

Store Door Lock (ANSI SERIES 1000-F14)
Latch bolt by lever either side
Dead bolt by key either side



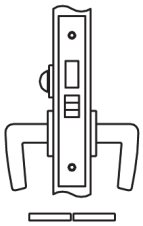
9124M for doors 1 3/4" minimum
(1 1/4" armor front)
9024M for doors 1 3/8" minimum
(1" armor front)

Dormitory, Entrance or Storeroom Lock
(ANSI SERIES 1000-F13)
Latch bolt by lever either side. Dead bolt by key outside and turn piece inside. A turn of inside lever retracts latch and dead bolt simultaneously, automatically unlocking outside lever.



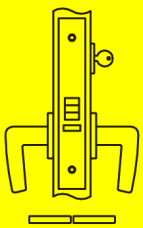
9125M for doors 1 3/4" minimum
(1 1/4" armor front)
9025M for doors 1 3/8" minimum
(1" armor front)

Passage and Closet Latch
(ANSI SERIES 1000-F01)
Latch bolt by lever either side



9139M for doors 1 3/4" minimum
(1 1/4" armor front)
9039M for doors 1 3/8" minimum
(1" armor front)

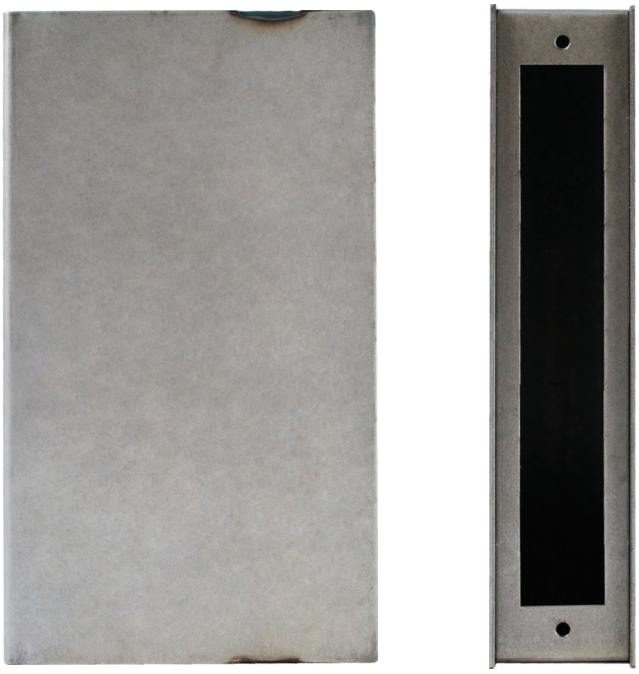
Privacy bedroom or bathroom Lock
(ANSI SERIES 1000-F19)
Latch bolt by lever either side
Dead bolt by turn piece inside and optional emergency key outside
A turn of inside lever retracts latch and dead bolt simultaneously—automatically unlocking outside lever



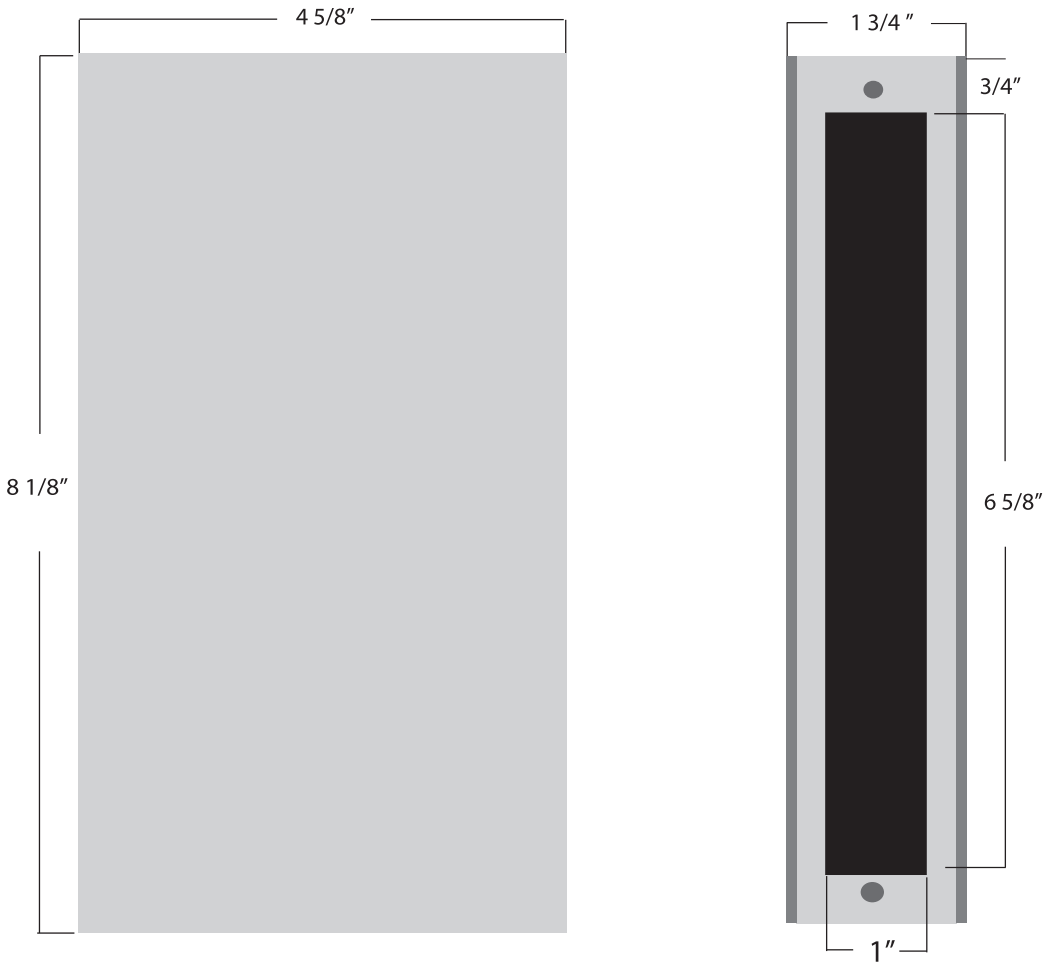
9159M for doors 1 3/4" minimum
(1 1/4" armor front)
9059M for doors 1 3/8" minimum
(1" armor front)

Storeroom or Closet Lock
(ANSI SERIES 1000-F07)
Latch by lever inside and key outside
Outside lever always RIGID
Auxiliary latch deadlocks latch bolt

K-BXMOR4
Weldable Box



Type: Mortise
Dimensions:
4 5/8 ″W x 8 1/8″H x 1 3/4″D
Materials Available:
14 Gauge Steel.....K-BXMOR4
.125 Aluminum.....K-BXMOR4-AL



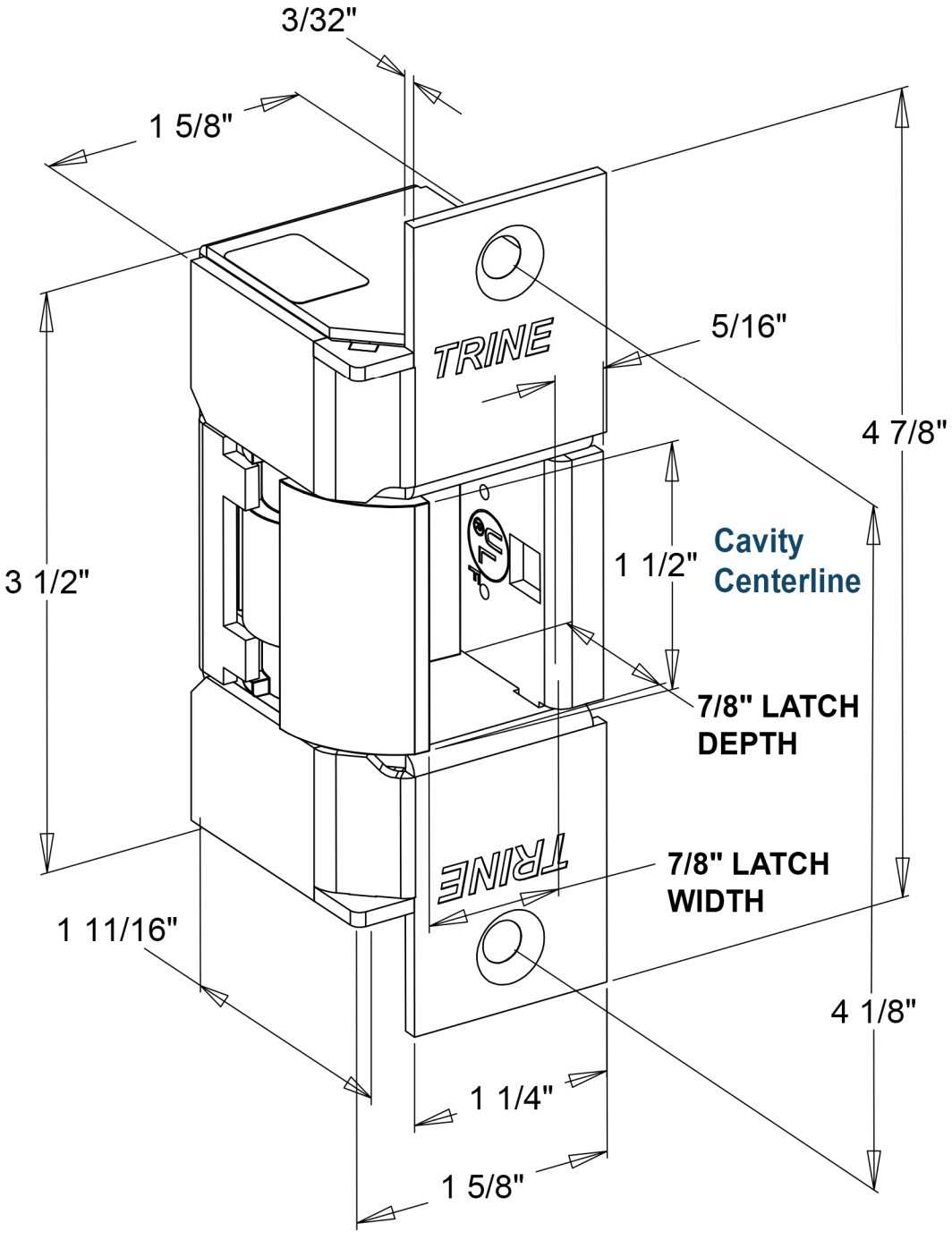
KEEDEX

www.keedex.com • 714-993-4300

This rendering is NOT to scale and dimensions are NOT exact. For precise technical information, please refer to the template for the lock you are using.

EN400
Electric Strike
Dimension

TRINE ACCESS TECHNOLOGY
1440 Ferris Place • Bronx • New York • 10461-3699
Telephone Number: (718) 829-2332
Fax Number: (718) 829-6405
Email: CustomerService@Trineonline.com
Website: www.Trineonline.com



Instruction Manual

AXION SERIES - ELECTRIC STRIKE

MODEL EN400, EN400RP

TRINE ACCESS TECHNOLOGY
1440 Ferris Place, Bronx, NY 10461-3699
PH: 718-829-2332 – FX: 718-829-6405
www.trineonline.com

PARTS LIST

Index No.	Name Part	Number
1	EN400 Latch	EN-LCH
2	EN400RP Latch	EN- RPLCH
3	Slider	EN-SLR
4	Coil Assembly (12V)	EN-CA-12DC or EN-CA-12AC
	Coil Assembly (24V)	EN-CA-24DC or EN-CA-24AC
5	Screws (2) #4-40 x 1/8" (Cover)	EN-SCR 1/8
6	Frame Cover	EN-FR.C
7	Screws #4-40 x 1/4" (Coil)	EN-SCR 1/4
8	Frame **	EN-FR400
9	Assembly Pin*	EN-ASS.PN
10	Spring	EN-SPR
11	Latch Pivot Pin	EN-LCH-PV-ST
12	Slider Guard	EN-GRD
13	Mounting Screws (2) #12-24 x 1/2"	EN-MTS
14	Shim Kit (3) 1/16" Shim	EN-UNV-SHIM
15	Shim Screws (2) #6-32 x 1/4"	EN-SHIM-SCR-S
16	Shim Screws (2) #6-32 x 3/8"	EN-SHIM-SCR-L

NOTE: Number in parenthesis ( ) indicates part in Parts List.

UL LISTED - 10B fire rated (class A, 3-hour, Single Swing Doors) [Except EN400RP]

UL LISTED - 1034 Burglary Resistant Locking Mechanism for Indoor or Outdoor Use

ANSI/BHMA - A156.5 - 1992 - 4-7/8" x 1-1/4" Fits Cutout Specification A115.1 (with Slight Jamb Modification)

BHMA - Grade 1

NYC MEA - 79-01-E

NOTE: UL fire listing is void when using fail safe action or RP latch for Rim Panic Devices.

EN SERIES ELECTRICAL CHARACTERISTICS CHART

Voltage	Amps	Ohms	Duty	Sound
12AC	0.70	4.5	Intm.	Buzz
24AC	0.37	18.0	Intm.	Buzz
12DC	0.28	43.0	Intm./Cont.	Silent
24DC	0.15	164.0	Intm./Cont.	Silent

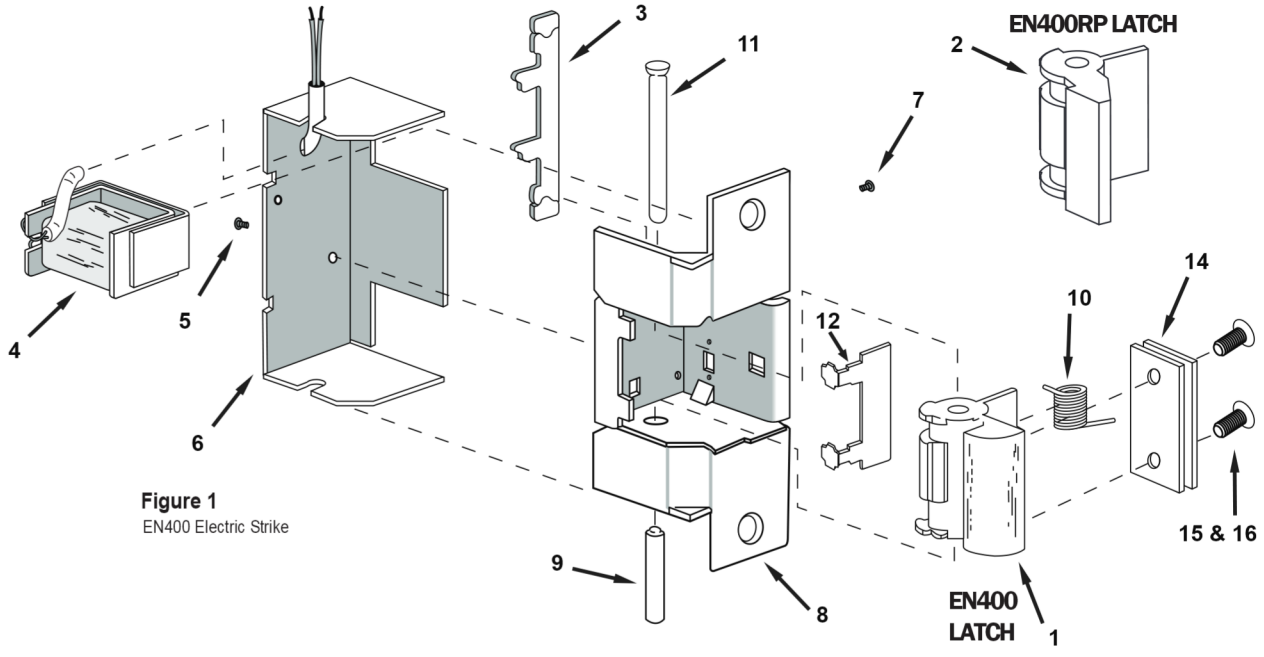
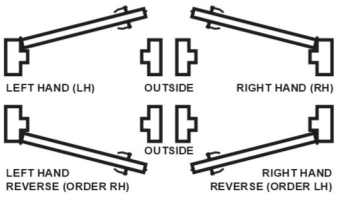


Figure 1
EN400 Electric Strike

DOOR HANDING GUIDE



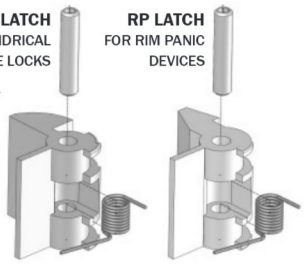
HANDING OF DOOR IS ALWAYS DETERMINED FROM THE OUTSIDE.

HANDING DETERMINATION

Door handing is determined by the position of the hinges, as viewed from the outside of the room or building. If the door hinges are on the left, the door is termed left handed; if the door hinges are on the right, the door is termed right handed. Also a door is either inswinging (opens into the room), or outswinging (opens to the outside of the room).

LATCH ASSEMBLY

Prepare the Latch for assembly. Position the Latch and Latch Spring as shown and pass the assembly pin through the two parts.

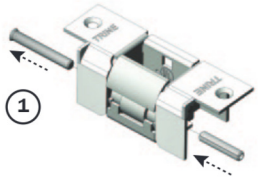


(A) SWAP LATCHES

At 5 (Below) you may switch out the standard Cylindrical/Mortise Latch for the RP (rim panic) Latch.

Note: RP Latch is NOT Fire Rated (it is Outdoor rated)

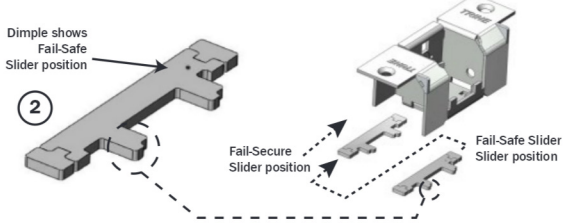
HANDING THE STRIKE (RIGHT HAND)



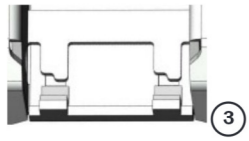
Disassemble the Back Cover and the solenoid of the Left Hand configured EN strike.

Using the Assembly Pin, push the Latch Pivot Pin out.

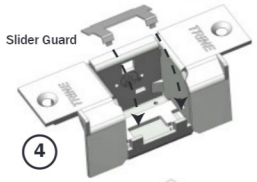
Take the Latch & Spring and the Slider Guard out of the frame.



Insert the Slider as Fail-Secure or Fail-Safe position as shown.



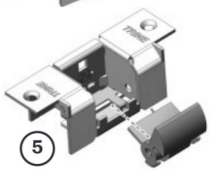
Align the Slider with the pick guard ribs as shown.

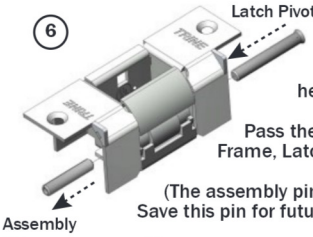


Assemble the Slider Guard over the Slider.

(A) below

Pass the long leg of the Spring through the rectangular hole on the frame and let the Latch assembly drop to position where all the pivot holes lines up.

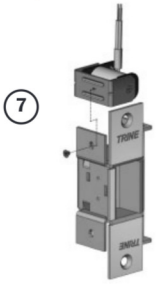




Insert the Latch Pivot Pin making sure that the flared pin head is towards the right as shown.

Pass the Latch Pivot Pin through the Frame, Latch and Spring.

(The assembly pin will fall off the opposite end. Save this pin for future use.)



Assemble the Solenoid and secure it with the solenoid Screw as shown.

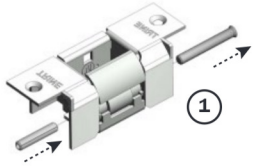
Finish the assembly by installing the Cover and securing it with the two assembly Screws.

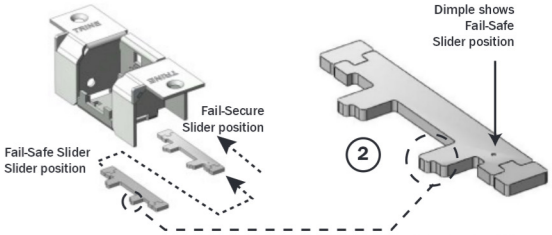
HANDING THE STRIKE (LEFT HAND)

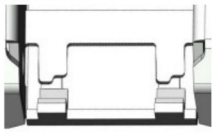
Disassemble the Back Cover and the solenoid of the Right Hand configured EN strike.

Using the Assembly Pin, push the Latch Pivot Pin out.

Take the Latch & Spring and the Slider Guard out of the frame.





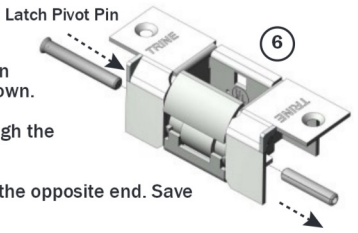


Align the Slider with the pick guard ribs as shown.

Assemble the Slider Guard over the Slider.

(A) below

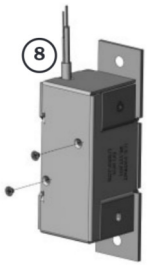
Pass the long leg of the Spring through the rectangular hole on the frame and let the Latch assembly drop to position where all the pivot holes lines up.



Insert the Latch Pivot Pin making sure that the flared pin head is towards the left as shown.

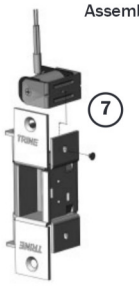
Pass the Latch Pivot Pin through the Frame, Latch and Spring.

(The assembly pin will fall off the opposite end. Save this pin for future use.)



Assemble the Solenoid and secure it with the solenoid Screw as shown.

Finish the assembly by installing the Cover and securing it with the two assembly Screws.



Cont... Page 2 **Door Handing Determination**

The position of the Electric Strike in the door jamb will be the same for a right-handed door and a lefthanded door. For these installations, the Electric Strike position in the door jamb will be as shown in Figure 3.

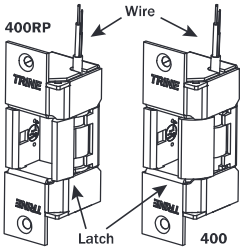


Figure 3. Position of Electric Strike for Right Hand Inswinging and Left Hand Outswinging Door

In a similar manner, the position of the Electric Strike in the door jamb will be the same for a lefthanded reverse bevel door and a right -handed door. For these installations, the Electric Strike position in the door jamb will be as shown in figure (4).

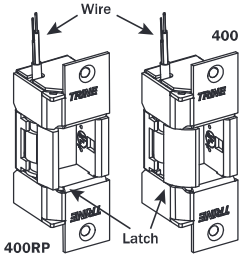


Figure 4. Position of Electric Strike for <u>Left Hand</u> Inswinging and Right Hand Outswinging Door

<u>NOTE</u>
The EN Electric Strike must be installed with coil assembly up (wiring toward top of unit). In this position, the Electric Strike will be locked without power, Fail Secure, or locked with power, Fail Safe action. Before performing Handing Procedure, view Electric Strike in up position (wire leads at top) to determine if a handing change is required.

<u>INSTALLATION PROCEDURE:</u>

- For new or replacement installation in wood or metal jambs.

1. Verify that voltage rating of Electric Strike is compatible with supply voltages of installtion. Coil voltages are color coded.

<u>WIRE LEAD</u>	<u>CODE/STRIPE</u>
12AC	Blue/Orange Stripe
12DC	2 Orange Stripe
24AC	Blue/Black Stripe
24DC	2 Black Stripe

2. Using template supplied with Electric Strike, mark door jamb for cutout and screw holes.

<u>NOTE</u>
For proper installation, center line of latches must be aligned with center line of Electric Strike.

3. Prepare door frame (cut out jamb if required) for Electric Strike. Leave sufficient space for splicing between power supply wiring and Electric Strike wiring.

4. If required, run new wiring to door frame mounting hole. See figure 10 for typical wiring installations. Refer to wiring chart below for correct wire size. (Total wiring length includes routing to door-release push button).

<u>Total Wiring Length</u>

<u>To Transformer</u>	<u>12V</u>	<u>24V</u>
Up to 50 Ft	18AWG	20AWG
50 to 150 ft	16AWG	18AWG
150 to 300 ft	14AWG	16AWG
300 to 600 ft	12AWG	14AWG

<u>NOTE</u>
For DC operation, to obtain an audible signal when Electric Strike is energized, install buzzer type BZ-12 for 12VDC operation, or BZ-24 for 24VDC operation (purchased seperately), as illustrated in figure 10. 5. Hold Electric Strike upright (wiring toward top) and determine if handing is required. If so, perform handing procedure.

6. Splice Electric Strike wiring to supply wiring. Secure with wire nuts (supplied).

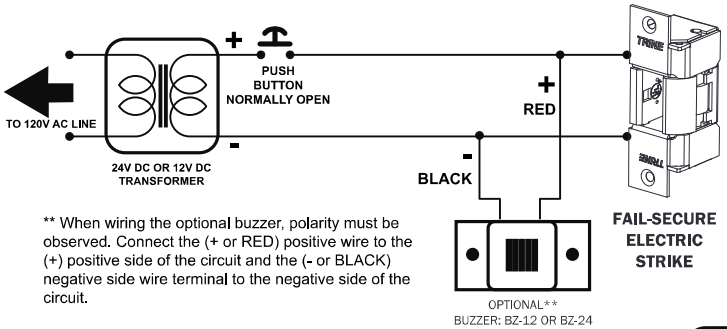
7. For wood and aluminum door jambs, drill pilot holes for securing Electric Strike to door jamb. For steel and aluminum door jambs, secure Electric Stike to existing mounting tabs.

8. Install Electric Strike into door jamb and secure with flat head mounting screws (supplied).

9. Verify that door operates correctly when Electric Strike is energized and not energized.

<u>NOTE</u>
1. Rectifier can be located either between transformer and push button, or between push button and electric strike.
2. Use either a silicon rectifier or a current regulating rectifier for converting the AC voltage at the transformer secondary to the DC for operating the electric strike.

SAMPLE WIRING DIAGRAMS FOR THE EN SERiES



** When wiring the optional buzzer, polarity must be observed. Connect the (+ or RED) positive wire to the (+) positive side of the circuit and the (- or BLACK) negative side wire terminal to the negative side of the circuit.

Figure 10a. USING DC TRANSFORMER

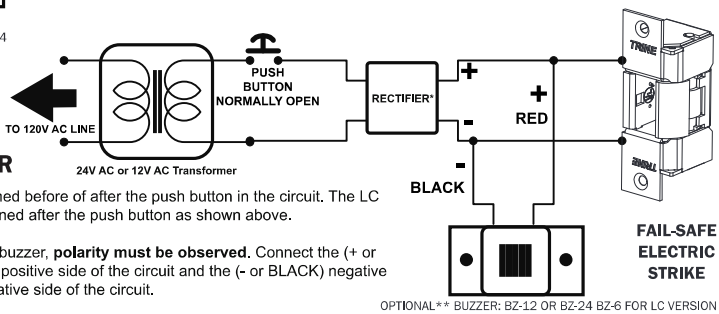


Figure 10b. USING AC TRANSFORMER

* The rectifier can be positioned before of after the push button in the circuit. The LC module can ONLY be positioned after the push button as shown above.

*** When wiring the optional buzzer, **polarity must be observed**. Connect the (+ or RED) positive wire to the (+) positive side of the circuit and the (- or BLACK) negative side wire terminal to the negative side of the circuit.

TROUBLESHOOTING

Possible Trouble	Probable Cause	Suggested Remedy
Door lockset is not secured by Electric Strike	1) Centerline of lockset is not properly aligned to the centerline of the electric strike.	Check for proper cutout installation of Electric Strike by referring to template and door frame and lockset position.
	2) Latch does not project properly into the cavity of the electric strike	Check for excessive gap between door and jamb. Check that lockset is compatible with EN series cavity and requirements. If necessary, use other type of lockset or Electric Strike (refer to Trine Catalog for more information).
	3) Latch Spring broken or missing	Hold Electric Strike so that wiring faces down and apply pressure to Latch. Verify that Latch releases and that there is sufficient Spring tension to push it to closed positionwhen released. If Latch does not have Spring tension, disassemble Electric Strike and inspect for improperly installed or broken Spring.
Electric Strike does no energize (activate)	1) Wiring to electric strike is open or shorted.	Check that electrical connections are secure and that no fraying has occurred during installation. Use voltmeter to verify that Electric Strike is receiving energizing voltage and that wiring is not shorted.
	2) Insufficient voltage to electric strike.	Verify that voltage rating on Electric Strike label is compatiblewith voltage from seconcary transformer (12V or 24V). If voltages do not match, either replace transformer or change Electric Strike or Coil Assembly. Use voltmeter to verify that Electric Strike is receiving proper voltage and that wiring is not shorted. If voltage is too low because wire size is too small for length or wiring to Electric Strike (see wiring-length data on previous page), either replace wiring or use transformer with higher VA rating.
	3) Slider does not move when coil receives proper voltage	Using an OHM meter, verify that resistance of the Coils matches the chart on page 3. If Coil is open (burned out), verify that transformer for Electric Strike has correct voltage current AC/DC and is wired correctly. AC Coils do not operate at continuous duty, or on DC voltage. Check that Slider (2) floats freely, as follows: Remove Electric Strike from jamb and hold with wires facing up. Test that Strike is locked by applying pressure to Latch. Then turn Strike upside down with wires facing down and verify that Latch opens freely by applying pressure. The locking Slider (#2) must float freely for unit to operate properly.
Electric Strike energizes but does not disengage the lockset	1) Lockset is applying pressure to electric strike, preventing latch from releasing.	Check for proper cutout installation of Electric Strike. Latch requires proper clearance to open correctly and provide path for Lockset Latch to engage Strike. Check that Lockset Latch is not binding to bottom of Strike cavity due to door sag. Check if foam insulation or the materials around door jamb are preventing door from closing flush, causing door to put pressure on Latch.

FOR ADDITIONAL INFORMATION, HELP, ACCESS TO SPECS ON A OUR FULL LINE OF PRODUCST, OR ADDITIONAL CONTACT OPTIONS PLEASE VISIT OUR WEBSITE

www.trineonline.com

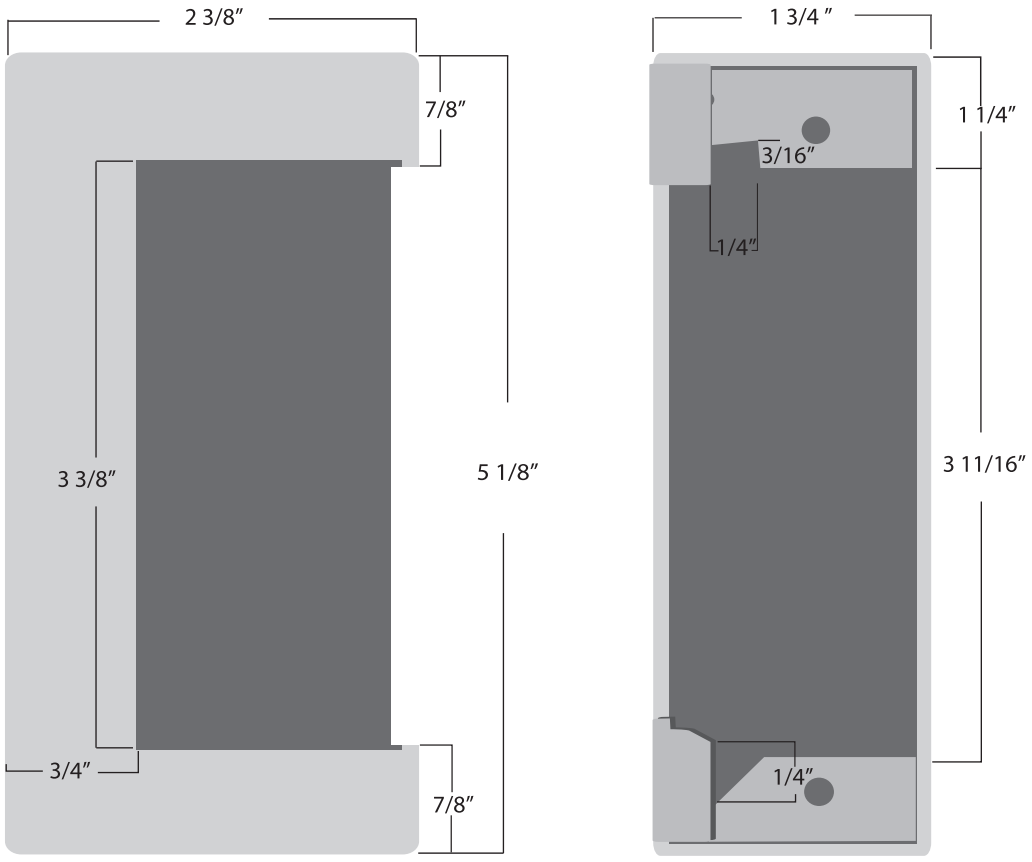
TRINE ACCESS TECHNOLOGY®

TRINE ACCESS TECHNOLOGY
1440 Ferris Place, Bronx, NY 10461-3699
PH: 718-829-2332 -- FX: 718-829-6405

AXION PREMIUM ELECTRIC STRIKES

K-BXES-EN400
Weldable Box

Type: Electric Strike
Dimensions:
2 3/8 ″W x 5 1/8″H x 1 3/4″D
Materials Available:
14 Gauge Steel.....K-BXE-EN400
Notes: Electric Strike



KEEDEX
www.keedex.com • 714-993-4300

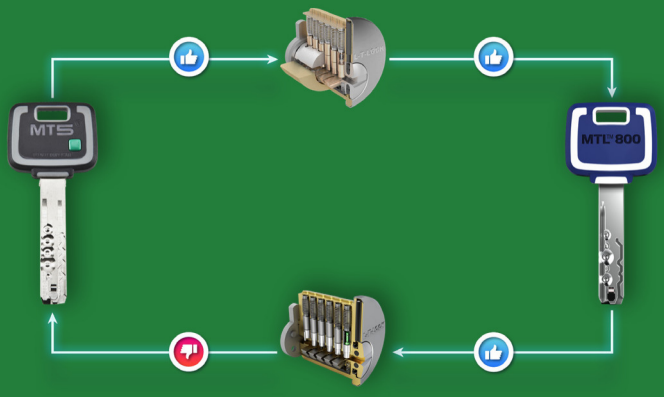
This rendering is NOT to scale and dimensions are NOT exact. For precise technical information, please refer to the template for the lock you are using.

MTL™800

Meets high international standards to offer enhanced resistance to picks, drills, bumps, and other forms of lock manipulation.

- Fully backward compatible with the previous MT5®+
- Supports large and complex master key systems
- Ability to create exclusive keyways
- Integrates with wide range of products
- Offer a variety of keying options
- The same key cutting machines, the same tooling and the same pinning kit.

  (With the exception of a change to a new Alpha Centric Pin)



* The product contains the inventions contained in MT5®/ MT5®+ products which is patent protected until 2025. In addition, patent application were filed with respect to another invention contained in this product but patents have not yet been granted as of March 2023 ("Patent Pending").


MOR0


MOR1


Mortise Cylinders

Mortise Cylinders - MTL™ 800

Item #	Description	Size
MOR0	Mortise Cylinder w/Adams Rite® Cam (4 Chamber)	1"
MOR1	Mortise Cylinder w/Yale® Standard Cam	1 1/8"
MOR2	Mortise Cylinder w/Yale® Standard Cam	1 1/4"
MOR3	Mortise Cylinder w/Yale® Standard Cam	1 3/8"
MOR4	Mortise Cylinder w/Yale® Standard Cam	1 1/2"
MOR6	Mortise Cylinder w/Yale® Standard Cam	1 3/4"
MOR8	Mortise Cylinder w/Yale® Standard Cam	2"
MORC	Mortise Cylinder (Concealed) w/Yale® Standard Cam	1 1/8"
MOGFA2_ _	Mogul for Adtec® / Folger Adam® / Southern Steel® (Specify Cam: Straight, 90° or 60°)	
MOGAT1_ _	Mogul for AirTeq® / Norment®	

Mortise Cylinders - MTL™ 600

Item #	Description	Size
MOR0	Mortise Cylinder w/Adams Rite® Cam (4 Chamber)	1"
MOR1	Mortise Cylinder w/Yale® Standard Cam	1 1/8"
MOR2	Mortise Cylinder w/Yale® Standard Cam	1 1/4"
MOR3	Mortise Cylinder w/Yale® Standard Cam	1 3/8"
MOR4	Mortise Cylinder w/Yale® Standard Cam	1 1/2"
MOR6	Mortise Cylinder w/Yale® Standard Cam	1 3/4"
MOR8	Mortise Cylinder w/Yale® Standard Cam	2"
MORC	Mortise Cylinder (Concealed) w/Yale® Standard Cam	1 1/8"
MOGFA2_ _	Mogul for Adtec® / Folger Adam® / Southern Steel® (Specify Cam: Straight, 90° or 60°)	
MOGAT1_ _	Mogul for AirTeq® / Norment®	

HOW TO ORDER:

See page 53 for further details

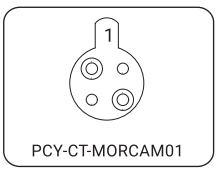
MTL™800 | MTL™600 | MTL™400

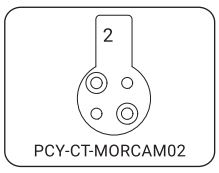
Mortise Cylinder Cams

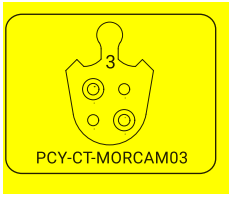
Part #	Description
PCY-CT-MORCAM01	Cam for Mortise Cylinder Adams Rite® Type
PCY-CT-MORCAM02	Cam for Mortise Cylinder Yale® Standard Type
PCY-CT-MORCAM03	Cam for Mortise Cylinder Russwin® Clover Type
PCY-CT-MORCAM04+	Cam for Mortise Cylinder Falcon® Type
PCY-CT-MORCAM05	Cam for Mortise Cylinder Lockwood® Type
PCY-CT-MORCAM07	Cam for Mortise Cylinder Schlage® "L" Type
PCY-CT-MORCAM08	Cam for Mortise Cylinder Sargent® Off-Set Type
PCY-CT-MORCAM10	Cam for Mortise Cylinder Corbin® Jumbo Type
PCY-CT-MORCAM11	Cam for Mortise Cylinder Baldwin® Type
PCY-CT-MORCAM12	Cam for Mortise Cylinder Yale® Type
PCY-CT-MORCAM13	Cam for Mortise Cylinder Marks® Type
PCY-CT-MORCAM15	Cam for Mortise Cylinder Vingcard® Type
PCY-CT-MORCAM16	Cam for Mortise Cylinder Yale® A-04Type
PCY-CT-MORCAM17	Cam for Mortise Cylinder Yale® 2160 Type
PCY-CT-MORCAM18	Cam for Mortise Cylinder Alarm Lock® Type
PCY-CT-MORCAM44	Cam for Mortise Cylinder Falcon® Type - Old Cam #4
PCY-CT-MORCAM-DBL	Double Layer Cam For Mortise Cylinders - kit of cam and plug screws

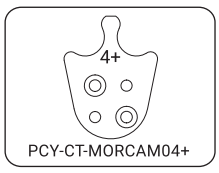
Security Rings for Mortise and Rim Cylinders

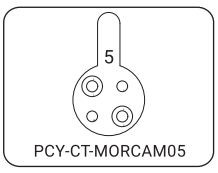
Part #	Description
PCY-SR-MOR01-_ _	Security Ring for Mortise and Rim Cylinder (5.7mm (.22") Length)
PCY-SR-MOR02-_ _	Security Ring for Mortise and Rim Cylinder (8.9mm (.35") Length)
PCY-SR-MOR03-_ _	Security Ring for Mortise and Rim Cylinder (12.2mm (.48") Length)

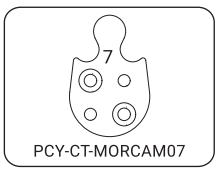


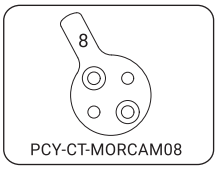


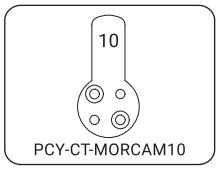


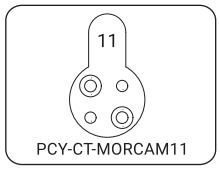


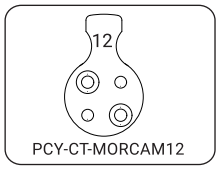


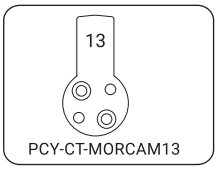


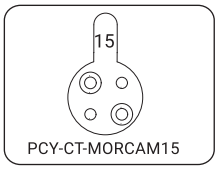


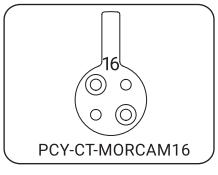


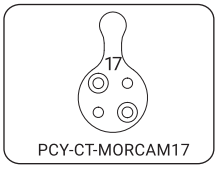


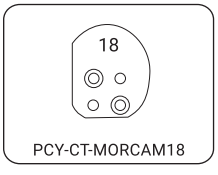


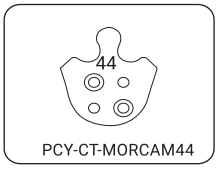


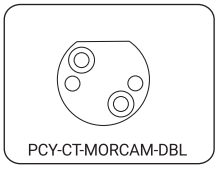












MTL™800 | MTL™600 | MTL™400

Turnknob Cylinders

Lead time 4 weeks unless listed below.

Stock List

7151TK2-26D
7161TK1-03
7161TK2-03
7161TK2-26D
7161TK2-46
7181TK1-03
7181TK1-26D
7181TK2-26D
7181TK1-46
7201TK1-26D

Standard Turnknob

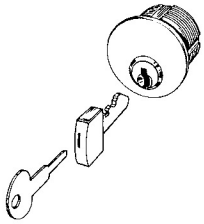
- 10 lengths
- 16 cams (See page 7)

Model	Length		Available Finishes	Sugg. List
7151	15/16"	(23.8 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	12.45
7161	1"	(25.4 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	12.45
7181	1 1/8"	(28.6 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	12.45
7201	1 1/4"	(31.7 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	12.45
7221	1 3/8	(34.9 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	27.85
7241	1 1/2"	(38.1 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	28.35
7261	1 5/8"	(41.2 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	28.95
7281	1 3/4"	(44.4 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	29.50
7301	1 7/8"	(47.6 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	30.10
7321	2"	(50.8 mm)	03, 04, 05, 10, 10B, 26, 26D, 28, 29, 46	30.60

Classroom Function

Model	Length		Available Finishes	Sugg. List
4135	15/16"	(23.8 mm)	03, 13, 26D, 29	14.40
4136	1"	(25.4 mm)	03, 13, 26D, 29	15.10
4137	1 1/8"	(28.6 mm)	03, 13, 26D, 29	15.80
4138	1 1/4"	(31. 7 mm)	03, 13, 26D, 29	16.50

Captive Turnknob



- 2 finishes (03, 26D)
- One turnknob key and one conventional key per cylinder. Choose from Schlage C or Weiser keys.

Model	Length		Description	Sugg. List
41651	15/16"	(23.8 mm)	(for use with 4900)	26.40
41671	1 1/8"	(28.6 mm)	(for use with 4500)	26.40

Replacement Keys for Captive Turnknob

Model	Description	Sugg. List
4165-XX-5001	Captive thumbturn key blank	17.75
4165-XX-5002	Captive thumbturn cut key	21.75
4165-82-2001	Flat steel thumbturn key	1.55

"XX" indicates finish. Specify 03 or 26D

ADA Turnknob

- 10 lengths
- 16 cams (See page 7)

Model	Length		Available Finishes	Sugg. List
ADA7151	15/16"	(23.8 mm)	03, 26D, 10B	16.80
ADA7161	1"	(25.4 mm)	03, 26D, 10B	16.80
ADA7181	1 1/8"	(28.6 mm)	03, 26D, 10B	16.80
ADA7201	1 1/4"	(31.7 mm)	03, 26D, 10B	16.80
ADA7221	1 3/8	(34.9 mm)	03, 26D, 10B	27.85
ADA7241	1 1/2"	(38.1 mm)	03, 26D, 10B	28.35
ADA7261	1 5/8"	(41.2 mm)	03, 26D, 10B	28.95
ADA7281	1 3/4"	(44.4 mm)	03, 26D, 10B	29.50
ADA7301	1 7/8"	(47.6 mm)	03, 26D, 10B	30.10
ADA7321	2"	(50.8 mm)	03, 26D, 10B	30.60

Complete stock list shown on page 24.

See Availability Chart (pg. 22 & 23) for additional details.
Pricing is for standard keying. See pages 6 & 7 for additional ordering and pricing details that may apply.

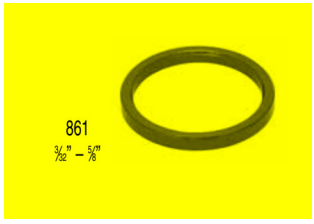
Stock Adjustable Spring Collars

Product No.	Description	Adjustment	Sugg. List
861A-03-10	Bright Brass, Solid Brass	5/16"-13/32" (7.9 mm-20.6 mm)	6.10
861A-26D-10	Satin Chrome, Solid Brass	5/16"-13/32" (7.9 mm-20.6 mm)	6.10
861A-26-10	Bright Chrome, Solid Brass	5/16"-13/32" (7.9 mm-20.6 mm)	6.10
861V-XX-10	Steel	7/64"-1/4" (2.8 mm-6.35 mm)	6.10

(Replace "XX" with finish 03, 10B, 26D, 26.)

Stock Tapered Collars

Product No.	Description	Projection	Head Recess	Sugg. List
861B-03-10	Bright Brass Hardened Steel Collar	7/16"	1/4"	6.50
861B-26D-10	Satin Chrome Hardened Steel Collar	7/16"	1/4"	6.50
861B-46-10	Duracolor Hardened Steel Collar	7/16"	1/4"	6.50



Stock Solid Collars

(Replace "XX" with finish 03, 04, 10, 10B, 26, 26D, 28, 29 or 46.)

Product No.	Description	Thickness	Sugg. List
861C-XX-10	Aluminum Collar	3/32" (2.4 mm)	2.10
861D-XX-10	Aluminum Collar	1/8" (3.2 mm)	2.10
861E-XX-10	Aluminum Collar	5/32" (4.0 mm)	2.10
861K-XX-10	Aluminum Collar	3/16" (4.8 mm)	2.10
861L-XX-10	Aluminum Collar	7/32" (5.6 mm)	2.10
861F-XX-10	Aluminum Collar	1/4" (6.4 mm)	2.10
861M-XX-10	Aluminum Collar	9/32" (7.1 mm)	2.20
861N-XX-10	Aluminum Collar	5/16" (7.9 mm)	2.20
861P-XX-10	Aluminum Collar	11/32" (8.7 mm)	2.20
861Q-XX-10	Aluminum Collar	3/8" (9.5 mm)	2.50
861R-XX-10	Aluminum Collar	1/2" (12.7 mm)	2.50
861T-XX-10	Aluminum Collar	5/8" (15.9 mm)	2.50
861K-00-10	Grey Vinyl Collar	3/16" (4.8 mm)	2.50

Stock Miscellaneous Parts

Product No.	Description	Sugg. List
869-00-10	Cash Box Nut - Fits thread on Standard Mortise Cylinder	3.50
866B-00-100	Mortise Cam Screws, (Bag of 100) 3 x 48 self tapping	7.45
704-04-11	Standard Throw Turn Knob Disc, 3/16" (4.8 mm) Sq. Hub	18.85
705-04-11	Long Throw Turn Knob Disc, 3/16" (4.8 mm) Sq. Hub	18.85

ILCO BUMP HALT™

Bump Halt Kit

Product No.	Description	Sugg. List
7000BH-00-10	Bump resistance Kit includes 10 pins and 10 springs for Mortise and Rim Cylinders	12.10

EntryCheck™ Heavy Duty Keypads

SDC designed manufactured

The SDC EntryCheck™ series consists of stand alone digital keypads designed to control access of a single entry point for facilities with up to 500 users. Each user is assigned a personal identification number (PIN). Keypad entry of a valid one to six digit code activates one or both of the output relays which releases an electric door lock. Optional Prox Readers are available for selective models

918 EntryCheck®
Vandal Resistant,
Thick S. S. Faceplate

920 EntryCheck®
Vandal Resistant,
Surface Mount

920P EntryCheck®
Vandal Resistant,
with Prox Reader

923 EntryCheck®
Narrow, Surface Mount

923P EntryCheck®
Narrow with Prox Reader

921P & 924P EntryCheck®
Vandal Resistant, with Prox Reader,
2 piece Configuration

EntryCheck® Features

- Weather Resistant
- Heavy Cast Vandal Resistant Housing
- Heavy Cast Metal Blue Backlit Keys
- Keypad programmable
- 500 Users, 4-6 digit PIN codes
- 4 outputs, 2 relay and 2 solid state outputs timed or latching (on/off)
- Assign entry PIN's to relays 1 and/or 2
- LED Status: Access, lockout
- Tactile keys with loudness selectable audible volume for key depression or output activation
- Timed anti-passback, anti-tailgate
- Keypad tamper lockout
- Request-to-Exit/Enter input
- Choice of door sense/relay inhibit input functions
  - Forced entry
  - Door ajar
  - Inhibit relay 1 or 2
  - Auto relock when door closes
- Choice of 2 solid states outputs functions:
  - Alarm shunt
  - Forced entry
  - Door ajar
  - Tamper lockout
  - Keypad active

PROX Only:
3 User Modes:

- PIN or Card
- Card Only
- Card and PIN

EntryCheck® Specifications

Voltage	12/24 VAC/DC
Current	30mA typical, 150mA maximum
Outputs	Relay 1 - SPDT 5 Amps @ 30VDC Relay 2 - SPDT 2 Amps @ 30VDC Switch to Common Outputs 3 & 4 – 100mA @ 30VDC
Temperature	-22°F to + 149°F (-30°C to + 65°C)
Humidity	5% to 95% non-condensing
Finish	920/920P Powder Coat Painted

Accessories - Access Credentials

HID1326-25	HID ProxCard® II, 25 cards
HID1326-100	HID ProxCard® II, 100 cards
HID1346-10	HID ProxKey® II, 10 key fobs
HID1346-100	HID ProxKey® II, 100 key fobs

923

Indoor/Outdoor Stand-Alone Narrow Keypad, Surface Mount

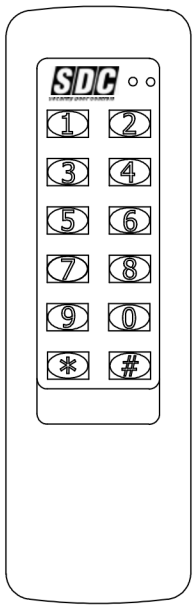
Dimensions:
1.75"W x 7-5/16"H x 1-3/8"D
(1.5" wall projection)

923

923P with Prox Reader

SDC Security Door Controls

801 Avenida Acaso, Camarillo, Ca. 93012 • (805) 494-0622 •
www.sdcsecurity.com • E-mail: service@sdcsecurity.com



INSTALLATION INSTRUCTIONS
923 *EntryCheck* ™

The 923 Indoor/Outdoor Keypad Surface Mount *EntryCheck*™ is a digital keyless entry system designed for access control applications. The keypad is integrated in a heavy cast vandal resistant housing, designed to be mounted on a rugged, surface mounting plate and may be mounted in a standard single-gang electrical box. The indoor/outdoor backlit keys have bright, easy-to-read graphics.

Up to 500 entry codes, from 1 to 6 digits in length, can be programmed. They can activate either, or both of the relay outputs. The “anti-passback” feature prevents using the same code again before the programmed time elapses.

All system indicators are long-lasting, solid state LEDs. Two indicators show the status of the entry system. The left indicator lights red to indicate power, then turns green when access is granted. The right yellow LED flashes when the keypad is in programming mode. An internal sounder beeps when each key is pressed. An internal jumper sets the sounder volume high or low

The **SENSE** input can be used two ways. If programmed for “door sense” the input is wired to a normally closed switch on the door to detect when the door is opened or closed. Forced entry or door ajar situations can then be detected. Using door sense, the “Auto-relock” feature will prevent “tailgating” by turning off the Main Relay output immediately when the door is closed after access has been granted. If the **SENSE** input is programmed for “inhibit”, the input can be wired to a “service” switch or automatic timer that will disable the Main Relay when required.

The **REQUEST-TO-EXIT** input can be wired to a pushbutton to provide codeless activation of Main Relay, Auxiliary Relay, Output #3 or Output #4 (programmable).

The **ALARM SHUNT** output activates when access is granted. This output can be wired to shunt alarm contacts on the access door/gate to prevent triggering of an alarm when authorized access occurs.

The 923 *EntryCheck*™ is powered from a 12-24V AC or DC source. The EEPROM memory retains all entry codes and programming, even without power. An internal jumper is provided to reset the master code. The Main Relay has a 5 Amp capacity. The Auxiliary Relay has a 2 Amp capacity. Two solid state outputs, capable of switching 100 mA to common, are programmable to signal forced entry, door ajar, lockout, alarm circuit shunting, request-to-exit, and keypad active conditions.

Features

- Keypad programmable
- 500 user codes
- 4 to 6 digit user codes
- 4 independent outputs
- 4 independent timers
- 2 Form C relay contacts
- 2 solid state open collector outputs
- Program entry codes to activate one or two relays
- Disable input
- Door sense input
- Request-to-exit/enter input
- Keypad tamper lockout
- Timed anti-passback
- Anti-tailgate
- Two LED status indicators
- Tactile key feel
- Audible code entry verification
- 12 or 24V, AC or DC operation

SPECIFICATIONS

Mechanical
Dimensions: 1.750" W x 7.3125" H x 1.375" D
(1.4375” wall projection)

Electrical
Input Voltage: 12-24 Volts AC or DC
Operating Current: 30 mA typical, 150 mA max

Output Ratings
Main Relay: Form “C” 5 Amps @ 28 Volts max
Auxiliary Relay: Form “C” 2 Amp @ 28 Volts max
Type: Solid state outputs (Outputs #3 & #4)
Short-to-common 100 mA @ 24 VDC maximum

Environmental
Temperature: -22°F to 149°F (-30°C to 65°C)
Humidity: 5% to 95% non-condensing

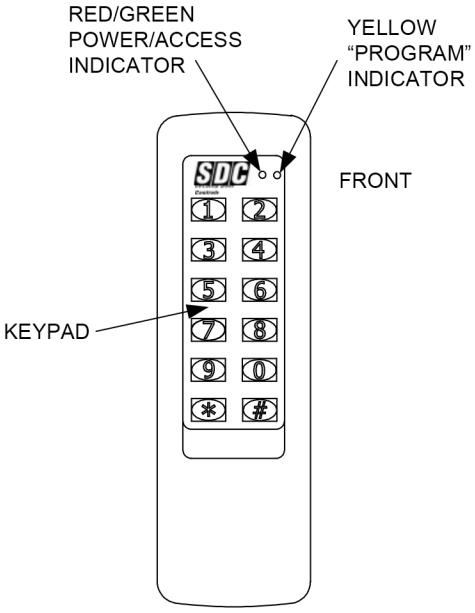
Any suggestions or comments to this instruction or product are welcome. Please contact us through our website or email engineer@sdcsecurity.com

QuickStart Programming

You must first enter programming mode to perform any function. The yellow indicator will blink slowly showing that the 923 EntryCheck™ is in programming mode. Use the option codes to program each function. After the new data entry is complete for each function , the yellow indicator will flash quickly while the data is being stored and the green indicator will light briefly if the programming has been accepted. The red indicator will light if any programming data is entered incorrectly or the function is rejected. If a red indicator is seen, the entire function (option code + data) will have to be fully re-entered.The keypad will remain in programming mode until ** # is pressed or after 30 seconds of inactivity.

Set default parameters (first time use)

Step 1. Enter: **#9# 123456#**	Enter the program mode (default master code)
Step 2. Enter: **03# 4#**	Set the entry code length to 4 digits
Step 3. Enter: **21# 5#**	Set the main relay activation time for 5 sec.
Step 4. Enter: ** #	Exit programming mode



Assign a user code

Step 1. Enter: **#9# 123456#**	Enter the program mode (default master code)
Step 2. Enter: **01# 002# 2580# 2580# 1#**	Assign User 002 with a PIN code of '2580'. Activate the main relay when entered.
Step 3. Enter: ** #	Exit programming mode

Test your new user

Enter PIN code '2580#'. The green indicator should illuminate and the main relay should activate, unlocking the door for 5 seconds.

Adding additional user codes

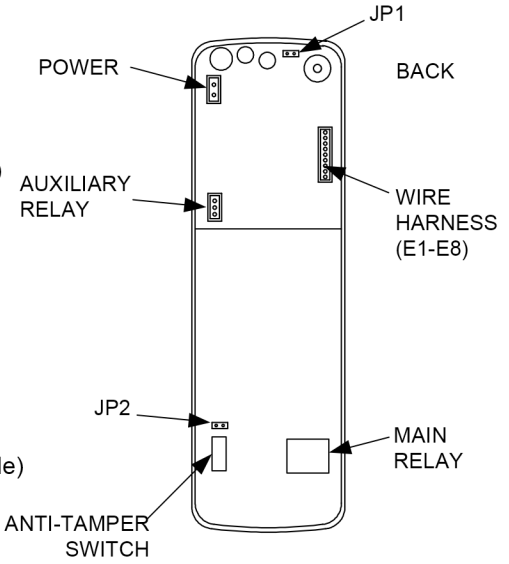
Once the code length and relay time has been set you do not need to set them again for additional users.

To add additional users:

Step 1. Enter: **#9# 123456#**	Enter the program mode (default master code)
Step 2. Enter: **01# 003# 2222# 2222# 1#**	User 003 has been created with a PIN code of '2222#' to activate the main relay

Step 3. Repeat Step 2 to enter another unique User # & PIN code OR skip to Step 4.

Step 4. Enter: ** #	Exit programming mode



Deleting a user code

Step 1. Enter: **#9# 123456#**	Enter the program mode (default master code)
Step 2. Enter: **02# 002# 002#**	User 2 has been deleted.
Step 3. Enter: ** #	Exit programming mode

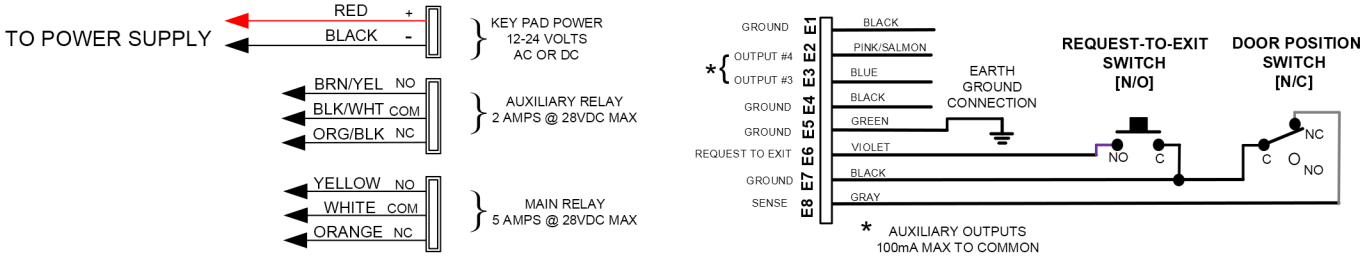


Fig. 2 Wiring Pigtail Color Code

CAUTION

IF THE UNIT IS AC POWERED, MAKE SURE THAT THE SECONDARY OF THE SYSTEM IS ISOLATED FROM EARTH GROUND

KEYPAD WIRING

See Fig. 3 for an example of a basic door installation. The keypad is mounted adjacent to the door. An electric door strike is mounted in the door jamb to release the door lock. A magnetic switch is mounted on top of the door jamb for detecting when the door is open.

Use the following steps to wire the keypad. Refer to the wiring diagram shown in Fig. 4 to assist in the wiring.

Note: Up to 500 feet of 18 AWG wire can be run for power, use larger wire for longer runs. Use 22 AWG or larger (depending on load) for other connections.

Output Connection

Install a low voltage fail secure (power to unlock) electric door strike at the door to be controlled. Route two wires from the door strike to the keypad. Connect a MOV or varistor across the coil wires of the strike. Connect the (+) door strike wire to the keypad's MAIN RELAY N.O wire (yellow). Connect the other door strike wire to the keypad's PWR(-) wire (black). Connect the keypad's MAIN RELAY COM wire (white), to the keypad's PWR(+) wire (red) .

Power Connection

Choose a location for the DC power supply or AC transformer. Route two wires between the door strike and the keypad . Connect the power supply's output terminals to the keypad's PWR(+) wire (red) and PWR(-) wire (black). If using a DC supply, Observe wiring polarity. If an AC transformer is being used, polarity does not mater.

Caution: If the unit is AC powered, make sure the secondary of the system transformer is isolated from earth ground.

Earth Ground

To avoid damage to the unit from static discharges, connect the earth ground wire (green/E5) to a good earth grounding point. Suggested wiring size is 18 AWG for earth ground.

Sense Input

RE *Note: The SENSE input (gray wire) can be programmed as either a door sense or inhibit input. Both features cannot be used at the same time. If you are not using the sense input, program this input for inhibit.*

Door Sense: (Detect forced entry or door ajar conditions) Install a *normally closed* door switch on the door and route two wires from the switch to the keypad. Connect the door switch to the keypad's SENSE wire (gray/ E8) and COM wire (any black wire).

Inhibit: (Disable access) If an inhibit switch or timer is going to be used for temporarily disabling the keypad, route two wires from the switch or timer to the keypad. Connect the inhibit switch/timer's *normally open* contacts to the keypad's SENSE (gray/ E8) and COM (black wires) terminal.

Request-to-Exit Input *(Refer to fig. 4)*

If a request-to-exit pushbutton is going to be used, route two wires from the keypad box to a normally open pushbutton mounted on the secure side of the door. Connect the wires to the pushbutton and to the keypad's REX wire (violet/ E6) and COM (black wires) terminals.

Solid State Outputs

The two solid state outputs (Outputs #3 & #4) can be programmed to activate during various conditions. These "open collector" outputs can be used to activate indicators or sounders. See fig. 5 for wiring examples using the solid state outputs.

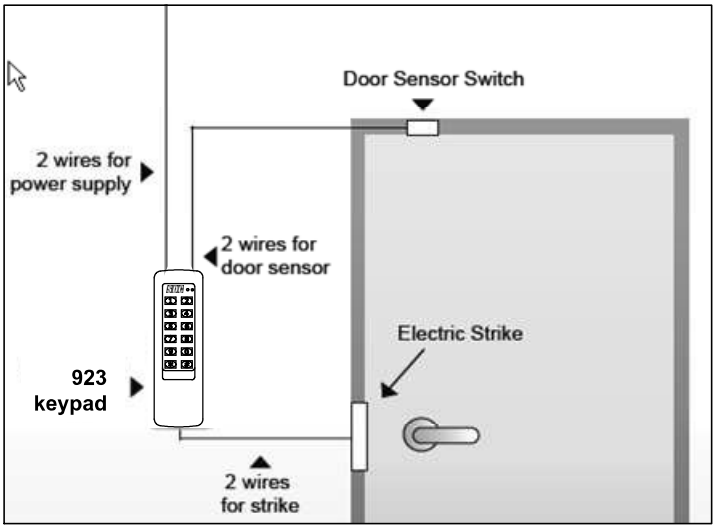


Fig. 3 Basic Door Installation

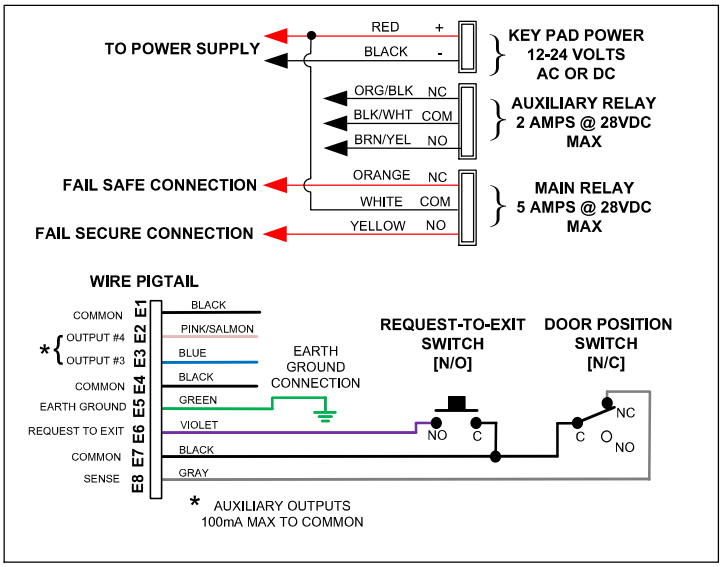


Fig. 4 Basic Door Installation Wiring

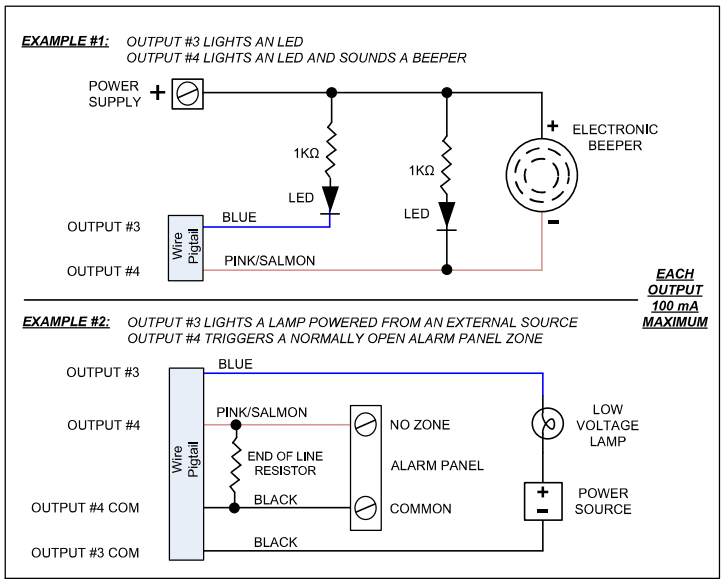


Fig. 5 Using Solid State Outputs

FACTORY DEFAULTS

Master Programming Code……..123456
Entry Code Length……..4 digits
Request-to-exit Output Relay……..Main Relay
Alarm Shunt Output……..Disabled
Forced Entry Output……..No Output
Door Ajar Output……..No Output
Main Relay On Time……..02 Seconds
Auxiliary Relay On Time……..02 Seconds
Solid State Output #3 On Time……..02 Seconds
Solid State Output #4 On Time……..02 Seconds
Door Sense/Inhibit Input……..Door Sense
Keypad Lockout Output……..Disabled
Keypad Active Output……..Disabled
Beeper Sounds When Key Pressed……..Yes
Beeper Sounds During Relay #1……..No
Beeper Sounds During Relay #2……..No
Beeper Sounds During Output #3……..No
Beeper Sounds During Output #4……..No
Keypad Lockout Count……..3 Tries Before Lockout
Anti-Passback Time……..No Anti-Passback
Auto-Relock……..On

BASIC PROGRAMMING

When the 923 EntryCheck™ is in Programming Mode the yellow indicator will blink slowly. After a programming command is selected, the yellow indicator will flash rapidly while the keypad is waiting for user input data. The green indicator will light if the data is accepted. The red indicator will light if any programming data is entered incorrectly, and the command will have to be fully re-entered.

Entering Programming Mode

The 6-digit Master Programming Code (default = 123456) is used to enter Programming Mode.

Press: # 9 # Master Code #

Master Code = the current 6-digit Master Programming Code

Exiting Programming Mode

Press: **#

The red indicator will light after exiting Programming Mode

Note: *The 923 will automatically exit Programming Mode after 30 seconds of inactivity*

Re-entering a Command After a Mistake

If the red indicator lights, signaling an incorrect entry, or an incorrect key is pressed during programming, to clear the keypad and re-enter the command:

Press: * 9 #

Setting Entry Code Length — Default: 4 digits

Press: 0 3 # *Length* #

Length = 4-6 for entry code length

Note: *If the Entry Code Length is going to be changed from the factory default of 4 digits, make this change first before programming any entry codes.*

Adding a New Entry Code

Press: 0 1 # User # *Code* # *Code* # *Relay* #

User = User number to be added (001-500). Must be unique.
Code*=The new entry code: 1-999999, depending on code length*
Relay*=Relay output entry code will activate:*
1=Main Relay 2=Auxiliary Relay 3=Both Relays
10=Relay #1, toggled 20=Relay #2, toggled 30=both Relays toggled
12=Relay #1 toggled; Relay #2 timed open
21=Relay #1 timed open; Relay #2 toggled

The yellow indicator will flash quickly while the 923 stores the new user information in memory The green indicator will light when the new user is accepted. If the user number already exists or an entry error has been made, the red indicator will light. Delete the user and re-enter the new information again.

Note: *Leading zeros (zeros before the Code number, i.e.0001) do not need to be entered when programming a new code. The 923 will internally add any zeros to fill digits determined by the entry code length setting. Leading zeros will have to be entered by the user when entering their code to gain access.*

Erasing a Single Entry Code

Press: 0 2 # User # User #

User=The user ID to delete

The yellow indicator will flash quickly while the 923 searches its memory for the User to erase. The green indicator will light when the code is erased.

Erasing All Users

WARNING: PERFORMING THIS COMMAND WILL REMOVE ALL USERS FROM THE MEMORY

Press: 9 7 # 0 0 0 0 0 0 # 0 0 0 0 0 0 #

Note: *The green indicator will light while the memory is being erased. This may take up to 15 seconds.*

Changing the 6-Digit Master Programming Code

Press: 9 8 # *Master Code* # *Master Code* #

Master Code=The new 6-digit Master Programming Code

New master code: _____

PROGRAMMING OPTIONS

There are several 923 EntryCheck™ programming options. For most installations, the factory set default options are sufficient. The keypad must be in Programming Mode to make these changes.

Programming the 923 To Hold the Output

SDC's EntryCheck™ products have a programmable "Toggle Mode" available for each relay and solid-state output. When an output is programmed for Toggle Mode, the output alternates from OFF to ON or from ON to OFF each time it is activated. When output is toggled on, the green LED remains solid until toggled off.

The rules for a toggle output are:

- *If the output is OFF, it will turn ON and stay on until the next activation.*
- *If the output is ON, it will turn OFF and stay off until the next activation.*
- *An authorized PIN, Card, or REX input programmed to momentarily activate that same relay will reset the relay to its normal state.*

(Typical Programming cont.)

Program all normal entry codes to use the Main Relay (Relay #1), and only Relay #1 as the output relay. Program the code(s) that you want to use to hold the output for an indefinite period to the Auxiliary Relay (Relay #2). See the following example that sets entry codes 1234 for normal and 5678 for toggle operation.

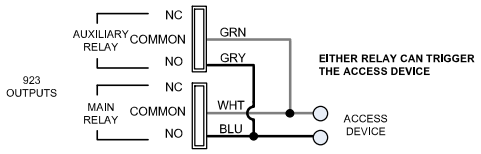
Press: 0 1 # 1 2 3 4 # 1 2 3 4 # 1 #
01=Programming Step; 1234=Entry Code; 1=Main Relay

Press: 0 1 # 5 6 7 8 # 5 6 7 8 # 20 #
01=Programming Step; 5678=Entry Code; 20=Auxiliary Relay toggle

---

Typical Toggle Mode Wiring

For devices triggered by a normally open circuit, wire the contacts of the Main and Auxiliary Relays in parallel (see the Figure below). Either relay will be able to trigger the access device. Entry codes programmed for the Auxiliary Relay will be able to hold the output on.



Select Door Sense or Inhibit Input **Default: Door Sense**

The Sense Input (gray wire) can be programmed for either DOOR SENSE or INHIBIT.

Press: 1 0 # Input #
Input=0 for Door Sense; =1 for Inhibit

When programmed for DOOR SENSE, if an open condition on the input occurs before access is granted (with an entry code or with the request-to-enter input) a FORCED ENTRY output will occur. If an open condition remains 60 seconds after a relay activation for access, a DOOR AJAR output will occur.

When programmed for INHIBIT, a closed condition on the input will prevent Relay #1 from activating when access is requested with an entry code. This mode is typically used with an external timer to disable the access device at certain times.

Select Forced Entry Output **Default: No Output**

Sets which output activates if the DOOR SENSE input opens before access is granted. This output is timed and configured by the relay "On-time".

Press: 1 1 # Output #
Output=Output to Activate(0-4)
1=Main Relay; 2=Auxiliary Relay; 3=Output #3; 4=Output #4; 0=No Output

---

Select Door Ajar Output **Default: No Output**

Sets which output activates if the DOOR SENSE input stays open 60 seconds after access is granted (door ajar time is adjustable using Function 25). This output is not timed.

Press: 1 2 # Output #
Output=Output to Activate (0-4)
1=Main Relay; 2=Auxiliary Relay; 3=Output #3; 4=Output #4; 0=No Output

---

Select Keypad Lockout Output **Default: No Output**

Sets which output activates when the keypad is "locked out" after too many incorrect entry code attempts. The lockout time is 60 seconds.

Press: 1 3 # *Output* #
Output=Output to Activate (0-4)
1=Main Relay; 2 = Auxiliary Relay; 3=Output #3; 4=Output #4; 0=No Output

---

Select Keypad Active Output **Default: No Output**

Sets which output activates when any keys are pressed. This output is timed. If toggle mode is selected for the output, the timer value defaults to 2 seconds.

Press: 1 4 # *Output* #
Output=Output to Activate(0-4)
1=Main Relay; 2=Auxiliary Relay; 3=Output #3; 4=Output #4; 0=No Output

---

Select Alarm Shunt Output **Default: No Output**

Sets which output activates during the time access is granted. (Use this output ot shunt alarm contacts attached to the access door.) This output may be timed or toggled.

Press: 1 5 # *Output* #
Output=Output to Activate(0-4)
1=Main Relay; 2=Auxiliary Relay; 3=Output #3; 4=Output #4; 0=No Output

---

Select Request-to-Exit Output **Default: No Output**

Sets which output activates when the Request-to-Exit input is grounded. This output may be timed or toggled.

Press: 1 6 # *Output* #
Output=Output to Activate(0-4)
1=Main Relay; 2=Auxiliary Relay; 3=Output #3; 4=Output #4; 0=No Output
REX input terminates toggle of Main or Aux. Relay

Anti-Tamper Output **Default: No Output**

Sets which output activates when the Anti Tamper switch on the back of the keypad is activated.

Press: 17 # *Output* #
Output=Output to Activate(0-4)
0=No Output; 2=Auxiliary Relay; 3=Output #3; 4=Output #4;

Main Relay On-time **Default: 02 Seconds**

Sets the length of time the Main Relay activates when triggered. Green LED is on when Main Relay is active.

Press: 2 1 # *Seconds* #
Seconds=Output time in seconds (0-60)

Auxiliary Relay On-time **Default: 02 Seconds**

Sets the length of time the Auxiliary Relay activates when triggered.

Press: 2 2 # *Seconds* #
Seconds=Output time in seconds (0-60)

Solid-state Output #3 On-time **Default: 02 Seconds**

Sets the length of time Output #3 activates when triggered.

Press: 2 3 # *Seconds* #

Seconds=Output time in seconds (0-60), 99=Toggle Mode

Solid-state Output #4 On-time **Default: 02 Seconds**

Sets the length of time Output #4 activates when triggered.

Press: 2 4 # *Seconds* #

Seconds=Output time in seconds (0-60), 99=Toggle Mode

Door Ajar Timer **Default: 60 Seconds**

Sets the amount of time the door may be held open after an authorized access. The DOOR AJAR output will activate after the time expires.

Press: 25 # *Seconds* #

Seconds=Held open time in seconds (1-60)

Beep Sounds on Keystrokes **Default: Yes**

Selects whether or not the keypad beeps as each key is pressed.

Press: 4 0 # *Sound* #

Sound=1 for Yes, =0 for No

Beep Sounds During Main Relay **Default: No**

Selects whether or not the keypad beeps during Main Relay activation.

Press: 4 1 # *Sound* #

Sound=1 for Yes, =0 for No

Beep Sounds During Auxiliary Relay **Default: No**

Selects whether or not the keypad beeps during Auxiliary Relay activation.

Press: 4 2 # *Sound* #

Sound=1 for Yes, =0 for No

Beep Sounds During Output #3 **Default: No**

Selects whether or not the keypad beeps during Output #3 activation.

Press: 4 3 # *Sound* #

Sound=1 for Yes, =0 for No

Beep Sounds During Output #4 **Default: No**

Selects whether or not the keypad beeps during Output #4 activation.

Press: 4 4 # *Sound* #

Sound=1 for Yes, =0 for No

Keypad Lockout Count **Default: 3 Tries**

Sets the number or incorrect entry code attempts allowed before the keypad "locks out".

Press: 5 0 # Attempts #

Attempts=Number of attempts before lockout (2-7)

Anti-Pass Back Time **Default: No Anti-Pass Back**

Sets the length of time an entry code will not function after it is used.

Press: 5 1 # Minutes #

Minutes=Time in minutes (1-4), 0=No Anti-passback

Selects mode for Keypad LED Backlight **Default: 30 Seconds**

Selects whether or not the keypad back light stays OFF, lights for 30 seconds when activated or stays ON.

Press: 52 # Output #

0 = Light always OFF
1 = 30 sec light when activated (default)
2 = Light always ON

Changing the Beeper Sound Level

The Keypad's beeper can be set to high or low level. Remove jumper JP1 to reduce beeper sound level.

RESETTING KEYPAD

Master Reset

CAUTION: Performing a master reset will clear the entire memory of the 923 and return all programmable options to the factory default values. ALL ENTRY CODES WILL BE ERASED. NOTE: The Master Code will NOT be reset.

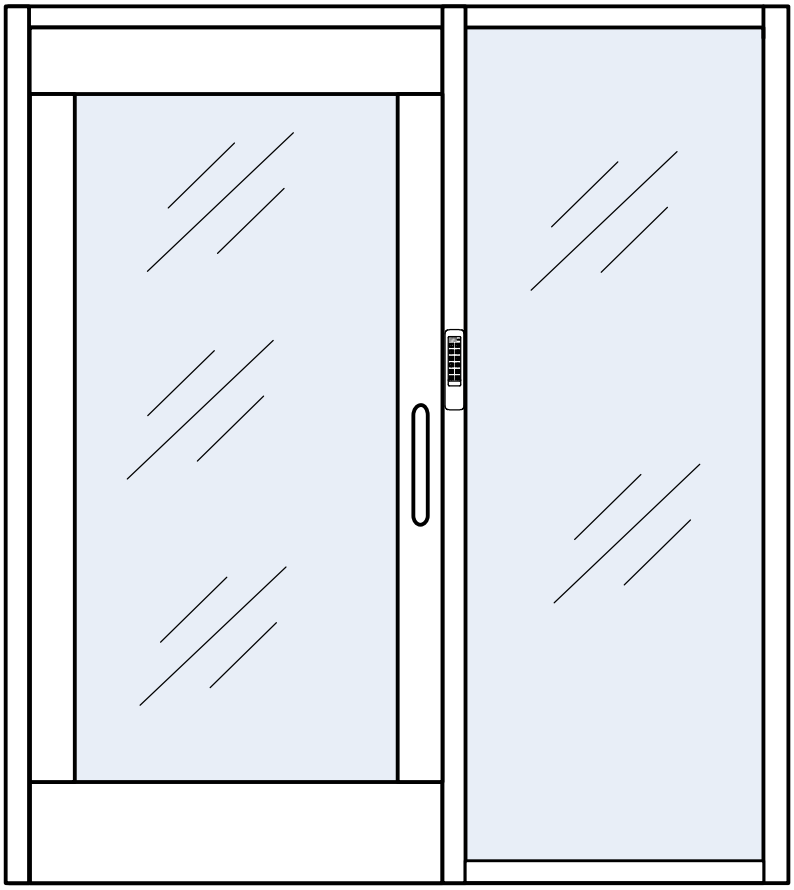
STEP 1 Disconnect power from the keypad.
STEP 2 Press and hold down the * and # keys.
STEP 3 Apply power to the keypad, continue holding the keys down until the red indicator starts flashing
STEP 4 Release the keys. The red and yellow indicators will remain lit until the process is complete, then the yellow indicator will go out.

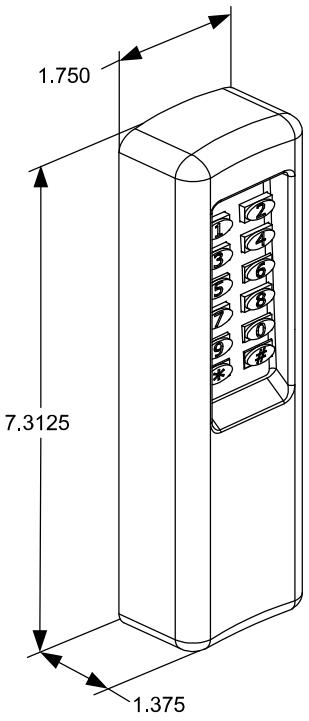
Resetting the Master Code

STEP 1 Remove the 923 from the wall and disconnect power from the keypad.
STEP 2 Locate & Remove jumper at JP2. Reference page 2.
STEP 3 Re-apply power. You will get a single beep and the yellow LED will flash momentarily.
STEP 4 Replace jumper on JP2.

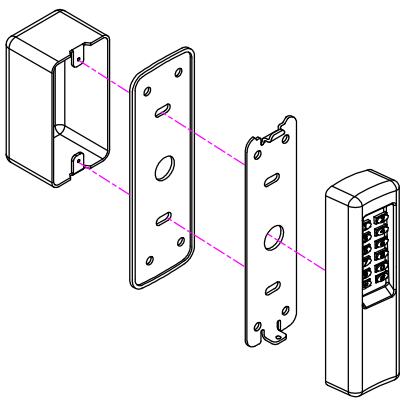
THE MASTER PROGRAMMING CODE IS NOW 123456.

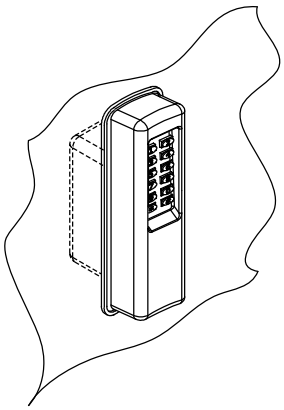
MULLION MOUNT

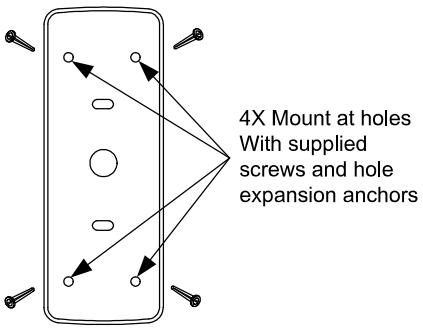




WALL MOUNT



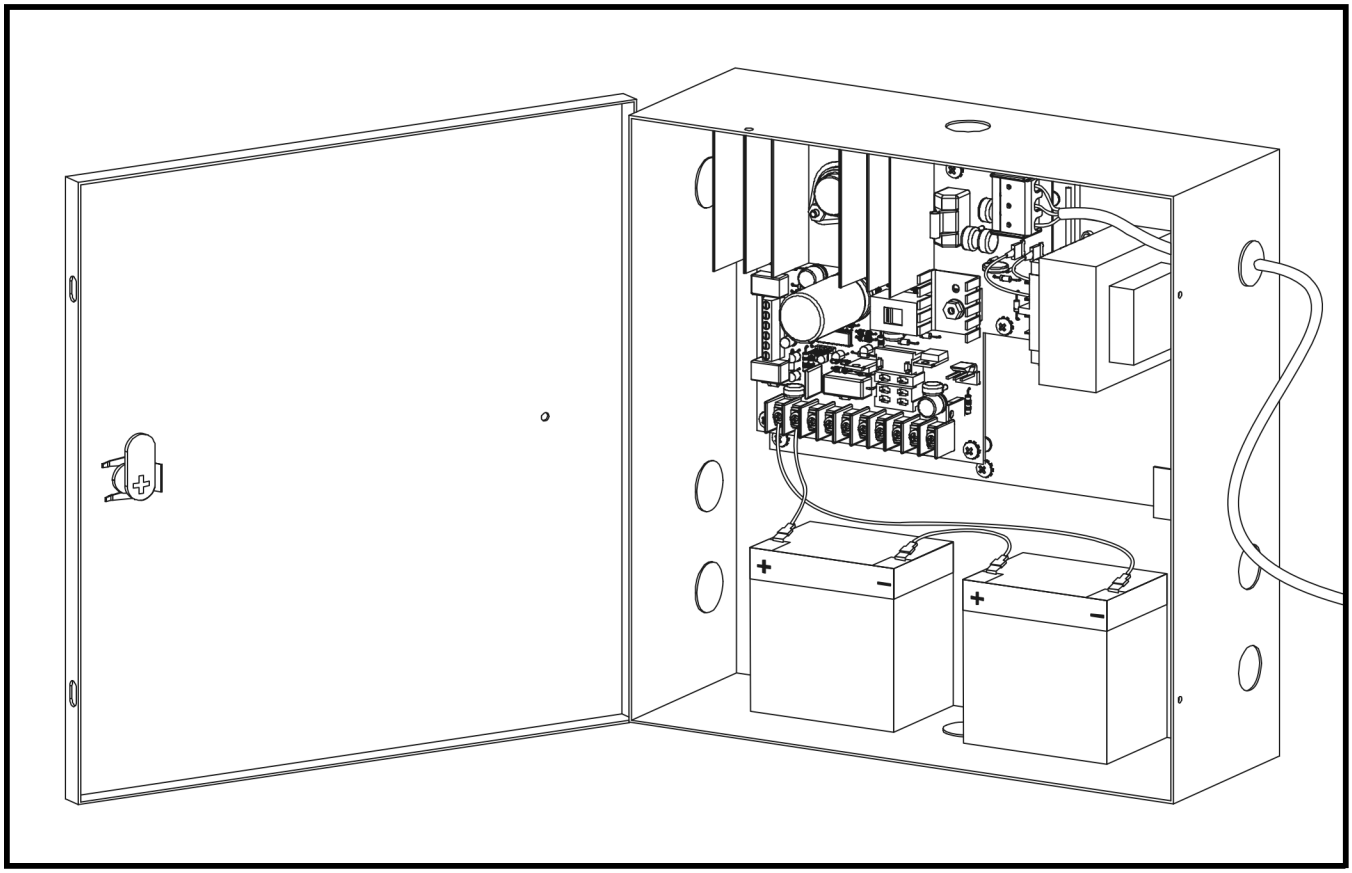




510 SERIES
POWER SUPPLY

INSTALLATION MANUAL

510ULAC



Schlage Lock Company
575 Birch Street
Forrestville, CT 06010
technical support: 866-322-1237
email: SESsupport@irco.com
web: www.irsupport.net

Ingersoll Rand
Security Technologies

23392715-B **03-2009**

Table of Contents

Description of Operation

The 510ULAC power supply converts an 110VAC/60 Hz input to a power limited DC output. Output voltage is field selectable for either 13.8 VDC @ 3.0A or 27.6 VDC @ 2.0A nominal. There are three indicator LED's present on power supply to monitor the status of the unit. A red LED is illuminated when there is a DC output on the DC+ and DC- terminals. There are two green led's present near the supervision terminal block. One LED indicates when a battery is connected, the other indicates the presence of A.C. line voltage. The supervision terminal block has connections for two relays each consisting of a Common, N.O., and N.C. contact. The contacts are rated 1A @ 28VDC.

The 510ULAC 12/24VDC Power Supply is intended for operation in a controlled environment.

Bill of Materials

- Metal enclosure
- 510ULAC Printed Circuit Board
- Lid screw pack

The following are optional items:

- 12VDC Batteries
- Battery cables
- Cam lock with keys
- EIR

The following are optional items not evaluated by UL:

- CMR
- DCM
- TDM
- RCM

Enclosure Features

- Painted metal, with hinged, painted metal door
- Dimensions: 12" x 12" x 4"
- Extra “knockouts” on the top, bottom and sides.
- Mounting holes on the back surface.

The following is an optional feature:

- Door can be fitted with a cam lock.

UL

- UL File Number: BP9350
- All interconnected devices must be UL listed.

Product Specifications

Table 1: Product Specifications

Electrical	Specification
Input Voltage	110VAC, 60Hz, 1.25 Amp
Output Voltage	13.8VDC (+/- 5%) or 27.6VDC (+/- 5%) (field selectable) Filtered & Regulated
Output Current	3.0A @ 13.8VDC or 2.0A @ 27.6VDC
Primary Fuse Size	1.25A, Slo-Blo, 250V, 5x20mm
Battery Fuse Size	4.0A, Resettable
Secondary Protection	Output overload protected by the regulator circuit
Charging Circuit	Built-in Standard
Supervision Circuit	
AC Monitor	Power Limited. Form “C” Contacts.
Battery Monitor	Power Limited. Form “C” Contacts.
Mechanical	
Enclosure	12” x 12” x 4” Approx. Steel NEMA Grade 1with conduit knockouts and hinged cover with lock down screws.
Color/Finish	Gray, Baked Enamel
Input Terminals	Barrier strip with (3) #6 screw terminals and protective cover,
Output Terminals	Barrier strip with (2) #6 screw terminals labeled DC(+), DC(-) Barrier strip with (2) #6 screw terminals labeled BAT(+), BAT(-) Barrier strip (7) #6 screw terminal labeled EIR
Optional	
Stand-by Battery Pack (1)	4.0A/Hour @ 12VDC (Rechargeable, Sealed, Lead Acid, Gel Cell)
Stand-by Battery Pack (2)	8.0A/Hour @ 12VDC or 4.0A/Hour @ 24VDC (Rechargeable, Sealed, Lead Acid, Gel Cell)
EIR	Contact rating: 3.0A @ 30VDC
Key Lock Cover	Optional with 2 keys.
Warranty	
Warranty	1 Year Limited
Shipping Weight	
Power Supply	12 Pounds
Each Battery	4 Pounds
Environmental Conditions	
Operating Temperature & Relative Humidity	Indoor - 0°C and 49°C (32°F and 120°F) 85%, +/- 5%

1) Installation Procedure

The 510ULAC must be installed in accordance with article 760 of the National Electrical Code or NFPA 72 as well as all applicable local codes.

NOTE: *Install the 510ULAC indoors within the protected premises.*

A.) Mounting holes are provided on the back surface of enclosure. Firmly mount the 510ULAC to a solid surface using hardware suitable for the surface.

NOTE: *Check national and local codes for installation requirements.*

B.) Output voltage selection is set at the factory for 12VDC. If required, change SW1 to 24VDC as shown in (**See *Installation Diagram* on page 6**).

C.) Connect AC power (110VAC, 50/60Hz) to terminals marked: LINE, GROUND (symbol), and NEUTRAL (**See *Installation Diagram* on page 6**).

D.) Connect devices to be powered to terminals marked: DC (+) and DC (-) (**See *Installation Diagram* on page 6**).

NOTE: *To avoid potential damage, measure output voltage before connecting devices.*

E.) For Access Control applications, stand-by batteries are optional.

- When stand-by batteries are not used, a loss of AC will result in the loss of output voltage.
- When stand-by batteries are used, they must be lead acid or gel type.

2) Wiring

- Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), local codes, and the authorities having jurisdiction.
- Use metallic conduit for connection of the branch circuit to maintain grounding and bonding of the enclosure.
- Cabling and wire must be UL Listed and/or recognized wire suitable for the application.
- Only use stranded, multi-conductor, color coded wire, without splices.
  - Use 18AWG or larger for all low power connections (Battery, DC output, AC input).
  - Use 22AWG or larger for all power limited circuits (Battery Fail, AC Fail).
- Recommended minimum of two (2) spare conductors.

WARNING: Keep power limited wiring separate from non-power limited wiring (110VAC / 60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.

Table 2: Wire Selection Table

Total Length of One Wire Run (Feet)	Load Current @ 12VDC				Load Current @ 24VDC			
	1/4A	1/2A	3/4A	1A	1/4A	1/2A	3/4A	1A
100	24	18	16	14	24	20	18	18
200	16	14	12	12	20	18	16	14
300	16	12	12	10	18	16	14	12
400	14	12	10	--	18	14	12	12
500	14	10	10	--	16	14	12	10

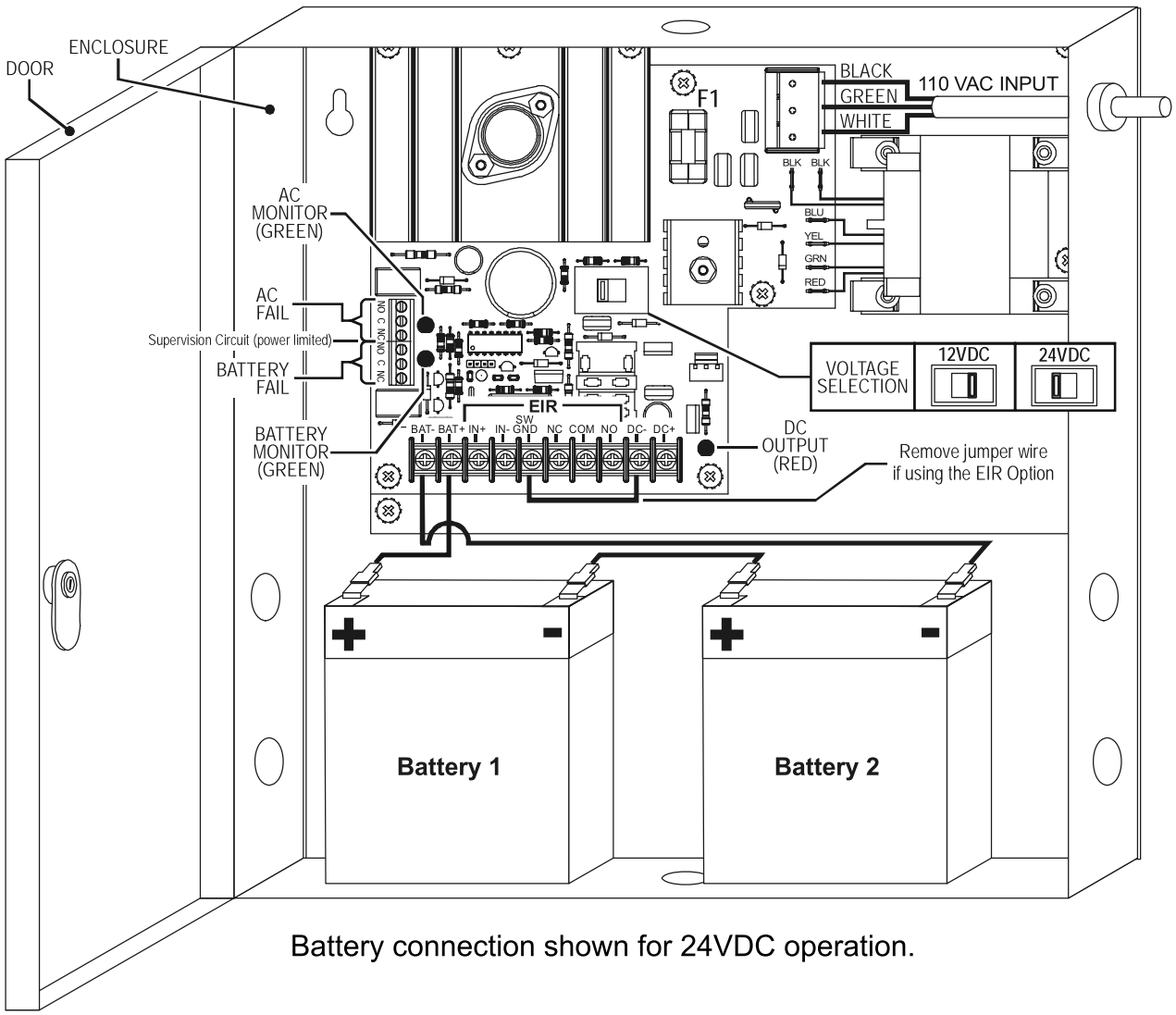
3) Tamper Switch

A tamper switch is required to be installed on the 505ULAC/510ULAC that will monitor the enclosure for unauthorized access. The tamper switch should be attached to a UL Listed burglar alarm system or a Listed local siren/annunciator. This will allow for compliance to UL294 Section 32.1.4.

Installation Diagram

Refer to the diagram below when wiring the 510ULAC Power Supply. Stand-by batteries shown for 24VDC operation and are wired in series.

Figure: 1. Installation Diagram



Battery connection shown for 24VDC operation.

WARNING: **De-energize unit prior to servicing. For continued protection against fire hazard, replace fuse (F1) with the same type and rating (1.25A, Slo-Blo, 250V). Replace fuse cover before energizing.**

Stand-by Battery Installation

1.) Verify field wiring is complete.

2.) Place batteries upright in bottom of enclosure (**See *Installation Diagram* on page 6**).

3.) Using the provided cables, connect batteries (**See *Installation Diagram* on page 6**).

4.) Turn on VAC line power input to power supply.

Table 3: Stand-by Battery Power Selection Chart

Current Load Draw (Amps)	12VDC SYSTEM		24VDC SYSTEM	
	Hours	Hours	Hours	Hours
3	2.5	5	n/a	n/a
2	4	8	2	4
1	8	16	4	8
0.5	16	32	8	16
0.33	24	48	12	24
0.22	36	72	18	36
0.16	50	100	25	50
Number of batteries required	2	4	2	4

Battery capacity for emergency standby with 2 batteries at least 2.5 hours at 12VDC @ 3A.
Battery capacity for emergency standby with 2 batteries at least 2 hours at 24VDC @ 2A.

NOTE: *Charging time is approxiamtely 48 hours from deep discharge.*

Terminal Identification

Table 4: Terminal Identification

Terminal Legend	Function / Description
Line, Ground, Neutral	110VAC, 50/60Hz input
DC (-), DC (+)	12VDC @ 3A continuous power limited output 24VDC @ 2A continuous power limited output
AC Fail NC C NO	Indicates loss of AC power, e.g. connect to alarm panel. Relay normally energized when AC power is present. Contact rating: 1A @ 28VDC
Battery Fail NO C NC	Indicates low battery voltage, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating: 1A @ 28VDC
BAT (-), BAT (+)	Stand-by battery connections

EIR Connection (optional)

The purpose of the EIR circuit is to cut power to fail safe locks in an emergency situation. When using the EIR relay circuit to supply power to fail safe locks, such as electromagnetic locks, power must come from connector J4, terminals: **DC-** & **DC+** as shown below. Be sure to test all circuits for proper function after installation.

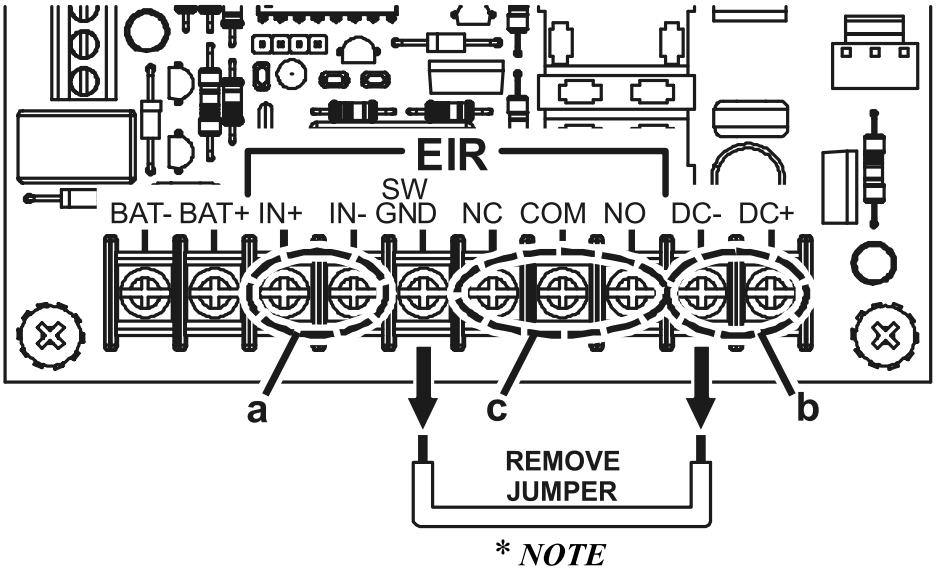
**** NOTE:** Jumper from **SW GND** to **DC-** must be removed when using EIR.*

Figure: 2. EIR Connection

(a) NORMALL CLOSED DRY CONTACT FROM FIRE PANEL (BY OTHERS). CONTACT MUST OPEN UPON EMERGENCY.

(b) OUTPUT POWER TO LOCKING SYSTEM WILL HAVE GROUND CONNECTION (-) REMOVED WHEN FIRE ALARM CONTACT OPENS ON TERMINALS: IN+ & IN-.

(c) RELAY OUTPUT REFLECTS CONDITION OF EIR RELAY FOR SIGNAL OR CONTROL. RATED 3.0A @ 30VDC.



** NOTE*

LED Diagnostics

Table 5: LED Diagnostics

DC OUTPUT (RED)	AC MONITOR (GREEN	BATTERY MONITOR (GREEN)	POWER SUPPLY STATUS
ON	ON	ON	Normal Operation.
ON	ON	OFF	Batteries Disconnected or Discharged.
ON	OFF	ON	Unit on Back-up Battery.
OFF	ON	OFF	DC Output Shorted.
OFF	OFF	OFF	Unit De-energized.

Maintenance

Unit should be tested at least once a year for proper operation. Perform test as follows:

Output Voltage Test - Under normal load conditions, the DC output voltage should be checked for proper voltage level (see power supply voltage output in the Product Specifications Chart).

Battery Test - Under normal load conditions, check the following

- Battery is fully charged.
- Specified voltage at all battery terminals and PCB terminals marked BAT (+) & BAT (-). This ensures there are no breaks in the battery cables.

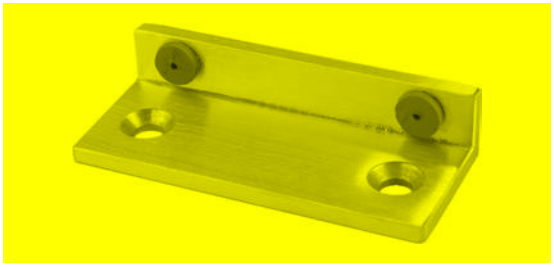
***NOTE:** Expected battery life is 5 years. Change batteries every 4 years, or less if necessary.*

Slide Bolts, Surface Bolts and Misc

Innovation, Quality, Customer Service...

1801 Applied Stop

- For use on single or double doors without a stop
- Mounts on the frame
- Stainless steel base material
- Standard finishes: US32D, US32, US3, US4, US10 and US10B



1802 Door Silencer

- For metal doors
- ¼" projection
- Grey color only
- Only sold in quantities of 100
  - Part number 1802 = one bag of (100) silencers

1803 Floor Stops

- For use in high abuse areas
- Ideal for correctional facilities, schools and institutions
- Installed in quick set cement

1803

Bumper = 2" D x 1-⅜"H
Rod = ⅝" D x 3" H

1803HO

Supplied with stainless steel door portion and hook

H1803

Bumper = 4" D x 1-⅜"H
Rod = ⅝" D x 3" H

EHD1803

Bumper = 3-¼" D x 2" H
Rod = ⅝" D x 3" H

1804 Pipe Stop & Holder

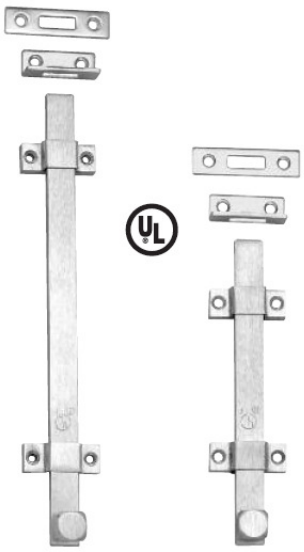
- All stainless steel components with rubber bumper
- Rubber bumper on door portion hits the pipe when used as a stop
- Door can be held open to floor portion with stainless steel hook
- Floor portion installed in quick set cement

Architectural Builders Hardware Manufacturing, Inc.
1222 Ardmore Avenue, Itasca, IL 60143
Tel: 630-875-9900 • Fax: 630-875-9918 / 800-932-9224
Web: www.abhmfg.com • Email: abhinfo@abhmfg.com

ROCKWOOD

ASSA ABLOY

Surface Bolts



Surface Bolts
No. 580, 582 Series

Material: No. 580: Steel, Stainless Steel
No. 582: Stainless Steel

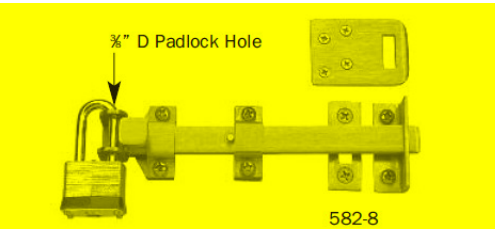
Finishes: US3, US10, US10B Painted, US26D, US32D

Fastener: No. 580: 8 ea. #10 x 1¼ FH SMS, 8 ea. 10-24 x 1 FH MS
No. 582: Bolt: 4 ea. 10-24 x 1½ PH MS; 4 ea. #10 x 1¼ PH WS
Strikes: 6 ea. 10-32 x 1½ FH MS; 6 ea. 10-32 x 1½ FH WS

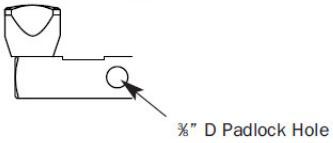
Other: 1⅛" bolt throw, ¼" x ¾" bolt material.

Features:
- **No. 580 series bolts are UL listed** for use on inactive leaf of a pair of 3-hour labeled fire doors.
- No. 580 and No. 582 series both Include a universal top strike and a mortise bottom strike.
- No. 582 series has a bracket for padlock *(padlock not included)*.

Options: Sex bolts available for extra secure mounting.



No.	Bolt Length	Weight	ANSI A156.16
580-8	8"	1.1 lbs.	L04161
580-12	12"	1.4 lbs.	L04161
580-18	18"	1.7 lbs.	L04161
580-24	24"	2.0 lbs.	L04161
582-8	8"	1.3 lbs.	
582-12	12"	1.6 lbs.	



Heavy Duty Surface Bolts
No. 585 Series

Material: Steel

Finishes: US26D

Fastener: Bolt: 4 ea. ¼-20 x 2¼ FH MS;
4 ea. ¼-20 x 1⅝ Sex Bolts
Strike: 2 ea. #14 x 2½ FH SMS, 2 ea. Plastic Anchors;
2 ea. ¼-20 x 1 FH MS, 2 ea. ¼-20 Lead Anchors

Other: 1¼" bolt throw, ¾" x ¾" bolt material.

Features:
- UL listed for use on inactive leaf of a pair of 3-hour labeled fire doors.
- Includes a universal top strike and a mortise bottom strike.
- Locks in both the up and down position.
- Bolt locks automatically when thrown; can be released only by pressing knob toward door while retracting.
- Can be used on any type of door.
- Accomodates padlock.

No.	Bolt Length	Weight	ANSI A156.16
585-12	12"	3.9 lbs.	L04161
585-24	24"	6.1 lbs.	L04161

ROCKWOOD

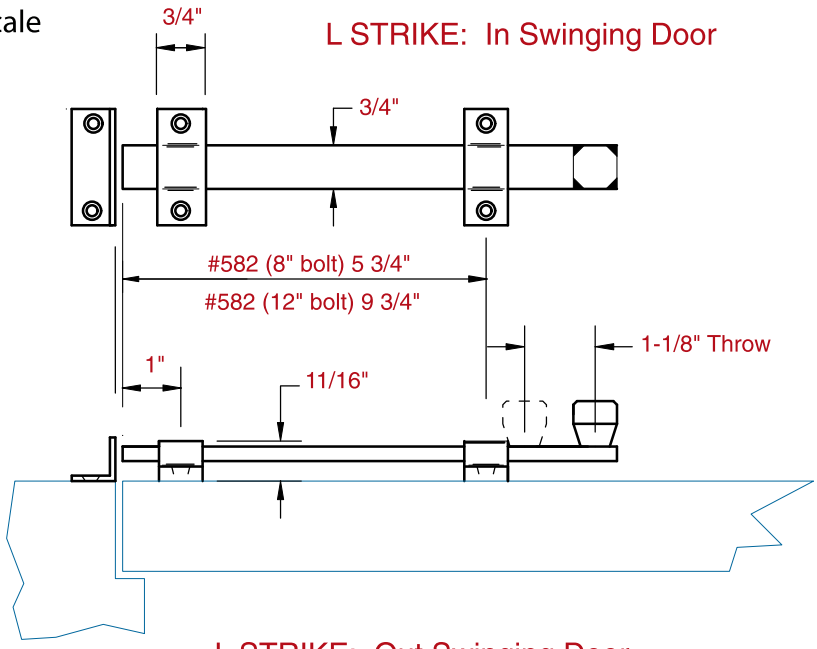
ASSA ABLOY

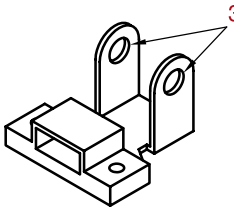
ASSA ABLOY, the global leader in door opening solutions.

582 Series Surface Bolts

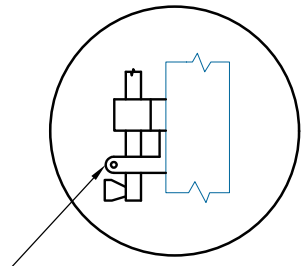
Not To Scale

L STRIKE: In Swinging Door



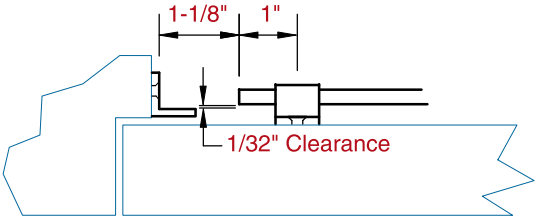


SINGLE LOCK



SINGLE LOCK BRACKET FOR PAD LOCK (BOLT SHOWN IN UNLOCKED POSITION)

L STRIKE: Out Swinging Door

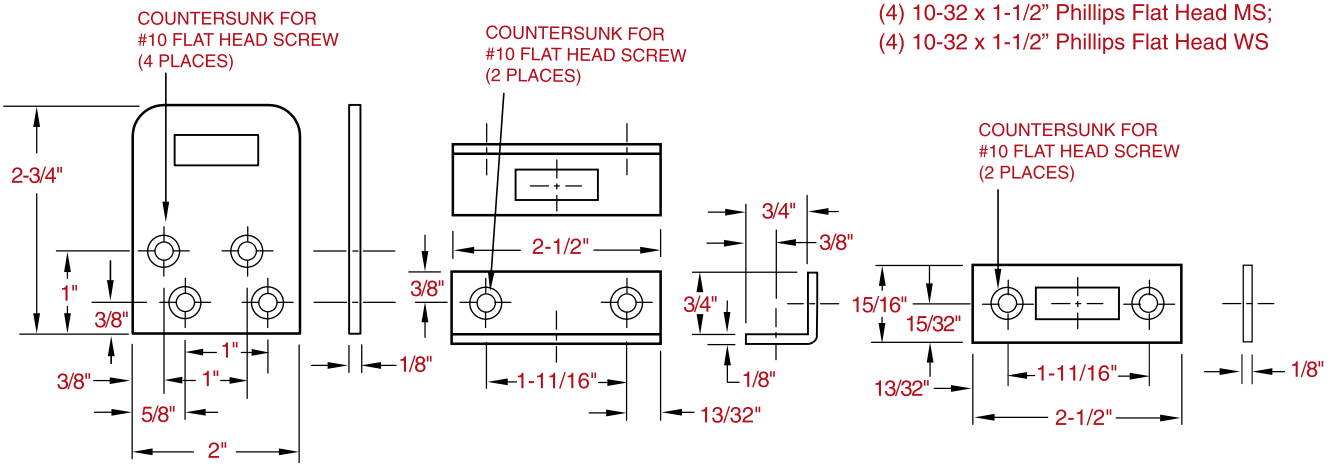


FASTENER INFORMATION

BOLT:
(4) 10-24 x 1-1/2" Phillips Pan Head MS;
(4) #10 x 1-1/4" Phillips Pan Head WS

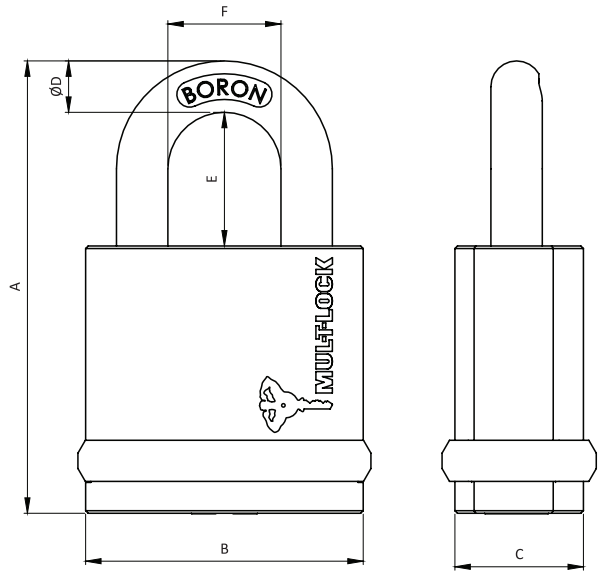
MORTISE & L STRIKES:
(2) 10-32 x 1-1/2" Phillips Flat Head MS;
(2) 10-32 x 1-1/2" Phillips Flat Head WS

RIM STRIKE:
(4) 10-32 x 1-1/2" Phillips Flat Head MS;
(4) 10-32 x 1-1/2" Phillips Flat Head WS



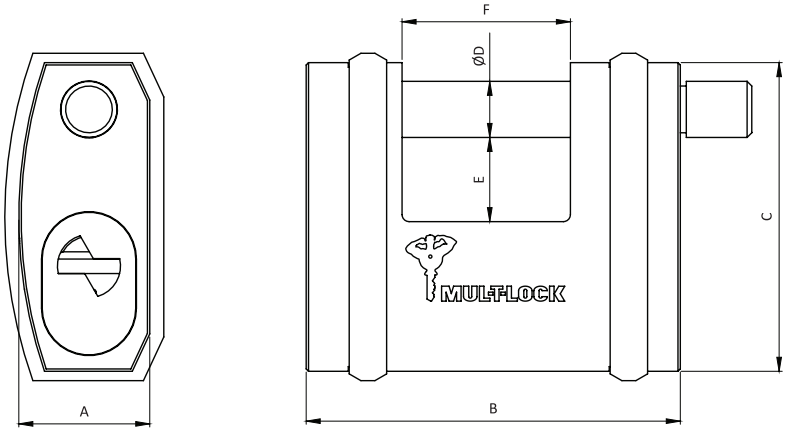
Template No.
T-582-8 & 12
Rev. 8/31/09

NOTE: Rockwood reserves the right to make product changes and is not responsible for obsolete template errors. To ensure your template is current, please visit our website at www.rockwoodmfg.com or call us at 800-458-2424.



NE10L / NE12L / NE14L Measurements

		Body				Shackle			Standard Grade
Model		A	B	C	D	E		F	
						LE1	LE2		
NE10L	mm	95	54	54	10	25	50	28	4
	inches	3.42	2.12	1	0.39	1	1.97	1.10	
NE12L	mm	88	66	28	12	25	50	30	5
	inches	3.46	2.60	1.10	0.47	1	1.97	1.18	
NE14L	mm	88	66	28	14	26	50	32	6
	inches	3.46	2.66	1.10	0.55	1.02	1.97	1.26	



NE12SB Measurements

		Body				Shackle		Standard Grade
Model		A	B	C	D	E	F	
NE12SB	mm	28	80	66	12	**18**	36	5
	inches	1.10	3.15	2.60	0.47	**0.71**	1.42	

NE10H / NE12H / NE14H

NE12SB

NE-Series Heavy Duty Padlock - MTL™400

Item #	Description	Shackle Thickness
NE10LE1	#10 NE-Series with Low Guard (1" Clearance)	3/8"
NE10LE2	#10 NE-Series with Low Guard (2" Clearance)	3/8"
NE10HE1	#10 NE-Series with High Guard (1" Clearance)	3/8"
NE12LE1	#12 NE-Series with Low Guard (1" Clearance)	1/2"
NE12LE2	#12 NE-Series with Low Guard (2" Clearance)	1/2"
NE12HE1	#12 NE-Series with High Guard (1" Clearance)	1/2"
NE14LE1	#14 NE-Series with Low Guard (1" Clearance)	9/16"
NE14LE2	#14 NE-Series with Low Guard (2" Clearance)	9/16"
NE14HE1	#14 NE-Series with High Guard (1" Clearance)	9/16"
NE12SB	Sliding Bolt #12 NE-Series Ø 1/2" Bolt (Heavy Duty)	1/2"

All NE-Series padlocks supplied as key retaining only with the exception of the NE12SB.

HOW TO ORDER: Please refer to page 91 & 95

MTL™800 | MTL™600 | MTL™400

RIXSON®

ASSA ABLOY

Installation Instructions

40016 (03-09)

185 Quick Spotter

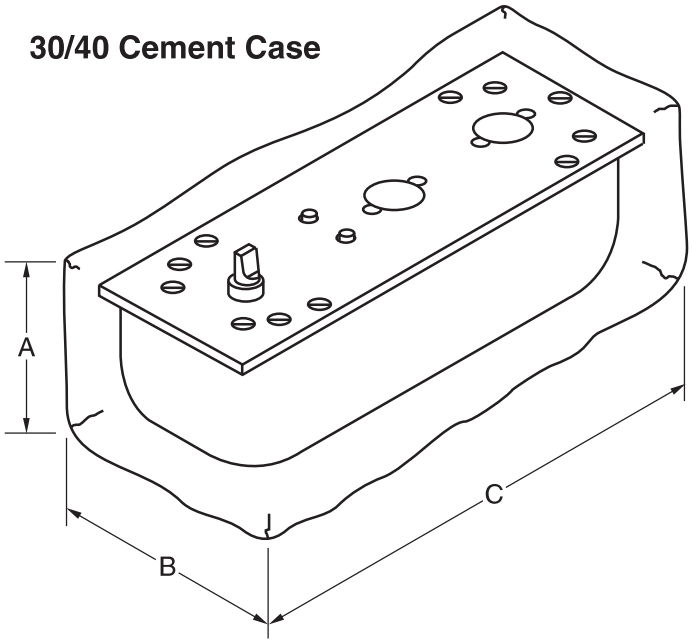
For use with
Closer Models 25, 26, 27,
28, 30, & 40
Cement Cases 79501 & 1101

Blocking Instructions

Check template for location of rough hole.

Figure 1

30/40 Cement Case



Closer	A	B	C
No. 30	4	7	15-1/2
No. 40	4-1/2	7-1/2	18

25-28 Cement Case

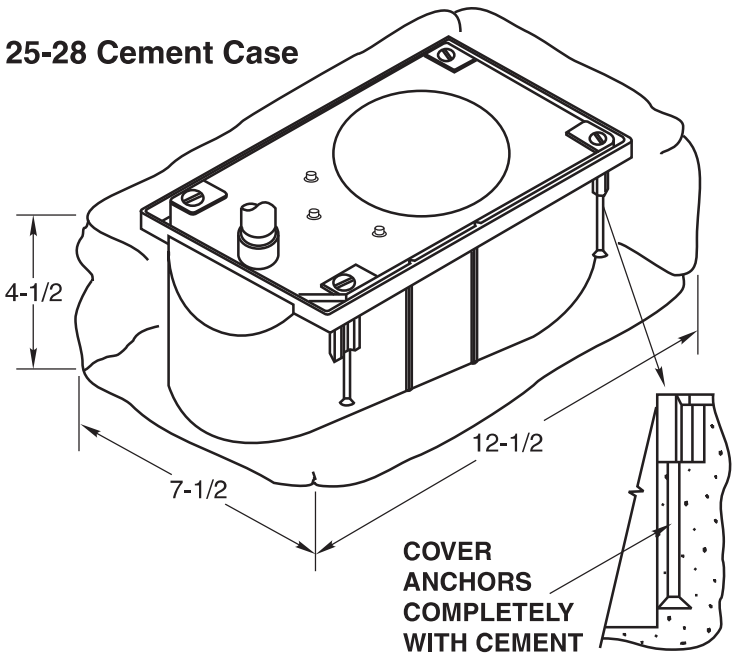
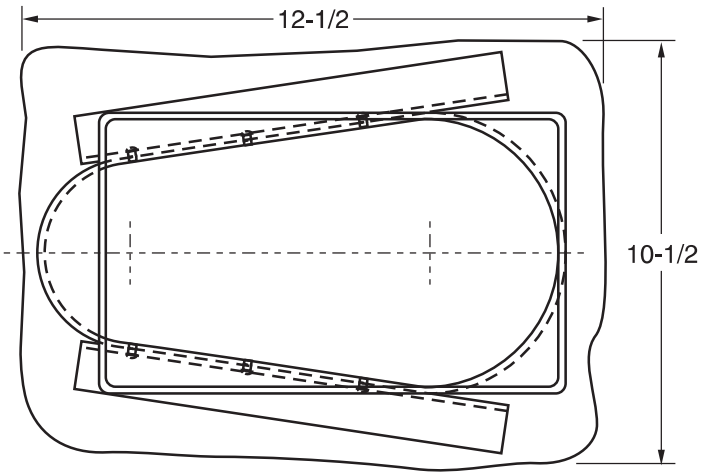


Figure 1A

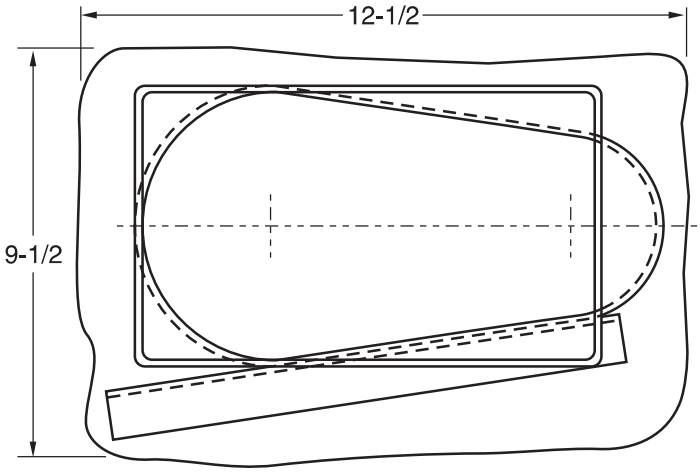
79501 Cement Case

4-1/2" Deep



1101 Cement Case

4-1/2" Deep
Concrete pour should not go past expansion joint.
4" to outside of building/5-1/2 to inside.



Note:

1. Do not scale drawing.
2. Dimensions given in inches. Conversion from inches to metric: inch x 25.4.
3. If necessary to prevent cement from entering foundation case, apply duct tape to seal the gap between closer and foundation case.

5/88

Kit includes:

4 ea 1/4 -20 x 3/4 Flat Head Phillips Screws

4 ea #10-24 x 5/16 Round Head Phillips Screws

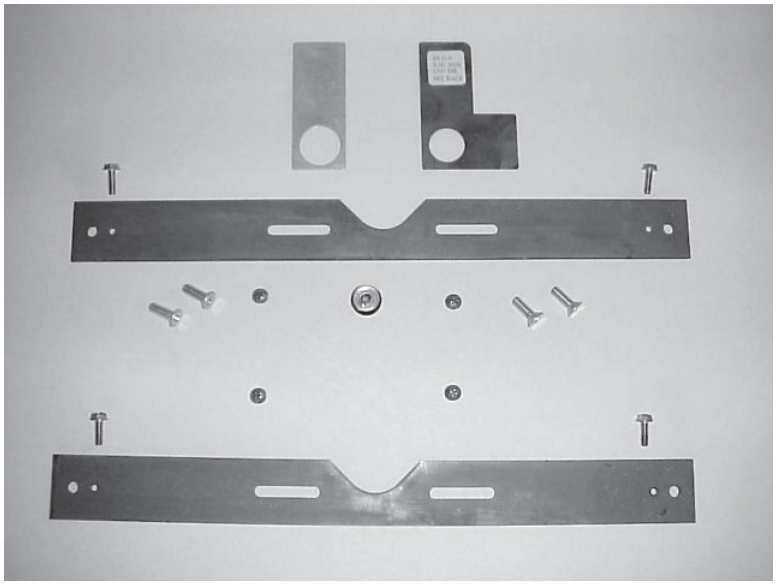
4 ea #10-24 x 3/4 Hex Washer Head Screws

2 ea Straps

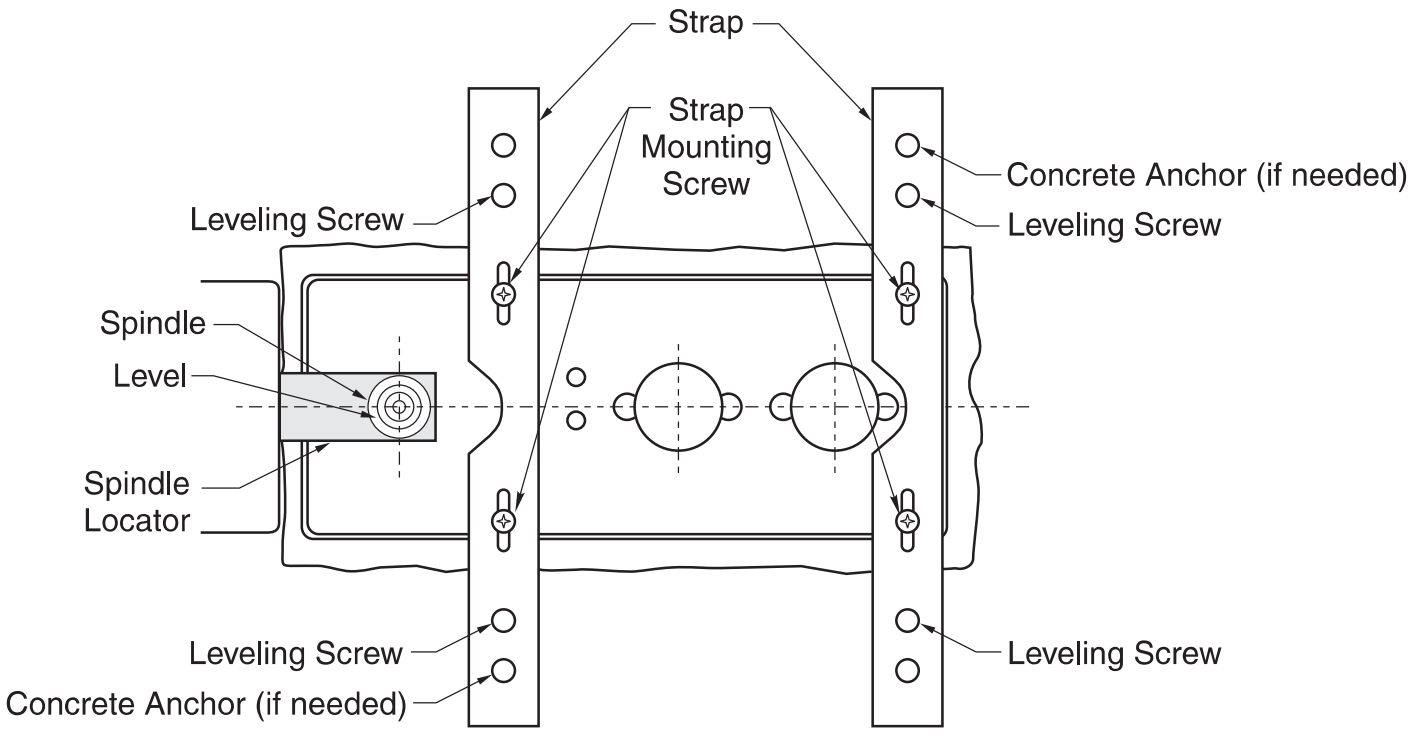
1 Spindle locator 3/4 offset

1 Spindle locator 2-3/4 center hung

1 Bubble level

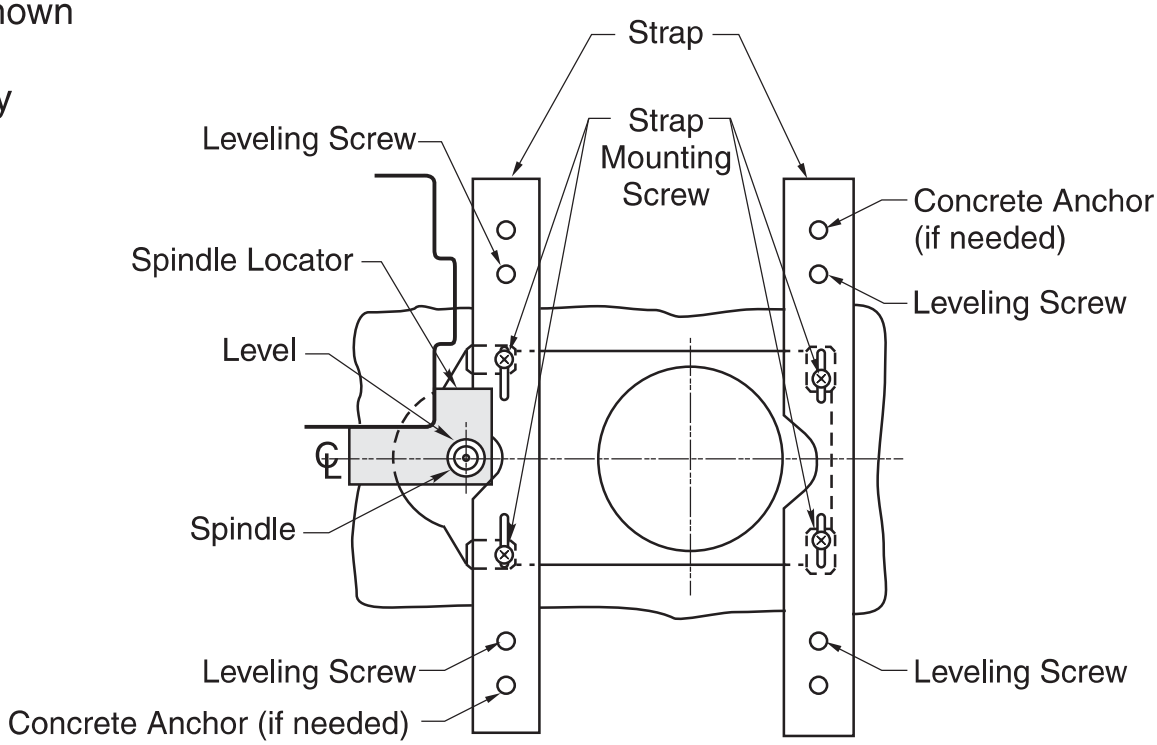


No. 30/40 Closers
Non-Handed

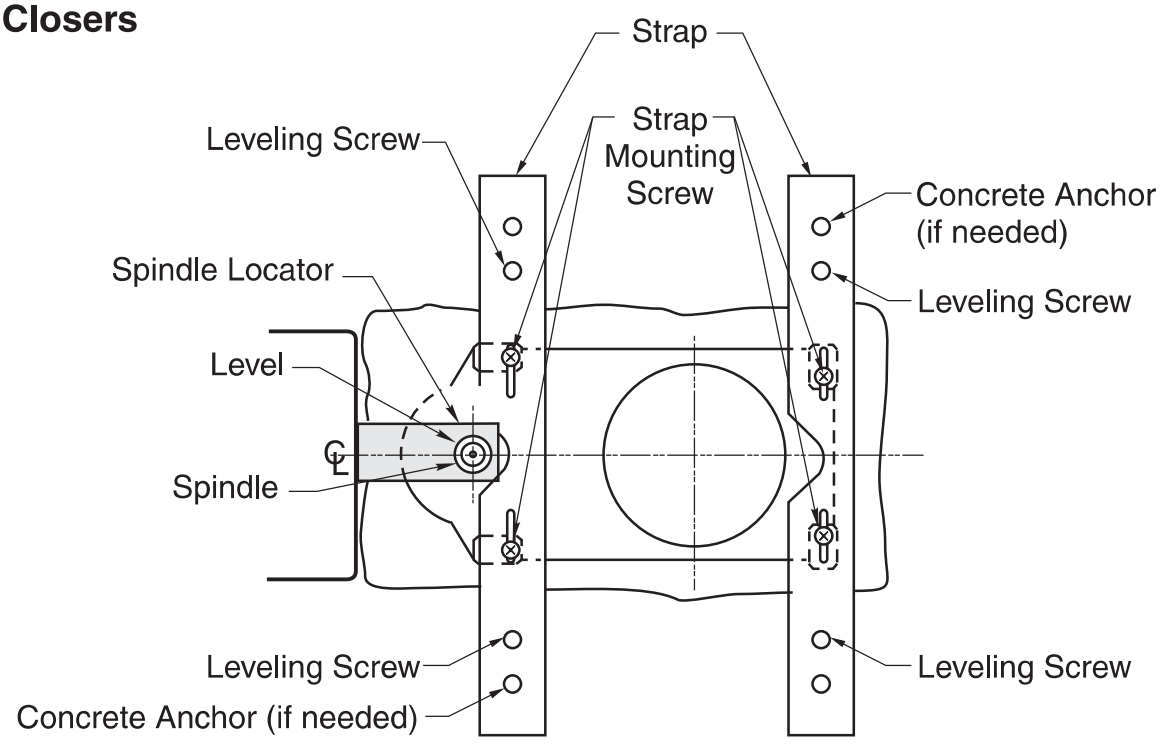


No. 25-27
Offset Closers
Right Hand Shown

3/4 Offset Only



No. 26-28
Center Hung Closers



Installation:

1. With frame set in place, cut hole in floor to dimensions for closer model on page 1; Figure 1. Clean out excess concrete.

2. Install top pivot in frame.

3. Drop plumb line from top pivot. See Figure 2 at right. (Use of Rixson 2604 Pivot Aligning Tool is recommended)

4. Place closer in cement case and attach with 4 each 1/4-20 x 3/4 Flat Head Phillips screws.

5. Place straps on top of cement case and center each.

6. Using 10-24 x 5/16 round head screws, tighten straps to top of closer. See Figure 3 at right.

7. Set closer/foundation case in hole in floor.

8. Put spindle locator over spindle and position closer next to frame. See appropriate closer model illustration on previous pages.

9. Make sure that plumb line is centered over spindle.

10. Place bubble level on top of closer spindle and torpedo level. See Figure 4 at right.

11. Using 4 leveling screws (10-24 x 3/4 hex washer head screws), turn screws to raise and lower straps until closer is completely level. This is determined by bubble level provided.

12. Re-check all areas, locator, plumb line and level.

13. If needed, insert cement anchors to stabilize installation.

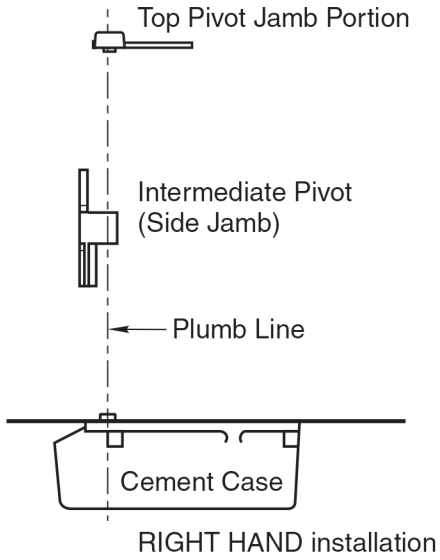


Figure 2

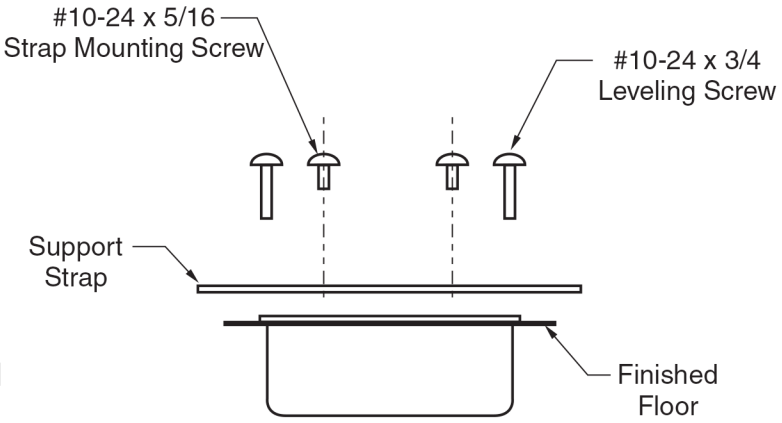


Figure 3

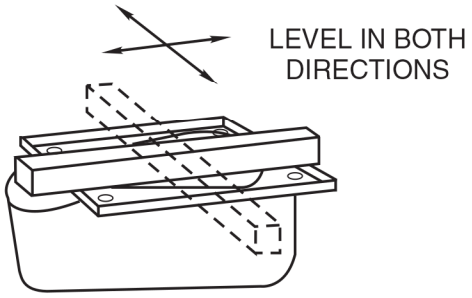


Figure 4

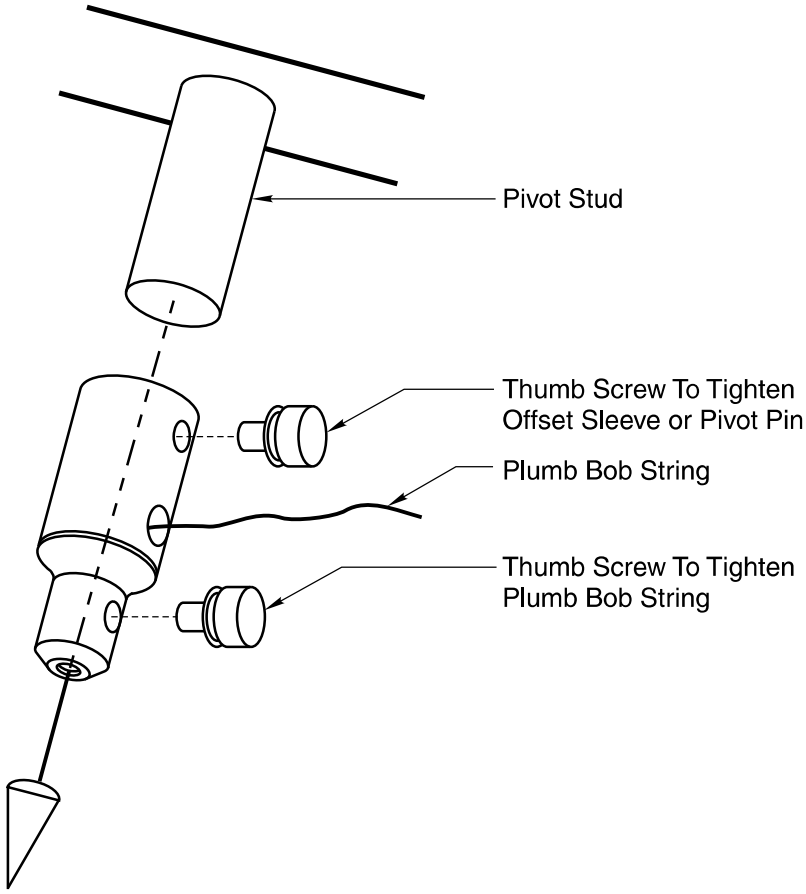
14. Use two pour grouting procedure:
Step 1 Use EXPANDABLE QUICKSET CEMENT, (Por-Rok or equivalent grout). Grout in only bottom 3/4" of foundation case, including bottom of cement anchor. Allow grout to harden.

15. Hang door.

16. **Step 2** Use a regular cement mixture, EXTERIOR TYPE (Sakrete or equivalent) to finish setting the foundation case. ALL 4 ANCHORS MUST BE COMPLETELY COVERED WITH CEMENT. (See Figure 1A on page 1)

2604 Alignment Tool
Center Hung
Installation Instructions

1. Insert end of plumb line through small hole in bottom of the body and out the side hole.
2. Fish enough line through so bob can center over floor portion of the pivot.
3. Slide body over top pivot pin and tighten thumb screw.
4. Adjust height of plumb bob and allow it to center.
5. Mark holes in floor plate for drilling.



Notes:
1. Do not scale drawing.
2. Parts not sold separately.
3. Plumb bob and string by others.

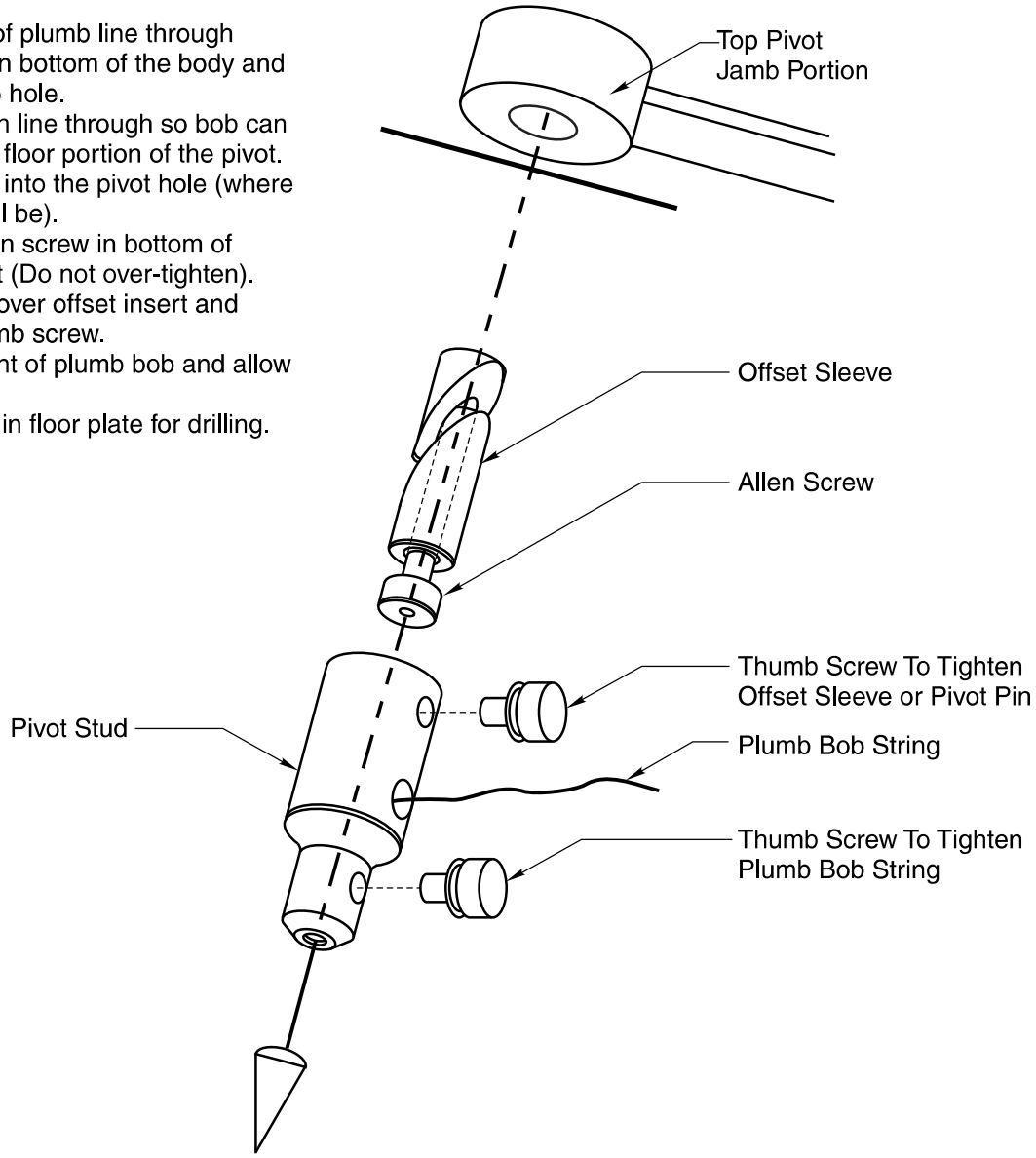
Model 2604 Alignment Tool

RIXSON
ASSA ABLOY
www.rixson.com

TEMPLATE NUMBER	DATE
IS2604	04-09

2604 Alignment Tool
Offset Hung
Installation Instructions

1. Insert end of plumb line through small hole in bottom of the body and out the side hole.
2. Fish enough line through so bob can center over floor portion of the pivot.
3. Slide insert into the pivot hole (where pivot pin will be).
4. Tighten allen screw in bottom of offset insert (Do not over-tighten).
5. Slide body over offset insert and tighten thumb screw.
6. Adjust height of plumb bob and allow it to center.
7. Mark holes in floor plate for drilling.



Notes:
1. Do not scale drawing.
2. Parts not sold separately.
3. Plumb bob and string by others.

Model 2604 Alignment Tool

RIXSON
ASSA ABLOY
www.rixson.com

TEMPLATE NUMBER	DATE
IS2604	04-09

ACCESS CONTROL SYSTEM
WIRE GAUGE SIZE & DISTANCE CHART

FOR 12V AND 24V AC/DC

To determine the correct wire gauge to use on ìone circuitî the following information is required:

- The quantity, voltage and current draw of all lock(s) and other powered devices on one circuit.
- The distance in feet from the power supply to the furthest lock.

Add together the current draw (amps) of all locks on the same circuit. Cross reference the total amps with the distance between the power supply and the farthest lock to determine the wire gauge required.

"**One circuit**" implies that two wires are being run from the power supply to one or more locks in parallel. The last lock on the pair of wires should not exceed the maximum distance number shown on the chart for that gauge of wire and total current draw in Amps.

If the wire gauge size or maximum distance is inadequate for your application, divide the quantity of locks on that circuit to create two or more separate circuits and use the chart to figure each new circuit independently. SDC recommends that two fuse protected circuits be provided for each opening, one circuit for the locking device (inductive loads) and one circuit for access controllers and signaling devices (resistive loads). This allows for significantly smaller gauge wire, increased distance and protects access control and signaling devices from potential damage caused by inductive load devices

All wiring must be installed in accordance with all state and local codes.

Minimum Wire Gauge for 12 volts AC or DC

Maximum Distance Allowable For a 5% Voltage Drop From the Power Supply to the Furthest Load On One Circuit

AMPS	25ft	50ft	75ft	100ft	150ft	200ft	250ft	300ft	350ft	400ft	500ft
0.125	20	20	20	20	20	20	20	18	18	18	16
0.25	20	20	20	20	18	18	16	16	16	14	14
0.35	20	20	20	18	18	16	16	14			
0.50	20	20	18	18	16	14	14				
0.75	20	18	18	16	14	14					
1.00	20	18	16	14	14						
1.50	18	18	16	14							
2.00	18	16	14	14							
2.50	18	14	14	14							
3.00	16	14	14								
3.50	16	14									
4 to 6	14										

Minimum Wire Gauge for 24 volts AC or DC

Maximum Distance Allowable For a 5% Voltage Drop From the Power Supply to the Furthest Load On One Circuit

AMPS	25ft	50ft	75ft	100ft	150ft	200ft	250ft	300ft	350ft	400ft	500ft
0.125	20	20	20	20	20	20	20	20	20	20	20
0.25	20	20	20	20	20	20	20	18	18	18	16
0.35	20	20	20	20	20	18	18	18	16	16	14
0.50	20	20	20	20	18	18	16	16	16	14	14
0.75	20	20	20	18	16	16	16	14	14	14	
1.00	20	20	18	18	16	16	14	14			
1.50	20	18	18	16	16	14					
2.00	18	18	16	16	14						
2.50	18	18	16	14	14						
3.00	18	16	14	14	14						
3.50	18	16	14	14							
4	16	16	14								
5	16	14	14								