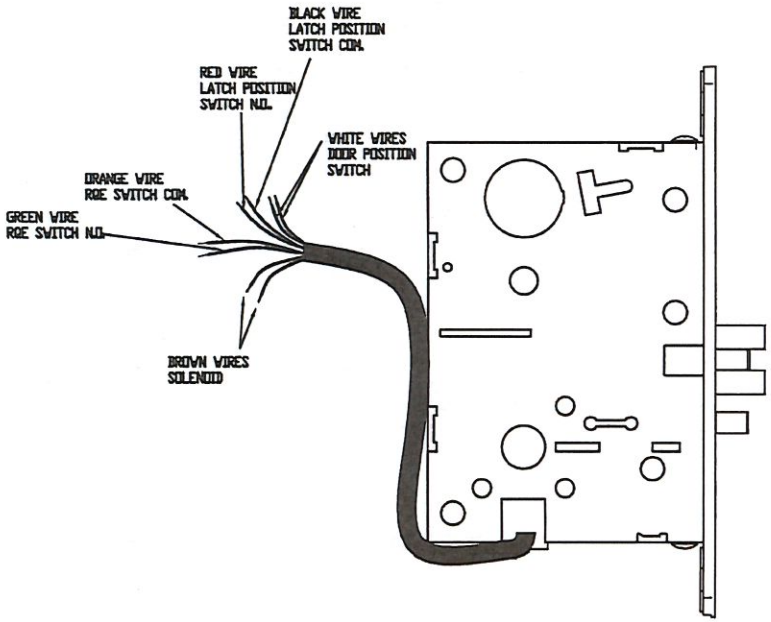
INSTALLATION GUIDE FOR MARSHALL BEST SECURITY ELECTRIFIED MORTISE LOCKS



INSTRUCTIONS

1. PREPARE MORTISE POCKET IN DOOR PER TEMPLATE. ACCESS FOR THE WIRING TO BE PER INSTALLERS REQUIRMENTS. IT IS RECOMMENDED THAT AN ACCESS CHANNEL IS BORED TO PROVIDE CONTACT FROM THE ELECTRIC TRANSFER HINGE OR OTHER MEANS OF TRANSFER TO THE MORTISE POCKET.

2. CONNECT WIRES AS NECESSARY (SOME OPTIONS MAY NOT USED) AND SLIP THE MORTISE INTO THE PREPARED POCKET IN THE DOOR. TAKE CARE TO ENSURE WIRES ARE NOT PINCHED OR DAMAGED. NOTE: IT IS RECOMMENDED THAT ALL WIRING BE DONE BY A LICENSED ELECTRICIAN FAMILIAR WITH TEH SUPPORTING EQUIPMENT.

3. ALWAYS ENSURE DOOR OPERATES PROPERLY BEFORE LOCKING.

SPECIFICATIONS:

SOLENOID (SPECIFIED BY MODEL NUMBER):

12VDC	26.2±10% OHMS	WIRE SIZE 22AWG	OPERATE AT 12VDC±10%	.50 Amps
24VDC	104.7±10% OHMS	WIRE SIZE 22AWG	OPERATE AT 24VDC±10%	.25 Amps

SWITCHES (N.O.):

30VDC 2A WIRE SIZE 28AWG

REED SWITCH (N.O.):

DOOR POSTION SWITCH WIRE SIZE 22 AWG 10VDC .3A OPERATING GAP 5/8" MAX

TERMS

FAIL SAFE- OUTER TRIM IS LOCKED WHEN POWER IS APPLIED. WHEN POWER IS REMOVED THE OUTER TRIM REMAINS UNLOCKED.

FAIL SECURE- OUTER TRIM IS UNLOCKED WHEN POWER IS APPLIED. WHEN POWER IS REMOVED THE OUTER TRIM REMAINS LOCKED.

DOOR POSITION SWITCH- MONITORS DOOR POSITION USING THE REED SWITCH AND STRIKE MAGNET.

LATCH POSITION SWITCH- MONTIORS POSITION OF THE LATCH BOLT

REQUEST FOR EXIT SWITCH- MONITORS INSIDE LEVER POSITION

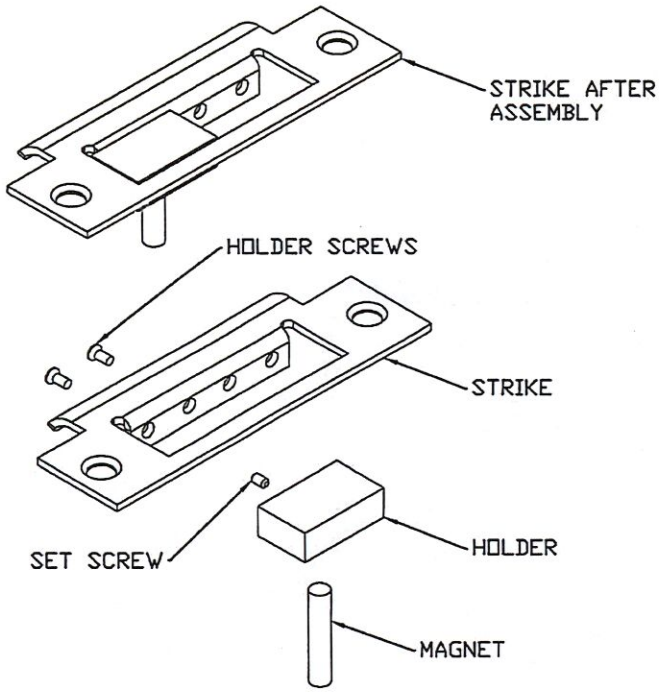
GUIDE	
DATE: 7-23-08	
NAME: ELECTRIFIED MORTISE	MBS

SOLENOID SPECIFICATIONS FOR MARSHALL BEST SECURITY

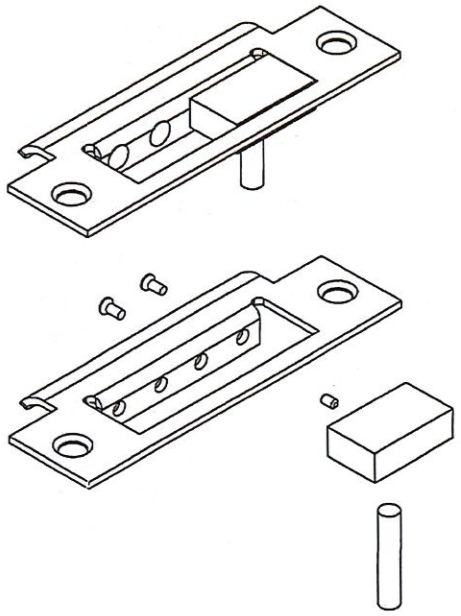
ELECTRIFIED MORTISE LOCKS

Duty cycle(%) = "ON" time / ("ON" time + "OFF" time) X 100%			Continuous (100%)	Or less (50%)	Or less (25%)	Or less (10%)
MAX. "on" time in seconds			∞	230	25	6
Watts at 20°C			5.5	11	22	55
Ampere-turns at 20°C			738	1058	1476	2338
Type no.	Resistance (20°C) Ω ±10%	No. turns	Volts DC			
RG-T-1632L06AA	6.5	800	6	8.5	12	19
RG-T-1632L12AA	26.2	1600	12	17	24	38
RG-T-1632L24AA	104.7	3200	24	34	48	76
RG-T-1632L48AA	419	6200	48	68	96	152

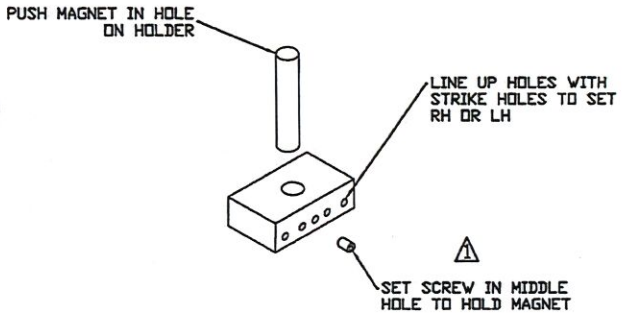
REV	DESCRIPTION	DATE



STRIKE ASSEMBLY FOR RIGHT HAND DOOR SHOWN



STRIKE ASSEMBLY FOR LEFT HAND DOOR SHOWN



MAGNET HOLDER DETAIL

Marshall Best Security Corporation
13097 Parkside Drive, Suite B
Fishers, Indiana 46038
317-806-1180
www.MarshallBestSecurity.com

DRAFT UNLESS OTHERWISE SPECIFIED: 1° MAX	A
DRAWN BY: C.M.	
DATE: 5/29/09	
TOLERANCES UNLESS OTHERWISE SPECIFIED: X.X (METRIC) = ±0.4; X.XX (METRIC) = ±0.15; FRACTIONS = ±.03; ANGLES = ±1/2°; ⌀ .12; MACHINED SURFACES 125; THIRD ANGLE	
MATERIAL: NOTED	
HEAT TREAT: N/A	
FINISH: PER ORDER	
TITLE: STRIKE ASSEMBLY INSTRUCTIONS	
PART#: TS AS8737-X-ELEC	

1 TIGHTEN MAGNET IN BLOCK WITH SET SCREW FIRST

NOTES:

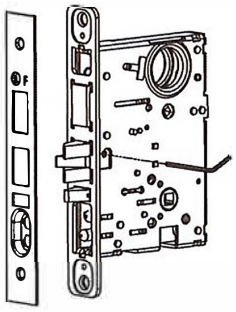
INSTALLATION GUIDE

Heavy Duty Commercial Mortise Lock

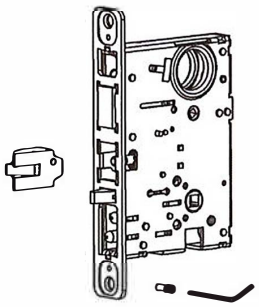
"Easily Field Reversible"

Mortise handing change instruction

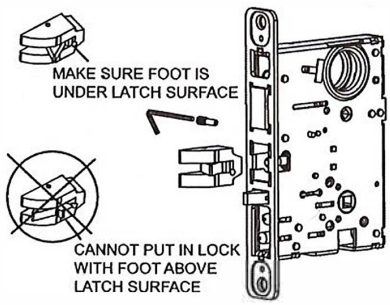
Change the latchbolt position



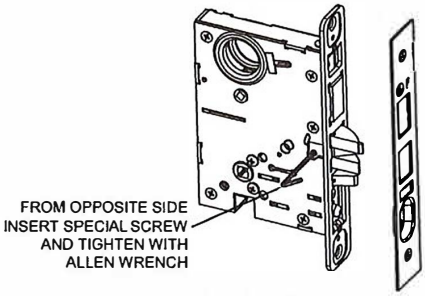
1. Remove special screw with provided allen wrench



2. Pull latch bolt out of lock

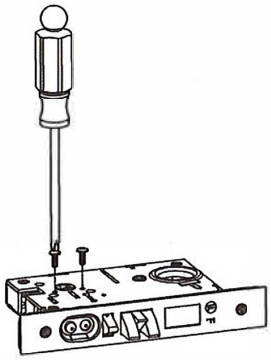


3. Rotate Latch bolt 180° and reinstall into lock, pushing the latch bolt into the lock and then releasing.

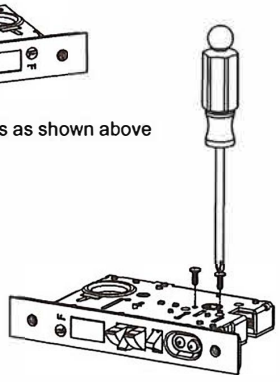


4. Reinstall the special screw and tighten securely with the provided allen wrench.

Change the locking slide position



1. Remove 2 screws as shown above

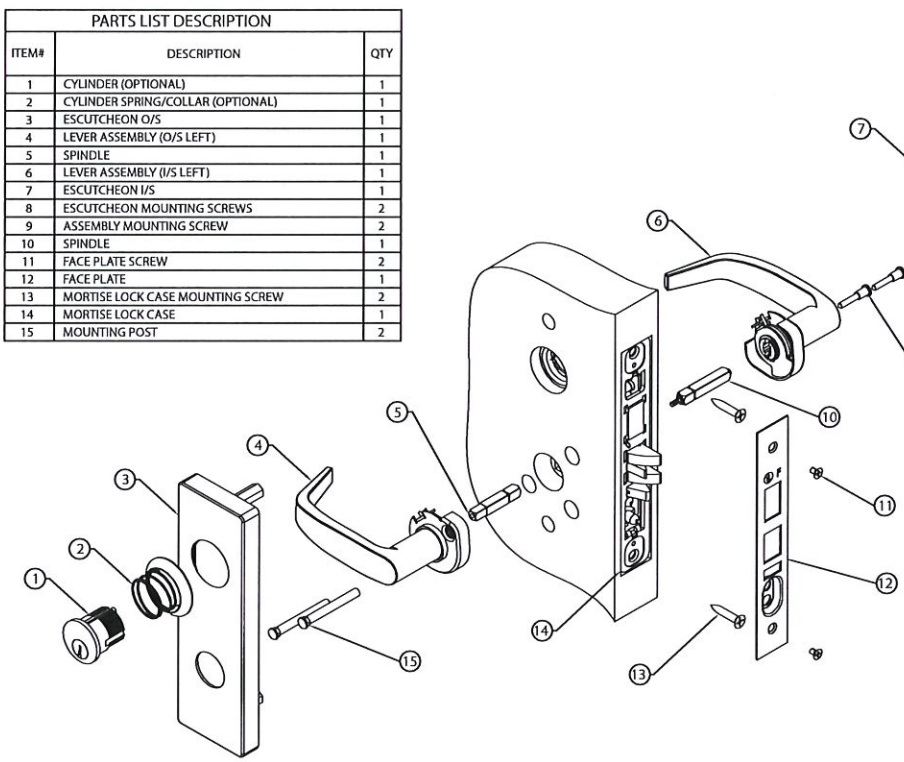


2. Turn lock over to opposite side and reinstall screws as shown above. To ensure locking slide does not bind, manually push to the desired side or alternate tightening each screw every 2-3 turns.

Regular / Wide Escutcheon

Installation Guide

PARTS LIST DESCRIPTION		
ITEM#	DESCRIPTION	QTY
1	CYLINDER (OPTIONAL)	1
2	CYLINDER SPRING/COLLAR (OPTIONAL)	1
3	ESCUTCHEON O/S	1
4	LEVER ASSEMBLY (O/S LEFT)	1
5	SPINDLE	1
6	LEVER ASSEMBLY (I/S LEFT)	1
7	ESCUTCHEON I/S	1
8	ESCUTCHEON MOUNTING SCREWS	2
9	ASSEMBLY MOUNTING SCREW	2
10	SPINDLE	1
11	FACE PLATE SCREW	2
12	FACE PLATE	1
13	MORTISE LOCK CASE MOUNTING SCREW	2
14	MORTISE LOCK CASE	1
15	MOUNTING POST	2



NOTE: LEFT HAND mounting is shown

Step 1 Prepare door per supplied template

Step 2 Insert mortise lock case (item 14) into mortise cutout and fasten to door with screws (item 13)

Step 3 Insert inside and outside spindles (items 5 & 10) into the mortise lock case hub and tighten screw

Step 4 Insert 2 mounting posts (item 15) into the outside lever assembly (item 4)

Step 5 Position outside (O/S) lever assembly onto the mortise lock case- line up spindle & mounting posts with mortise lock case

Step 6 Position inside (I/S) lever assembly (item 6) onto the mortise lock case- line up spindle

Step 7 Using the 2 mounting screws (item 9) fasten the I/S lever assembly to the O/S lever assembly

Step 8 Install O/S & I/S Escutcheons (items 3 & 7) over lever assemblies and fasten with screws (item 8)

Step 9 Optional- Screw in cylinder (item 1) using spring & cylinder collar (item 2)- some models use no cyl. collar

Step 10 Thread cylinder to operational depth and secure with mortise lock case set screw

Step 11 Fasten face plate (item 12) on using screws (item 11)

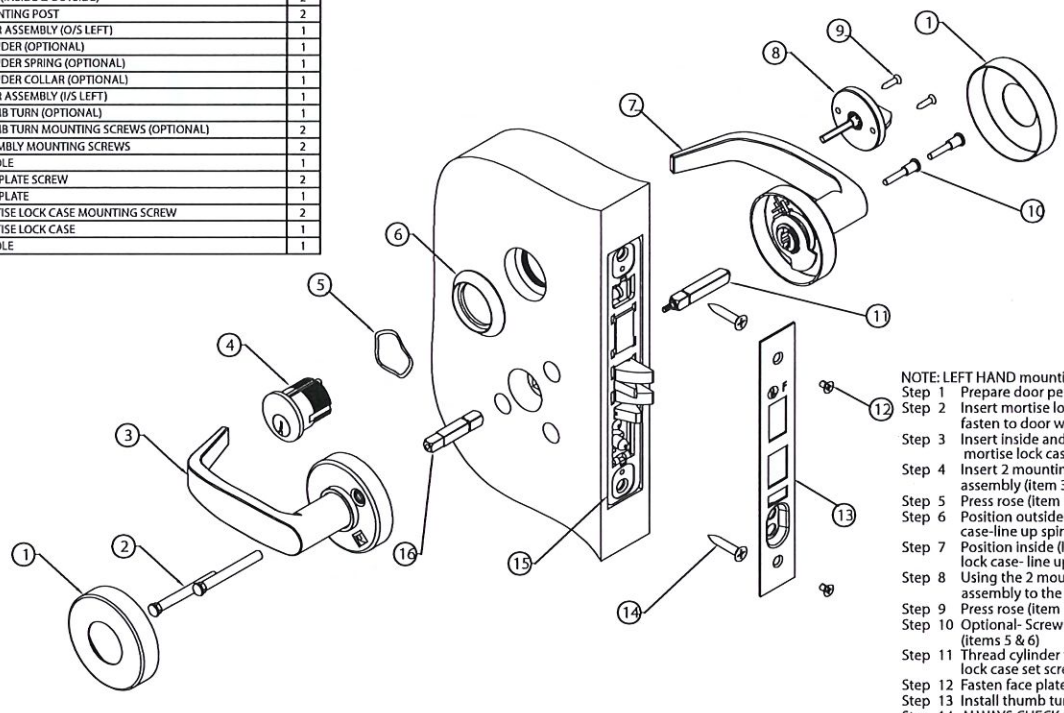
Step 12 ALWAYS CHECK OPERATION OF LOCK SET PRIOR TO LOCKING/SHUTTING DOOR

TO CHANGE HANDING: REVERSE INSIDE & OUTSIDE LEVER ASSEMBLIES (items 4 & 6) & CHANGE MORTISE LOCK CASE HANDING

Sectional

Installation Guide

PARTS LIST DESCRIPTION		
ITEM#	DESCRIPTION	QTY
1	ROSE (INSIDE & OUTSIDE)	2
2	MOUNTING POST	2
3	LEVER ASSEMBLY (O/S LEFT)	1
4	CYLINDER (OPTIONAL)	1
5	CYLINDER SPRING (OPTIONAL)	1
6	CYLINDER COLLAR (OPTIONAL)	1
7	LEVER ASSEMBLY (I/S LEFT)	1
8	THUMB TURN (OPTIONAL)	1
9	THUMB TURN MOUNTING SCREWS (OPTIONAL)	2
10	ASSEMBLY MOUNTING SCREWS	2
11	SPINDLE	1
12	FACE PLATE SCREW	2
13	FACE PLATE	1
14	MORTISE LOCK CASE MOUNTING SCREW	2
15	MORTISE LOCK CASE	1
16	SPINDLE	1



NOTE: LEFT HAND mounting is shown

Step 1 Prepare door per supplied template

Step 2 Insert mortise lock case (item 15) into mortise cutout and fasten to door with screws (item 14)

Step 3 Insert inside and outside spindles (items 11 & 16) into the mortise lock case hub and tighten screw

Step 4 Insert 2 mounting posts (item 2) into the outside lever assembly (item 3)

Step 5 Press rose (item 1) onto the outside lever assembly (item 3)

Step 6 Position outside (O/S) lever assembly onto the mortise lock case-line up spindle & mounting posts with mortise lock case

Step 7 Position inside (I/S) lever assembly (item 7) onto the mortise lock case- line up spindle

Step 8 Using the 2 mounting screws (item 10) fasten the I/S lever assembly to the O/S lever assembly

Step 9 Press rose (item 1) onto the inside lever assembly (item 7)

Step 10 Optional- Screw in cylinder (item 4) using spring and collar (items 5 & 6)

Step 11 Thread cylinder to operational depth and secure with mortise lock case set screw

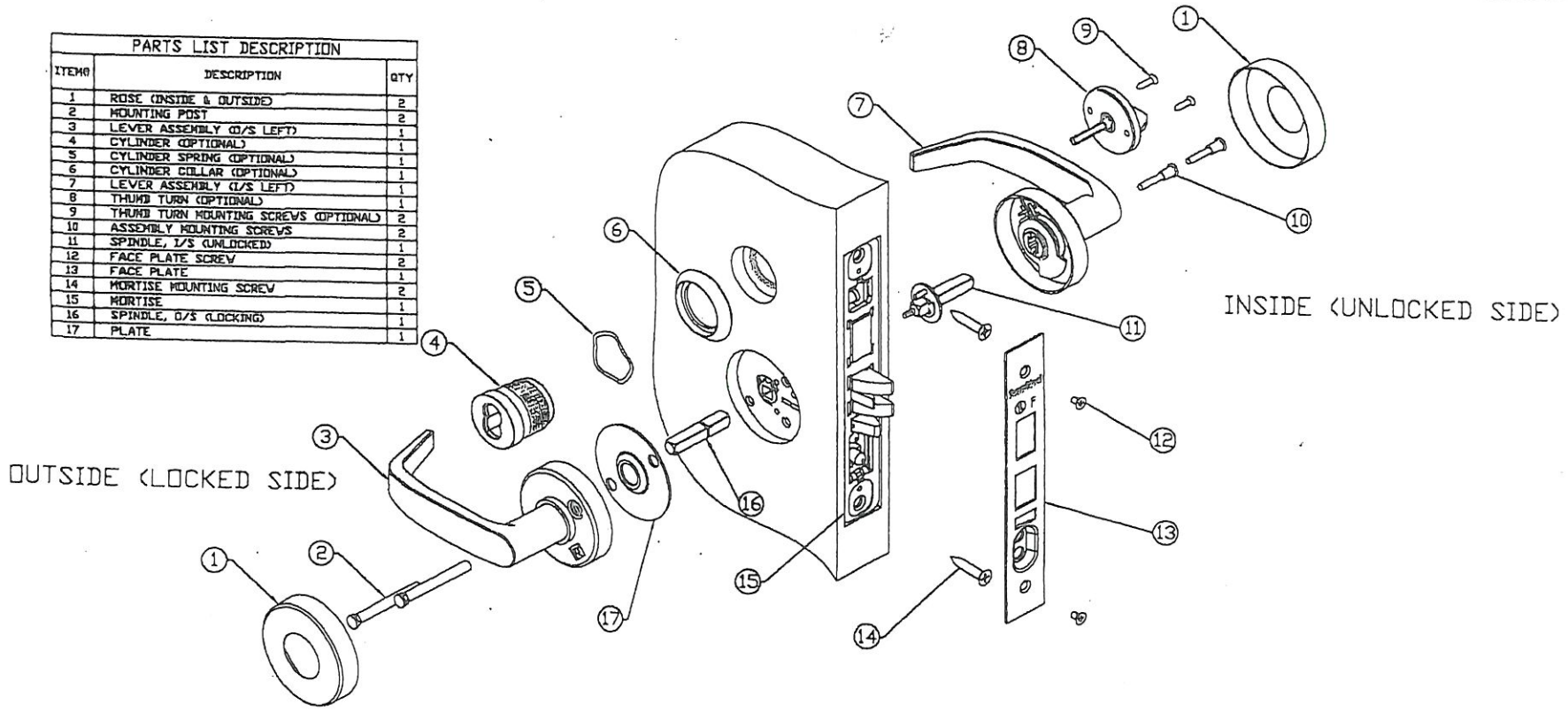
Step 12 Fasten face plate (item 13) on using screws (item 12)

Step 13 Install thumb turn (items 8 & 9) if required

Step 14 ALWAYS CHECK OPERATION OF LOCK SET PRIOR TO LOCKING/SHUTTING DOOR

TO CHANGE HANDING: REVERSE INSIDE & OUTSIDE LEVER ASSEMBLIES (items 3 & 7) & CHANGE MORTISE LOCK CASE HANDING

PARTS LIST DESCRIPTION		
ITEM#	DESCRIPTION	QTY
1	ROSE (INSIDE & OUTSIDE)	2
2	MOUNTING POST	2
3	LEVER ASSEMBLY (O/S LEFT)	1
4	CYLINDER (OPTIONAL)	1
5	CYLINDER SPRING (OPTIONAL)	1
6	CYLINDER COLLAR (OPTIONAL)	1
7	LEVER ASSEMBLY (I/S LEFT)	1
8	THUMB TURN (OPTIONAL)	1
9	THUMB TURN MOUNTING SCREWS (OPTIONAL)	2
10	ASSEMBLY MOUNTING SCREWS	2
11	SPINDLE, I/S (UNLOCKED)	1
12	FACE PLATE SCREW	2
13	FACE PLATE	1
14	MORTISE MOUNTING SCREW	2
15	MORTISE	1
16	SPINDLE, O/S (LOCKING)	1
17	PLATE	1



NOTE: LEFT HAND mounting is shown
Step 1 Prepare door per supplied template
Step 2 Insert mortise (item 15) into mortise cutout and fasten to door with screws (item 14)
Step 3 Insert inside and outside spindles (items 11 & 16) into the lock case hub and tighten screw
Step 4 Insert 2 mounting posts (item 2) into the outside lever assembly (item 3)
Step 5 Press rose (item 1) onto the outside lever assembly (item 3), add plate (item 17)- slip on to mounting posts
Step 6 Position outside (O/S) lever assembly onto the mortise- line up spindle and mounting posts with mortise
Step 7 Position inside (I/S) lever assembly (item 7) onto the mortise- line up spindle
Step 8 Using the 2 mounting screws (item 10) fasten the I/S lever assembly to the O/S lever assembly
Step 9 Press rose (item 1) onto the inside lever assembly (item 7)
Step 10 Optional- Screw in cylinder (item 4) using spring and collar (items 5 & 6)
Step 11 Thread cylinder to operational depth and secure with mortise set screw
Step 12 Fasten face plate (item 13) on using screws (item 12)
Step 13 Install thumb turn (items 8 & 9) if required
Step 14 ALWAYS CHECK OPERATION OF LOCK SET PRIOR TO LOCKING/SHUTTING DOOR
TO CHANGE HANDING: REVERSE INSIDE & OUTSIDE LEVER ASSEMBLIES (items 3 & 7)

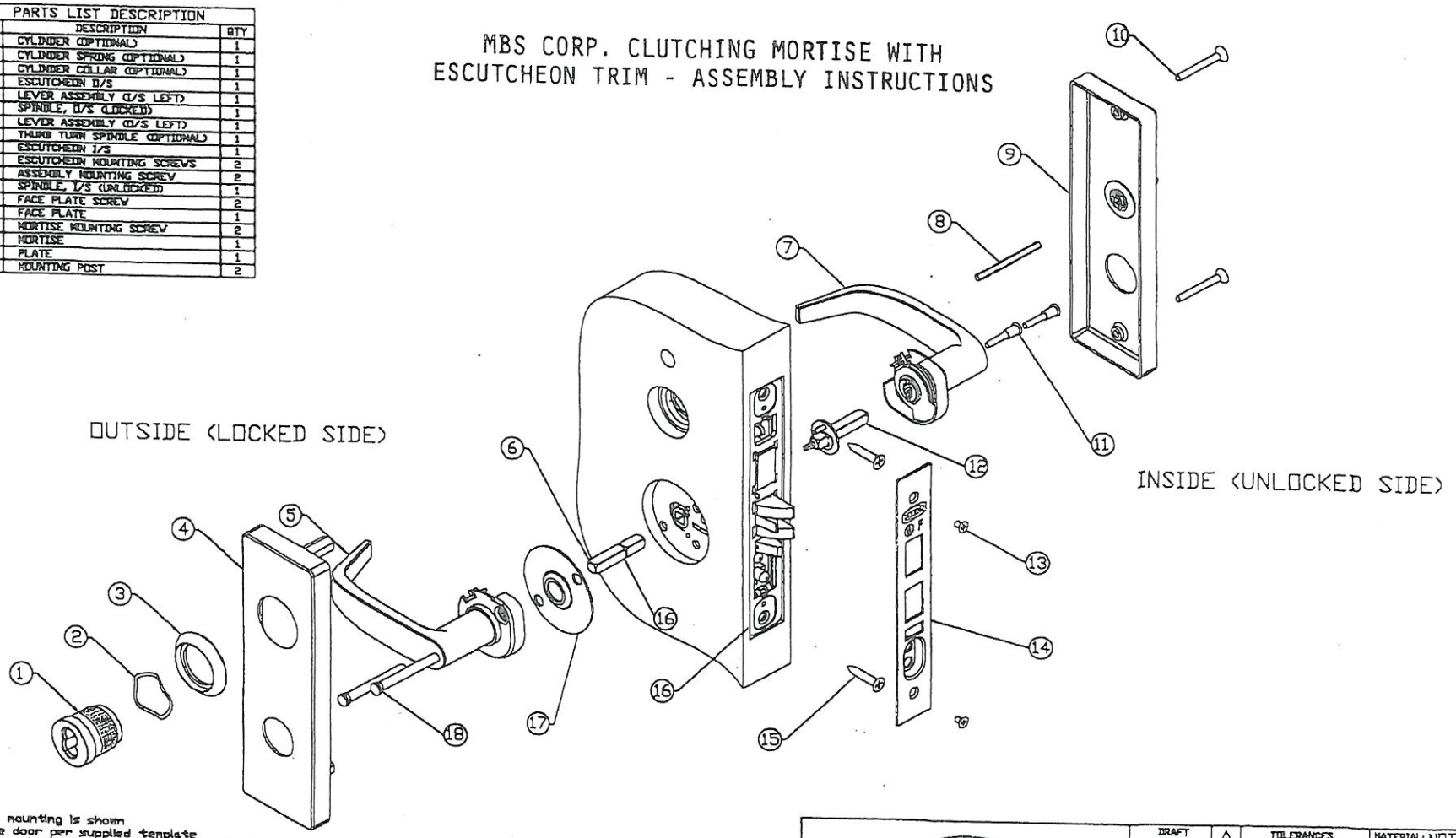
MBS CORP. CLUTCHING MORTISE WITH SECTIONAL TRIM- ASSEMBLY INSTRUCTIONS

MARSHALL BEST SECURITY CORP.
13097 Parkside Dr., Suite B
Fishers, IN 46038 • 317-806-1180
www.marshallbestsecurity.com

DRAFT UNLESS OTHERWISE SPECIFIED:	A
1° MAX	
DRAWN BY:	SC
DATE:	3-6-14
TOLERANCES UNLESS OTHERWISE SPECIFIED:	
X.X (METRIC) ±0.4	
X.XX (METRIC) ±0.15	
FRACTIONS ± 1/8	
ANGLES ± 1/2°	
∅ .12	
MACHINED SURFACES 125	
THIRD ANGLE	
MATERIAL: NOTED	
HEAT TREAT: N/A	
FINISH: N/A	
TITLE: CLUTCHING MORTISE ASSY INSTRUCTION	
PART#: INSTRUCTION	

MBS CORP. CLUTCHING MORTISE WITH ESCUTCHEON TRIM - ASSEMBLY INSTRUCTIONS

PARTS LIST DESCRIPTION		
ITEM#	DESCRIPTION	QTY
1	CYLINDER (OPTIONAL)	1
2	CYLINDER SPRING (OPTIONAL)	1
3	CYLINDER COLLAR (OPTIONAL)	1
4	ESCUTCHEON O/S	1
5	LEVER ASSEMBLY (O/S LEFT)	1
6	SPINDLE, O/S (LOCKED)	1
7	LEVER ASSEMBLY (I/S LEFT)	1
8	THUMB TURN SPINDLE (OPTIONAL)	1
9	ESCUTCHEON I/S	1
10	ESCUTCHEON MOUNTING SCREWS	2
11	ASSEMBLY MOUNTING SCREW	2
12	SPINDLE, I/S (UNLOCKED)	1
13	FACE PLATE SCREW	2
14	FACE PLATE	1
15	MORTISE MOUNTING SCREW	2
16	MORTISE	1
17	PLATE	1
18	MOUNTING POST	2



NOTE: LEFT HAND mounting is shown
Step 1 Prepare door per supplied template
Step 2 Insert mortise (Item 16) into mortise cutout and fasten to door with screws (Item 15)
Step 3 Insert inside and outside spindles (Items 6 & 12) into the lock case hub and tighten screw
Step 4 Insert 2 mounting posts (Item 18) into the outside lever assembly (Item 5), add plate (Item 17)- slip on to mounting posts
Step 5 Position outside (O/S) lever assembly onto the mortise- line up spindle and mounting posts with mortise
Step 6 Position inside (I/S) lever assembly (Item 7) onto the mortise- line up spindle.
Step 7 Using the 2 mounting screws (Item 11) fasten the I/S lever assembly to the O/S lever assembly.
Step 8 Position thumb turn spindle (Item 8), if required, as shown between escutcheon and mortise- line up with mortise
Step 9 Install O/S & I/S Escutcheons (Items 4 & 9) over lever assemblies and fasten with screws (Item 10)
Step 10 Optional- Screw in cylinder (Item 1) using spring and collar (Items 2 & 3)
Step 11 Thread cylinder to operational depth and secure with mortise set screw
Step 12 Fasten face plate (Item 14) on using screws (Item 13)
Step 13 ALWAYS CHECK OPERATION OF LOCK SET PRIOR TO LOCKING/SHUTTING DOOR
TO CHANGE HANDING: REVERSE INSIDE & OUTSIDE LEVER ASSEMBLIES (Items 5 & 7)

MARSHALL BEST SECURITY CORP.
13097 Parkside Dr., Suite B
Fishers, IN 46038 - 317-806-1180
www.marshallbestsecurity.com

DRAFT UNLESS OTHERWISE SPECIFIED: 1° MAX	A
DRAWN BY: SC	
DATE: 3-6-14	
TOLERANCES UNLESS OTHERWISE SPECIFIED: XX (METRIC) ±0.4; XXX (METRIC) ±0.13; FRACTIONS ±.8; ANGLES ± ±1/2°; Ø .12; MACHINED SURFACES 125; THIRD ANGLE	
MATERIAL: NOTED	
HEAT TREAT: N/A	
FINISH: N/A	
TITLE: CLUTCHING MORTISE ASSY INSTRUCTION	
PART#: INSTRUCTION	

1. Function Description:

EU - Electrically Unlocked (Fail Secure):

When power is applied the outside trim will unlock. With power removed the outside trim is locked.

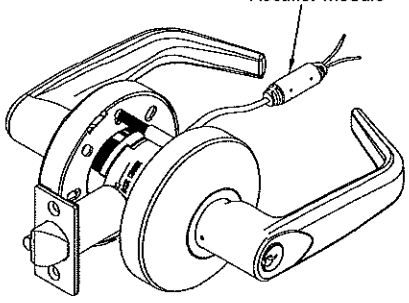
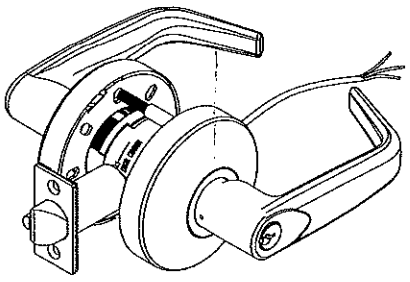
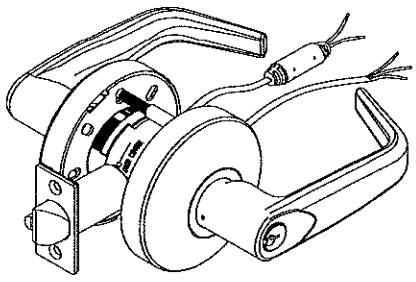
EL - Electrically Locked (Fail Safe):

When power is applied the outside trim will lock. With power removed the outside trim is unlocked.

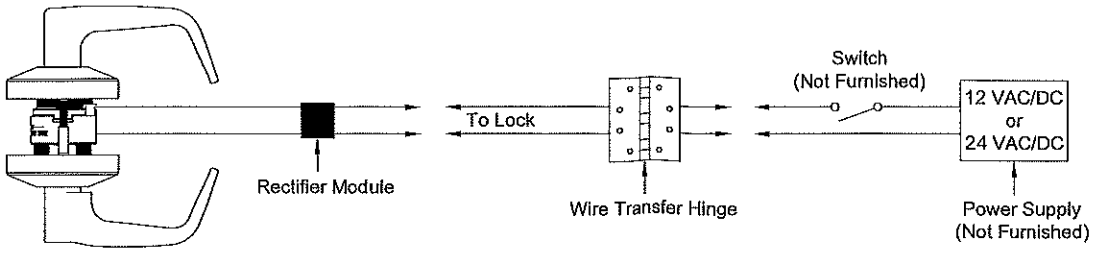
RX - Request to Exit:

A microswitch attached to the chassis is activated when the inside lever is rotated. The switch signals the use of the lever to security systems allowing a non-disruptive means of immediate egress.

2. Electrical Specifications:

Electrified Functions	RX Functions	
EU and EL	**RX**	**EU-RX and EL-RX**
- 24 Volts AC/DC +/-10% operating current .145 AMP - 12 Volts AC/DC +/-10% operating current .293 AMP * All solenoids are continuous duty type. * White heat shrinkable tubings on solenoid leads designates 12 volt.	- Voltage 250 VAC - Current rating: 1 AMP - Wire leads: 22 AWG The 3-wire utilizes a UL recognized SPDT switch providing a choice of: * Normally closed operation use the white (COM.) & gray wires * Normally open operation use the white(COM.) & purple wires	
Rectifier Module 		
NOTE: Warranty is void if rectifier module is removed.		

3. Wiring Diagram for Electrified Locks:



NOTE: All installations should be in accordance with local electrical codes.

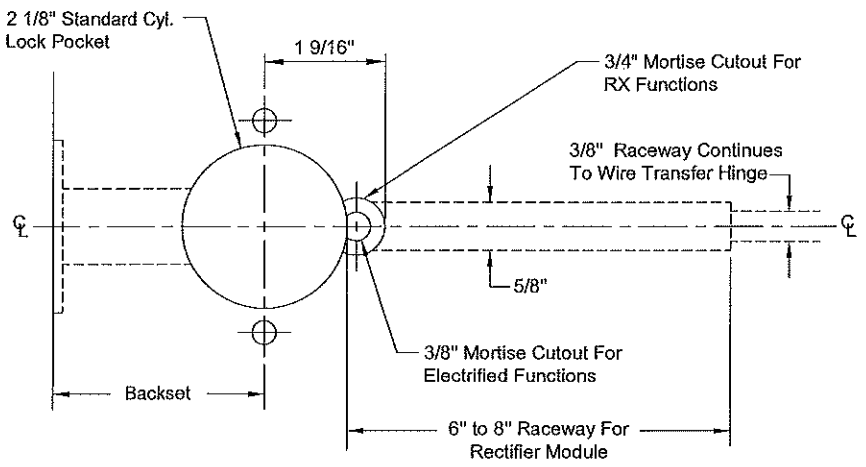
4. Installation Instructions:

A. Door Preparation

a. The door must be machined with a 3/8" wire raceway, Cyl. lock pocket & prepped for a wire transfer hinge. **Make sure the pocket is free of debris.**

b. Provide a 5/8" dia. hole extending 6" to 8" in depth from back edge of Cyl. lock pocket. This provide room for insertion of rectifier module and wires.

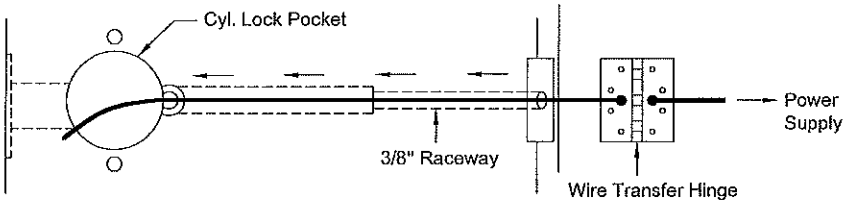
c. Provide a 3/8" dia. through hold for electrified functions or provide a 3/4" dia. for RX functions.



B. Install Wire Route

a. Run the wires from the wire transfer hinge through the 3/8" raceway starting at the wire transfer hinge & exiting into the Cyl. lock pocket.

b. Screw the wire transfer hinge to the door (at this time **DO NOT** connect the hinge wires on the jamb side to the wires coming from the power supply).

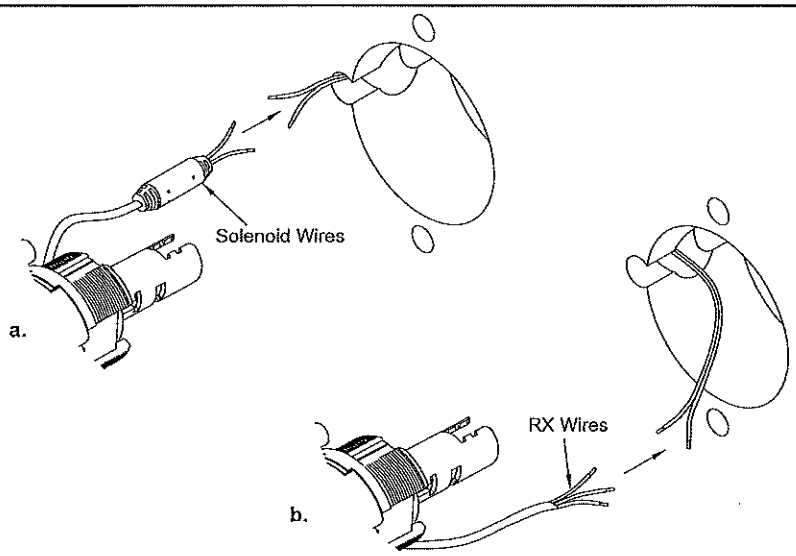


C. Install Outside Trim

a. **Electrified Functions:**
Terminate the two blue wires from lock to the wire transfer hinge device using 22 AWG wire. Use proper crimp splices or wire nuts for terminating connections. (No Polarity of wire is required)

b. **RX Functions:**
Terminate the three wires from lock to the wire transfer hinge device using 22 AWG wire. Use proper crimp splices or wire nuts for terminating connections.

c. Carefully slip the connected Cyl. lock chassis into the pocket paying close attention not to pinch any wires.



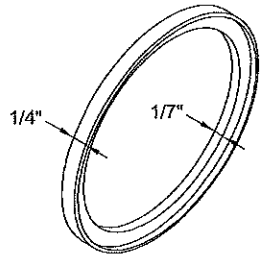
D. Follow UP

a. Mount the Cyl. lock per manufacturer's instructions.

b. Connect the wires from the power supply at the wire transfer hinge on the jamb side. Connect the wire transfer hinge to the jamb.

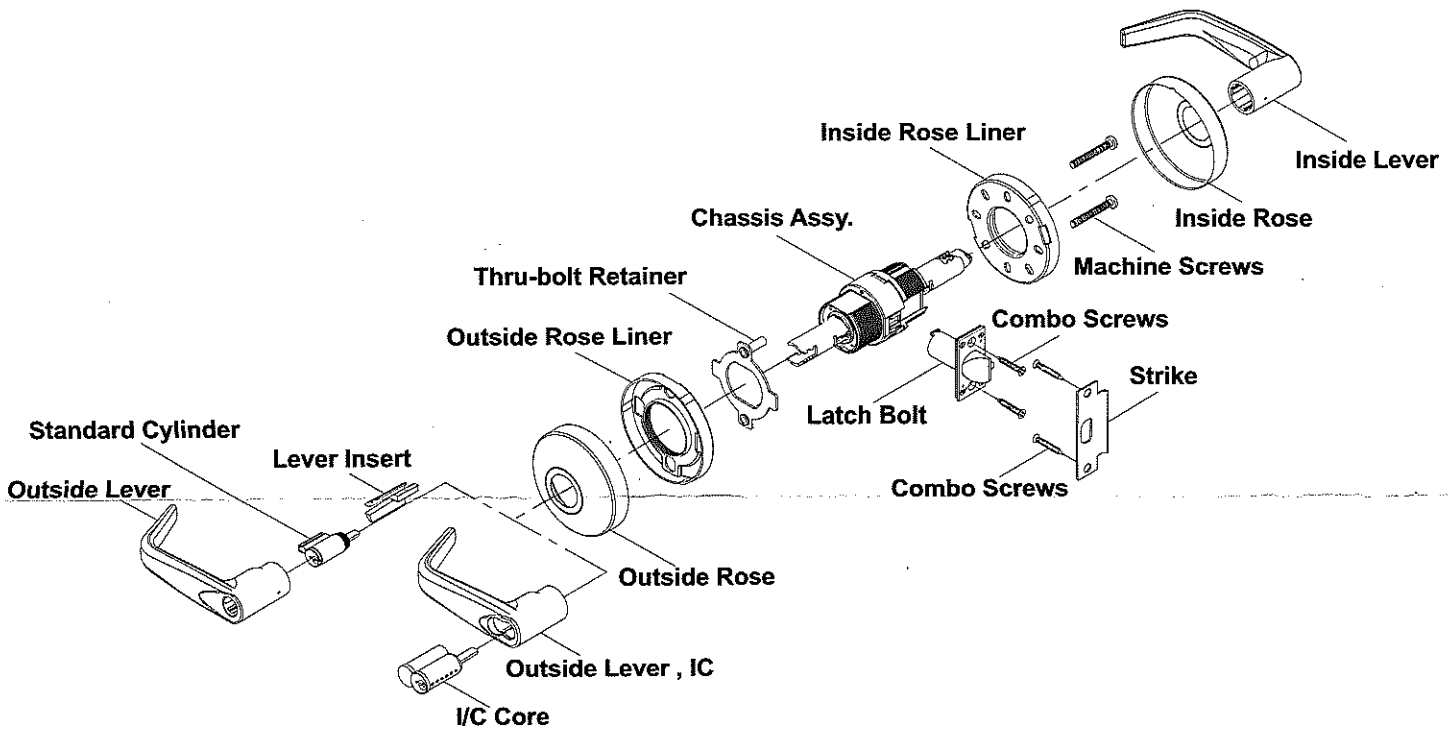
5. Accessories:

For installation on 1 3/8" doors, two (2) spacers are required.



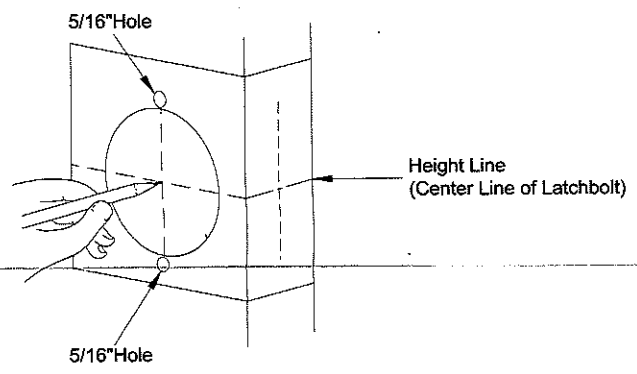
1 3/8" Lever Door Spacer

HOW TO INSTALL THIS CYLINDRICAL LEVER LOCK



1. MARK DOOR

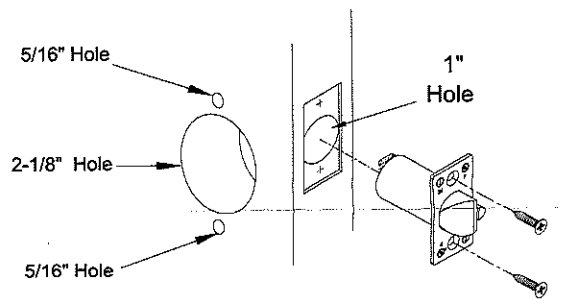
a. Mark height line on edge of door approximately 38" from floor.
b. Using the proper backset, mark 2 1/8" hole on both sides of the door.
c. Mark 5/16" holes, two places on outside of the door.
d. Mark the center of the door edge for the latch.



2. DOOR PREPARATION

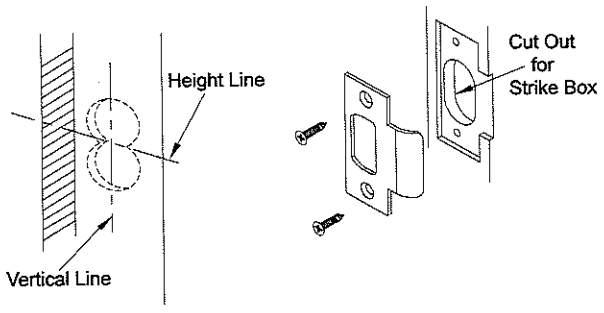
a. Bore 2 1/8" hole thru and two 5/16" holes from both sides of door to prevent splintering door finish.
b. Bore 1" hole for latch on door.
c. Using the latch faceplate as a guide, trace outline and mortise door edge so latch is flush with door.
d. Install latch with screws provided

NOTE : Hollow metal doors must be properly reinforced for lock support (if support was not furnished, contact door manufacturer).



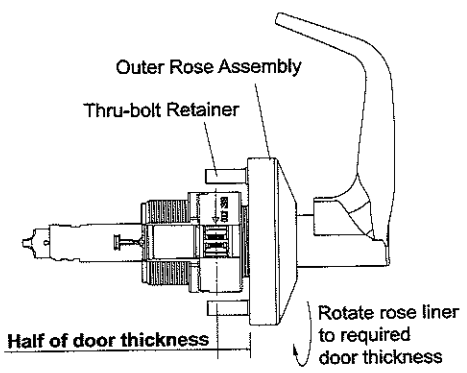
3. INSTALL STRIKE

a. Use strike locating tool or pointed object to locate position for hole in frame.
b. Bore 1" x 3/4" deep hole. Use strike as a template and mortise to the proper depth.
c. If dust box is to be used, clear area with wood chisel.



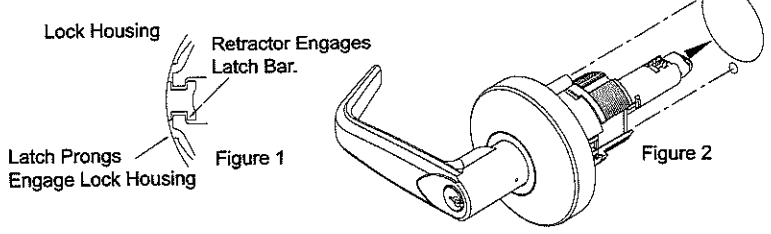
4. CHASSIS ADJUSTMENT

For door thickness adjustment:
A. Remove Thru-bolt Retainer away from outer rose assembly.
B. Rotate rose assembly to required position of door thickness.
C. Move back Thru-bolt Retainer and mate with outer mounting plate.



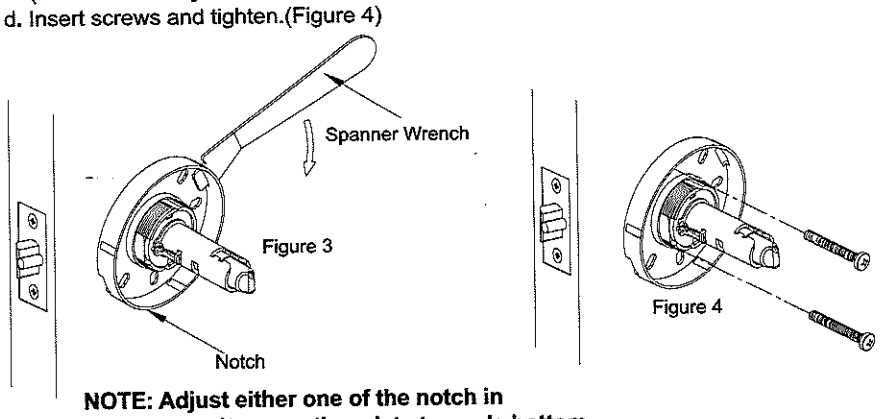
5. INSTALL OUTSIDE CHASSIS

a. For ease of installation, lock should be in the unlocked position.(Figure 1)
b. Slide chassis assembly into door from outside making sure that lock housing engages latch prongs, retractor must also engage latch bar.(Figure 2)
IMPORTANT: Chassis assembly must be positioned in center of door for proper operation.



CAUTION: Do not attempt to mount lock unit with door closed.

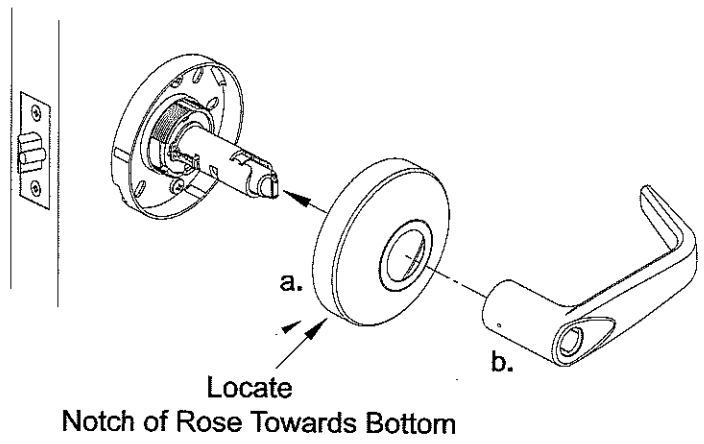
c. Screw inside security mounting plate onto hub and tighten firmly by rotating plate with spanner wrench, adjust screw holes in plate to align with through bolts.(Figure 3)
(NOTE: Also adjust either one of the notch in plate towards bottom.)
d. Insert screws and tighten.(Figure 4)



NOTE: Adjust either one of the notch in security mounting plate towards bottom.

6. INSTALL INSIDE TRIM

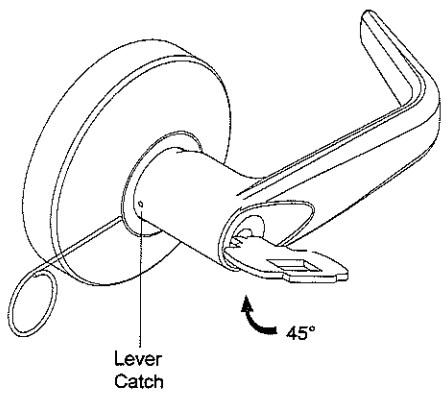
a. Locate the notch on edge of rose towards bottom and push in until flush with face of door .
b. Align lever with spindle and push lever catch engages with hole.
c. Check function before closing door.



7. INSTRUCTIONS FOR REMOVING KEYED LEVERS

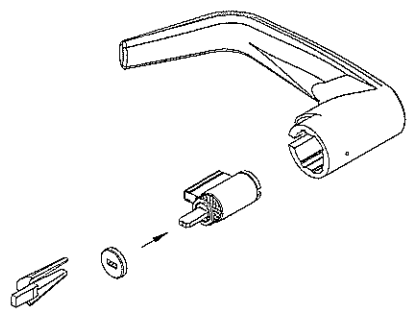
7.1 REMOVING LEVERS

a. For Outside Levers Only:Turn key **45° clockwise** and hold.
b. Depress lever catch and pull off lever and cylinder.



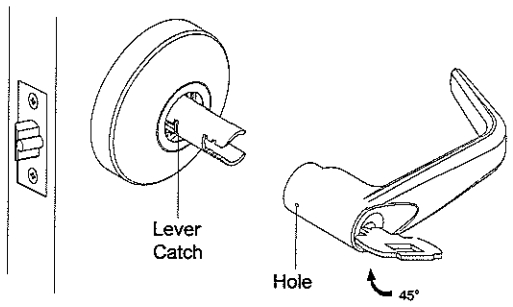
7.2 INSTALLING STANDARD CYLINDERS INTO LEVERS

a. Attach a spacer on tailpiece.
b. Insert cylinder into lever.
c. Insert key into cylinder to hold and align cylinder.
d. Put lever insert into lever to secure cylinder.



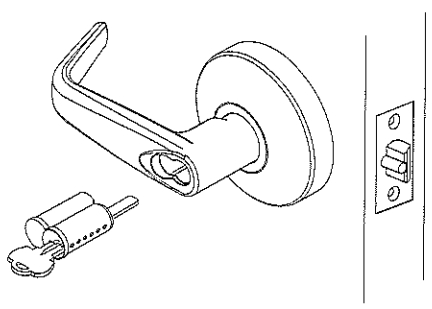
7.3 INSTALLING STANDARD CYLINDERS & LEVERS

a. Align hole in lever with lever catch on spindle assembly and slide lever up to lever catch.
b. For Outside Levers Only:Turn key or button **45° clockwise** and hold.
c. Push lever in to engage lever catch.
d. Check function before closing door.



7.4 REMOVING IC CORE

a. Unlock lockset.
b. Turn control key **15° clockwise(CW)** or until key stops.
c. Pull key to remove IC core.

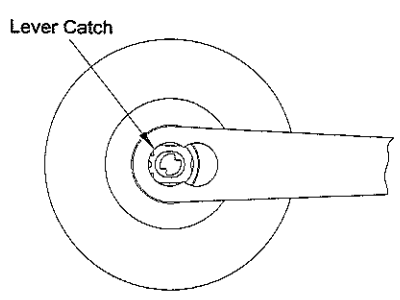


7.5 INSTALLING IC CORE

a. With control key in core rotate key **15° clockwise** and insert fully into lever.
b. Turn the key counter-clockwise and remove key.
c. Check function before closing door.

7.6 REMOVING IC LEVERS

a. With IC core removed, using a screwdriver, depress lever catch and pull lever to remove.



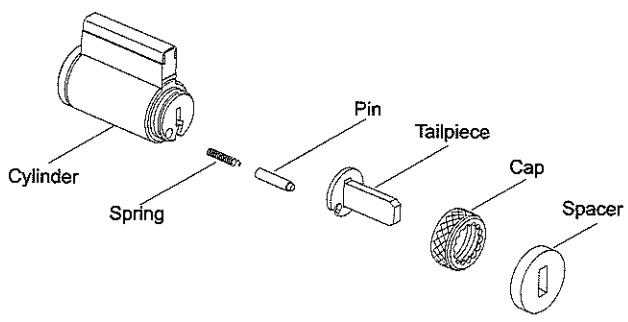
7.7 INSTALLING IC LEVERS

a. Push lever in until lever catch engages with lever.

7.8 TAILPIECE INSTALLATION

a. Insert spring and pin into cylinder.
b. Place tailpiece into cap.
c. Thread cap onto the cylinder.
d. Attach a spacer on tailpiece.

NOTE: The cap must be properly adjusted . If too loose, excessive plug end play will prevent the key from being withdrawn. If too tight, the plug will drag and be difficult to rotate with the key.



7.9 CYLINDER TIMING

For Store Function:
a. Install lock on door as shown in steps 1 thru 7.
b. Using a 1/4" diameter philips screwdriver, turn key spindle until stop and lever is locked.
c. Turn back the key spindle 1/2 turn.
d. If IC go to g.. Remove standard cylinder lever.
e. Insert cylinder into lever as shown in step 8.2.
f. Insert lever and cylinder onto spindle and shown in step 8.3.
g. For IC: Install IC lever into spindle as shown in step 8.7.
Insert cylinder into lever as shown in step 8.5.
h. Repeat a. thru g. for opposite side.
i. Check operation:
Outside-turn key **CCW 270°** to unlock.
turn key **CW 180°** to lock.
Inside -turn key **CCW 270°** to unlock.
turn key **CW 180°** to lock.

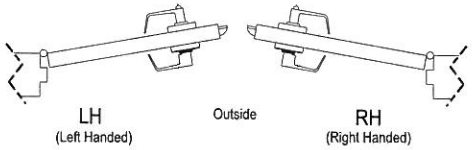
For Communicating & Classroom Function:
a. Install lock on door as shown in steps 1 thru 7.
b. Using a 1/4" diameter philips screwdriver, turn key spindle until stop and lever is locked.
c. If IC go to g.. Remove standard cylinder lever.
d. Insert cylinder into lever as shown in step 8.2.
e. Slide lever and cylinder onto the spindle and push the cylinder in to engage the key spindle.
f. Insert key into cylinder and turn **CW 45°**.
g. For IC: Insert cylinder into lever as shown in step 8.4.
h. Check operation:
Outside-turn key **CW 360°** to unlock.
turn key **CCW 360°** to lock.

Timing of Double Cylinder Classroom Security Function (I/C)

A. OUTSIDE

1. Determine Handing of DOOR

Make sure LH(Left Handed) or RH(Right Handed) door before installation.



2. Check Lock Status

A. Insert lever onto spindle.

B. Turn the outside lever as (Figure 1) and retract the latchbolt in order to make sure the lock is in **unlocked** mode.

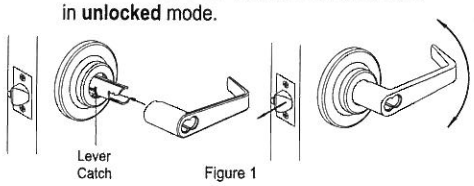


Figure 1

3. Determine Handing of LOCK

A. For RH door, to use the flat head screwdriver to turn the breach of CAM face up. (Figure 2)

B. For LH door, to use the flat head screwdriver to turn the breach of CAM face down. (Figure 3)

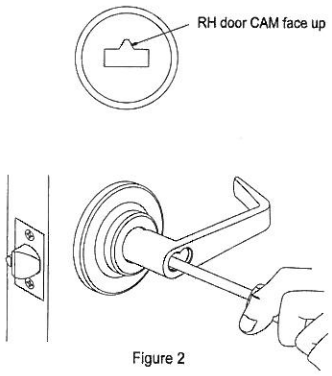


Figure 2

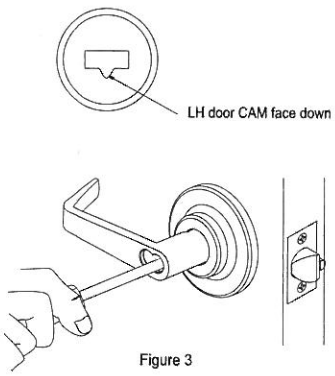


Figure 3

4. Install IC Core

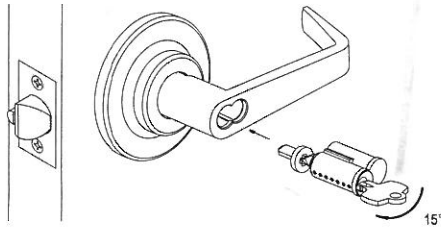
A. With control key in core rotate **15° clockwise (CW)** and insert fully into lever.

B. Turn the key **counter clockwise (CW)** and remove control key.

C. Check function before closing door by following steps:

a. Rotate key **270° clockwise (CW)** for locked mode then rotate **270° counter clockwise (CCW)** to remove key.

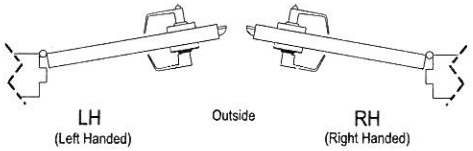
b. Rotate key **180° counter clockwise (CCW)** for unlocked mode then rotate **180° clockwise (CW)** to remove key.



B. INSIDE

1. Determine Handing of DOOR

Make sure LH(Left Handed) or RH(Right Handed) door before installation.



2. Check Lock Status

A. Insert lever onto spindle.

B.Turn the outside lever as (Figure 1) and retract the latchbolt in order to make sure the lock is in **unlocked** mode.

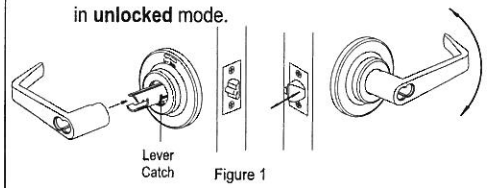


Figure 1

3. Determine Handing of LOCK

A. For RH door, to use the flat head screwdriver to turn the breach of CAM face up. (Figure 2)

B. For LH door, to use the flat head screwdriver to turn the breach of CAM face down. (Figure 3)

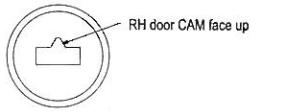


Figure 2

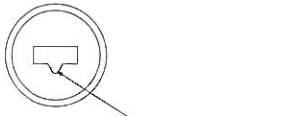


Figure 3

4. Install IC Core

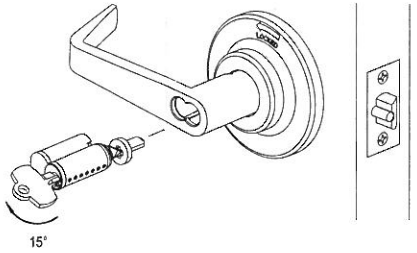
A. With control key in core rotate key **15° clockwise(CW)** and insert fully into lever.

B. Turn the key **counter clockwise (CCW)** and remove control key.

C. Check function before closing door by following steps:

a. Rotate key **270° counter clockwise (CCW)** for locked mode then rotate **270° clockwise (CW)** to remove key.

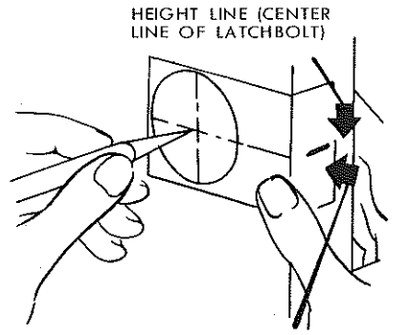
b. Rotate key **180° clockwise (CW)** for unlocked mode then rotate **180° counter clockwise (CCW)** to remove key.



HOW TO INSTALL
THIS HEAVY DUTY CYLINDRICAL LOCK SET

1 MARK DOOR

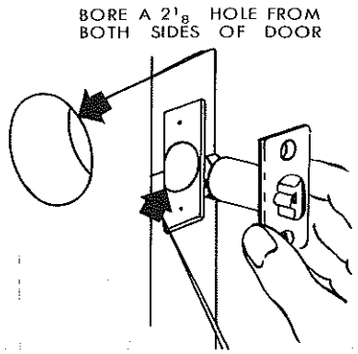
Mark height line (center line of latchbolt) on edge of door. Suggested height from floor 38". Mark center point of door thickness. Position center line of template on height line. Hold in place and mark center point for $2\frac{1}{8}$" hole.



MARK CENTER FOR 1" HOLE AT CENTER POINT ON HEIGHT LINE

2 BORE TWO HOLES

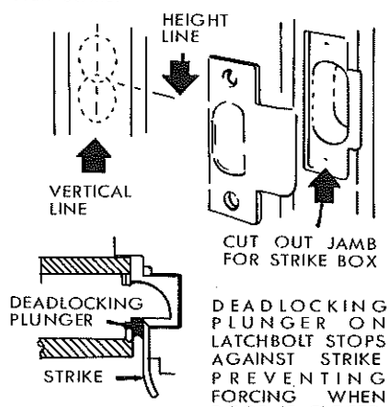
Bore a $2\frac{1}{8}$" hole at point marked through template. Bore a 1" hole straight into edge of door at center point on height line. Cut out for latch front and install latchbolt.



BORE A 1" HOLE AND CUT OUT FOR LATCH FRONT.

3 INSTALL STRIKE

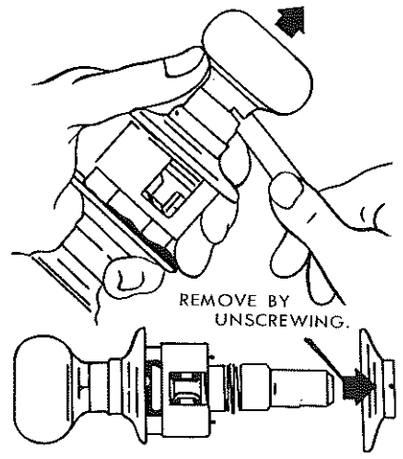
Mark vertical line and height line on jamb exactly opposite center point of latch hole. Bore two 1" holes $11/16$" deep in jamb on vertical line $5/16$" above and below height line. Clean out hole and install strike.



DEADLOCKING PLUNGER ON LATCHBOLT STOPS AGAINST STRIKE PREVENTING FORCING WHEN DOOR IS CLOSED.

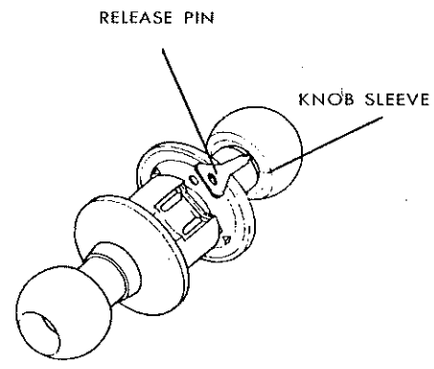
4 REMOVE INSIDE TRIM

Insert pointed end of spanner wrench through hole in knob sleeve on side facing latch retractor. Depress knob catch and slide knob off spindle.



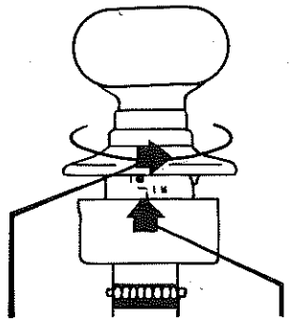
FOR REMOVING BALL KNOB

Insert pointed end of release pin (included in package) in the hole under knob sleeve on side facing latch retractor, depress knob catch and slide knob off spindle.



5 ADJUST ROSE

Adjust lock to fit door thickness by rotating outside rose until correct door thickness appears above edge of housing and it is engaged with ratchet.

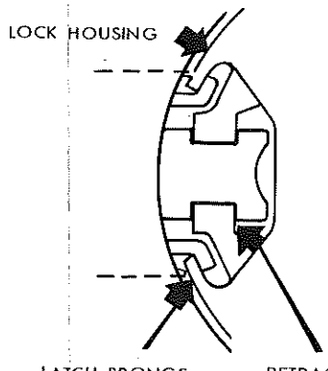


ROTATE ROSE TO ADJUST FOR DOOR THICKNESS

LOCK FITS ALL DOORS $1\frac{3}{8}$" TO 2"

6 INTERLOCK UNITS

Latch UNIT must be in place before installing lock. Engage lock housing with latch prongs and lock retractor with latch bar.

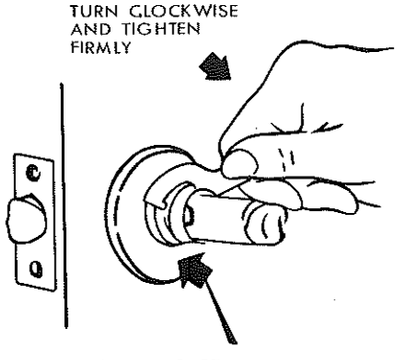


LATCH PRONGS ENGAGE LOCK HOUSING

RETRACTOR ENGAGES LATCH BAR.

7 ATTACH TRIM

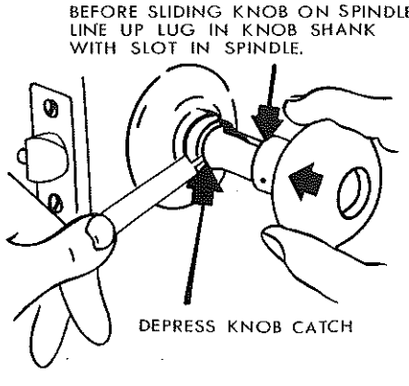
Slip inside rose over spindle and screw on to threads. Tighten firmly with spanner wrench.



ROSE HELD STATIONARY BY ANCHOR PINS AS BUSHING IS SCREWED ON TO HUB.

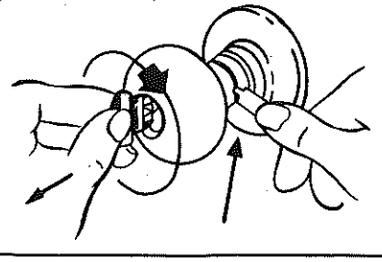
8 REPLACE KNOB

Slide knob on spindle. Depress knob catch and push knob into position. Pull knob to test fastening of catch. When properly installed, both knobs should operate freely.



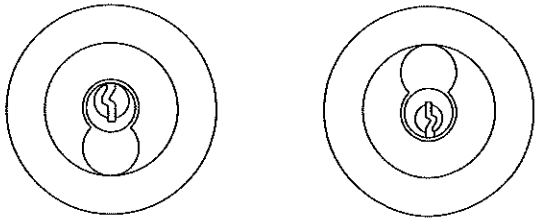
TO CHANGE LOCK HAND

Insert pointed end of Spanner Wrench through hole in the outside knob sleeve on side facing latchbolt. Push Spanner Wrench and at the same time turn key slowly until knob catch depresses; then pull off knob. Turn knob over and with key partly removed from cylinder, replace knob and side onto spindle up to knob catch. Turn key one-quarter turn to right, depress knob catch, and push knob into position.



INSTRUCTIONS FOR CHANGING HAND OF THIS INTERCHANGEABLE CORE LOCK

The Keyed Knob of this lock is reversible for right hand or left hand doors. If necessary to change the hand of lock so that keyway will be right side up, follow these instructions.

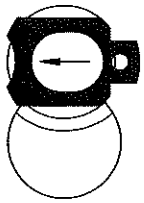


INCORRECT CORRECT

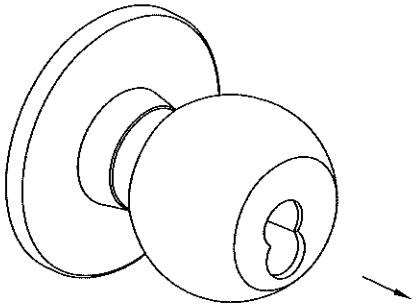
1. REMOVE OUTDE KNOB

a. Insert screw driver into Figure "8" core hole and into knob keeper. Depress knob keeper.

b. Slide keyed knob off sleeve.



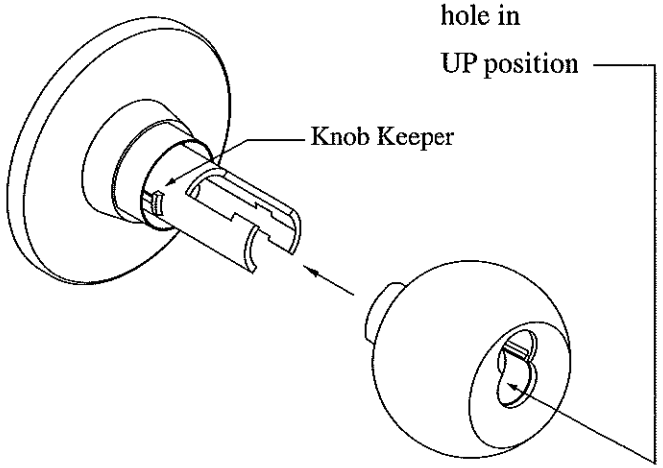
a



b

2. REPLACE KNOB

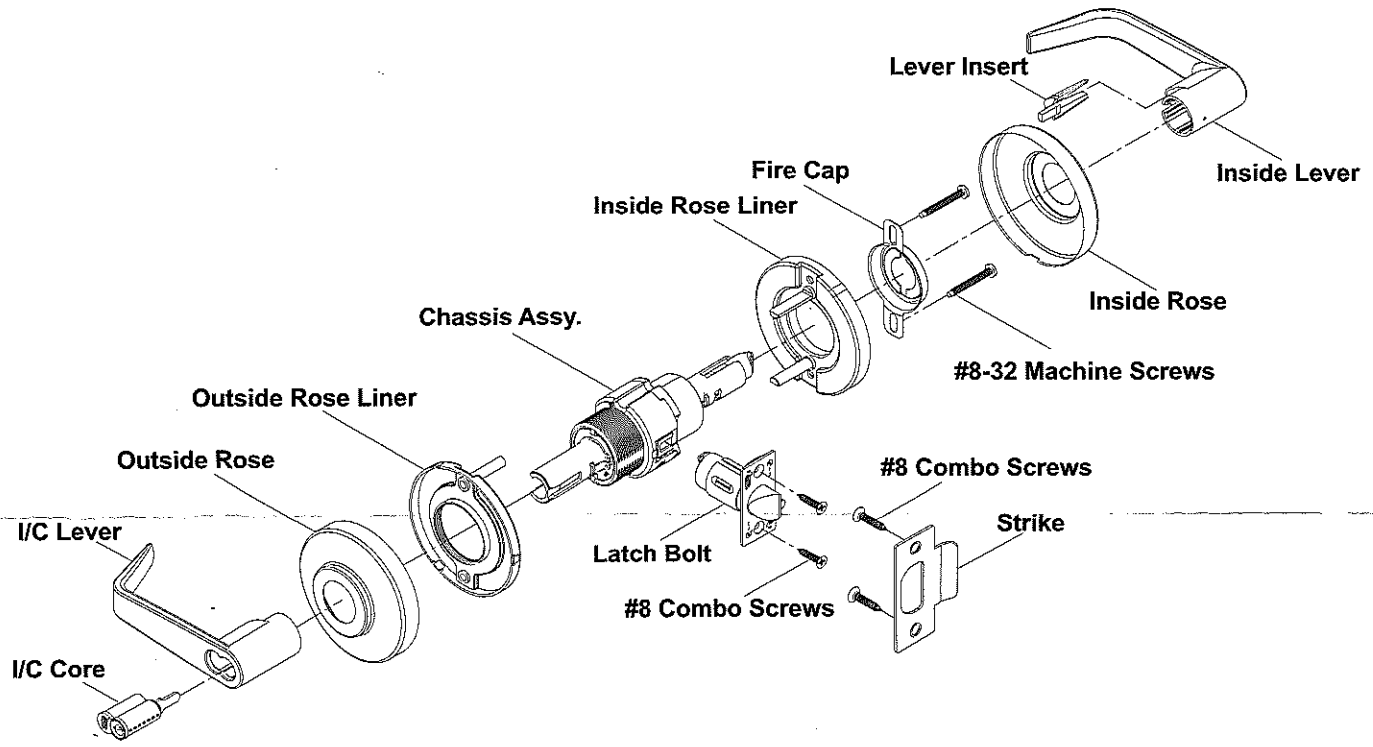
With "Figure 8" hole of knob in UP position, depress Knob Keeper and push knob until knob keeper engages with knob.



WD-OD002(192)

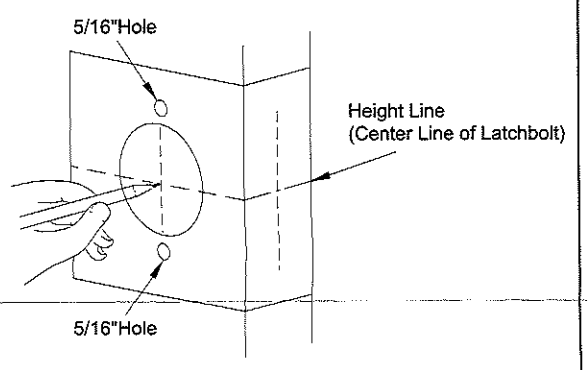
U.S. Patent No. 6,360,570

HOW TO INSTALL THIS CYLINDRICAL LEVER LOCK



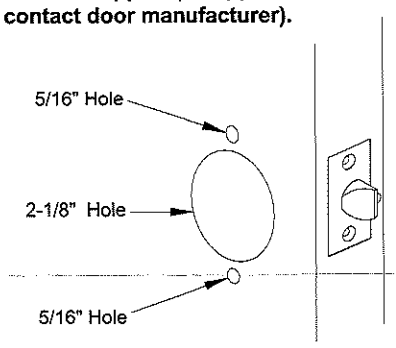
1. MARK DOOR

a. Mark height line on edge of door approximately 38" from floor.
b. Using the proper backset, mark 2 1/8" hole on both sides of the door.
c. Mark 5/16" holes, two places on outside of the door.
d. Mark the center of the door edge for the latch.



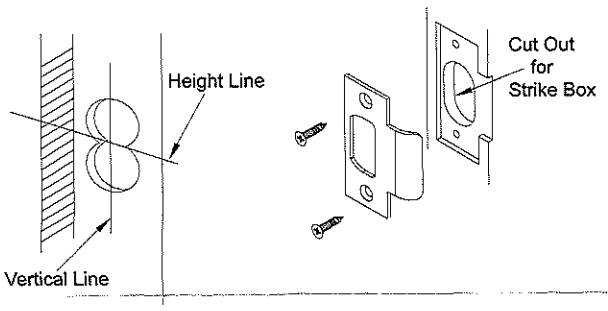
2. DOOR PREPARATION

a. Bore 2 1/8" hole thru and two 5/16" holes from both sides of door to prevent splintering door finish.
b. Bore 1" hole for latch on door.
c. Using the latch faceplate as a guide, trace outline and mortise door edge so latch is flush with door.
d. Install latch with screws provided
NOTE : Hollow metal doors must be properly reinforced for lock support (if support was not furnished, contact door manufacturer).



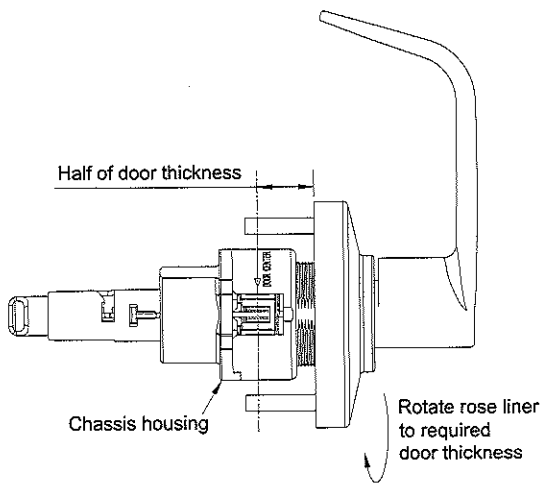
3. INSTALL STRIKE

a. Use strike locating tool or pointed object to locate position for hole in frame.
b. Bore 1" x 3/4" deep hole. Use strike as a template and mortise to the proper depth.
c. If dust box is to be used, clear area with wood chisel.



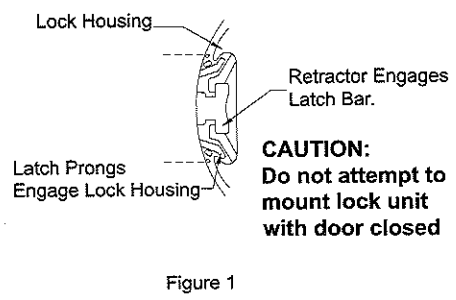
4. CHASSIS ADJUSTMENT

a. Rotate outside rose liner to required door thickness.



5. INSTALL OUTSIDE TRIM

a. For ease of installation, lock should be in the unlocked position.(Figure 1)
b. Slide chassis assembly into door from outside making sure that lock housing engages latch prongs, retractor must also engage latch bar.(Figure 2)
IMPORTANT: Chassis assembly must be positioned in center of door for proper operation.



CAUTION:
Do not attempt to mount lock unit with door closed

Figure 1

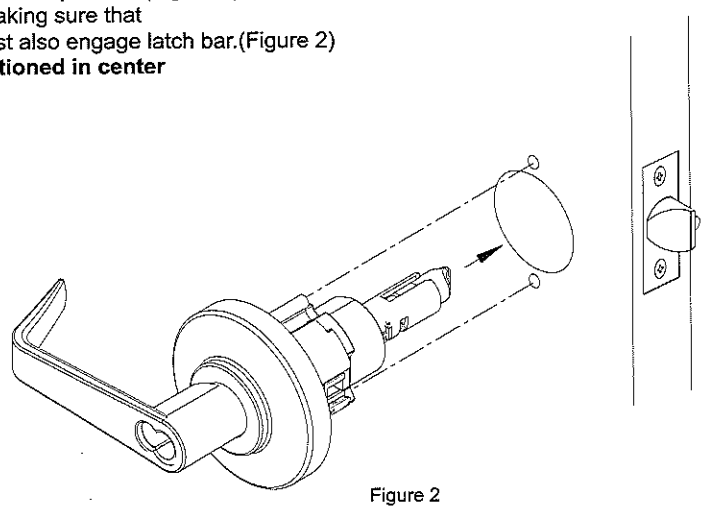
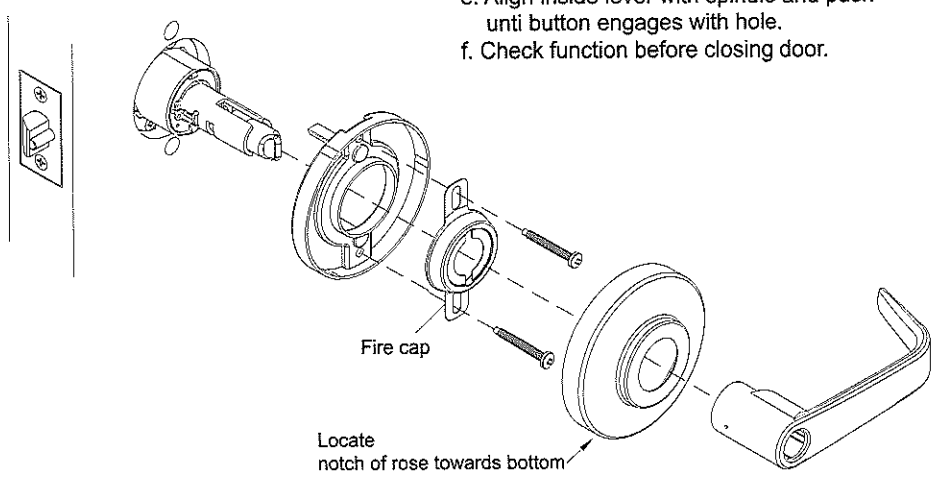


Figure 2

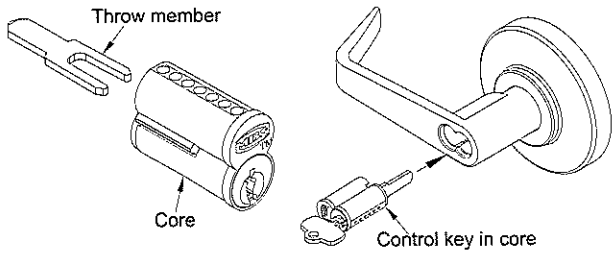
6. INSTALL INSIDE TRIM

a. Place inside rose liner over chassis.
b. Insert fire cap.
c. Insert screws and tighten.
d. Locate the notch on the edge of rose towards the bottom and push in until flush with face of door.
e. Align inside lever with spindle and push unti button engages with hole.
f. Check function before closing door.



7. INSTALL CORE

a. Insert the throw member into the core.
b. Put the control key into the core and turn the key **15° clockwise**.
c. Put the core and throw member into the lever with the control key.
d. Turn the **15° counterclockwise** and remove the key.
CAUTION : Since the control key is a high-security key,make sure to keep it protected.

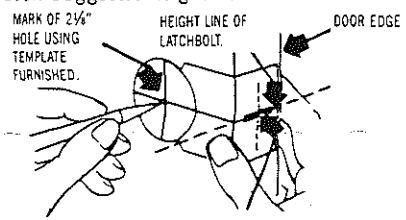


HOW TO INSTALL YOUR NEW CYLINDRICAL LOCK

FOR NEW LOCK INSTALLATION: Follow Steps 1 through 4 to prepare door and frame. **Doors thicker than 1⅞" require special locks.**
TO REPLACE AN EXISTING LOCK: Use cardboard marking template and latchbolt to check sizes of existing holes. Enlarge if necessary with wood rasp or similar tool. Use existing strike when possible.

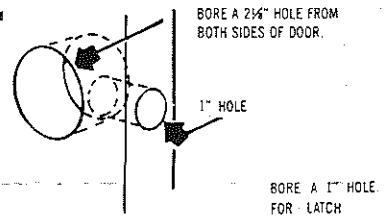
1 MARK DOOR

Mark height line of latchbolt on edge of door. Suggested height from floor 38".



MARK FOR CENTER OF LATCH HOLE ON HEIGHT LINE. MARK IN CENTER OF DOOR EDGE. DOORS OVER 1⅜" THICK, MARK HOLE ⅜" FROM OUTSIDE FACE OF DOOR.

2 BORE TWO HOLES

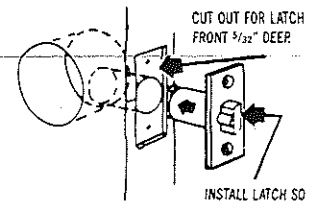


Tools: 2⅛", 1" bits, hand brace or power drill (½" chuck), hammer, wood chisel, Phillips screwdriver. For easier preparation, check with dealer on availability of other installation tools.

3 INSTALL LATCH

Follow 3A for standard latch and 3B for circular latch installation.

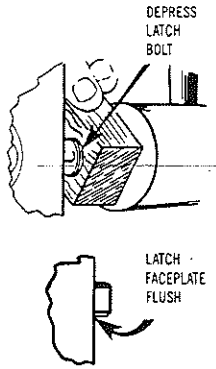
3A: STANDARD LATCH



3B: CIRCULAR LATCH

Insert latch partially into 1" diameter latch bolt hole. Line up beveled face of latch bolt with edge of jamb. Push latch into hole as far as it will go.

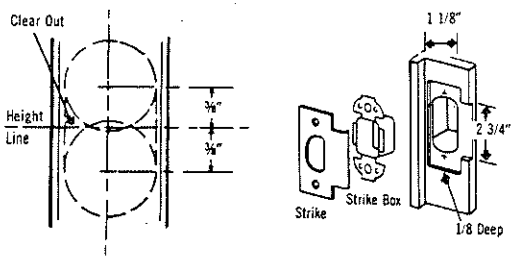
Place wooden block against bolt. Apply enough force to depress bolt. Tap block with mallet to drive latch into hole. Surface of latch faceplate should be flush with edge of door.



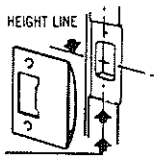
4 INSTALL STRIKE

Mark vertical line and height line on frame exactly opposite center point of latch hole.

Step 1. FOR T STRIKE bore two ⅞" holes, 11/16" deep in frame on vertical line ⅜" above and below *height line.*



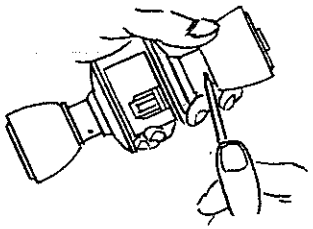
Step 2. FOR FULL LIP STRIKE mark screw holes for strike so that screws lie on same vertical center line as latch screws. Cut out frame providing for clearance of latch bolt and strike tongue and install strike.

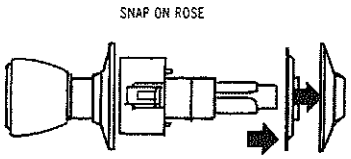


STRIKE SCREWS ARE LOCATED ON VERTICAL CENTER LINE

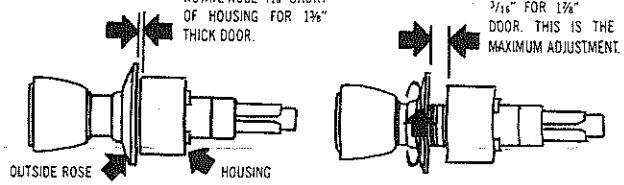
5 REMOVE INSIDE TRIM

Depress knob catch, slide knob off spindle and remove appropriate rose design as described.



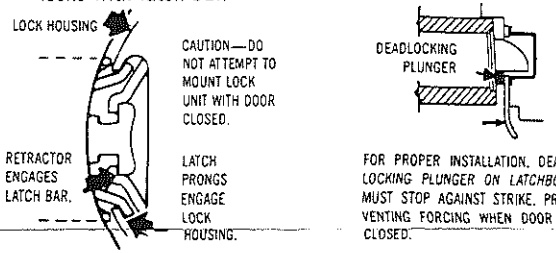


6 ADJUST ROSE

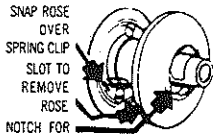


7 INTERLOCK UNITS

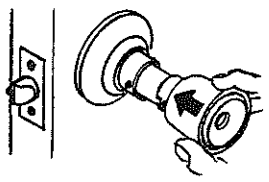
Latch unit must be in place before installing lock. Be sure lock housing engages with latch prongs and retractor interlocks with latch bar.



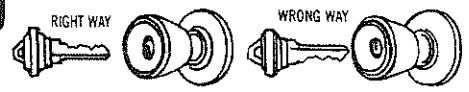
8 ATTACH TRIM AND ROSE



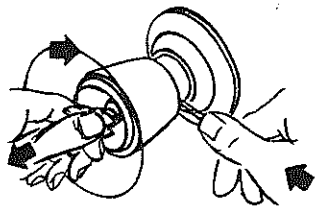
Step 1: SNAP ON ROSE
Slip mounting plate over spindle and fasten securely with two machine screws. Snap rose over spring clip on mounting plate.



9 TO CHANGE LOCK HAND



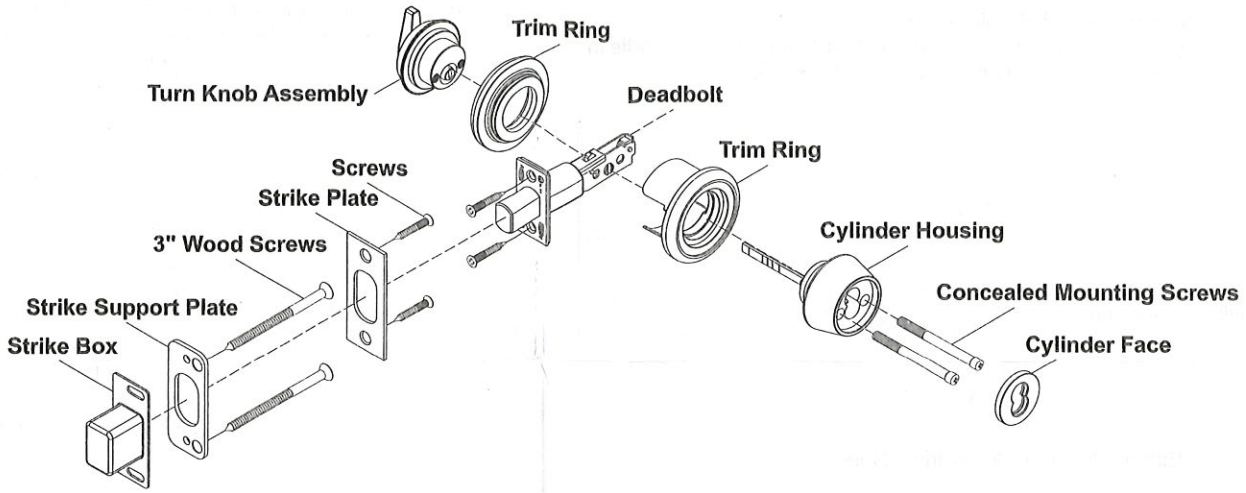
Pin tumbler cylinder locks are factory assembled in knobs for right or left hand doors as ordered. If necessary to change the hand of a lock so that cylinder will be right side up, see following instructions:



With key in cylinder, insert small nail into hole in the outside hub cap. Exert pressure and turn key slowly until knob catch depresses; then pull off knob. Simply turn knob over and with key partly removed from cylinder, replace knob on spindle. Slide knob up to knob catch.

Turn key one-quarter turn in same direction as before, depress knob catch, and push knob into position.

Installation Instructions for T6 Series Deadbolt (I/C)



1. Center Punch the Drill Points

a. Place the template at the desired height, on the high side of the door bevel.
b. Tape the template to the door.
c. Center punch the drill points.

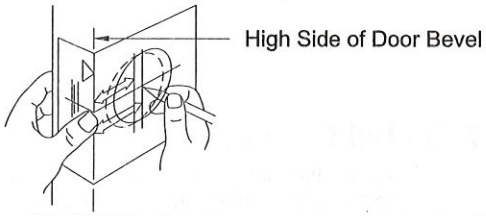


Figure 1

2. Bore Two Holes

a. Bore a 2 1/8" diameter hole. To avoid splintering a wood door, bore the hole from both sides of the door.
b. Drill a 1" diameter hole from the edge of the door that intersects the 2 1/8" hole.
c. Using the deadbolt faceplate as a guide, mortise the edge of the door to recess the faceplate.

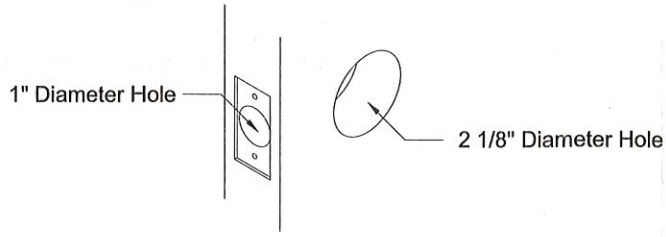


Figure 2

3. Install Strike Plate

a. Center punch the jamb directly opposite the bolt hole in the door.
b. Drill two 1" diameter holes, located 5/16" above and below the center punch to a depth of 1 1/8". See Figure 3.

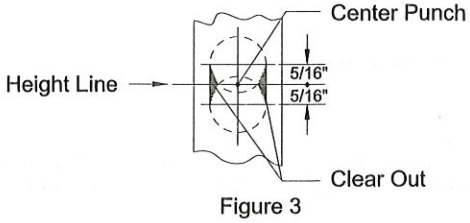


Figure 3

c. Using the strike as a guide, mortise the jamb, then install the strike box, strike support plate, and strike plate with screws. See Figure 4.

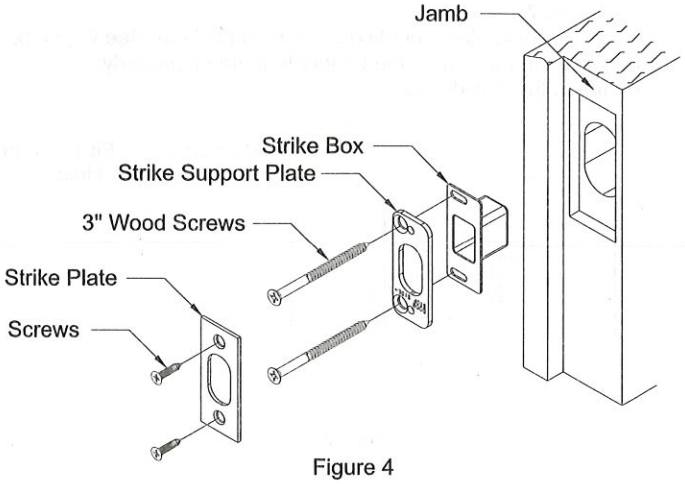


Figure 4

4. Install Deadbolt Assembly

a. Insert the deadbolt with slotted spindle hole at the bottom of the assembly. See Figure 5.
b. Secure the deadbolt to the door with screws.

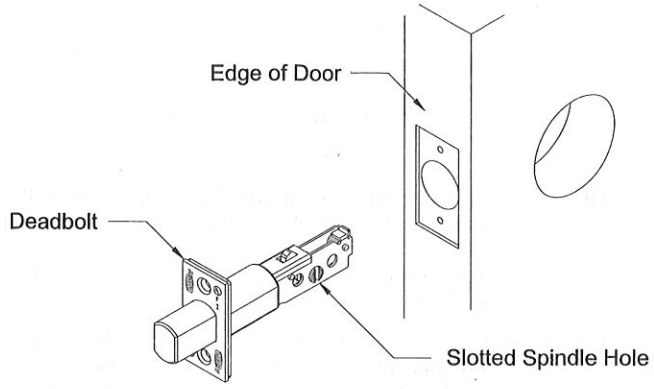


Figure 5

5. Install Cylinder or Cylinders

For Single-Keyed Cylinder Deadbolts:

a. Extend the bolt with a screwdriver.
b. Install the cylinder housing and trim ring with the spindle in the vertical position as shown in Figure 6.

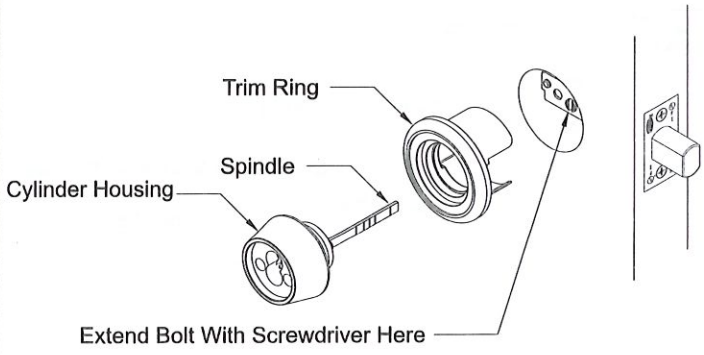


Figure 6

For Double-Keyed Cylinder Deadbolts:

a. Extend the bolt with a screwdriver.
b. Install each cylinder with its ring and rose as shown in Figure 7.
c. Insert concealed mounting screws and tighten. See Figure 8.
d. Check to make sure the deadbolt operates properly.
e. Insert the cylinder face.

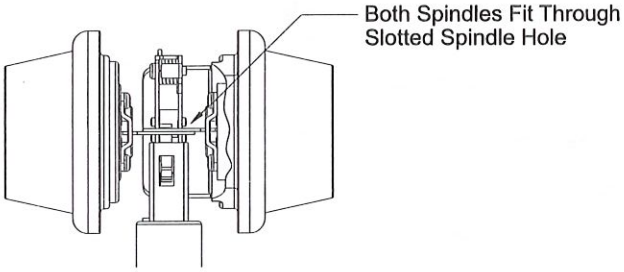


Figure 7

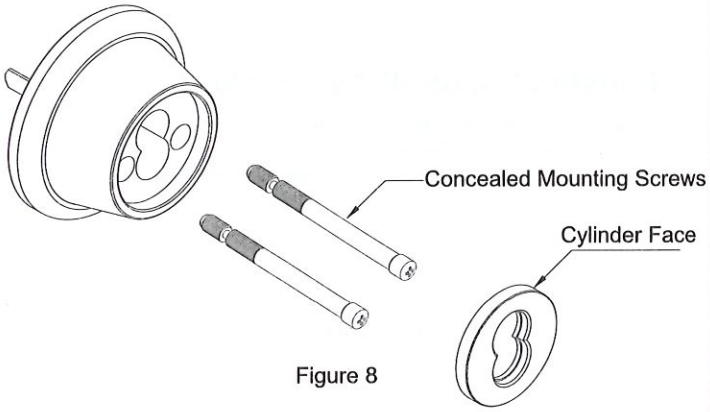


Figure 8

NOTE : 1. When possible, mount cylinders on the door so that the concealed mounting screws enter from the inside of the door.
2. Both spindles must fit through the spindle hole in the deadbolt assembly.

CAUTION : Double cylinder locks are operated by key only and may hinder emergency exit . Check for applicable fire codes and / or life safety codes before installing double cylinder deadbolt .

6. Attach Inside Trim

a. With the spindle in the vertical position, slide the turn knob assembly and trim ring over the spindle as shown in Figure 9.
b. Secure the turn knob assembly and the cylinder to the door with the concealed mounting screws supplied as shown in Figure 10.(Cut screws for door thickness less than 2")
c. Check to make sure that the deadbolt operates property.

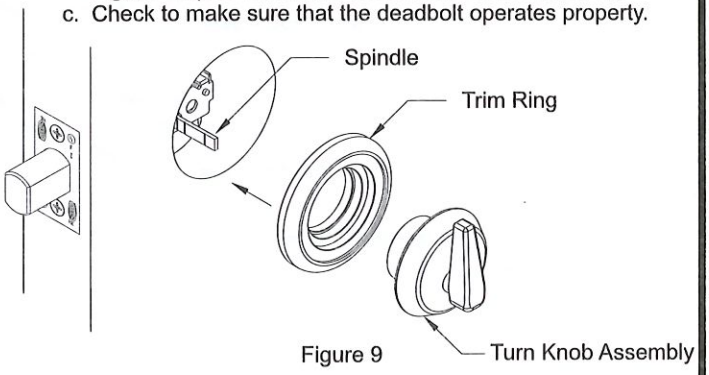


Figure 9

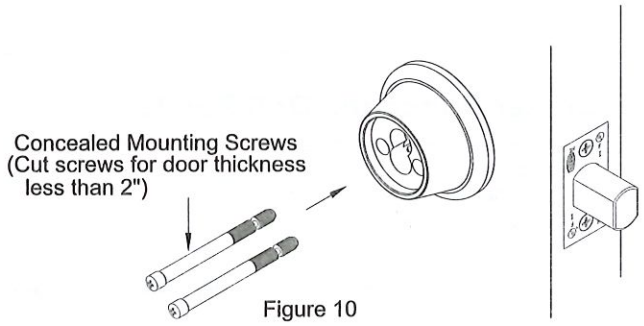


Figure 10

7. Install Core or Cores

a. To cover the mounting screw holes, put the cylinder face into the cylinder housing. See Figure 11.
b. Put the control key into the core and turn the key **15° clockwise(CW)**.See Figure 12.
c. Adjust the throw pins if needed, then put the core into the cylinder with the control key.
d. Turn the key **15° counterclockwise(CCW)** and remove the key.

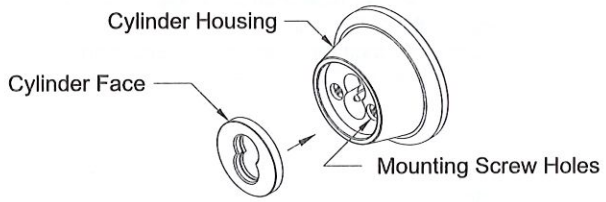


Figure 11

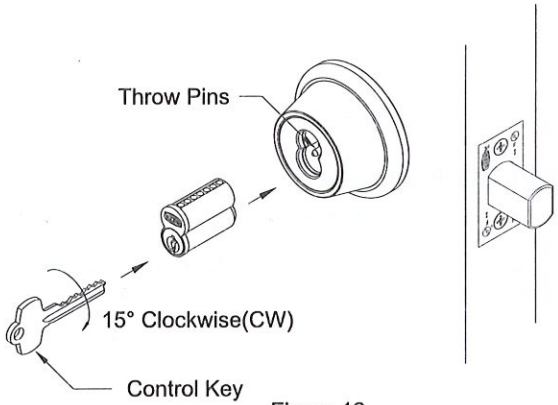


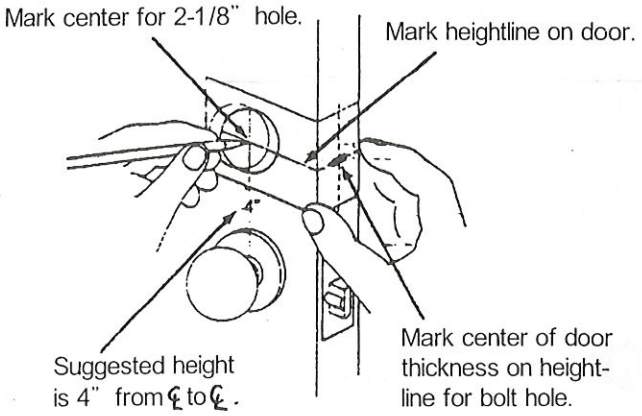
Figure 12

Patents :
Products are protected by one or more of the following U.S. patents : 5713231, 5906125, 5970760. Other patents pending.

INSTALLATION INSTRUCTIONS

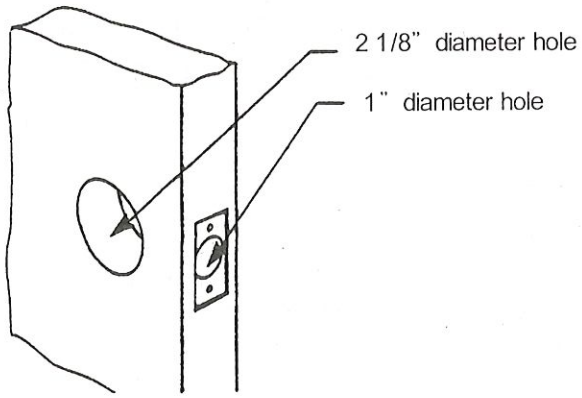
❶ Mark Door

1 Place template on door and mark center for 2-1/8" hole at desired backset.
2 Template should be placed on high edge of beveled door edge.



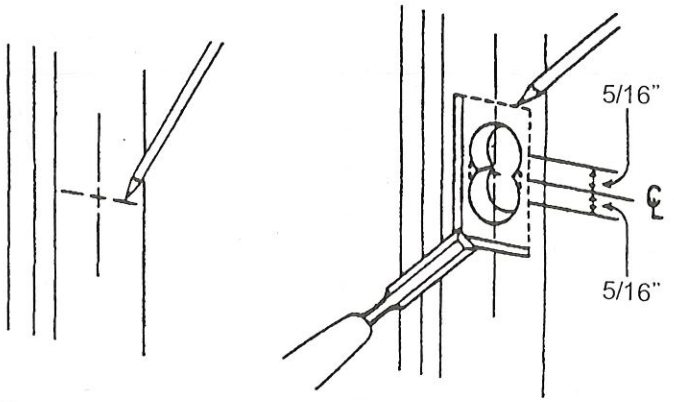
❷ Bore Two Holes

1 Bore a 2-1/8" diameter hole. To avoid splintering a wood door, bore the hole from both sides of door.
2 Drill a 1" diameter hole from the edge of door that intersects the 2-1/8" hole.
3 Using the deadbolt faceplate as a guide,mortise the edge of door to recess the faceplate.



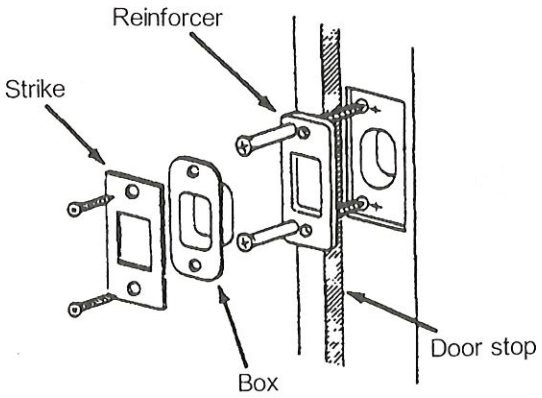
❸ Prepare Door Jamb

1 Locate exact center of bolt and mark center lines on jamb as shown.
2 Mark drill points 5/16" above and below horizontal center line.
3 Bore two overlapping 7/8" holes, 1-1/8" deep.
4 Clean out holes for strike box and place strike box in hole.
5 Place strike over box and trace for cutout.
6 Chisel about 1/4" deep for flush fit of reinforcer box and strike.



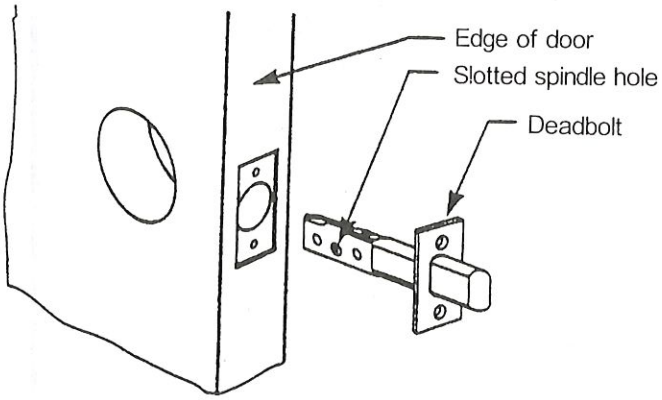
❹ Install Strike Assembly

1 Place strike reinforcer with screw holes toward doorstop.
2 Mark and drill (2)3/16" holes for 3" wood screws.
3 Install reinforcing plate, strike box, and finish strike in the order shown.
4 Test lock with key and thumbtum. Bolt must travel and project fully into strike preparation without binding.



❺ Install Deadbolt Assembly

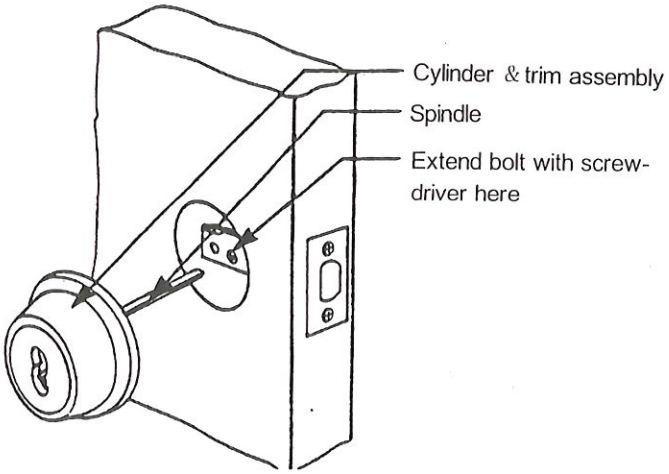
1 Insert the deadbolt with slotted spindle hole at the bottom of the assembly.
2 Secure the deadbolt to the door with screws.



6 Install Cylinder Or Cylinders

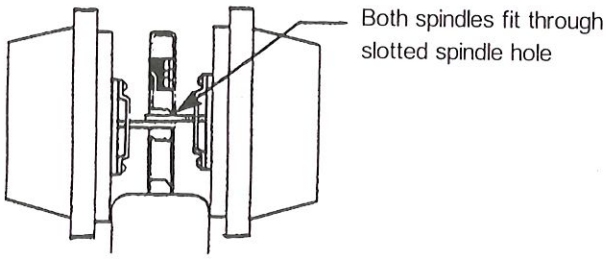
For single cylinder deadbolts:

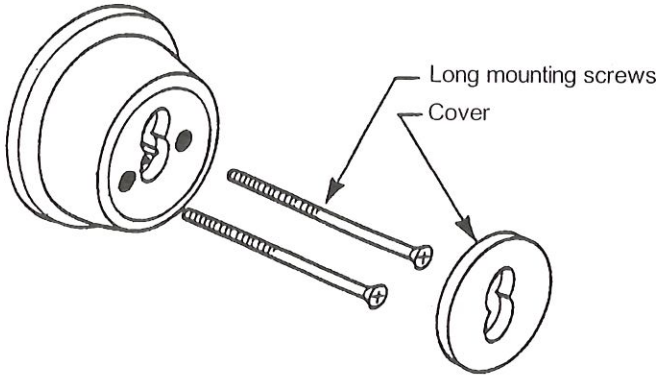
1 Extend the bolt with a screwdriver.
2 Install the cylinder and trim assembly with the spindle in the vertical position.



For doubel cylinder deadbolts:

1 Extend the bolt with a screwdriver.
2 Install each cylinder with its ring and rose.
3 Insert long mounting screws and tighten.
4 Check to make sure the deadbolt operates properly.
5 Insert the cover.

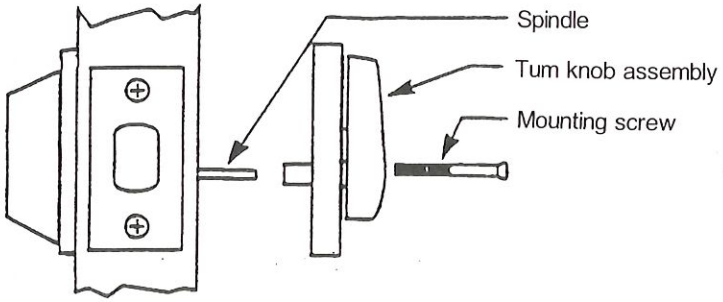




Note 1:Mount cylinders on the doors so that the mounting screws enter from the inside of the door .
2:Both spindles must fit through the spindle hole in the deadbolt assembly.

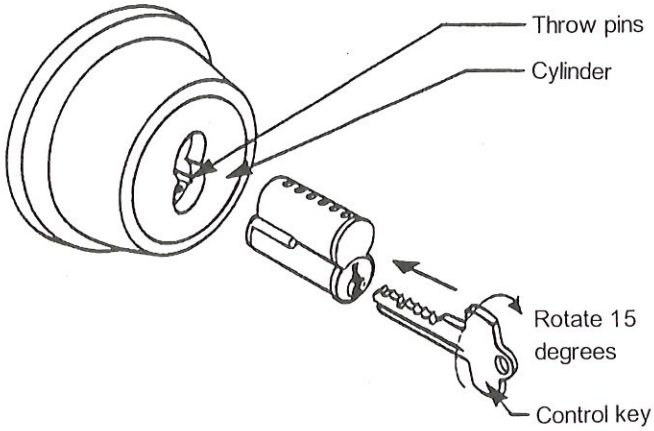
7 Attach Inside Trim

1 Break the spindle at the appropriate notch to suit the installation.
2 Slide the Tum Knob assembly over the spindle and secure it and the cylinder to the door with mounting screws supplied.
3 Check to make sure that the deadbolt operates properly.



8 Install Core Or Cores

1 Put the control key into the core and tum the key 15° clockwise
2 Adjust the throw pins if needed,then put the core into the cylinder with the control key.
3 Tum the key 15 degrees counterclockwise and remove the key.

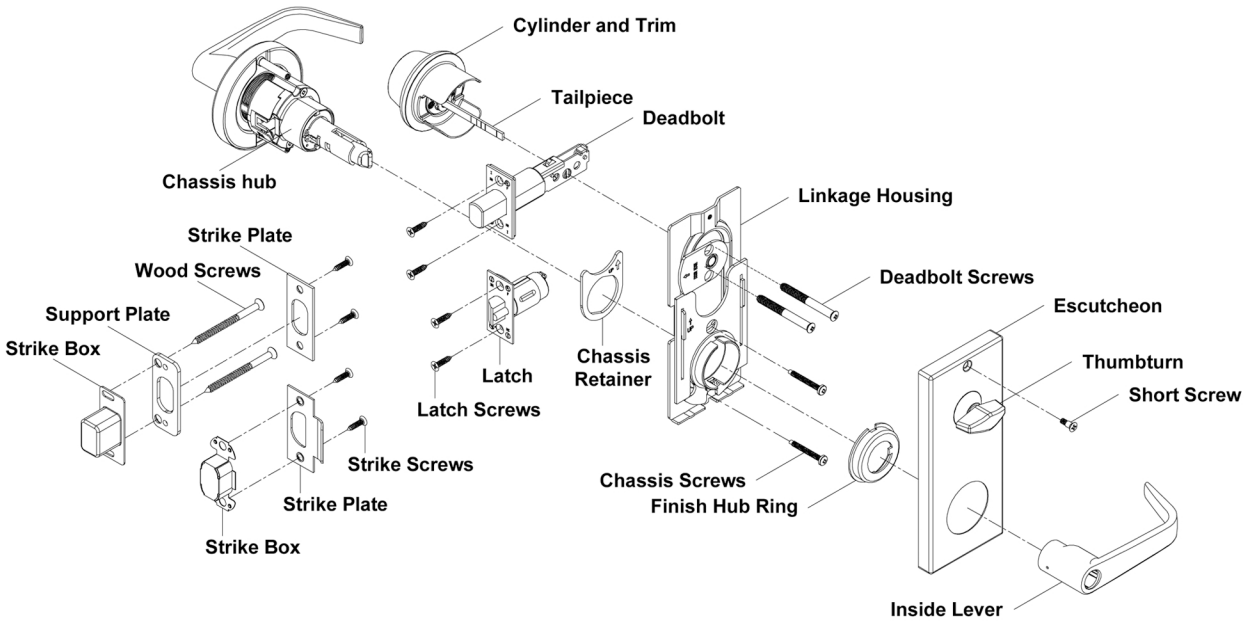


Patents:
Products are protected by one more or more of the following U.S.patents:4725086,4838053,4921289,5149151,5398531, 5713231. Other patents pending.

Caution: Double cylinder locks are operated by key only and may hinder emergency exit.

GF2 Series

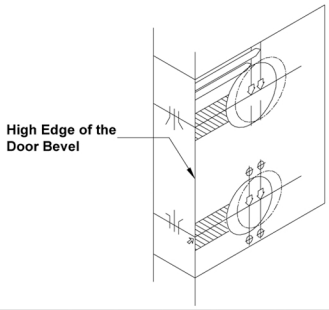
Installation Instruction For Interconnected Lock



1. Position Template

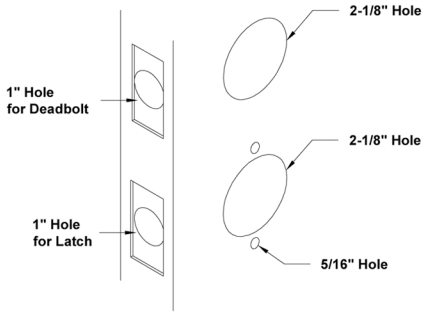
a. Fold the template and place it in position on the high edge of the door bevel.
b. Mark the drill points.

NOTE: The suggested height from the floor to centerline of the lock is 40-5/16". If steel frames are used, the latch centerline must be in line with the center of the strike preparation.



2. Bore Holes

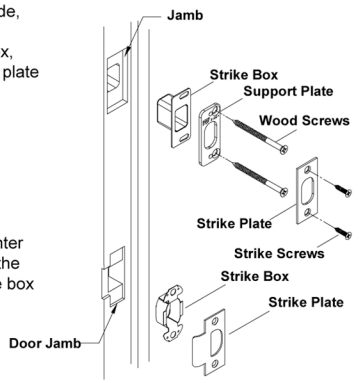
a. Bore two 2-1/8" holes from both sides of door.
b. Depending on latch & deadbolt housing diameter, bore 1" holes into edge of door.
c. Mortise the door edge for latch & deadbolt faceplate.
d. Drill two 5/16" holes from both sides of door.



3. Install Strike Plates

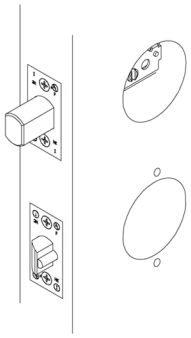
For Deadbolt:
Using the strike as a guide, mortise the jamb.
Then install the strike box, support plate, and strike plate with strike screws.

For Latch:
In alignment with the center of the latchbolt, mortise the door jamb to fit the strike box and strike plate.



4. Install Deadbolt and Latch

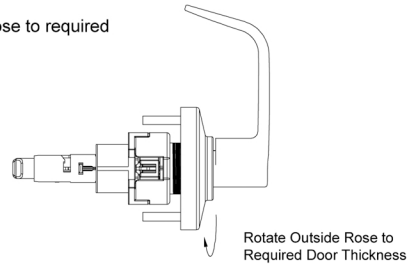
a. Extend the deadbolt with slotted spindle hole at the bottom of the assembly and secure the deadbolt into door upper hole with screws.
b. Insert the latch into lower hole and secure the latch with screws.



GF2 Series

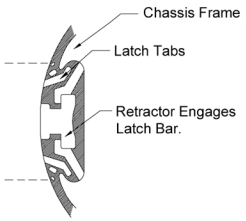
5. Chassis Adjustment

a. Rotate outside rose to required door thickness.



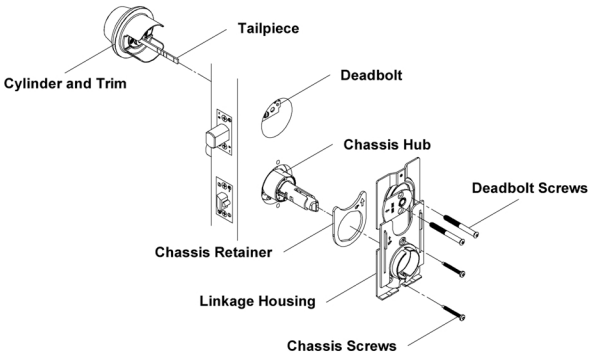
6. Engage retractor in latch

a. With the latch in place, install the chassis from the outside.
Make sure the latch tabs engage the chassis frame and the latch bar engages the retractor.



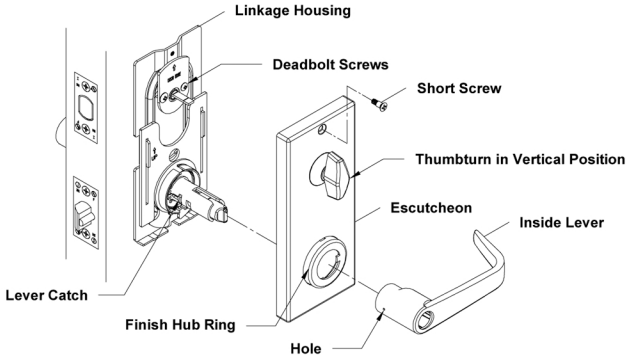
7. Install Linkage Housing & Chassis Retainer

a. With the arrow pointing up, place chassis retainer over chassis hub.
b. Slide linkage housing onto chassis hub, fasten together lightly with chassis screws of lever lock.
c. With deadbolt fully thrown, turn upper swivel plate toward door edge.
d. Install the cylinder and trim assembly with the tailpiece in vertical position.
e. Turn swivel plate upward and insert deadbolt screws through linkage housing and deadbolt, and secure the cylinder in place.
f. Check to make sure that the deadbolt operates properly.



8. Install Escutcheon and Inside Lever

a. Break the tailpiece at the appropriate notch to suit the installation.
b. Attach finish hub ring over chassis hub, position the finish hub ring with tab pointing toward door edge.
c. With the thumbturn in vertical position, slide the escutcheon over the sleeve and linkage housing.
d. Secure escutcheon in place by short screw provided, the escutcheon should fit closely to the door surface.
e. With the lever pointing toward the hinges, push the lever on sleeve firmly until seated.

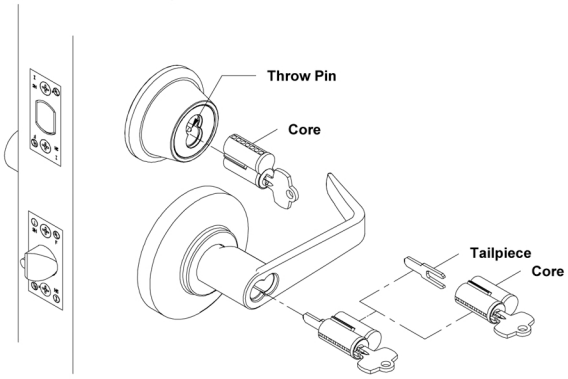


9. Install Core or Cores

For Cylinder and Trim:
a. Put the control key into the core and turn the key 15°clockwise.
b. Adjust the throw pins if needed, then put the core into cylinder with the control key.
c. Turn the key 15°counterclockwise and remove the key.

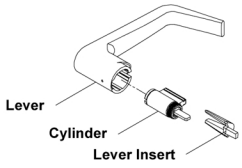
For Lever Lock:
a. Insert the cylinder tailpiece into the core.
b. Put the control key into the core and turn the key 15°clockwise.
c. Put the core and tailpiece into the lever with control key.
d. Turn the key 15°counterclockwise and remove the key.

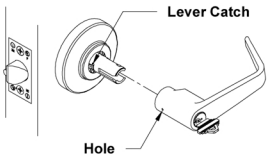
NOTE: Follow these steps to remove the core also.



10. Installing Keyed Levers and Cylinders

For Standard Cylinders:
a. Insert cylinder into lever.
b. Insert key into cylinder to hold and align cylinder.
c. Insert lever insert into lever to secure cylinder.
d. Align hole in lever with lever catch on spindle assembly and slide lever up to lever catch.
e. Turn key 45° clockwise and hold.
f. Push lever into engage lever catch.
g. Check function before closing door.

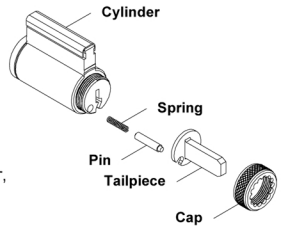




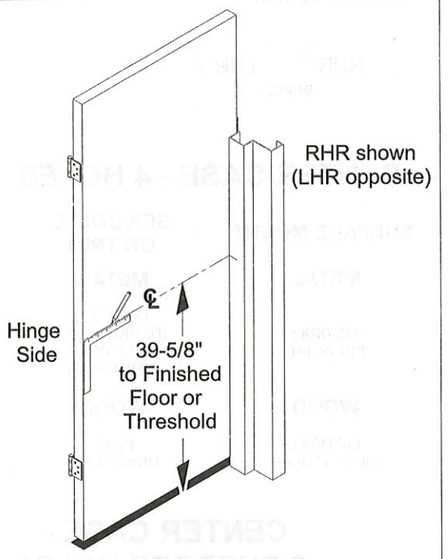
11. Tailpiece Installation

a. Insert spring and pin into cylinder.
b. Place tailpiece into cap.
c. Thread cap onto cylinder.

IMPORTANT: If key does not come out of cylinder easily, cap is too loose. If key does not turn smoothly in cylinder, cap is too tight.

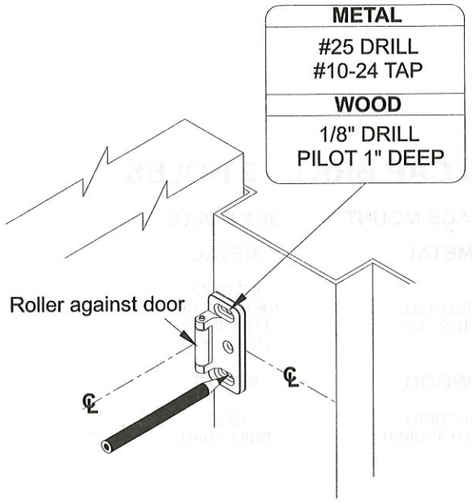


1 DRAW HORIZONTAL DEVICE AND STRIKE CENTERLINE.



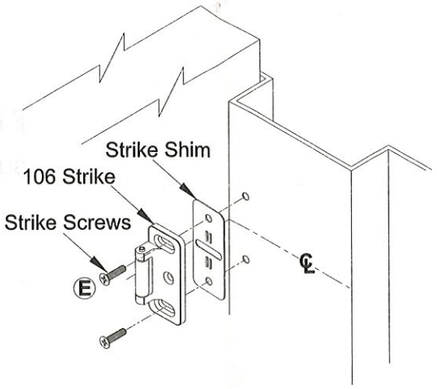
Close door, mark horizontal centerline on inside face of door and on lock side door stop 39-5/8" from finished floor as shown(continue horizontal centerline to outside face of door if trim is used).

2 ALIGN STRIKE ON HORIZONTAL CENTERLINE (℄) AND MARK TWO(2) SLOTTED HOLES.



Use strike as template and place on door stop and against inside face of door, so the horizontal centerline on strike lines up with the horizontal centerline on door stop and door. Mark centers and drill / tap holes as required.

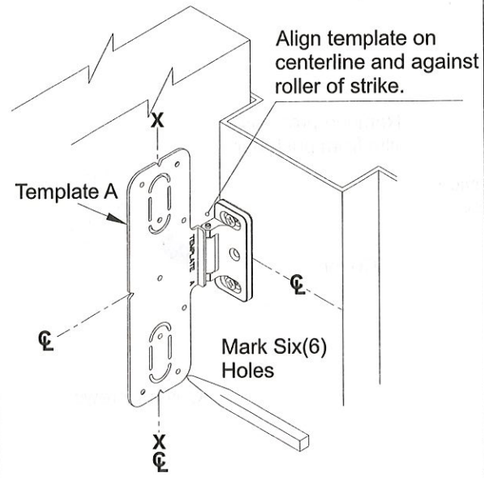
3 INSTALL STRIKE AND SHIM.



Prepare two(2) holes and install a screw through each slot.

For 108 strike see back cover of this instruction.

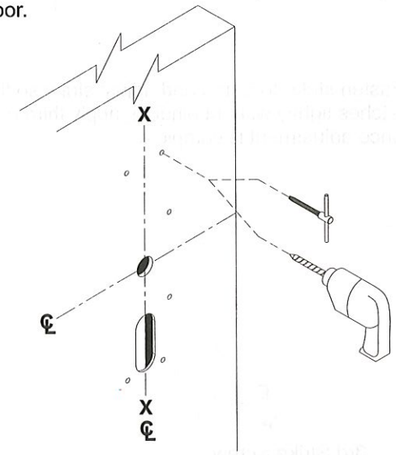
4 POSITION TEMPLATE AGAINST STRIKE AND ON ℄ AND MARK DOOR.



Tape "TEMPLATE A"(and trim template if trim is using) to the door so that the centerlines on the template line up with centerlines on the door. Mark centers and drill/tap the required holes as indicated on the template.

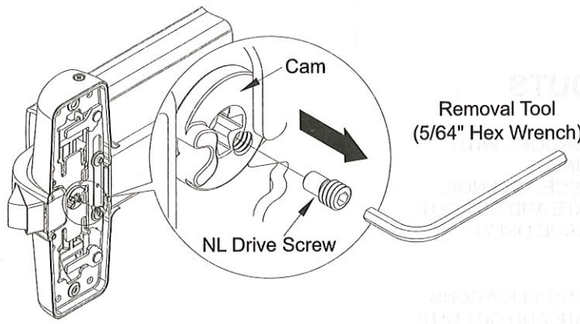
5 PREPARE DOOR FOR DEVICE AND TRIM.

See trim instructions for outside door preparation.
Locate same vertical centerline for both sides.
Use extra care if edge of door is beveled.
Be sure X-X vertical centerline is parallel to edge of door.



See "DOOR PREPARATION CHART" on page 3 for drill, tap and cut-out information.

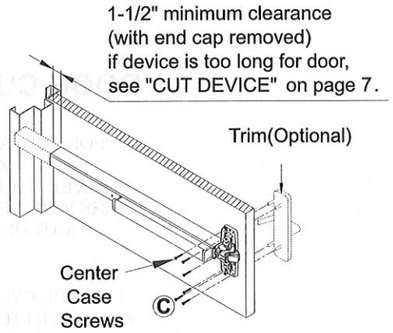
6 DETERMINE USE OF NL DRIVE SCREW.

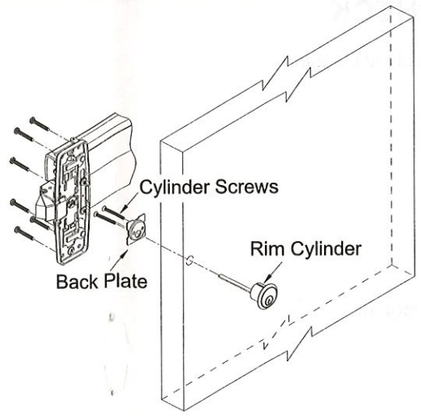


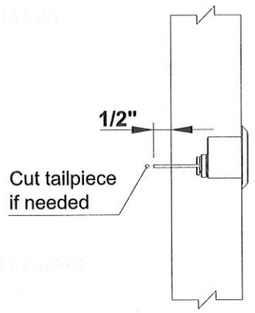
NL driver screw is factory assembled in cam on back of device center case, when the NL drive screw is left in back of center case, the outside cylinder will function only as a Night Latch.

NOTE: 1. **DO NOT** remove NL drive screw for Pull Plate or Escutcheon with night latch cylinder.
2. **REMOVE** NL drive screw from back of center case when installing trim that has a functional lever, knob, or thumbpiece AND an outside cylinder to lock and unlock the trim.

7 INSTALL TRIM (IF USING) AND SECURE DEVICE CENTER CASE TO DOOR.

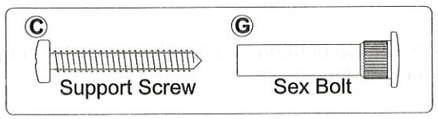




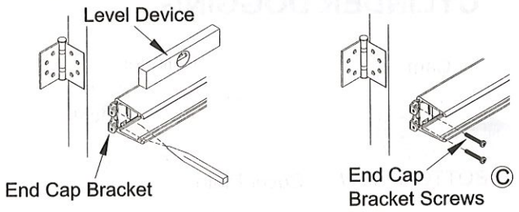


1. DEVICE WITH TRIM - See "Trim Instructions".
2. CYLINDER ONLY - Install cylinder with cylinder back plate as shown. Make sure the tailpiece is extending 1/2" from the inside face of door. Insert tailpiece into cam in the center case and mount it to the door with six(6) center case screws.
3. EXIT ONLY - Mount center case to the door with six(6) center case screws.

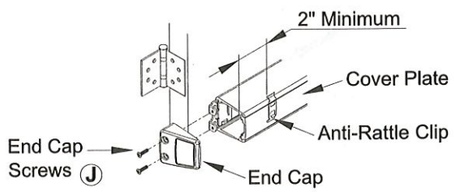
For **FIRE EXIT DEVICES** :
Two(2) sex bolts and support screws are required for composite (wood, plastic and steel covered), wood core, sheet metal and hollow metal doors without reinforcement unless door manufacturer has an alternate mounting method. Fire doors with steel reinforcement, mount devices with machine screws.



8 INSTALL MOUNTING BRACKET AND END CAP.

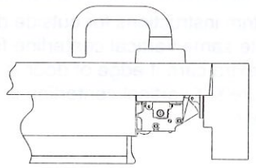


1. Remove cover plate, insert end cap bracket into push bar assembly against mechanism case. Level device, mark and drill two(2) holes for Bracket Screws. Fasten end cap bracket screws to door.

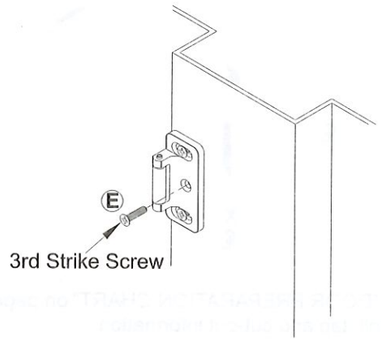


2. Insert cover plate, slide anti-rattle clip in position (2" minimum from end), and attach end cap with two(2) end cap screws.

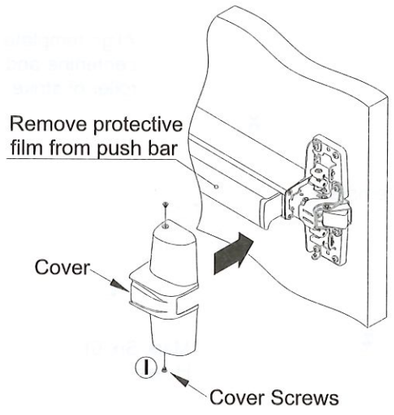
9 ADJUST AND SECURE STRIKE.



Fasten strike to frame and adjust strike so that the device latches tightly without binding, apply third center screw once adjustment is complete.



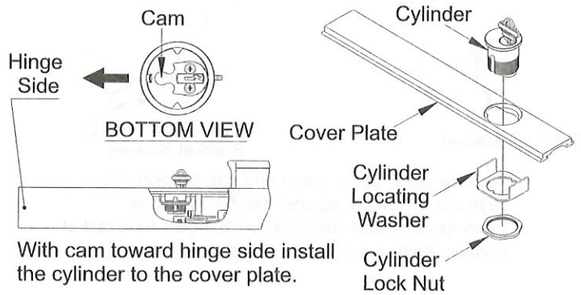
10 INSTALL COVER.



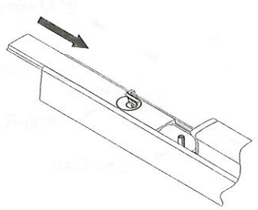
Attach cover to center case with two(2) center case screws.

OPTIONAL DOGGING

CYLINDER DOGGING

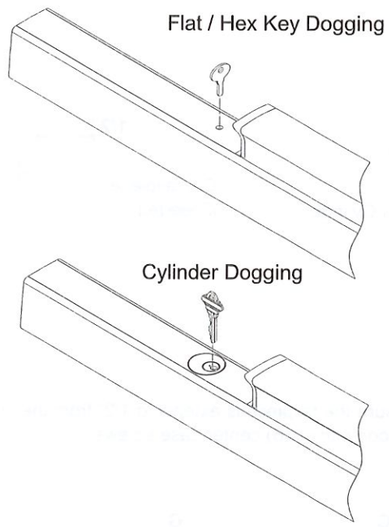


With cam toward hinge side install the cylinder to the cover plate.



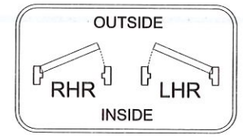
Slide cover plate in position in the mechanism case.

DOGGING CHECK



Depress push bar and turn flat / hex wrench or key one full turn for dogging check.

DOOR PREPARATION CHART



END CAP BRKT. - 2 HOLES

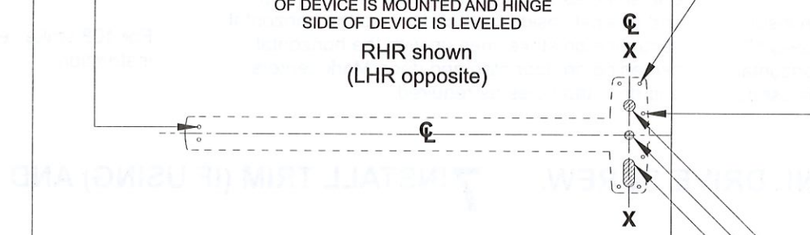
SURFACE MOUNT	SEX BOLTS
METAL	METAL
#25 DRILL #10-24 TAP	1/4" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD	WOOD
1/8" DRILL PILOT 1" DEEP	13/32" DRILL THRU

CENTER CASE - 4 HOLES

SURFACE MOUNT	SEX BOLTS OR TRIM
METAL	METAL
#25 DRILL #10-24 TAP	1/4" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD	WOOD
1/8" DRILL PILOT 1" DEEP	13/32" DRILL THRU

*PREPARE HOLES AFTER LOCK SIDE OF DEVICE IS MOUNTED AND HINGE SIDE OF DEVICE IS LEVELED

RHR shown
(LHR opposite)

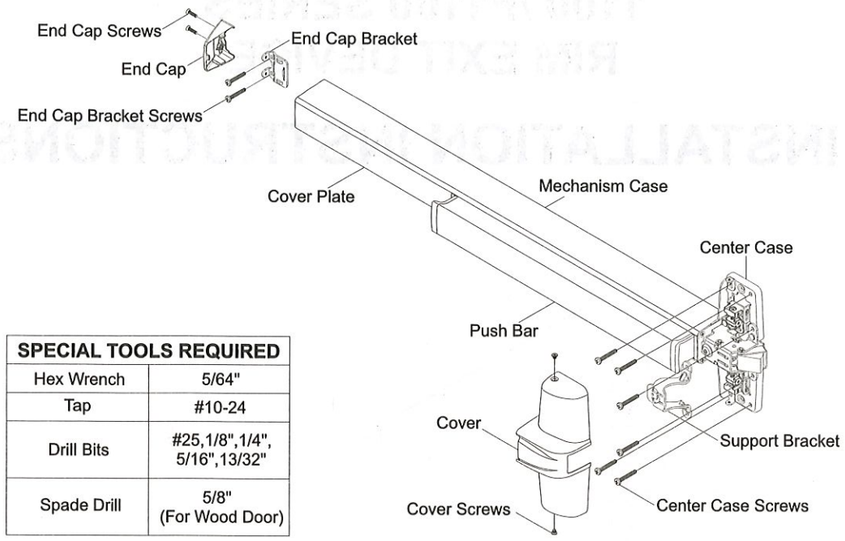


CENTER CASE - 2 SUPPORT HOLES

SURFACE MOUNT
METAL
#25 DRILL #10-24 TAP
WOOD
1/8" DRILL PILOT 1" DEEP

DOOR CUT-OUTS

	FOR TRIM APPLICATIONS WITH WORKING LEVER, THUMBPIECE, OR KNOB: MARK WITH TEMPLATE AND CUT OUT: (CUT DEVICE SIDE ONLY)
(5/8" DIA.)	OUTSIDE CYLINDER APPLICATIONS: MARK WITH TEMPLATE AND CUT OUT: **METAL DOOR**(CUT DEVICE SIDE) **WOOD DOOR**(CUT THRU)
(7/8" DIA.)	DOUBLE CYLINDER APPLICATIONS: MARK WITH TEMPLATE AND CUT OUT: **METAL DOOR**(CUT DEVICE SIDE) **WOOD DOOR**(CUT THRU)

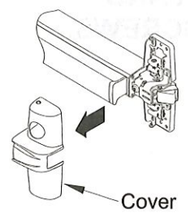


SPECIAL TOOLS REQUIRED	
Hex Wrench	5/64"
Tap	#10-24
Drill Bits	#25,1/8",1/4", 5/16",13/32"
Spade Drill	5/8" (For Wood Door)

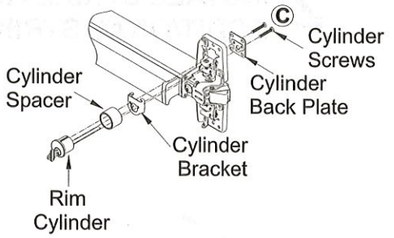
SCREW CHART

LOCATION	METAL	SEX BOLTS	WOOD
Center Case Screws	(C) No.10-24 x 1-11/32" 6 PCS	(C) No.10-24 x 1-11/32" 6 PCS; (G) No.10-24 x 1-3/32" 6 PCS	(A) No.10-12 x 1-11/32" 6 PCS
End Cap Bracket Screws	(C) No.10-24 x 1-11/32" 2 PCS	(C) No.10-24 x 1-11/32" 2 PCS; (G) No.10-24 x 1-3/32" 2 PCS	(A) No.10-12 x 1-11/32" 2 PCS
106 Strike Screws	(E) No.10-24 x 11/16" 3 PCS		(B) No.10-12 x 1-11/32" 3 PCS
108 Strike Screws	(E) No.10-24 x 11/16" 7 PCS		(B) No.10-12 x 1-11/32" 7 PCS
End Cap Screws	(J) No.8-32 x 5/8" 2 PCS		
Cover Screws	(I) No.8-32 x 5/32" 2 PCS		
Cylinder Screws	(C) No.10-24 x 1-11/32" 2 PCS		

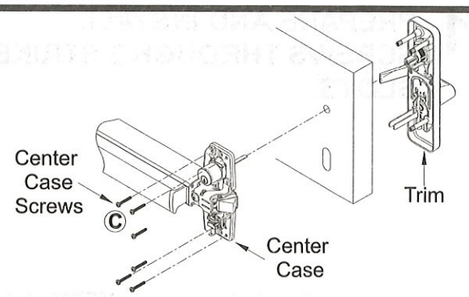
DOUBLE CYLINDER INSTALLATION



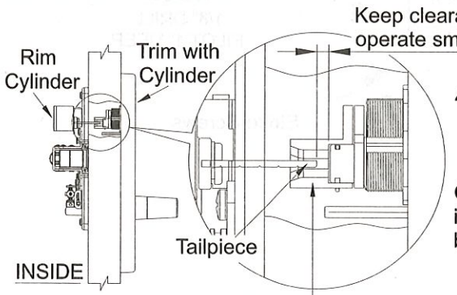
1. Remove cover.



2. Mount rim cylinder to cylinder spacer and bracket and attach assembly to center case with two(2) cylinder screws through cylinder back plate as shown.

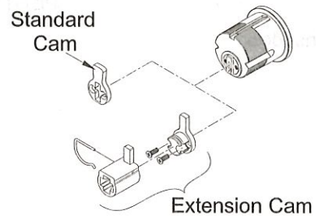


3. Install center case and trim with center case screws.
NOTE: See "Trim Instructions" to install trim cylinder.



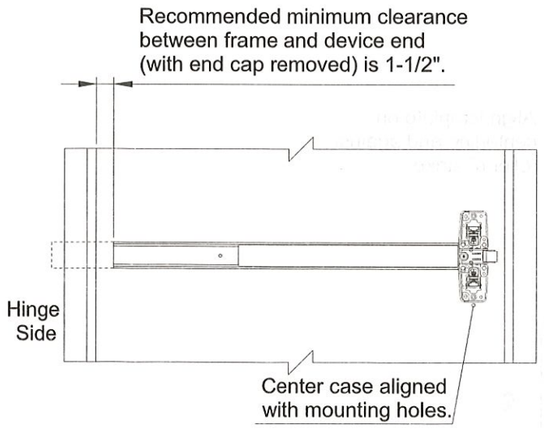
4. Cut off tailpiece if necessary for different door ranges and various cylinder lengths.

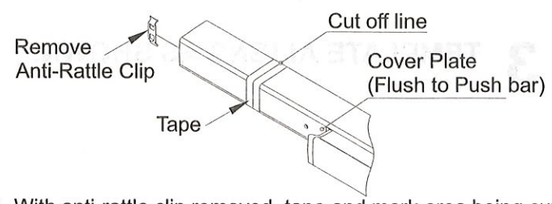
CAUTION! If tailpiece is too far into cylinder cam may interfere both cylinders' operation.



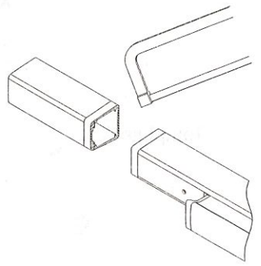
To remove standard cam and replaced with extension cam.

CUT DEVICE (IF REQUIRED)





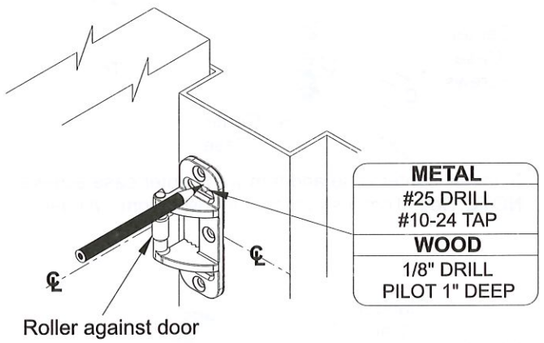
1. With anti-rattle clip removed, tape and mark area being cut.



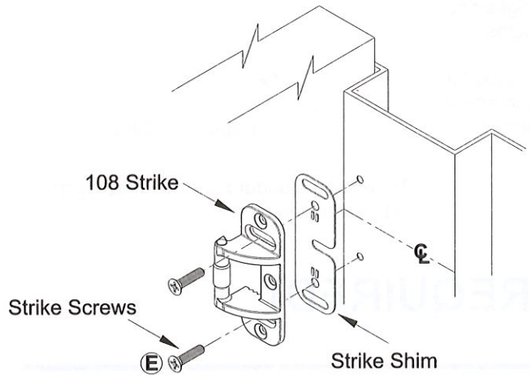
2. Cut off device and deburr.
NOTE: Device must be cut square for proper end cap fit.

108 STRIKE INSTALLATION

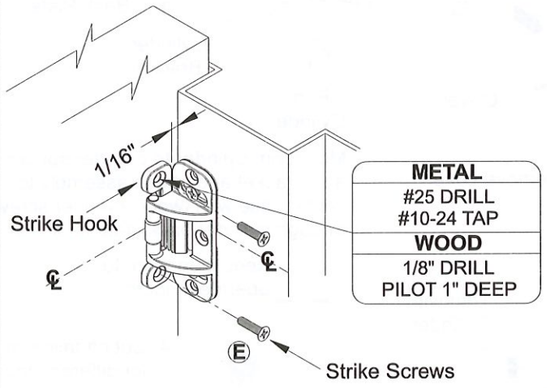
1 PREPARE AND INSTALL SCREWS THROUGH 2 STRIKE SLOTS.



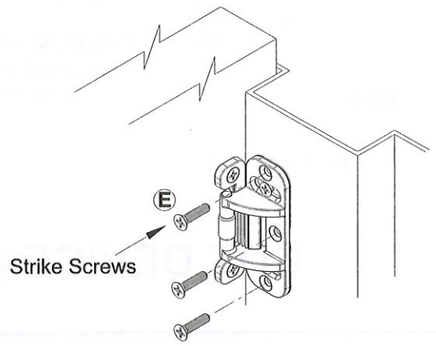
METAL
#25 DRILL #10-24 TAP
WOOD
1/8" DRILL PILOT 1" DEEP



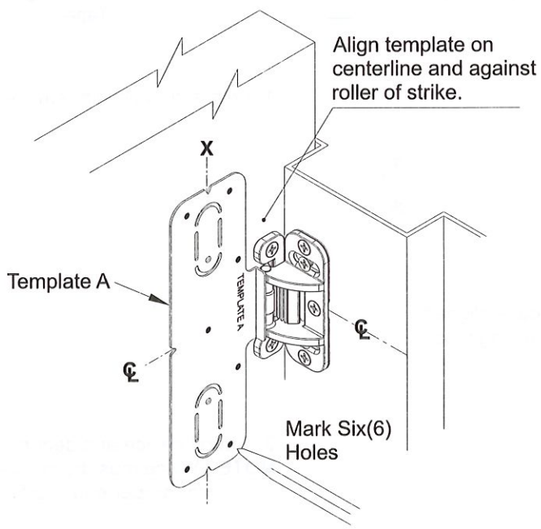
2 INSTALL STRIKE HOOK AND ADDITIONAL STRIKE SCREWS.



METAL
#25 DRILL #10-24 TAP
WOOD
1/8" DRILL PILOT 1" DEEP



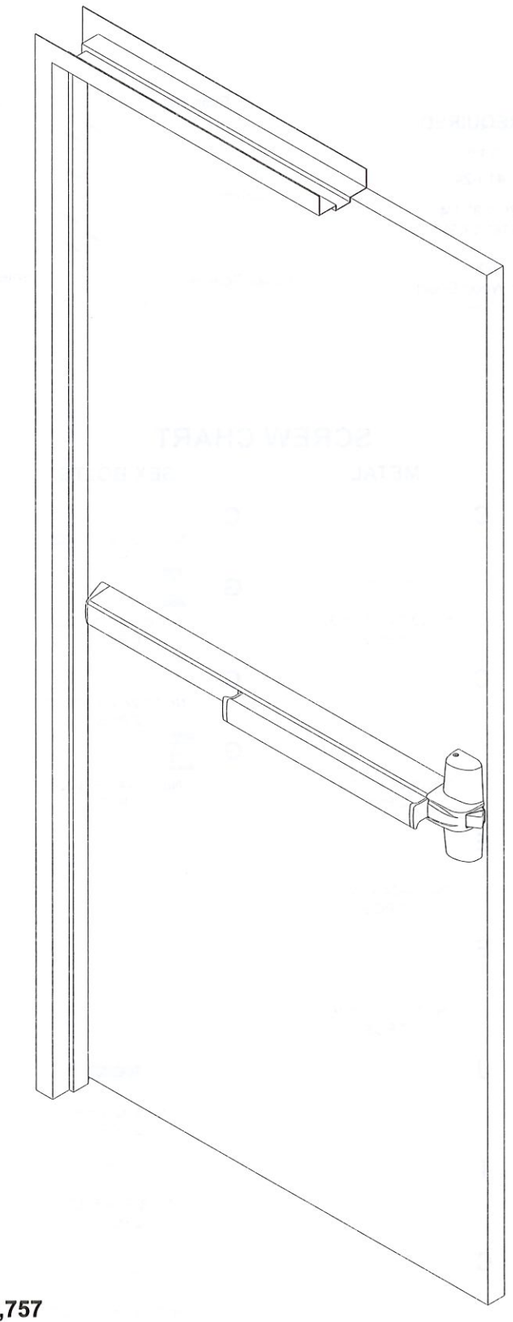
3 TEMPLATE ALIGNS AS SHOWN.



WD-OD002(334)

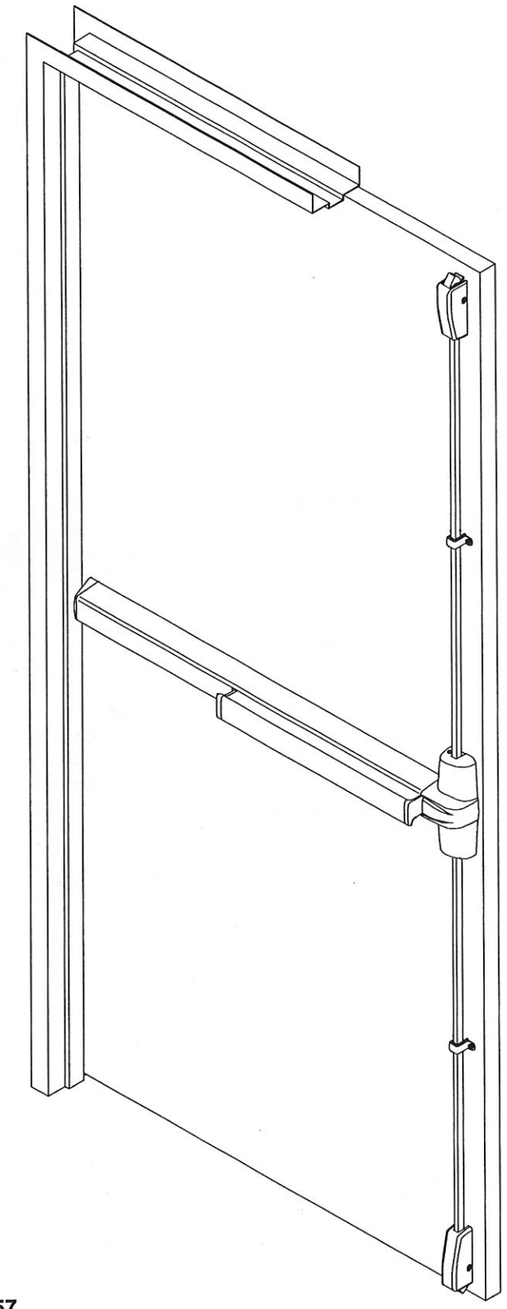
1100 /F1100 SERIES
RIM EXIT DEVICE

INSTALLATION INSTRUCTIONS



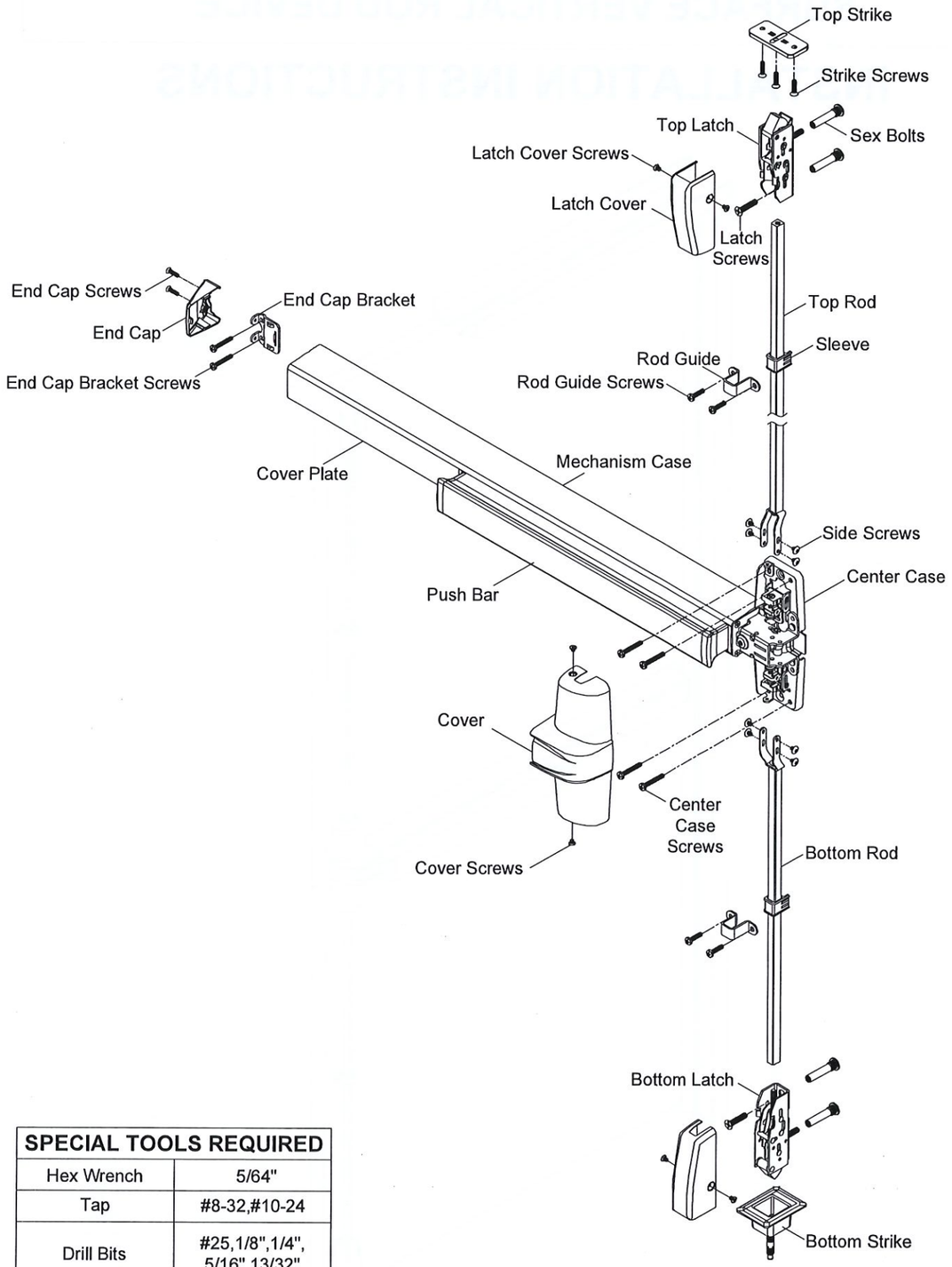
1200/F1200 SERIES
SURFACE VERTICAL ROD DEVICE

INSTALLATION INSTRUCTIONS



Patent No. 7,634,927 7,748,757
D623,499 7,836,738 7,887,107
and other patents pending.

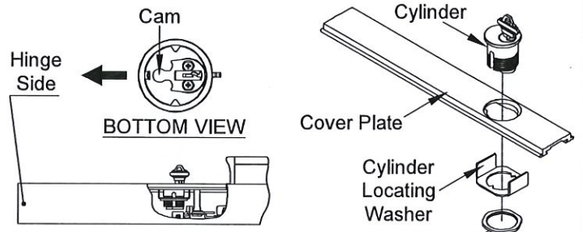
WD-OD002(335)



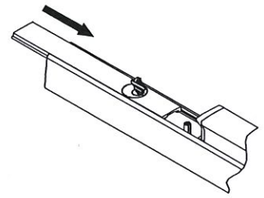
SPECIAL TOOLS REQUIRED	
Hex Wrench	5/64"
Tap	#8-32,#10-24
Drill Bits	#25,1/8",1/4", 5/16",13/32"
Spade Drill	5/8" (For Wood Door)

OPTIONAL DOGGING

CYLINDER DOGGING

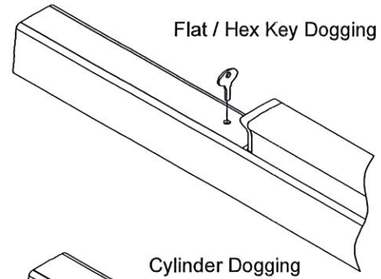


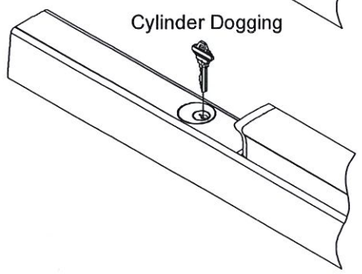
With cam toward hinge side install the cylinder to the cover plate.



Slide cover plate in position in the mechanism case.

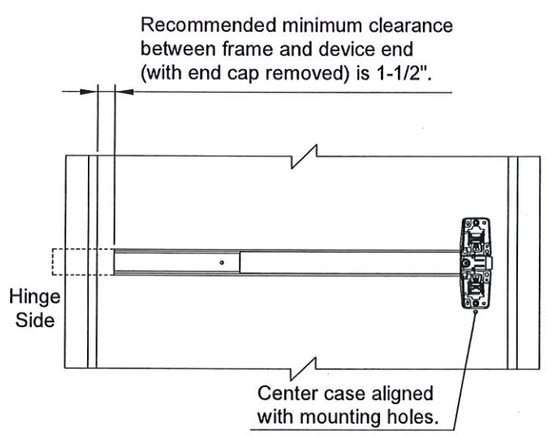
DOGGING CHECK

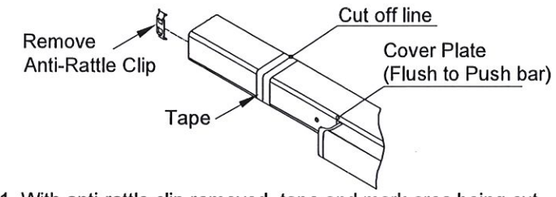




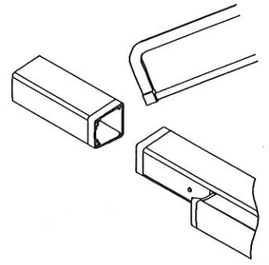
Depress push bar and turn flat / hex wrench or key one full turn for dogging check.

CUT DEVICE (IF REQUIRED)

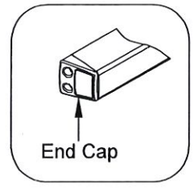




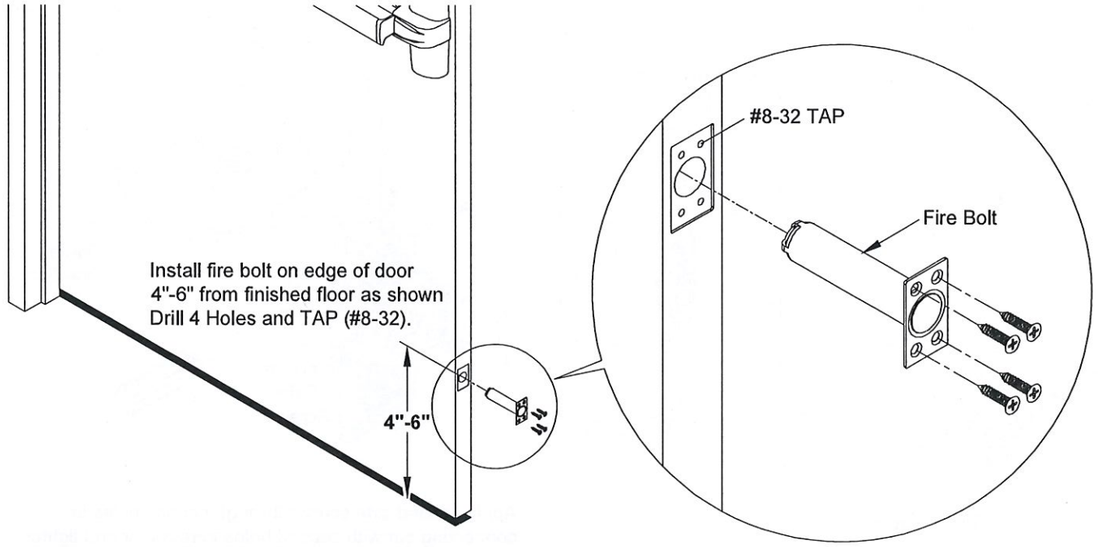
1. With anti-rattle clip removed, tape and mark area being cut.



2. Cut off device and deburr.
NOTE: Device must be cut square for proper end cap fit.



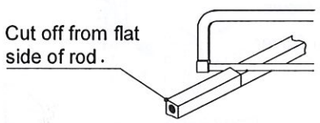
INSTALL FIRE BOLT



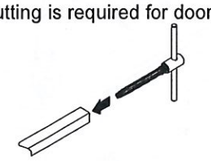
NOTE: Fire rated device with less bottom rod (LBR) applications must use FIRE BOLT.

CUT TOP ROD / EXTEND TOP ROD

CUT TOP ROD

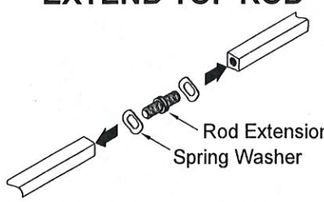


Step 1: Make sure the flat side of rod, and measure amount to cut off rod.
NOTE: Rod cutting is required for doors shorter than 7'.

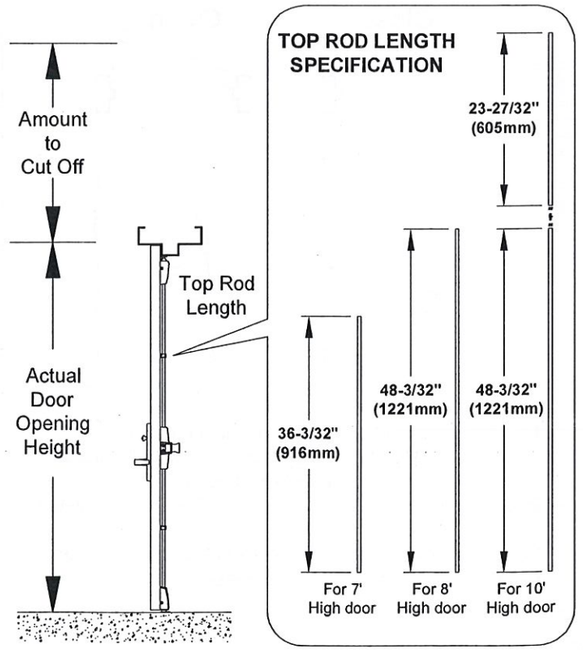


Step 2: Tap #1/4-20 ; 1" deep.

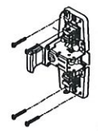
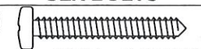
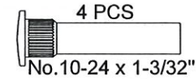
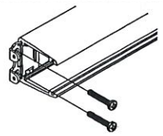
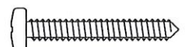
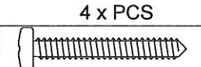
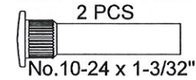
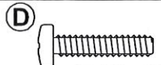
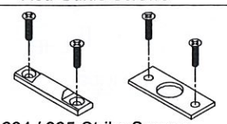
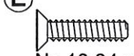
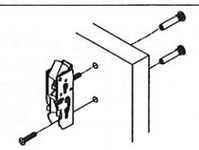
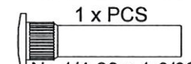
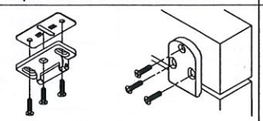
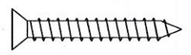
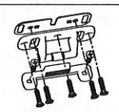
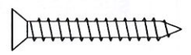
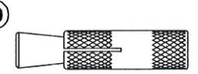
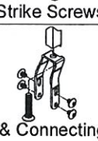
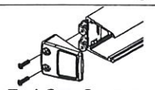
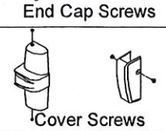
EXTEND TOP ROD



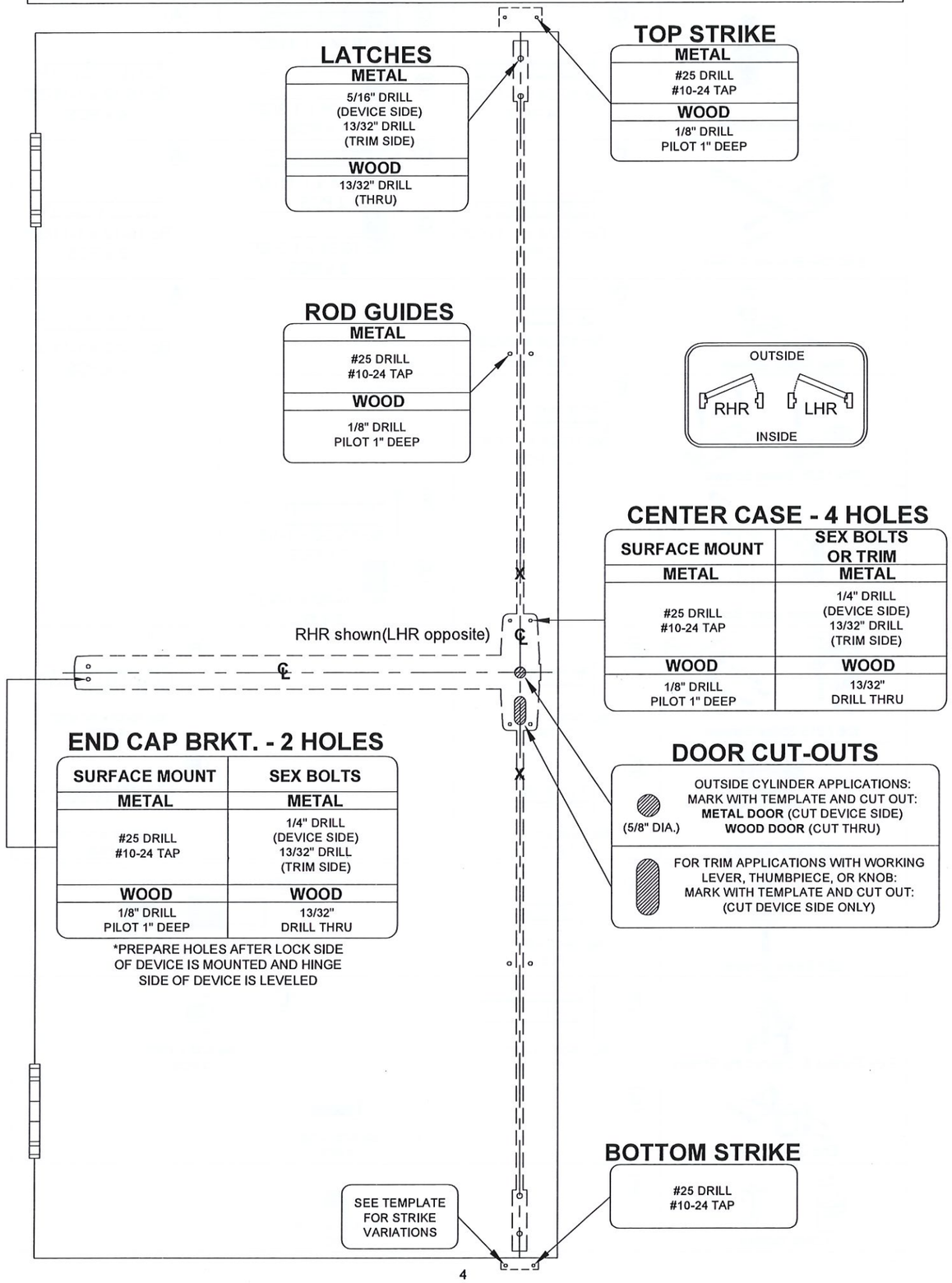
Install rod extension & spring washer to connect two(2) rods tightly.



SCREW CHART

APPLICATION	METAL	SEX BOLTS	WOOD
 Center Case Screws	Ⓒ  No.10-24 x 1-11/32" 4 PCS	Ⓒ  No.10-24 x 1-11/32" 4 PCS Ⓖ  No.10-24 x 1-3/32" 4 x PCS	Ⓐ  No.10-12 x 1-11/32" 4 x PCS
 End Cap Bracket Screws	Ⓒ  No.10-24 x 1-11/32" 2 PCS	Ⓒ  No.10-24 x 1-11/32" 2 PCS Ⓖ  No.10-24 x 1-3/32" 2 x PCS	Ⓐ  No.10-12 x 1-11/32" 2 x PCS
 Rod Guide Screws	Ⓓ  No.10-24 x 25/32" 2 x PCS		Ⓐ  No.10-12 x 1-11/32" 2 x PCS
 224 / 225 Strike Screws	Ⓔ  No.10-24 x 11/16" 2 x PCS		
 Top / Bottom Latch Screws		Ⓕ  No.1/4-20 x 1-1/6" 1 x PCS Ⓗ  No.1/4-20 x 1-3/32" 2 x PCS	
 106 / 215 Strike Screws	Ⓔ  No.10-24 x 11/16" 3 PCS		Ⓑ  No.10-12 x 1-11/32" 3 PCS
 108 Strike Screws	Ⓔ  No.10-24 x 11/16" 7 PCS		Ⓑ  No.10-12 x 1-11/32" 7 PCS
 227 Strike Screws	Ⓝ  No.1/4-20 x 5/8" 1 PCS	Ⓞ  No.1/4-20 x 5/8" 1 PCS	
 Side Screws & Connecting Screws	Ⓕ  No.1/4-20 x 1-1/6" 1 PCS	Ⓛ  No.8-32 x 7/32" 4 PCS	
 End Cap Screws	Ⓙ  No.8-32 x 5/8" 2 PCS		
 Cover Screws	Ⓘ  No.8-32 x 5/32" 2 PCS		

DOOR PREPARATION CHART



LATCHES

METAL
5/16" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD
13/32" DRILL (THRU)

TOP STRIKE

METAL
#25 DRILL #10-24 TAP
WOOD
1/8" DRILL PILOT 1" DEEP

ROD GUIDES

METAL
#25 DRILL #10-24 TAP
WOOD
1/8" DRILL PILOT 1" DEEP

OUTSIDE
RHR LHR
INSIDE

CENTER CASE - 4 HOLES

SURFACE MOUNT	SEX BOLTS OR TRIM
METAL	**METAL**
#25 DRILL #10-24 TAP	1/4" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD	**WOOD**
1/8" DRILL PILOT 1" DEEP	13/32" DRILL THRU

END CAP BRKT. - 2 HOLES

SURFACE MOUNT	SEX BOLTS
METAL	**METAL**
#25 DRILL #10-24 TAP	1/4" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD	**WOOD**
1/8" DRILL PILOT 1" DEEP	13/32" DRILL THRU

*PREPARE HOLES AFTER LOCK SIDE OF DEVICE IS MOUNTED AND HINGE SIDE OF DEVICE IS LEVELED

DOOR CUT-OUTS

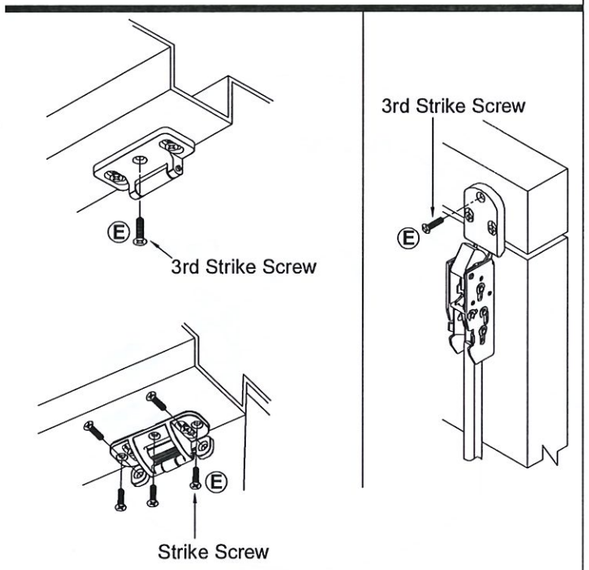
(5/8" DIA.) OUTSIDE CYLINDER APPLICATIONS: MARK WITH TEMPLATE AND CUT OUT: **METAL DOOR** (CUT DEVICE SIDE) **WOOD DOOR** (CUT THRU)

FOR TRIM APPLICATIONS WITH WORKING LEVER, THUMBPIECE, OR KNOB: MARK WITH TEMPLATE AND CUT OUT: (CUT DEVICE SIDE ONLY)

BOTTOM STRIKE

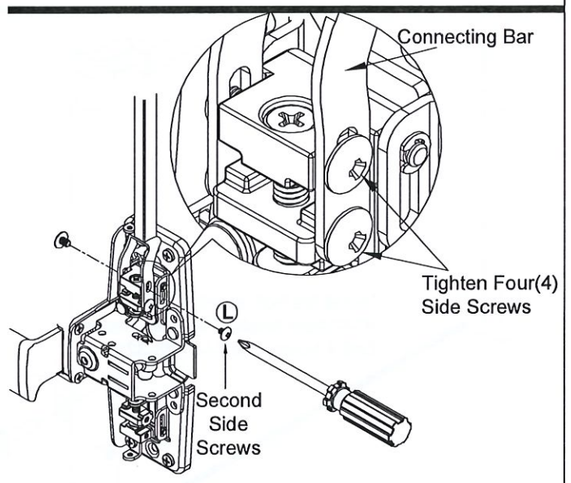
#25 DRILL #10-24 TAP

SEE TEMPLATE FOR STRIKE VARIATIONS



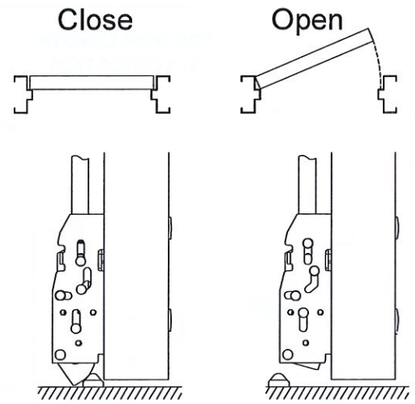
3. Apply third screw in hole of strike once adjustment is complete.

11 SECURE TWO(2) SIDE SCREWS.



Apply second side screws through second holes in connecting bar with second holes in retractor and tighten two side screws.

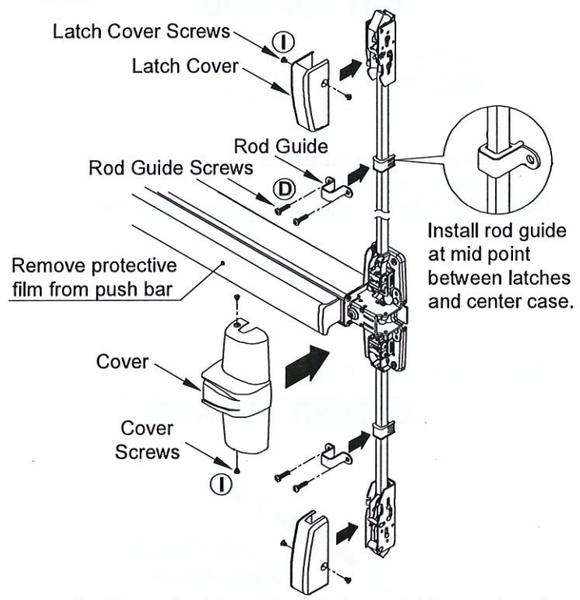
13 ADJUST BOTTOM ROD WITH DOOR OPEN (TOP LATCH RETRACTED).



1. Place device in holdback by pushing on push bar. Bottom latch bolt clears bottom strike, adjust retractor by screw driver or readjust rod if needed.
2. Secure two side screws when adjustment is completed.

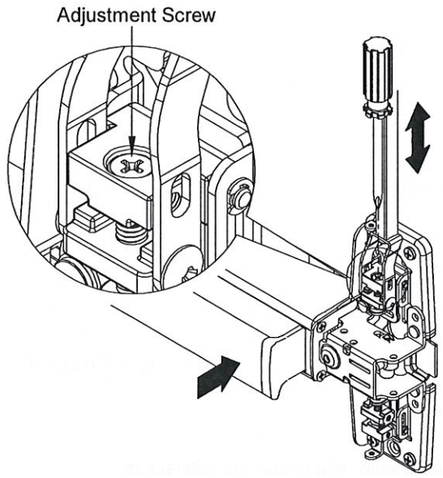
Open and close door a few times and check for deadlocking when door is closed.

14 INSTALL ROD GUIDES AND COVERS WITH SCREWS.

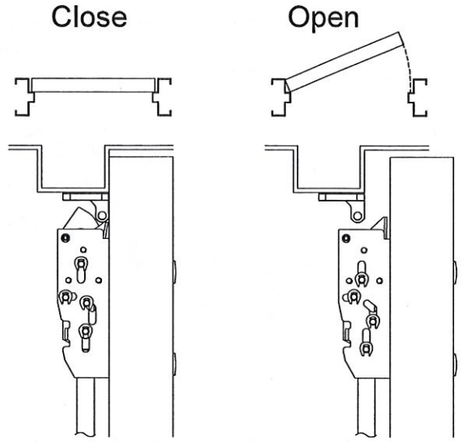


Position rod guides midway between latches and center case, centered on rods. Mark, drill/tap and fasten rod guides with two(2) screws.

10 CHECK TOP LATCH FOR HOLDBACK AND DEADLOCK.

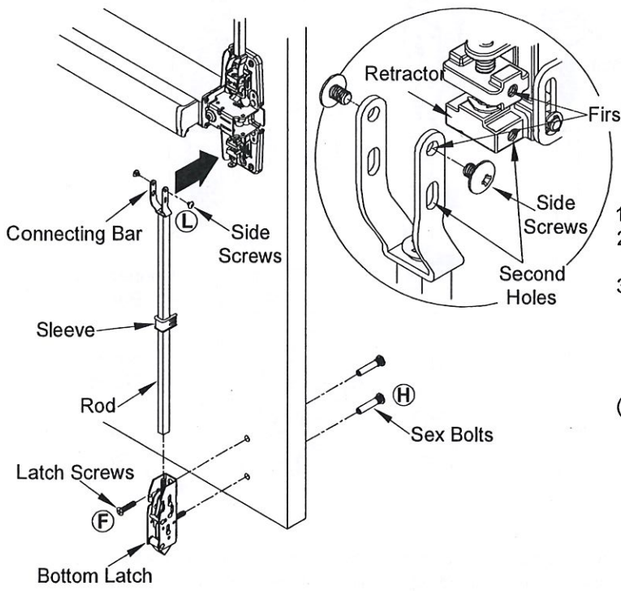


1. Pushing on push bar will retract the latchbolt and open the door. Latchbolt will stay retracted and device is in HOLDBACK. If NO HOLDBACK adjust the screw in top of retractor by screw driver.



2. Fully extended latchbolt should be in deadlock. DEADLOCKED latchbolt cannot be pushed down into the latch housing. If NO DEADLOCK, loose strike screws and adjust strike position.

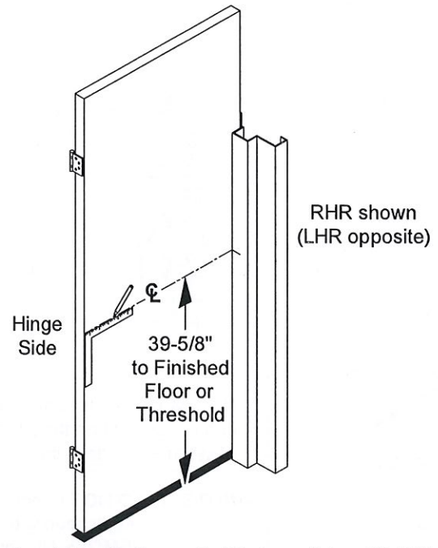
12 INSTALL BOTTOM LATCH AND ROD.



1. Install bottom latch with two(2) screws(Sex bolts).
2. Put connecting screw through round hole of connecting bar and thread into bottom rod and tighten.
3. Assemble sleeve with rod, thread the bottom rod onto the stud in the bottom latch until the first holes in the end of connecting bar align with first holes in retractor and fasten side screws.

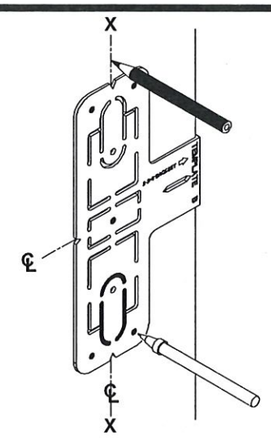
(For LBR devices omit preparation for bottom Latch and rod.)

1 DRAW HORIZONTAL CENTERLINE (℄).



Mark horizontal centerline on inside face of door 39-5/8" from finished floor as shown. (Continue horizontal center line to outside face of door if trim is used)

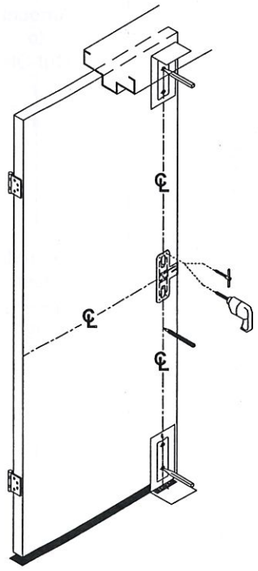
2 POSITION TEMPLATE AS SHOWN AND MARK VERTICAL ℄.



Mark vertical center line X-X above and below horizontal center line. (Mark vertical center line at lock side using same backset dimension on outside face of door if trim is using).

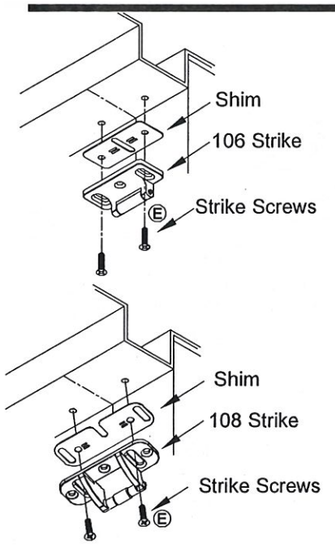
CAUTION: Vertical center lines on both sides of the door should be the same dimension from the edge of the door. Use extra care if edge of door is beveled. Be sure X-X vertical center line is parallel to edge of door.

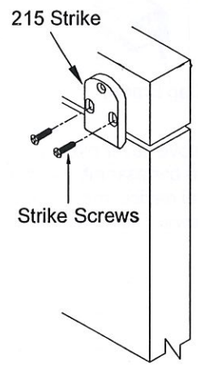
3 ALIGN TOP & BOTTOM TEMPLATES ALONG CENTERLINE, THEN MARK AND PREPARE DOOR.



1. Fold strike template and place on door stop and inside face of door, so the vertical centerline on template lines up with the vertical centerline on door stop and door.
2. Tape template on door stop and the door face.
3. Mark centers and drill/tap holes as indicated on the template. See "DOOR PREPARATION CHART" on page 4 for drill/tap, and cut-out information.

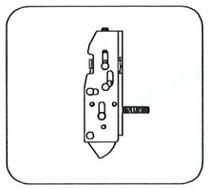
4 INSTALL TOP STRIKE AND SHIM.



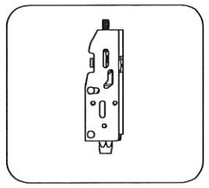


Install a screw through each slot.

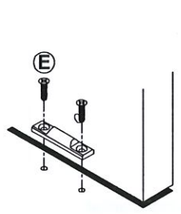
5 INSTALL BOTTOM STRIKE.



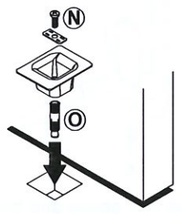
Pullman Latch



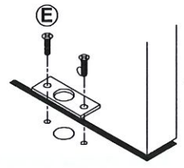
Round Bottom Latch



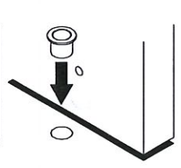
224 Strike



227 Strike



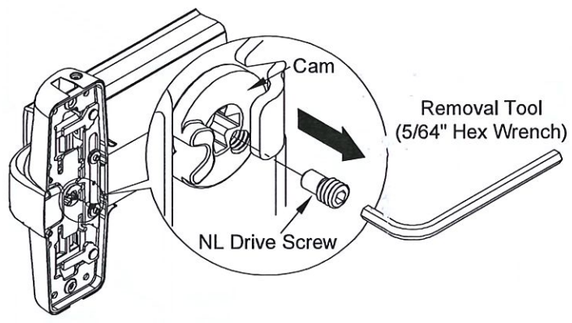
225 Strike



226 Strike

1. Mark floor for fasteners, prepare floor according to the type of strike and fastener furnished. Provide clearance in floor for bolt.
2. For threshold application:
   Provide hole in threshold according to type of strike and fasteners furnished.

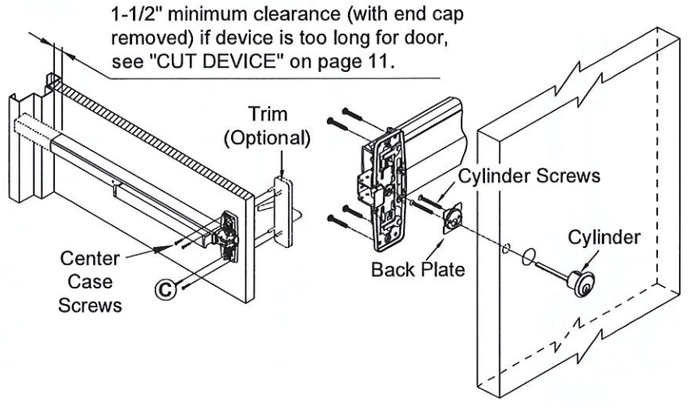
6 DETERMINE USE OF NL DRIVE SCREW.

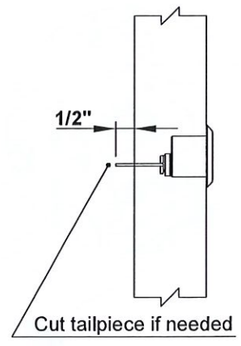


NL driver screw is factory assembled in carn on back of device center case, when the NL drive screw is left in back of center case, the outside cylinder will function only as a Night Latch.

NOTE: 1. **DO NOT** remove NL drive screw for Pull Plate or Escutcheon with night latch cylinder.
2. **REMOVE** NL drive screw from back of center case when installing trim that has a functional lever, knob, or thumbpiece AND an outside cylinder to lock and unlock the trim.

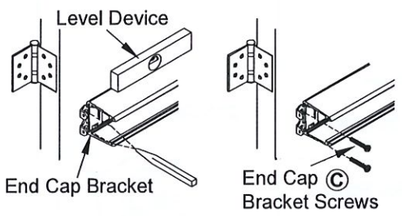
7 INSTALL TRIM (IF USING) AND SECURE DEVICE CENTER CASE TO DOOR.



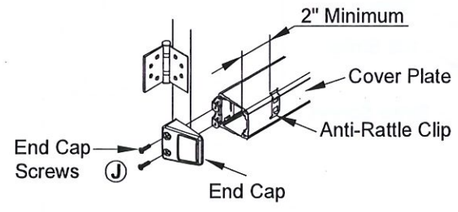


1. DEVICE WITH TRIM - See "Trim Instructions".
2. CYLINDER ONLY - Install cylinder with cylinder back plate as shown. Make sure the tailpiece is extending 1/2" from the inside face of door. Insert tailpiece into cam in the center case and mount it to the door with four(4) center case screws.
3. EXIT ONLY - Mount center case to the door with four(4) center case screws.

8 INSTALL MOUNTING BRACKET AND END CAP.



1. Remove cover plate, insert end cap bracket into push bar assembly against mechanism case. Level device, mark and drill two(2) holes for Bracket Screws. Fasten end cap bracket screws to door.



2. Insert cover plate, slide anti-rattle clip in position (2" minimum from end), and attach end cap with two(2) end cap screws.

9 INSTALL TOP LATCH AND ROD.

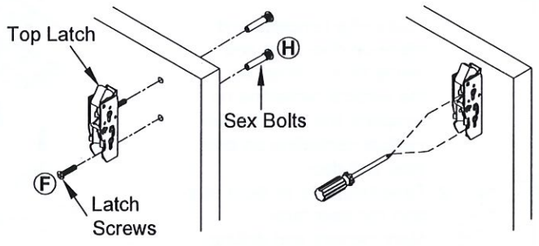


Figure 1

1. Install top latch with two(2) screws (sex bolts). Adjust strike so that device latches without binding. **See Figure 1**
2. Determine rod lengths as shown in **Figure 2**. If necessary; cut end of rod and tap. See "CUT TOP ROD / EXTEND TOP ROD" on page 10.

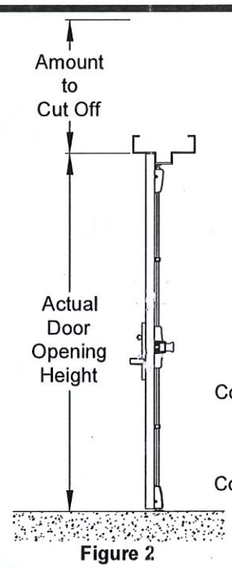


Figure 2

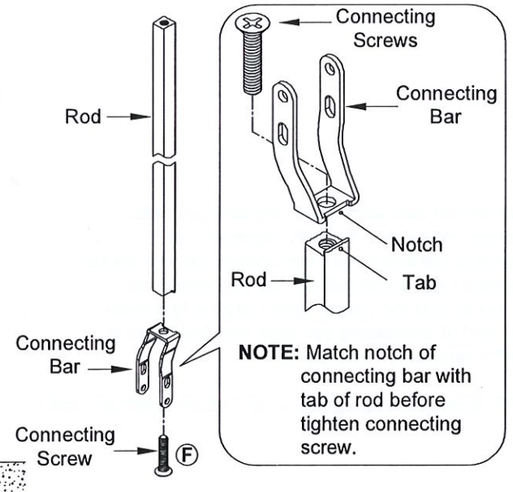
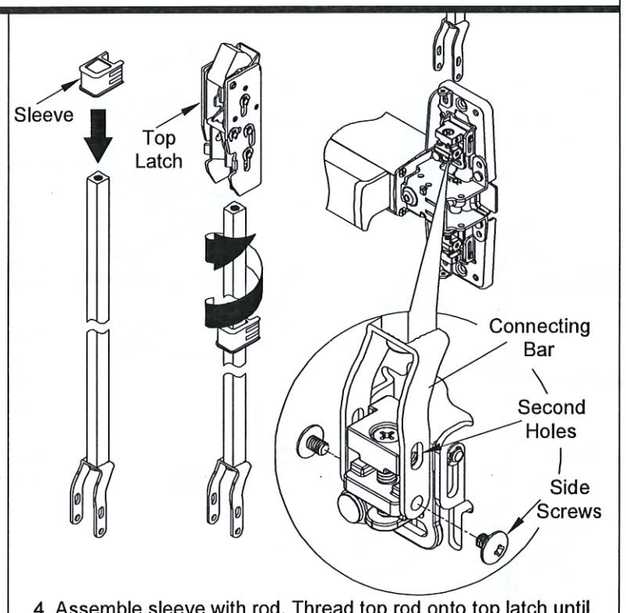


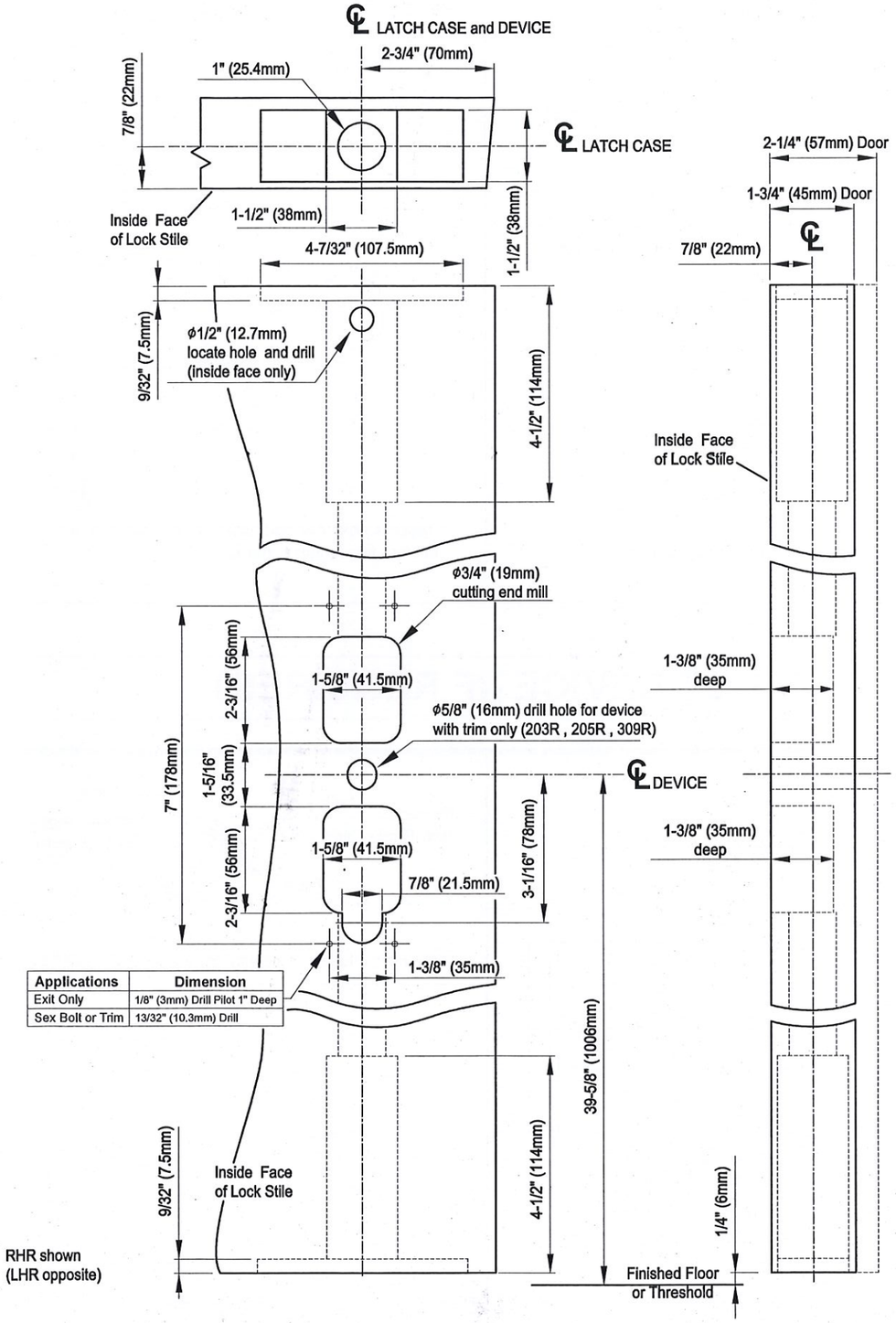
Figure 3

3. Put connecting screw through round hole of connecting bar and thread into top rod and tighten. **See Figure 3**



4. Assemble sleeve with rod. Thread top rod onto top latch until first hole in connecting bar align with first hole in retractor and fasten side screws.

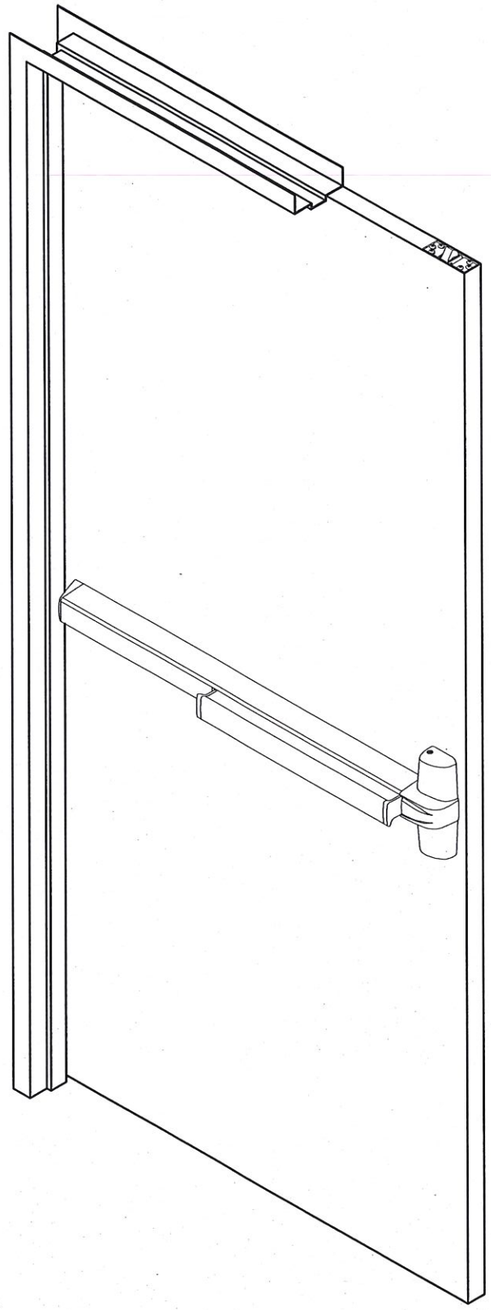
PREPARATION FOR WOOD DOOR

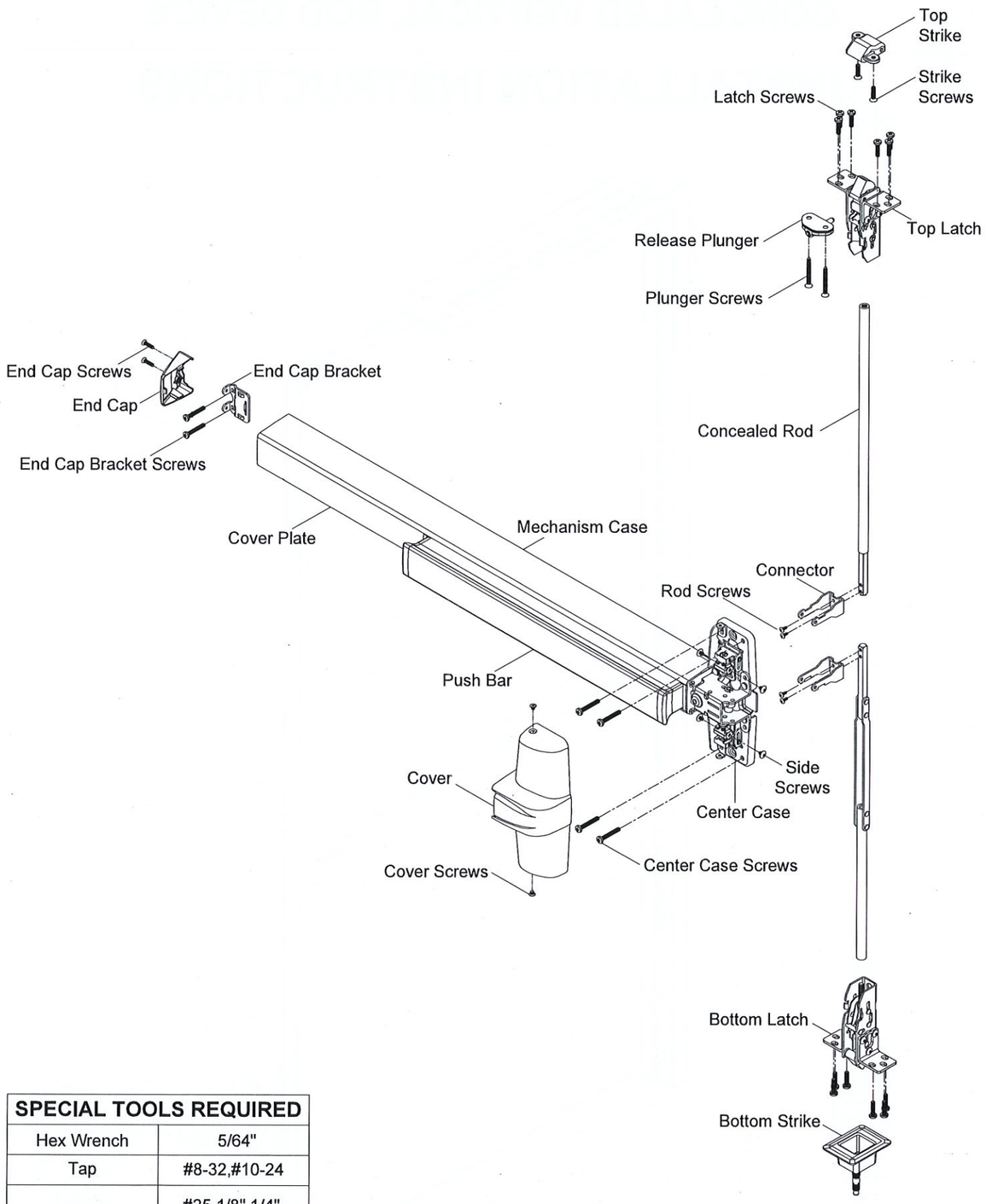


WD-OD002(503)

1300/F1300 SERIES CONCEALED VERTICAL ROD DEVICE

INSTALLATION INSTRUCTIONS

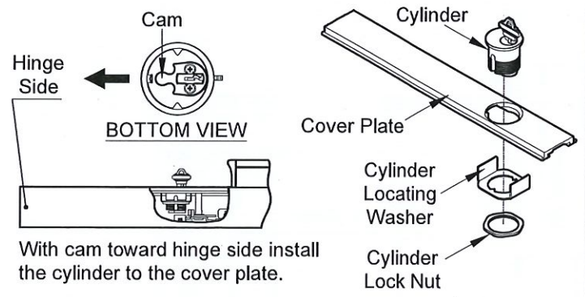




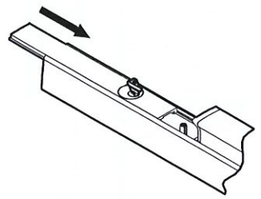
SPECIAL TOOLS REQUIRED	
Hex Wrench	5/64"
Tap	#8-32,#10-24
Drill Bits	#25,1/8",1/4", 5/16",13/32"
Spade Drill	5/8" (For Wood Door)

OPTIONAL DOGGING

CYLINDER DOGGING

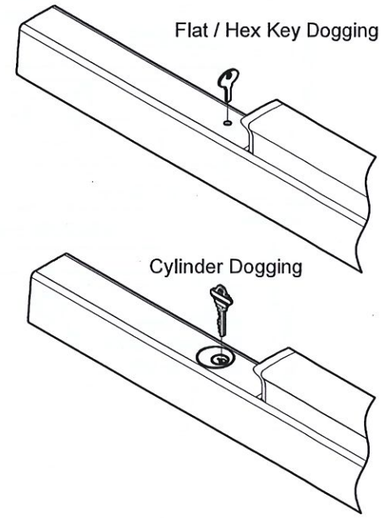


With cam toward hinge side install the cylinder to the cover plate.



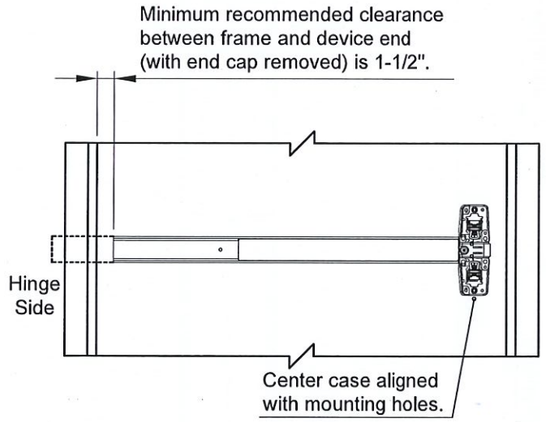
Slide cover plate in position in the mechanism case.

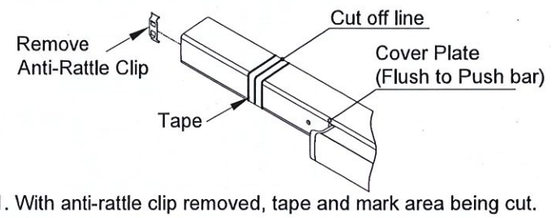
DOGGING CHECK



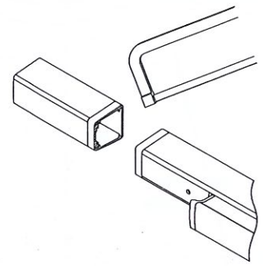
Depress push bar and turn flat / hex wrench or key one full turn for dogging check.

CUT DEVICE (IF REQUIRED)



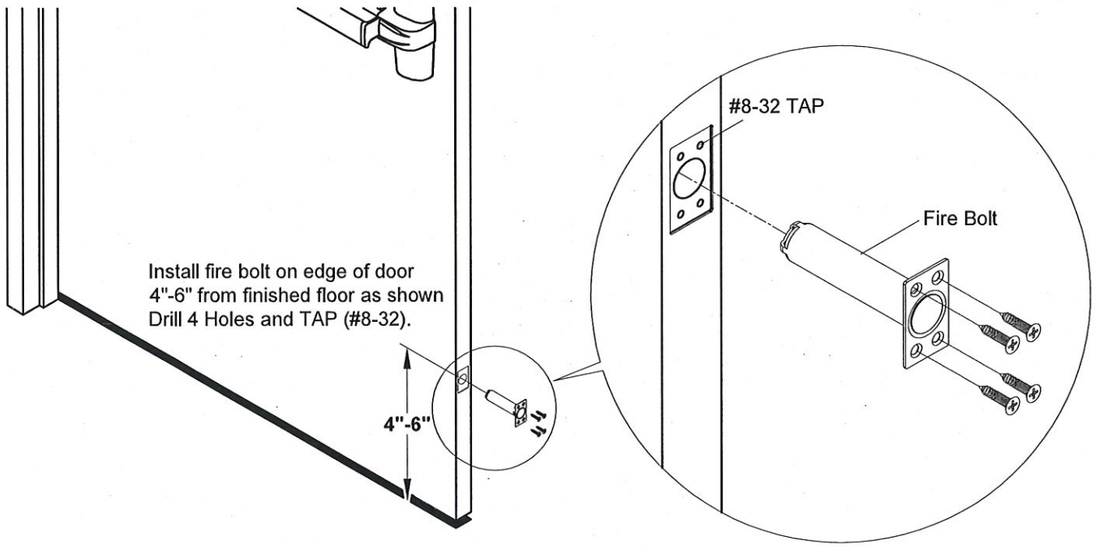


1. With anti-rattle clip removed, tape and mark area being cut.



2. Cut off device and deburr.
NOTE: Device must be cut perpendicularly for proper end cap fit.

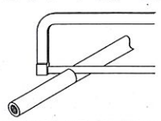
INSTALL FIRE BOLT



NOTE: Fire rated device with less bottom rod (LBR) applications must use FIRE BOLT.

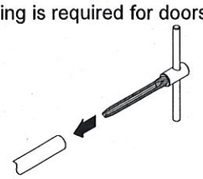
CUT TOP ROD / EXTEND TOP ROD

CUT TOP ROD



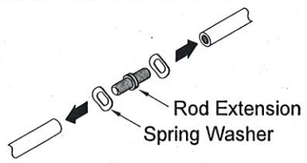
Step 1: Cut off the rod to fit the door's dimension . Measure from flat end.

NOTE: Rod cutting is required for doors shorter than 7'.

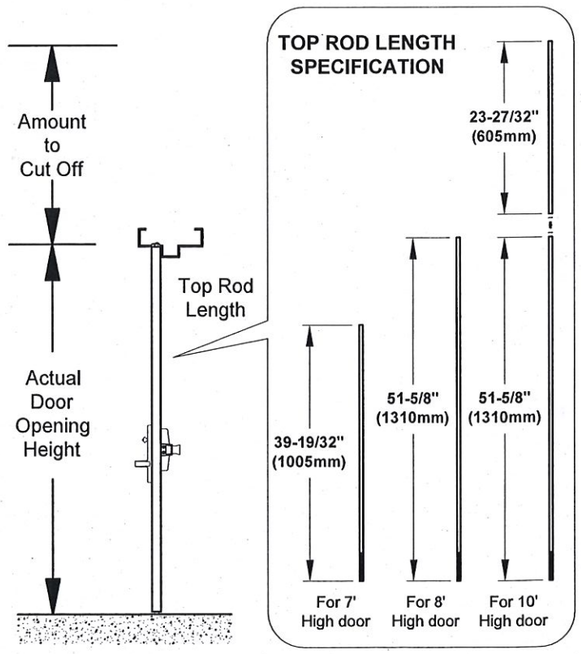


Step 2: Tap #1/4-20 ; 1" deep.

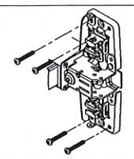
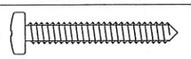
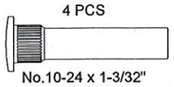
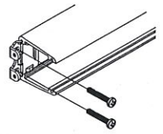
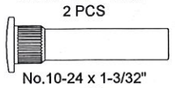
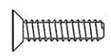
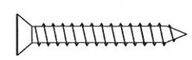
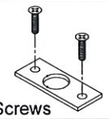
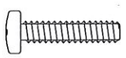
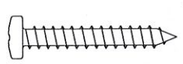
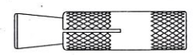
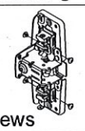
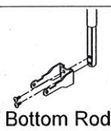
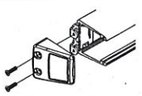
EXTEND TOP ROD



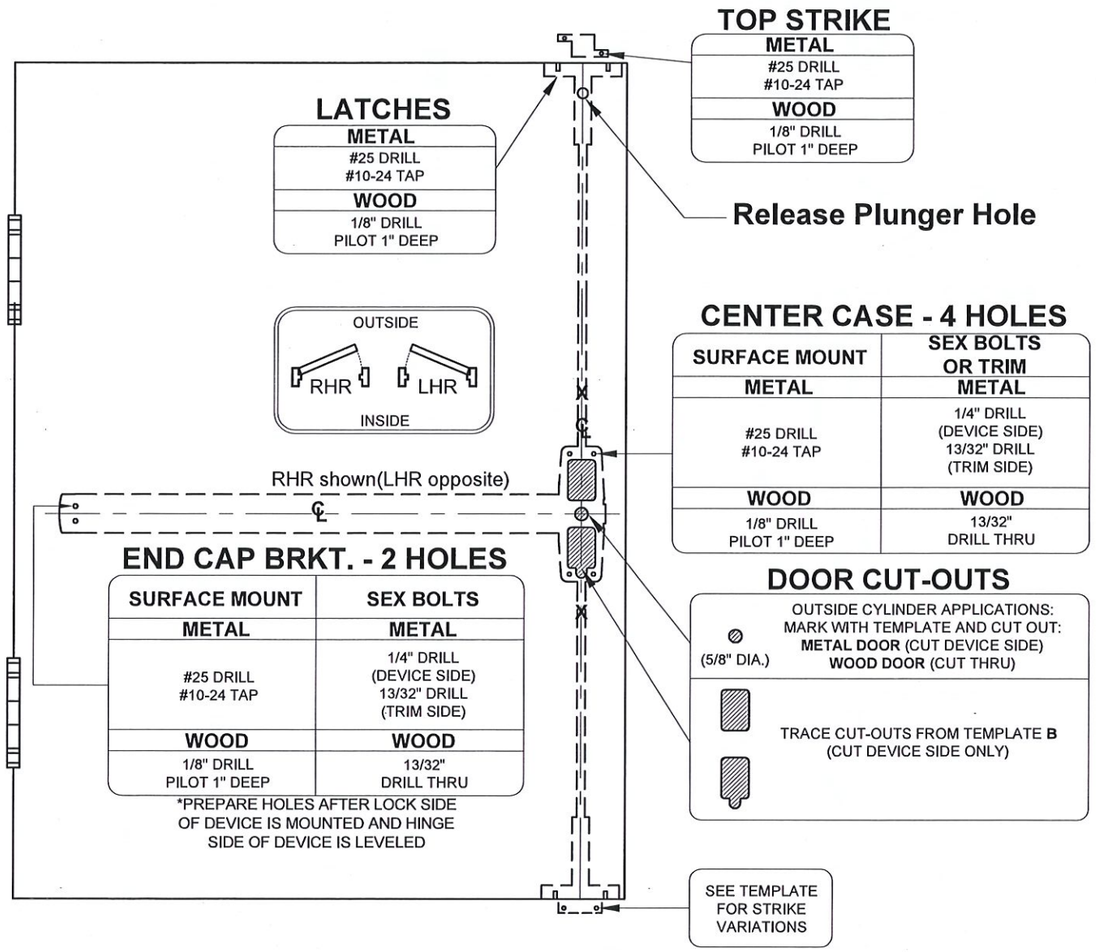
Install rod extension & spring washer to connect two(2) rods tightly.



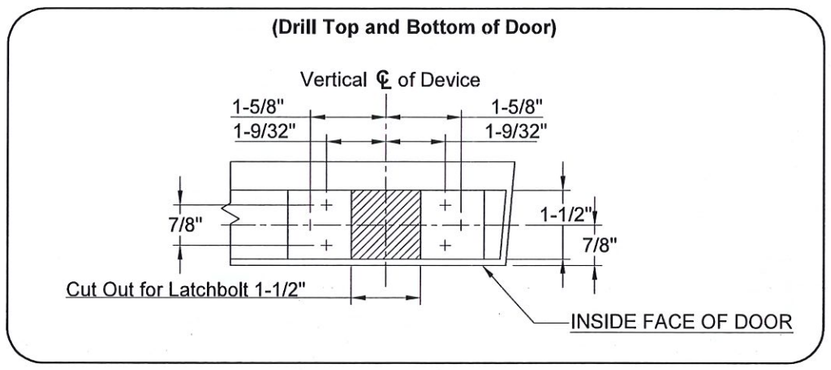
SCREW CHART

APPLICATION	METAL	SEX BOLTS	WOOD
 Center Case Screws	Ⓒ  No.10-24 x 1-11/32" 4 PCS	Ⓒ  No.10-24 x 1-11/32" 4 PCS Ⓖ  No.10-24 x 1-3/32" 4 PCS	Ⓐ  No.10-12 x 1-11/32" 4 PCS
 End Cap Bracket Screws	Ⓒ  No.10-24 x 1-11/32" 2 PCS	Ⓒ  No.10-24 x 1-11/32" 2 PCS Ⓖ  No.10-24 x 1-3/32" 2 PCS	Ⓐ  No.10-12 x 1-11/32" 2 PCS
 Plunger Screws		Ⓟ  No.10-24 x 1-5/8" 2 PCS	
 216 Strike Screws	Ⓔ  No.10-24 x 11/16" 2 PCS		Ⓑ  No.10-12 x 1-11/32" 2 PCS
 225 Strike Screws	Ⓔ  No.10-24 x 11/16" 2 PCS		
 Top / Bottom Latch Screws	Ⓓ  No.10-24 x 25/32" 6 PCS		Ⓐ  No.10-12 x 1-11/32" 6 PCS
 227 Strike Screws	Ⓝ  No.1/4-20 x 5/8" 1 PCS	Ⓞ  No.1/4-20 x 5/8" 1 PCS	
 Side Screws	Ⓛ  No.8-32 x 7/32" 4 PCS		
 Top / Bottom Rod Screws	Ⓜ  No. 8-32 x 5/16" 2 PCS		
 End Cap Screws	Ⓙ  No.8-32 x 5/8" 2 PCS		
 Cover Screws	Ⓘ  No.8-32 x 5/32" 2 PCS		

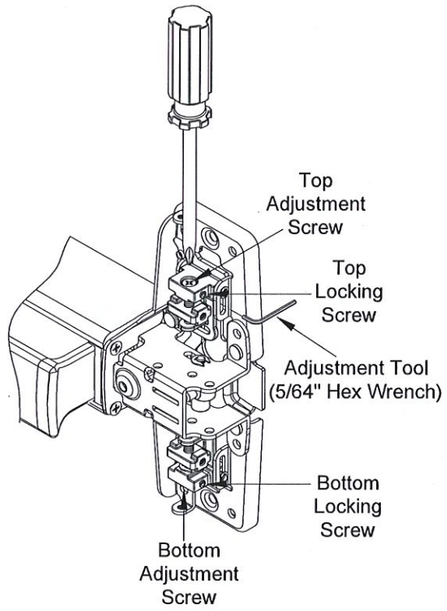
DOOR PREPARATION CHART



LATCH HOLE PREPARATION



14 ADJUST LATCHES AND SECURE TOP & BOTTOM LOCKING SCREWS.



1. Depress push bar to retract the latch bolt and open the door.
2. Check top latch for HOLDBACK (Latchbolt stays retracted in latch case). **See Figure 1**
3. Loosen top locking screw.
4. Rotate top adjustment screw until top latchbolt is fully retracted.
5. Release top latchbolt. **See Figure 2**
6. Check top latchbolt for DEADLOCK (Latchbolt should not push in).
7. Rotate top adjustment screw until top latchbolt is in DEADLOCK.
8. Tighten top locking screw.
9. Depress push bar and retract latchbolt.
10. Make sure top latchbolt stays retracted as shown. **See Figure 1**
11. Loosen bottom locking screw.
12. With top latchblot still retracted, adjust bottom rod by rotating bottom adjustment screw, so latchbolt clears floor and bottom strike in HOLDBACK. **See Figure 3**
13. Release top latchbolt. **See Figure 2**
14. Check bottom latchbolt for DEADLOCK.
15. Tighten bottom locking screw.
16. Open and close door several times and check device operation and function of DEADLOCK & HOLDBACK.

Figure 1

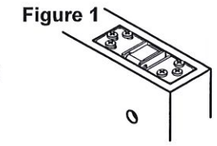


Figure 2

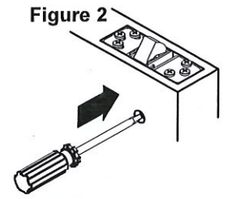
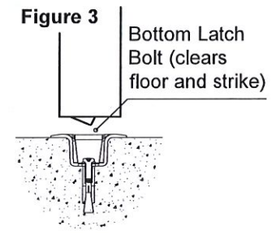
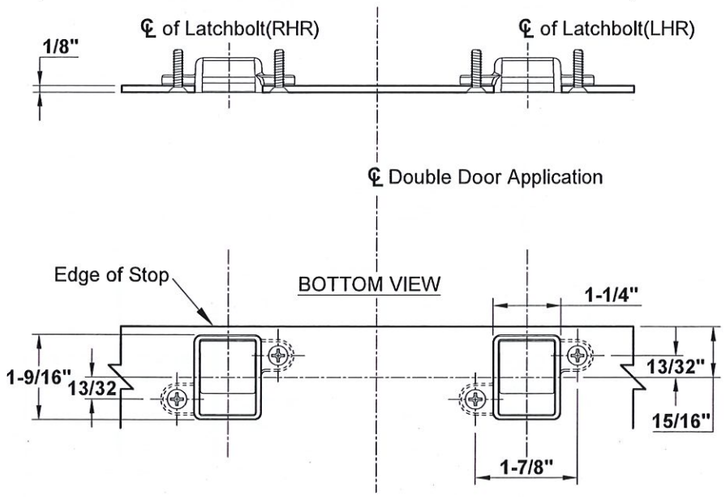


Figure 3

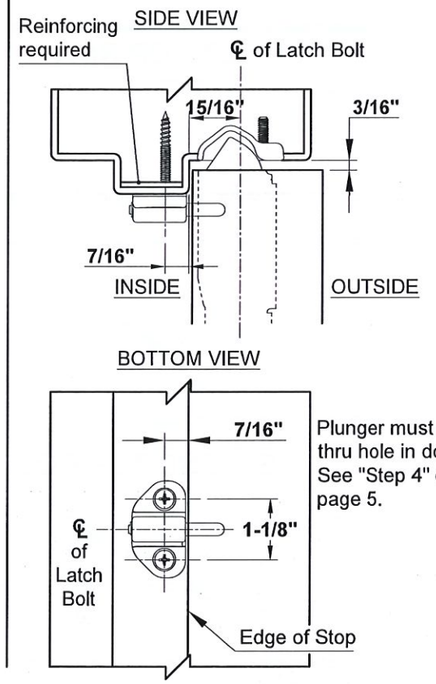


FRAME PREPARATION

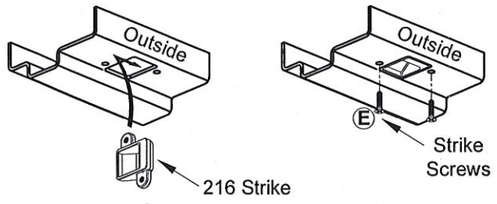
216 STRIKES



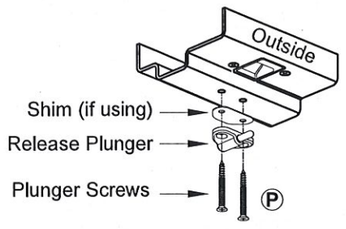
RELEASE PLUNGER



12 HANG DOOR AND INSTALL TOP STRIKE & RELEASE PLUNGER.

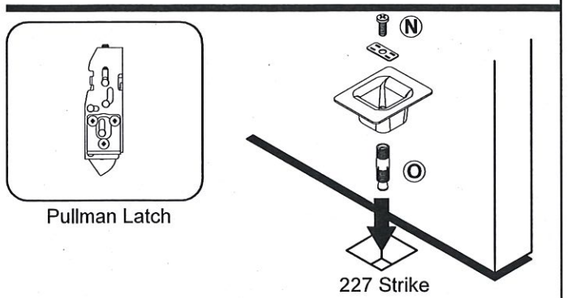


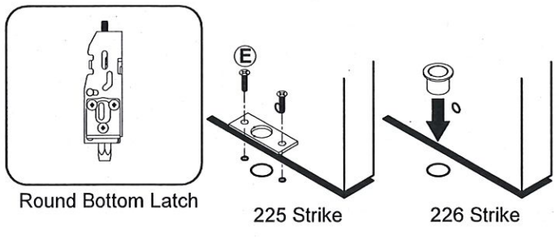
See "FRAME PREPARATION" on page 9 for cut-out and holes. After preparing, install top strike into door frame and mount two(2) strike screws.



See "FRAME PREPARATION" on page 9 for holes. After preparing, install release plunger with two(2) plunger screws.

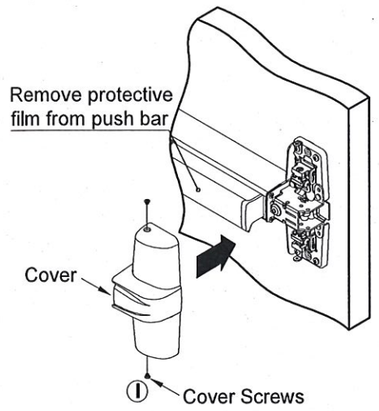
13 INSTALL BOTTOM STRIKE.





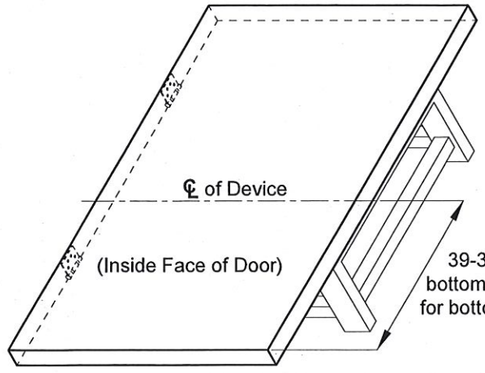
1. Mark floor for fasteners, prepare floor according to the type of strike and fastener furnished. Provide clearance in floor for bolt.
2. For threshold application:
   Provide hole in threshold according to type of strike and fasteners furnished.

15 INSTALL CASE COVER.

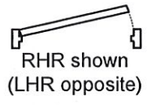


Attach cover to center case with two(2) center case screws.

1 DRAW HORIZONTAL DEVICE CENTER LINE(℄).

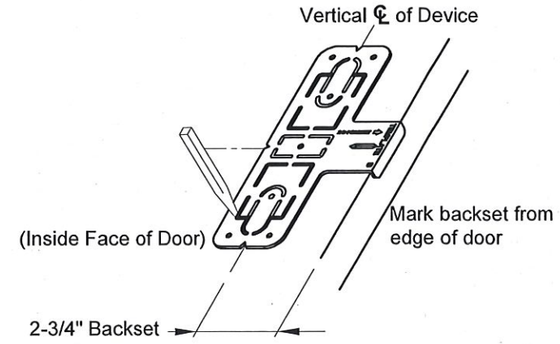


If threshold is used centerline of device must be 39-5/8" from finished floor. **(bottom door gap must be 1/4")**



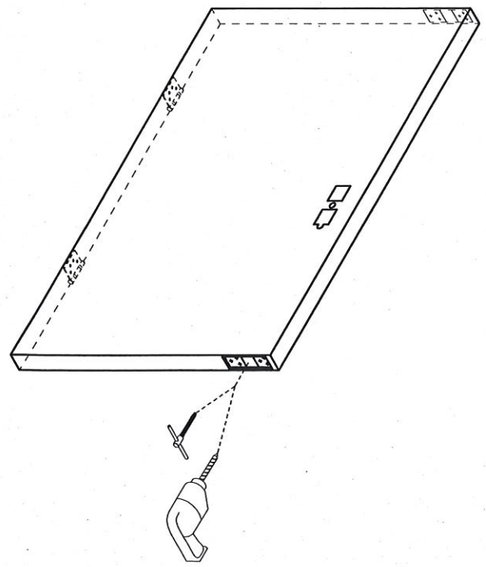
Lay door in place and draw horizontal device center line as shown.

2 DRAW VERTICAL ℄ & MARK BACKSET.



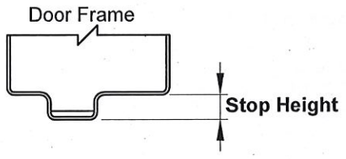
Position template as shown, then mark vertical center line for device center case.

3 PREPARE DOOR FOR DEVICE AND TOP & BOTTOM LATCH.



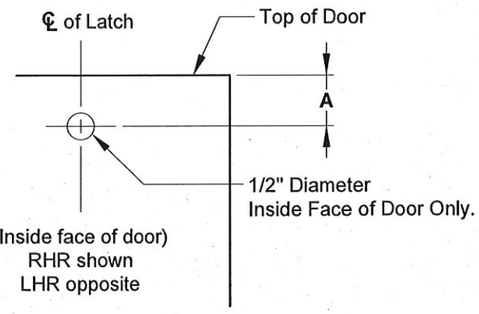
See "DOOR PREPARATION CHART" on page 4 for drill tap, and cut-out information.

4 DRILL TOP OF DOOR FOR RELEASE PLUNGER.

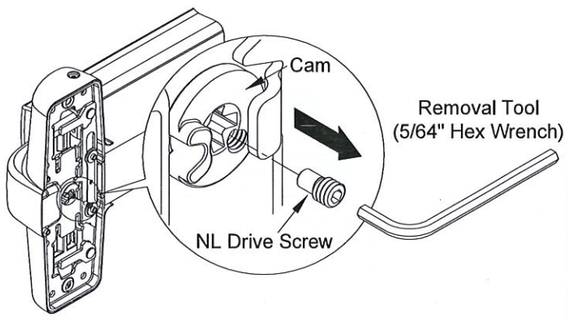


Stop Height	A
1/2"	11/16"
5/8"-Std.	13/16"
3/4"	15/16"

Measure "**Stop Height of Door Frame**" to decide "**Dimension of A**".



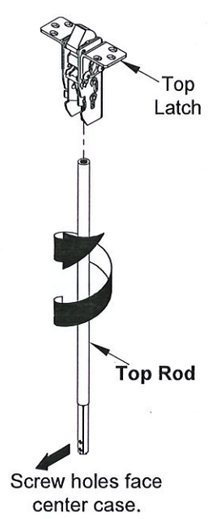
5 DETERMINE USE OF NL DRIVE SCREW.

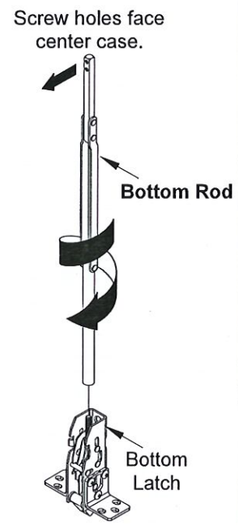


NL driver screw is factory assembled in cam on back of device center case, when the NL drive screw is left in back of center case, the outside cylinder will function only as a Night Latch.

NOTE: 1. **DO NOT** remove NL drive screw for Pull Plate or Escutcheon with night latch cylinder.
2. **REMOVE** NL drive screw from back of center case when installing trim that has a functional lever, knob, or thumbpiece AND an outside cylinder to lock and unlock the trim.

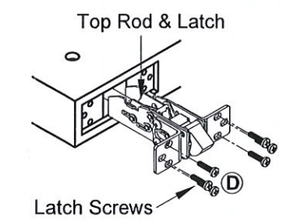
6 ATTACH RODS TO LATCHES.

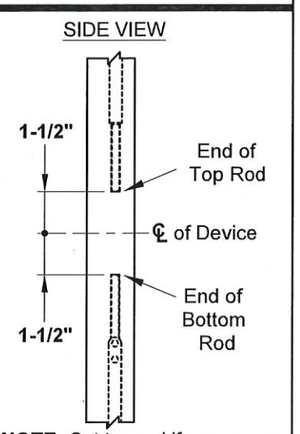




Thread rod onto latch stud until screw holes in rod bars face center case.

7 INSTALL RODS AND LATCH.

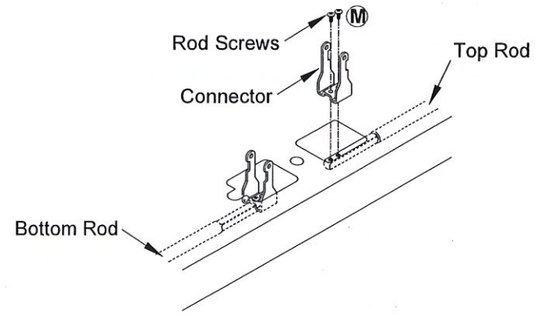




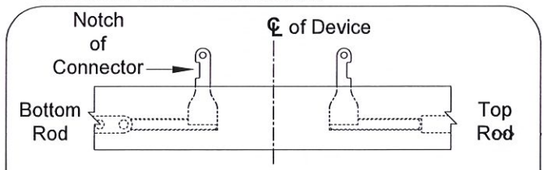
NOTE: Cut top rod if necessary; cut end of rod and tap. See "CUT TOP ROD / EXTEND TOP ROD" on page 10.

1. Install top latch and latch screws from top of door.
2. Install bottom latch and latch screws from bottom of door.
3. Fine tune the overall length by threading latch in or out of rod.

8 INSTALL CONNECTORS.



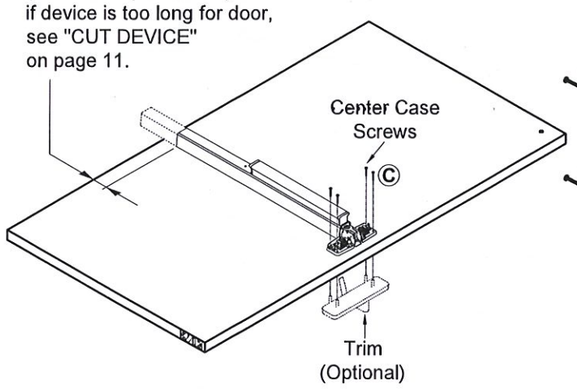
After adjusting the lengths, Install connectors on both concealed rods with rod screws.

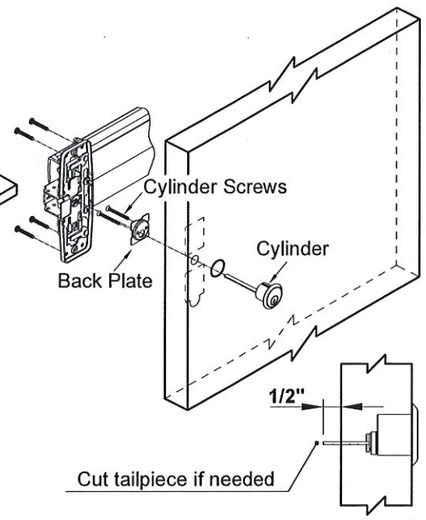


NOTE: Locate notch of connector in top rod toward top of door, and notch of connector in bottom rod toward bottom of door.

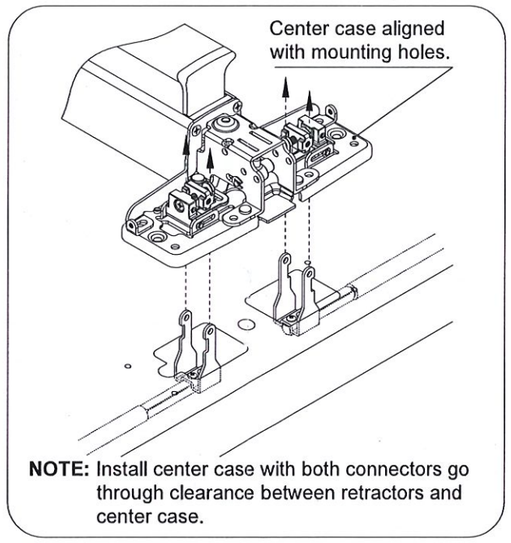
9 INSTALL TRIM (IF USING) AND SECURE DEVICE CENTER CASE TO DOOR.

2" Minimum clearance
(with end cap removed)
if device is too long for door,
see "CUT DEVICE"
on page 11.



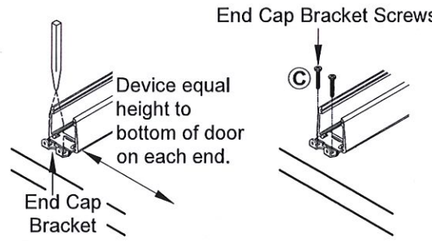


1. DEVICE WITH TRIM - See "Trim Instructions".
2. CYLINDER ONLY - Install cylinder with cylinder back plate as shown. Make sure the tailpiece is extending 1/2" from the inside face of door. Insert tailpiece into cam in the center case and mount it to the door with four(4) center case screws.
3. EXIT ONLY - Mount center case to the door with four(4) center case screws.

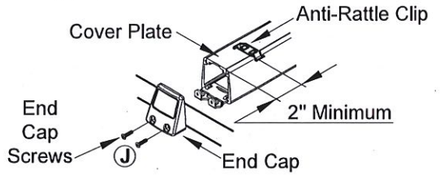


NOTE: Install center case with both connectors go through clearance between retractors and center case.

10 INSTALL MOUNTING BRACKET AND END CAP.

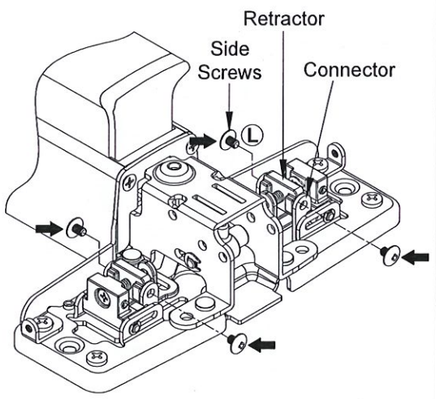


1. Remove cover plate, insert end cap bracket into push bar assembly against mechanism case. Level device, mark and drill two(2) holes for Bracket Screws. Fasten end cap bracket screws to door.



2. Insert cover plate, slide anti-rattle clip in position(2" minimum from end), and attach end cap with two(2) end cap screws.

11 INSTALL SIDE SCREWS.

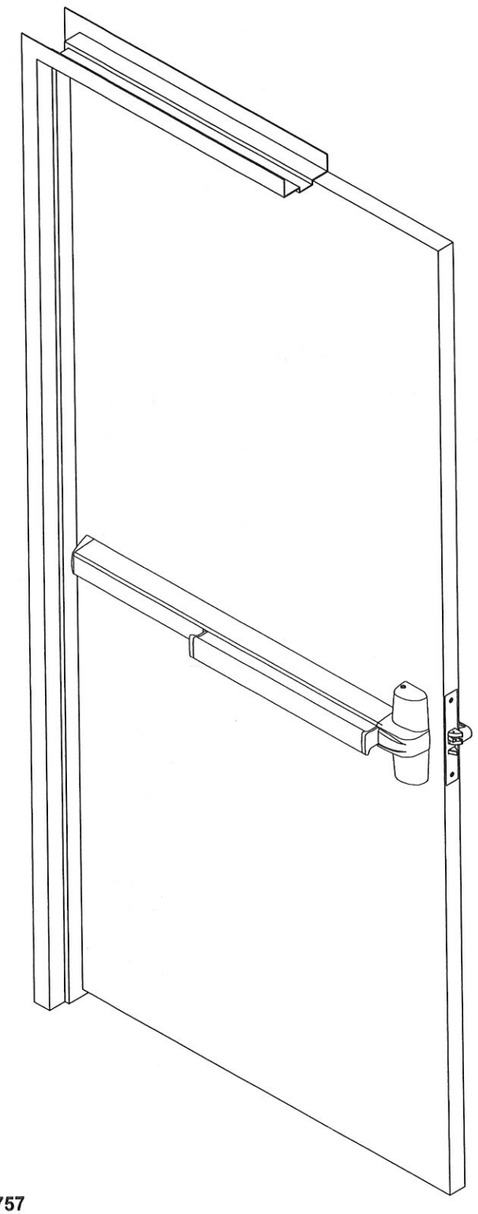


1. Make sure both latchbolts are extended.
2. Apply both sides "side screws" through round holes in connector with threaded holes in retractors and tighten.

NOTE: Both sides of connectors and retractors must have side screws installed.

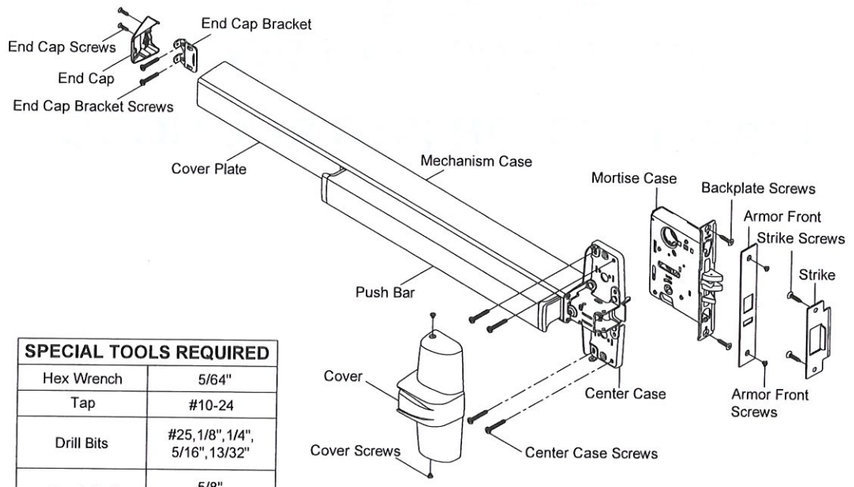
1400/F1400 SERIES
MORTISE LOCK EXIT DEVICE

INSTALLATION INSTRUCTIONS



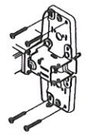
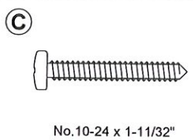
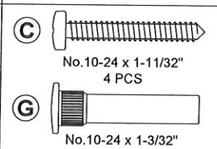
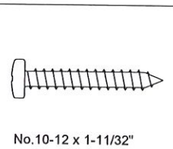
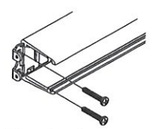
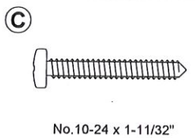
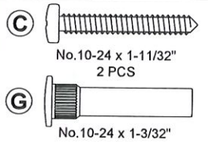
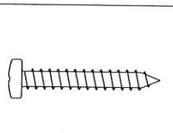
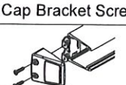
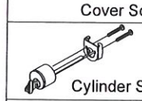
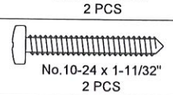
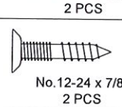
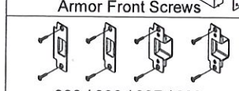
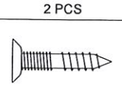
Patent No. 7,634,927 7,748,757
D623,499 7,836,738 7,887,107
and other patents pending.

WD-OD002(527)

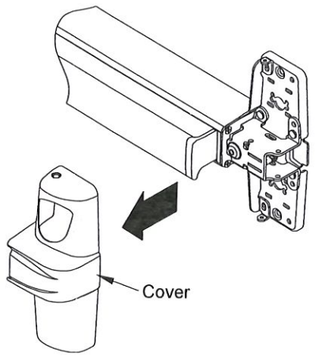


SPECIAL TOOLS REQUIRED	
Hex Wrench	5/64"
Tap	#10-24
Drill Bits	#25,1/8",1/4", 5/16",13/32"
Spade Drill	5/8" (For Wood Door)

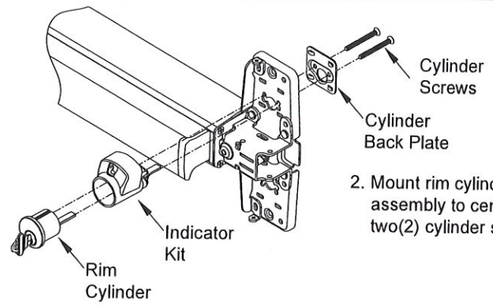
SCREW CHART

APPLICATION	METAL	SEX BOLTS	WOOD
 Center Case Screws	 No.10-24 x 1-11/32" 4 PCS	 No.10-24 x 1-11/32" 4 PCS No.10-24 x 1-3/32" 4 PCS	 No.10-12 x 1-11/32" 4 PCS
 End Cap Bracket Screws	 No.10-24 x 1-11/32" 2 PCS	 No.10-24 x 1-11/32" 2 PCS No.10-24 x 1-3/32" 2 PCS	 No.10-12 x 1-11/32" 2 PCS
 End Cap Screws	 No.8-32 x 5/8" 2 PCS		
 Cover Screws	 No.8-32 x 5/32" 2 PCS		
 Cylinder Screws	 No.10-24 x 1-11/32" 2 PCS		
 Backplate Screws	 No.12-24 x 7/8" 2 PCS		
 Armor Front Screws	 No.8-32 x 5/32" 2 PCS		
 306 / 336 / 337 / 338 Strike Screws	 No.12-24 x 7/8" 2 PCS		

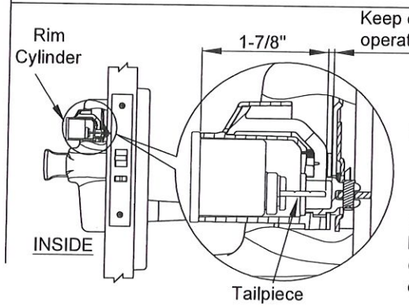
SECURITY INDICATOR KIT INSTALLATION



1. Remove cover.



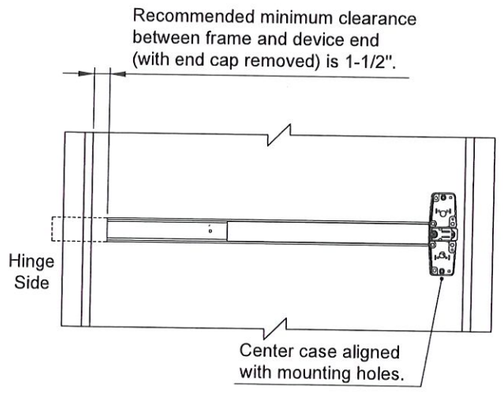
2. Mount rim cylinder to Indicator Kit assembly to center case with two(2) cylinder screws as shown.

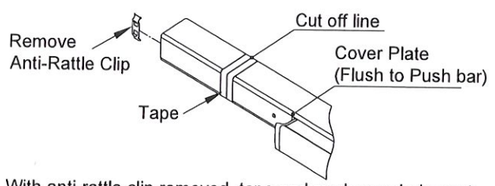


3. The distance between the tailpiece's endpoint after cropping and contact surface of the indicator is of 1-7/8"

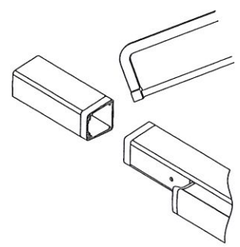
CAUTION!
If the tailpiece is too far into the indicator drive hole, it cannot be properly operated.

CUT DEVICE (IF REQUIRED)

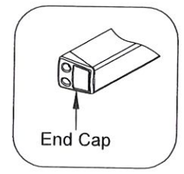




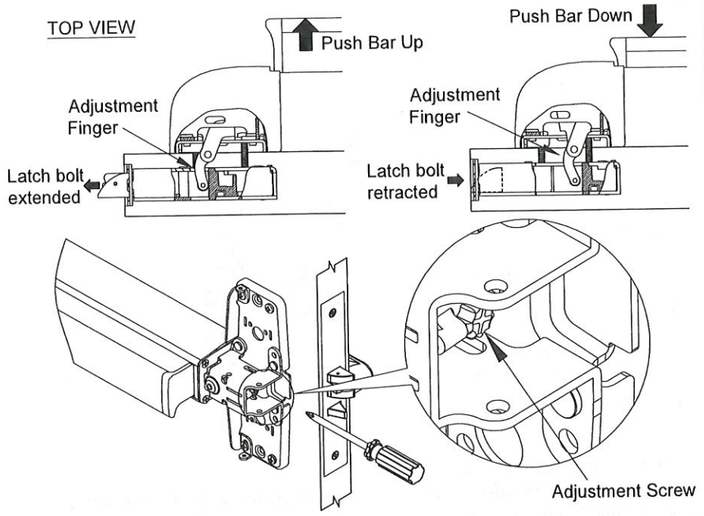
1. With anti-rattle clip removed, tape and mark area being cut.



2. Cut off device and deburr.
NOTE: Device must be cut square for proper end cap fit.

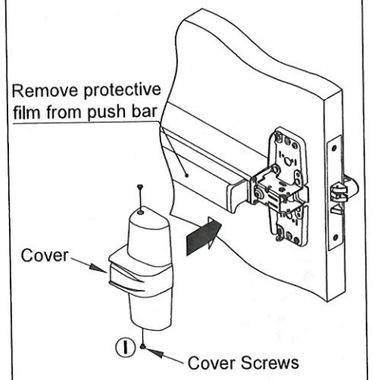


9 ADJUSTING LATCH BOLT.



Latchbolt should be fully retracted when push bar is depressed or device is dogged down. If above condition does not exist, adjust "adjustment finger" with adjusting "adjustment screw".

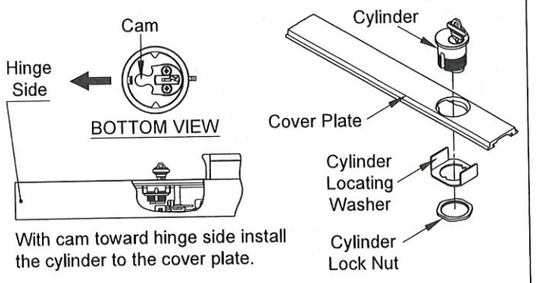
10 INSTALL CASE COVER.



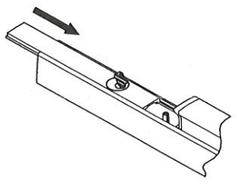
Attach cover to center case with two(2) center case screws.

OPTIONAL DOGGING

CYLINDER DOGGING

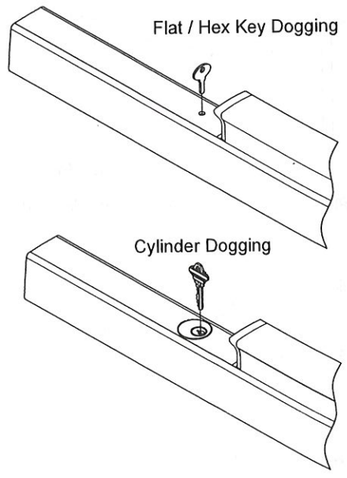


With cam toward hinge side install the cylinder to the cover plate.



Slide cover plate in position in the mechanism case.

DOGGING CHECK



Depress push bar and turn flat / hex wrench or key one full turn for dogging check.

DOOR PREPARATION CHART

RHR shown (LHR opposite)

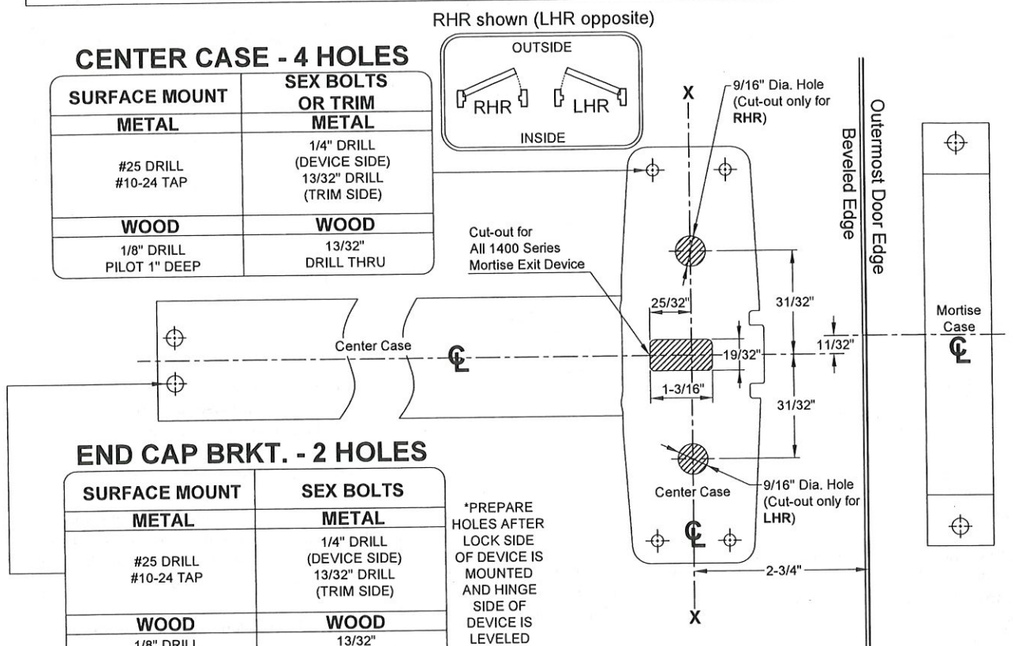
CENTER CASE - 4 HOLES

SURFACE MOUNT	SEX BOLTS OR TRIM
METAL	METAL
#25 DRILL #10-24 TAP	1/4" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD	WOOD
1/8" DRILL PILOT 1" DEEP	13/32" DRILL THRU

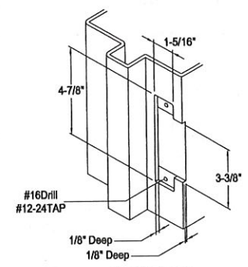
END CAP BRKT. - 2 HOLES

SURFACE MOUNT	SEX BOLTS
METAL	METAL
#25 DRILL #10-24 TAP	1/4" DRILL (DEVICE SIDE) 13/32" DRILL (TRIM SIDE)
WOOD	WOOD
1/8" DRILL PILOT 1" DEEP	13/32" DRILL THRU

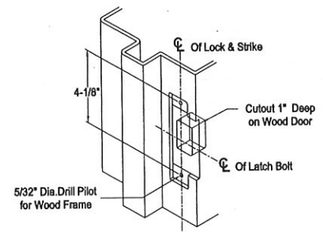
*PREPARE HOLES AFTER LOCK SIDE OF DEVICE IS MOUNTED AND HINGE SIDE OF DEVICE IS LEVELED



STRIKE PREPARATION

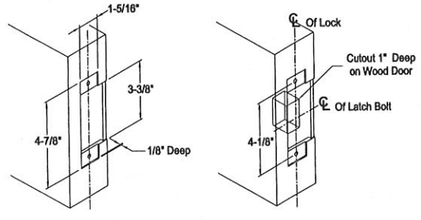


306 Strike

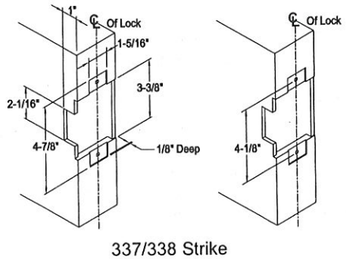


306 Strike

For Single Door



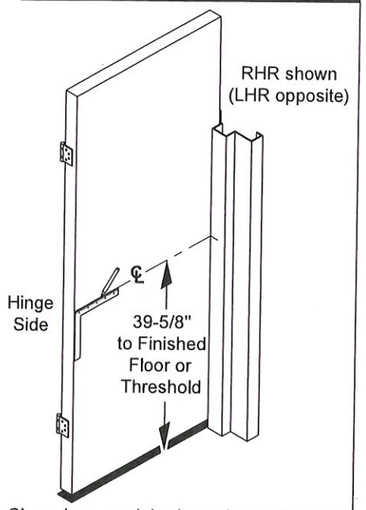
306/336 Strike



337/338 Strike

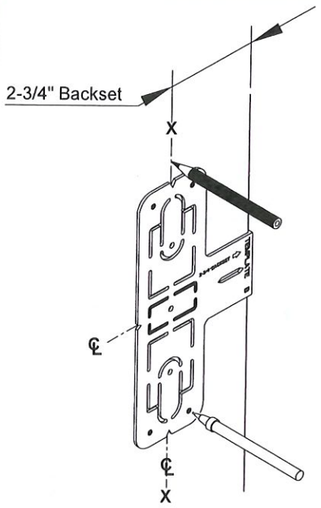
For Double Door

1 DRAW HORIZONTAL DEVICE CENTERLINE (℄).



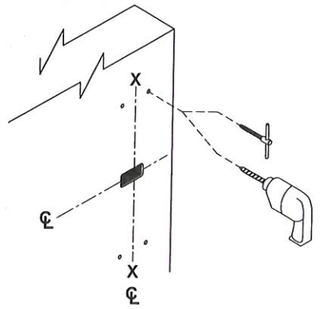
Close door, mark horizontal centerline on inside face of door and on lock side door stop 39-5/8" from finish floor as shown, (Continue horizontal centerline to outside face of door if trim is used)

2 ALIGN TEMPLATE ALONG CENTERLINE (℄) AND MARK DOOR.



Mark four(4) center case holes. Mark vertical centerline at lock side using 2-3/4" backset dimension.

3 PREPARE FOUR(4) CENTER CASE HOLES AND MORTISE LOCK CUTOUTS.

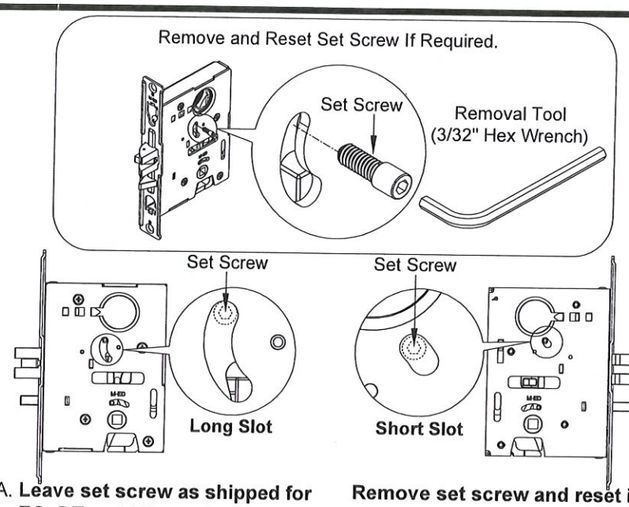


3A. Mark vertical centerline at lock side using 2-3/4" backset dimension (If trim is using mark vertical centerline on the outside face of door. Use extra care if edge of door is beveled, be sure X-X vertical centerline is parallel to edge of door).

3B. If door is not pre-machined for mortise lock, mortise the door according to "Mortise Lock Instructions".

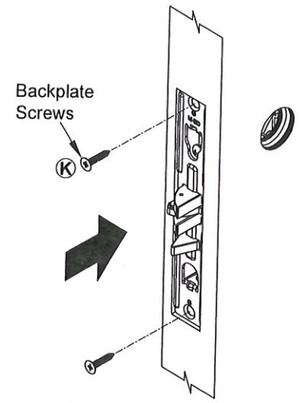
See "Trim Instructions" for pull side door preparation.

4 INSTALL MORTISE LOCK INTO DOOR.



4A. **Leave set screw as shipped for EO, DT and NL applications.** Set screw is factory set in the long slot on one side of the mortise case.

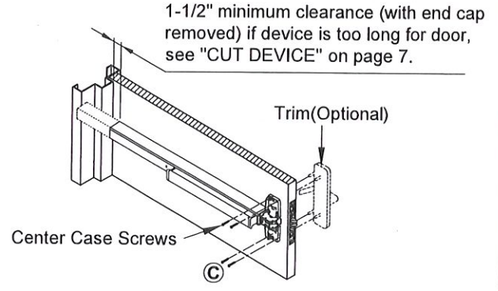
Remove set screw and reset in short slot of the other side for TP, K, "double cylinder" and L trims with outside cylinder to lock and unlock trim function.



4B. Install mortise lock into door and fasten with backplate screws.

NOTE:Security indicator uses special mortise lock case and is already factory pre-set and does not require any modification, therefore above step is not applicable for such case.

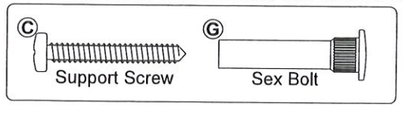
5 INSTALL TRIM (IF USING) AND SECURE DEVICE CENTER CASE TO DOOR.



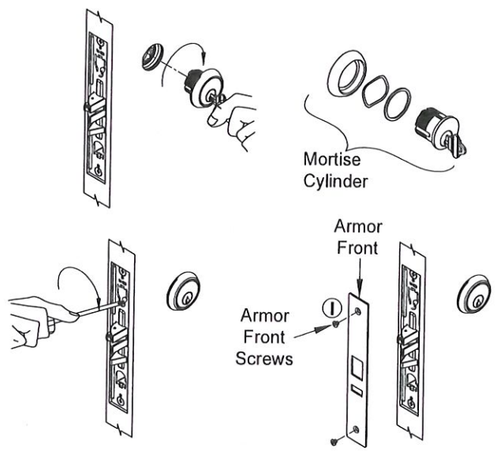
1. DEVICE WITH TRIM - See "Trim Instructions".
2. EXIT ONLY - With device adjustment finger in the mortise case, mount center case to the door with four(4) screws.

For **FIRE EXIT DEVICES**

Sex bolts and support screws are required for composite (wood, plastic and steel covered), wood core, sheet metal and hollow metal doors without reinforcement unless door manufacturer has an alternate mounting method. Fire doors with steel reinforcement, mount devices with machine screws



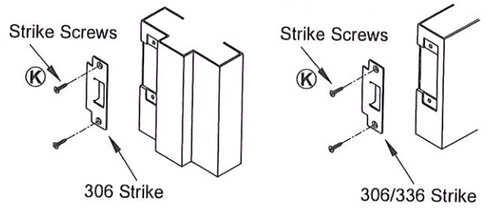
6 INSTALL OUTSIDE LOCKING CYLINDER (IF USING) AND FINISH INSTALLING MORTISE LOCK.

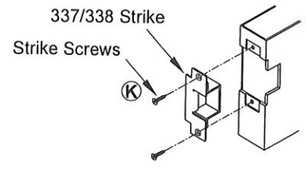


CYLINDER ONLY - Install mortise cylinder into mortise lock as shown. Check key operation and secure cylinder in place by tightening cylinder anchor screw into groove on side of cylinder.

NOTE: See "DOUBLE CYLINDER INSTALLATION" on page 7 for double cylinder application.

7 INSTALL SUPPLIED STRIKE TO FRAME OR OTHER DOOR.

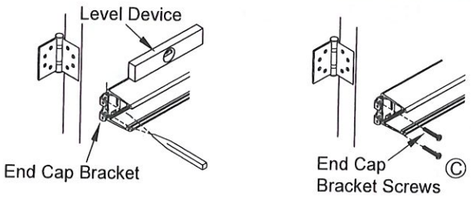




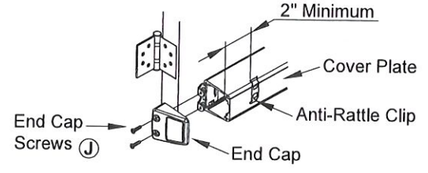
Open Back Strike For Double Door Application

See "STRIKE PREPARATION" on page 3 for preparation information.

8 INSTALL MOUNTING BRACKET AND END CAP.



1. Remove cover plate, insert end cap bracket into push bar assembly against mechanism case. Level device, mark and drill two(2) holes for Bracket Screws. Fasten end cap bracket screws to door.



2. Insert cover plate, slide anti-rattle clip in position (2" minimum from end), and attach end cap with two(2) end cap screws.

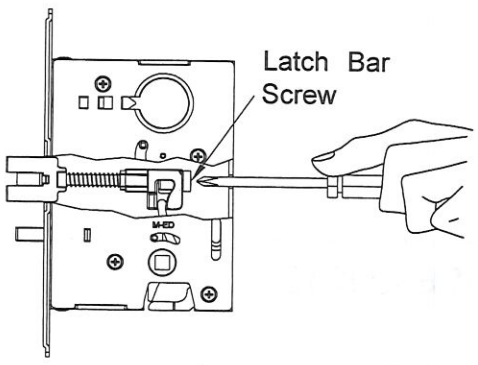
1400 SERIES
MORTISE LOCK FOR EXIT DEVICE

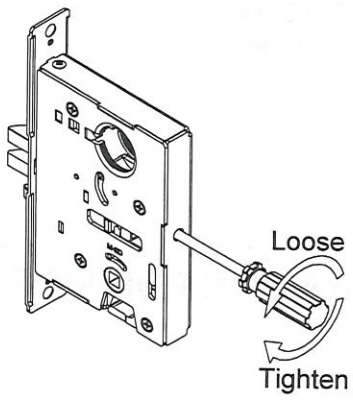
INSTALLATION INSTRUCTIONS

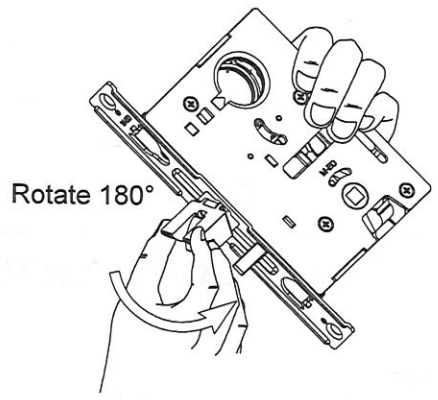
1. Prepare door for device and trim (see their instructions).

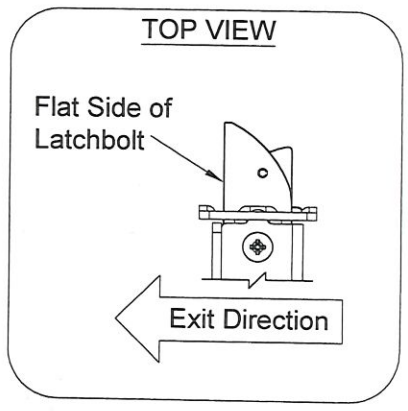
2. Prepare door for mortise lock and cylinder (see preparation on other side of these instructions).

3. Change lock handing if required:
   (a) Loose latch bar screw to project latchbolt away from mortise case.
   (b) After latchbolt fully projected, rotate it 180° so flat side faces exit direction, tighten latch bar screw.







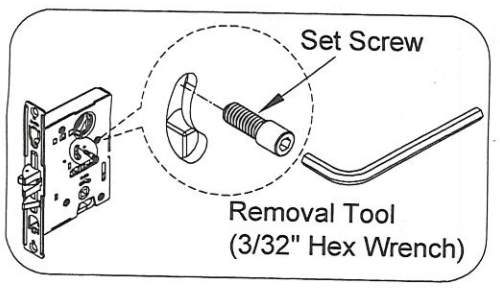


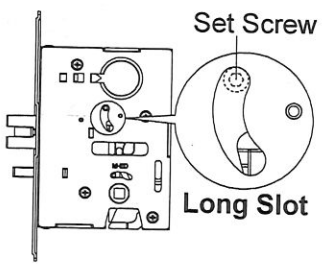
Remove and Reset Set Screw If Required.

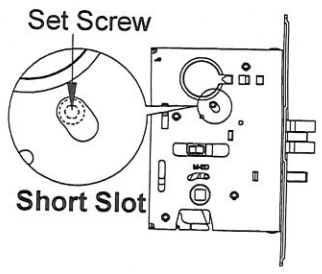
4A. **Remain set screw as shipped.** Set screw is factory set at **long slot** side for EO,DT, and NL applications.

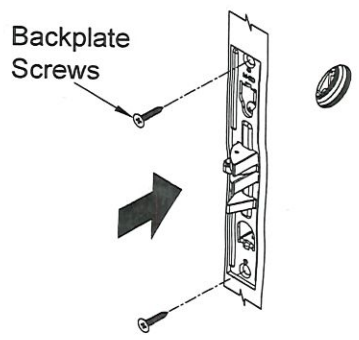
Remove set screw and reset in short slot of the other side for TP, K, "double cylinder" and L trims with outside cylinder to lock and unlock trim function.

4B. Install mortise lock into door and fasten with backplate screws.





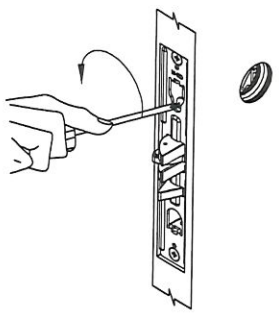




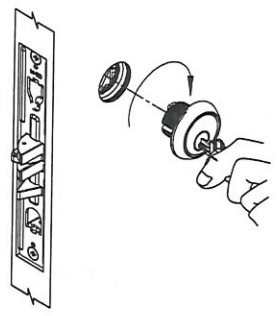
NOTE:Security indicator uses special mortise lock case and is already factory pre-set and does not require any modification, therefore above step is not applicable for such case.

5. Install trim, if using (see "Trim Instructions").

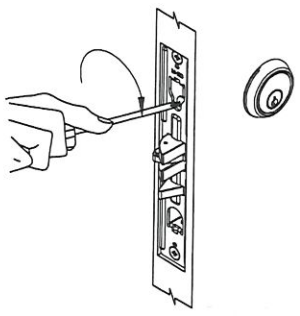
6. If using outside cylinder:
   (a) Loose cylinder anchor screw sufficiently to allow cylinder to be threaded into lock case.



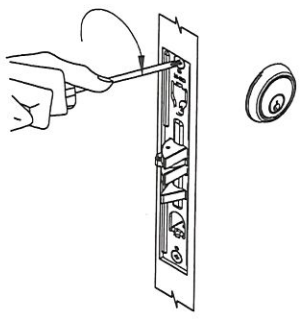
   (b) Screw cylinder into the lock case, keyway must end up on bottom of cylinder housing.



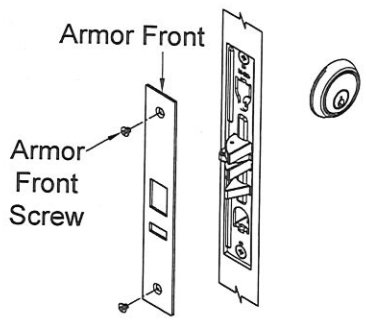
   (c) Secure cylinder by tightening cylinder anchor screw into groove on side of cylinder.



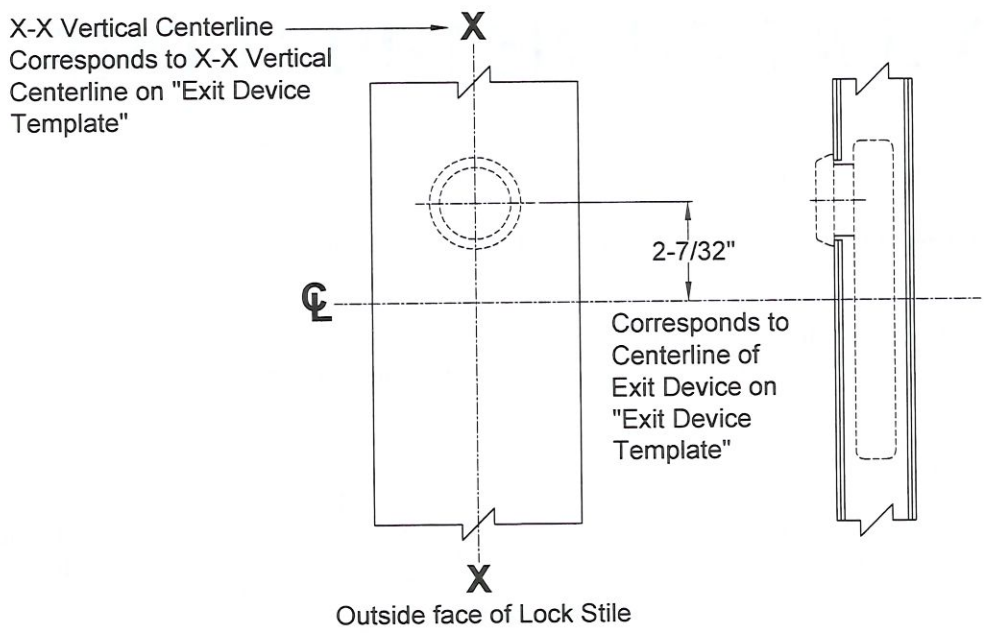
7. Finish installing mortise lock:
   (a) Tighten two(2) backplate screws.



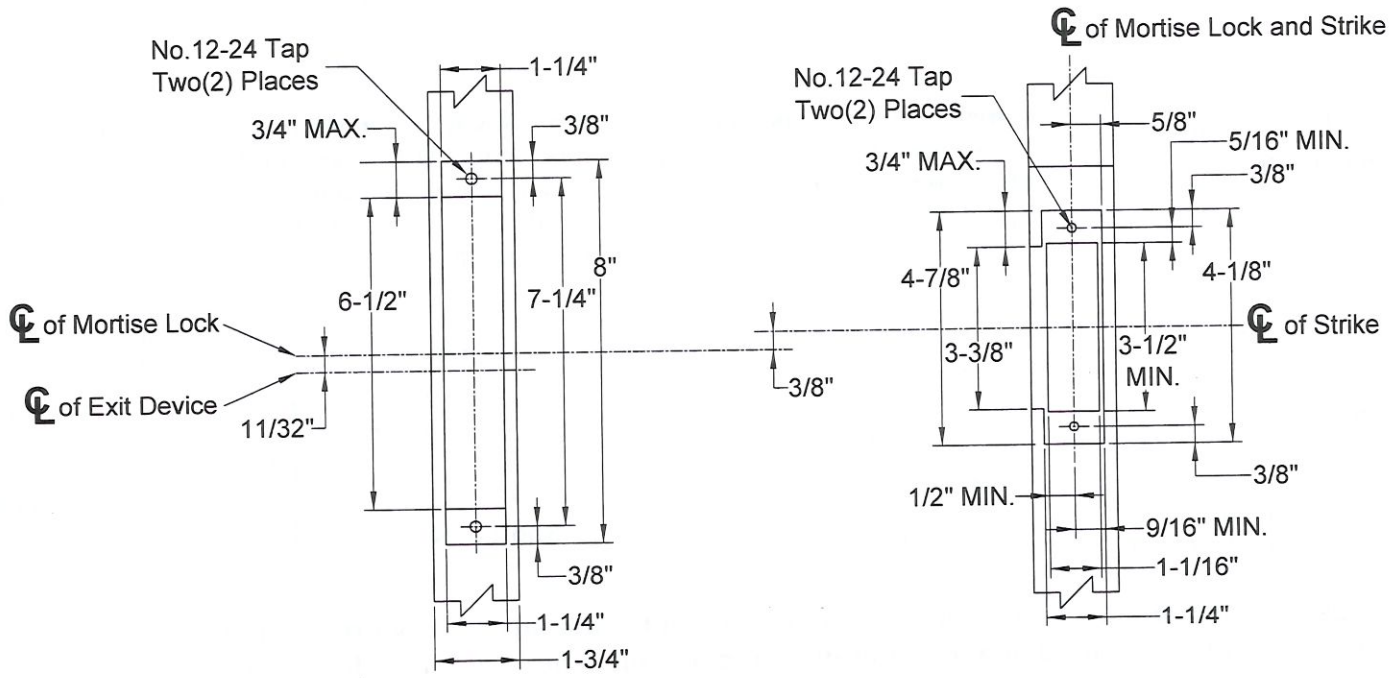
   (b) Place armor front in position and install two(2) armor front screws.



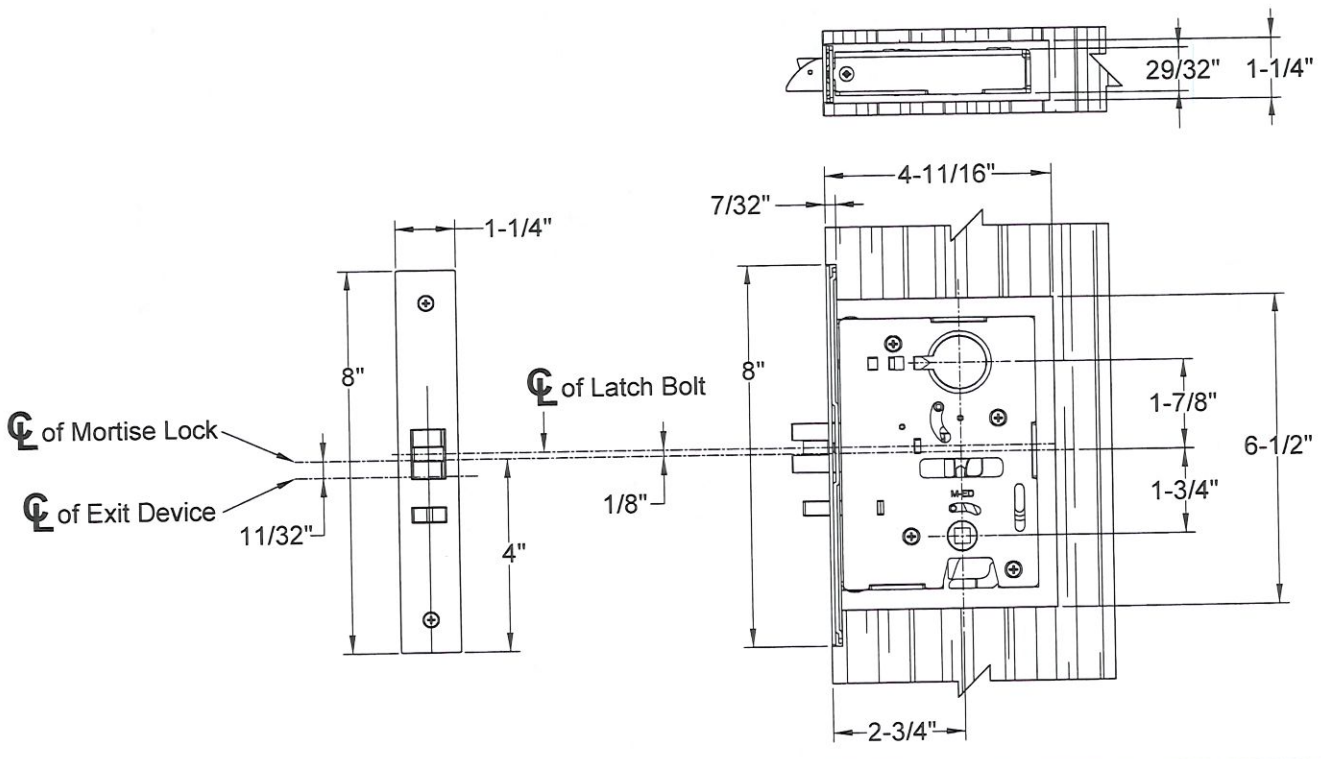
DOOR PREPARATION FOR MORTISE CYLINDER



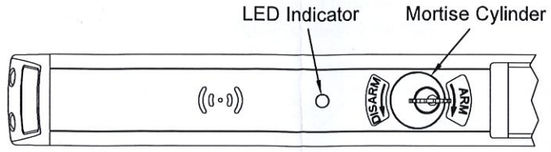
METAL DOOR PREPARATION FOR MORTISE LOCK



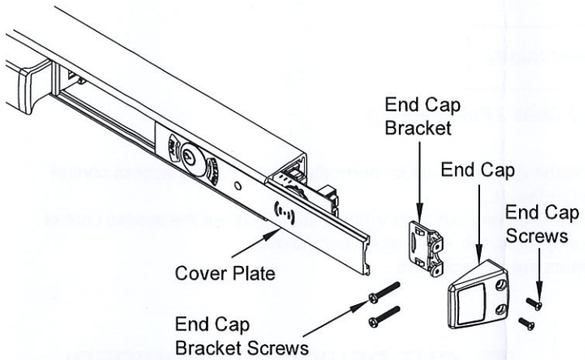
WOOD DOOR PREPARATION FOR MORTISE LOCK

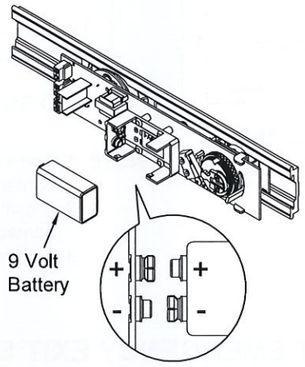


OPERATION



1. Insert the key into the cylinder and turn clockwise to arm unit. Rotate to initial position to remove key.
2. Arming time is of 15 seconds, during which the LED flashes green every 1.5 seconds.
3. A brief sound will indicate that the alarming time is complete. When armed the LED will flash red every 15 seconds.
4. Turn the key counterclockwise to disarm.
5. Changing the battery:
   A beep will sound every 15 seconds to indicate that battery is low. This cannot be shut down by disarming the unit and the sound will stop only when battery is changed.

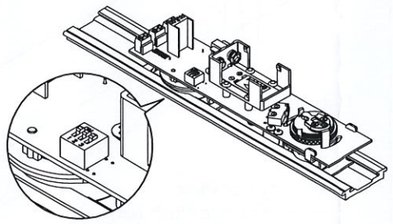


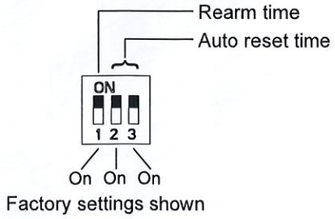


Make sure polarity is correct

7. To change the battery.
   A. Remove end cap and loosen or remove mounting bracket.
   B. Remove cover plate.
   C. Change Battery.
   D. Reassemble.

OPTIONS





Factory settings shown

MODE SELECT SWITCHES	
Option	**Function**
Rearm time	If switch No. 1 is off, AL device re-arms with no delay.
Auto reset time	Set switches No. 2 and 3 for auto reset alarm time. Three setting options: 1.5, 3 or 5 minutes.

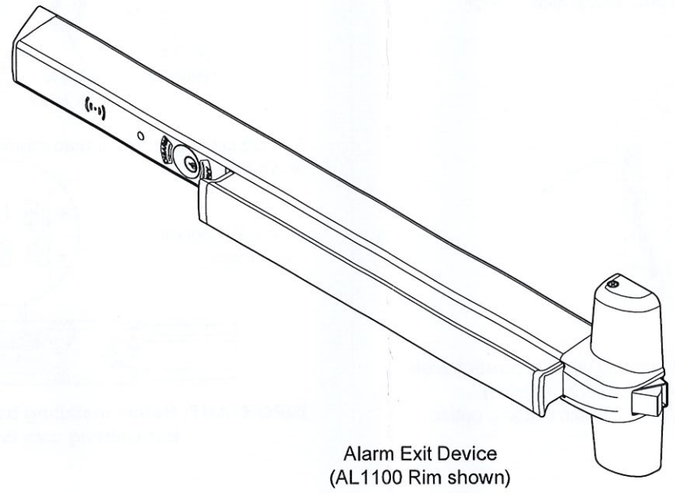
NOTE: The default configuration setting for alarm sound is set for 5 minutes before rearming.

AUTO RESET TIME				
Minutes	1-1/2	3	5	infinite
Switch No. 2	off	on	on	off
Switch No. 3	on	off	on	off

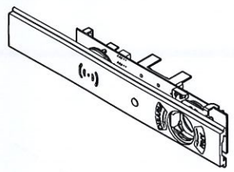
ALARM EXIT DEVICE

INSTALLATION INSTRUCTIONS

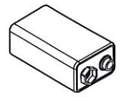
COMPONENTS:



Alarm Exit Device
(AL1100 Rim shown)



Cover Plate
(Include Alarm Exit Module)



9 Volt Battery

Cylinder Lock Nut

EMERGENCY EXIT ONLY
PUSH TO OPEN ALARM WILL SOUND

Emergency Exit Sign
(packed in cardboard tube)

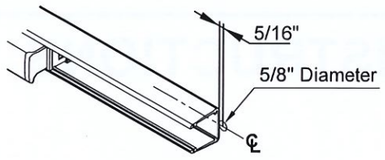
SPECIFICATIONS:

Voltage ..... 12 to 24VDC,
12 to 24VAC
Current 0.2A
Battery 9V
Normally open inputs ..... External inhibit (EI)

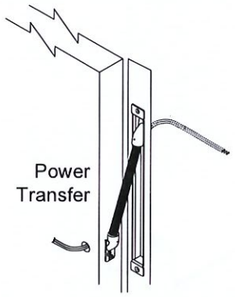
NOTE: 1. The Alarm Exit Module requires an RX or LM switch mounted in the exit device.
2. Choose battery or remote power for usage.
3. Alarm Kit can be used for 1000 Series F1100, F1200, F1300, F1400 and F1500 Model.
2000 Series F2100, F2200, F2300, and F2500 Model.

INSTALLATION PROCEDURE:

1 COMPLETE WIRING (IF REQUIRED).

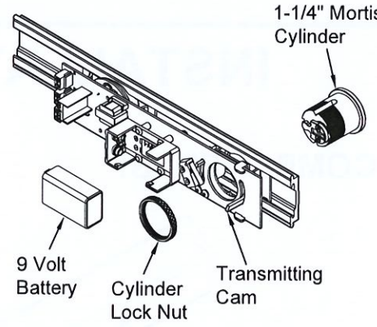


Drill 5/8"dia. wire access hole thru device side of door.

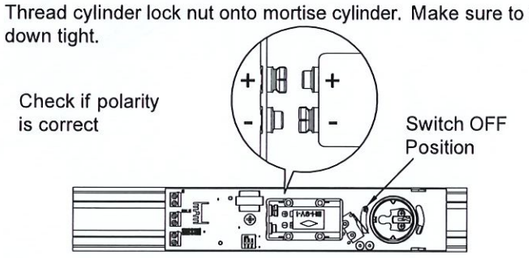


Route cable through hole and connect wires to power transfer (see "POWER TRANSFER" instructions as needed).
NOTE: Alarm Exit Device does not contain dogging option.

2 INSTALL CYLINDER AND BATTERY.

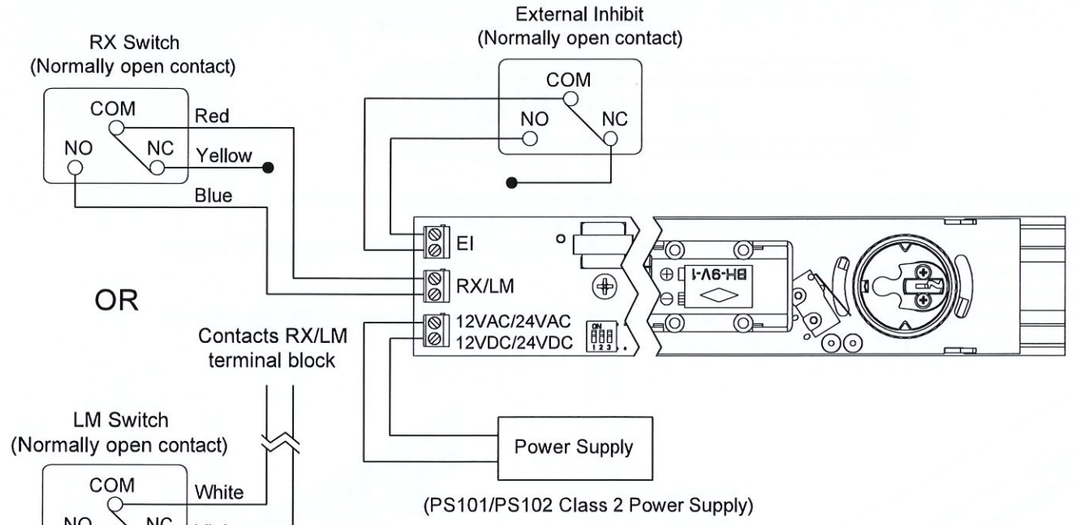


Thread cylinder lock nut onto mortise cylinder. Make sure to fasten down tight.



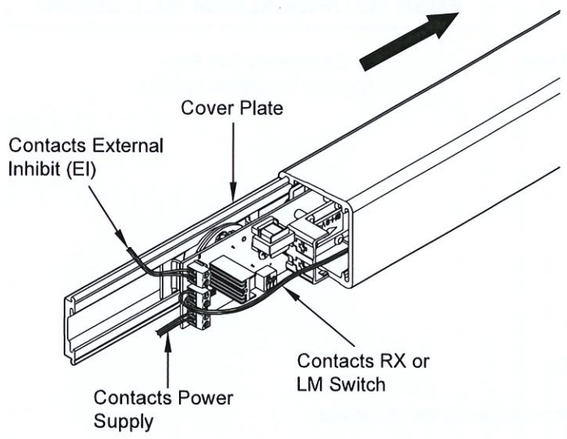
IMPORTANT: Before installing battery, make sure transmitting cam is in OFF position.

3 ATTACH WIRING TO TERMINAL BLOCKS ON ALARM EXIT MODULE.



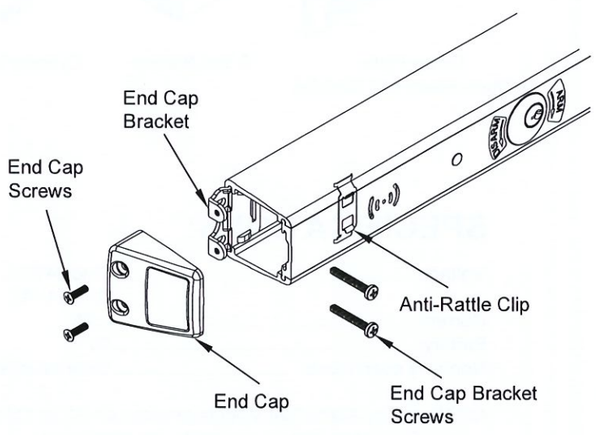
NOTE: 1. The external inhibit (EI) option uses normally open (NO) dry access control contacts to inhibit the AL.
2. Closing the access control contacts inhibits the AL. When the access control contacts are re-opened, the AL re-arms with no delay.
3. All terminal inputs are not polarized.

4 INSTALL COVER PLATE.



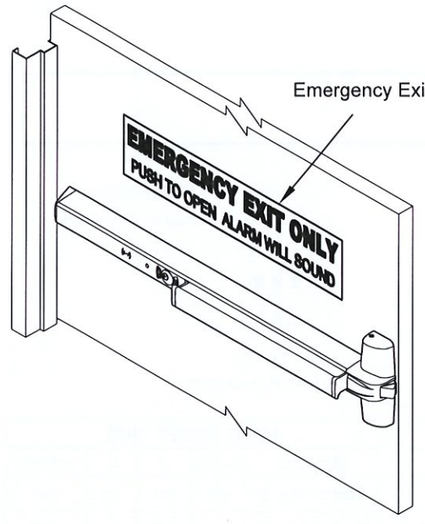
Insert cover plate back into the mechanism case.
NOTE: Be careful not to pinch cable when sliding cover plate.

5 INSTALL MOUNTING BRACKET AND END CAP.



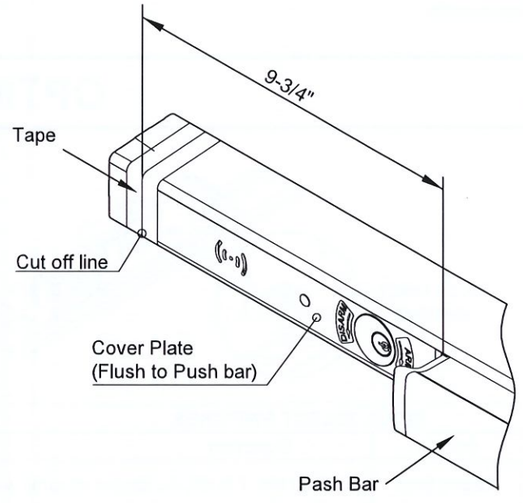
After all wire connections are made and device checked for operation, install the end cap bracket, end cap and label .

6 MOUNT EMERGENCY EXIT SIGN.



Remove protective layer and stick Emergency Exit on door.

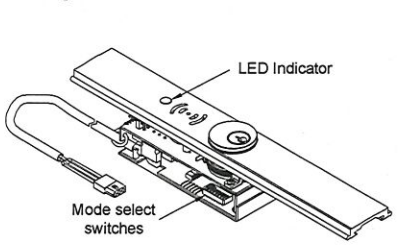
7 CUT DEVICE (IF REQUIRED).

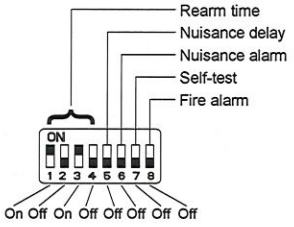


NOTE: Length measured from push bar to cutoff line must not be less than 9-3/4" long.

OPTIONS

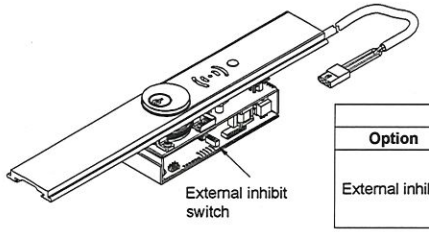
Rearming time settings can be made through switches within the Delayed Egress module. Before setting, turn off the DE device. Changes will take effect once the DE device is turned on.





Factory settings shown

MODE SELECT SWITCHES	
Option	**Function**
Rearm time	Switches No.1 through 4 determine the amount of time able to pass through after using key or external inhibit device (for details see table below)
Nuisance delay	If switch No. 5 is on, it is required to push and hold the pushbar for at least 2 seconds to activate alarm.
Nuisance alarm	If switch No.6 is on, during nuisance delay the pushbar will set off the DE device horn; usage must be in accordance to local code.
Self-test	If switch No.7 is on, a self-test is performed when the device is turned on; for normal operation, set this switch in off position.
Local fire alarm	If switch No. 8 is on, the internal horn will go off during a fire alarm.



Factory settings shown

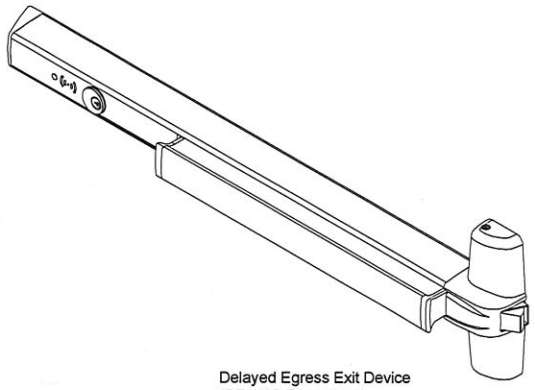
EXTERNAL INHIBIT SWITCH	
Option	**Function**
External inhibit	If switch is on, the external inhibit must be set with normally open contacts.
	If switch is off, the external inhibit must be set with normally closed contacts.

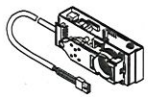
REARM TIME SWITCH SETTINGS																
Seconds	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	infinite
Switch No. 1	off	on	off	on	off	on	off	on	off	on	off	on	off	on	off	on
Switch No. 2	off	off	on	on	off	off	on	on	off	off	on	on	off	off	on	on
Switch No. 3	off	off	off	off	on	on	on	on	off	off	off	off	on	on	on	on
Switch No. 4	off	off	off	off	off	off	off	off	on	on	on	on	on	on	on	on

NOTE: 1. Set the rearming time a few seconds longer than the time needed to open and close the door to make sure the DE device will always arm after the door closes.
2. When the rearming time is infinite, the device must be applied along with door position switch for rearming to occur.
3. When the rearming time is infinite, the door must be open and closed once after the device is turned on, otherwise it won't activate.
4. If a door position switch is used, the DE device initial rearming time setting will be switched to an 2.5 second interval.
5. For proper operation, the rearming time between the DE devices must differ by at least 2 seconds.

DELAYED EGRESS EXIT DEVICE - ELECTRICAL

INSTALLATION INSTRUCTIONS


Delayed Egress Exit Device
(DE1100 Rim shown)


Delayed Egress Module


Cable

PUSH UNTIL ALARM SOUNDS DOOR CAN BE OPENED IN 15 SECONDS

Door Sign
(Door sign is in cardboard tube)

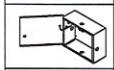
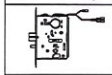
The Delayed egress exit device sounds an alarm and keeps an exit door secured for 15 seconds following an attempt to exit. The device releases immediately upon a fire alarm condition.

SPECIFICATIONS:

Voltage 24VDC
Current (Delayed Egress Device) 0.37A
Current (Electric Mortise) 0.25A
Current (Electric Trim) 0.25A
Current on arming ..... 300ms 16A in-rush
External alarm dry contacts (NO and C) ..... 23.76~24VDC, 1A
Normally closed inputs ..... Fire alarm (FA; required)
Door position switch (DPS)
Normally closed inputs ..... External inhibit (EI)
Optional (Normally open inputs)

NOTE: 1. Do not exceed rated specifications.
2. The DE device must be installed in accordance with these instructions by a qualified electrician.
3. Wiring must be in accordance with all local codes and regulations.
4. Install within a well-protected premise that is supervised/attended at all times.

INSTALLATION COMPONENTS

Illustration	Component	Function	Remark
	24VDC Power supply *	Supplis power to delayed egress exit device	PS101/PS102 Clasee 2 power supply
	Electric mortise lock *	Serves as locking device on electric mortise applications	If used trim (Electric Mortise Lock)
	Electric trim *	Serves as locking device on electric trim applications	If used trim (Electric trim)
	Building fire alarm * (normally closed contacts)	Unlocks DE device in case of fire alarm	
	Power transfer (EPT-1 shown)	Transfers electrical power through frame to door (wires concealed)	Highly recommended or used, the door loop or electric hinge
	External inhibit device (card reader, key switch, etc.) Rim and vertical (normally closed contacts) Electric Mortise & Electric Trim Fail safe (normally closed contacts) Electric Mortise & Electric Trim Fail secure (normally open contacts)	Allows authorized egress or ingress without alarm	Wire multiple external inhibit devices in series See "External inhibit Switch"
	Door position switch (normally closed contacts)	Arms device 2.5 seconds after door closes; sounds alarm if door forced open	If not used, Connect red wire to green wire
	External horn	Provides louder alarm than device internal horn	If not used, Insulate blue and black wires separately

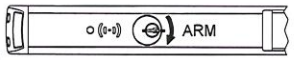
NOTE: 1. Always disconnect power prior to making any connections or service.
2. Components marked with (*) are required for product.

WIRE FUNCTIONS		
Terminal	**Description**	**Function**
Red	+24	Power supply +24VDC
Blue	NO	Common for 24 output; 24VDC, 1A maximum Normally open output; closes during alarm
Gray	CM-	Communication line; connect device
Yellow	CM+	Communication line; connect device
Orange	FA	Fire alarm input; 0 VDC = fire ; 24 VDC = no fire
Green	DPS	Door position switch input; 0 VDC = door open ; 24 VDC = door closed
White	EI	External inhibit off input; 0 VDC = device inhibited ; 24 VDC = device active External inhibit on input; 0 VDC = device active ; 24 VDC = device inhibited
Black	GND	Power supply ground

Maximum Wire Length From Power Supply To Device & Back To Supply In Feet x Wire Gage		
Wire	12 AWG	14 AWG
Feet	200	100

OPERATION

The DE device is designed to sound an alarm when activated and keep the door locked for 15 seconds before allowing passing. In order to make sure the DE device functions properly, perform actions No.1 through No.7 described in the following table and check if your product functions matches with the descriptions shown. If it does not, see "Troubleshooting".



RHR shown
(LHR opposite)

ARMING THE DE DEVICE:
With power applied, turn the key clockwise. The LED indicator will illuminate for 10 seconds and after it starts flashing quickly, the pushbar will lock. (default operation)

SUMMARY OF DELAYED EGRESS EXIT DEVICE MODES					
Action	**Mode**	**Pushbar**	**Red LED**	**Alarm**	**Duration**
1. Turn on device with key switch (turn key clockwise)	Rearm	Unlocked	On solid	Off	Rearm time (0~28 seconds)
2. Rearm time expires	Armed	Locked	Slow flash	Off	Continuous
3. Press pushpad	Release delay	Locked	Fast flash	On	15 seconds
4. 15 seconds release delay expires	Armed	Unlocked	Fast flash	On	Continuous
5. Turn off key switch or activate EI (external inhibit)	Inhibit	Unlocked	Off	Off	Returns to rearm mode when key switch turned on or EI reset
6. Fire alarm contacts open	Alarm	Unlocked	Fast flash	On (if option switch No. 8 is off)	Continuous (turn off key switch to clear)
7. Door position switch contacts open	Alarm	Unlocked	On solid	On	Continuous (turn off key switch to clear)

NOTE: 1. When door position switch is used, the DE device will arm 2.5 seconds after door closes.
2. The DE device default rearming time is 10 seconds.

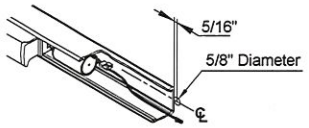
TROUBLESHOOTING

Turn the DE device off and on using key switch. Identify the problem encountered in the following table and apply the corresponding solution. After troubleshooting, check device function as instructed in "Operation" section.

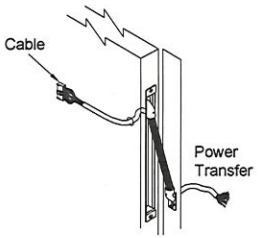
MODE SELECT SWITCHES		
Symptom	**Problem**	**Solution**
Red LED does not light	Power not reaching DE device	Replace/reset AC fuse/circuit breaker; check power supply input/output voltages; check input voltage at DE device cable connector
Red LED flashes fast and horn sounds	Fire alarm contacts open	Connect normally closed fire alarm contacts between red and orange wires
Red LED flashes once	External inhibit switch setting error	Check external inhibit switch and contacts between red and white wires
Red LED on solid then flashes fast and horn sounds	1. Push bar pressed 2. Push bar switch disconnected	1. Release the push bar 2. Connect pushbar switch connectors (see step No. 6 of "Installation")
Red LED on solid, horn sounds, and solenoid pulls in for one second (two sharp sounds)	1. Door open 2. Door position switch contacts open 3. Door position function not used and wires not terminated properly	1. Close door 2. Connect normally closed door position switch contacts between red and green wires 3. If door position switch not used, connect red and white green together

INSTALLATION

1 COMPLETE WIRING.

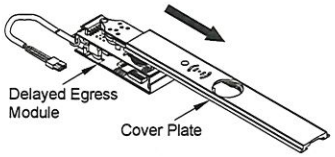


Drill 5/8"dia. wire access hole thru device side of door.

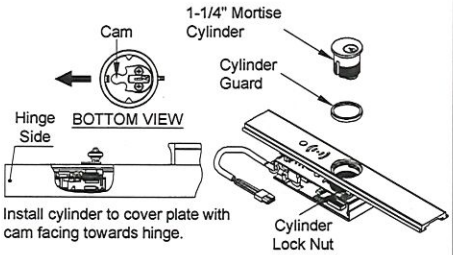


Route cable through hole and connect wires to power transfer (see "POWER TRANSFER" instructions as needed).

2 INSTALLATION DELAYED EGRESS MODULE AND CYLINDER.



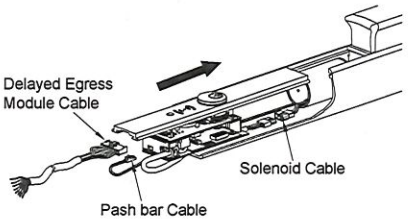
Slide delayed egress module into cover plate.



Install cylinder to cover plate with cam facing towards hinge.

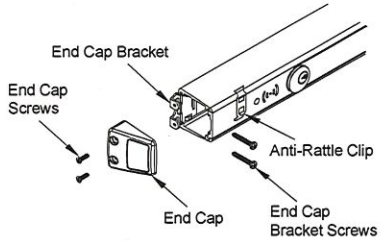
1. Insert 1-1/4" Mortise Cylinder with cylinder guard into the cover plate.
2. Thread cylinder lock nut onto mortise cylinder.
3. Make sure to fasten down tight.

3 WIRE CONNECTION.



Slide cover plate half way into place while routing and connecting three cables.
Route three cables while slowly sliding cover plate into place.

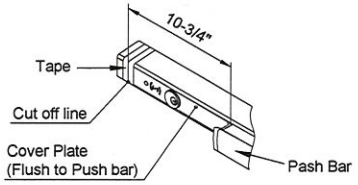
4 INSTALL MOUNTING BRACKET AND END CAP.



After all wire connections are made and device checked for operation, install the end cap bracket, end cap and label .
NOTE: Door sign is in cardboard tube

Go to "Operation" for testing and troubleshooting.

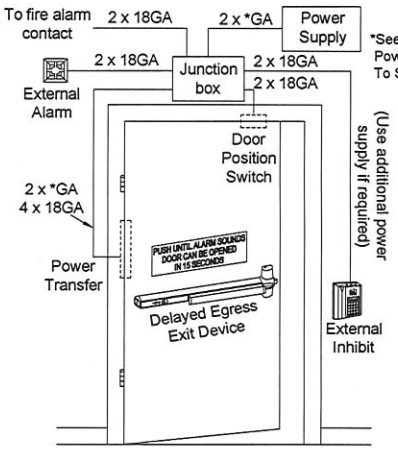
5 CUT DEVICE (IF REQUIRED).



NOTE: Length measured from push bar to cutoff line must not be less than 10-3/4".

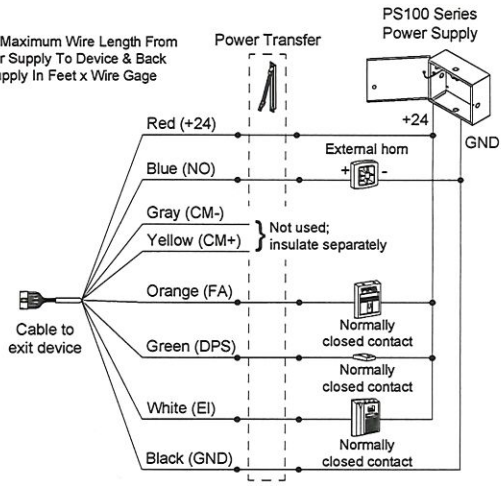
TYPICAL WIRING

RIM/VERTICAL - SINGLE DOOR APPLICATION



Component Placement and Wiring Requirements, Single Door

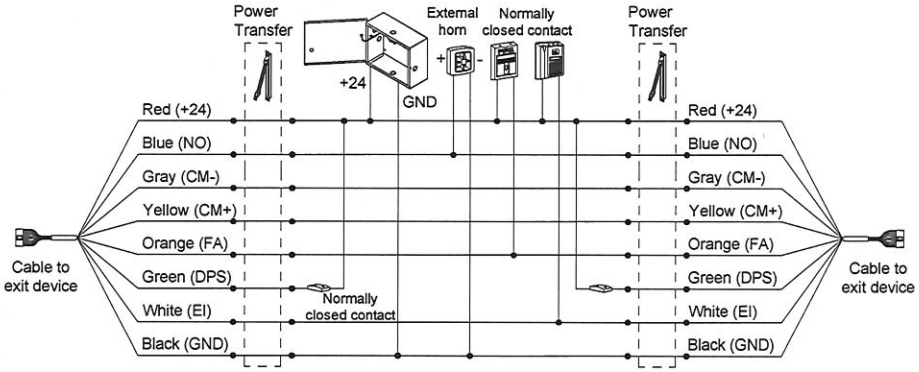
*See Maximum Wire Length From Power Supply To Device & Back To Supply In Feet x Wire Gage



Wiring Connections, Single Door

RIM/VERTICAL - DOUBLE DOOR APPLICATION

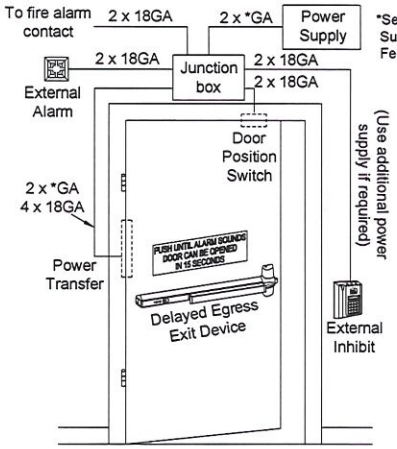
For double door application, both doors are installed with DE devices which are interconnected by yellow (CM+) and gray (CM-) wires (if not used, insulate wires separately). When one of the DE devices' alarm goes off, the other one does as well, and both devices will unlock after a 15 seconds interval. Both door locks can also be deactivated by a fire alarm or an external inhibit. If door position switch is used, after the external inhibit disarms the alarm of the device, the door opened will rearm 2.5 seconds after it closes, while the unused door will rearm depending on the full rearming time setting. For proper operation, the rearming time between the DE devices must differ by at least 2 seconds.



Wiring Connections, Double Door

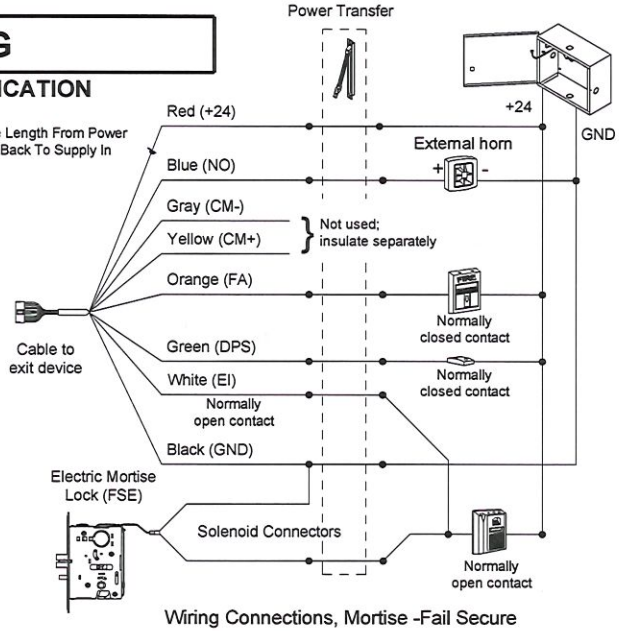
TYPICAL WIRING

ELECTRIC MORTISE LOCK APPLICATION

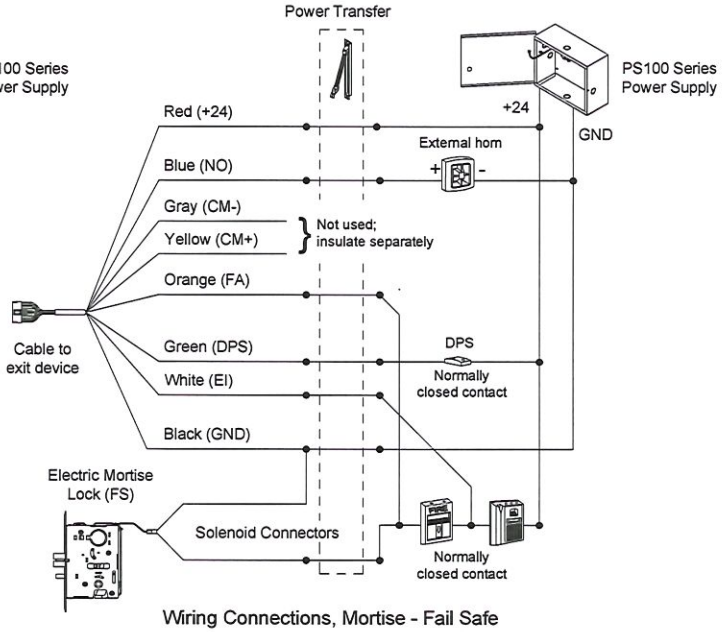


*See Maximum Wire Length From Power Supply To Device & Back To Supply In Feet x Wire Gage

Component Placement and Wiring Requirements for Mortise Applications

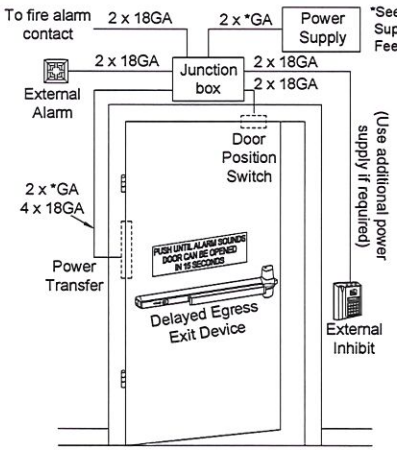


Wiring Connections, Mortise -Fail Secure



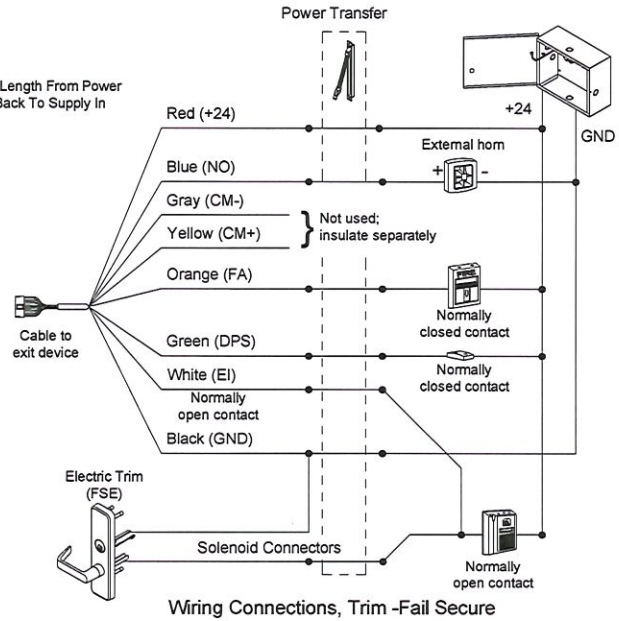
Wiring Connections, Mortise - Fail Safe

ELECTRIC TRIM APPLICATION

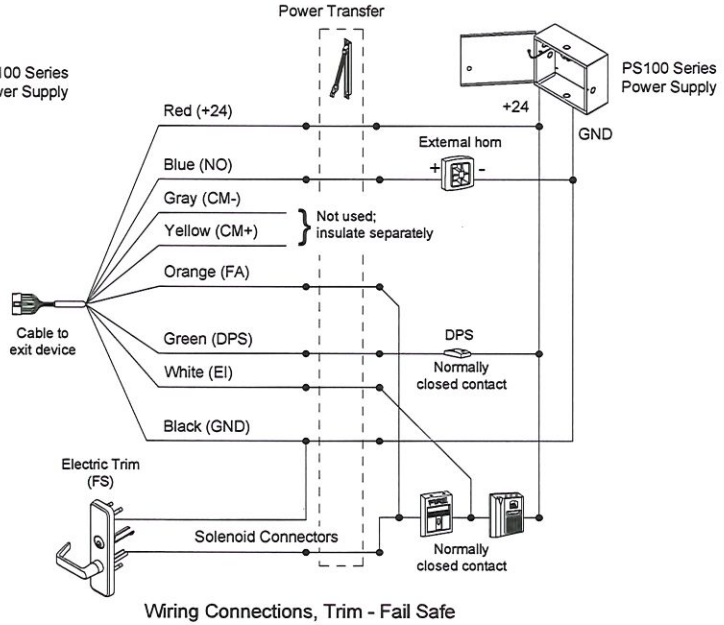


*See Maximum Wire Length From Power Supply To Device & Back To Supply In Feet x Wire Gage

Component Placement and Wiring Requirements for Trim Applications



Wiring Connections, Trim -Fail Secure



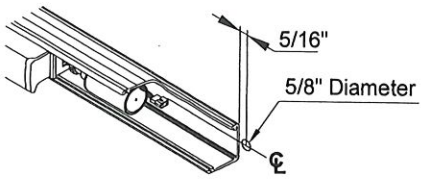
Wiring Connections, Trim - Fail Safe

ELECTRIC LATCH RETRACTION EXIT DEVICE

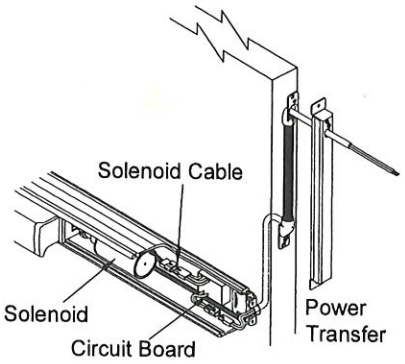
INSTALLATION INSTRUCTIONS

1 WIRING SETUP.

1. Drill 5/8"dia. wire access hole thru device side of door.



2. Route cable through hole and connect wires to power transfer (see "POWER TRANSFER" instructions as needed).



NOTE: Do not cut device with circuit board installed.

2 FUNCTION CHECK.

1. Make sure device is not dogged.
2. Push/release push bar to see whether latch bolt retracts and extends completely.
3. Electrically energize solenoid and hold.
4. Check latch bolt for full retraction.
5. Release solenoid and check latch bolt extension.

3 TROUBLE SHOOTING.

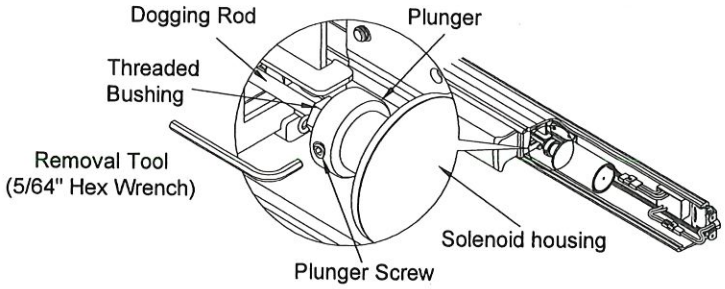
Solenoid must be wired to a PS 100 Series 100-2 logic board. Refer to installation instructions for the PS101 / PS102 Class 2 power supply.

WARNING: It is not suggested to use boards other than the ones provided along with product. We do not hold responsible for damage caused by misuse of components.

Problem	Solution
Solenoid fails to hold.	1. Check device vertical rod adjustment (if vertical rod device, see exit device installation instructions). 2. Make sure dogging does not interfere withplunger (ELR-ED only). 3. Check dogging rod adjustment (see below for details).
Solenoid pulls but no complete retraction of latch.	
Device works intermittently.	1. Check power supply. It must be PS100 with 100-2 option board. 2. Check for correct AWG of field wiring.

NOTE: When power is applied to the circuit board, the solenoid receives a momentary signal to retract and a separate signal to hold as long as power is applied. When attempting to retract solenoid again, power must be removed from the circuit and reapplied.

4 HOW TO ADJUST DOGGING ROD.



Maximum Wire Run From Power Supply to Device and Back		
Wire	12 AWG	14 AWG
Feet	200	100

Solenoid Specifications:
Current Pulse (0.3 seconds) : 24VDC, 16Amp
Continuous : 24VDC, 0.25Amp

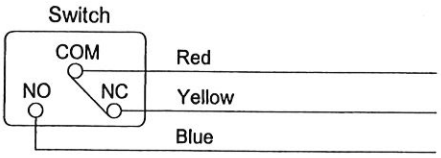
1. Check length of dogging rod:
   Too long if latch bolt does not retract.
   Too short if:
   A. Latch bolt extends partially.
   B. Solenoid cannot hold.
2. Adjust dogging rod.
   A. Loosen plunger screw.
   B. Hold plunger depressed in solenoid housing.
   C. If latch bolt is not retracted, hold plunger fully retracted with thumb and adjust threaded bushing until latch bolt position is correct.
   D. Tighten plunger screw.
   NOTE: Plunger screw must be tightened flat against threaded bushing.
   E. Replace cover plate and end cap.
   F. Return to check for proper function.

REQUEST TO EXIT DEVICE

INSTALLATION INSTRUCTIONS

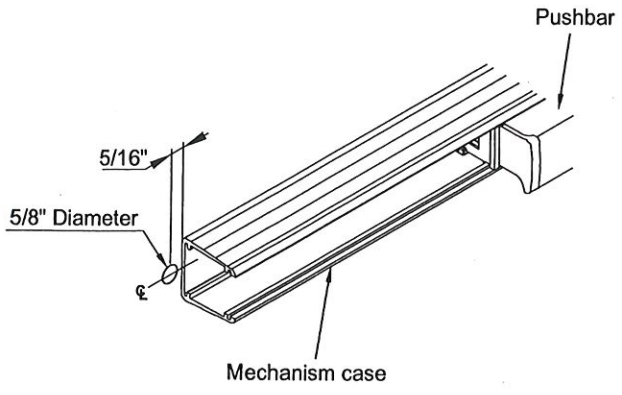
RX - Switch is designated for signaling purposes and designed to resist a maximum load of 3 amperes corresponding to a voltage value of 24V DC/AC. Application with magnetic locks or solenoid devices lowers the switch capacity.

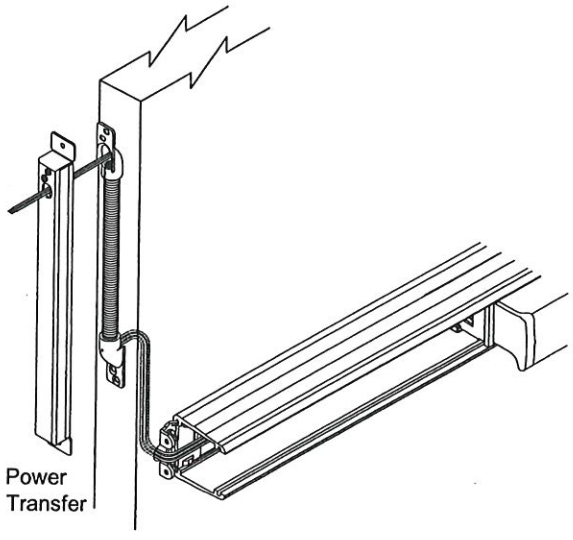
1. The RX monitor activates in coordination with the pressing of push bar.
2. The following configuration represents the situation in which the latch bolt and push bar are in their initial position.



NOTE: Switch ratings are as follows :
Switch: 24VDC, 3Amp SPDT

3. Drill 5/8"dia. wire access hole thru device side of door.
4. Route cable through hole and connect wires to power transfer (See "POWER TRANSFER" instructions as needed).



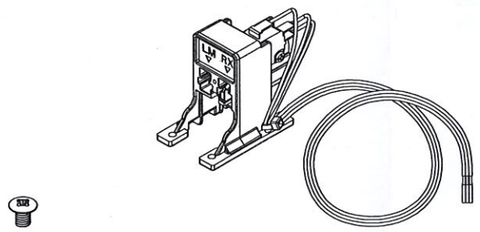


RX/LM
SWITCH RETROFIT KIT

INSTALLATION INSTRUCTIONS

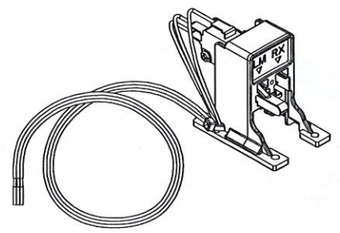
RX - The RX monitor activates in coordination with the pressing of push bar.
Switch is designated for signaling purposes and designed to resist a maximum load of 3 amperes corresponding to a voltage value of 24V DC/AC. Application with magnetic locks or solenoid devices lowers the switch capacity.

LM - The latch bolt monitor activates in coordination with the retraction of latch bolt.
Switch is designated for signaling purposes and designed to resist a maximum load of 3 amperes corresponding to a voltage value of 24V DC/AC. Application with magnetic locks or solenoid devices lowers the switch capacity.



No.8-32 x 7/32"
4 PCS

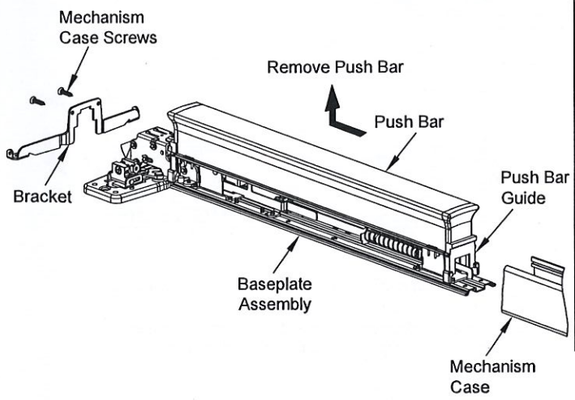
RX Switch Assembly



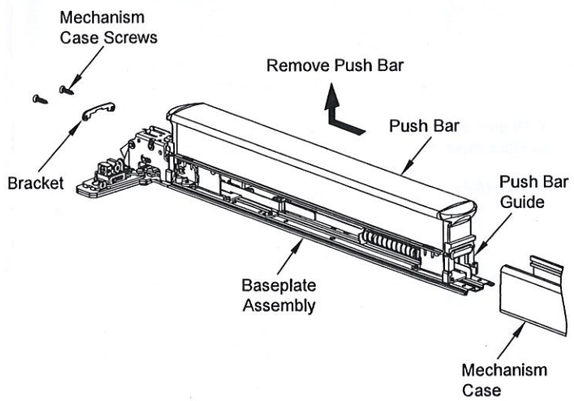
LM Switch Assembly

1 DISASSEMBLE THE EXIT DEVICE (REMOVE FROM DOOR IF MOUNTED)

1000 SERIES EXIT DEVICE

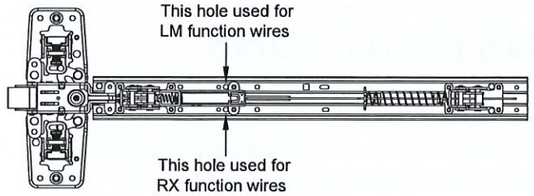


2000 SERIES EXIT DEVICE

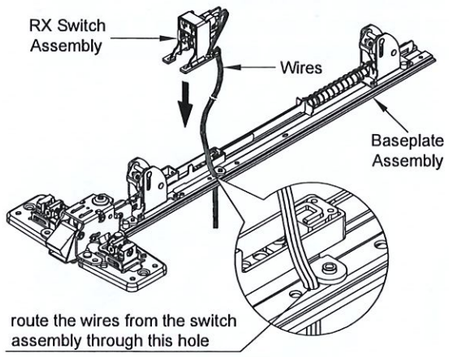


1. Unscrew Mechanism Case screws and remove bracket.
2. Slide off mechanism case.
3. Remove push bar.

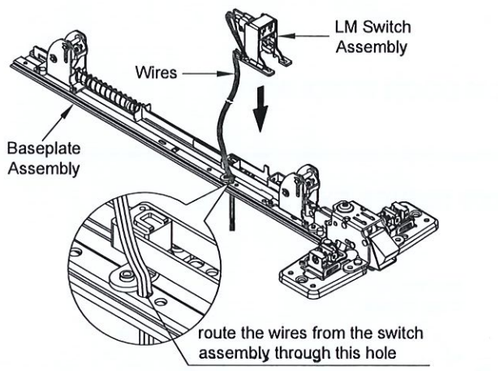
2 INSTALL RX or LM SWITCH ASSEMBLY



FOR RX SWITCH ASSEMBLY

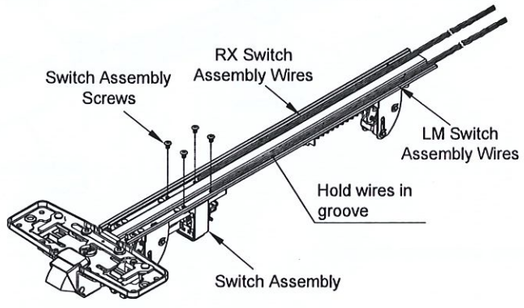


FOR LM SWITCH ASSEMBLY



1. Route cable through base plate assembly as shown.
2. Place switch assembly on top of base assembly.

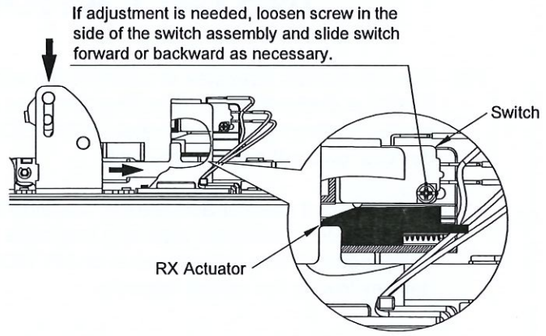
NOTE: Make sure wires are not cramped or tangled after installation.



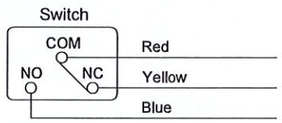
3. Tighten switch assembly set screw.
4. Set wires along incision at bottom of baseplate.

3 CHECK THE SWITCH FOR PROPER ACTUATION

FOR RX SWITCH ASSEMBLY

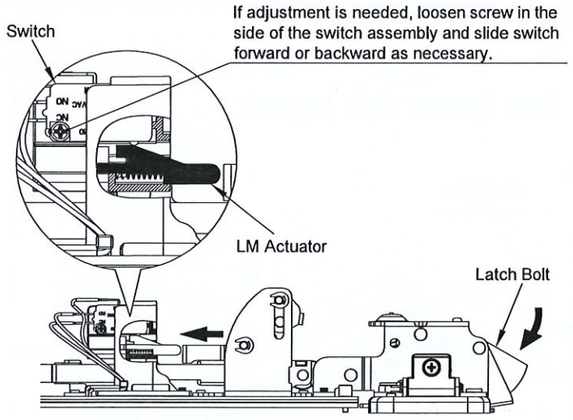


1. Depress the push bar, the switch should actuate during this movement.
2. The following configuration represents the situation in which the latch bolt and push bar are in their initial position.

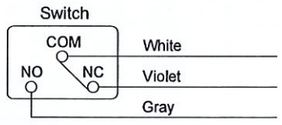


NOTE: Switch ratings are as follows :
Switch: 24VDC, 3Amp SPDT

FOR LM SWITCH ASSEMBLY

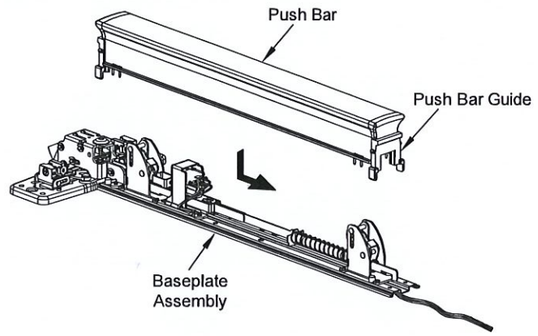


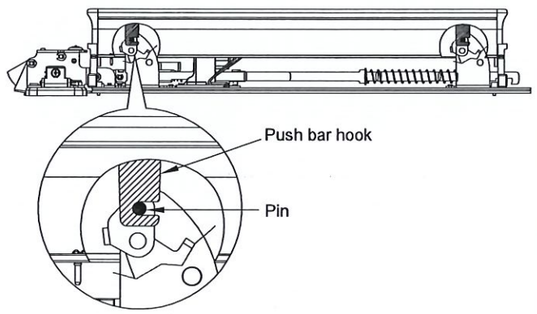
1. Depress the latch bolt, the switch should actuate during this movement.
2. The following configuration represents the situation in which the latch bolt and push bar are in their initial position.



NOTE: Switch ratings are as follows :
Switch: 24VDC, 3Amp SPDT

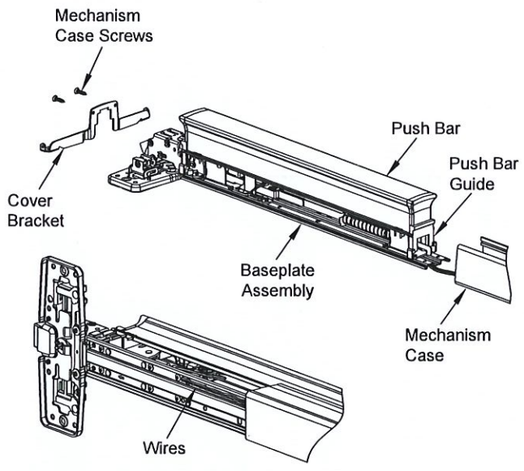
4 ROUTE CABLE THROUGH EXIT DEVICE





1. Install push bar and push bar guide onto base plate assembly.

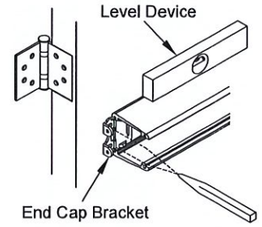
NOTE: RX Switch Assembly application shown.



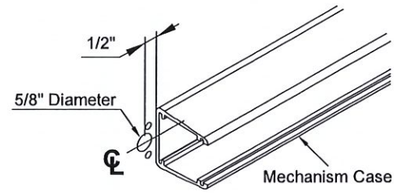
2. Slide mechanism case back in place, align plastic pushbar guides while doing so.
3. Set cover bracket back in place and fasten with case screws.

NOTE: Watch out for wires when sliding mechanism case back in place.

5 PREPARE DOOR FOR DEVICE WIRING

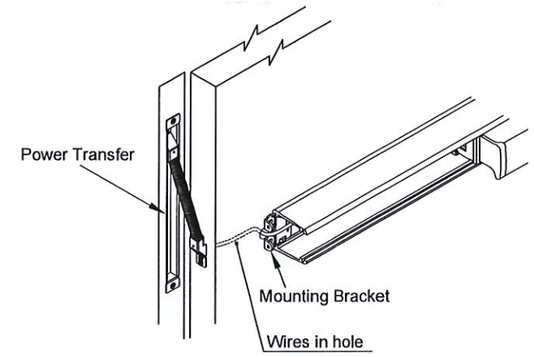


1. Momentarily fix device and trim to door with screws.
2. Insert end cap bracket into push bar assembly against mechanism case. Level device, mark and drill two(2) holes for Bracket Screws.

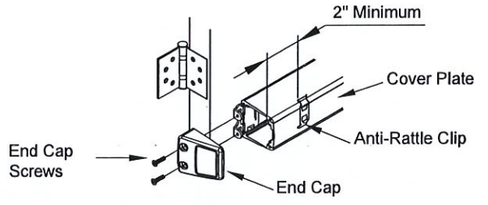


3. Mark and drill a 5/8" hole used for wire access and routing.

6 INSTALL END CAP BRACKET AND ROUTE WIRING THROUGH POWER TRANSFER

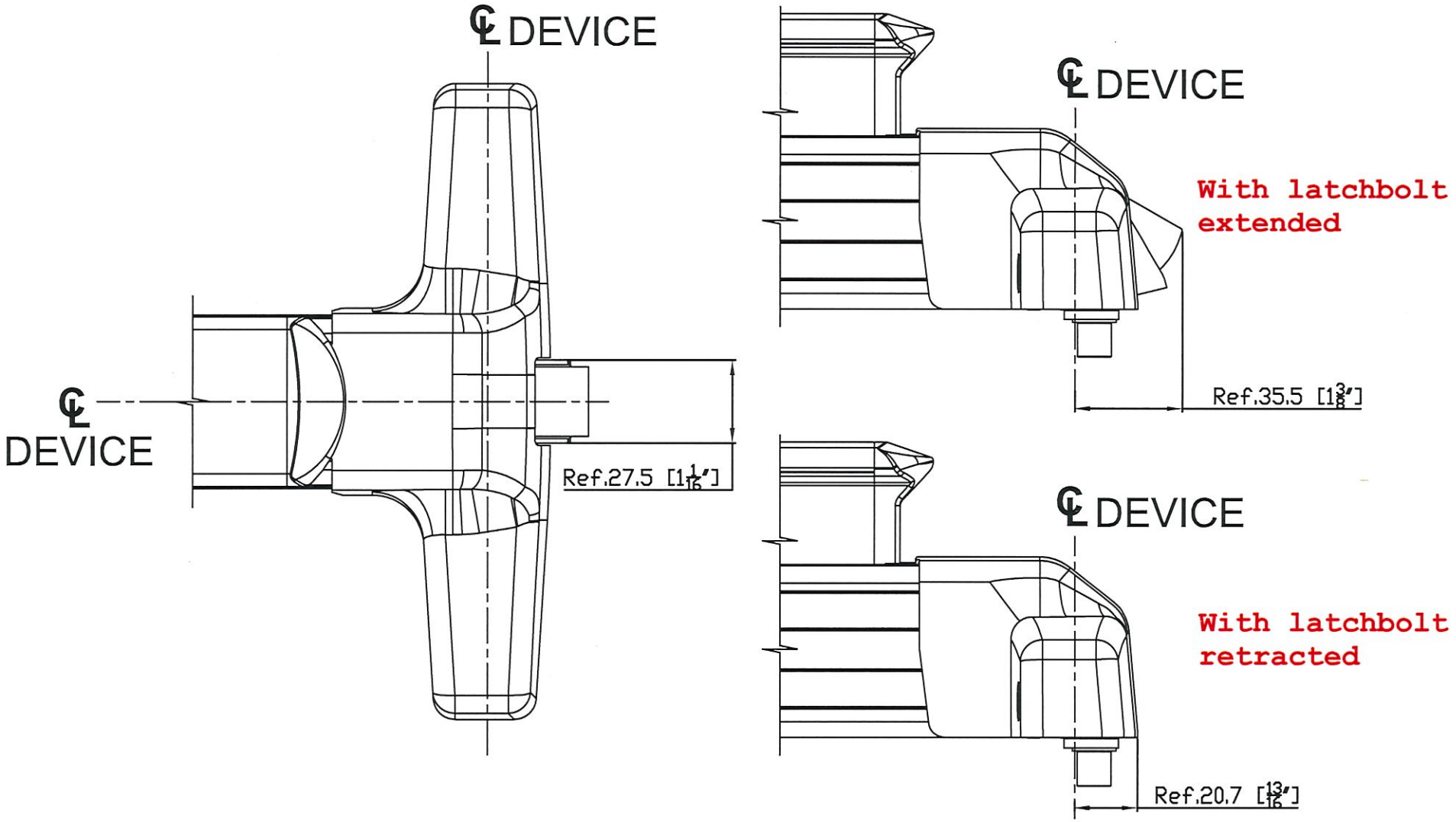


1. Slide cable into hole (mentioned in previous section).
2. Use Power Transfer to guide wiring from exit device to door frame. (For details see "Power Transfer Instructions")



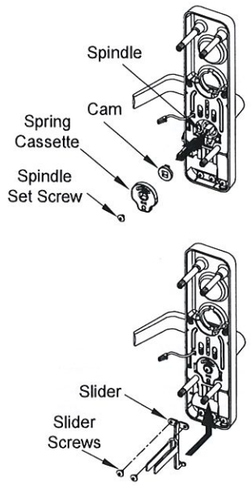
3. Insert cover plate, slide anti-rattle clip in position (2" minimum from end) and attach end cap with two(2) end cap screws. (See "Exit device instructions")

2017/06/23


℄ DEVICE
℄ DEVICE
Ref.27.5 [1 1/16"]
℄ DEVICE
With latchbolt extended
Ref.35.5 [1 3/8"]
℄ DEVICE
With latchbolt retracted
Ref.20.7 [13/16"]

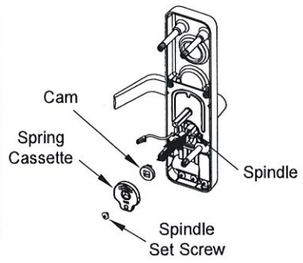
HOW TO ASSEMBLE TRIM

FOR FUNCTIONAL LEVER



1. Determine lever handing. (RHR shown;LHR opposite)
2. Insert cam on spindle.
3. Insert spring cassette and make sure the direction of spring cassette matches with lever handing.
4. Rotate lever to check function, tighten spindle set screw.
5. Install slider by fitting tabs into guide under mechanism.
6. Fasten slider set screws with moving parts in mechanism.

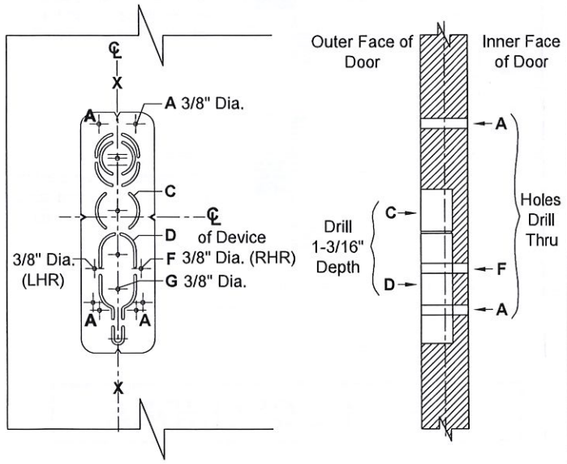
FOR MORTISE LOCK



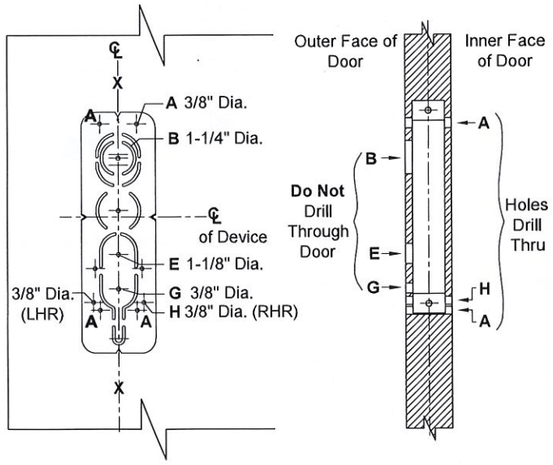
1. Determine lever handing. (RHR shown;LHR opposite)
2. Insert cam on spindle.
3. Make sure the direction of spring cassette matches with lever handing. Insert spring cassette.
4. Rotate lever to check function and tighten spindle set screw.

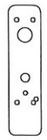
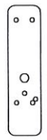
DOOR PREPARATION FOR E300 SERIES TRIM

FOR RIM AND VERTICAL ROD DEVICE

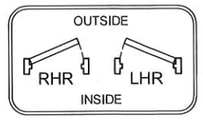


FOR MORTISE LOCK



TEMPLATE APPLICATION CHART				
DEVICE TYPE	RIM AND VERTICAL ROD		MORTISE LOCK	
CUT OUT ILLUSTRATION				
TRIM DESCRIPTION	E309R	E314R	E309M	E314M
PREPARATION	A+C+D+F+G	A+D+F+G	A+B+E+G+H	A+E+G+H

NOTE: RHR application shown
LHR application opposite

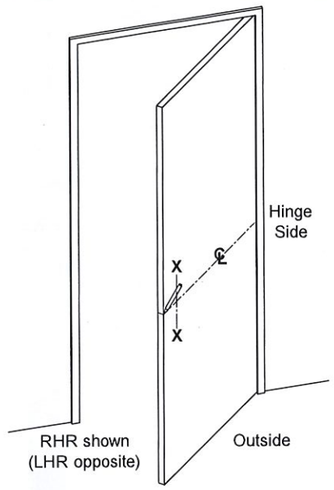


WD-OD002(403)

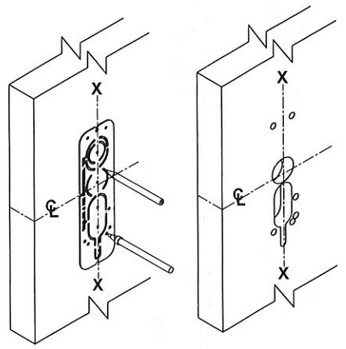
E300 SERIES
ELECTRIC LOCKING TRIM FOR EXIT DEVICE

INSTALLATION INSTRUCTIONS

1 PREPARE DOOR FOR DEVICE AND TRIM.

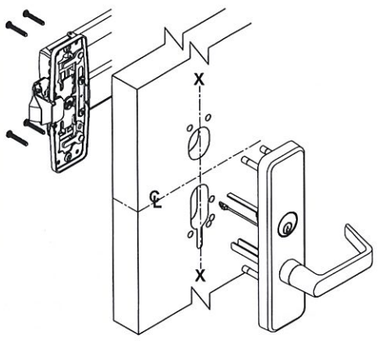


1. Prepare door for exit device. See exit device instructions for holes, backset (line X-X), and center lines.
2. Transfer line X-X from inner (exit device) side of door to outer (trim) side of door. Be extra careful if edge door of door is beveled. Be sure line X-X is parallel to edge of door.



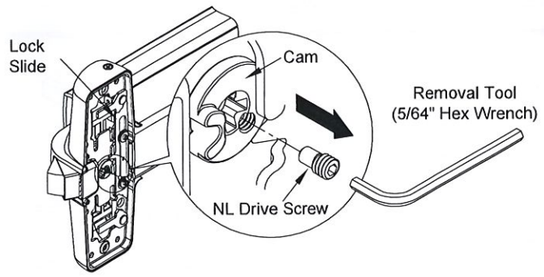
3. Locate X-X line and prepare required holes with "Template C".

NOTE: See "TEMPLATE APPLICATION CHART" on back page for different trim functions.



4. Select trim function, trim handling and assemble trim as needed. (See "HOW TO CHANGE TRIM FUNCTION", "HOW TO ASSEMBLE TRIM" and "INSTALL CYLINDER" on page 3 and 4)

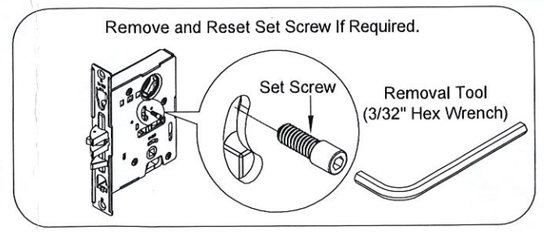
2 CHECK EXIT DEVICE NL DRIVE SCREW AND LOCK SLIDE.



Make sure the NL drive screw is installed in the exit device center case cam with the exit device lock slider in the upper position.

NOTE: If the lock slider is not in the correct position (as mentioned above), remove NL screw to unlock cam and rotate it with screwdriver to move slider to the right position and place back NL screw.

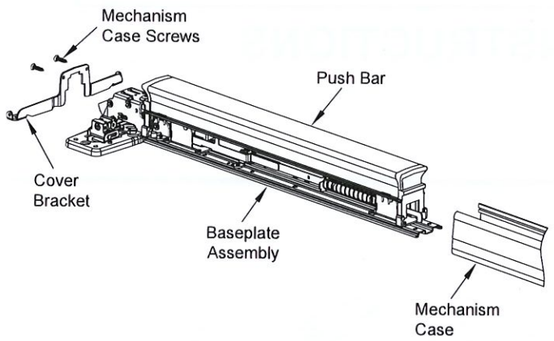
3 PREPARE MORTISE LOCK IF NECESSARY.



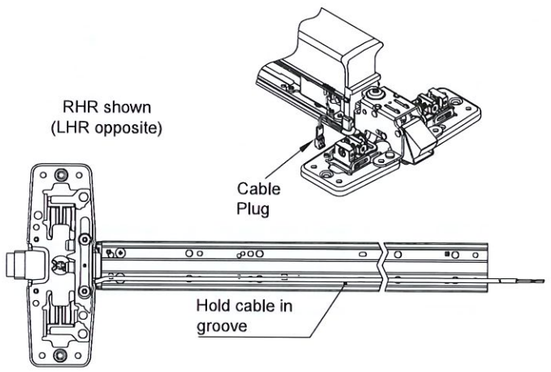
For mortise device applications, NL screw shall be set (by default) in long slot side of mortise lock for NL operations."

NOTE: Set screw is factory set at long slot side for EO,DT, and NL applications.

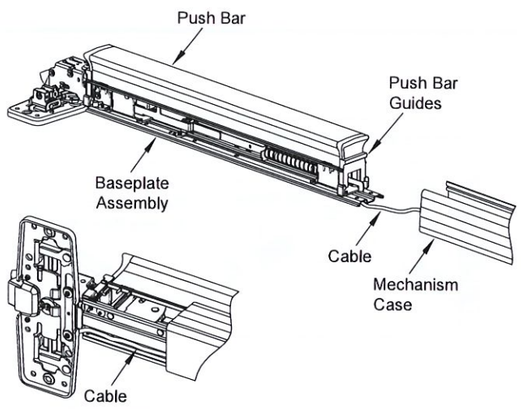
4 ROUTE CABLE THROUGH EXIT DEVICE.



1. Unscrew Mechanism case screws and remove cover bracket.
2. Slide off mechanism case.



3. Route cable through base plate assembly as shown.
4. Set cable along incision at bottom of baseplate.

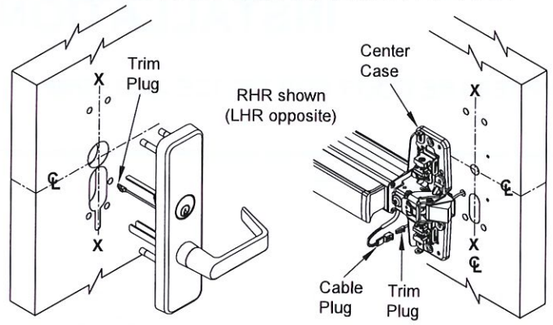


5. Slide mechanism case back to place, align plastic pushbar guides while doing so.
6. Set cover bracket back to place and fasten with case screws.

NOTE: Watch out for cable when sliding mechanism case back to place.

5 ROUTE TRIM CABLE THROUGH EXIT DEVICE.

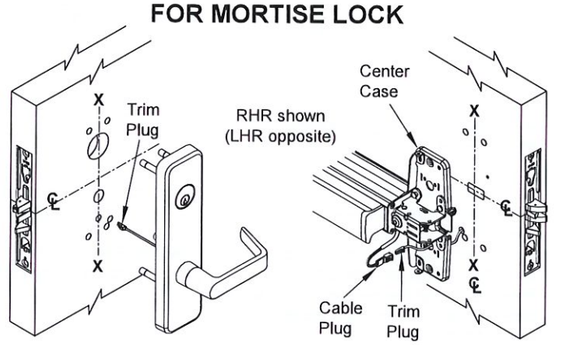
FOR RIM AND VERTICAL ROD DEVICE



1. Route trim plug through wire access hole in door.
2. Route trim cable through hole in center case.
3. Connect trim plug and cable plug.

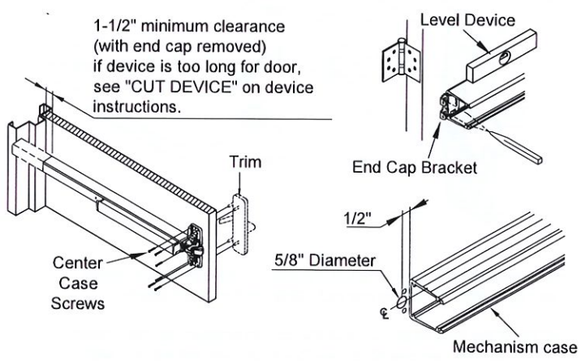
NOTE: Make sure wires are not cramped or tangled after installation.

FOR MORTISE LOCK



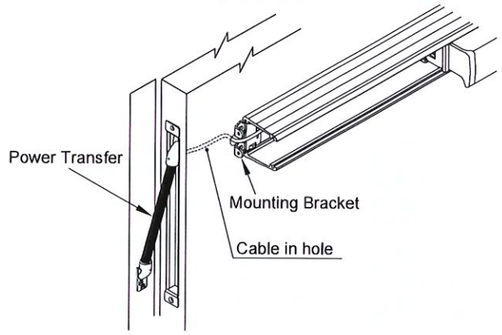
1. Install mortise lock, (see "Mortise lock Instructions").
2. Route trim plug through wire access hole in door.
3. Route trim cable through hole in center case.
4. Connect trim plug and cable plug.

6 INSTALL TRIM AND SECURE DEVICE CENTER CASE TO DOOR.



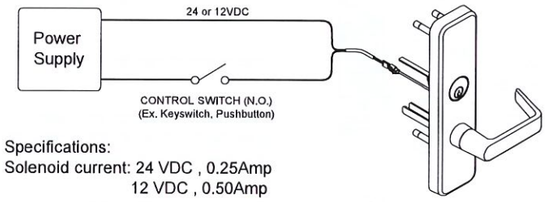
1. Momentarily fix device and trim to door with screws.
2. Insert end cap bracket into push bar assembly against mechanism case. Level device, mark and drill two(2) holes for Bracket Screws.
3. Mark and drill a 5/8" hole used for wire access and routing.

7 INSTALL END CAP BRACKET AND ROUTE WIRING THROUGH POWER TRANSFER.



1. Slide cable into hole (mentioned in previous section).
2. Use Power Transfer to guide wiring from exit device to door frame. (For details see "Power Transfer Instructions)
3. Insert cover plate, slide anti-rattle clip in position (2" minimum from end), and attach end cap with two(2) end cap screws. (See "Exit device instructions")

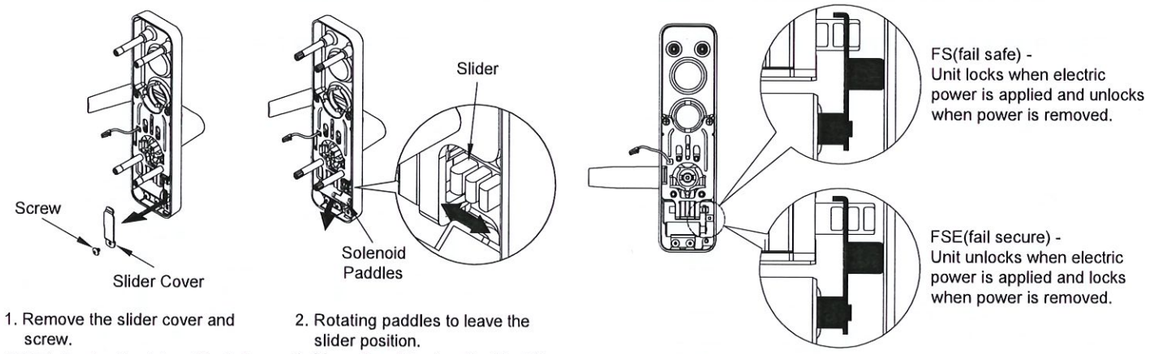
8 BASIC WIRING.



Specifications:
Solenoid current: 24 VDC , 0.25Amp
12 VDC , 0.50Amp

For the power supply wiring connection, two non-polarized wires are applied, one of which is directly connected to the power source (power supply), while the other one is attached to a control device (card reader, key pad, push button, dry contact, etc.) connected to the power source.

HOW TO CHANGE TRIM FUNCTION



1. Remove the slider cover and screw.

NOTE: Product is shipped in Fail Safe (FS) configuration.

2. Rotating paddles to leave the slider position.
3. Move the slider to select the FS (fail safe) and FSE(fail secure) function.
4. Paddles to the correct function of position.
5. Reinstall the slider cover and screws.

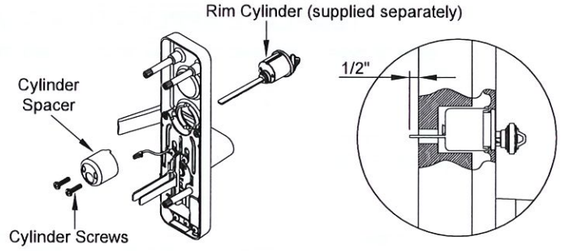
TEST TRIM FUNCTION

FS (Fail Safe) Configuration:
1. Apply power to lock trim.
2. To unlock trim, disconnect from power source or actuate control device.
3. If key cylinder is present, check for key override feature (night latch) proper functioning when device is connected to power source.
   Usage of the key will unlock the door without need of turning trim lever; device locks after removal of key.

FSE (Fail Secure) Configuration:
1.Apply power to unlock trim.
2.To lock trim, disconnect from power source or actuate control device.
3.If key cylinder is present, check for key override feature (night latch) proper functioning when device is disconnected to power source.
Usage of the key will unlock the door without need of turning trim lever; device locks after removal of key.

INSTALL CYLINDER

FOR RIM CYLINDER

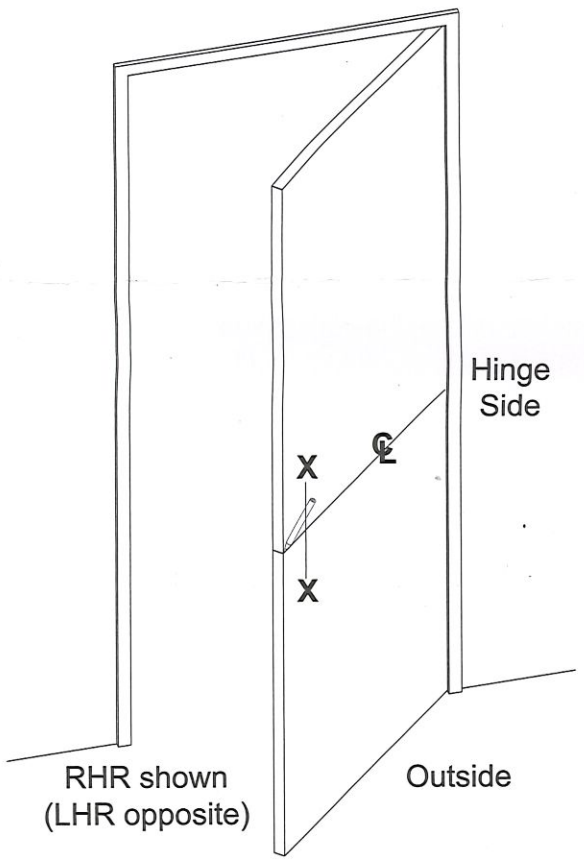


1. Mount rim cylinder to cylinder spacer and attach to outside trim with two(2) cylinder screws.
2. Make sure the tailpiece is extending 1/2" from the inside face of door.

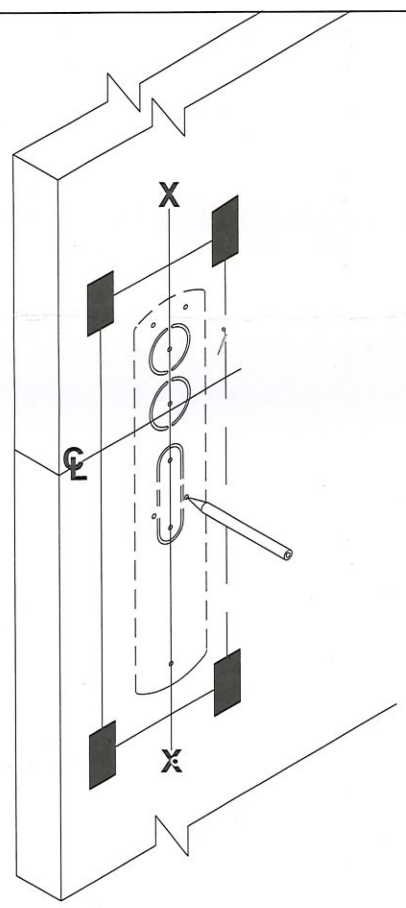
NOTE: Cut off tailpiece for different door ranges and various cylinder lengths.

200 SERIES
THUMBPIECE TRIM FOR EXIT DEVICE

INSTALLATION INSTRUCTIONS

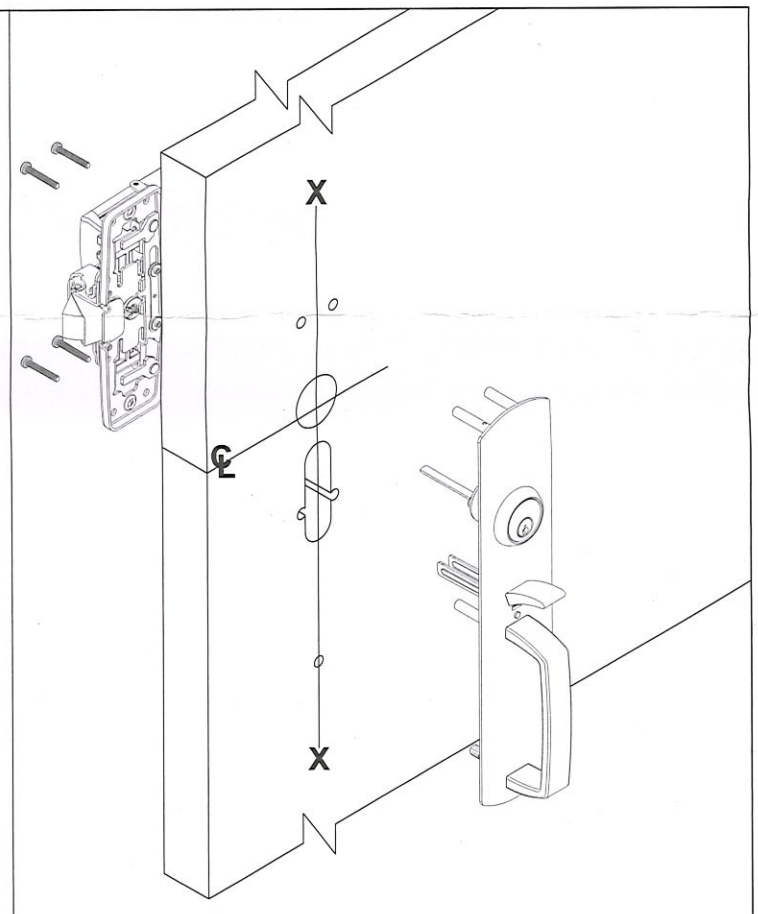


1. Prepare door for exit device. See exit device instructions for holes, backset (line X-X), and center lines.
2. Transfer line X-X from inside (exit device) side of door to outside (trim side) of door. Use extra care if edge of door is beveled. Be sure line X-X is parallel to edge of door.



3. Locate X-X line and prepare required holes with template.

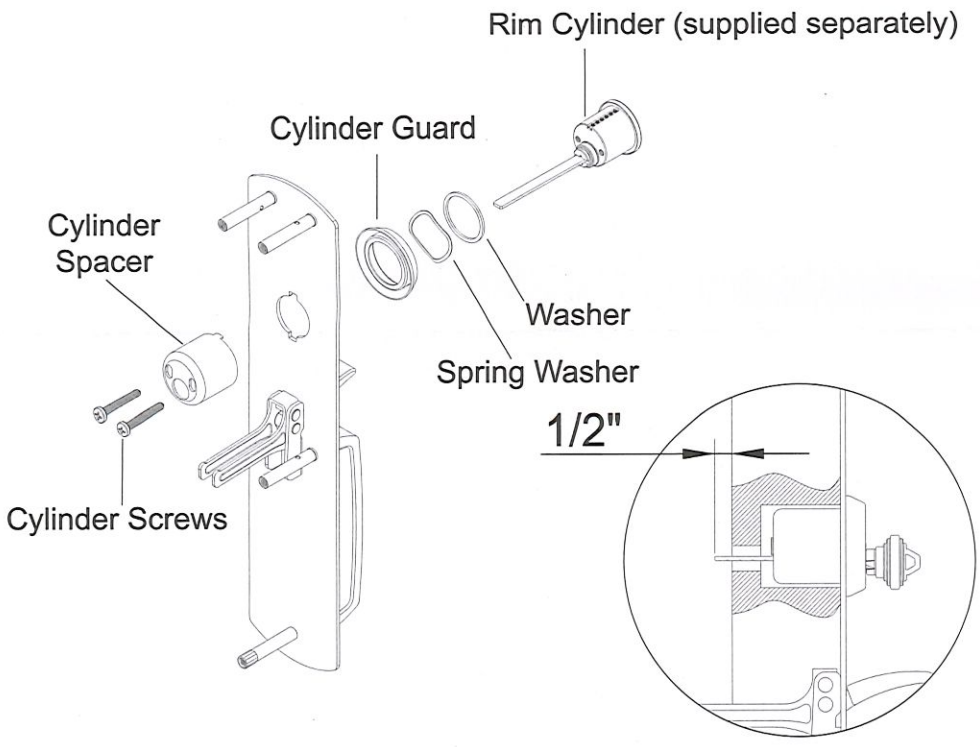
NOTE: See "APPLICATION CHART" on back page for different trim functions.



4. Determine trim handing and assemble trim. (see "INSTALL CYLINDER")

INSTALL CYLINDER

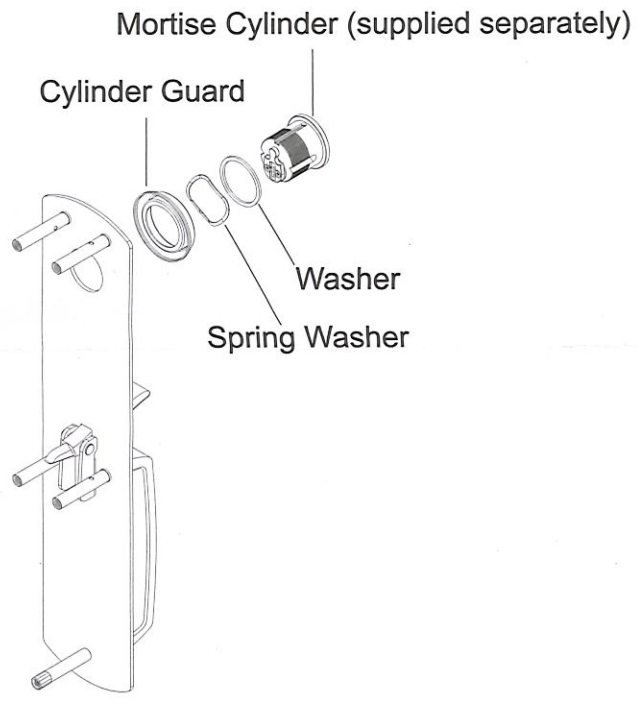
RIM CYLINDER FOR RIM AND VERTICAL ROD DEVICES



1. Mount rim cylinder to cylinder spacer and attach to outside trim with two(2) cylinder screws.
2. Make sure the tailpiece is extending 1/2" from the inside face of door.

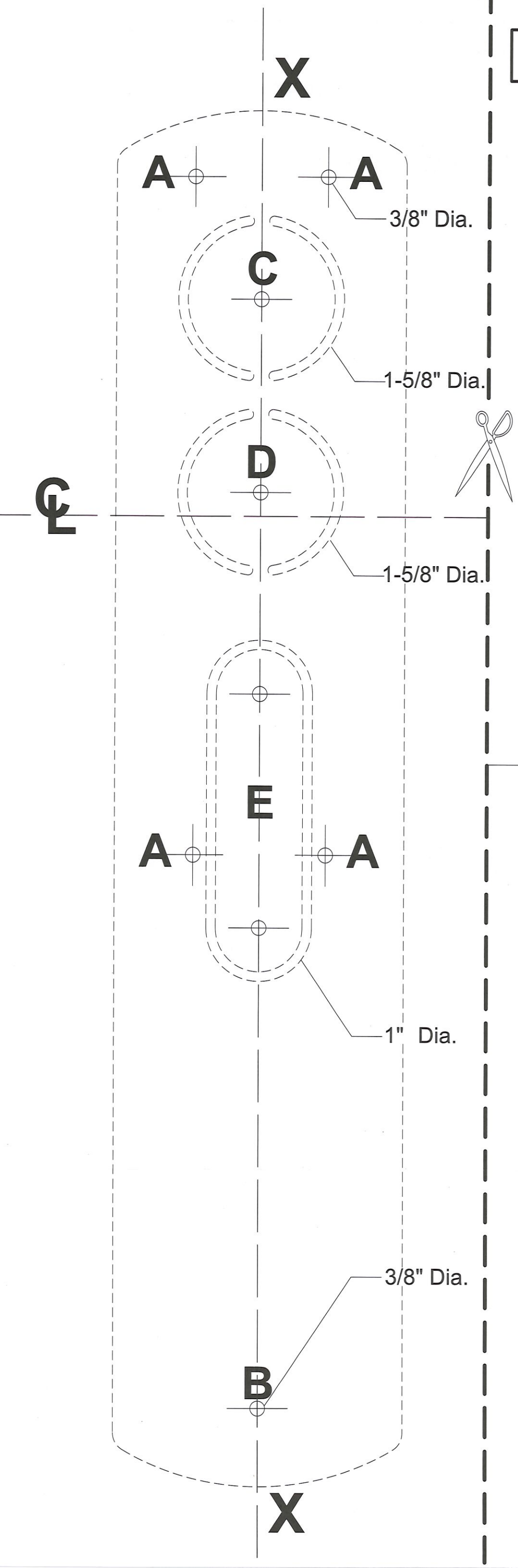
NOTE: Cut off tailpiece for different door ranges and various cylinder lengths.

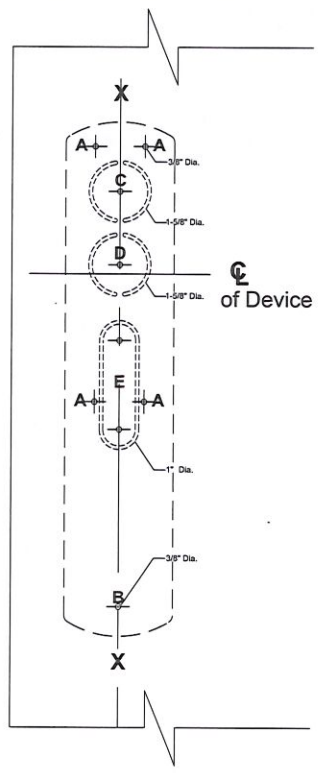
MORTISE CYLINDER FOR MORTISE DEVICE

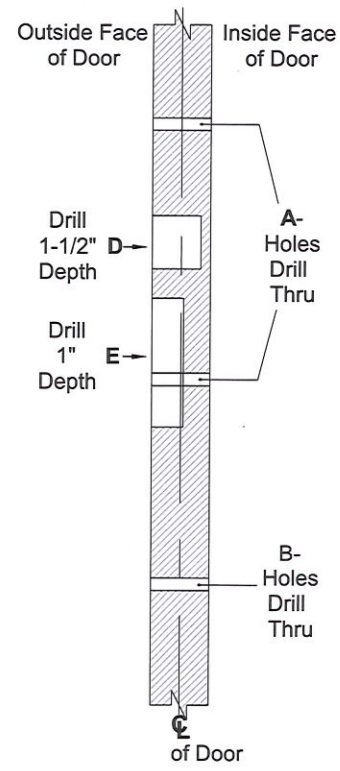


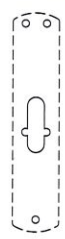
Mount mortise cylinder to mortise case.

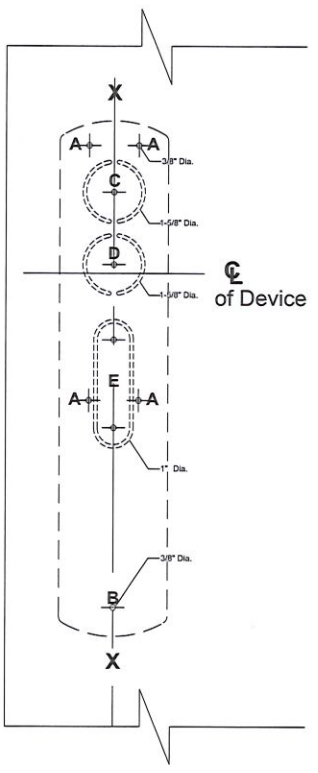
DOOR PREPARATION

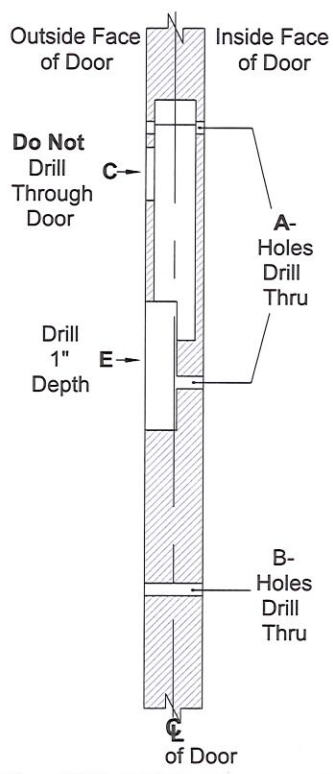






FOR RIM AND VERTICAL ROD APPLICATION				
CUT OUT ILLUSTRATION				
TRIM DESCRIPTION	201/202	203R	205R	215R
FUNCTION	01/02	03	05	15
PREPARATION	A+B	A+B+D	A+B+D+E	A+B+E

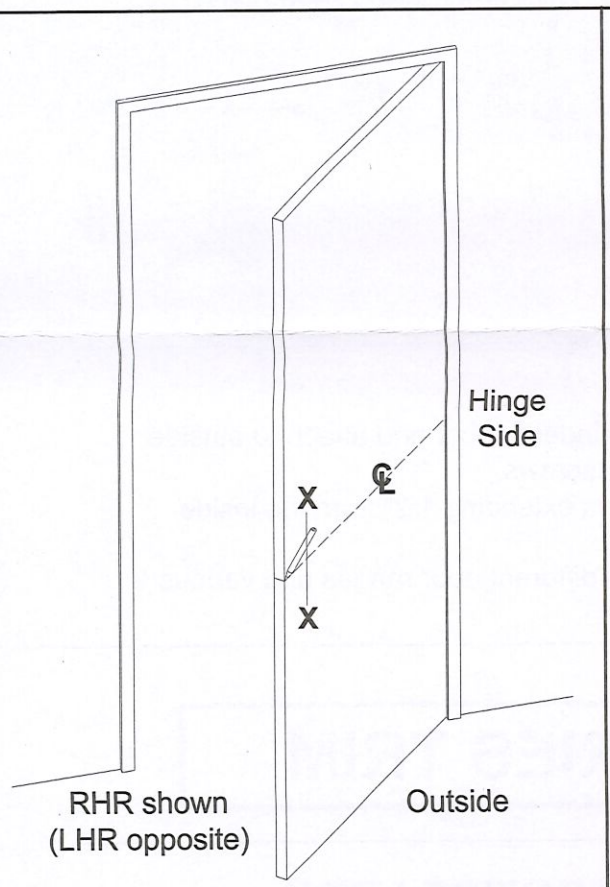




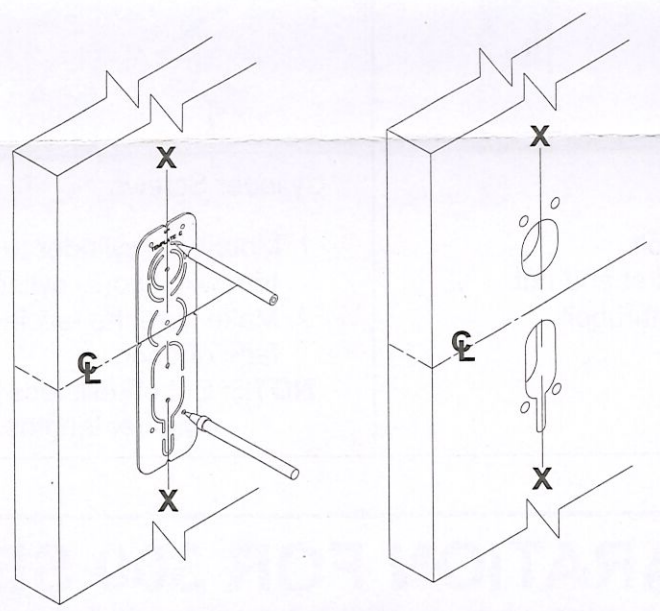
FOR MORTISE LOCK APPLICATION				
CUT OUT ILLUSTRATION				
TRIM DESCRIPTION	201/202	203M	205M	215M
FUNCTION	02	03	05	15
PREPARATION	A+B	A+B+C	A+B+C+E	A+B+E

300 SERIES
ESCUTCHEON TRIM FOR EXIT DEVICE

INSTALLATION INSTRUCTIONS

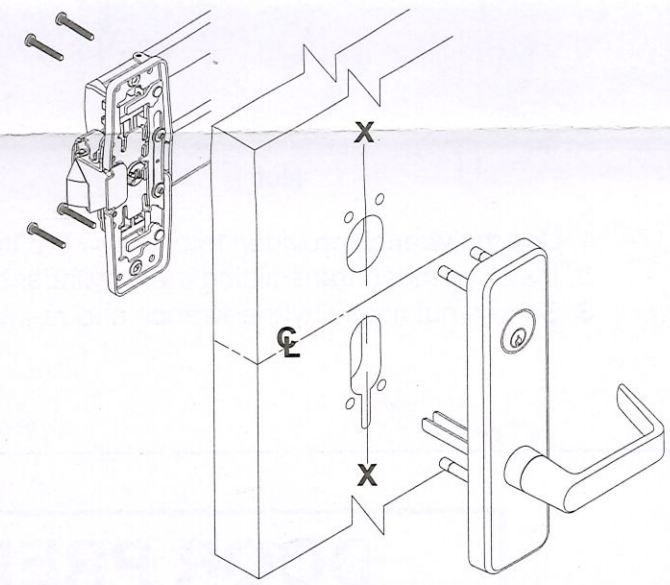


1. Prepare door for exit device. See exit device instructions for holes, backset (line X-X), and center lines.
2. Transfer line X-X from inside (exit device) side of door to outside (trim side) of door. Use extra care if edge of door is beveled. Be sure line X-X is parallel to edge of door.



3. Locate X-X line and prepare required holes with "Template C".

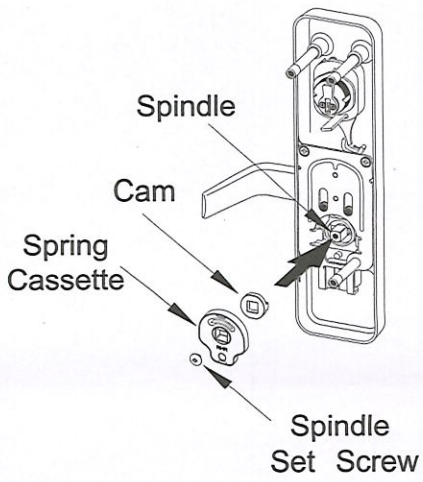
NOTE: See "TEMPLATE APPLICATION CHART" on back page for different trim functions.



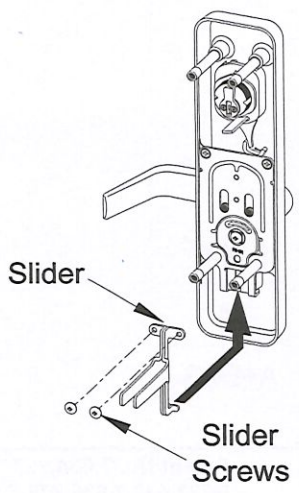
4. Determine trim handing and assemble trim. (see "HOW TO ASSEMBLE TRIM" and "INSTALL CYLINDER")

HOW TO ASSEMBLE TRIM

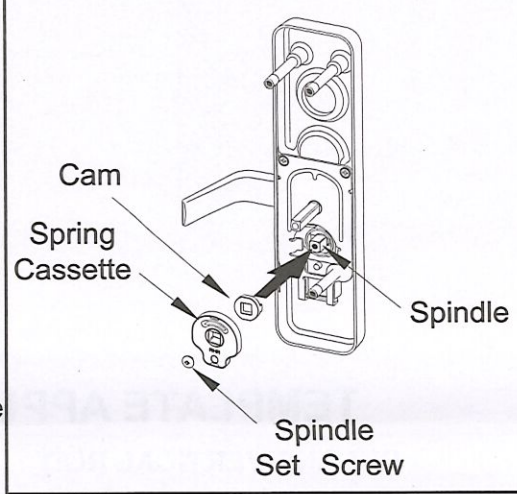
FOR FUNCTIONAL LEVER



1. Determine lever handing. (RHR shown;LHR opposite)
2. Insert cam on spindle.
3. Insert spring cassette and make sure the direction of spring cassette matches with lever handing.
4. Rotate lever to check function, tighten spindle set screw.
5. Install slider by fitting tabs into guide under mechanism.
6. Fasten slider set screws with moving parts in mechanism.

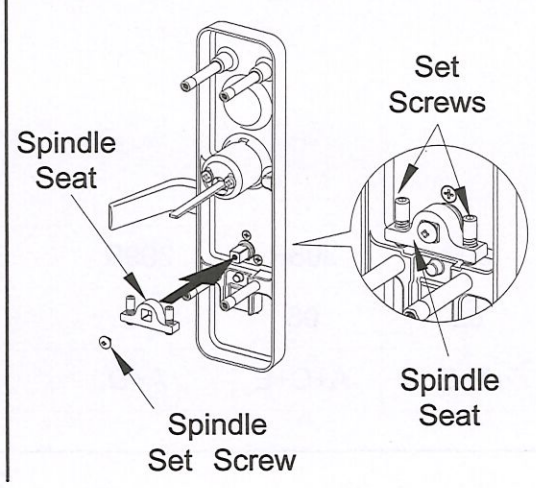


FOR MORTISE LOCK



1. Determine lever handing. (RHR shown;LHR opposite)
2. Insert cam on spindle.
3. Make sure the direction of spring cassette matches with lever handing. Insert spring cassette.
4. Rotate lever to check function and tighten spindle set screw.

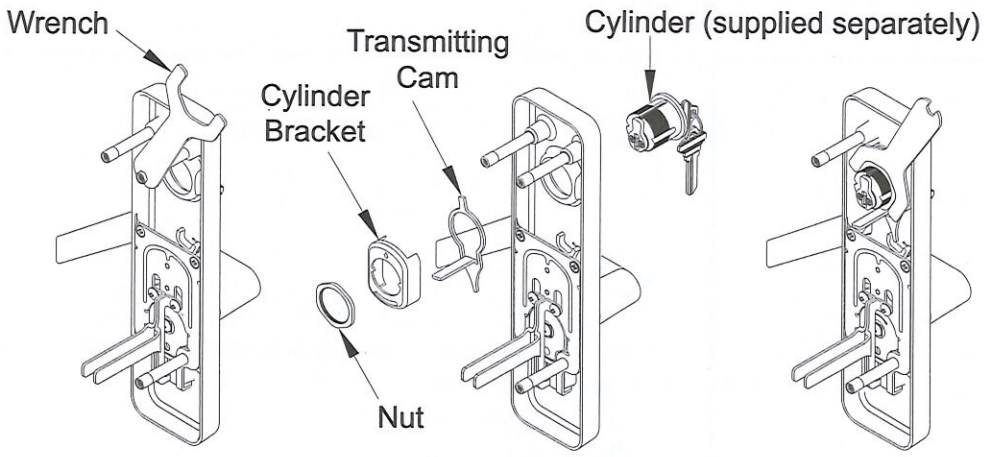
FOR RIGID LEVER



1. Determine lever handing. (RHR shown;LHR opposite)
2. Install spindle seat and tighten spindle set screw.
3. Tighten set screws on spindle seat and level the lever by adjusting either side set screws if necessary.

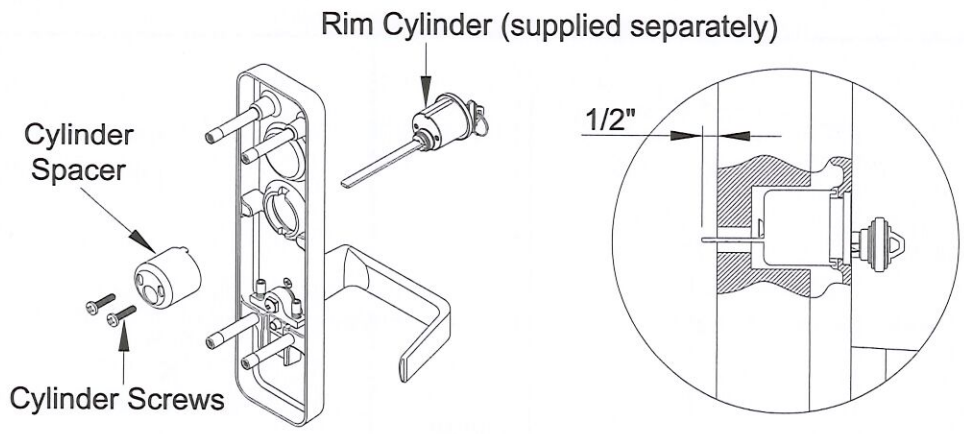
INSTALL CYLINDER

FOR MORTISE CYLINDER



1. Use the wrench provided to unscrew the thrubolt.
2. Install cylinder, transmitting cam, cylinder bracket and nut.
3. Secure nut tightly by the wrench and re-install thrubolt .

FOR RIM CYLINDER

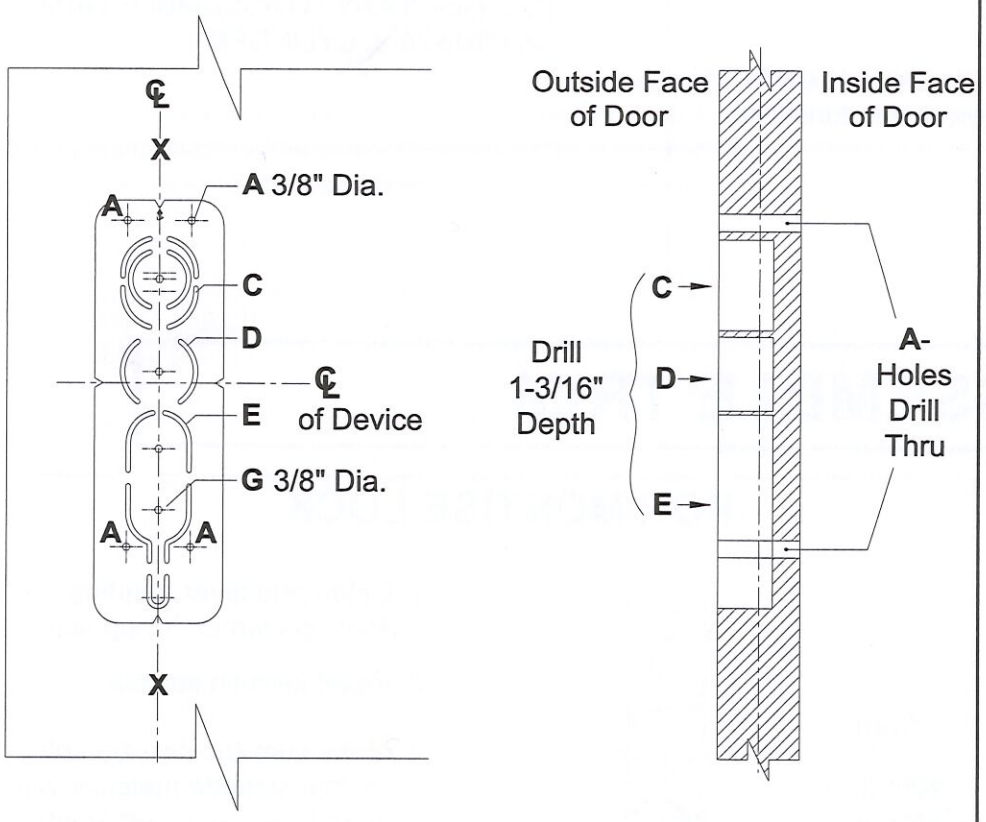


1. Mount rim cylinder to cylinder spacer and attach to outside trim with two(2) cylinder screws.
2. Make sure the tailpiece is extending 1/2" from the inside face of door.

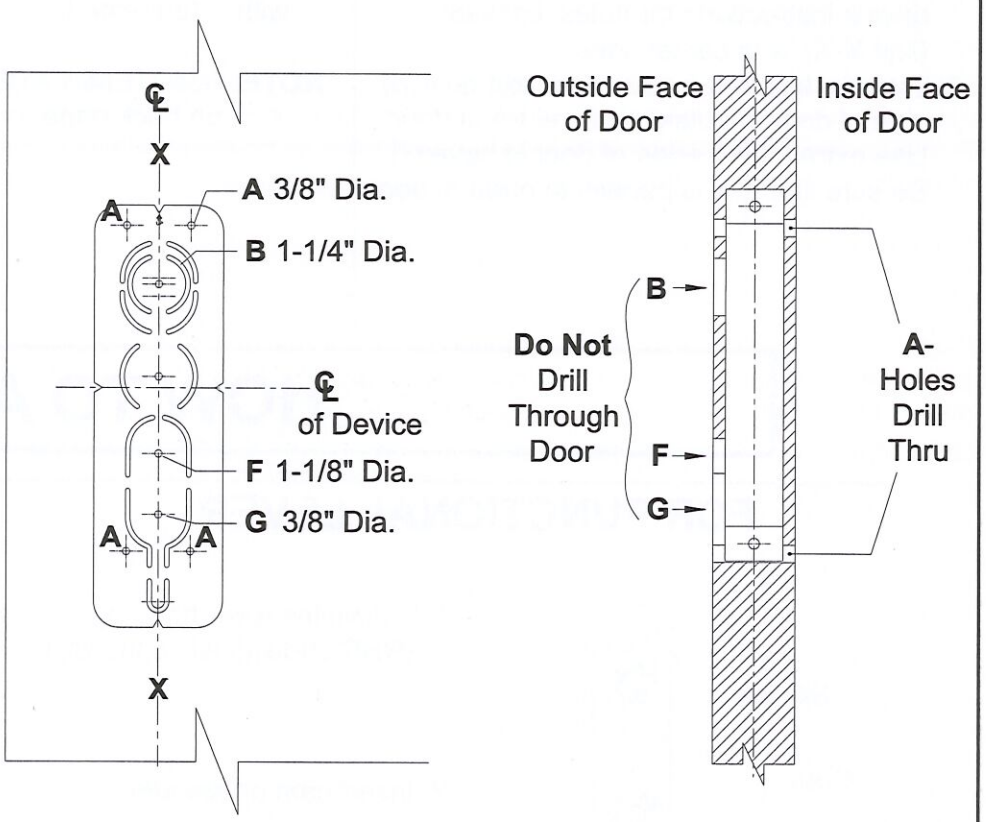
NOTE: Cut off tailpiece for different door ranges and various cylinder lengths.

DOOR PREPARATION FOR 300 SERIES TRIM

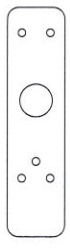
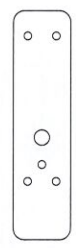
FOR RIM AND VERTICAL ROD DEVICE



FOR MORTISE LOCK

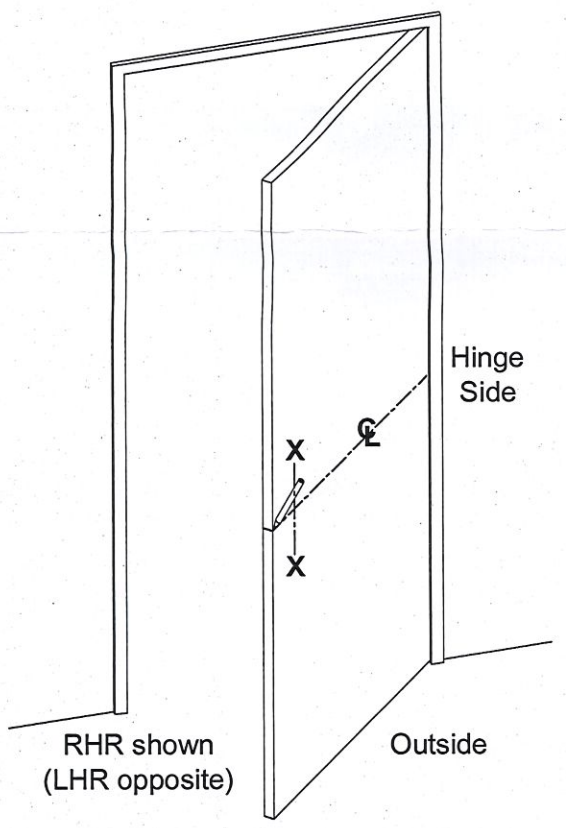


TEMPLATE APPLICATION CHART

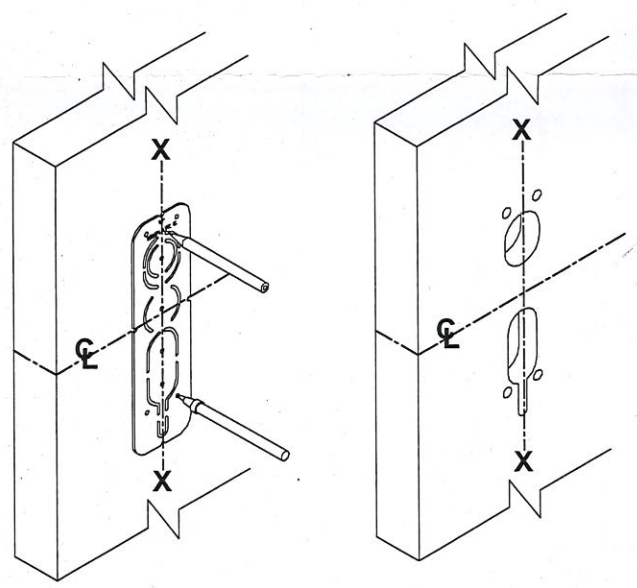
DEVICE TYPE	RIM AND VERTICAL ROD				MORTISE LOCK			
CUT OUT ILLUSTRATION								
TRIM DESCRIPTION	302	308R	309R	314R	302	308M	309M	314M
FUNCTION	02	08	09	14	02	08	09	14
PREPARATION	A+G	A+C+E	A+D	A+E	A+G	A+B+F+G	A+B+G	A+F+G

300 SERIES
ESCUTCHEON TRIM FOR EXIT DEVICE
(CLUTCH VERSION)

INSTALLATION INSTRUCTIONS

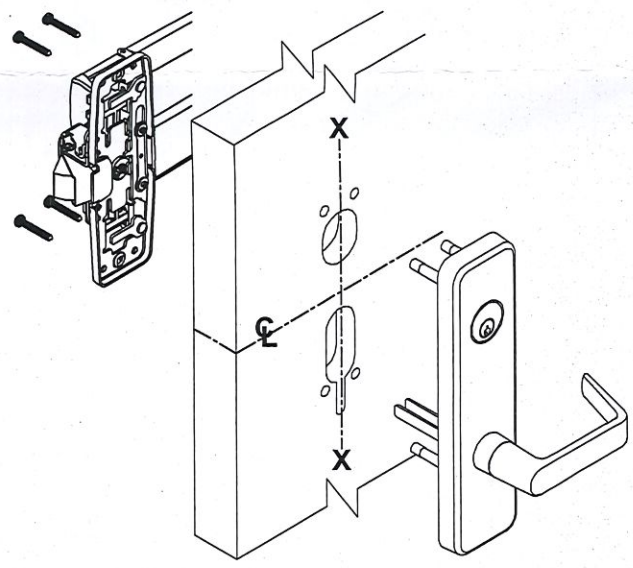


1. Prepare door for exit device. See exit device instructions for holes, backset (line X-X), and center lines.
2. Transfer line X-X from inner (exit device) side of door to outer (trim side) of door. Be extra careful if edge of door is beveled. Be sure line X-X is parallel to edge of door.



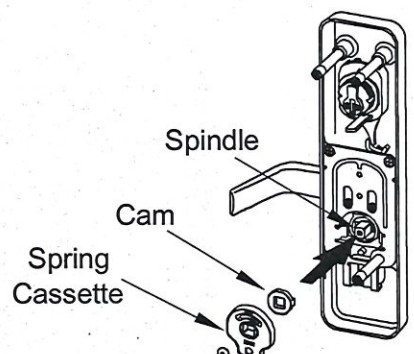
3. Locate X-X line and prepare required holes with "Template C".

NOTE: See "TEMPLATE APPLICATION CHART" on back page for different trim functions.



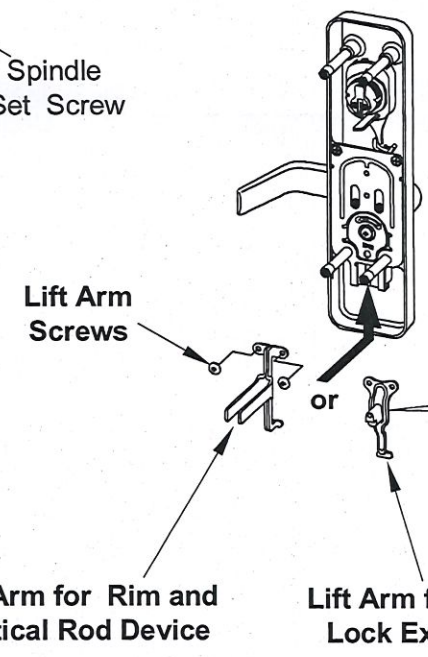
4. Select trim function, trim handing and assemble trim as needed. (see "HOW TO ASSEMBLE TRIM" and "INSTALL CYLINDER"on back of this page)

HOW TO ASSEMBLE TRIM

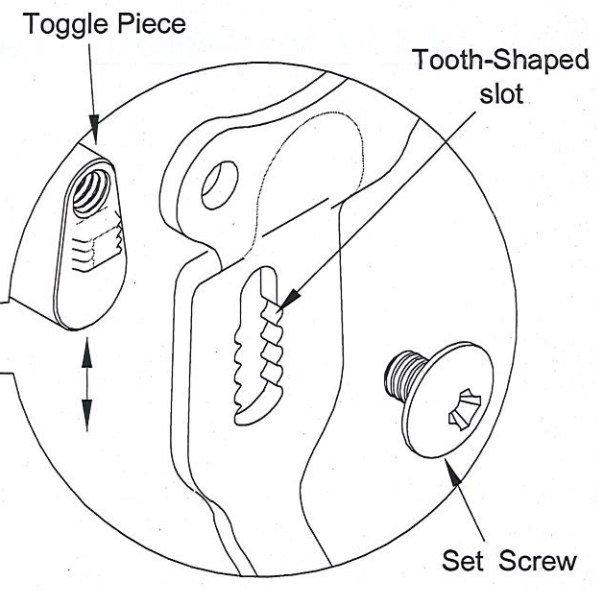


1. Choose lever handing. (RHR shown;LHR opposite)
2. Insert cam on spindle.
3. Insert spring cassette and make sure the direction of spring cassette matches with lever handing.
4. Rotate lever to check function, tighten spindle set screw.

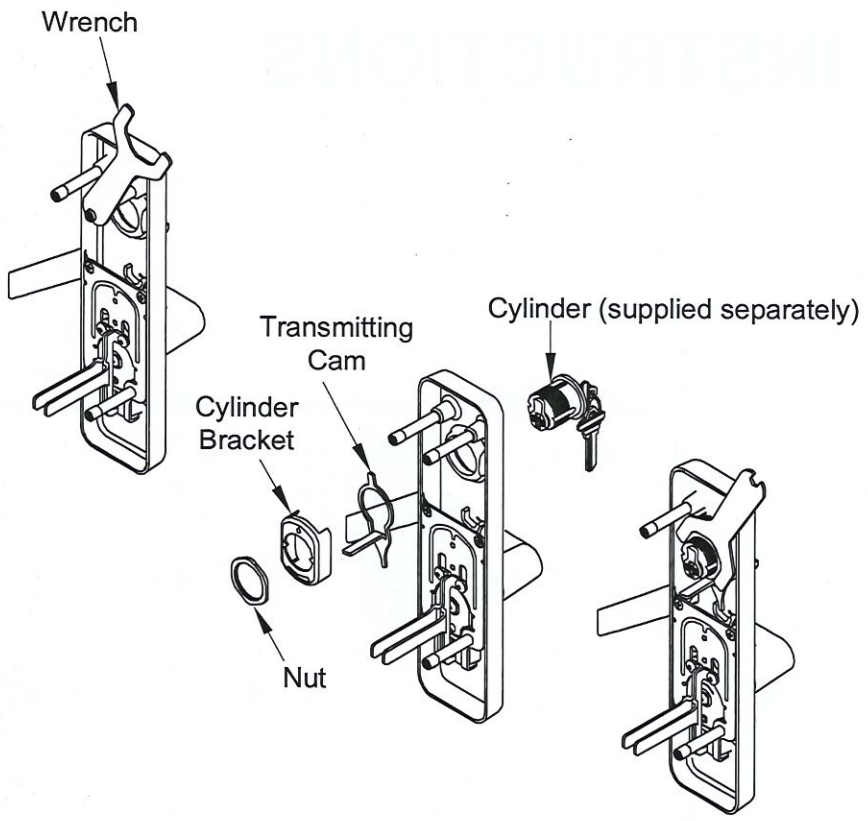
NOTE:
The lift arm for mortise lock exit device function is capable of fine adjustments.
When the turning of the handle cannot completely retract the latch, it is necessary to adjust the slider.
To do so, remove the central screw and move the toggle piece upwards or downwards depending on the situation.
When finished fasten with set screw and test for normal actuation of handle and latch.



5. Install lift arm by fitting tabs into guide under mechanism.
6. Assemble lift arm onto moving parts of the mechanism with set screws.

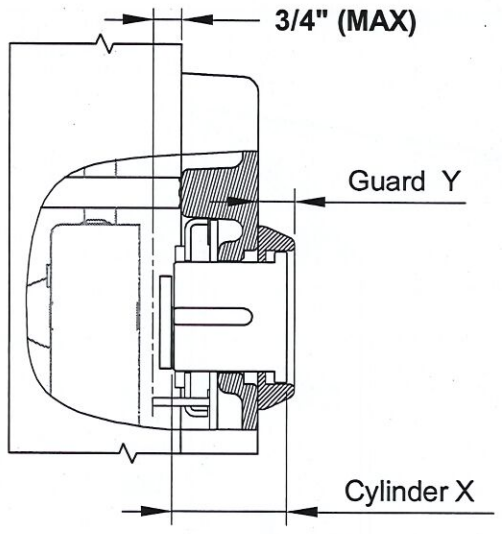


INSTALL CYLINDER



1. Use the wrench provided to unscrew the thrubolt.
2. Install cylinder, transmitting cam, cylinder bracket and nut.
3. Secure nut tightly with wrench and re-install thrubolt .

SPECIAL ARRANGEMENT FOR USAGE WITH 1300 OR 1400 EXIT DEVICES

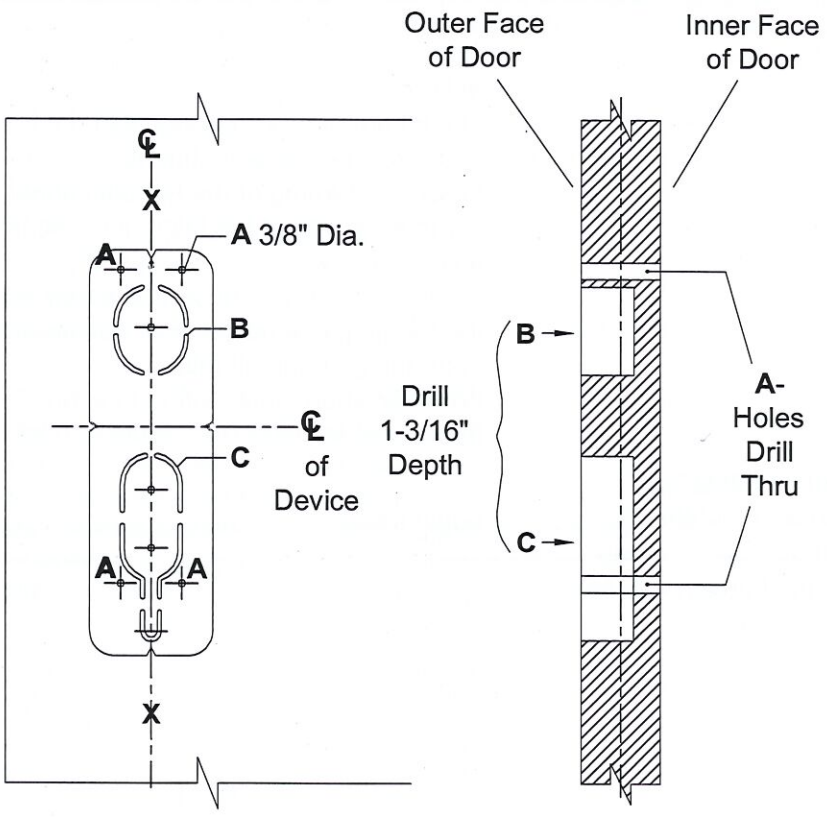


When trim is used for 1300 or 1400 exit devices, the cylinder must be installed along with the cylinder guard to prevent interference between the core and the cylinder during actuation.
After installation, the projection measured from the trim's most inner part must not be greater than 3/4".
The following table shows the recommended dimension arrangments.

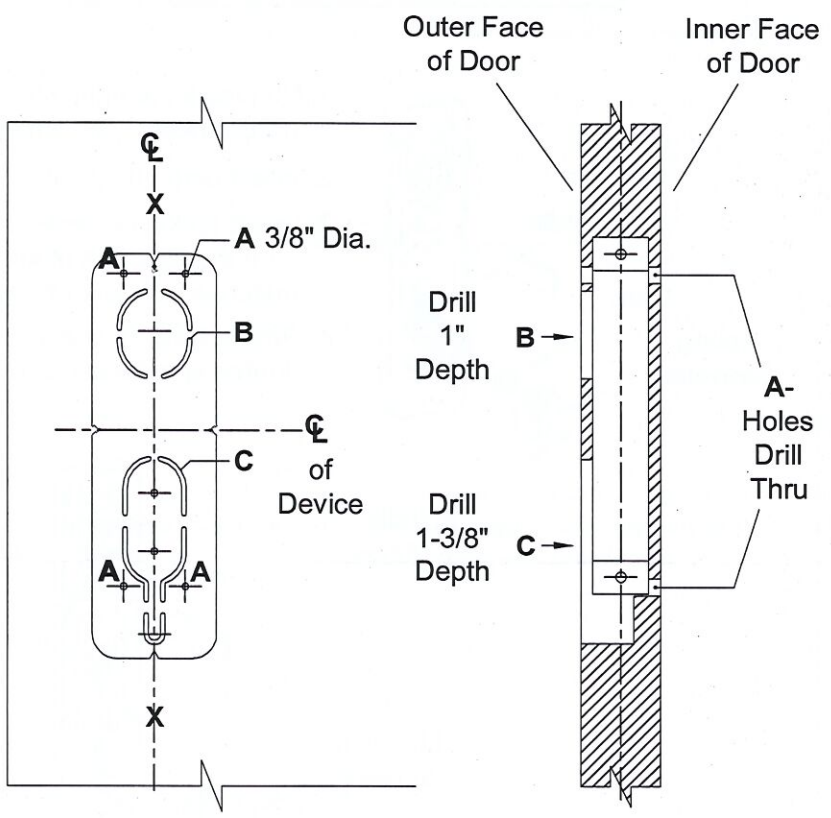
	Cylinder No.	X	Guard No.	Y
Standard Cylinder	441-102	1-1/8"	4240-0202	3/8"
I/C Cylinder	442-701	1-3/8"	611902-032	1/2"

DOOR PREPARATION FOR CLUTCH TRIM

FOR RIM AND VERTICAL ROD DEVICE

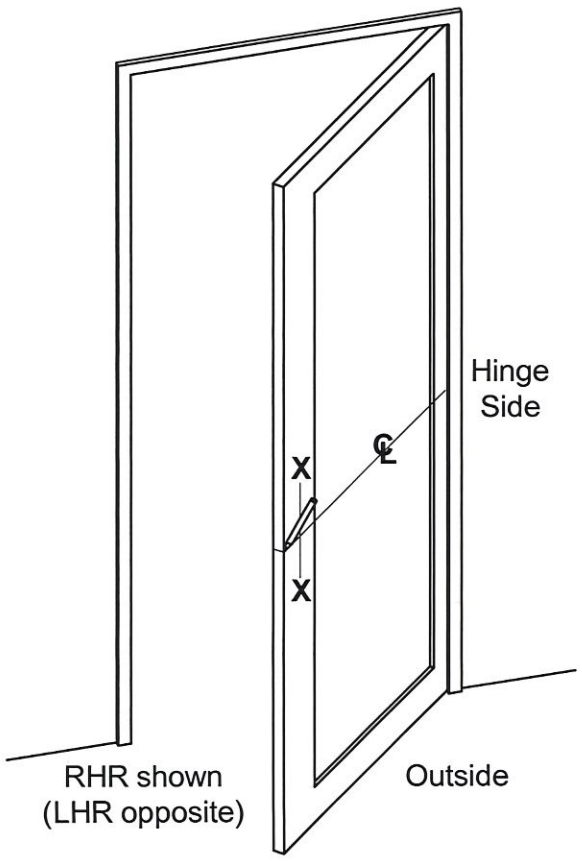


FOR MORTISE LOCK

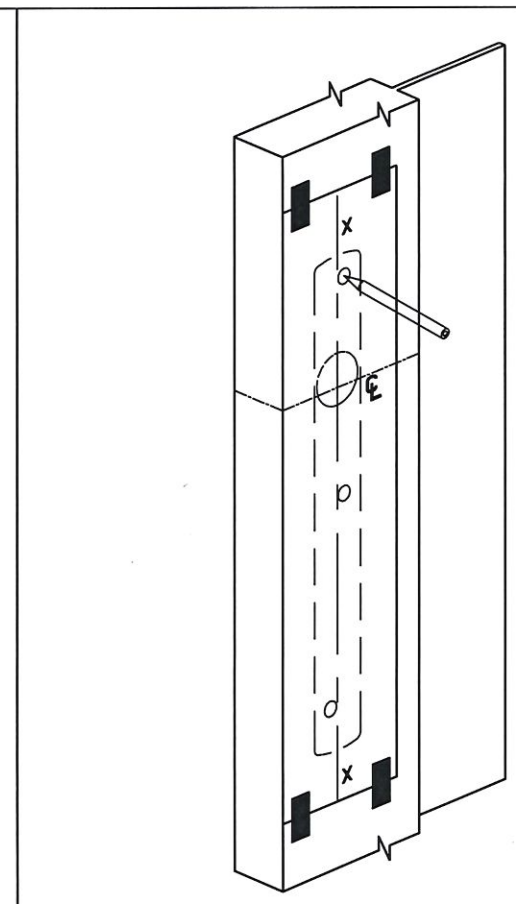


400SERIES
PULL TRIM FOR EXIT DEVICE

INSTALLATION INSTRUCTIONS

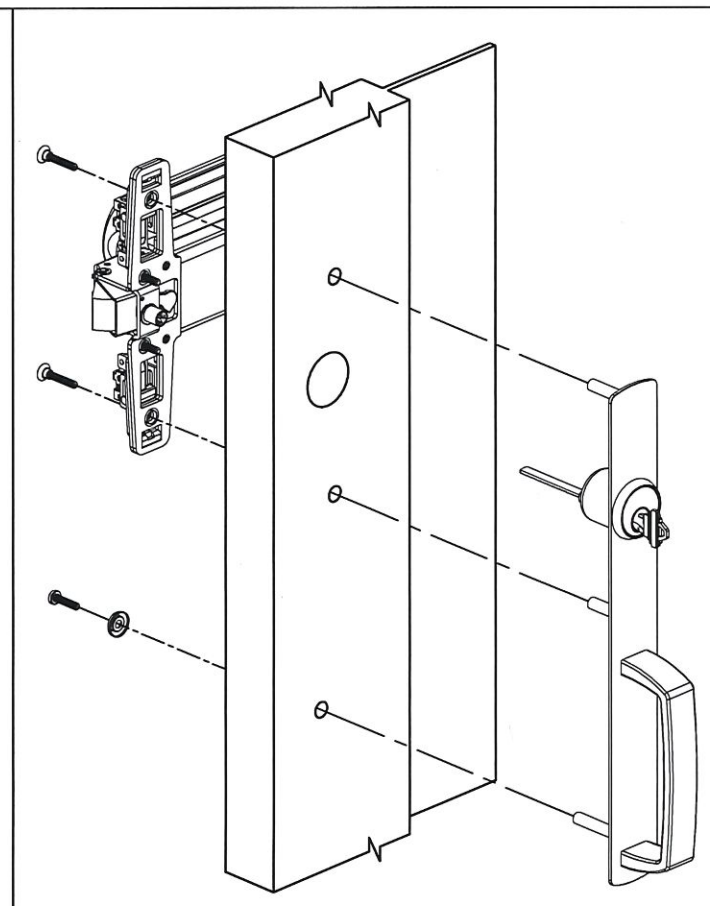


1. Prepare door for exit device. See exit device instructions for holes, backset (line X-X), and center lines.
2. Transfer line X-X from inner (exit device) side of door to outer (trim side) of door. Be extra care if edge of door is beveled. Make sure line X-X is parallel to edge of door.



3. Locate X-X line and prepare required holes with template.

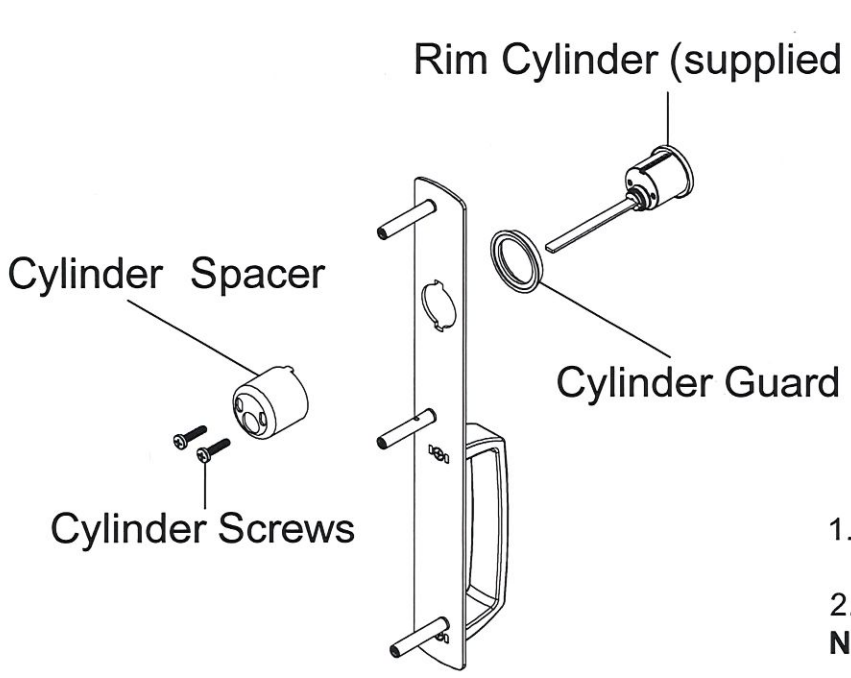
NOTE:
*.See "APPLICATION CHART" on back page for different trim functions.
**.Be aware when applying templates for right-hand side door and left hand-side door

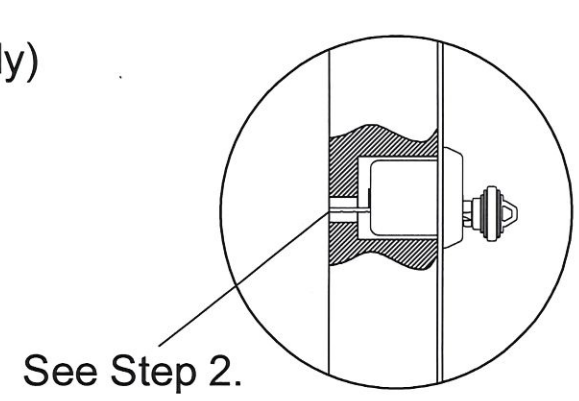


4. Determine trim handing and assemble trim. (see "INSTALL CYLINDER")

INSTALL CYLINDER

RIM CYLINDER FOR RIM AND VERTICAL ROD DEVICES



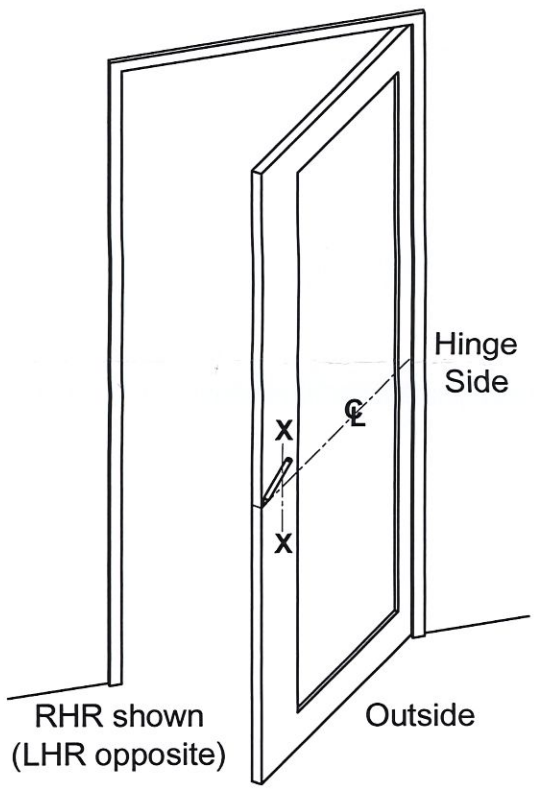


1. Mount rim cylinder to cylinder spacer and attach to outer trim with two(2) cylinder screws.
2. Make sure the tailpiece is aligned with the inner face of door.

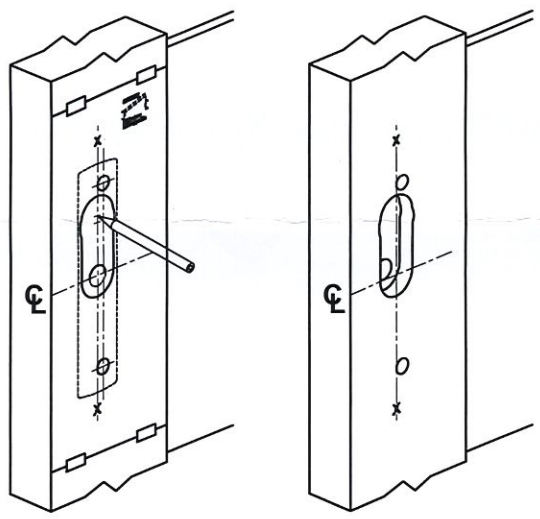
NOTE: Cut off tailpiece for different door ranges and cylinder lengths.

500 SERIES
ESCUTCHEON TRIM FOR 2000 SERIES EXIT DEVICE

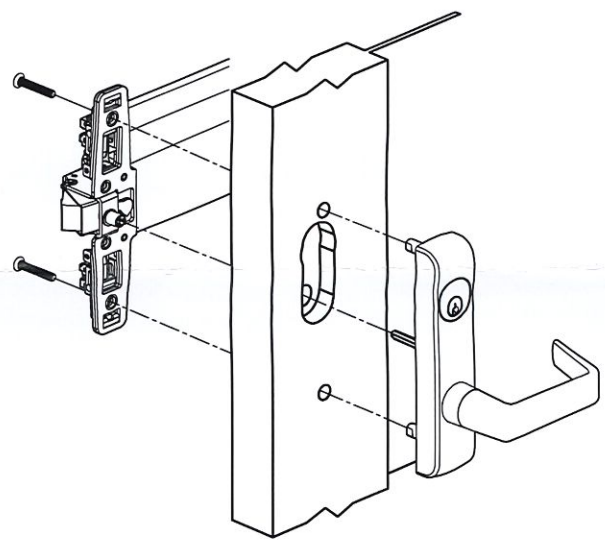
INSTALLATION INSTRUCTIONS



1. Prepare door for exit device. See exit device instructions for holes, backset (line X-X), and center lines.
2. Transfer line X-X from inner side (exit device) of door to outer side (trim side) of door. Use extra care if edge of door is beveled. Be sure line X-X is parallel to edge of door.



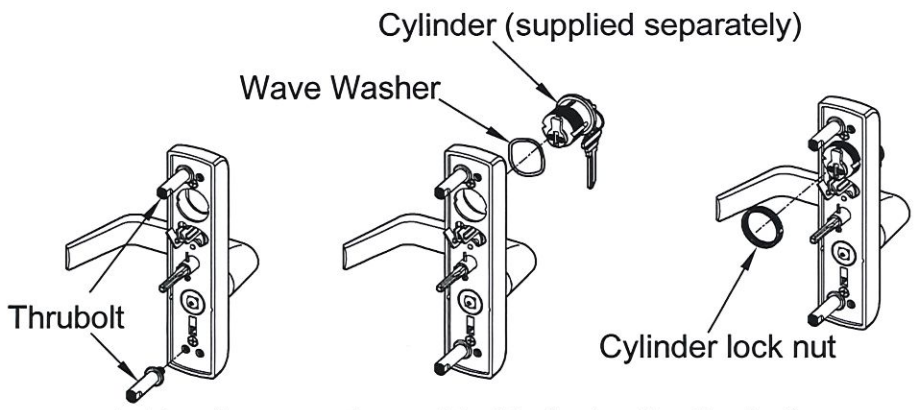
3. Locate X-X line and prepare required holes with Template.



4. Determine trim handing and assemble trim. (see "HOW TO ASSEMBLE TRIM")

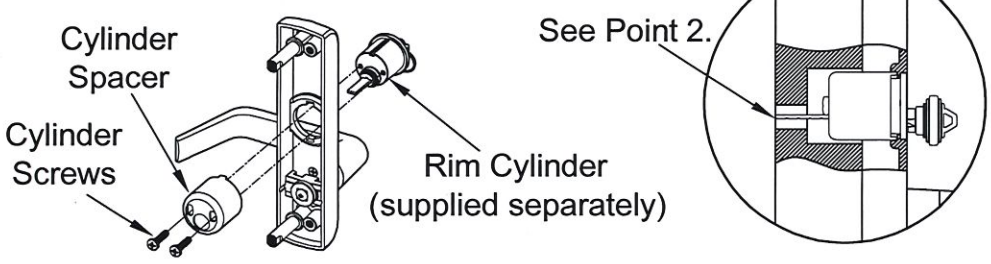
HOW TO ASSEMBLE TRIM

FOR MORTISE CYLINDER



1. Use the wrench provided to fasten the thrubolt.
2. Install cylinder,wave washer into hole in escutcheon.
3. Thread cylinder lock nut onto mortise cylinder. Make sure to fasten down tight.

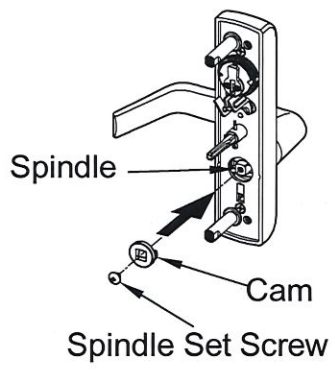
FOR RIM CYLINDER



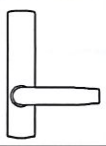
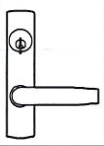
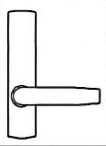
1. Mount rim cylinder to cylinder spacer and attach to outside trim with two(2) cylinder screws.
2. Make sure the tailpiece is aligned with the inside face of door.

NOTE: Cut off tailpiece for different door ranges and cylinder lengths.

FOR FUNCTIONAL LEVER



1. Determine lever handing. (RHR shown;LHR opposite)
2. Insert cam on spindle.
3. Rotate lever to check function, tighten spindle set screw.

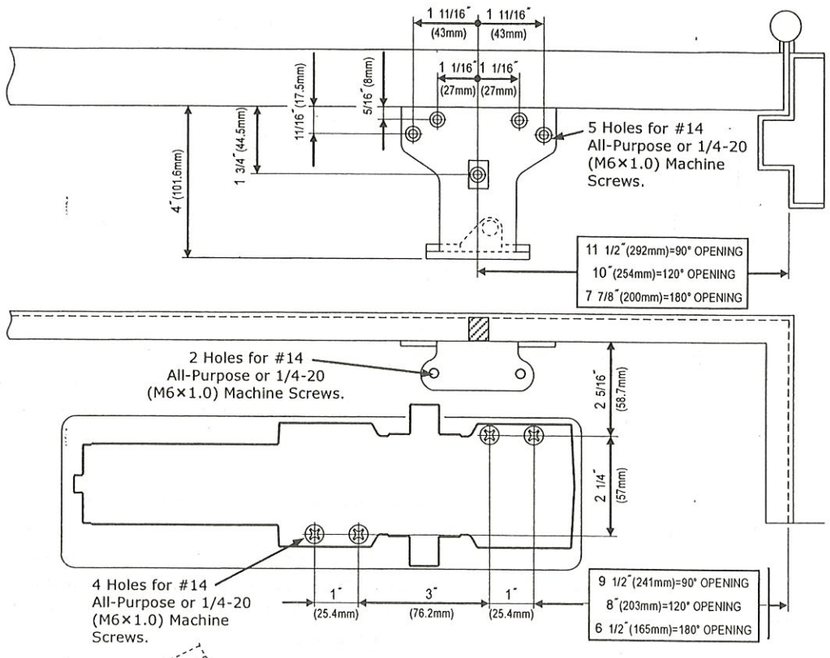
Trim No.	502	508M	509R	514	503R	511M	512R	516
ANSI No.	02	08	09	14	03	11	12	16
Illustration								
Cylinder Type		Mortise	Rim		Rim	Mortise	Rim	
Application Template	B	A	B	B	B	A	B	B

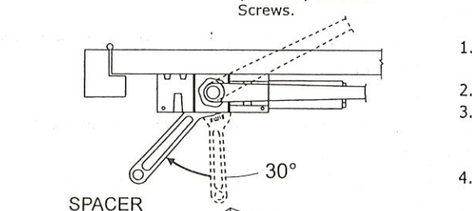
Application Template : "A" for Trim No.508M , 511M
"B" for Trim No.502 , 503R , 509R , 512R, 514 and 516

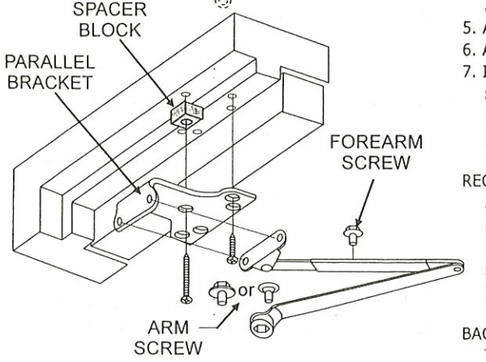
PARALLEL ARM INSTALLATION
CLOSER MOUNTED ON DOOR ON PUSH SIDE

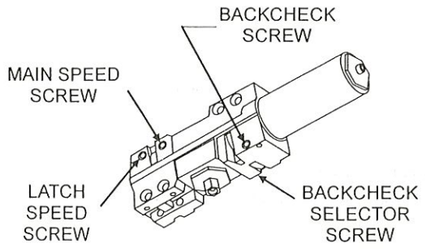
DOOR OPENING: 180°

RIGHT HAND DOOR shown. LEFT HAND DOOR is opposite.









1. Before installation, turn BACKCHECK selector valve (found on the opposite side of closer from backcheck screw side) ALL THE WAY IN CLOCKWISE.
2. Adjust spring power to match door width as indicated by chart on page 1.
3. Mount closer on door at dimensions shown with tube end toward latch edge of door. If pivots are used, locate closer and parallel bracket from CENTERLINE OF PIVOT.
4. Place open end wrench on bottom shaft and turn toward hinge jamb about 30°. and then place main arm on top shaft, insert arm screw into top of shaft and tighten.
5. Attach parallel bracket on frame at dimensions shown.
6. Attach rod and shoe to parallel bracket as shown.
7. Insert rod in forearm, and rotate main arm parallel to door. Then insert forearm set screw and tighten.
   (IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

REGULATION:

A 'Normal' closing time from 90° open position to door stop position is 4-6 secs, evenly divided between main swing speed and latch swing speed. Use socket key (furnished) to adjust speed. To slow main speed of door, turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest hinge clockwise.

BACKCHECK

To increase BACKCHECK force, turn regulating screw nearest latch clockwise. DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

COVER

Place insert in proper cutout, then push cover against door. Tighten both cover screw securely.

HOLD OPEN ADJUSTMENT (when hold open arm is used)

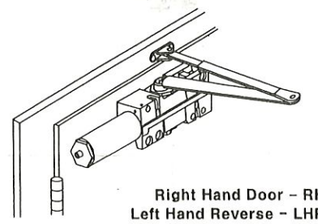
Loose adjusting nut, open door to desired hold open position and tighten nut. Do not permit door to swing beyond hold open setting.

Revision No.:0 - 20120915

INSTALLATION NSTRUCTIONS

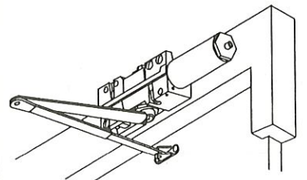
QDC 40A

STANDARD MOUNT (PULL SIDE)



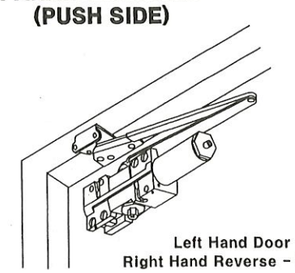
Right Hand Door – RH
Left Hand Reverse – LHR

TOP JAMB MOUNT (PUSH SIDE)



Right Hand Door – RH
Left Hand Reverse – LHR

PARALLEL MOUNT (PUSH SIDE)



Left Hand Door – LH
Right Hand Reverse – RHR

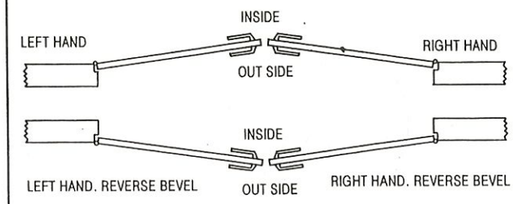
DOOR CLOSER SIZE	MAXIMUM DOOR WIDTH		FULL TURNS OF POWER ADJUSTMENT SCREW	
	EXTERIOR (SWING OUT)	INTERIOR	5000 5000DA	5000BF 5000BF.DA
BF	-	5lb-f	-	14 C.C.W
1	28"(0.71m)	32"(0.81m)	7C.C.W	12 C.C.W
2	32"(0.81m)	36"(0.91m)	4C.C.W	8 C.C.W
3	36"(0.91m)	42"(1.07m)	0(PRESET)	0(PRESET)
4	42"(1.07m)	48"(1.22m)	5C.W	4 C.W
5	48"(1.22m)	54"(1.22m)	10C.W	-
6	54"(1.37m)	58"(1.47m)	15C..W	-

C.W. = CLOCKWISE
C.C.W = COUNTER CLOCKWISE

PLEASE NOTE
TURNS REQUIRED ARE APPROXIMATE BECAUSE OF VARIOUS DOOR CONDITIONS AND LOCATIONS. YOU MAY HAVE TO FURTHER ADJUST SPRING TENSION TO SUIT YOUR REQUIREMENTS.

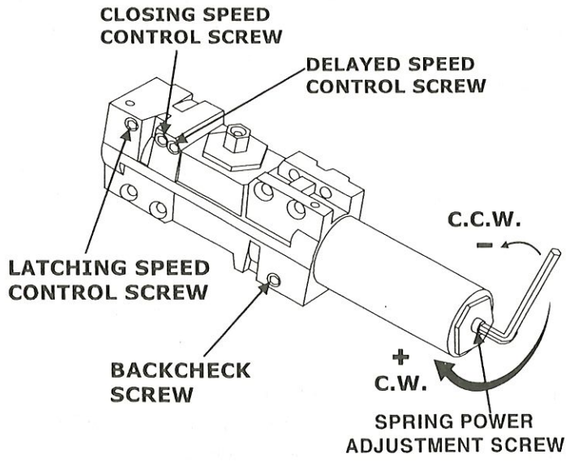
DOOR HANDING

US STANDARDIZATION PROCEDURE

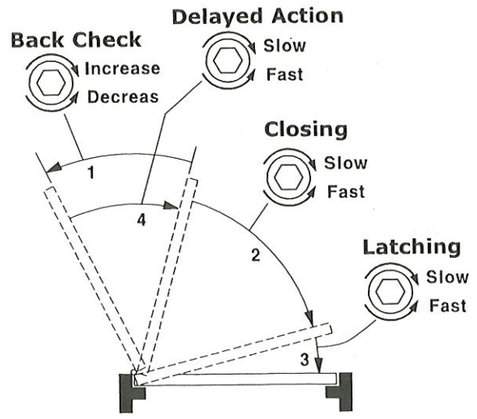


DOOR HANDS DETERMINED FROM OUTSIDE

IT IS IMPORTANT TO CAREFULLY FOLLOW ALL INSTALLATION AND MOUNTING INSTRUCTIONS WHEN INSTALLING ANY DOOR CLOSER.



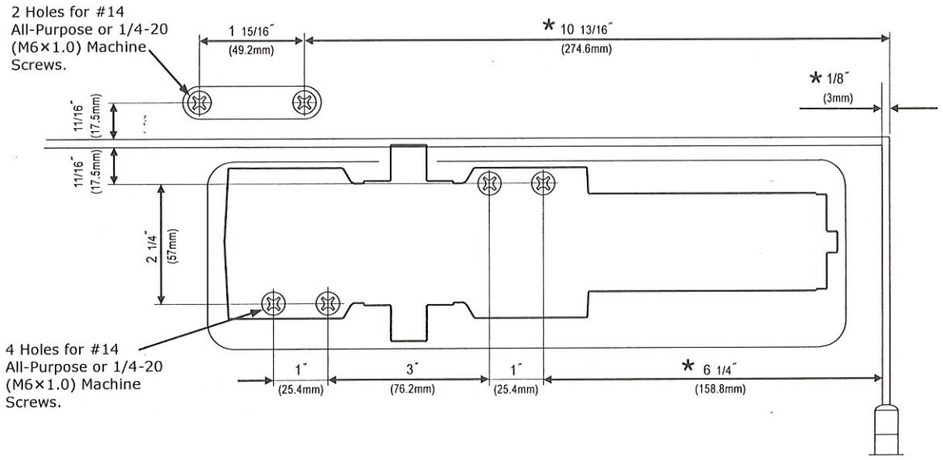
CONTROL RANGE

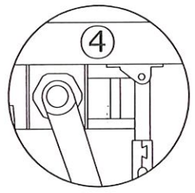


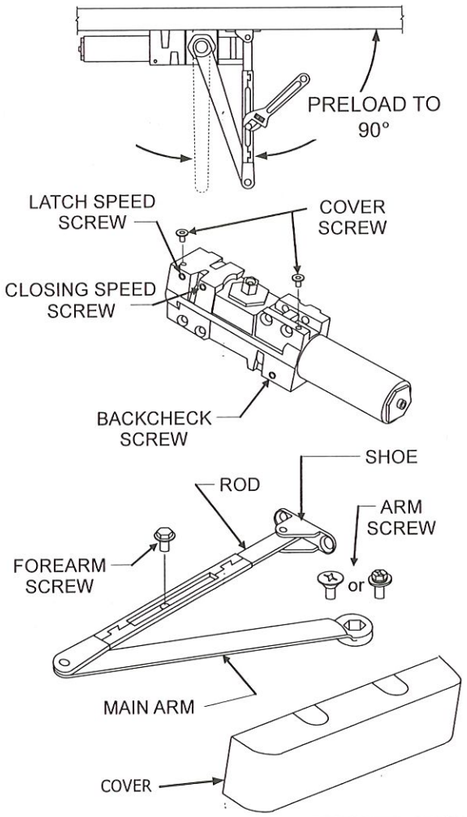
STANDARD INSTALLATION
CLOSER MOUNTED ON DOOR ON PULL SIDE

DOOR OPENING: 120°

LEFT HAND DOOR shown. RIGHT HAND DOOR is opposite.







1. Adjust spring power to match door width as indicated by chart on page 1.
2. Mount closer on door as dimensions shown. Tube end toward hinge. If pivots are used, locate closer and shoe from CENTERLINE OF PIVOT.

(*For offset pivots, please increase the marked dimensions by 1/8˝)

3. Place main arm on top of shaft, 100° to closer body, insert arm screw into top of shaft and tighten.
4. Attach shoe to frame as shown. (If more latching power is required, rotate shoe 180° from position shown in fig. 4)
5. Open door and insert rod in forearm.
6. Rotate forearm away from hinge edge of door until forearm is 90° to frame face, insert forearm, set screw and tighten.
   (IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

REGULATION:

A 'Normal' closing time from 90° open position to door stop position is 4-6 secs, evenly divided between main swing speed and latch swing speed. Use socket key (furnished) to adjust speed. To slow main speed of door, turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest latch clockwise.

BACKCHECK

To increase BACKCHECK force, turn regulating screw nearest hinge clockwise. DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

COVER

Place insert in proper cutout, then push cover against door. Tighten both cover screw securely.

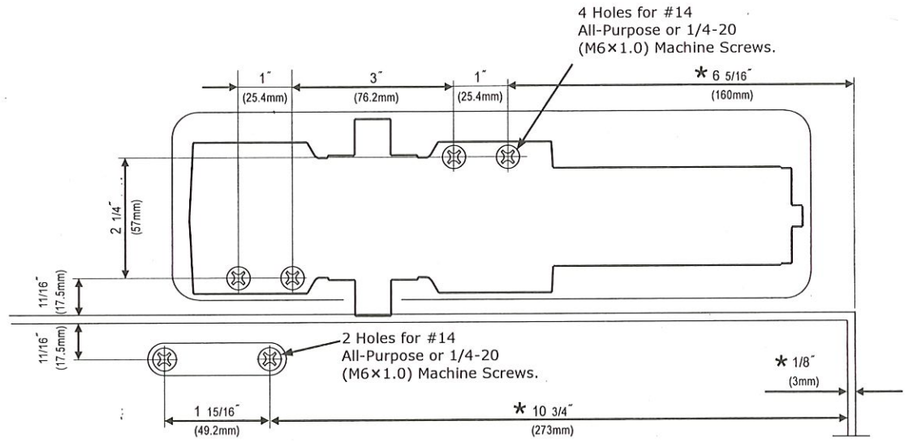
HOLD OPEN ADJUSTMENT (when hold open arm is used)

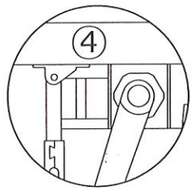
Loose adjusting nut, open door to desired hold open position and tighten nut. Do not permit door to swing beyond hold open setting.

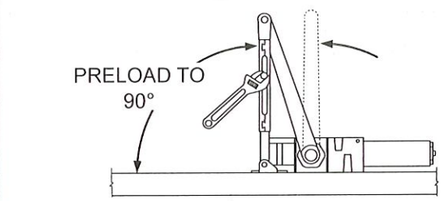
TOP JAMB INSTALLATION
CLOSER MOUNTED TOP JAMB ON PUSH SIDE OF DOOR

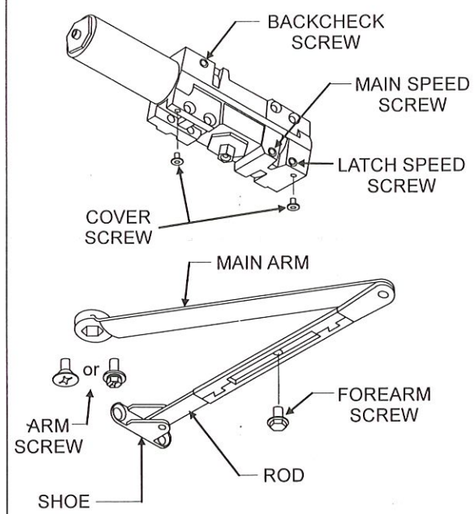
DOOR OPENING: 120°

RIGHT HAND DOOR shown. LEFT HAND DOOR is opposite.









1. Adjust spring power to match door width as indicated by chart on page 1.
2. Mount closer on frame as dimensions shown. Tube end toward hinge. If pivots are used, locate closer and shoe from CENTERLINE OF PIVOT.

(* For offset pivots, please increase the marked dimensions by 1/8˝)

3. Place main arm on top of shaft, 100° to closer body, insert arm screw into top of shaft and tighten.
4. Attach shoe to frame as shown. (If more latching power is required, rotate shoe 180° from position shown in fig. 4)
5. Open door and insert rod in forearm.
6. Rotate forearm away from hinge edge of door until forearm is 90° to frame face, insert forearm, set screw and tighten.
   (IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

REGULATION:

A 'Normal' closing time from 90° open position to door stop position is 4-6 secs, evenly divided between main swing speed and latch swing speed. Use socket key (furnished) to adjust speed. To slow main speed of door, turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest latch clockwise.

BACKCHECK

To increase BACKCHECK force, turn regulating screw nearest hinge clockwise. DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

COVER

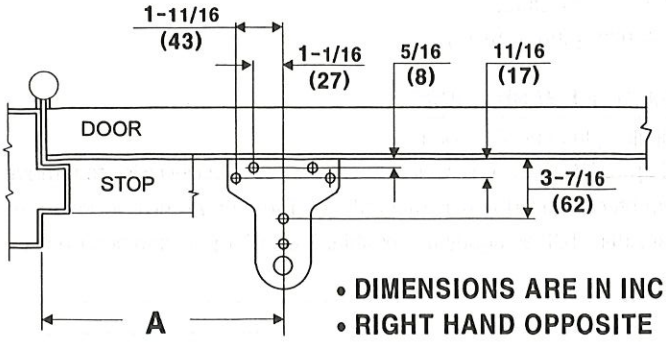
Place insert in proper cutout, then push cover against door. Tighten both cover screw securely.

HOLD OPEN ADJUSTMENT (when hold open arm is used)

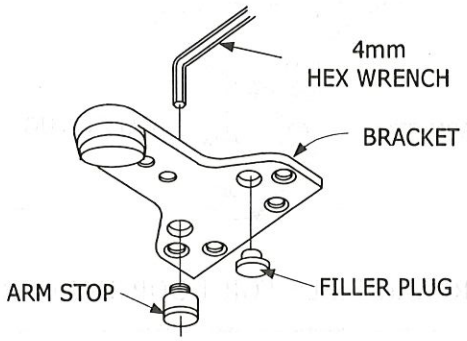
Loose adjusting nut, open door to desired hold open position and tighten nut.

PARALLEL ARM(PUSH SIDE) Mounting

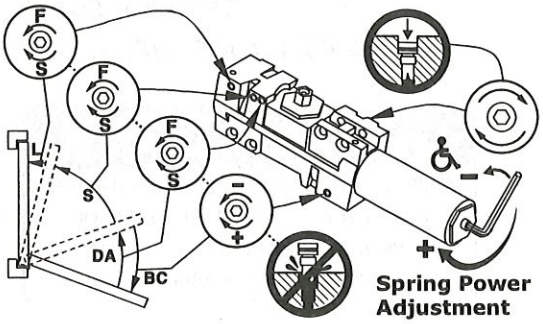
LEFT HAND DOOR SHOWN

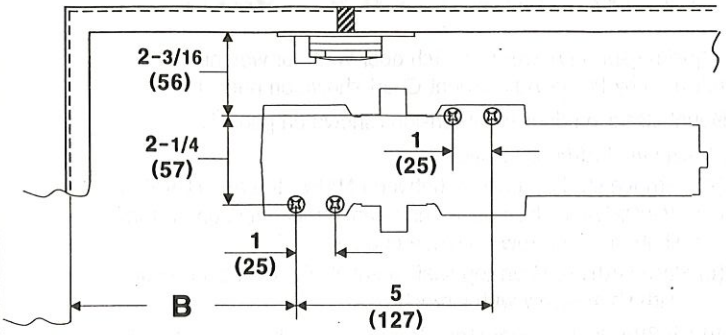


- DIMENSIONS ARE IN INCHES
- RIGHT HAND OPPOSITE
- DO NOT SCALE



DOOR CLOSER ADJUSTMENT

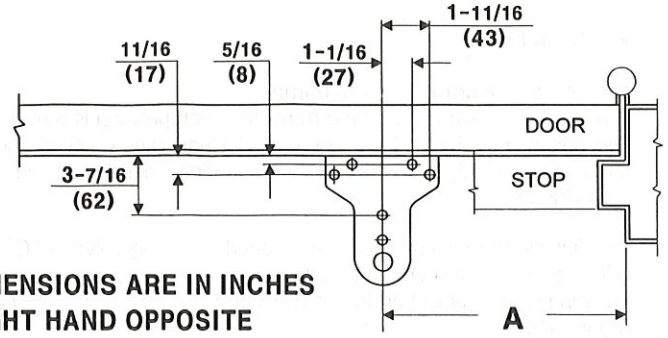




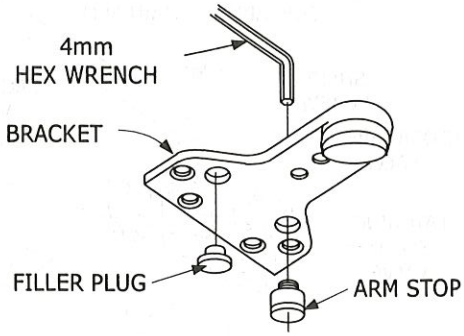
PARALLEL ARM(PUSH SIDE) Mounting

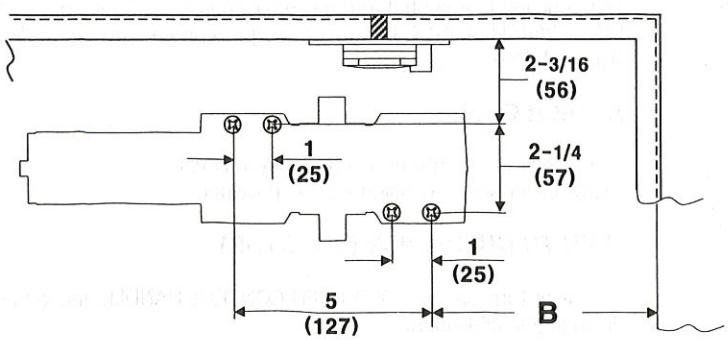
RIGHT HAND DOOR SHOWN

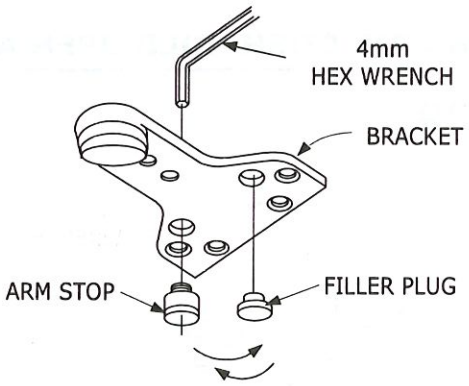
Door Opening	Dim. A	Dim. B
85°	11-1/8 (283)	9-1/2 (241)
90°	10-1/2 (267)	8-3/4 (222)
100°	9-1/4 (235)	7-5/8 (194)
110°	8-3/8 (213)	6-5/8 (168)



- DIMENSIONS ARE IN INCHES
- RIGHT HAND OPPOSITE
- DO NOT SCALE







INTERCHANGEBLE FOR DOOR HANDING

THE HAND MUST BE CORRECT BEFORE THE BRACKET IS MOUNTED TO THE DOOR STOP(TOP JAMB).
Refer to page 1.

FOR LEFT HAND DOORS

All brackets are shipped assembled for LEFT HAND DOOR. Insert 4mm hex wrench into ARM STOP and turn anti-clockwise to seat as tightly as possible.
Push filler plug in firmly.

FOR RIGHT HAND DOORS

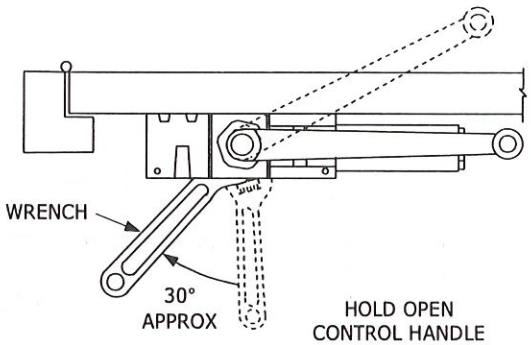
Pull filler plug out of bracket.
Using a 5/16" (8mm) hex wrench turn ARM STOP clockwise to remove form bracket insert in hole marked "R". Turn hex wrench clockwise to seat ARM STOP as tightly as possible. Push filler plug into other hole.

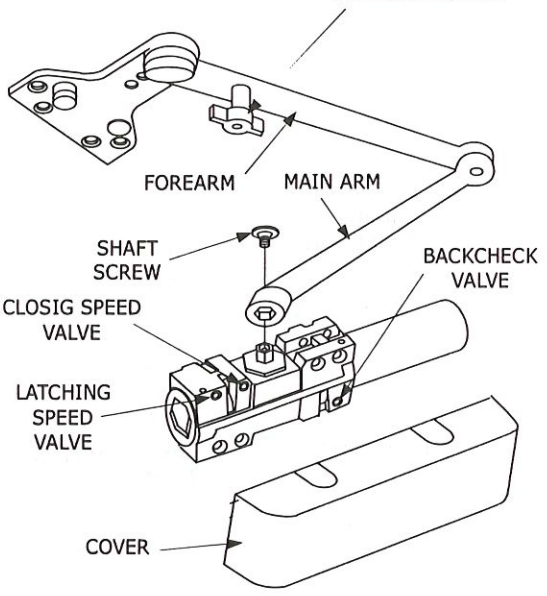
INSTALLATION SEQUENCE

LEFT HAND DOOR SHOWN – RIGHT HAND DOOR OPPOSITE

⚠ CAUTION

IMPROPER INSTALLATION OR REGULATION MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE FOLLOW ALL INSTRUCTIONS CAREFULLY.





1. Adjusting spring power to match door width or weight as indicated by Power Adjustment Chart shown on page 1.
2. Mount closer on door to dimensions shown on page 1.
3. Attach MAIN ARM as follows.
   (a) Remove stud at junction between MAIN ARM and FORARM
   (b) –IMPORTANT-place open end wrench (spanner) on bottom shaft and turn toward hinge edge about 30°
   (c) Place MAIN ARM on top shaft parallel with door and secure with shaft screw with wrench
4. Attach BRACKET to door stop (Top jamb) as shown on page 1.
5. Swing door open about 30° join main arm and forearm insert stud and tighten securely.

IMPORTANT REMARKS

REGULATION

Do not allow door to slam into frame.
A normal standard closing time from 90° open position is 5 to 7 seconds evenly divided between main closing (sweep) speed and latching speed Adjust the CLOSING speed first, then adjust the LATCHING speed.

For slow closing speed of door turn speed adjusting valve of "C" (closing speed) clockwise and anti-clockwise for fast.
Latching speed control of door is the same manner as closing speed adjustment.

ADJUSTABLE BACK CHECK FUNCTION

This function is essential to the proper operation of the SUPER RIGID PARALLEL ARM. Use just enough to prevent arm to striking stop with impact. See page 1.

ATTACH COVER

Slide cover insert into un-used cutout in cover.
Install cover securely using screws provided.

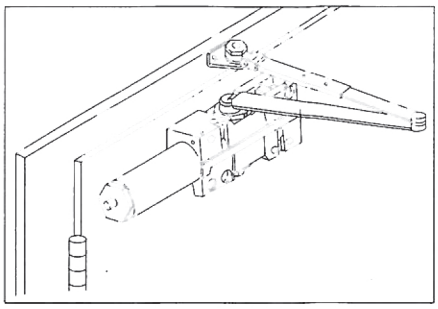
HOW TO HOLD-OPEN (90° STOP)

A quarter turn on the HOLD-OPEN CONTROL HANDLE engages or disengages hold-open.

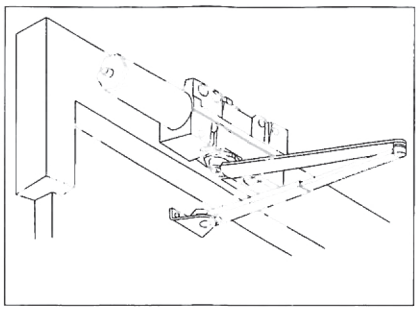
QDC40 SERIES HOA DOOR CLOSER INSTALLATION & INSTRUCTIONS

FOR HOLD OPEN TYPE

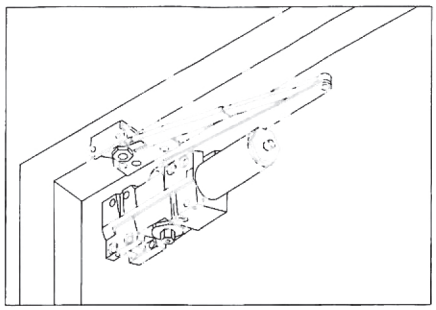
STANDARD MOUNT
(PULL SIDE)



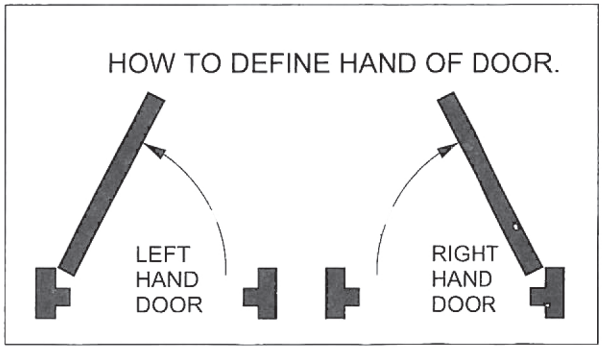
TOP JAMB MOUNT
(PUSH SIDE)

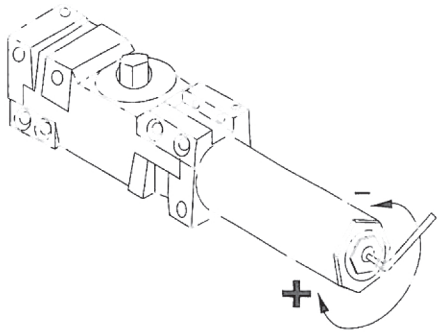


PARALLEL MOUNT
(PUSH SIDE)



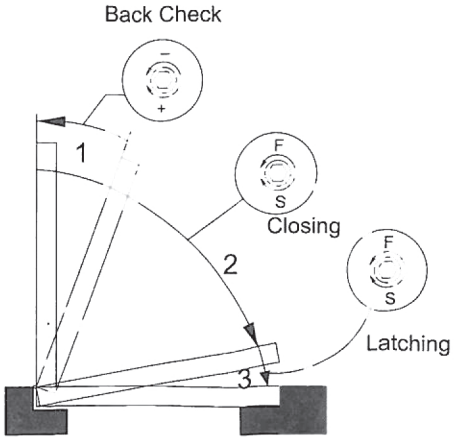
MAXIMUM DOOR WIDTH		FULL TURNS REQUIRED
EXTERIOR DOORS	INTERIOR DOORS	
———	5 lb-f*	5 TURNS C.C.W.
8.5lb-f*	34"(864)	2 TURNS C.C.W.
30" (762)	38"(962)	0 TURNS
36"(914)	48"(1219)	5 TURNS C.W.
42"(1067)	54"(1372)	10TURNS C.W.
48"(1219)	60"(1524)	15 TURNS C.W.





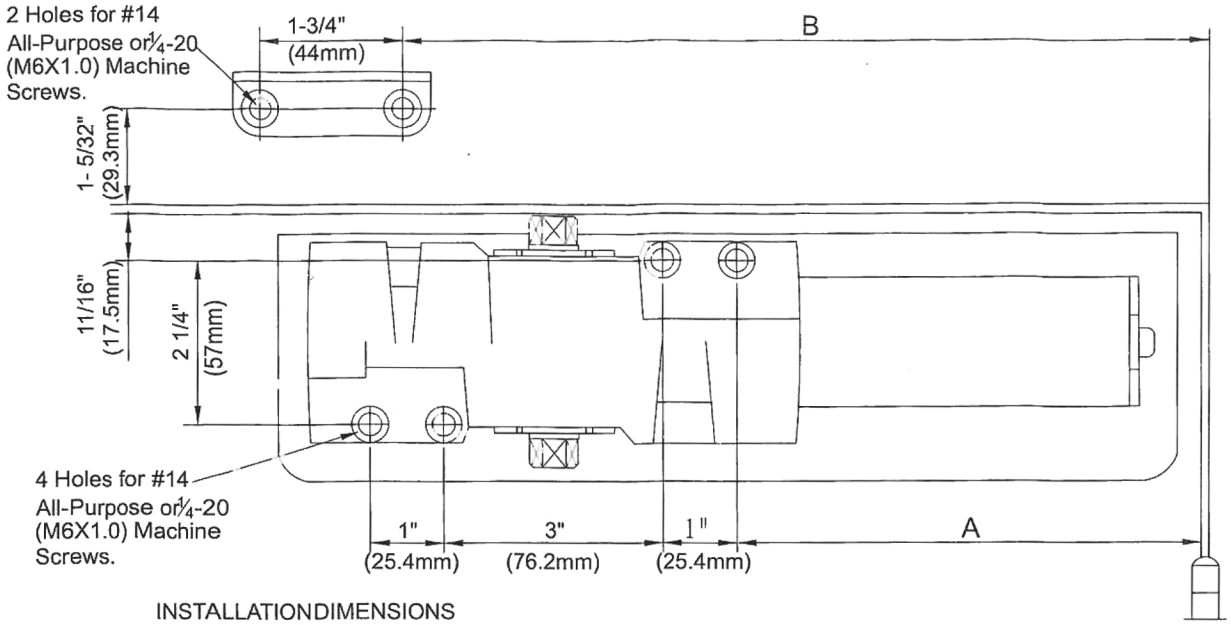
Spring Power Adjustment

CONTROL RANGE



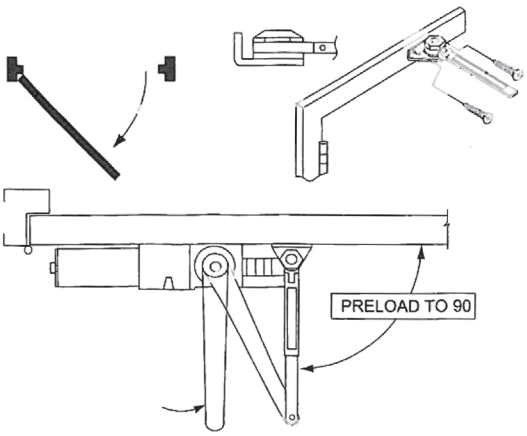
STANDARD INSTALLATION
CLOSER MOUNTED ON DOOR ON PULL SIDE

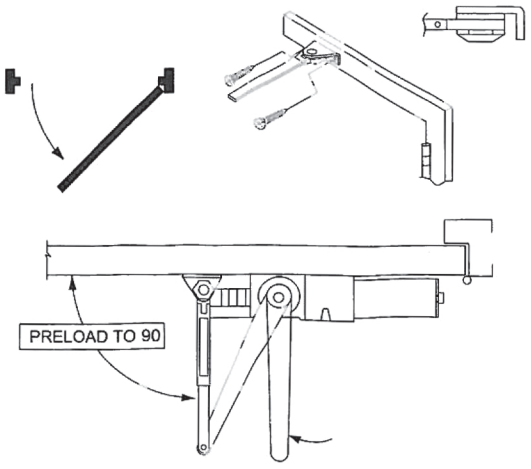
This drawing shown is LEFT HAND DOOR, For RIGHT HAND DOOR should be install in symmetry



INSTALLATIONDIMENSIONS

OPENNING	"A"	"B"
TO 100	7-5/16" (185)	11-13/16" (300)
TO 130	6-1/4" (159)	10-13/16" (275)





1. Adjust spring power to match door width as indicated by chart on page 1.
2. Mount closer on door as dimensions shown. Turn end toward hinge. If pivots are used, locate closer and shoe from CENTERLINE OF PIVOT.
(For offset pivots, pls increase the marked dimensions by 1/8")
3. place main arm on top shaft to closer body, insert arm screw into top of shaft and tighten.
4.Attach shoe to frame as dimensions shown. (if more latching power is required, rotate shoe 180)
5.Open door and insert rod in forearm.
6. With forearm at right angle to door (90), insert forearm set screw and tighten.
(IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

REGUALTION:
A ' normal ' closing time from 90 open position to door stop position is 4-6 secs, evenly devided between main swing speed and latch swing speed. Use socket key (Furnished) to adjust speed. To slow mian speed of door turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest hinge clockwise.

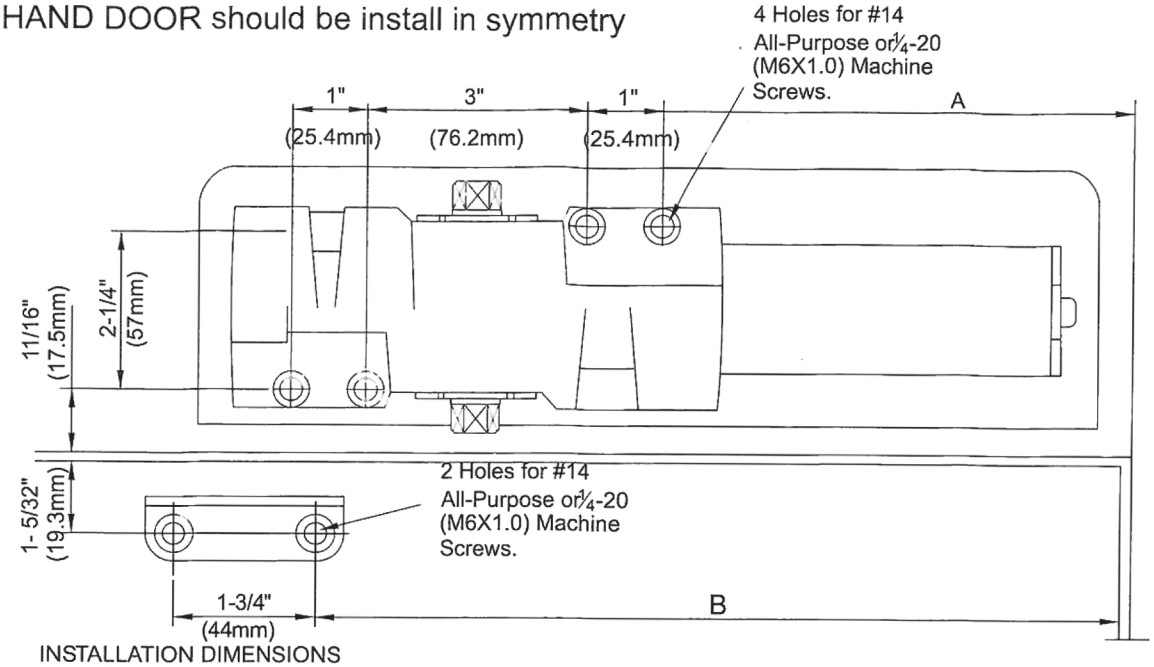
BACKCHECK
To increase back-check force, turn regulating screw nearest hinge clockwise.
DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

COVER
Place insert in proper cutout, then push cover against door. Tighten both cover screws securely.

HOLD OPEN ADJUSTMENT (WHEN HOLD OPEN ARM IS USED)
Loose adjusting nut, open door to designed hold open position and tighten nut.
Do not permit door to swing beyond hold open setting.

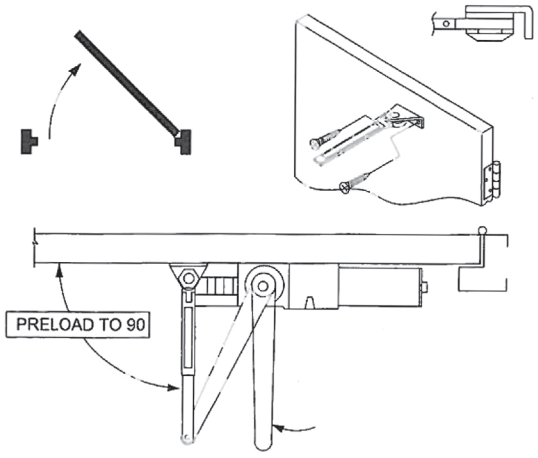
CLOSER MOUNTED TOP JAMB ON PUSH SIDE OF DOOR.

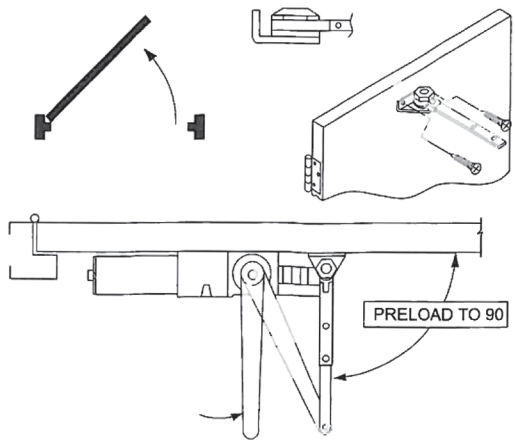
This drawing shown is RIGHT HAND DOOR,
For LEFT HAND DOOR should be install in symmetry



INSTALLATION DIMENSIONS

OPENNING	"A"	"B"
TO 100	7-5/16" (185)	11-13/16" (300)
TO 130	6-1/4" (159)	10-13/16" (275)





1. Adjust spring power to match door width as indicated by chart on page 1.
2. Mount closer on frame as dimensions shown. Turn end toward hinge. If pivots are used, locate closer and shoe from CENTERLINE OF PIVOT.
(For offset pivots, pls increase the marked dimensions by 1/8")
3. place main arm on top shaft to closer body, insert arm screw into top of shaft and tighten.
4.Attach shoe to door as shown. (if more latching power is required, rotate shoe 180)
5.Open door and insert rod in forearm-for reveal 2 5/8" through 4 13/16" use long rod. for reveals 4 7/8" to 8" use FORARM EXTENDER (ROD) -available from dealer.
6. With forearm at right angle to door (90) ,insert forearm set screw and tighten.
(IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

REGUALTION:
A ' normal ' closing time from 90 open position to door stop position is 4-6 secs, evenly devided between main swing speed and latch swing speed. Use socket key (Furnished) to adjust speed. To slow mian speed of door turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest hinge clockwise.

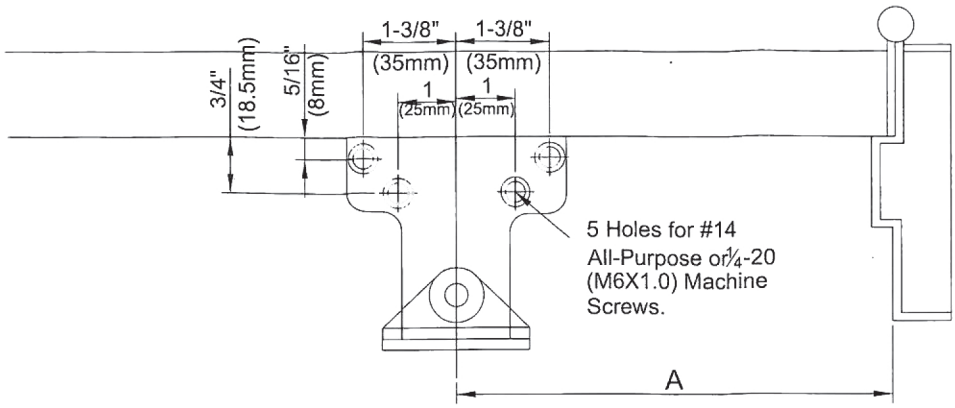
BACKCHECK
To increase back-check force, turn regulating screw nearest hinge clockwise.
DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

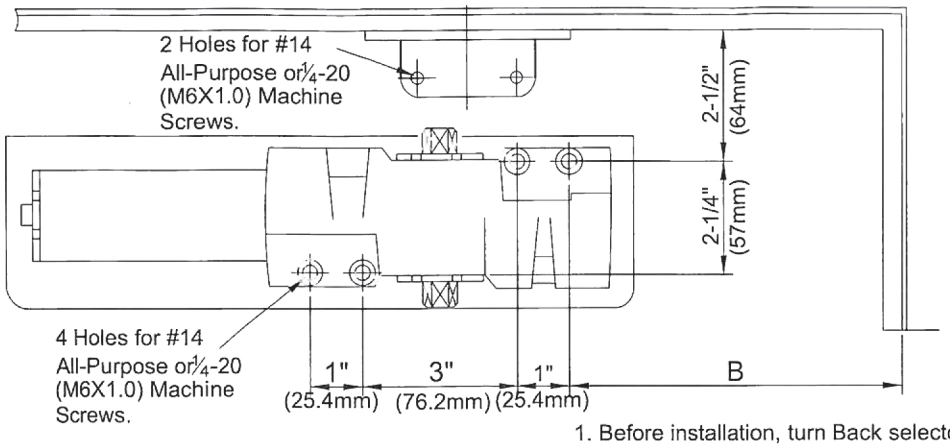
COVER
Place insert in proper cutout, then push cover against door. Tighten both cover screws securely.

HOLD OPEN ADJUSTMENT (WHEN HOLD OPEN ARM IS USED)
Loose adjusting nut, open door to designed hold open position and tighten nut.
Do not permit door to swing beyond hold open setting.

PARALLEL ARM INSTALLATION
CLOSER MOUNTED ON DOOR ON PUSH SIDE

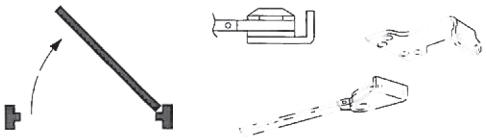
This drawing shown is RIGHT HAND DOOR, For LEFT HAND DOOR should be install in symmet

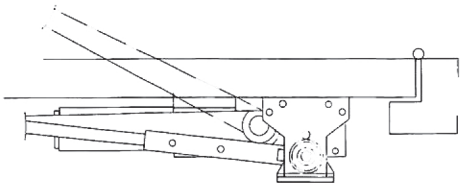


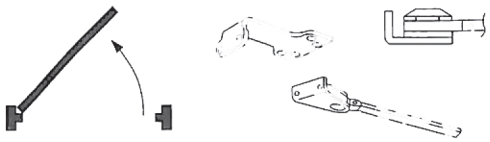


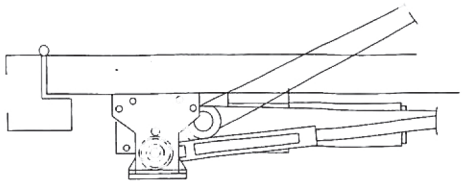
INSATLLATION DIMENSIONS

OPENNING	"A"	"B"
TO 100	9-7/16" (240)	8-1/4" (210)
TO 120	8 5/8" (220)	7 -5/16" (185)
OVER 140	7 7/8" (200)	6- 1/2" (165)









1. Before installation, turn Back selector valve (Found on the opposite side of closer from backcheck screw side) ALL THE WAY IN (CLOCKWISE).
2. Adjust spring power to match door width as indicated by chart on page 1.
3. Mount closer on door as dimensions shown Turn end toward latch. If pivots are used, locate closer and parallel bracket from CENTERLINE OF PIVOT.
4. Place open end wrench on bottom shaft and turn toward hinge jamb about 30degrees and then place main arem on top shaft, insert arm screw into top of shaft and tighten.
5. Attach parallel bracket on frame as dimensions shown.
6. Attach rod and shoe to parallel bracket as shown.
7. Insert rod in forearm, and then insert main arm to closer parallel to door. Then insert forearm set screw and tighten.

(IF HOLD OPEN ARM IS USED, THE NUT IS ON THE TOP FOR RH DOOR AND BOTTOM FOR LH DOOR)

REGUALTION:
A ' normal ' closing time from 90 open position to door stop position is 4-6 secs, evenly devided between main swing speed and latch swing speed. Use socket key (Furnished) to adjust speed. To slow mian speed of door turn regulating screw nearest shaft clockwise. To slow latch speed, turn regulating screw nearest hinge clockwise.

BACKCHECK
To increase back-check force, turn regulating screw nearest hinge clockwise.
DO NOT USE ABRUPT BACKCHECK OR EXPECT DOOR CLOSER TO ACT AS A DOOR STOP.

COVER
Place insert in proper cutout, then push cover against door. Tighten both cover screws securely.

HOLD OPEN ADJUSTMENT (WHEN HOLD OPEN ARM IS USED)
Loose adjusting nut, open door to designed hold open position and tighten nut. Do not permit door to swing beyond hold open setting.

This sheet covers 3 installation options. Select appropriate installation.
All measurements are to be made manually.
Diagram measurements are for reference only (NOT TO SCALE!).

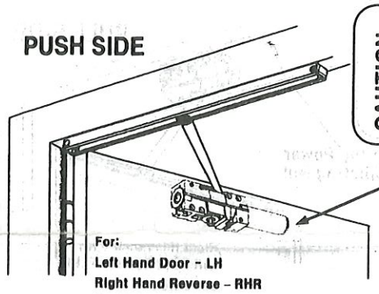
7100TA/TAHO Series
Slide Track Door Closer
Push Side - Stop Mounted Track
Maximum Door Opening 120°
(Conditions Permitting)

Installation Instructions

PUSH SIDE-STOP MOUNTED TRACK

CAUTION AN INCORRECTLY INSTALLED OR IMPROPERLY ADJUSTED DOOR CLOSER CAN CAUSE PROPERTY DAMAGE OR PERSONAL INJURY. THESE INSTALLATION INSTRUCTIONS SHOULD BE FOLLOWED TO AVOID THE POSSIBILITY OF MISAPPLICATION OR MISADJUSTMENT. **CAUTION**

PUSH SIDE

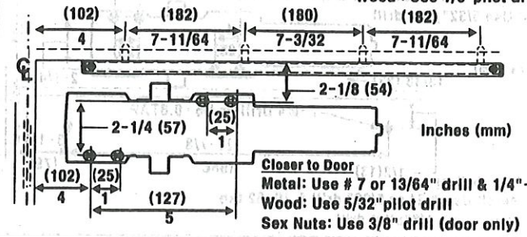


For:
Left Hand Door - LH
Right Hand Reverse - RHR
See Below

★ INSTALLATION INSTRUCTIONS

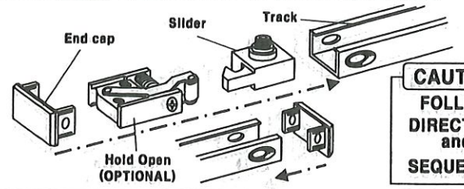
1 Use diagram to locate holes on door and frame:
Drill (4X) on frame stop for track assembly.
Drill (4X) on door for closer body.

Track to Stop
Metal: Use # 21 or 5/32" drill & 10-32 tap
Wood : Use 1/8"pilot drill



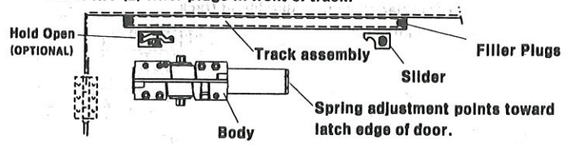
Closer to Door
Metal: Use # 7 or 13/64" drill & 1/4"-20 tap
Wood: Use 5/32"pilot drill
Sex Nuts: Use 3/8" drill (door only)

2 Hold Open: Install Slider, Hold Open & End cap in direction/ sequence shown.
Non-Hold Open: Install Slider & End cap in sequence shown.



CAUTION
FOLLOW DIRECTION and SEQUENCE

3 Install closer body to door using four (4) screws provided.
Install track to frame stop using four (4) screws provided.
Insert two (2) filler plugs in front of track.



Push Side

4 Use wrench to rotate pinion shaft 30° toward hinges, (see Figure 1) & secure main arm to pinion as shown.
Attach Slider to main arm with bolt provided, (see Figure 2).

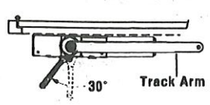


Figure 1

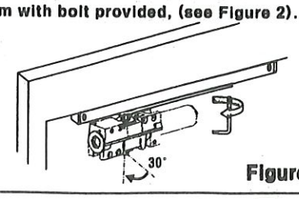
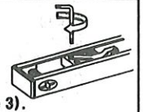
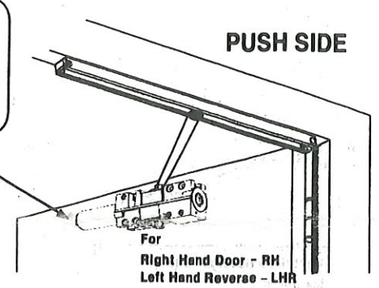


Figure 2

5 OPTIONAL HOLD OPEN
Engage slider into hold open.
Open door to desired hold open angle.
Secure Hold Open with set screw.
Complete all spring and closer adjustments (see page 3).
Secure cover with screws provided.
Separate limiting door stop REQUIRED!



PUSH SIDE

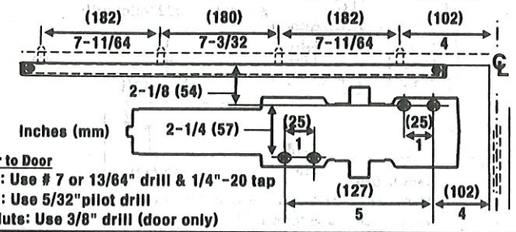


For
Right Hand Door - RH
Left Hand Reverse - LHR
See Below

★ INSTALLATION INSTRUCTIONS

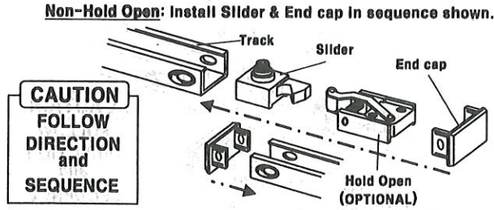
1 Use diagram to locate holes on door and frame:
Drill (4X) on frame stop for track assembly.
Drill (4X) on door for closer body.

Track to Stop
Metal: Use # 21 or 5/32" drill & 10-32 tap
Wood : Use 1/8" pilot drill



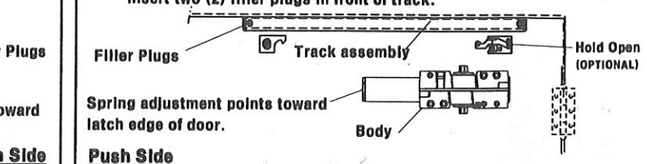
Closer to Door
Metal: Use # 7 or 13/64" drill & 1/4"-20 tap
Wood: Use 5/32"pilot drill
Sex Nuts: Use 3/8" drill (door only)

2 Hold Open: Install Slider, Hold Open & Side cap in direction/ sequence shown.
Non-Hold Open: Install Slider & End cap in sequence shown.



CAUTION
FOLLOW DIRECTION and SEQUENCE

3 Install closer body to door using four (4) screws provided.
Install track to frame stop using four (4) screws provided.
Insert two (2) filler plugs in front of track.



Push Side

4 Use wrench to rotate pinion shaft 30° toward hinges, (see Figure 1) & secure main arm to pinion as shown.
Attach Slider to main arm with bolt provided, (see Figure 2).

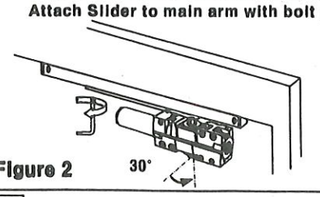


Figure 2

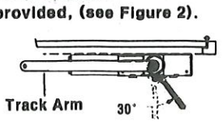
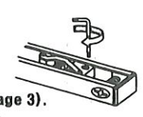


Figure 1

5 OPTIONAL HOLD OPEN
Engage slider into hold open.
Open door to desired hold open angle.
Secure Hold Open with set screw.
Complete all spring and closer adjustments (see page 3).
Secure cover with screws provided.
Separate limiting door stop REQUIRED!



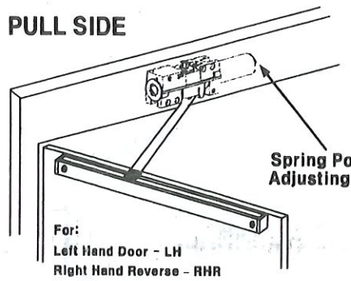
Installation Instructions

PULL SIDE-DOOR MOUNTED TRACK

7100TA/TAHO Series
Slide Track Door Closer
Pull Side - Stop Mounted Track
Maximum Door Opening 180°
(Conditions Permitting)

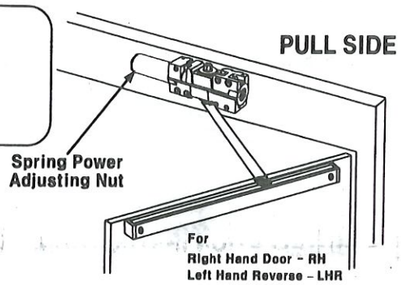
AN INCORRECTLY INSTALLED OR IMPROPERLY ADJUSTED DOOR CLOSER CAN CAUSE PROPERTY DAMAGE OR PERSONAL INJURY. THESE INSTALLATION INSTRUCTIONS SHOULD BE FOLLOWED TO AVOID THE POSSIBILITY OF MISAPPLICATION OR MISADJUSTMENT.

PULL SIDE



For:
Left Hand Door - LH
Right Hand Reverse - RHR
See Below

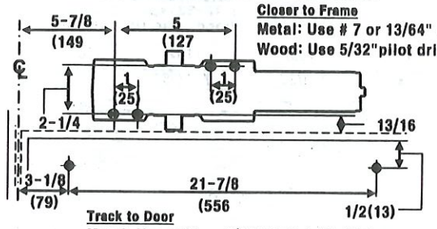
PULL SIDE



For
Right Hand Door - RH
Left Hand Reverse - LHR
See Below

★ INSTALLATION INSTRUCTIONS

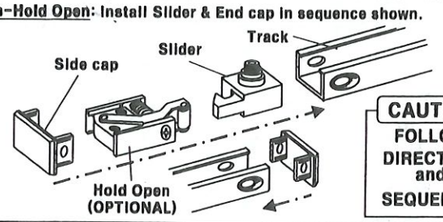
1 Use diagram to locate holes on door and frame:
Drill (4X) on door for closer body.
Drill (2X) on frame for track assembly.



Closer to Frame
Metal: Use # 7 or 13/64" drill & 1/4"-20 tap
Wood: Use 5/32"pilot drill

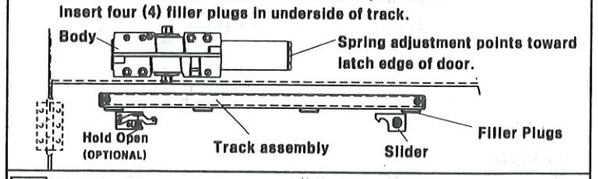
Track to Door
Metal: Use # 21 or 5/32" drill & 10-32 tap
Wood : Use 1/8"pilot drill

2 Hold Open: Install Slider, Hold Open & End cap in direction/ sequence shown.
Non-Hold Open: Install Slider & End cap in sequence shown.

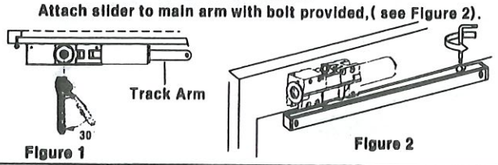


CAUTION
FOLLOW DIRECTION and SEQUENCE

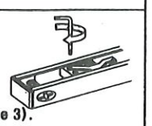
3 Install closer body to frame using four (4) screws provided.
Install track to door using two (2) screws provided.
Insert four (4) filler plugs in underside of track.



4 Use wrench to rotate pinion shaft 30° toward hinges,(see Figure 1) & secure main arm to pinion as shown.
Attach slider to main arm with bolt provided,(see Figure 2).

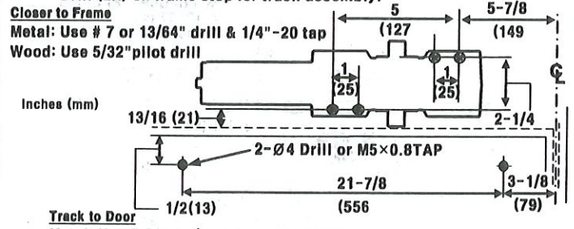


5 OPTIONAL HOLD OPEN
Engage slider into hold open.
Open door to desired hold open angle.
Secure Hold Open with set screw.
Complete all spring and closer adjustments (see page 3).
Secure cover with screws provided.
Separate limiting door stop REQUIRED!



★ INSTALLATION INSTRUCTIONS

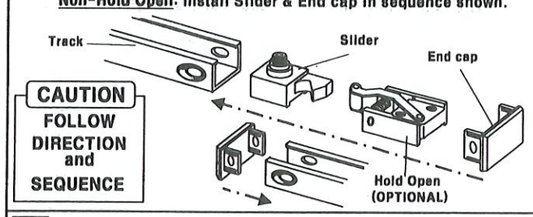
1 Use diagram to locate holes on door and frame:
Drill (4X) on door for closer body.
Drill (2X) on frame stop for track assembly.



Closer to Frame
Metal: Use # 7 or 13/64" drill & 1/4"-20 tap
Wood: Use 5/32"pilot drill

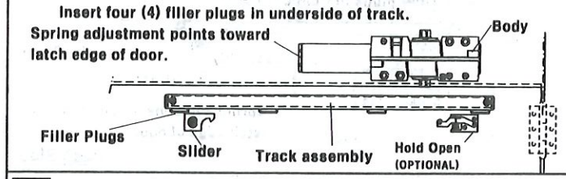
Track to Door
Metal: Use # 21 or 5/32" drill & 10-32 tap
Wood : Use 1/8"pilot drill

2 Hold Open: Install Slider, Hold Open & End cap in direction/ sequence shown.
Non-Hold Open: Install Slider & End cap in sequence shown.

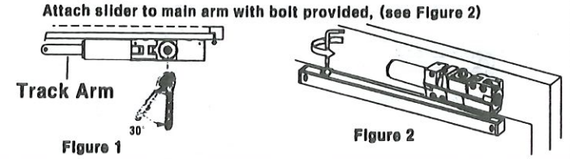


CAUTION
FOLLOW DIRECTION and SEQUENCE

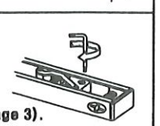
3 Install closer body to frame using four (4) screws provided.
Install track to door using two (2) screws provided.
Insert four (4) filler plugs in underside of track.



4 Use wrench to rotate pinion shaft 30° toward hinges,(see Figure 1) & secure main arm to pinion as shown.
Attach slider to main arm with bolt provided, (see Figure 2)



5 OPTIONAL HOLD OPEN
Engage slider into hold open.
Open door to desired hold open angle.
Secure Hold Open with set screw.
Complete all spring and closer adjustments (see page 3).
Secure cover with screws provided.
Separate limiting door stop REQUIRED!

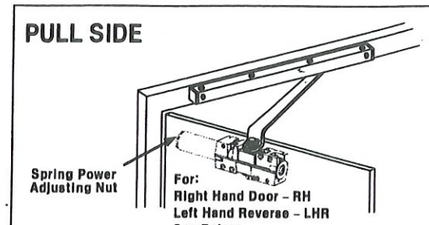


Installation Instructions

PULL SIDE, FRAME MOUNTED TRACK

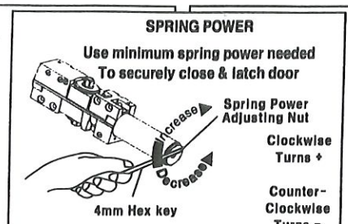
7100TA/TAHO Series
Slide Track Door Closer
Pull Side - Stop Mounted Track
Maximum Door Opening 120°
(Conditions Permitting)

PULL SIDE

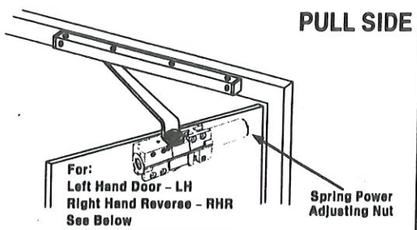


For:
Right Hand Door - RH
Left Hand Reverse - LHR
See Below

SPRING POWER
Use minimum spring power needed To securely close & latch door



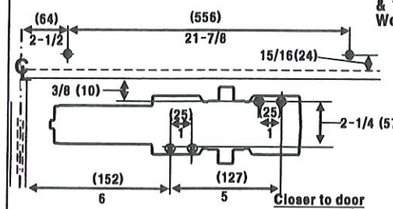
PULL SIDE



For:
Left Hand Door - LH
Right Hand Reverse - RHR
See Below

★ INSTALLATION INSTRUCTIONS

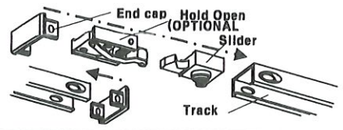
1 Use diagram to locate holes on door and frame:
Drill four (4X) on door for closer body.
Drill (2X) on frame for track assembly.



Track to Frame
Metal: Use # 21 or 5/32" drill & 10-32 tap
Wood : Use 1/8" pilot drill

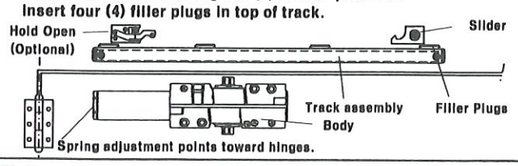
Closer to door
Metal: Use # 7 or 13/64" drill & 1/4"-20 tap
Wood: Use 5/32"pilot drill
Sex Nuts: Use 3/8" drill (door only)

2 Hold Open: Install Slider, Hold Open & End cap in direction/ sequence shown.
Non-Hold Open: Install Slider & End cap in sequence shown.

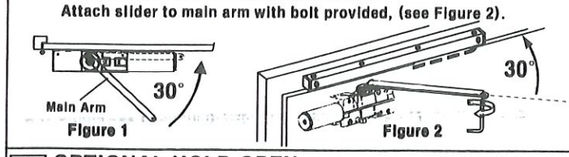


CAUTION
FOLLOW DIRECTION and SEQUENCE

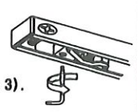
3 Install closer body to door using four (4) screws provided.
Install tack to frame using two (2) screws provided.
Insert four (4) filler plugs in top of track.



4 Use wrench to rotate pinion shaft 30° toward hinges, (see Figure 1) & secure main arm to pinion shaft as shown.
Attach slider to main arm with bolt provided, (see Figure 2).

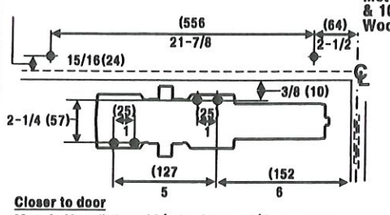


5 OPTIONAL HOLD OPEN
Engage slider into hold open.
Open door to desired hold open angle.
Secure Hold Open with set screw.
Complete all spring and closer adjustments (see page 3).
Secure cover with screws provided.
Separate limiting door stop REQUIRED!



★ INSTALLATION INSTRUCTIONS

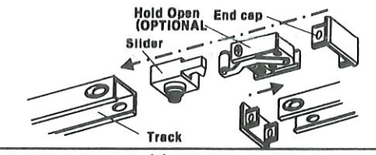
1 Use diagram to locate holes on door and frame:
Drill four (4X) on door for closer body.
Drill (2X) on frame for track assembly.



Track to Frame
Metal: Use # 21 or 5/32" drill & 10-32 tap
Wood : Use 1/8" pilot drill

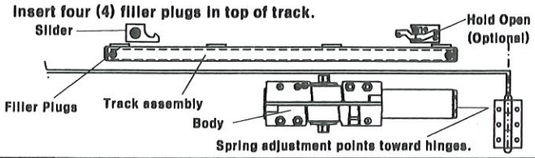
Closer to door
Metal: Use # 7 or 13/64" drill & 1/4"-20 tap
Wood: Use 5/32"pilot drill
Sex Nuts: Use 3/8" drill (door only)

2 Hold Open: Install Slider, Hold Open & End cap in direction/ sequence shown.
Non-Hold Open: Install Slider & End cap in sequence shown.

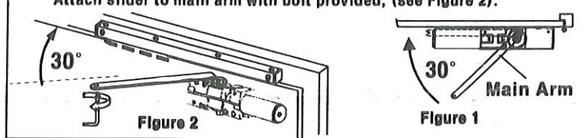


CAUTION
FOLLOW DIRECTION and SEQUENCE

3 Install closer body to door using four (4) screws provided.
Install track to frame using two (2) screws provided.
Insert four (4) filler plugs in top of track.

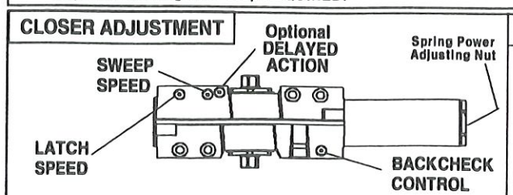


4 Use wrench to rotate pinion shaft 30° toward hinges, (see Figure 1) & secure main arm to pinion shaft as shown.
Attach slider to main arm with bolt provided, (see Figure 2).

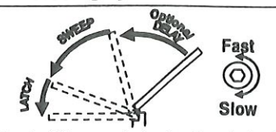


5 OPTIONAL HOLD OPEN
Engage slider into hold open.
Open door to desired hold open angle.
Secure Hold Open with set screw.
Complete all spring and closer adjustments (see page 3).
Secure cover with screws provided.
Separate limiting door stop REQUIRED!

CLOSER ADJUSTMENT

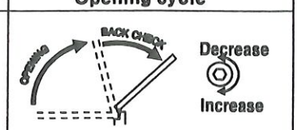


Closing cycle



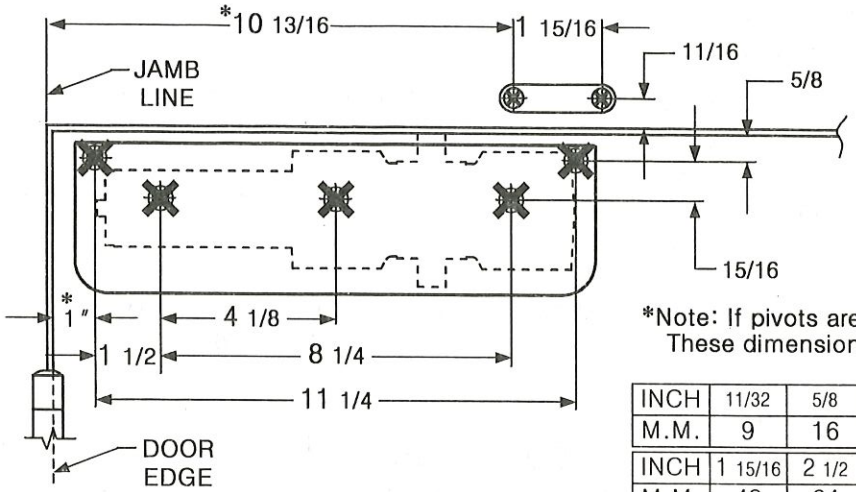
Four (4) to six (6) second closing time is typical.
Do not allow to slam! Injury could occur!

Opening cycle



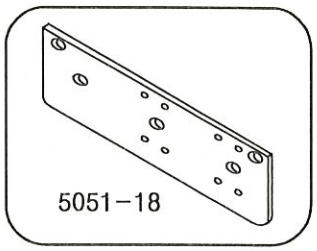
Do not completely close BC valve.

PULL SIDE (DOOR JAMB) DROP PLATE PERMITS 120° MAXIMUM OPENING



RIGHT HAND DOOR SHOWN, LEFT HAND OPPOSITE.

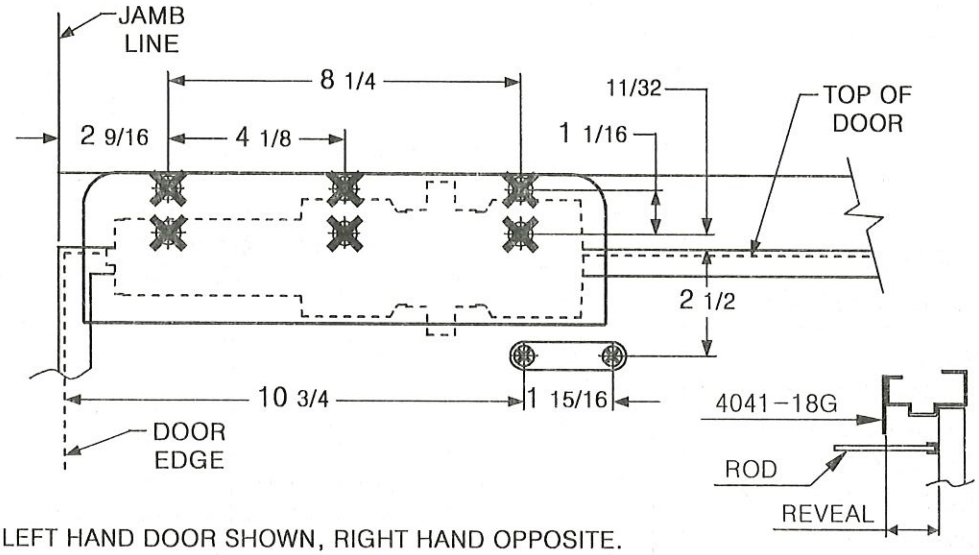
PULL SIDE MOUNT ON: 5051-18 DROP PLATE



*Note: If pivots are used, Increase These dimensions by 1/8"

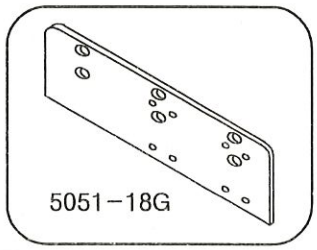
INCH	11/32	5/8	11/16	15/16	1	1 1/16	1 1/2	1 3/4
M.M.	9	16	17	24	25	27	38	44
INCH	1 15/16	2 1/2	2 9/16	4 1/8	8 1/4	10 3/4	10 13/16	11 1/4
M.M.	49	64	65	105	210	273	275	286

PUSH SIDE (TOP JAMB) DROP PLATE PERMITS 120° MAXIMUM OPENING



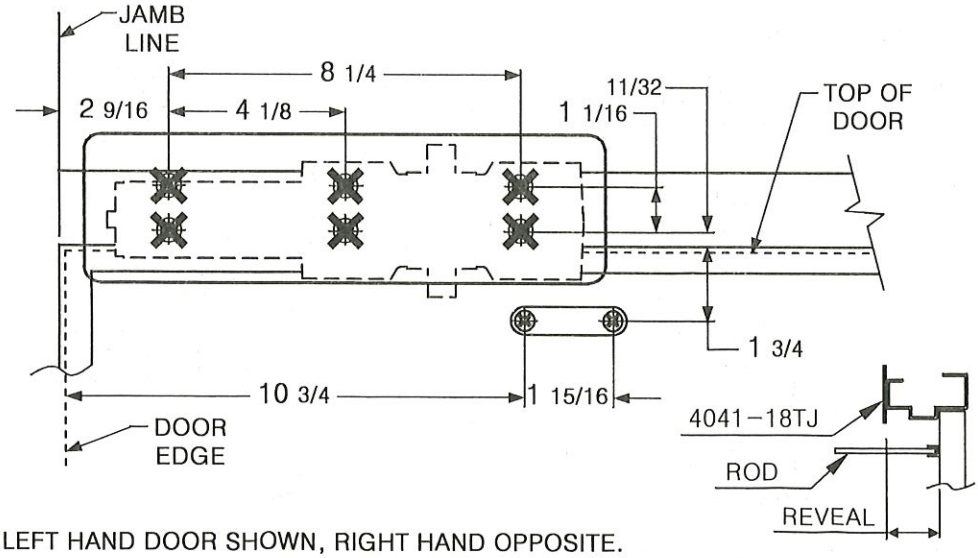
LEFT HAND DOOR SHOWN, RIGHT HAND OPPOSITE.

PUSH SIDE MOUNT ON: 5051-18G DROP PLATE



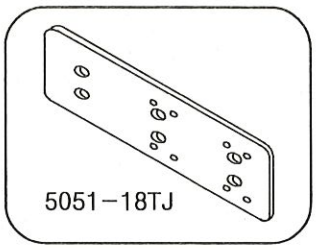
MAXIMUM REVEAL OF 2 9/16,
FOR REVEALS 2 5/8 – 4 13/16
SPECIFY LONG ROD
FOR REVEALS 8"
SPECIFY EXTRA LONG ROD

PUSH SIDE (TOP JAMB) DROP PLATE PERMITS 120° MAXIMUM OPENING



LEFT HAND DOOR SHOWN, RIGHT HAND OPPOSITE.

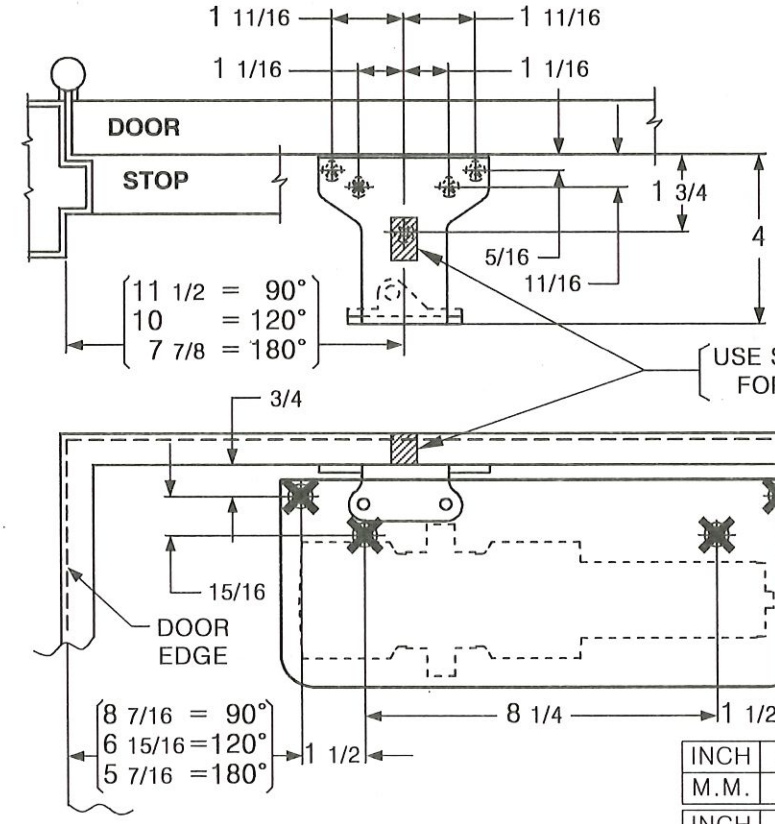
PUSH SIDE MOUNT ON: 5051-18TJ DROP PLATE



MAXIMUM REVEAL OF 2 9/16,
FOR REVEALS 2 5/8 – 4 13/16
SPECIFY LONG ROD
FOR REVEALS 8"
SPECIFY EXTRA LONG ROD

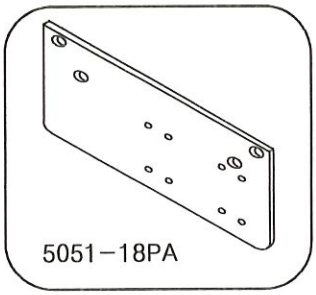
PUSH SIDE (DOOR MOUNT) DROP PLATE PERMITS 180° MAXIMUM OPENING

PUSH SIDE MOUNT ON: 5051-18PA DROP PLATE



IMPORTANT

Before installing, turn back check selector valve clockwise all the way in (valve can be found on opposite side of closer from back check screw side).



INCH	5/16	11/16	3/4	15/16	1 1/16	1 1/2	1 11/16	1 3/4
M.M.	8	17	19	24	27	38	43	44
INCH	4	5 7/16	6 15/16	7 7/8	8 1/4	8 7/16	10	11 1/2
M.M.	102	138	176	200	210	214	254	292

LEFT HAND DOOR SHOWN, RIGHT HAND OPPOSITE.

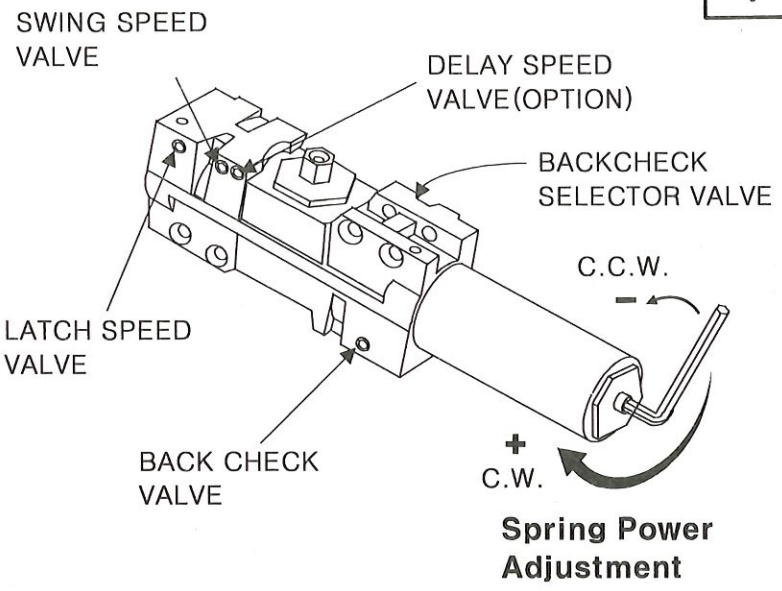
↻ C.W. = CLOCKWISE(+)
↺ C.C.W = COUNTER CLOCKWISE(-)

PLEASE NOTE

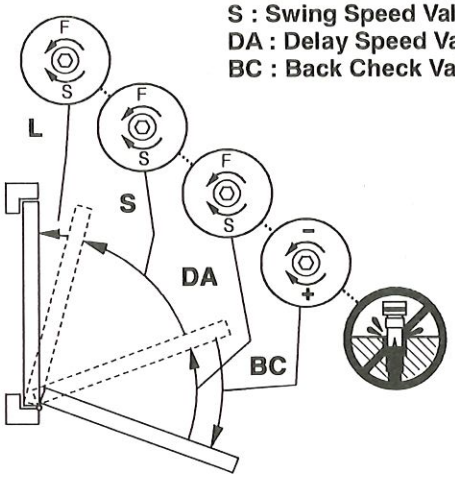
TURNS REQUIRED ARE APPROXIMATE BECAUSE OF VARIOUS DOOR CONDITIONS AND LOCATIONS. YOU MAY HAVE TO FURTHER ADJUST SPRING TENSION TO SUIT YOUR REQUIREMENTS.

GRÁFICO DEL AJUSTE DE FUERZA

TAMAÑO DEL CIERRE AUTOMÁTICO DE PUERTA	VUELTAS COMPLETAS DEL TORNILLO DE REGLAJE DE LA ENERGÍA		ANCHO CORRESPONDIENTE DE HOJA DE PUERTA		PESO DE PUERTA CORRESPONDIENTE
	QDC-100 QDC-100DA	QDC-100BF QDC-100BF.DA	INTERIOR	EXTEIOR (Pivotar hacia afuera)	
SIN BARRERAS	—	– 14	5 lb-f	—	—
1	– 7	– 12	32˝ (0.81m)	28˝ (0.71m)	33~66LBS (15~30Kg)
2	– 4	– 8	36˝ (0.91m)	32˝ (1.81m)	66~99LBS (30~45Kg)
3	0 (PREAJUSTADO)	0 (PREAJUSTADO)	42˝ (1.07m)	36˝ (0.91m)	99~143LBS (45~65Kg)
4	+ 5	+ 4	48˝ (1.22m)	42˝ (1.07m)	143~187LBS (65~85Kg)
5	+ 10	—	54˝ (1.37m)	48˝ (1.22m)	187~264LBS (85~120Kg)
6	+ 15	—	56˝ (1.47m)	54˝ (1.37m)	264~330LBS (120~160Kg)

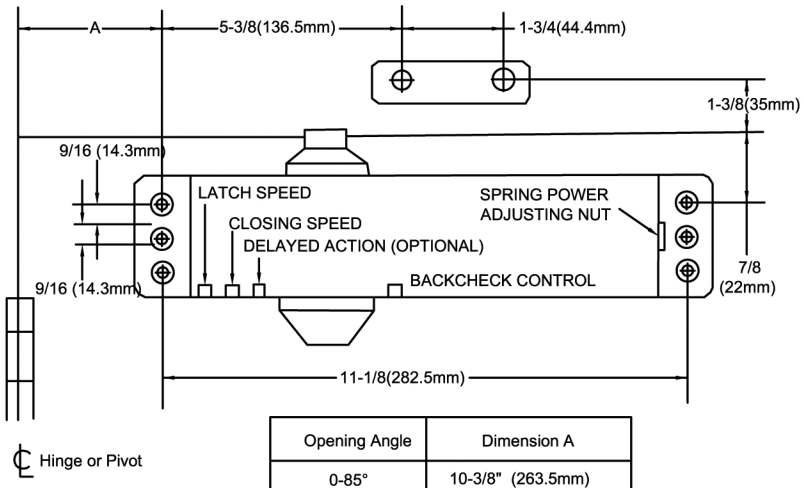


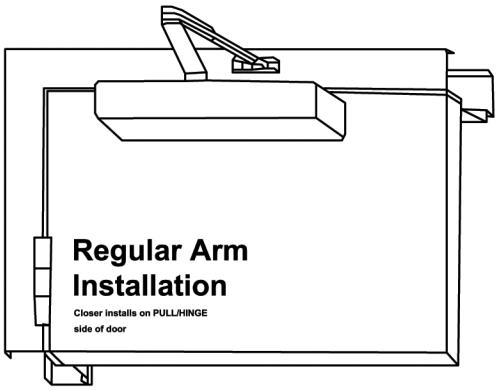
Spring Power Adjustment



Surface mounted
Adjustable & preset "Back-check"
QDC 70 series
No Hold-open/Hold-open
Optional BF/DA

Installation Instructions for REGULAR ARM (PULL SIDE) Mounting





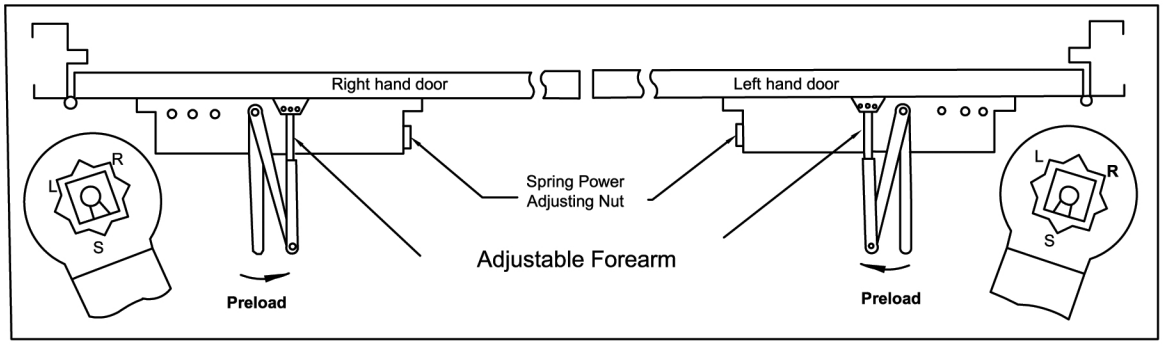
Opening Angle	Dimension A
0-85°	10-3/8" (263.5mm)
0-100°	9-1/16" (230mm)
0-110°	8-1/4" (210mm)
0-120°	7-3/32" (180mm)
120°-180°	3-15/16" (100mm)

- Right hand door shown
- Left hand door opposite
- Dimensions are in inches
- Do not scale drawing

INSTALLATION INSTRUCTIONS

1. Select degree of opening from table and use template dimensions shown in above, mark six(6) holes on door for door closer and two (2) holes on frame for arm shoe.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 1/4-20 machine screws.
3. Install adjustable forearm/arm shoe assembly to frame using screws provided.
4. Install main arm to top pinion shaft using screw provided.
5. Mount closer on door using screws provided. SPRING POWER ADJUSTING NUT MUST BE POSITIONED AWAY FROM HINGE EDGE.
6. Adjust length of adjustable forearm so that adjustable forearm is perpendicular to frame when assembled
7. Snap pinion cap over shaft at bottom of closer. (When using full cover, pinion cap is not necessary)
8. Adjust closing speed, back check control and spring power of door, following instructions as shown page 4.

Top View Typical Installation



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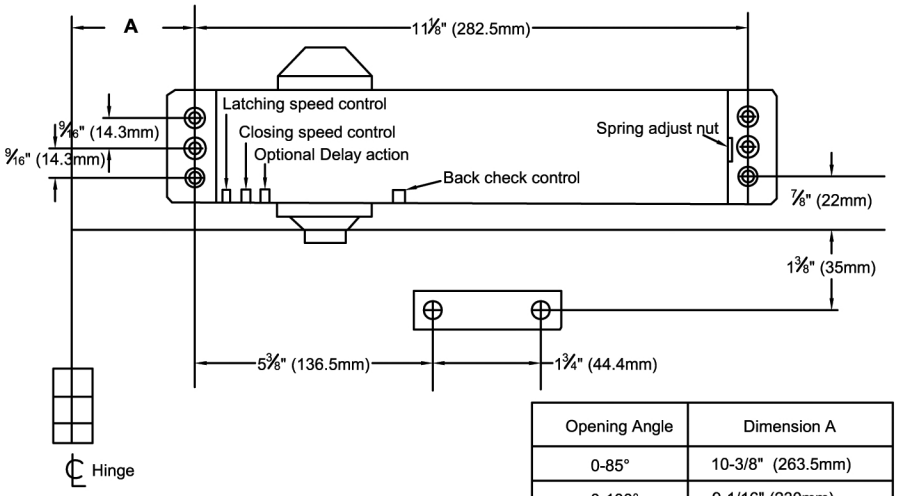
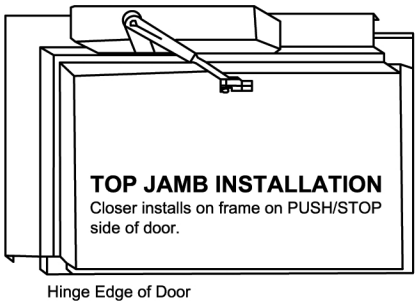
Optional BF/DA

Installation Instruction for TOP JAMB (PUSH SIDE) Mounting





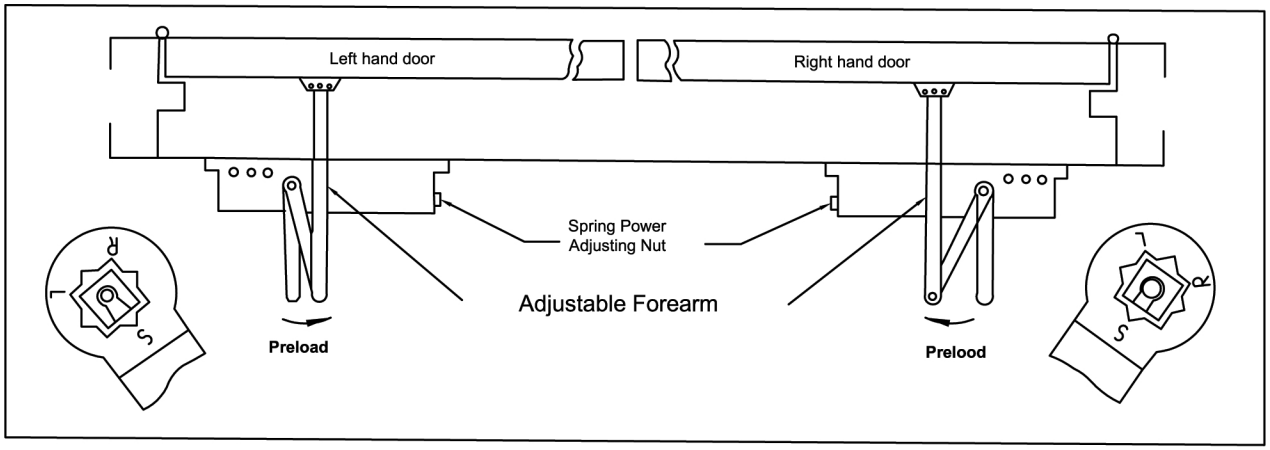
Opening Angle	Dimension A
0-85°	10-3/8" (263.5mm)
0-100°	9-1/16" (230mm)
0-110°	8-1/4" (210mm)
0-120°	7-3/32" (180mm)
120°-180°	3-15/16" (100mm)

- Left hand door shown
- Right hand door opposite
- Dimensions are in inches
- Do not scale drawing

INSTALLATION INSTRUCTIONS

1. Select degree of opening from table and use template dimensions shown in above, mark six (6) holes on door for door closer and two (2) holes on frame for arm shoe.
2. Drill pilot holes in door and frame for #14 all-purpose screws or drill and tap for 1/4-20 machine screws.
3. Install adjustable forearm/arm shoe assembly to frame using screws provided.
4. Install main arm to top pinion shaft using screw provided.
5. Mount closer body on frame using screw provided,SPRING POWER ADJUSTING NUT MUST BE POSITIONED AWAY FROM HINGE EDGE.
6. Adjust length of adjustable forearm so that adjustable forearm is perpendicular to door when assembled to preloaded main arm (illustration below). Secure forearm to main arm with screw provided.
7. Snap pinion cap over shaft on top of closer. (When using full cover, pinion cap is not necessary)
8. Adjust closing speed, backcheck control and spring power of door, following instructions as shown page 4.

Top View Typical Installation



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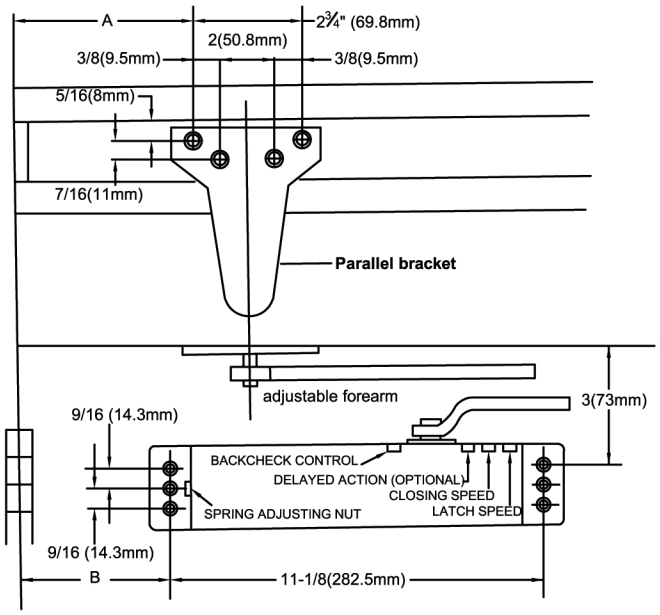
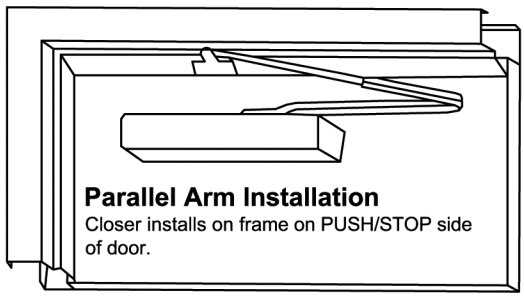
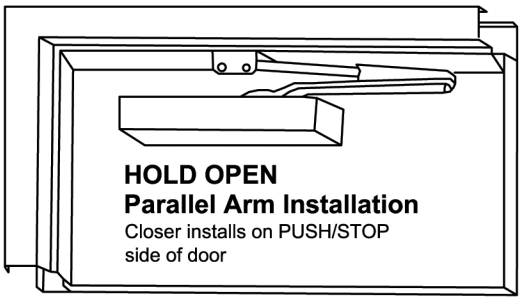
Optional BF/DA

Installation Instructions for PARALLEL ARM(PUSH SIDE) Mounting







OPENING	DIM.A	DIM.B
TO 120°	9-1/8(241mm)	6-1/8(156mm)
120°-180°	5-7/8(149.2mm)	2-9/16(65mm)

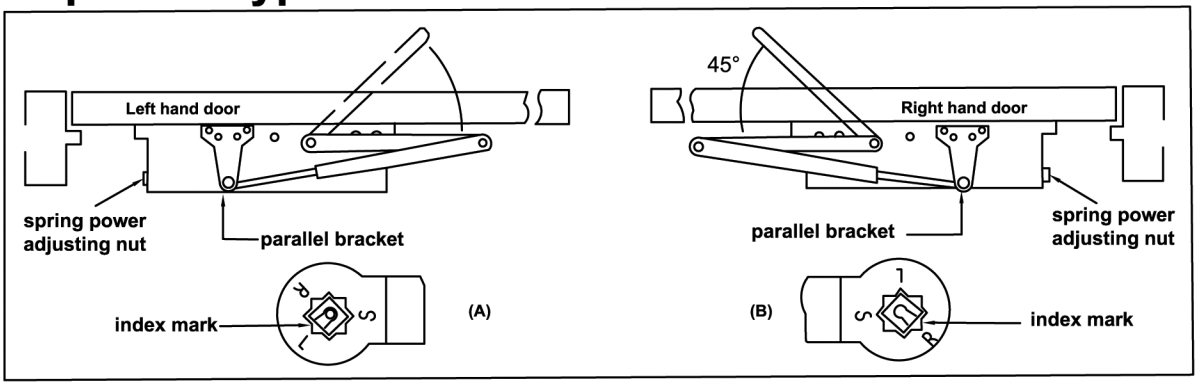
- Left hand door shown
- Right hand door opposite
- Dimensions are in inches
- Do not scale drawing

INSTALLATION INSTRUCTIONS

1. Select degree of opening from table and use template dimensions shown in above,mark six (6) holes on door for door closer and four (4) holes underside of frame for bracket.
2. Drill pilot holes in door and frame for #14 all-purpose screws of drill and tap for 1/4-20 machine screws.
3. Mount closer on door using screws provided.SPRING POWER ADJUSTING NUT MUST BE POSITIONED TOWARD HINGE EDGE.
4. Install parallel Arm Bracket to frame using screws provided.
5. Using a wrench on the square shaft at bottom of shaft on top of closer,rotate shaft approximately 45° toward hinge edge of door. Hold and place main arm of shaft on top of closer at proper index mark as illustrated.

   FOR LEFT HAND DOOR "L" (illustration"A").FOR RIGHT HAND DOOR "R" (illustration'B").Tighten arm screw with lock washer securely.
6. Remove arm shoe from the forearm and discard (arm shoe is not used for parallel installation) and tighten screw securely.
7. Adjust length of adjustable forearm so that adjustable forearm is parallel to frame.
8. Snap pinion cap over shaft at bottom of closer (when using full cover,pinion cap is not necessary)
9. Adjust closing speed, backcheck control and spring power of door, following instruction as page 4.

Top View Typical Installation



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Optional BF/DA

CLOSER ADJUSTMENT

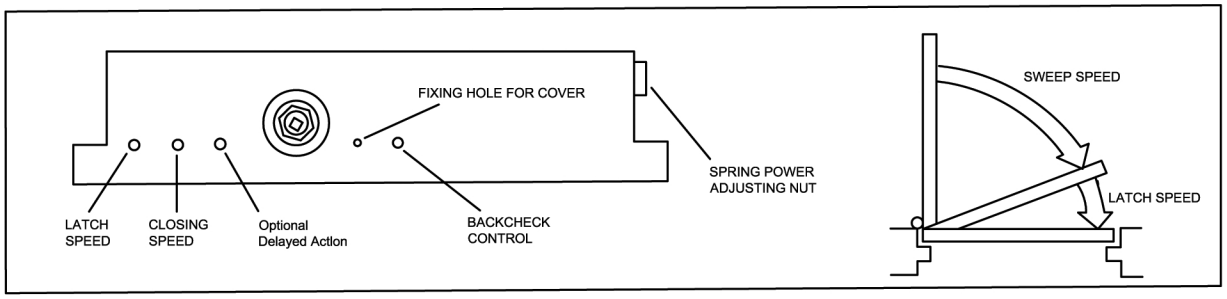
CLOSING CYCLE

NOTE:Closing arcs ("CLOSE"and"LATCH") are controlled by two(2) speed adjusting valves adjust the CLOSING speed first.then adjust the LATCHING speed.

1."CLOSING"speed adjustment is accomplished by full rotations of the speed adjusting valve.
-Turn the speed adjusting valve CLOCKWISE for a SLOWER CLOSE arc closing speed.
-Turn the speed adjusting valve COUNTER-CLOCKWISE for a FASTER CLOSE arc closing speed .

2."LATCH"speed adjustment is accomplished by full rotations of the speed adjusting valve.
-Turn the speed adjusting screw CLOCKWISE for a SLOWER Latch arc closing speed .
-Turn the speed adjusting screw COUNTER-CLOCKWISE for a FASTER Latch arc closing speed.

CAUTION!! Do not turn speed adjusting more valve than two (2) full turns counter-clockwise from its factory set position,as two speed adjusting valves could become dislodged from the door closer body, resulting in the loss of internal fluid and failure of the device.



BACK CHECK CONTROL

To increase back check intensity,turn back check control valve clockwise.

To decrease back check intensity, turn back check control valve anticlockwise.

SPRING POWER CONTROL

To increase opening force and closing force. turn the spring adjusting nut clockwise.

To decrease opening force and closing force,turn the spring adjusting nut anticlockwise.

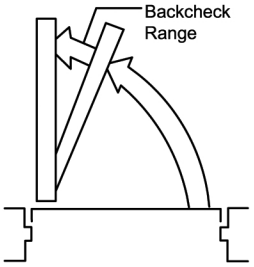
FULLY ADJUSTABLE SPRING

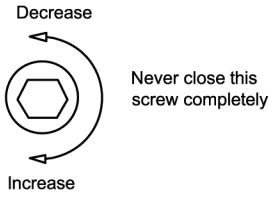
QDC 70 SERIES CLOSERS ARE SHIPPED AS SIZE 3. ROTATE SPRING ADJUSTMENT NUT COUNTER CLOCKWISE 3 TURNS TO REDUCE TO SIZE 2. ROTATE SPRING ADJUSTMENT NUT CLOCKWISE TO INCREASE SPRING POWER. MAXIMUM 10 TURNS TO ATTAIN SIZE 6.

CLOSER SIZE		CLOCKWISE TURNS OF ADJUSTING NUT
BC/DA	BF	
1	1/2	-3*
2	1	0
3	2	3
4	3	6
5	4	9

*-3 = 3 TURNS COUNTERCLOCKWISE

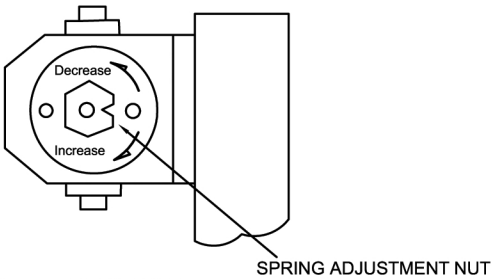
OPENING CYCLE





Backcheck intensity "BC"

ADJUSTABLE SPRING MODELS



NOTE: MAXIMUM ADJUSTMENT IS APPROXIMATELY 10 TURNS. DO NOT FORCIBLY EXTEND ADJUSTMENT BEYOND LIMITS.

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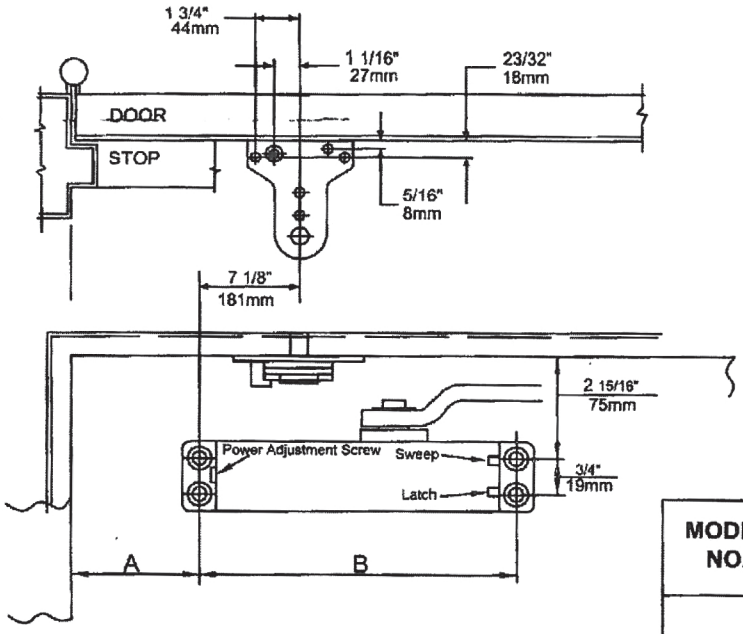
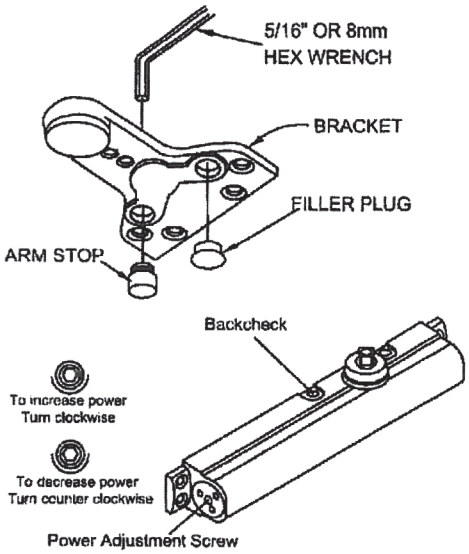
QDC 85 DOOR CLOSER

CUSH ARM INSTALLATION & INSTRUCTION SHEET

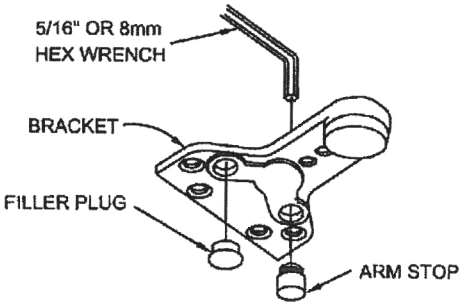
For Heavy Duty Arm W /Dead Stop , CUSH Hold Open Arm W /Dead Stop

PARALLEL ARM(PUSH SIDE)Mounting
LEFT HAND DOOR SHOWN

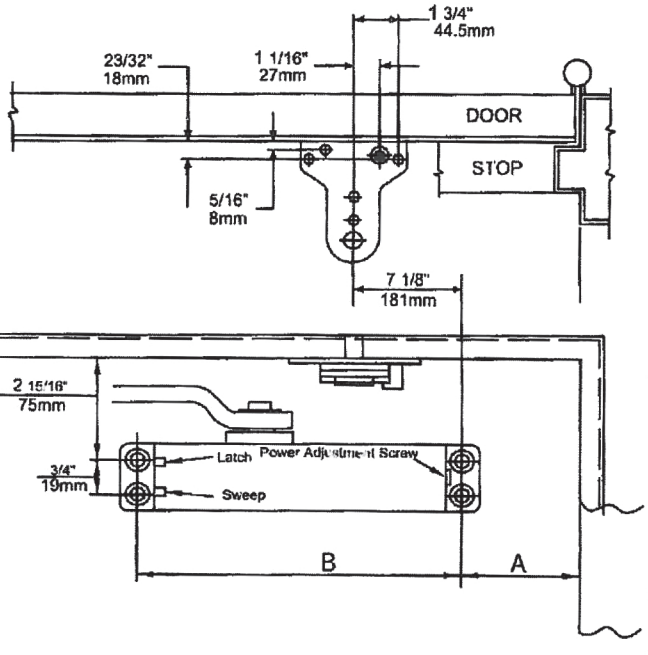




MODEL NO.	OPENING	DIMENSION	
		A	B
TDC 85	To 100°	3 1/2" (90mm)	12" (304.8mm)
	101° -150°	1 1/4" (32 mm)	12" (304.8mm)

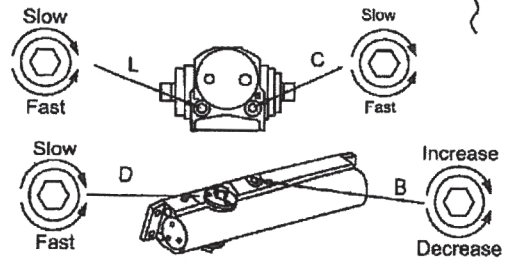


PARALLEL ARM(PUSH SIDE)Mounting
RIGHT HAND DOOR SHOWN



DOOR CLOSER ADJUSTMENT

L:LATCH SPEED VALVE
C:CLOSING SPEED VALVE
D:DELAY SPEED VALVE
B:BACKCHECK VALVE



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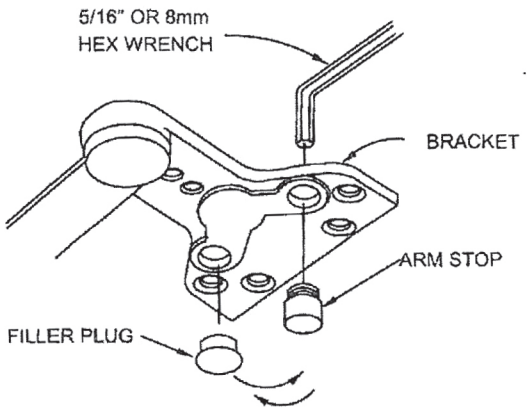


INTERCHANGEABLE FOR DOOR HANDING

THE HAND MUST BE DETERMINED & CHANGED IF NECESSARY BEFORE THE BRACKET IS MOUNTED TO THE DOOR STOP(TOP JAMB).
Refer to page 1.

FOR LEFT HAND DOORS

All brackets are shipped assembled for LEFT HAND DOOR.Insert 5/1 "(8mm) hex wrench into ARM STOP and Turn counter clockwise to seat as tightly as possible.
Push filler plug in firmly.

FOR RIGHT HAND DOORS

Pull filler plug out of bracket

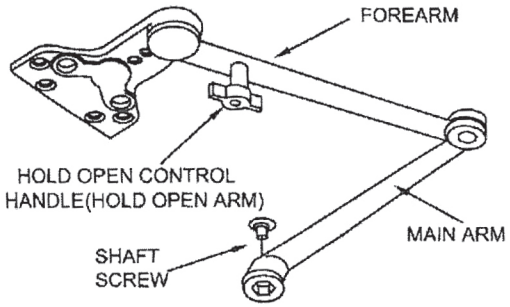
Use a 5/16"(8mm) hex wrench, Turn ARM STOP clockwise to remove from bracket insert hole . Turn hex wrench counter clockwise to seat ARM STOP as tightly as possible.
Push filler plug into other hole.

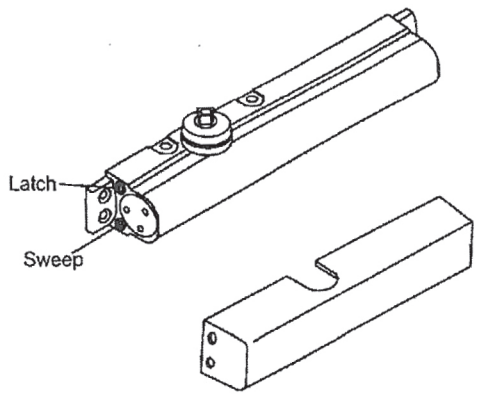
INSTALLATION SEQUENCE

LEFT HAND DOOR SHOWN- RIGHT HAND DOOR OPPOSITE

⚠ CAUTION

IMPROPER INSTALLATION OR REGULATION MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.FOLLOW ALL INSTRUCTIONS CAREFULLY.





INSTALLATION INSTRUCTIONS

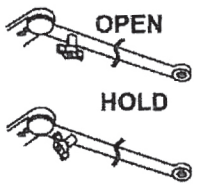
1.Using template dimensions shown above.Mark FOUR (4) HOLES ON DOOR for door closer and THREE (4) HOLES ON FRAME for parallel bracket.
2.Mount closer on door using screws provided. SPEED ADJUSTING VALVE MUST BE POSITIONED AWAY FROM HINGE EDGE
3. Adjusting spring power to match door width or weight as indicated by Power Adjustment Chart shown on 316 INSTALLATION INSTRUCTION SHEET.
4.Mount closer on door to dimensions shown on page 1

IMPORTANT REMARKS

Do NOT allow door to slam into frame.
A normal standard closing time from 90° open position is 5 to 7 seconds evenly divided between main closing (Sweep) speed and latching speed. Adjust the SWEEP speed first, then adjust the LATCHING speed.
For slower closing speed of door, turn adjusting valve of "S' clockwise and counter clockwise for faster speed.
Latching speed control of door is the same mannger as Sweep speed adjustment.

ADJUSTABLE BACKCHECK FUNCTION

This function is essential to proper operation of HEAVY DUTYARM W/ DEAD STOP. Use enough to prevent arm from striking stop with impact. See page 1.



ATTACH COVER (if packed)

Install cover securely using screws provided.

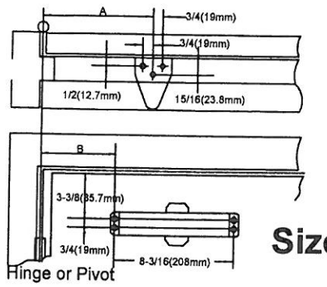
HOW TO HOLD -OPEN

A quarter turn on the HOLD-OPEN CONTROL HANDLE engages or disengages hold -open.

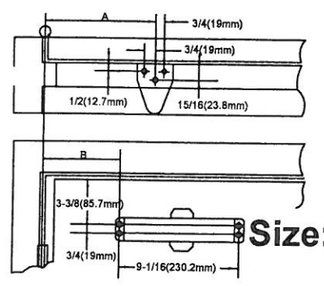
Installation Instructions for PARALLEL ARM (PUSH SIDE) Mounting

THIS TEMPLATE COVERS REGULAR ARM INSTALLATIONS TO 180° OPENING.

Parallel bracket accessory required



Size: 2&3



Size: 4&5

Left hand door shown
Right hand door shown
Dimensions are in inches
Do not scale drawing

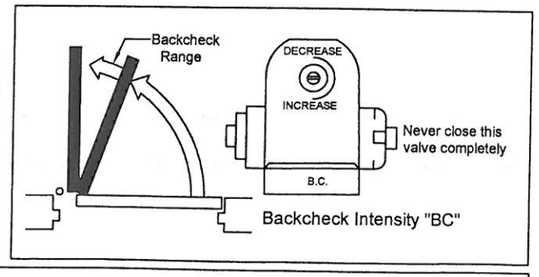
OPENING	DIM.A TDC52P,53P	DIM.B TDC52P,53P	DIM.A TDC54P,55P	DIM.B TDC54P,55P
To120°	10-3/4(273mm)	7-13/16(198.4mm)	10-3/4(273mm)	15-16(176.2mm)
120°-180°	8-3/4(222.2mm)	5-5/8(142.9mm)	8-3/4(222.2mm)	4-3/4(120.6mm)

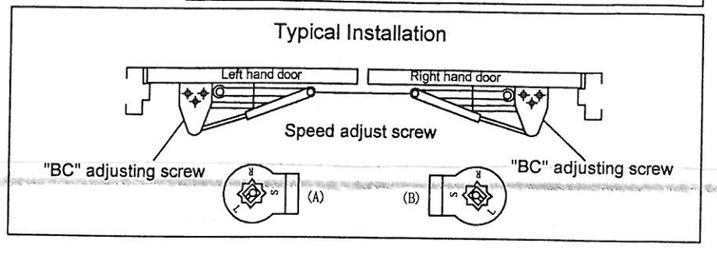
INSTALLATION INSTRUCTONS

1.Select door opening and use dimensions shown above, mark four (4) holes on frame door and two (2) holes on door of arm shoe.
2.Drill pilot holes in door and frame for # 14 all-purpose screws or drill or tap for 1/4-20 machine screw.
3.Intall forearm/arm shoe assembly to door using screws provided.
4.Mount closer on frame using screw provided. SPEED ADJUSTING VALVE MUST BE POSITIONED TOWARD HINGE EDGE.
5.Install main arm to top pinion shaft, perpendicular to frame when assmebled to preload main arm (illustration below). Secure forearm to main arm with screw/washer assmebly provided.
6.Adjut length of forearm so that forearm is perpendicular to frame when assmebled to preload main arm (illustration below). Secure forearm to main arm with screw /washer assembly provided.
7.Snap pinion cap over shaft at bottom of closer.
8.Adjust closing speed of door. following instructions as shown page 1.

OPEN CYCLE

NOTED:These instructions apply to closers equipped with backcheck.
To increase backcheck intensity. turn valve marked "BC"clockwise.
To decrease backcheck intensity, turn valve marked BC counter-clockwise

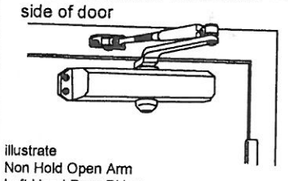




Surface Mounted
Model : TDC 50 Series
Size:2,3,4,5
Optional Backcheck

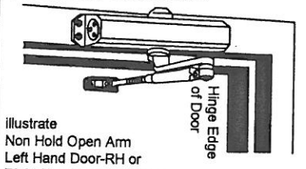
INSTALLATION INSTRUCTIONS

Regular Arm installation
Closer installs on PULL/HINGE side of door



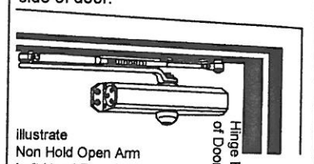
illustrate
Non Hold Open Arm
Left Hand Door-RH or
Right Hand Reverse -RHR
See Page 2

Top Jamb Installation
Closer Installs on Frame on PUSH/STOP side of door.



illustrate
Non Hold Open Arm
Left Hand Door-RH or
Right Hand Reverse -RHR
See Page 3

Parallel Arm Installation
Closer installs on PUSH/STOP side of door.



illustrate
Non Hold Open Arm
Left Hand Door-RH or
Right Hand Reverse -RHR
See Page 4

CLOSER ADJUSTMENT

CLOSING CYCLE
NOTE:CLOSING arcs(CLOSE and LATCH) are controlled two (2)separate speed adjusting valves adjust the CLOSING speed first, then adjust the LATCHING speed.

1.CLOSING speed adjustment is acomplished by full rotations of the speed adjusting valve.
-Turn the speed adjustment valve CLOCKWISE for a SLOWER CLOSE arc closing speed.
-Turn the speed adjustment valve COUNTER-CLOCKWISE for a FASTER CLOSER arc closing speed.
2.LATCH speed adjustments is accomplished by full rotations of the speed adjusting valve.
-Turn the speed adjustment screw CLOCKWISE for a SLOWER LATCHE arc closing speed.
-Turn the speed adjustment screw COUNTER-CLOCKWISE for a FASTER LATCH arc closing speed.

CAUTIONS!
Do not turn speed adjusting valve more than two (2) full turns counter-clockwise from its factory set position,as two speed adjusting valves could become dislodged from the door closer body. resulting in the loss of internal fluid and failure of the device.

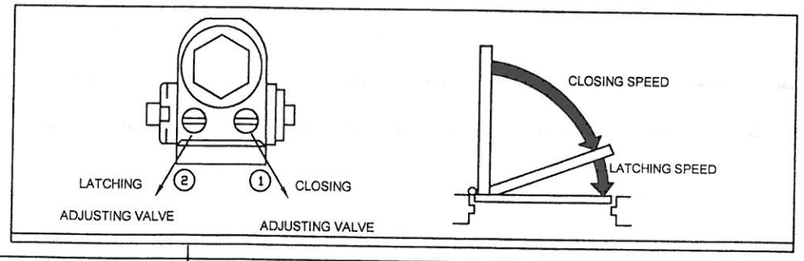
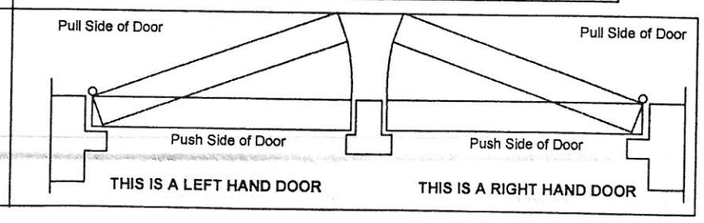


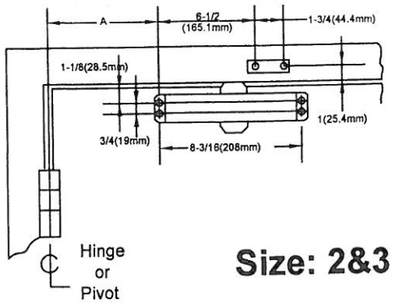
CHART
TO DETERMINE
HAND OF DOOR



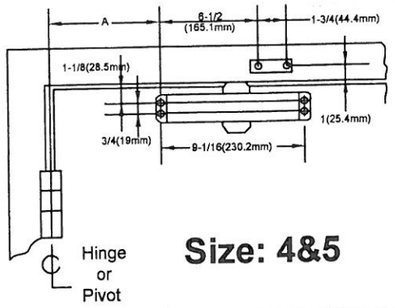
TDC 50 SERIES (With Back Check)

Installation Instructions for REGULAR ARM (PULL SIDE) Mounting

THIS TEMPLATE COVERS REGULAR ARM INSTALLATIONS TO 180° OPENING.



Size: 2&3



Size: 4&5

Right hand door shown
Left hand door shown
Dimensions are in inches
Do not scale drawing

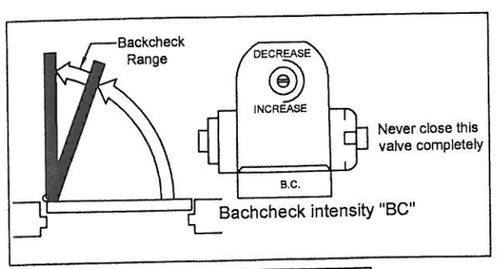
OPENING	DIM.A TDC52, 53, 53BC	DIM.A TDC54, 55, 54BC, 55BC
To120°	6-1/2(165.1mm)	6-1/2(165.1mm)
120° -180°	4(101.6mm)	4(101.6mm)

OPEN CYCLE

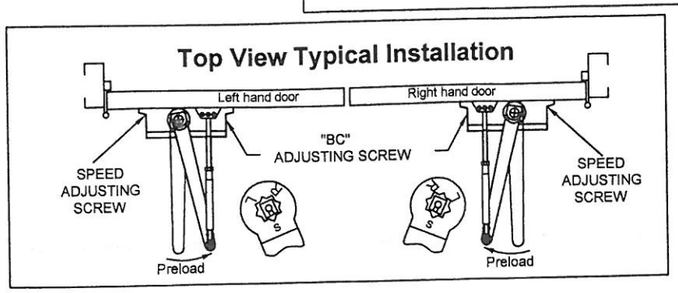
NOTED:These instructions apply to closers equipped with backcheck.
To increase backcheck intensity. turn valve marked "BC"clockwise.
To decrease backcheck intensity, turn valve marked BC counter-clockwise

INSTALLATION INSTRUCTONS

1.Select door opening and use dimensions shown above, mark four (4) holes on frame door and two (2) holes on door of arm shoe.
2.Drill pilot holes in door and frame for # 14 all-purpose screws or drill or tap for 1/4-20 machine screw.
3.Intall forearm/arm shoe assembly to door using screws provided.
4.Mount closer on frame using screw provided. SPEED ADJUSTING VALVE MUST BE POSITIONED TOWARD HINGE EDGE.
5.Install main arm to top pinion shaft, perpendicular to frame when assmebled to preload main arm (illustration below). Secure forearm to main arm with screw/washer assmebly provided.
6.Adjut length of forearm so that forearm is perpendicular to frame when assmebled to preload main arm (illustration below). Secure forearm to main arm with screw /washer assembly provided.
7.Snap pinion cap over shaft at bottom of closer.
8.Adjust closing speed of door. following instructions as shown page 1.



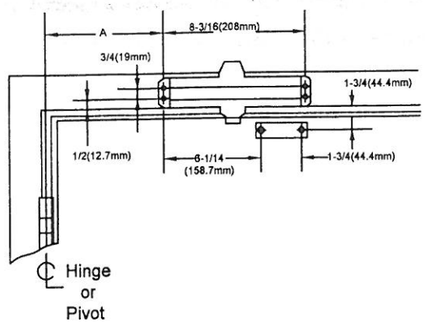
Top View Typical Installation

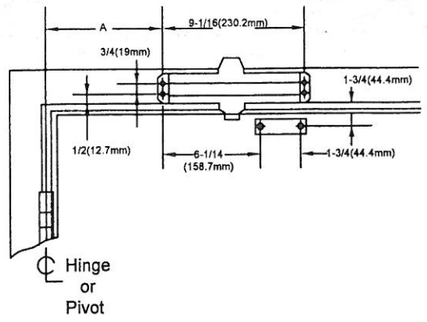


TDC 50 SERIES (With Back Check)

Installation Instructions for TOP JAMB (PUSH SIDE) Mounting

THIS TEMPLATE COVERS REGULAR ARM INSTALLATIONS TO 180° OPENING.





Left hand door shown
Right hand door shown
Dimensions are in inches
Do not scale drawing

OPENING	DIM.A TDC52, 53, 53BC	DIM.A TDC54, 55, 54BC, 55BC
To120°	6-1/2(165.1mm)	6-1/2(165.1mm)
120° -180°	4(101.6mm)	4(101.6mm)

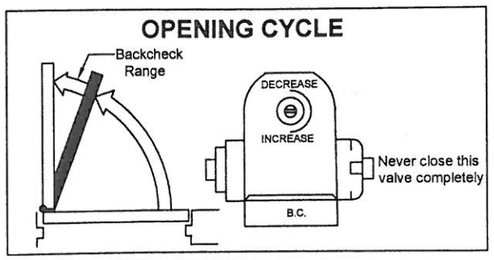
OPEN CYCLE

NOTED:These instructions apply to closers equipped with backcheck.
To increase backcheck intensity. turn valve marked "BC"clockwise.
To decrease backcheck intensity, turn valve marked BC counter-clockwise

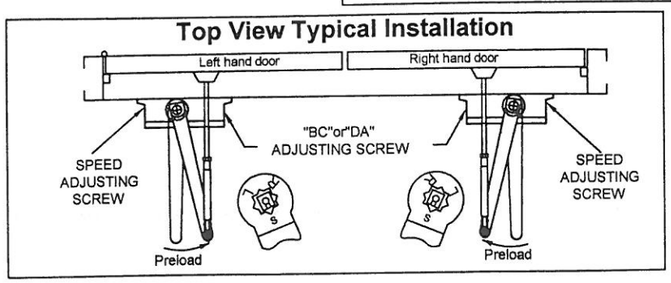
INSTALLATION INSTRUCTONS

1.Select door opening and use dimensions shown above, mark four (4) holes on frame door and two (2) holes on door of arm shoe.
2.Drill pilot holes in door and frame for # 14 all-purpose screws or drill or tap for 1/4-20 machine screw.
3.Intall forearm/arm shoe assembly to door using screws provided.
4.Mount closer on frame using screw provided. SPEED ADJUSTING VALVE MUST BE POSITIONED TOWARD HINGE EDGE.
5.Install main arm to top pinion shaft, perpendicular to frame when assmebled to preload main arm (illustration below). Secure forearm to main arm with screw/washer assmebly provided.
6.Adjut length of forearm so that forearm is perpendicular to frame when assmebled to preload main arm (illustration below). Secure forearm to main arm with screw /washer assembly provided.
7.Snap pinion cap over shaft at bottom of closer.
8.Adjust closing speed of door. following instructions as shown page 1.

OPENING CYCLE



Top View Typical Installation



INSTALLATION INSTRUCTIONS FOR AQ (EXIT) FUNCTION

BEFORE INSTALLATION MEASURE DOOR THICKNESS. LOCK IS PRE-ASSEMBLED FOR 1 3/4" DOOR THICKNESS. IF DOOR THICKNESS VARIES FROM 1 3/4" FOLLOW ADJUSTMENT PROCEDURE ON BACK OF PAGE.

INSTALL SECURE SIDE TRIM ASSEMBLY

1.) Align inside lever/rose assembly so rose posts enter thru-bolt holes in door.
2.) Push lock and trim assembly through 2-1/8" hole **FROM SECURE SIDE** of room so that retractor engages latch tail.
3.) Prongs must engage inside lock housing (Figure 1).
4.) Check from opposite side of door to ensure that latch is properly engaged.

INSTALL OUTSIDE TRIM ASSEMBLY

1.) Slide rose assembly over tube, passing the spring-loaded lever catch.
2.) Fasten rose assembly with 2 mounting screws.
3.) Install plastic washer(s) between both lever and rose assemblies. Washers may be added or removed as needed to eliminate excess play from lever handle (additional thin white washers are included). When determining required washer thickness, ensure the lever properly engages lever catch and does not pull off. If lever has excessive play that cannot be removed through use of washers, follow adjustment procedure outlined on back of page. The black and white washers provided are different thicknesses, it may be necessary to use multiple washers of varying thickness (ex. 1 black and 1 white washer) to achieve desired lever operation.
4.) Slide and push lever handle over tube until spring loaded lever catch is fully engaged.
5.) Check lock for proper operation before closing door.
6.) After lock is properly installed, adjusted and tested, remove lever on secure side and install security sleeve* on rose.
7.) To secure outside handle, thread in set screw using Allen wrench provided with lockset. Set screw must be flush or below surface of lever.

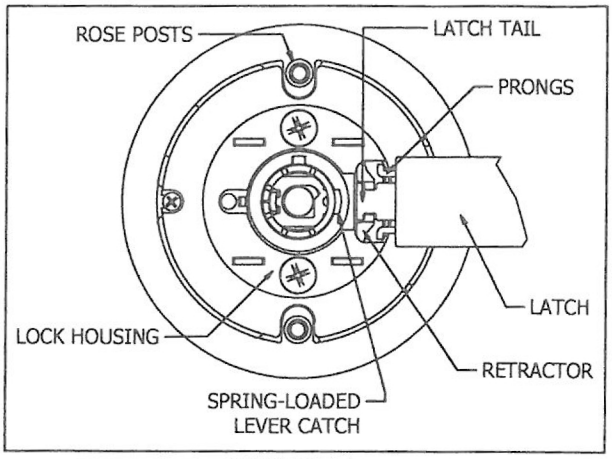
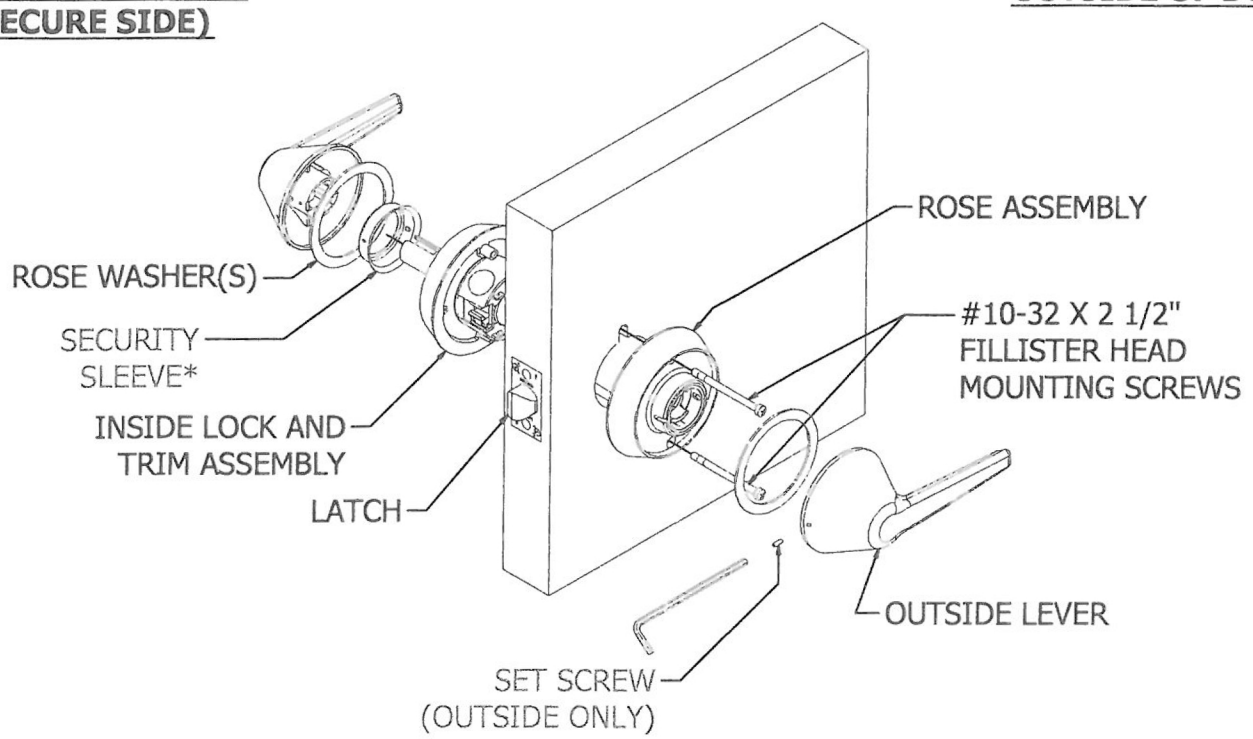


FIGURE 1

***NOTE: Once the security sleeve is installed, the lever handle cannot be removed. Failure to install security sleeve will result in a potential life threatening condition.**

< INSIDE OF DOOR (SECURE SIDE)

OUTSIDE OF DOOR >



ADJUST LOCKSET

NOTE: ALL LOCKS COME PRE-ADJUSTED FOR 1 3/4" DOOR THICKNESS.

1.) Measure door thickness.

2.) The distance from the mounting surface of the threaded rose to the centerline of the latch retractor must be equal to 1/2 door thickness (see Figure 2).
[ex. for 1.750" door, distance to latch retractor centerline = 0.875"]

3.) Remove lever from secure side.

4.) While depressing spring-loaded lever catch, rotate rose (in or out) to adjust for door thickness

NOTE: 1/2 rotation (180°) will move rose in/out by 0.020", 1 full rotation will move in/out 0.040"

5.) Follow instructions on reverse of page to complete lock set installation.

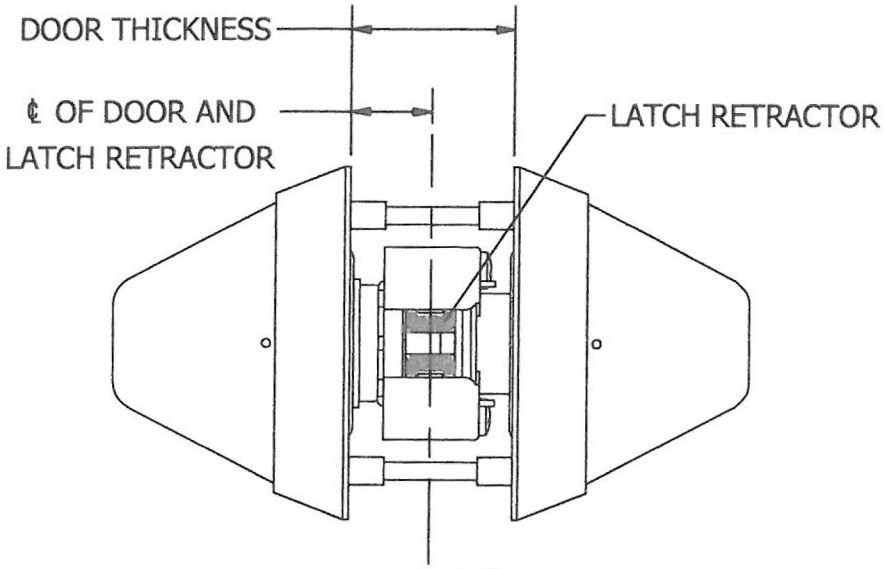
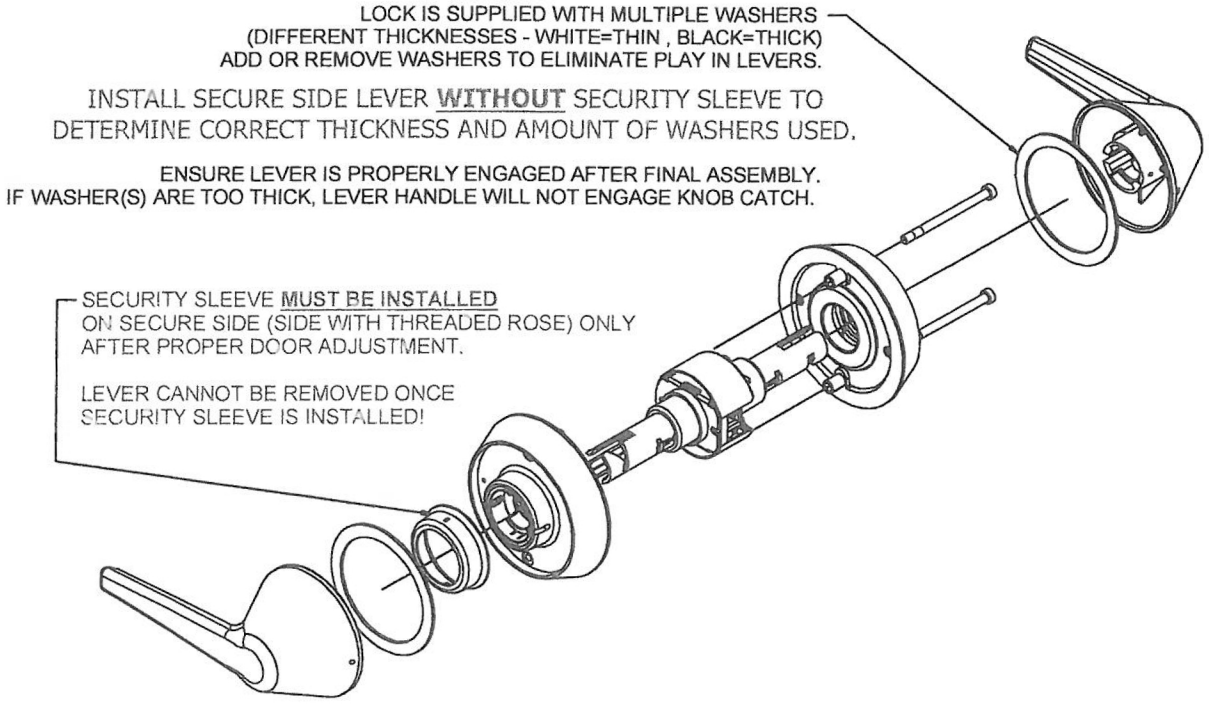


FIGURE 2



SECURE SIDE

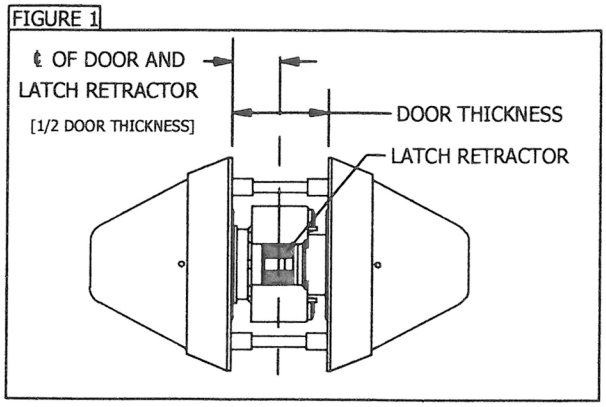
INSTALLATION INSTRUCTIONS FOR DW (DOUBLE CYLINDER) FUNCTION

ADJUST LOCKSET

1.) Measure door thickness. If door thickness is 1 3/4" no adjustment is needed. Proceed to "Install Lockset" section below.
2.) The distance from the mounting surface of the threaded rose to the centerline of the latch retractor must be equal to 1/2 door thickness (see Figure 1).
[ex. for 1.750" door, distance to latch retractor centerline = 0.875"]
3.) Remove both levers.
4.) While depressing spring-loaded lever catch, rotate threaded rose (in or out) to adjust for door thickness

NOTE: 1/2 rotation (180º) will move rose in/out by 0.020", 1 full rotation will move in/out 0.040"

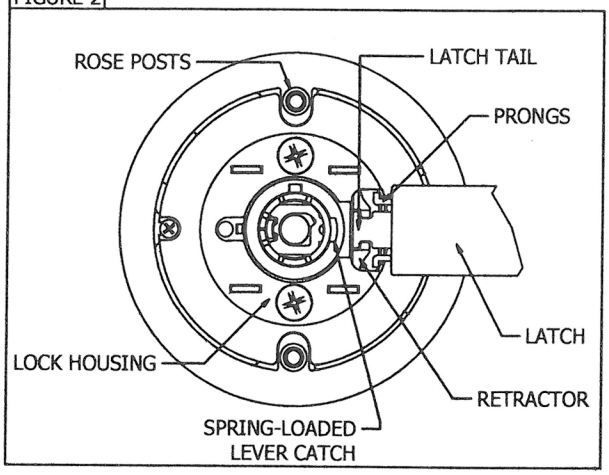
FIGURE 1

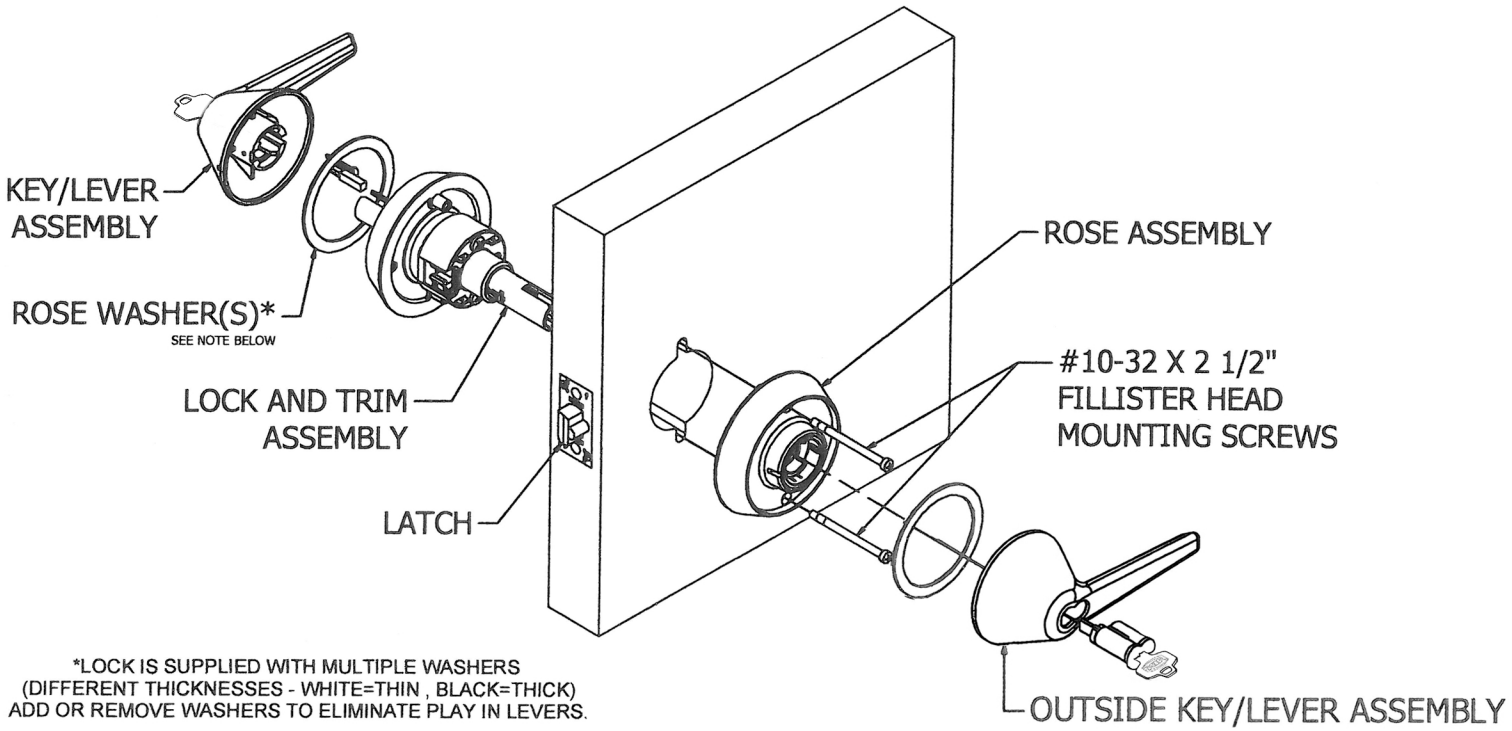


INSTALL LOCKSET

1.) Align inside lever/rose assembly so rose posts enter thru-bolt holes in door.
2.) Push lock and trim assembly through 2-1/8" hole so that retractor engages latch tail.
3.) Prongs must engage inside lock housing (Figure 2).
4.) Check from opposite side of door to ensure that latch is properly engaged.
5.) Slide rose assembly over tube, passing the spring-loaded lever catch.
6.) Fasten rose assembly with 2 mounting screws.
7.) Install plastic washers between both lever and rose assemblies. The black and white washers provided are different thicknesses, it may be necessary to use multiple washers of varying thickness (ex. 1 black and 1 white washer) to achieve desired lever operation. Washers may be added or removed as needed to eliminate excess play from lever handle. When determining required washer thickness, ensure the lever properly engages lever catch and does not pull off. If lever has excessive play that cannot be removed through use of washers, repeat adjustment procedure above.
8.) Turn key 45º either direction in cylinder .
9.) Slide and push lever handle over tube until spring loaded lever catch is fully engaged.
10.) Remove key from cylinder then check lock for proper operation before closing door.

FIGURE 2





*LOCK IS SUPPLIED WITH MULTIPLE WASHERS
(DIFFERENT THICKNESSES - WHITE=THIN , BLACK=THICK)
ADD OR REMOVE WASHERS TO ELIMINATE PLAY IN LEVERS.

ENSURE LEVER IS PROPERLY ENGAGED AFTER FINAL ASSEMBLY.
IF WASHER(S) ARE TOO THICK, LEVER HANDLE WILL NOT ENGAGE KNOB CATCH.

INSTALLATION INSTRUCTIONS FOR L (PRIVACY) FUNCTION

BEFORE INSTALLATION MEASURE DOOR THICKNESS. LOCK IS PRE-ASSEMBLED FOR 1 3/4" DOOR THICKNESS. IF DOOR THICKNESS VARIES FROM 1 3/4" FOLLOW ADJUSTMENT PROCEDURE ON BACK OF PAGE.

INSTALL SECURE SIDE TRIM ASSEMBLY

1.) Align inside lever/rose assembly so rose posts enter thru-bolt holes in door.
2.) Push lock and trim assembly through 2-1/8" hole **FROM SECURE SIDE** of room so that retractor engages latch tail.
3.) Prongs must engage inside lock housing (Figure 1).
4.) Check from opposite side of door to ensure that latch is properly engaged.

INSTALL OUTSIDE TRIM ASSEMBLY

1.) Slide rose assembly over tube, passing the spring-loaded lever catch.
2.) Fasten rose assembly with 2 mounting screws.
3.) Install plastic washer(s) between both lever and rose assemblies. Washers may be added or removed as needed to eliminate excess play from lever handle (additional thin white washers are included). When determining required washer thickness, ensure the lever properly engages lever catch and does not pull off. If lever has excessive play that cannot be removed through use of washers, follow adjustment procedure outlined on back of page. The black and white washers provided are different thicknesses, it may be necessary to use multiple washers of varying thickness (ex. 1 black and 1 white washer) to achieve desired lever operation.
4.) Turn emergency button 45º in either direction.
5.) Slide and push lever handle over tube until spring loaded lever catch is fully engaged.
6.) Check lock for proper operation before closing door.
7.) After lock is properly installed, adjusted and tested, remove lever on secure side and install security sleeve* on rose.
8.) To secure outside handle, thread in set screw using Allen wrench provided with lockset. Set screw must be flush or below surface of lever.

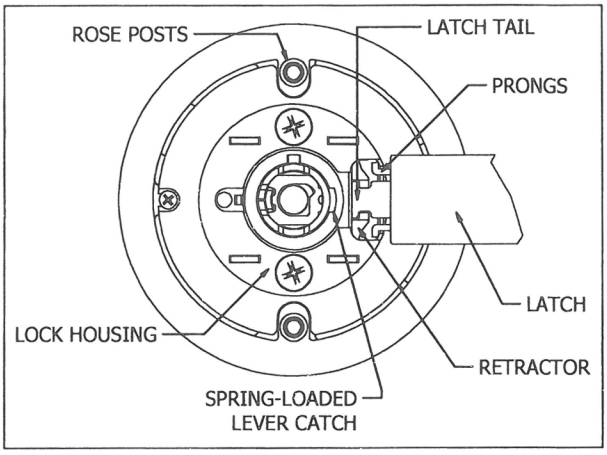
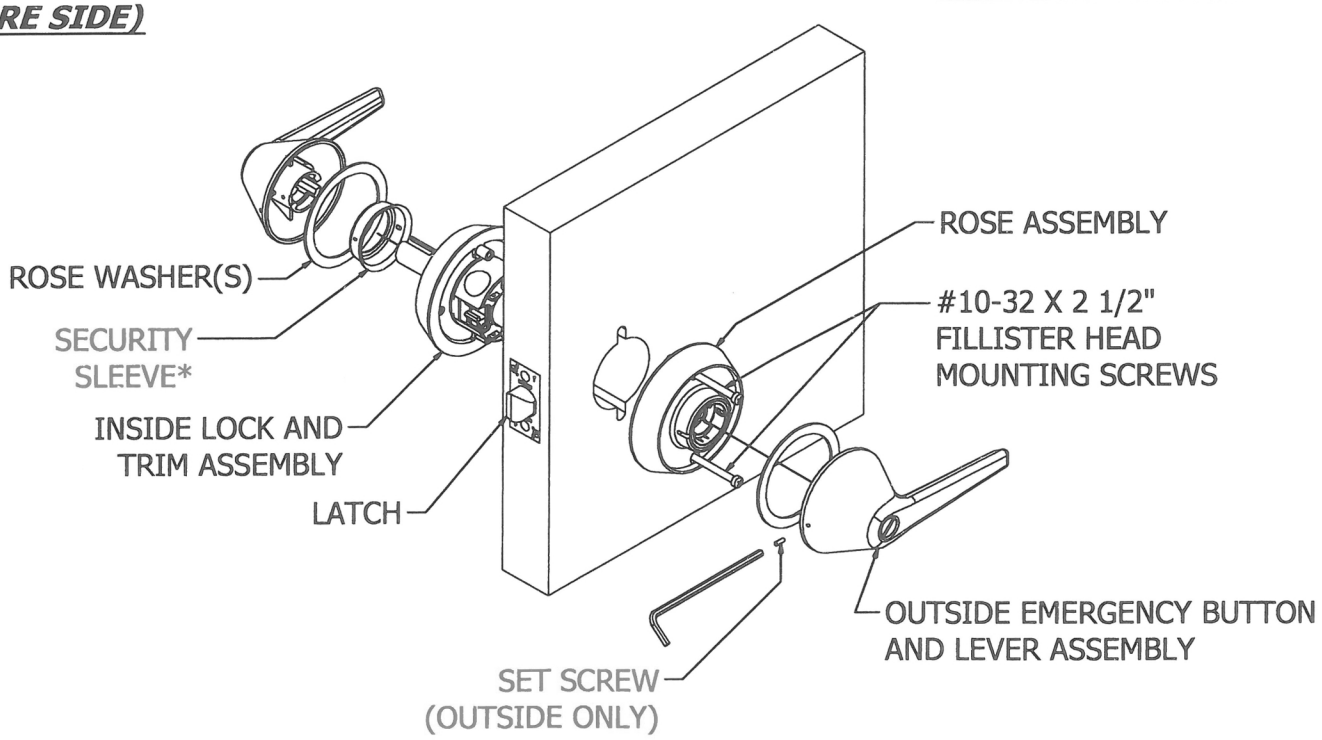


FIGURE 1

***NOTE: Once the security sleeve is installed, the lever handle cannot be removed. Failure to install security sleeve will result in a potential life threatening condition.**

< INSIDE OF DOOR (SECURE SIDE)

OUTSIDE OF DOOR >



ADJUST LOCKSET

NOTE: ALL LOCKS COME PRE-ADJUSTED FOR 1 3/4" DOOR THICKNESS.

1.) Measure door thickness.

2.) The distance from the mounting surface of the threaded rose to the centerline of the latch retractor must be equal to 1/2 door thickness (see Figure 2).
[ex. for 1.750" door, distance to latch retractor centerline = 0.875"]

3.) Remove lever from secure side.

4.) While depressing spring-loaded lever catch, rotate rose (in or out) to adjust for door thickness

NOTE: 1/2 rotation (180°) will move rose in/out by 0.020", 1 full rotation will move in/out 0.040"

5.) Follow instructions on reverse of page to complete lock set installation.

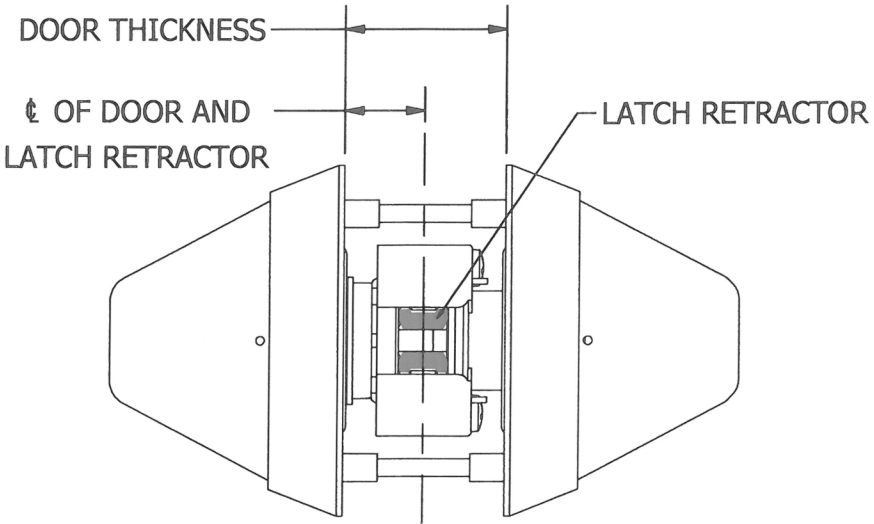
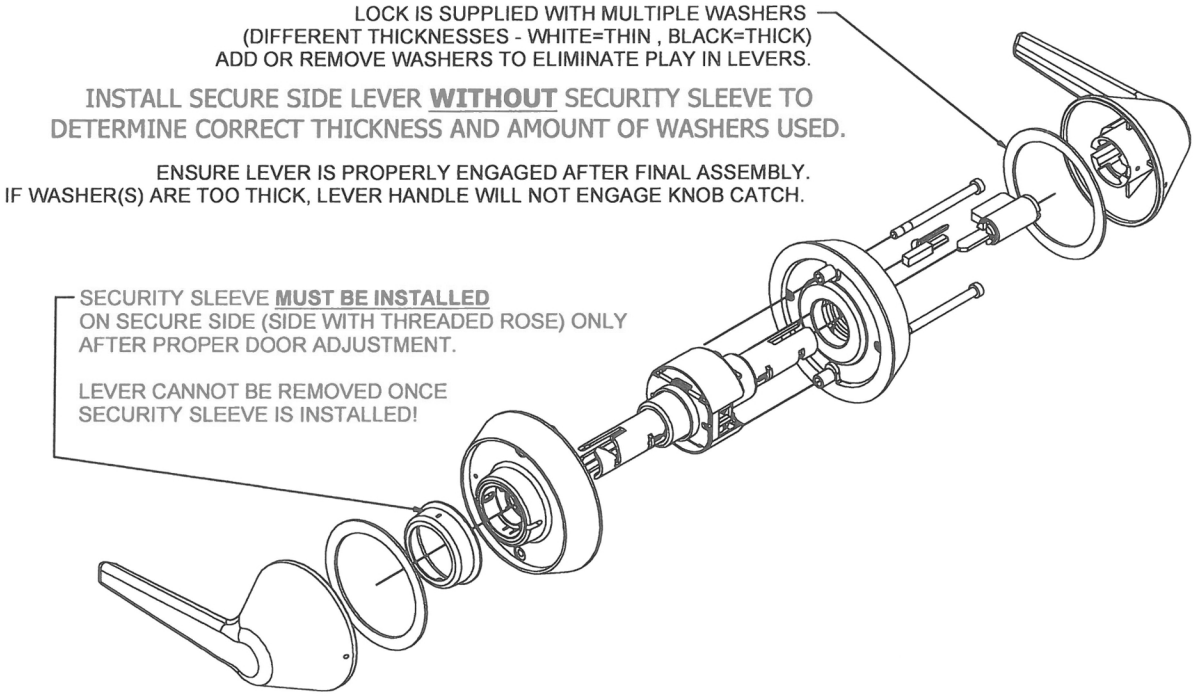


FIGURE 2



SECURE SIDE

INSTALLATION INSTRUCTIONS FOR N (PASSAGE), F (STOREROOM), AB (ENTRY) AND T (CORRIDOR) FUNCTIONS

BEFORE INSTALLATION MEASURE DOOR THICKNESS. LOCK IS PRE-ASSEMBLED FOR 1 3/4" DOOR THICKNESS. IF DOOR THICKNESS VARIES FROM 1 3/4" FOLLOW ADJUSTMENT PROCEDURE ON BACK OF PAGE.

INSTALL SECURE SIDE TRIM ASSEMBLY

1.) Align inside lever/rose assembly so rose posts enter thru-bolt holes in door.
2.) Push lock and trim assembly through 2-1/8" hole **FROM SECURE SIDE** of room so that retractor engages latch tail.
3.) Prongs must engage inside lock housing (Figure 1).
4.) Check from opposite side of door to ensure that latch is properly engaged.

INSTALL OUTSIDE TRIM ASSEMBLY

1.) Slide rose assembly over tube, passing the spring-loaded lever catch.
2.) Fasten rose assembly with 2 mounting screws.
3.) Install plastic washer(s) between both lever and rose assemblies. Washers may be added or removed as needed to eliminate excess play from lever handle (additional thin white washers are included). When determining required washer thickness, ensure the lever properly engages lever catch and does not pull off. If lever has excessive play that cannot be removed through use of washers, follow adjustment procedure outlined on back of page. The black and white washers provided are different thicknesses, it may be necessary to use multiple washers of varying thickness (ex. 1 black and 1 white washer) to achieve desired lever operation.
4.) Turn key in cylinder 45° in either direction.
5.) Slide and push lever handle over tube until spring loaded lever catch is fully engaged.
6.) Remove key from cylinder then check lock for proper operation before closing door.

NOTE: Key is non-functional in passage function

7.) After lock is properly installed, adjusted and tested, remove lever on secure side and install security sleeve* on rose.

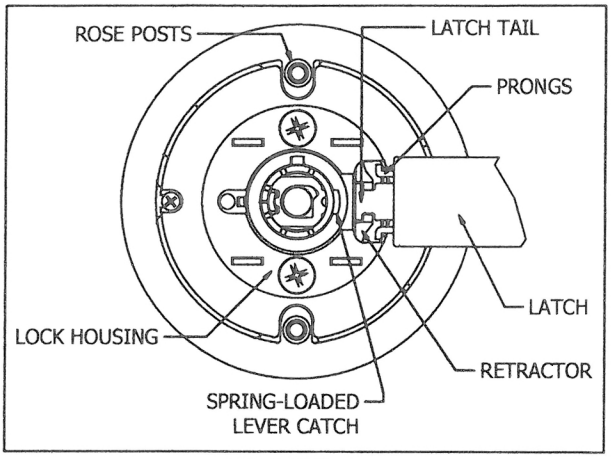
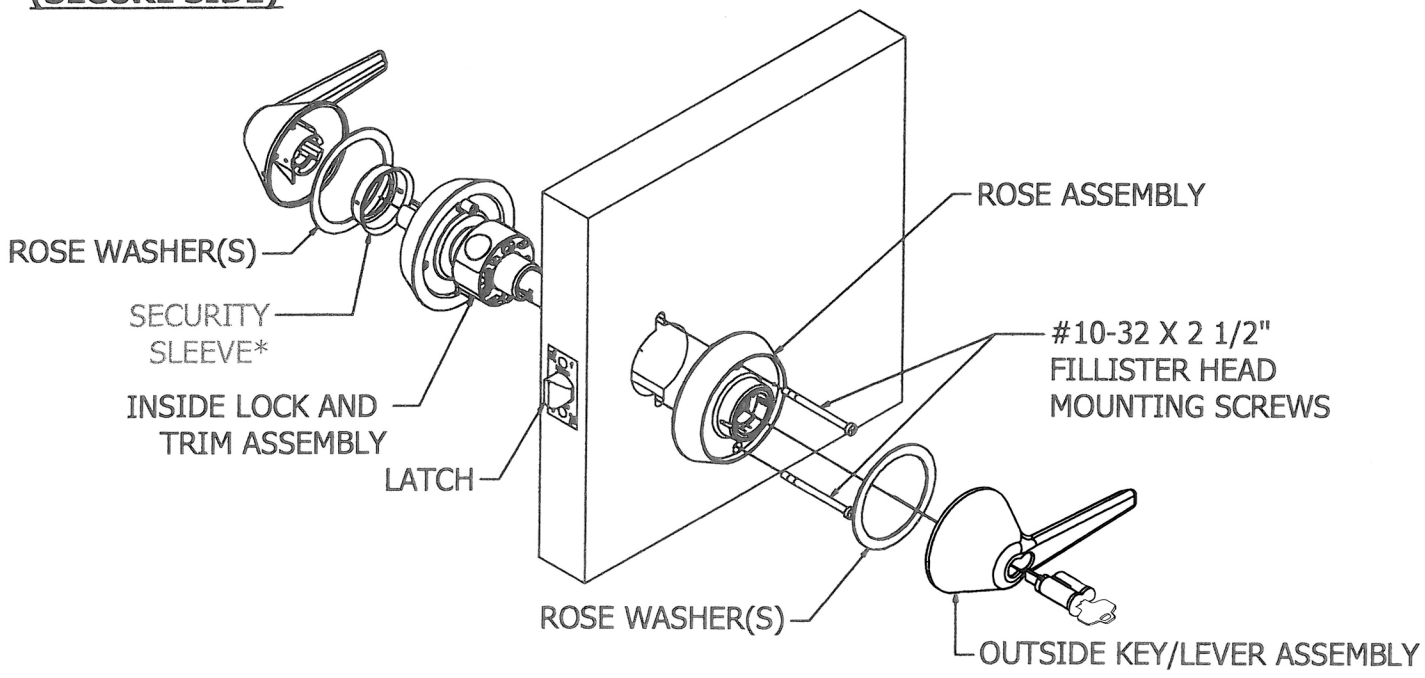


FIGURE 1

***NOTE: Once the security sleeve is installed, the lever handle cannot be removed. Failure to install security sleeve will result in a potential life threatening condition.**

< INSIDE OF DOOR (SECURE SIDE)

OUTSIDE OF DOOR >



ADJUST LOCKSET

NOTE: ALL LOCKS COME PRE-ADJUSTED FOR 1 3/4" DOOR THICKNESS.

1.) Measure door thickness.

2.) The distance from the mounting surface of the threaded rose to the centerline of the latch retractor must be equal to 1/2 door thickness (see Figure 2). [ex. for 1.750" door, distance to latch retractor centerline = 0.875"]

3.) Remove lever from secure side.

4.) While depressing spring-loaded lever catch, rotate rose (in or out) to adjust for door thickness

NOTE: 1/2 rotation (180°) will move rose in/out by 0.020", 1 full rotation will move in/out 0.040"

5.) Follow instructions on reverse of page to complete lock set installation.

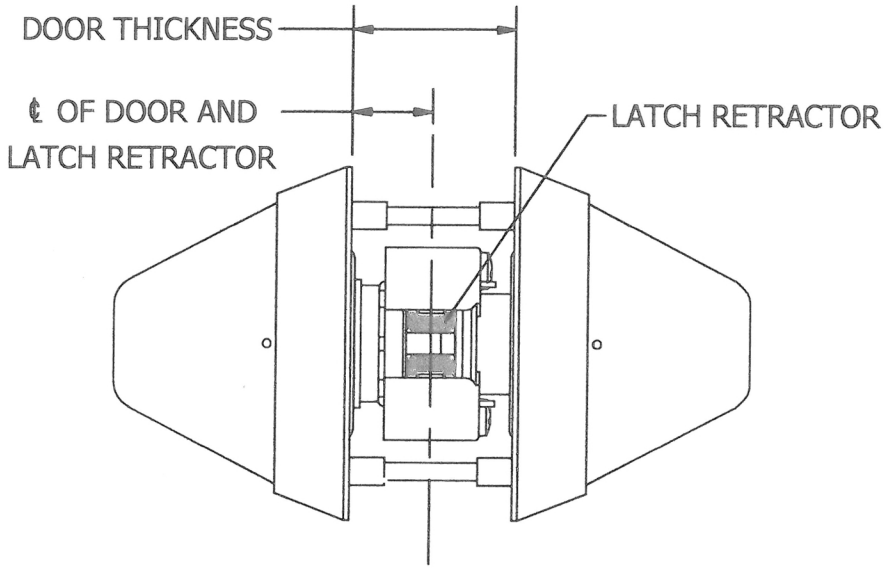
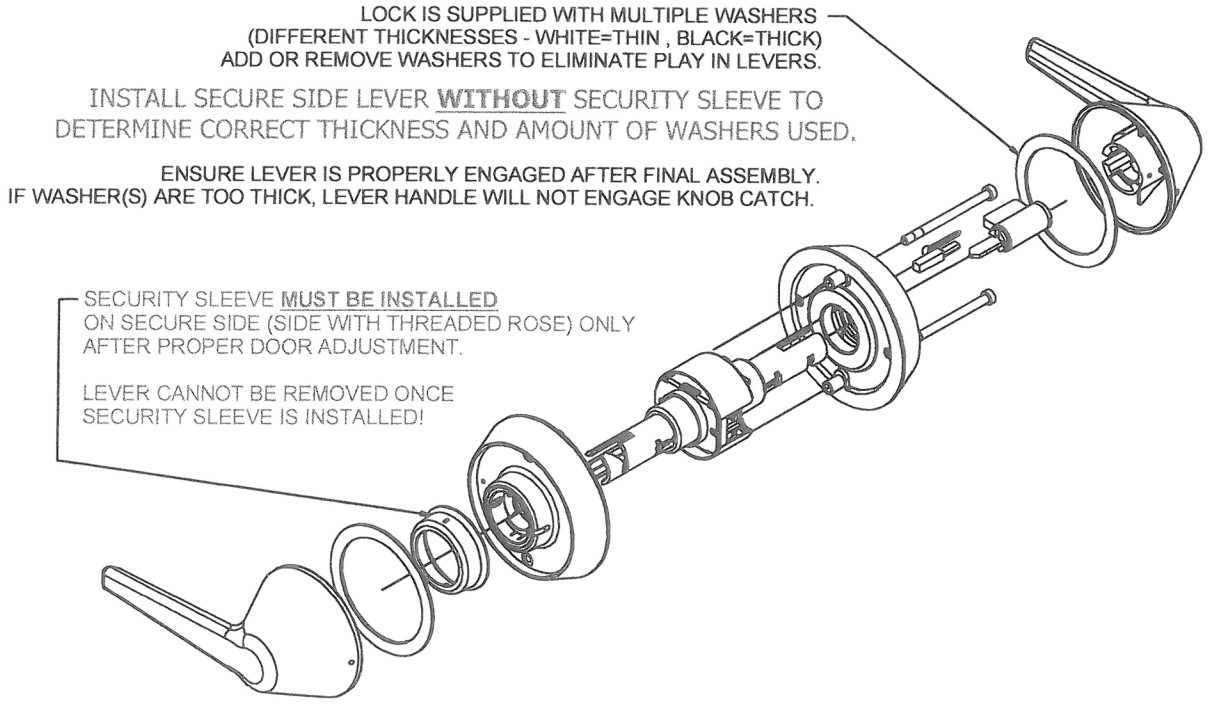
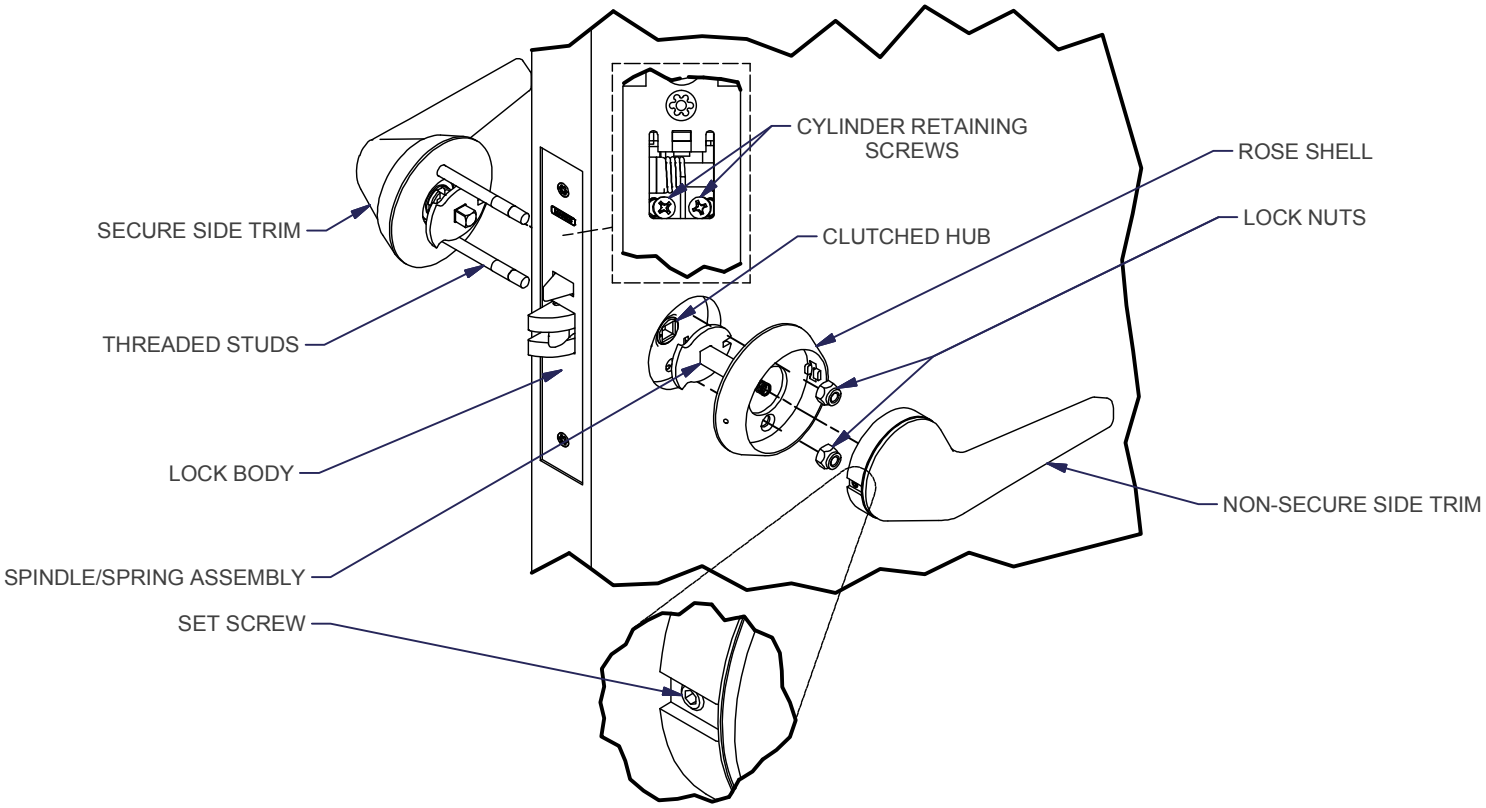


FIGURE 2



SECURE SIDE

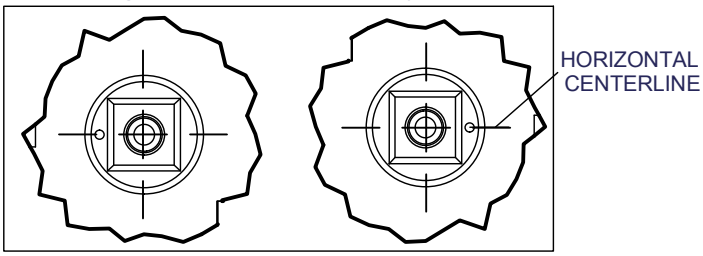
MLR TRIM INSTALLATION INSTRUCTIONS



1. Install lock body in door using 2 supplied mounting screws.

2. Mount cylinder(s) (if applicable), tighten cylinder retaining screw(s) inside lock body and install face plate using 2 suppled mounting screws.

3. Install secure side trim assembly, passing threaded studs through holes in lock body. Ensure spindle engages clutched hub.



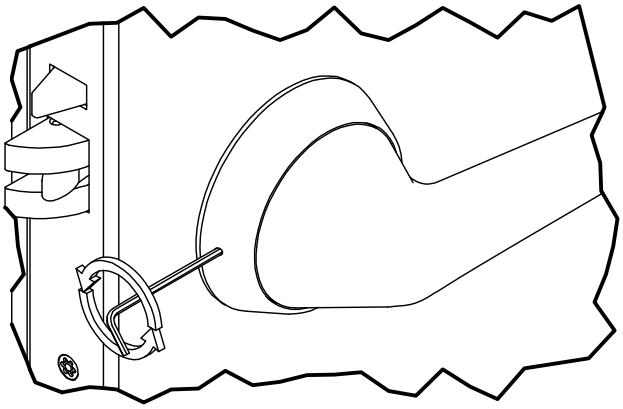
NOTE- Ensure marking on clutched hub is on horizontal centerline (3 or 9 o'clock depending on side of door).

4. Slide non-secure side rose shell over threaded posts and secure using 2 supplied lock nuts.

5. Insert non-secure side spindle/spring assembly through rose shell, engaging clutched hub (marking must be on horizontal centerline).

6. Install non-secure side trim. Insert lever/rose assembly into rose shell. Insert allen wrench into hole on each side of rose shell and rotate both set screws fully counter-clockwise to secure trim to rose shell.

7. Check lock for proper operation before closing door.



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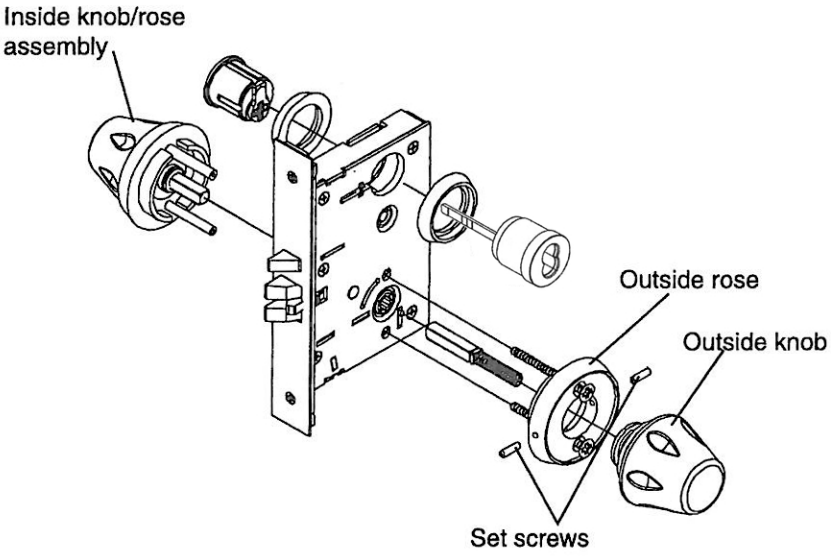
MKR Series Institutional Life Safety Mortise Lockset Trim Installation Instructions©

Lockset Trim Installation MKR Series:

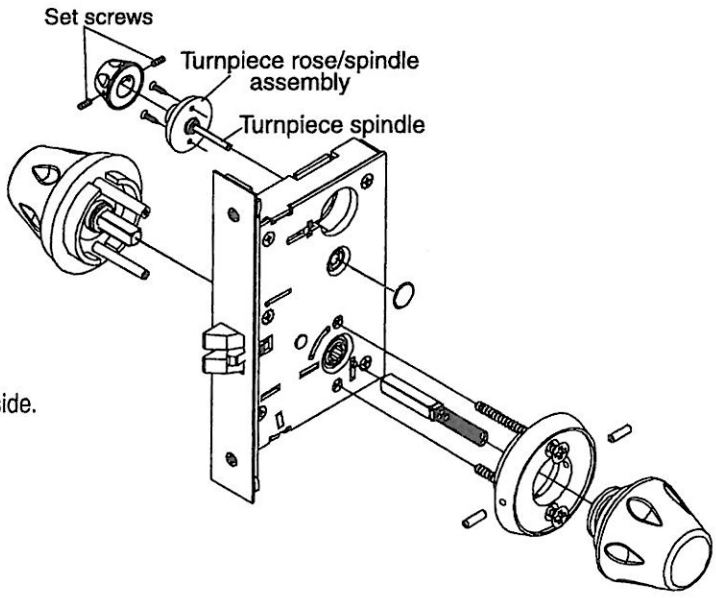
1. Place **inside knob/rose assembly** through lock body so that spring-loaded spindle engages inside hub (on the diamond) and threaded posts extend to the outside.
2. Place **outside rose** on door and screw onto threaded posts.
3. Insert **outside knob** fully onto the outside rose, so that spring-loaded spindle engages the outside hub (on the diamond). Secure with two **set screws** in rose.



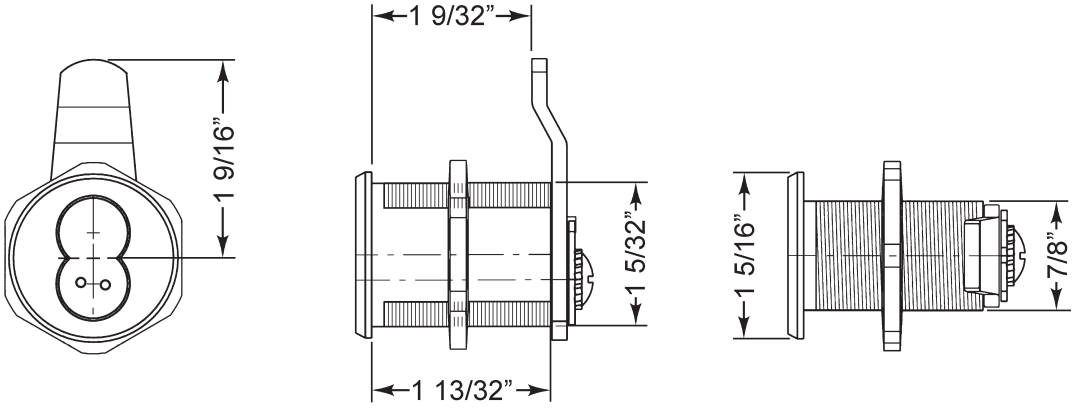
For Models With Deadbolts and Inside Turn Knob:

1. Place **turnpiece rose/spindle assembly** on door with spindle entering into deadbolt hub. Fasten **turnpiece rose/spindle assebly** to door with two screws. Make sure alignment is correct so that **turnpiece spindle** bushing can turn smoothly when throwing and retracting deadbolt.
2. With **turnpiece rose/spindle assembly** mounted in correct position, place **turn knob** fully over **turnpiece spindle** and secure with two **set screws** in turn knob.

NOTE: The above instruction assumes the secure trim to be on the inside. Depending upon application, this may be reversed.



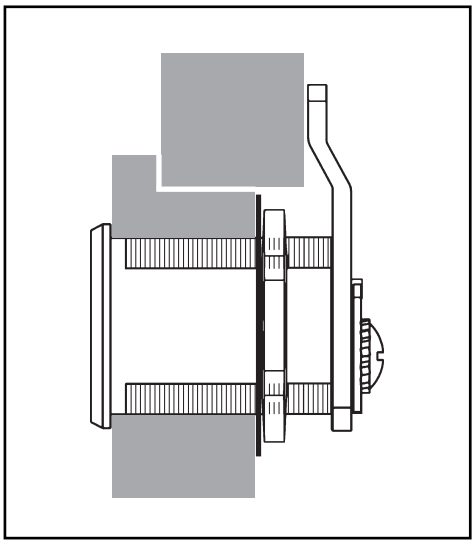
720LM/DM

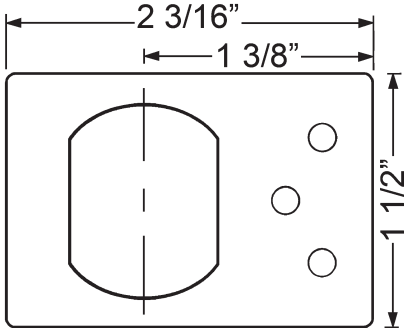


IMPORTANT:

It is highly recommended that you install the **cam/prong driver** and **lock cylinder** into the lock body and cycle to the locked position **before** assembling cam, cam shifter and stop pin onto the back of the lock.

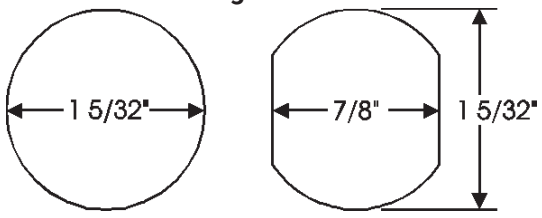
Typical Installation





Stabilizer Plate

Mounting Cutout



Lock diameter is 1-1/8”. Drilled hole should be slightly larger.

Title				
Installation instructions for 720LM/DM series cam lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
720	**1-7/16”**	**Cam lock**	**Surface**	**09/2014**

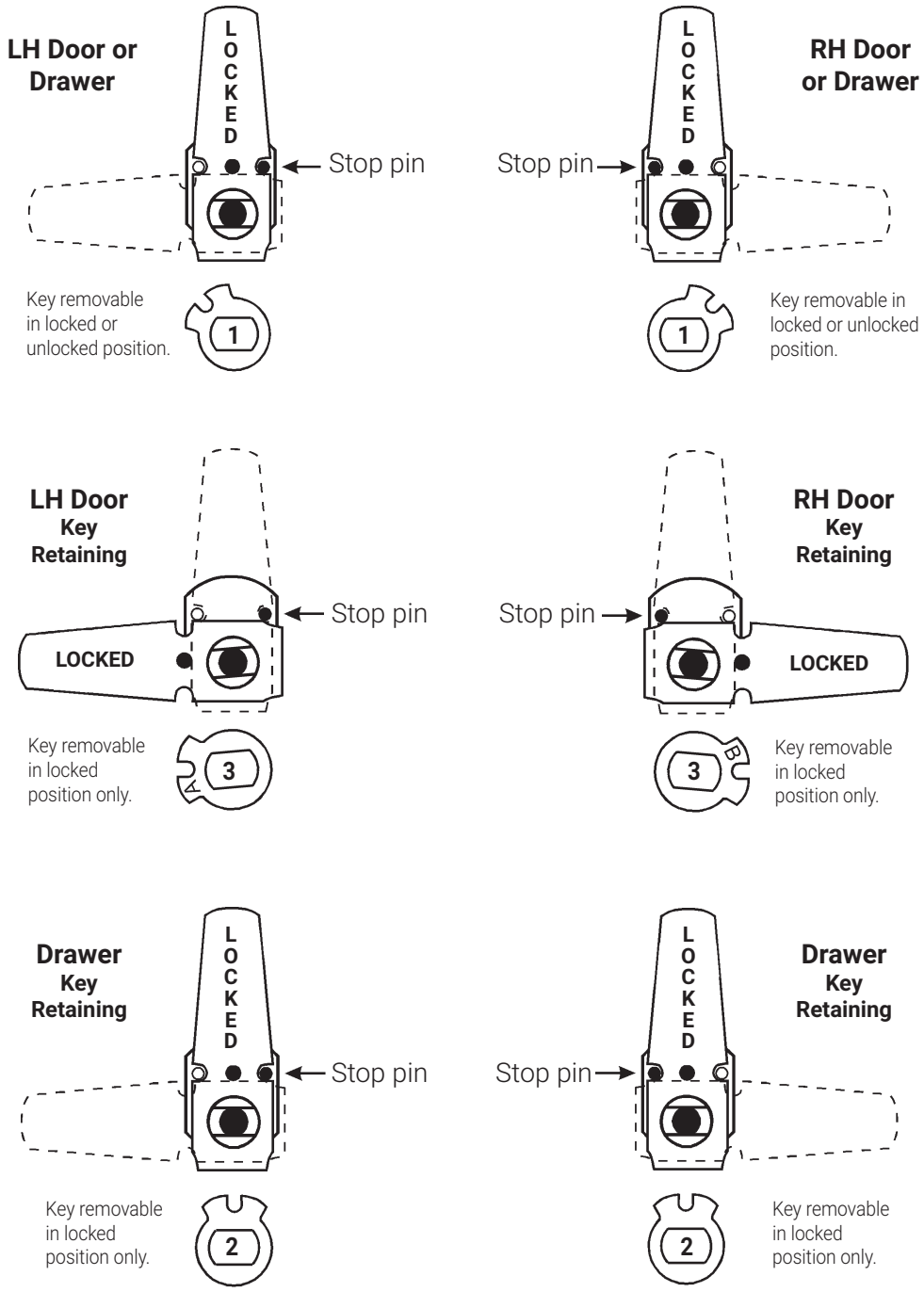
MARSHALL BEST SECURITY

720LM/DM

Assembled with vertical long cam 720-3-2 or extra long 3" cam 720-3-4

1	2	A 3	B 3
720-CDLM lost motion cam shifter (non-key-retaining)	**720-KR** key retaining drawer cam shifter	**720-CDDM (A Side)** key retaining door cam shifter	key retaining door cam shifter

IMPORTANT! If your cam has a brass pin between the two notched cut outs use these instructions, otherwise see page 3.



Installation instructions for 720LM/DM series cabinet lock

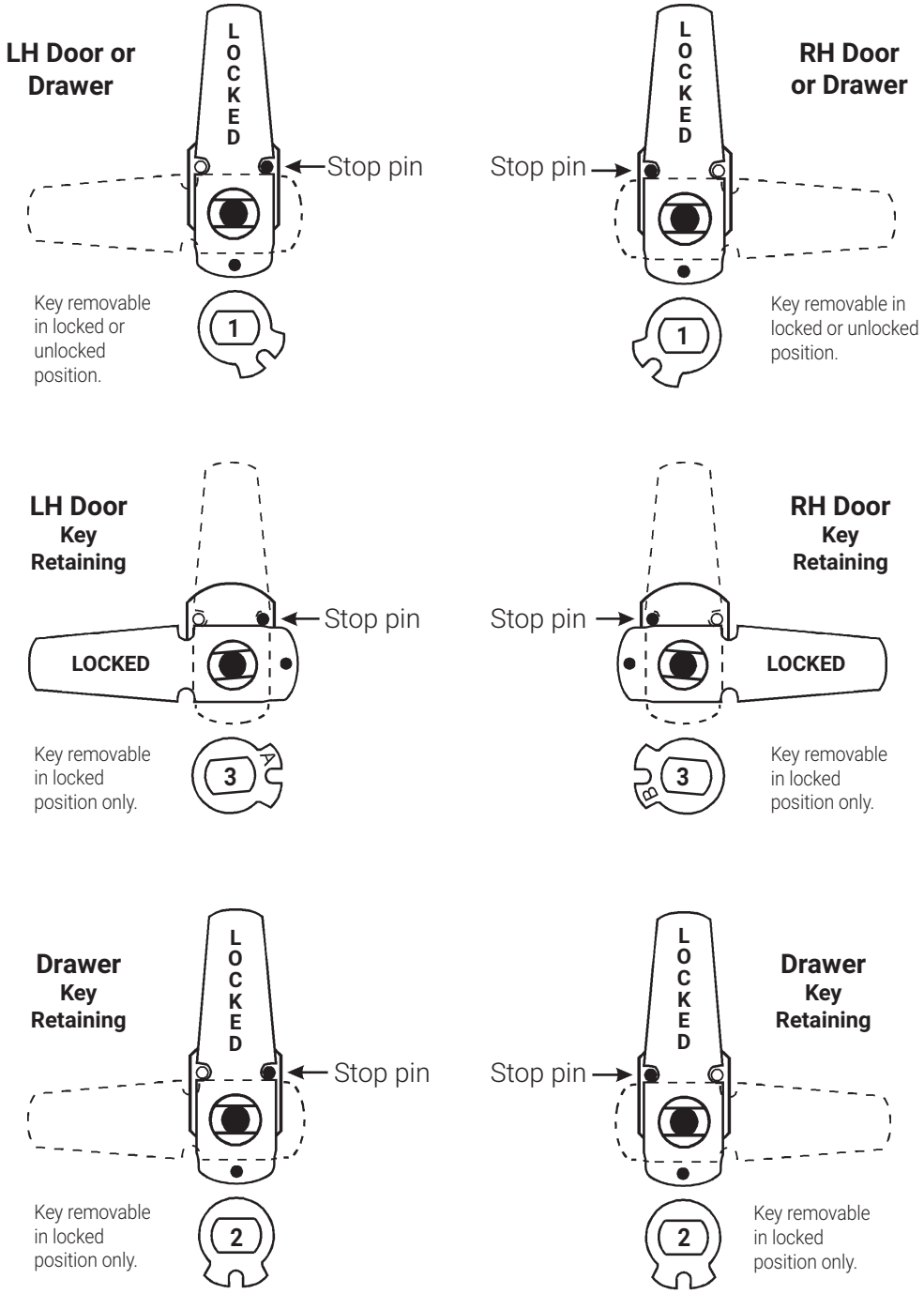
MARSHALL BEST SECURITY

720LM/DM

Assembled with vertical long cam 720-3-2 or extra long 3" cam 720-3-4

720-CDLM	720-KR	720-CDDM (A Side)	720-CDDM (B Side)
lost motion cam shifter (non-key-retaining)	key retaining drawer cam shifter	key retaining door cam shifter	key retaining door cam shifter

IMPORTANT! If your cam has a brass pin on the bottom of the cam use these instructions, otherwise see page 2.

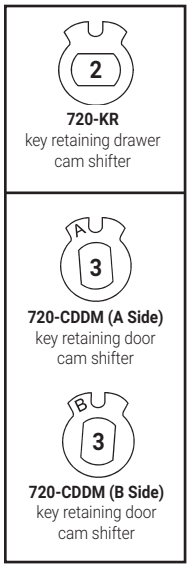


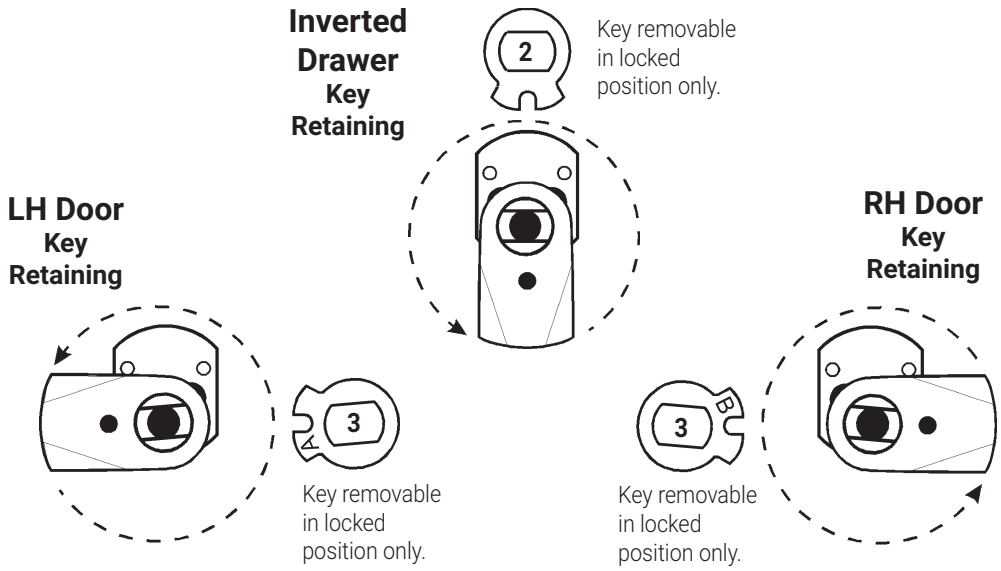
Installation instructions for 720LM/DM series cabinet lock

MARSHALL BEST SECURITY

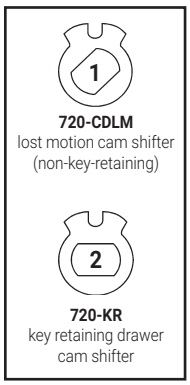
720LM/DM

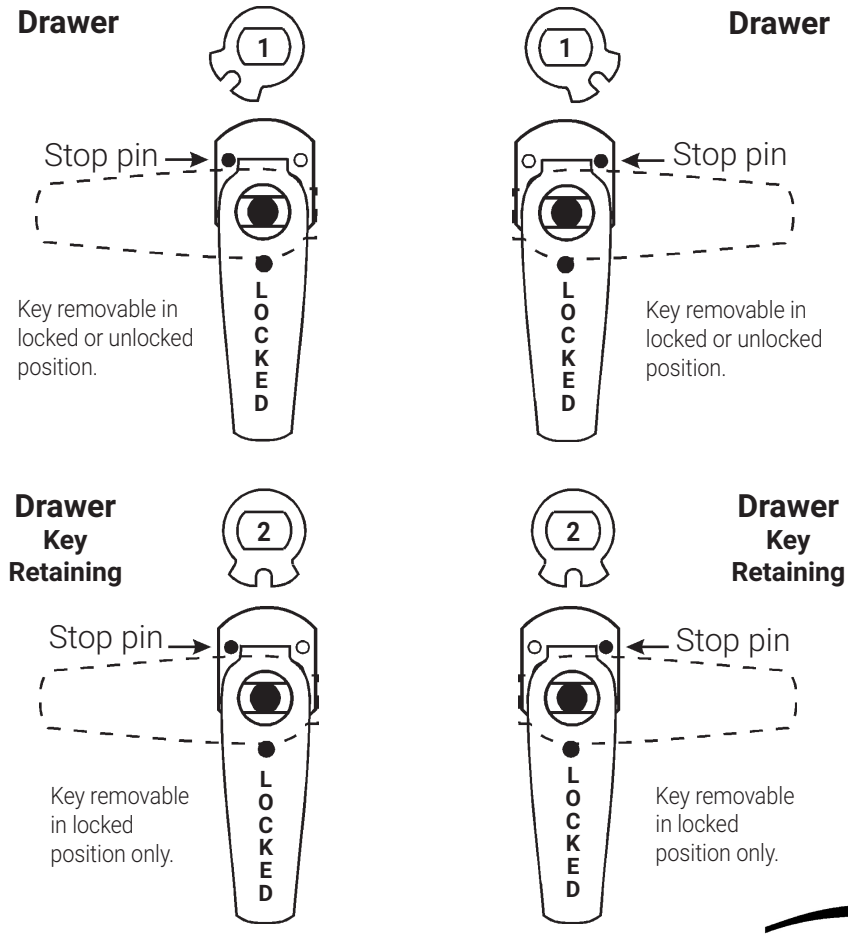
Assembled with short cam 720-3-1





Assembled with inverted long cam 720-3-3 or 720-3-5



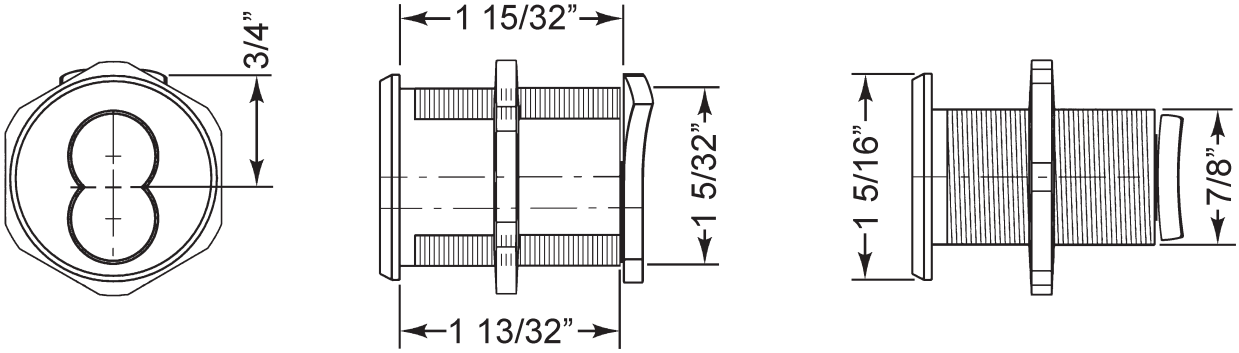


Installation instructions for 720LM/DM series cabinet lock

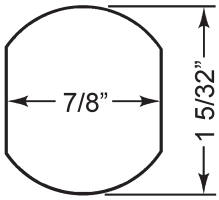
MARSHALL BEST SECURITY

Installation Instructions

720B-DM



MOUNTING CUTOUT



Lock diameter is 1-1/8". Drilled hole should be slightly larger.

CL-MP-118
Double-D metal hole punch is available separately. Punches double-D cut out in metal. For use with 1-1/8" diameter cam locks.

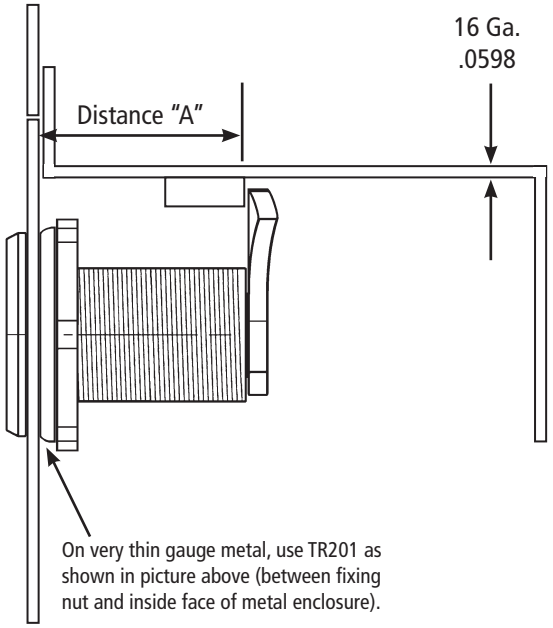
Order part number CL-MP-118

TYPICAL INSTALLATION

Depending on Distance "A" and your specific application, one or both of the supplied spacer collars may be required.

TR201 1/8"

TR202 1/4"



On very thin gauge metal, use TR201 as shown in picture above (between fixing nut and inside face of metal enclosure).

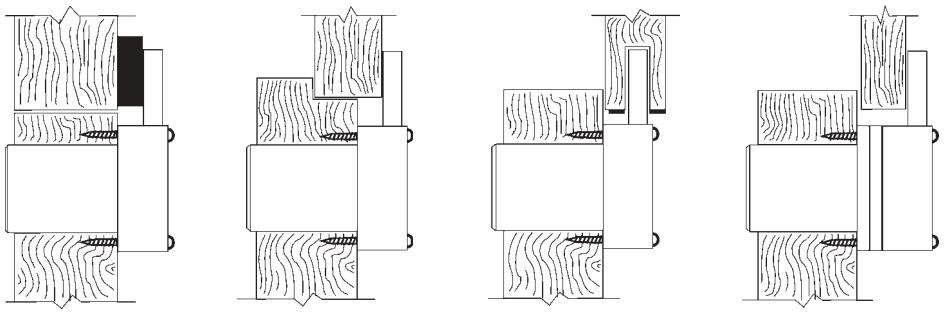
Title				
Installation instructions for 720B-DM series cam lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
720B-DM	**1-7/16"**	**Cam lock**	**Surface**	**03/2015**

MARSHALL BEST SECURITY

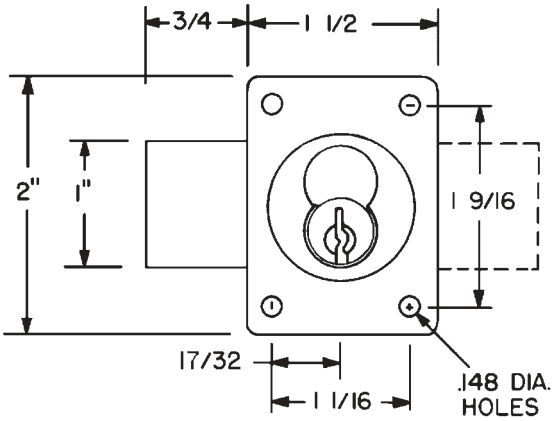
Installation Instructions

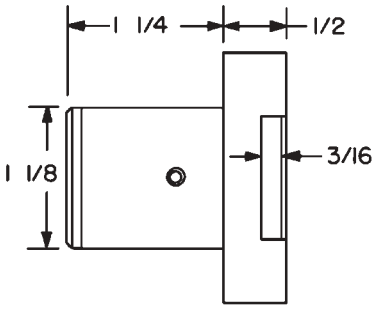
721DR

Typical Installation

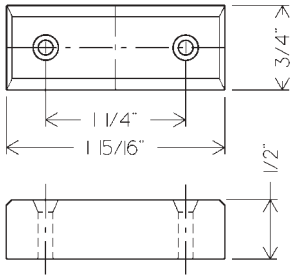


** Overaly installation is not recommended for particleboard.

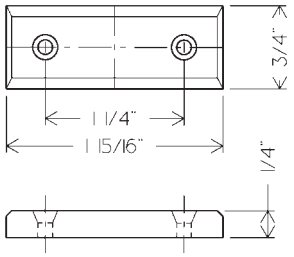




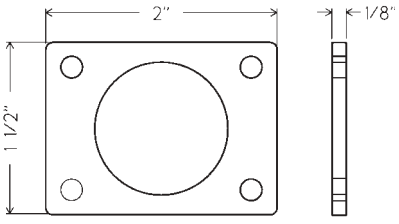
Use of spacers and strikes depends on application and material thickness.



10-055 - 1/2" bar strike



10-054 - 1/4" bar strike



10-350 - 1/8" spacer

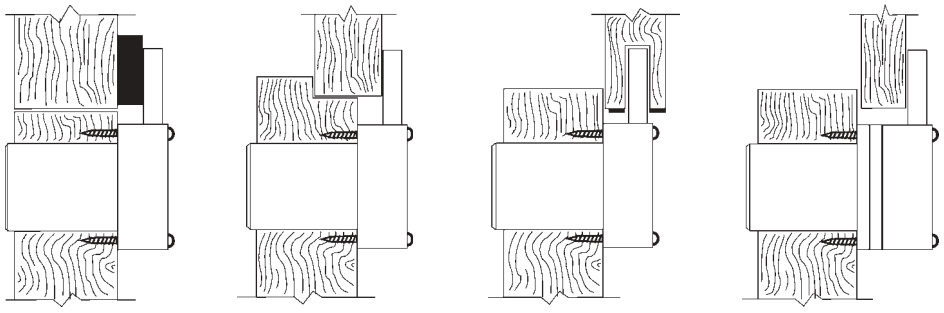
Title				
Installation instructions for 721DR series cabinet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
721DR	**1-1/4"**	**Deadbolt**	**Surface**	**06/2004**

MARSHALL BEST SECURITY

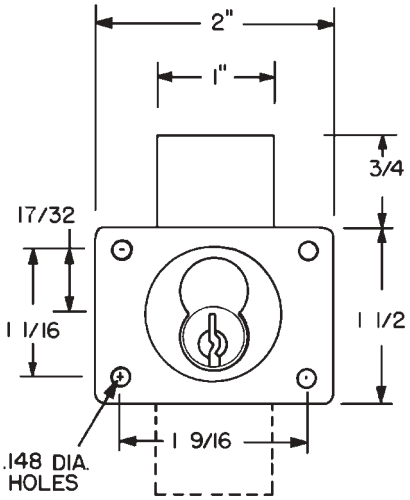
Installation Instructions

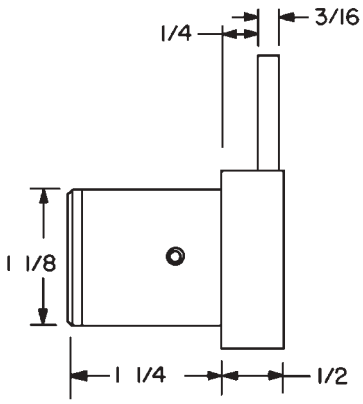
721DW

Typical Installation

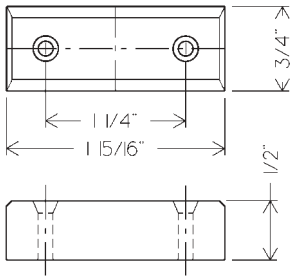


** Overaly installation is not recommended for particleboard.

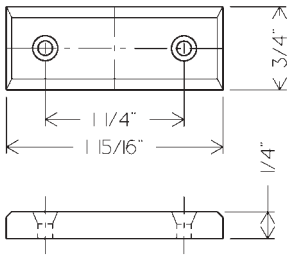




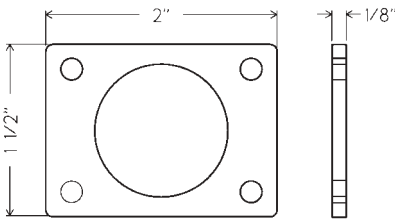
Use of spacers and strikes depends on application and material thickness.



10-055 - 1/2" bar strike



10-054 - 1/4" bar strike



10-350 - 1/8" spacer

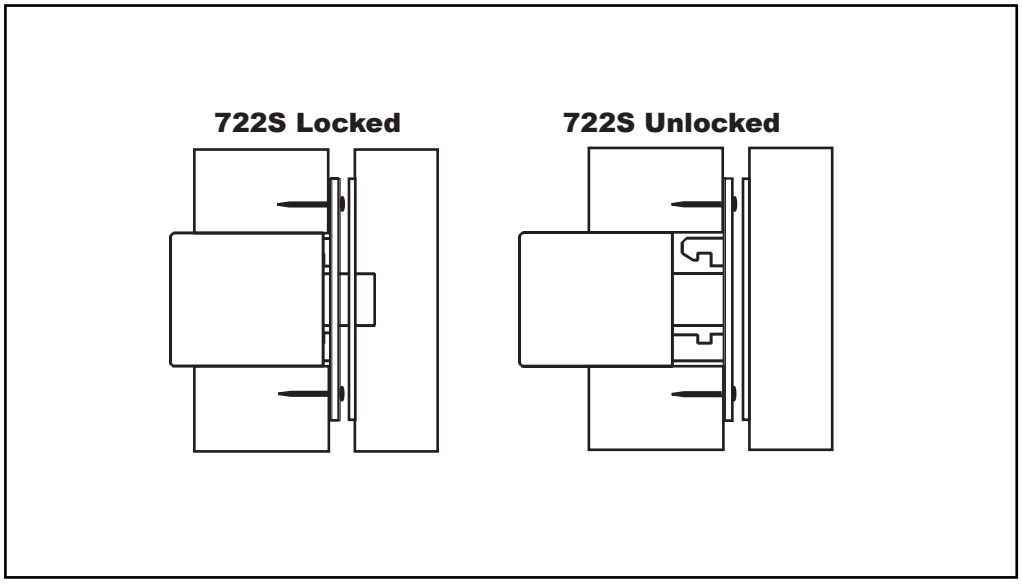
Title				
Installation instructions for 721DW series cabinet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
721DW	**1-1/4"**	**Deadbolt**	**Surface**	**06/2004**

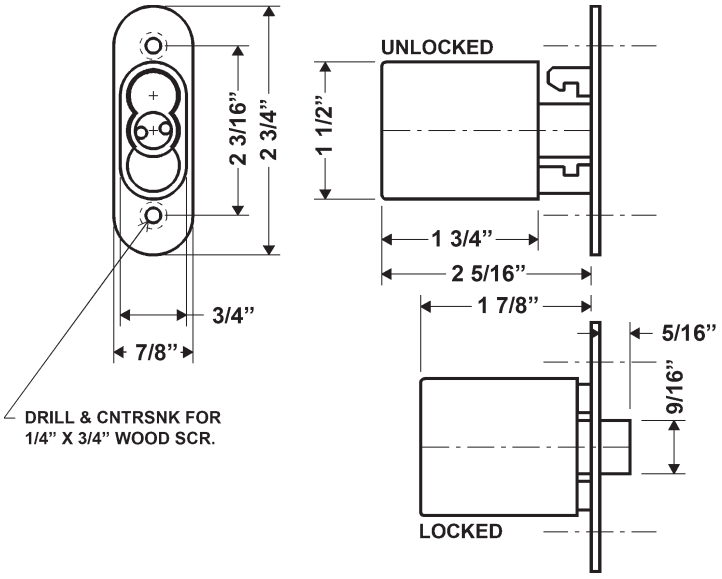
MARSHALL BEST SECURITY

Installation Instructions

722S

Typical Installation





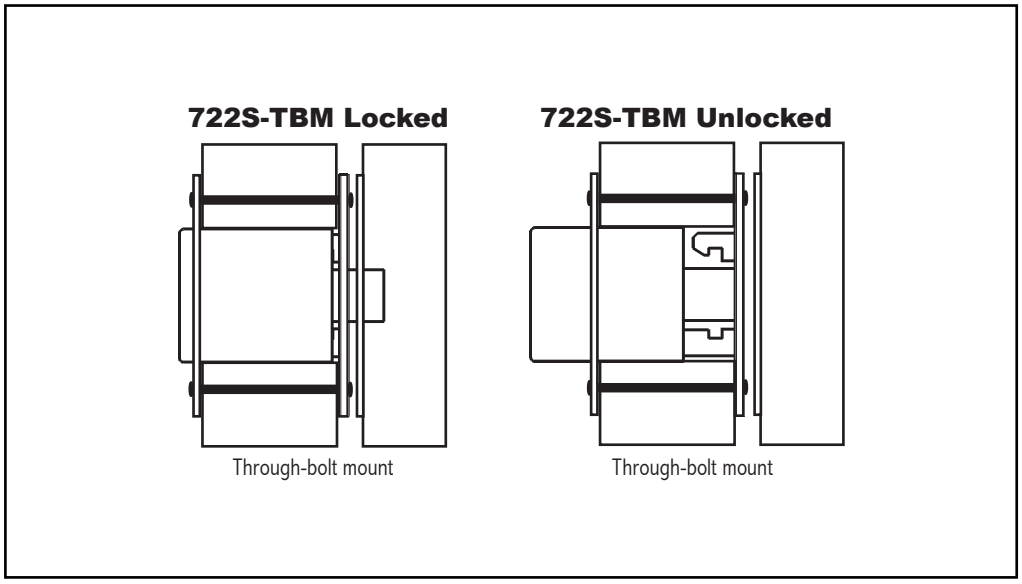
Title				
Installation instructions for 722S series sliding door lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
722S	1”	Plunger	Surface	06/2004

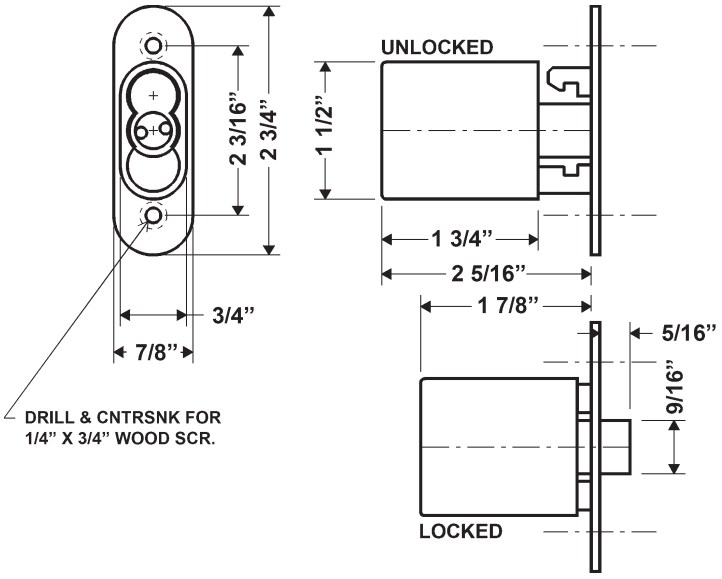
MARSHALL BEST SECURITY

Installation Instructions

722S-TBM

Typical Installation





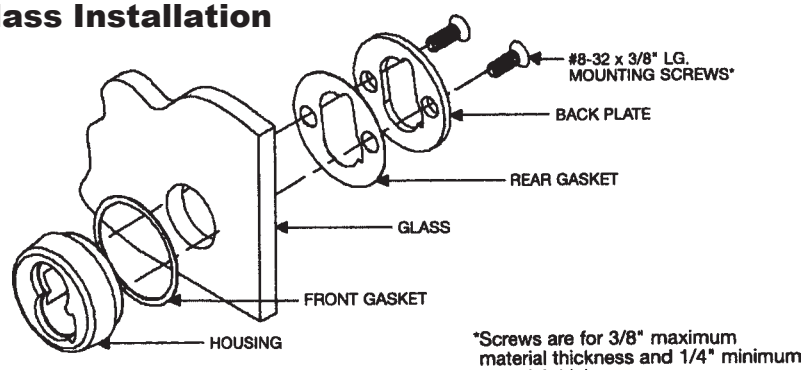
Title				
Installation instructions for 722S-TBM series sliding door lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
722S-TBM	**1”**	**Plunger**	**Surface**	**06/2004**

MARSHALL BEST SECURITY

Installation Instructions

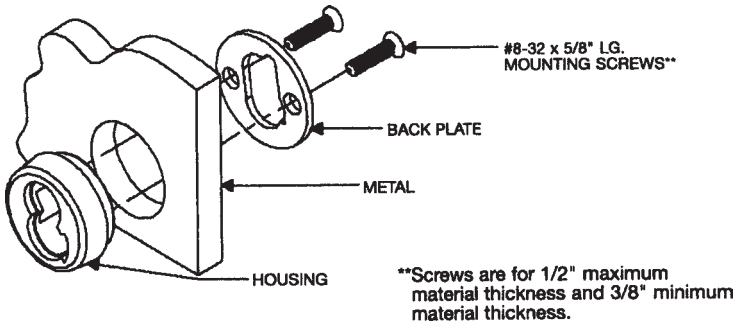
723

Glass Installation



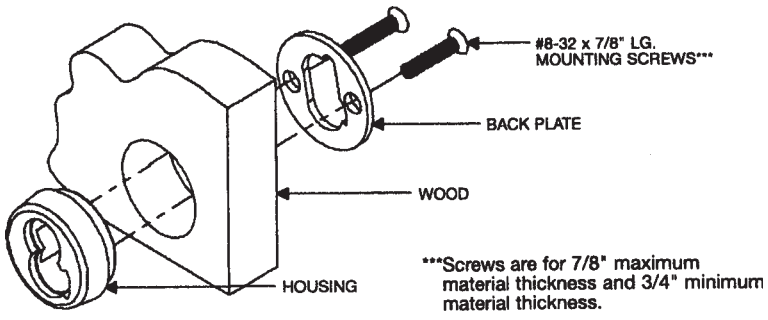
Note: Material thickness can be changed by using an "O" ring or changing the screw length.

Metal Installation



Note: Material thickness can be changed by using an "O" ring or changing the screw length.

Wood Installation



Note: Material thickness can be changed by using an "O" ring or changing the screw length.

Title				
Installation instructions for 723 series sliding door lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
723	**Adj.**	**Cyl. Housing**	**Surface**	**01/2006**

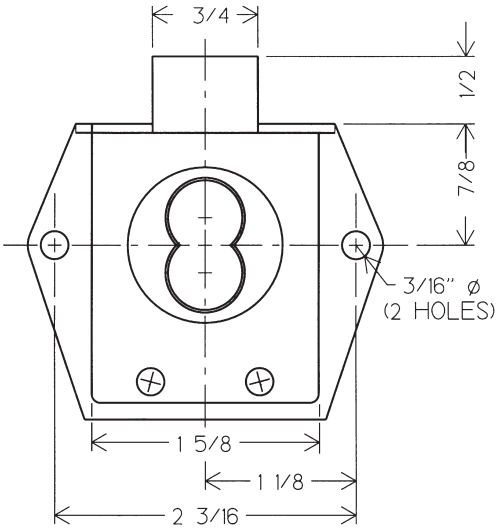
MARSHALL BEST SECURITY

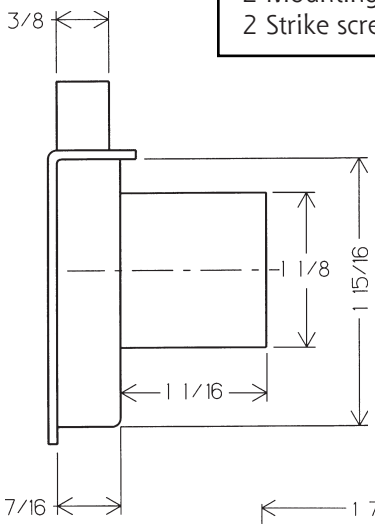
Installation Instructions

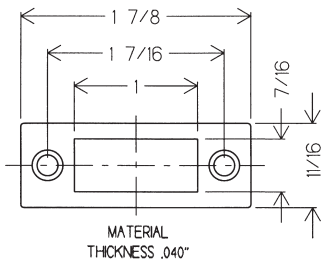
725MD

Includes

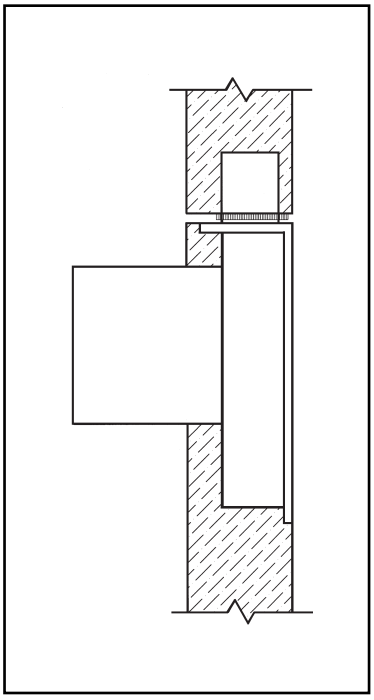
2 Mounting screws	#8 x 5/8"
2 Strike screws	#5 x 5/8"

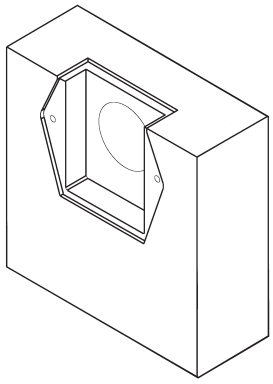




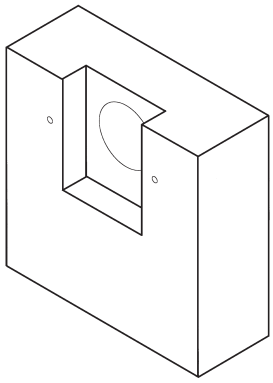


Typical Installation





Cutout for mortise application - including back plate (725 only)



Cutout for mortise Application - excluding back plate (725 only)

Title				
Installation instructions for 725MD series cabinet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
725MD	**1-1/16"**	**Deadbolt**	**Mortise**	**07/2009**

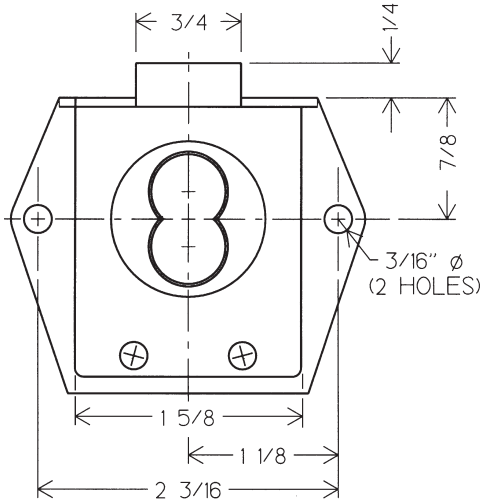
MARSHALL BEST SECURITY

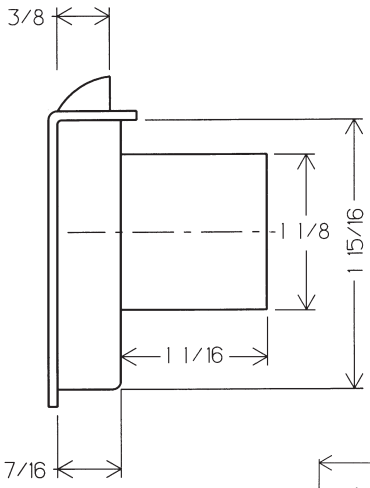
Installation Instructions

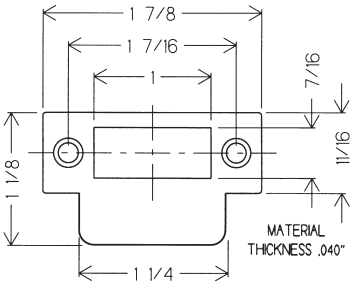
725ML

Includes

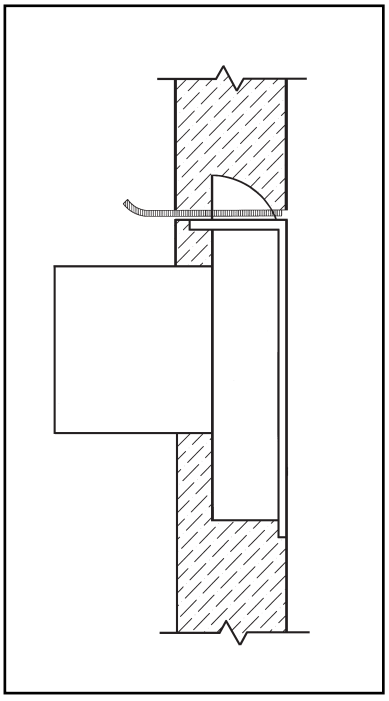
2 Mounting screws	#8 x 5/8"
2 Strike screws	#5 x 5/8"

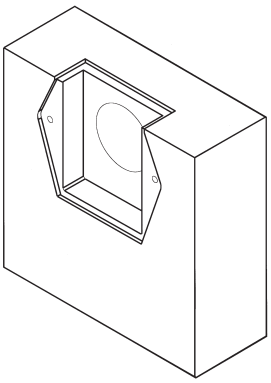




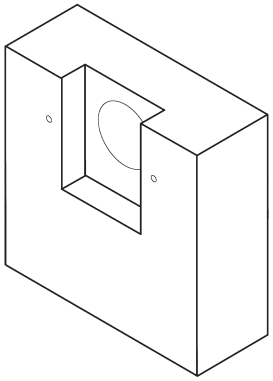


Typical Installation





Cutout for mortise application - including back plate (725 only)



Cutout for mortise Application - excluding back plate (725 only)

Title				
Installation instructions for 725ML series cabinet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
725ML	**1-1/16"**	**Latch**	**Mortise**	**07/2009**

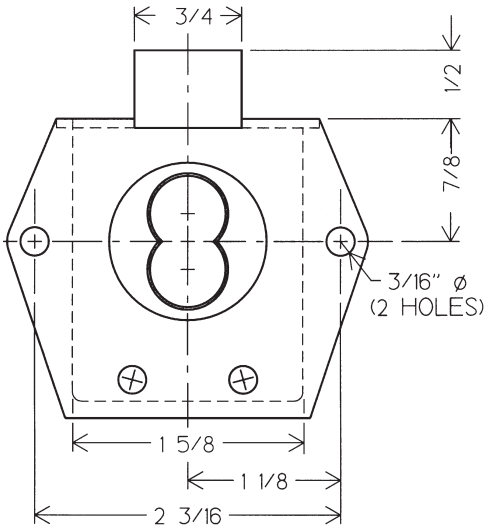
MARSHALL BEST SECURITY

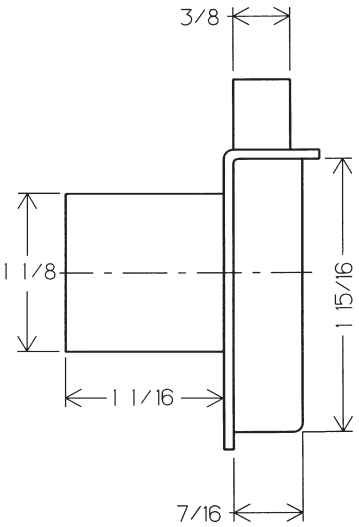
Installation Instructions

725RD

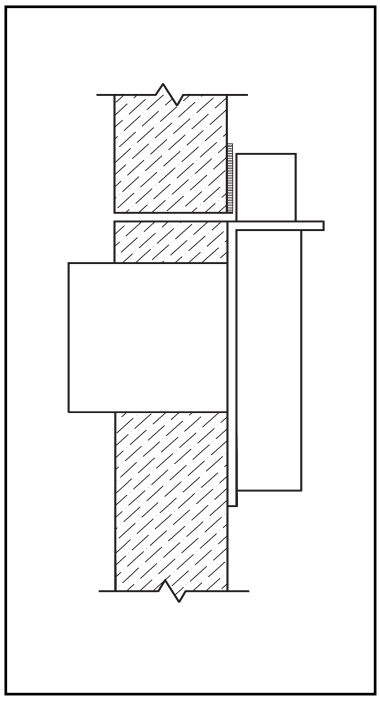
Includes

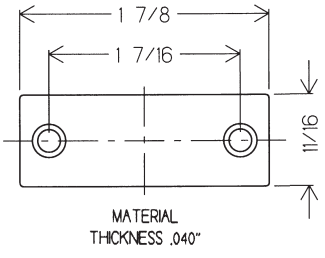
2 Mounting screws	#8 x 5/8"
2 Strike screws	#5 x 5/8"





Typical Installation





Title				
Installation instructions for 725RD series cabinet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
725RD	**1-1/16"**	**Deadbolt**	**Surface**	**07/2009**

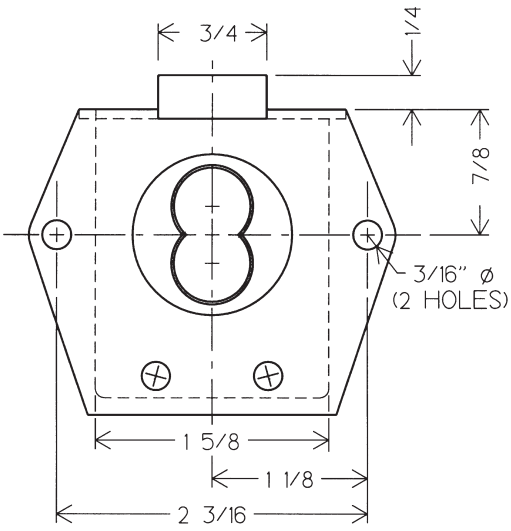
MARSHALL BEST SECURITY

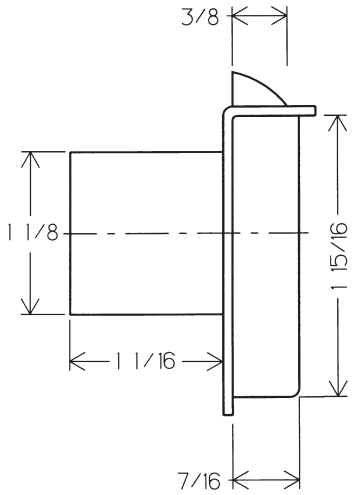
Installation Instructions

725RL

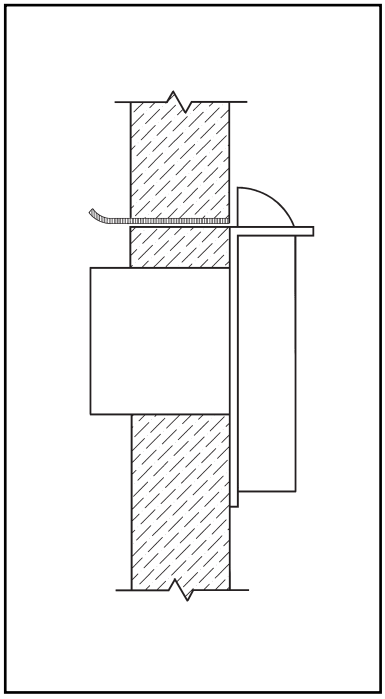
Includes

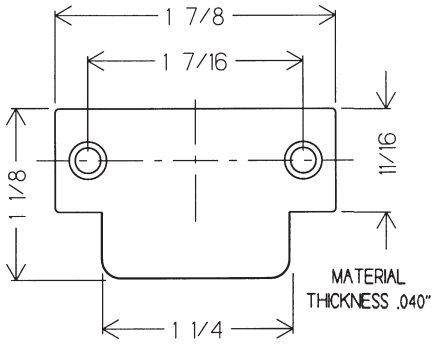
2 Mounting screws	#8 x 5/8"
2 Strike screws	#5 x 5/8"





Typical Installation





Title				
Installation instructions for 725RL series cabinet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
725RL	**1-1/16"**	**Latch**	**Surface**	**07/2009**

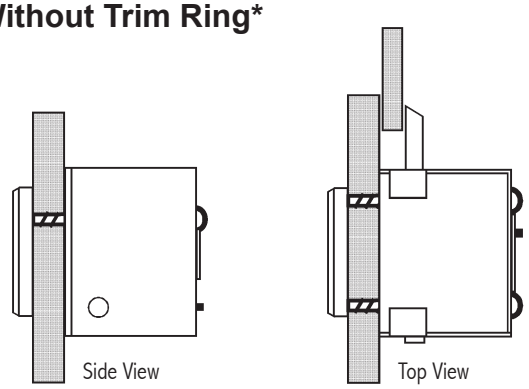
MARSHALL BEST SECURITY

Installation Instructions

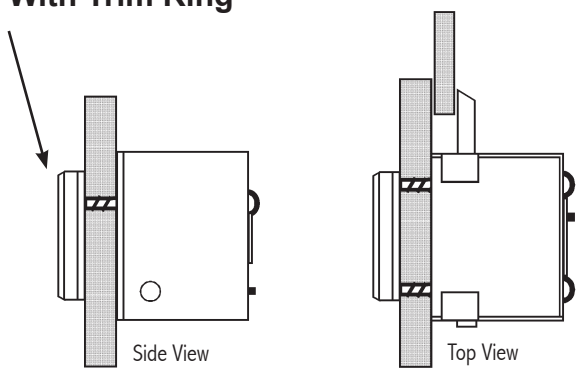
728MBL

For metal mail boxes

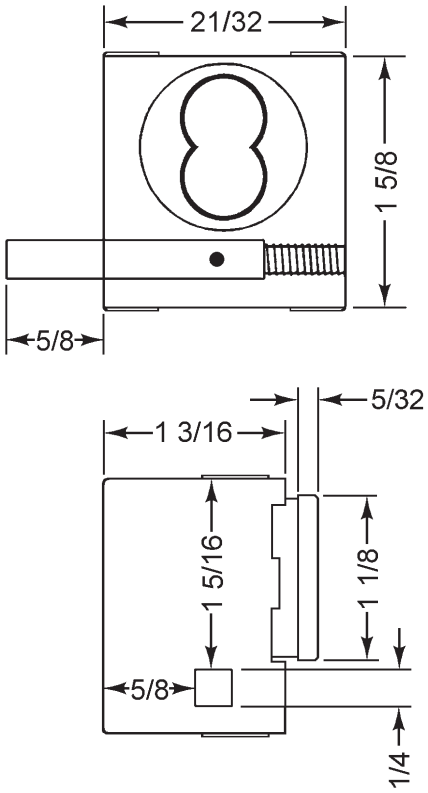
Without Trim Ring*

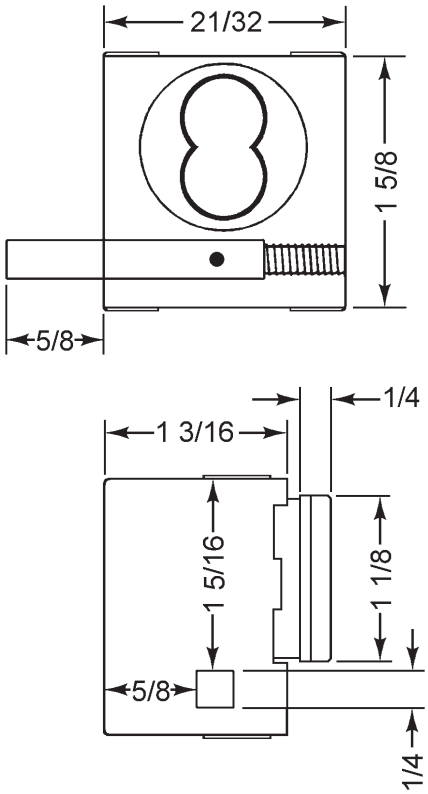


With Trim Ring*



*** Optional trim ring may be required for thin gauge metal doors when used with 7-pin SFIC cylinders**





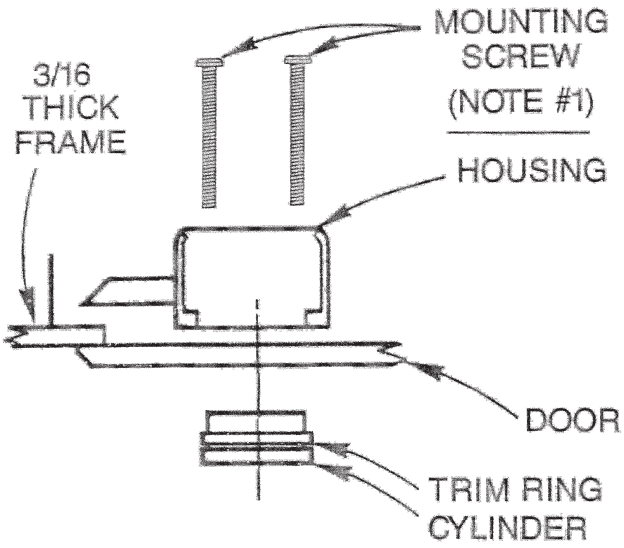
Title				
Installation instructions for 728MBL series mail box lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
728MBL	**n/a**	**Spring Latch**	**Surface**	**07/2017**

MARSHALL BEST SECURITY

728MBL

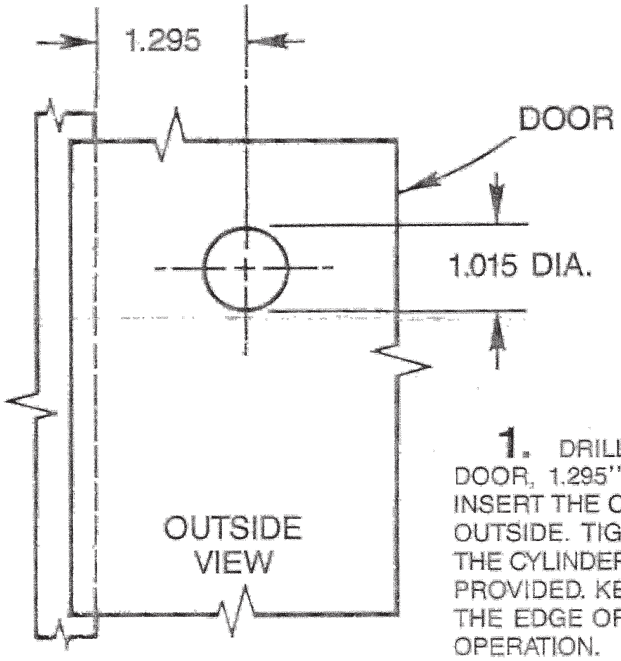
For metal mail boxes

NOTE: Actual installation will vary depending upon the specific mailbox manufacturer and dimensions of the metal enclosure and door.



THICKER DOORS DO NOT REQUIRE THE USE OF THE INCLUDED TRIM RING.

THINNER DOORS REQUIRE USE OF THE INCLUDED TRIM RING SO THAT 7-PIN SFIC CYLINDERS WILL FIT INTO THE LOCK.



1. DRILL A 1.015" DIAMETER HOLE IN THE DOOR, 1.295" FROM THE EDGE OF THE FRAME. INSERT THE CYLINDER INTO THE HOLE FROM THE OUTSIDE. TIGHTEN THE HOUSING SECURELY TO THE CYLINDER WITH THE TWO MOUNTING SCREWS PROVIDED. KEEP THE LATCH PERPENDICULAR TO THE EDGE OF THE DOOR. CHECK FOR CORRECT OPERATION.

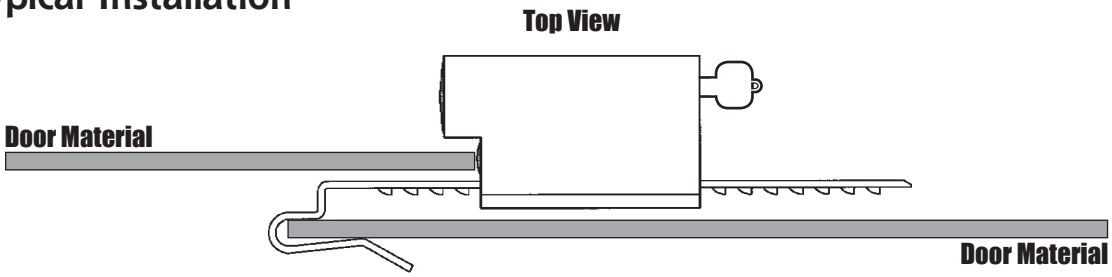
Title				
Installation instructions for 728MBL series mail box lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
728MBL	n/a	Spring Latch	Surface	07/2017

MARSHALL BEST SECURITY

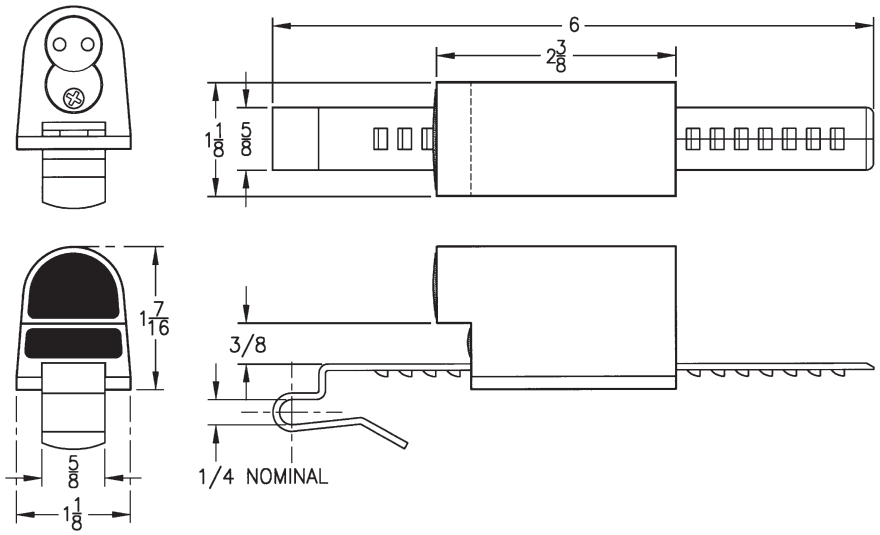
Installation Instructions

729R

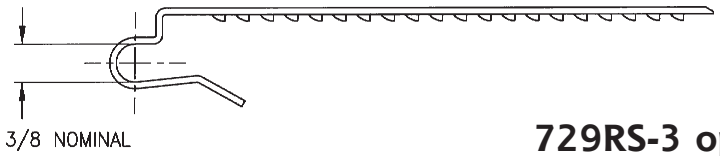
Typical Installation



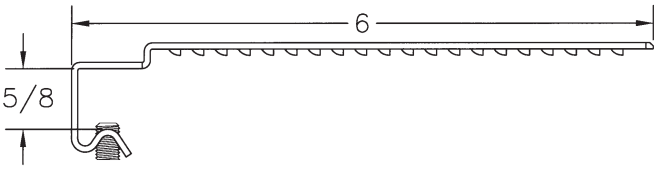
729R Dimensions



729RS-2 optional strap dimensions



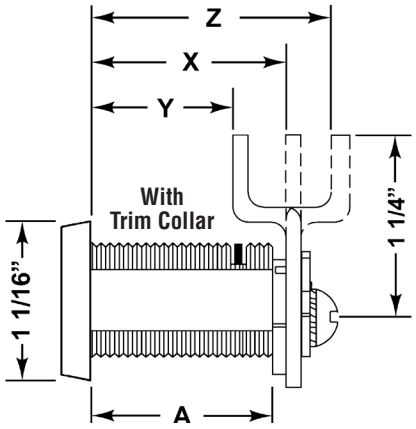
729RS-3 optional strap dimensions



Title				
Installation instructions for 729R series sliding door ratchet lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
729R	n/a	Ratchet	Surface	03/2009

MARSHALL BEST SECURITY

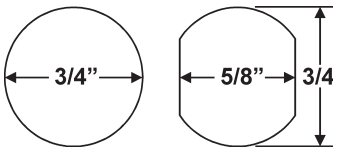
B7 Series

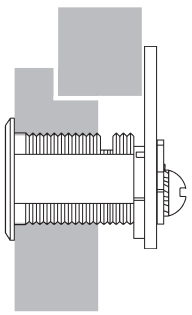


Cam Lock Dimensions

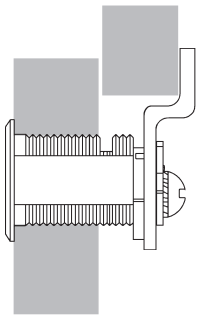
With Trim Collar	
For Mat. Thickness	7/8"
Straight Cam (X)	1-3/16"
Inbent Cam (Y)	7/8"
Outbent Cam (Z)	1-1/2"
Cylinder Length (A)	1-1/8"

Mounting Cutout

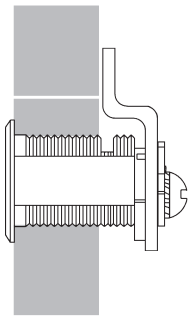




Lipped/ Overlay



Overlay



Flush

Title				
Installation instructions for B7 series cam lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
B7	See Chart	Cam Lock	Surface	11/2012

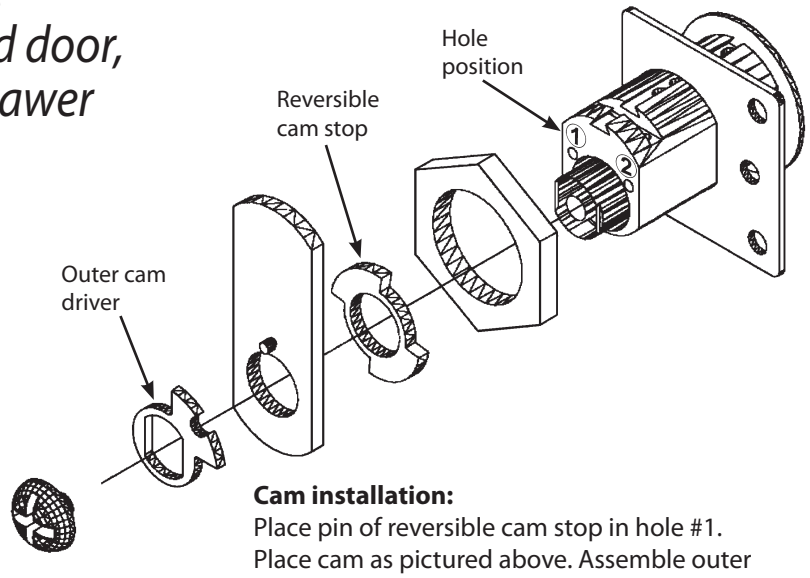
MARSHALL BEST SECURITY

B7

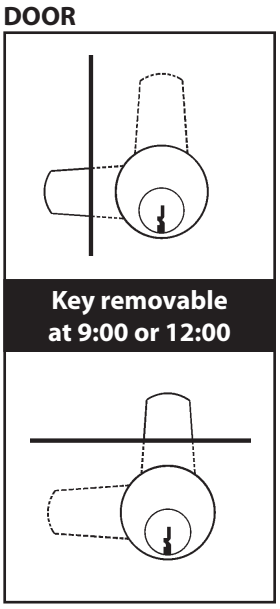
All below configurations can be used with straight cam or offset cam (in either the inbent or outbent position).

Function:
right-hand door, vertical drawer

Rear view

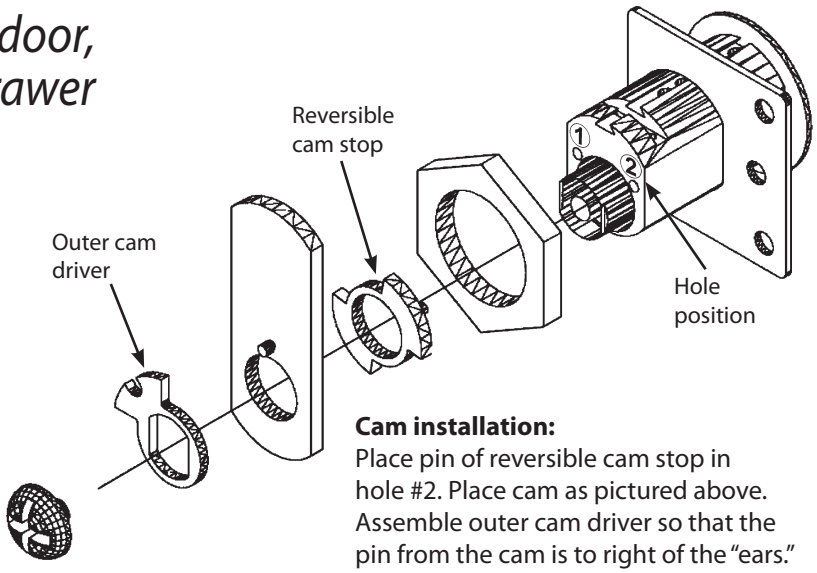


Cam installation:
Place pin of reversible cam stop in hole #1. Place cam as pictured above. Assemble outer cam driver so that the pin from the cam is to left of the "ears." Screw in cam screw until tight.

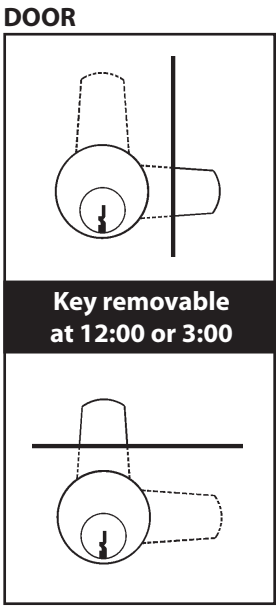


Function:
left-hand door, vertical drawer

Rear view



Cam installation:
Place pin of reversible cam stop in hole #2. Place cam as pictured above. Assemble outer cam driver so that the pin from the cam is to right of the "ears." Screw in cam screw until tight.



Title				
Installation instructions for B7 series cam lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
B7	See Chart	Cam Lock	Surface	11/2012

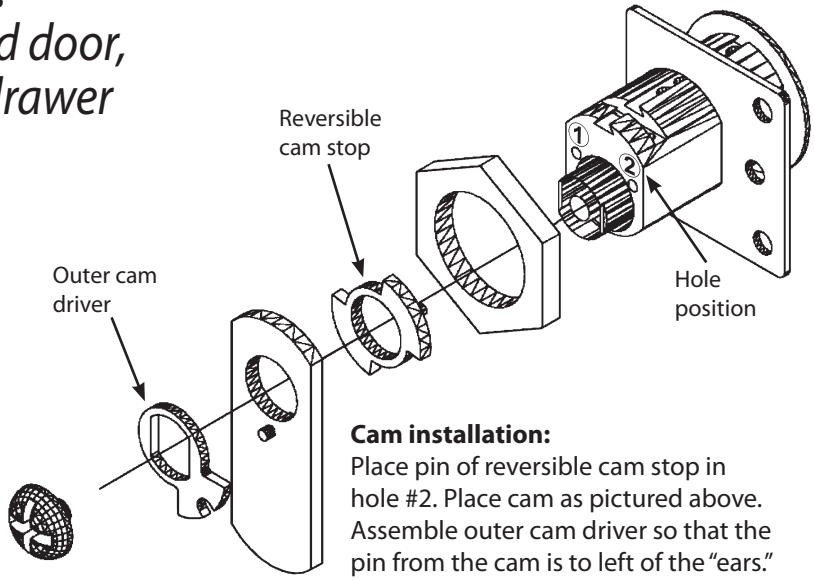
MARSHALL BEST SECURITY

B7

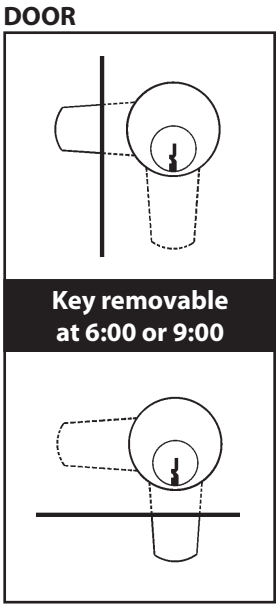
All below configurations can be used with straight cam or offset cam (in either the inbent or outbent position).

Function:
right-hand door, inverted drawer

Rear view

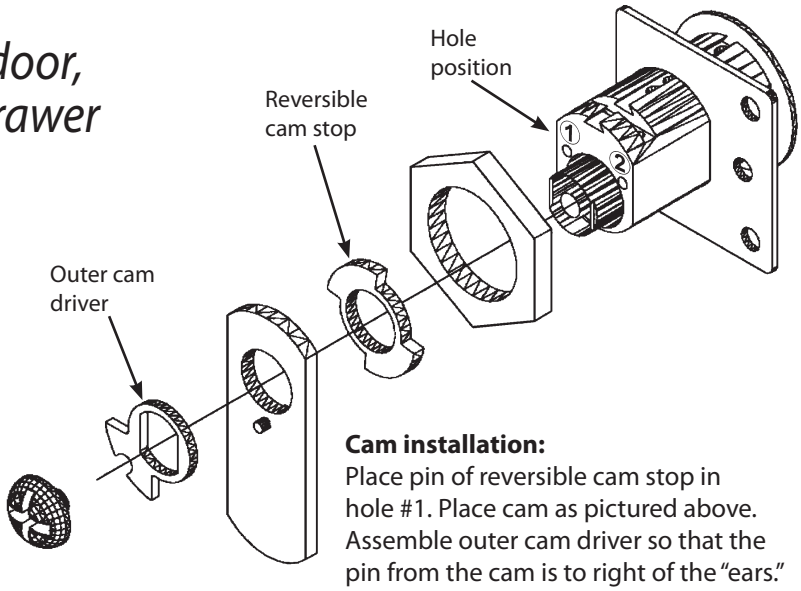


Cam installation:
Place pin of reversible cam stop in hole #2. Place cam as pictured above. Assemble outer cam driver so that the pin from the cam is to left of the "ears." Screw in cam screw until tight.

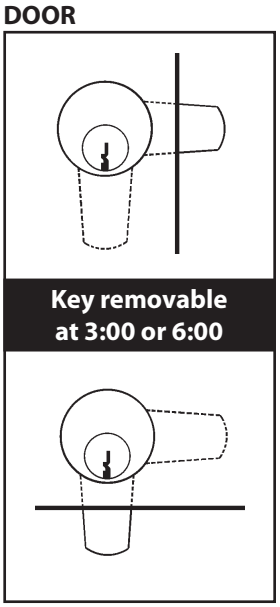


Function:
left-hand door, inverted drawer

Rear view



Cam installation:
Place pin of reversible cam stop in hole #1. Place cam as pictured above. Assemble outer cam driver so that the pin from the cam is to right of the "ears." Screw in cam screw until tight.



Title				
Installation instructions for B7 series cam lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
B7	See Chart	Cam Lock	Surface	11/2012

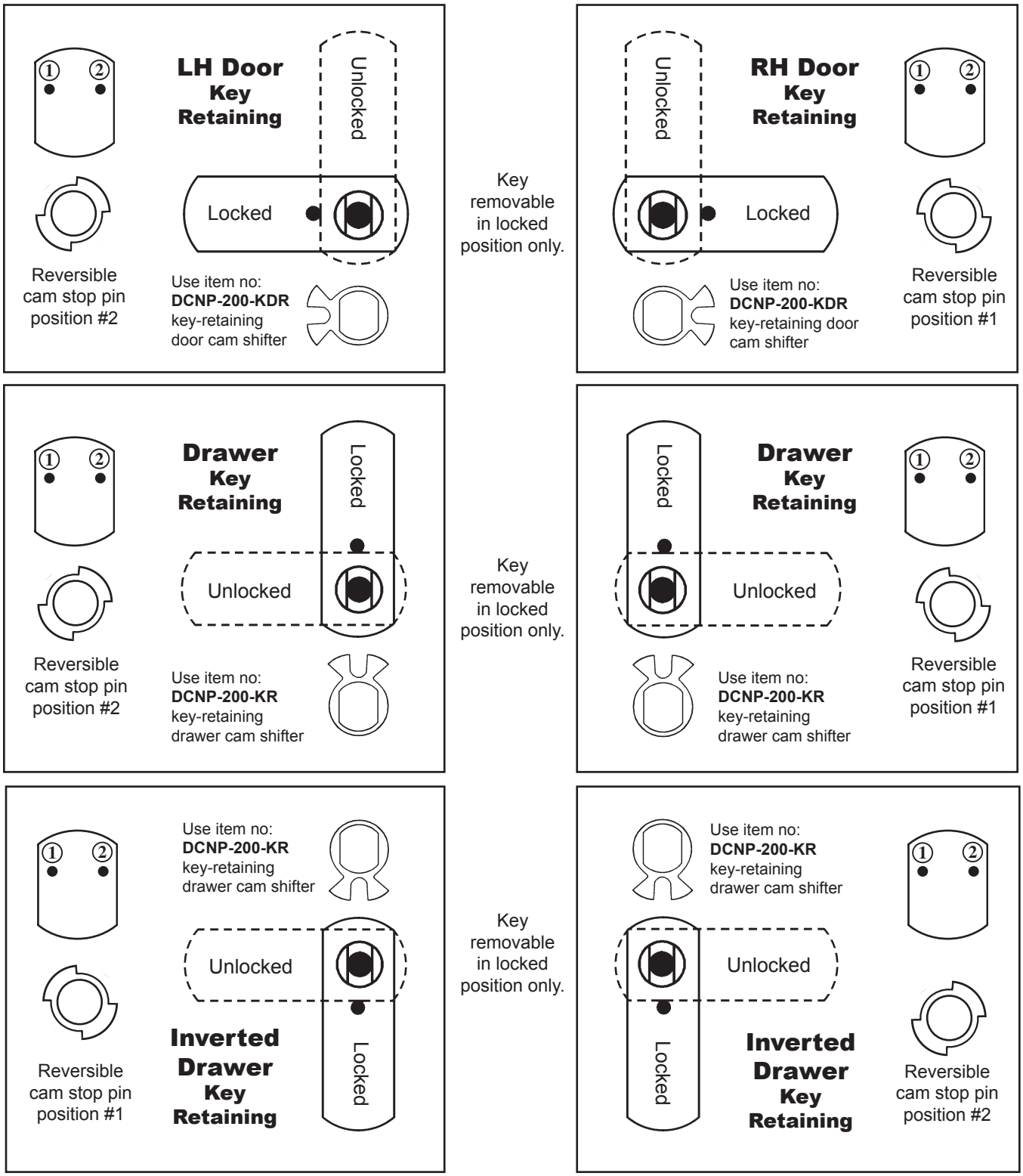
MARSHALL BEST SECURITY

Installation Instructions

DCN/DCR/B7 Series (key-retaining assembly)

*** ***For proper function, install cam in the locked position*** ***

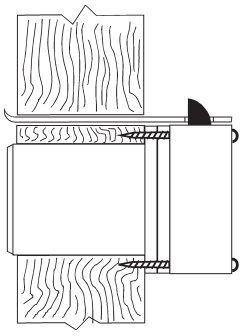
Key-retaining assembly requires purchase of additional key-retaining cam shifters
(For doors use item no: **DCNP-200-KDR**) / (For drawers use item no: **DCNP-200-KR**)



MARSHALL BEST SECURITY

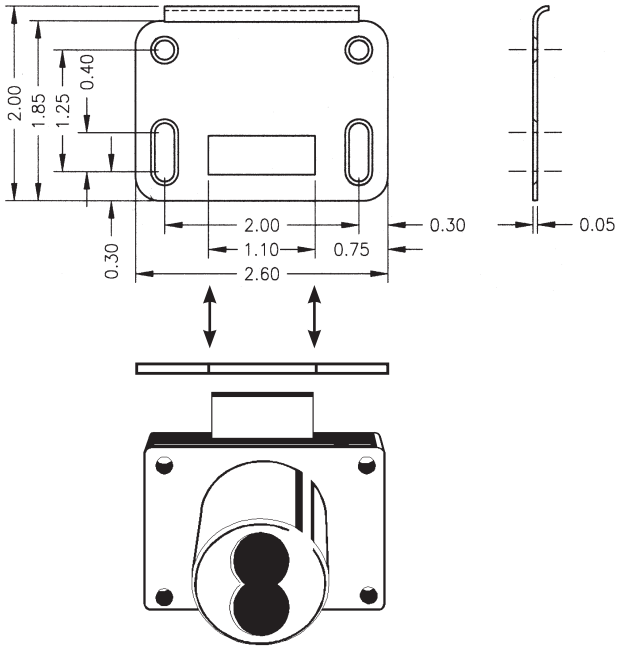
Installation Instructions

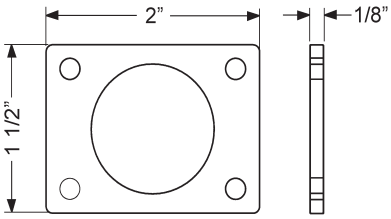
L72V



Note: Strike must be mounted so that spring latch mechanism projects through strike slot when the drawer is closed.

L78ST-1 lip strike
Provided with each lock

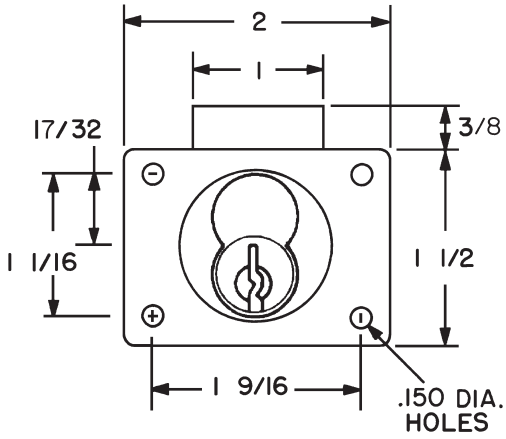


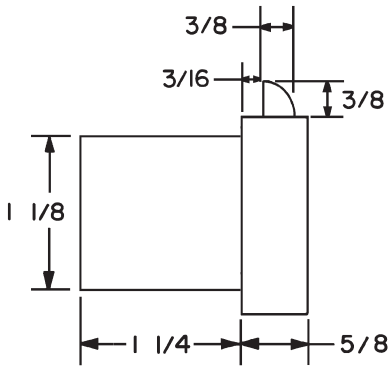


10-350 - 1/8" spacer

Note: Use of spacers and strike depends on application and material thickness.

Note: For correct lock function, line up latch with slot in provided lip strike.





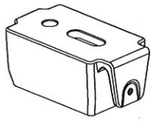
Title				
Installation instructions for L72V series cabinet drawer lock				
Series	Barrel Length	Bolt type	Mounting	Revision Date
L72V	**1-1/4"**	**Latch**	**Surface**	**05/2013**

MARSHALL BEST SECURITY

1000 Series Mullion
INSTALLATION INSTRUCTIONS

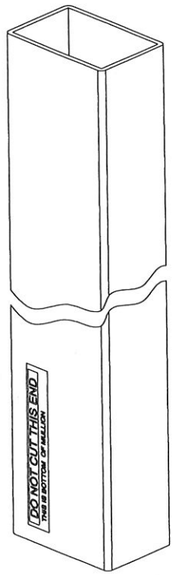
This kit includes the following parts

Top Mullion Fitting Shim



Top Mullion Fitting

Bottom Mullion Fitting



Mullion Body

Screws Chart

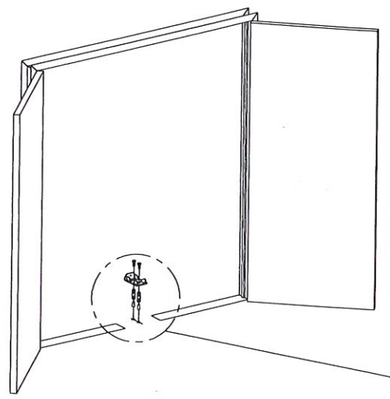
Phillips Pan Head Machine Screw
5/16-18 x 1-1/4"

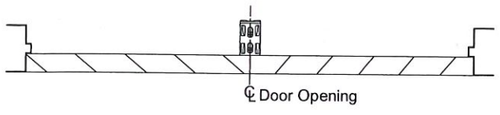
Expansion Anchor

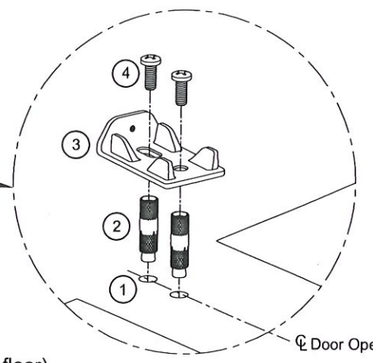
Phillips Pan Head Machine Screw
8-32 x 1/4"

Phillips Pan Head Machine Screw
5/16-18 x 3/4"

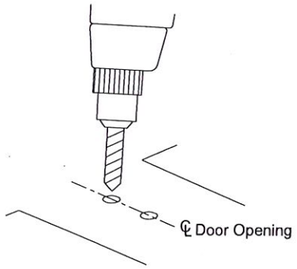
1. Install bottom mullion fitting.



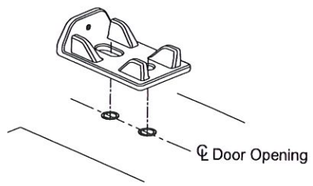




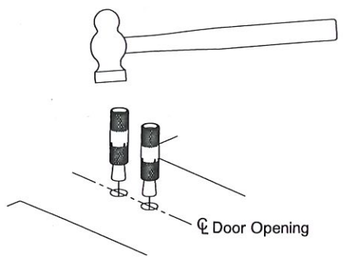
(1) Drill 1/2" diameter x 2" deep holes
(Use bottom mullion fitting as template to cut threshold to allow bottom mullion fitting to sit on the floor)



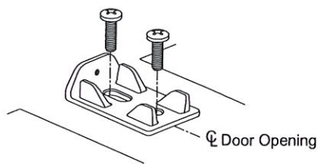
(3) Position bottom mullion fitting.



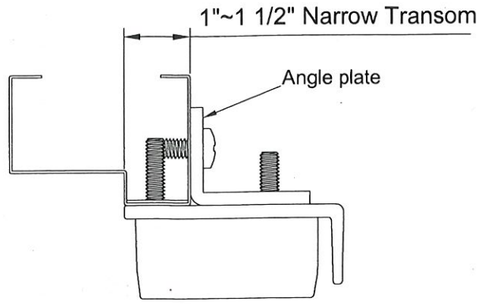
(2) With a hammer, install expansion anchors until flush with floor.

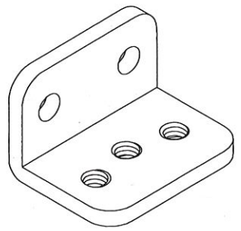


(4) Install screws.
(Phillips Pan Head Machine Screw 5/16-18 x 3/4")

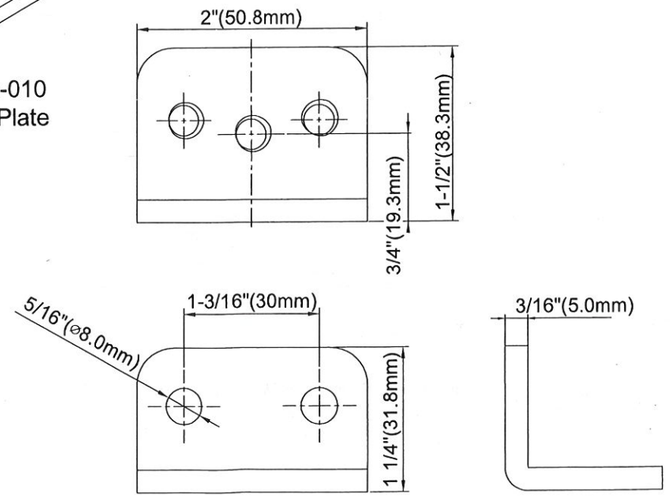


Dimension of angle plate

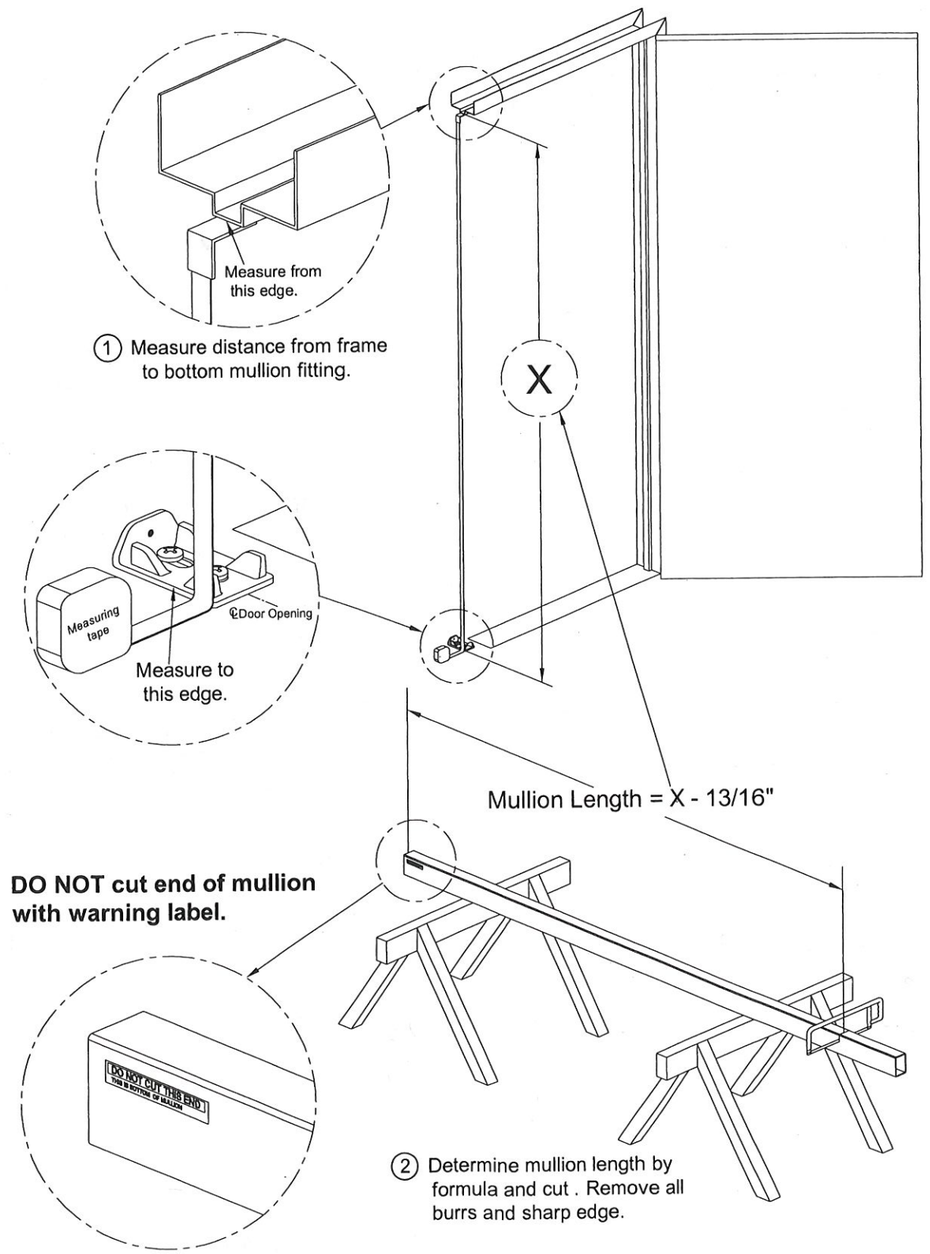




P/N 618352-010
Angle Plate



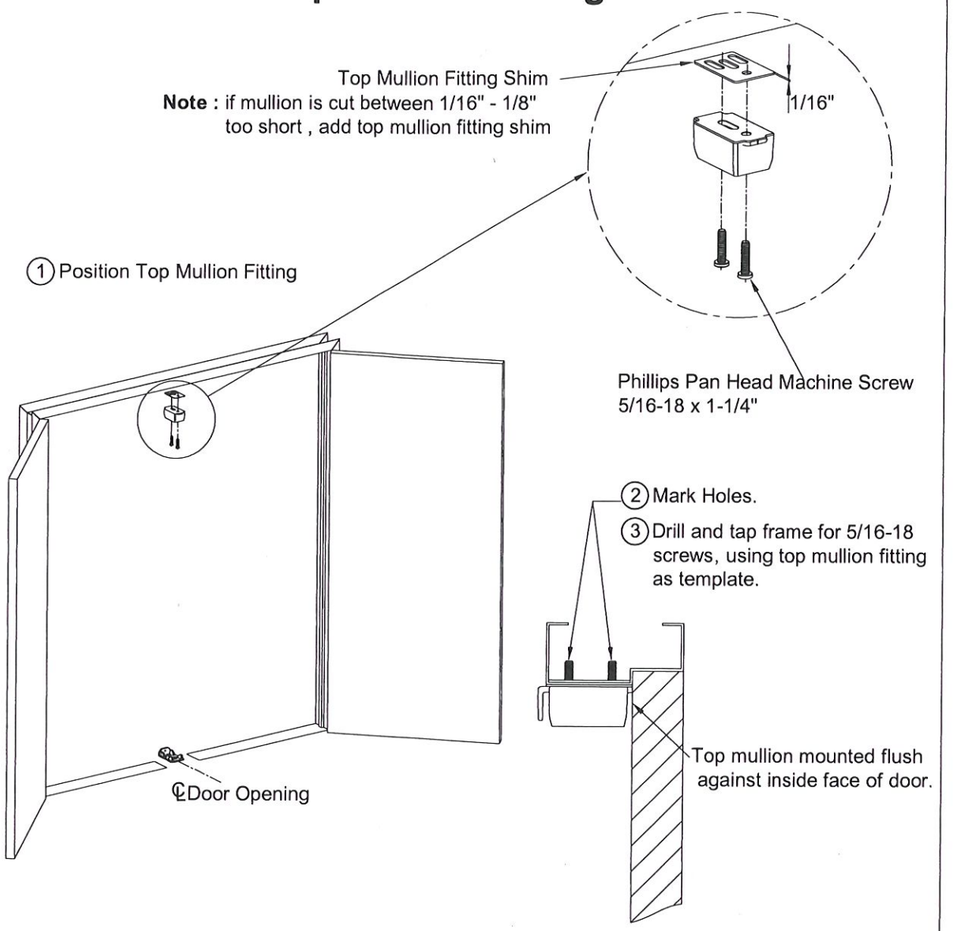
2. Size mullion.



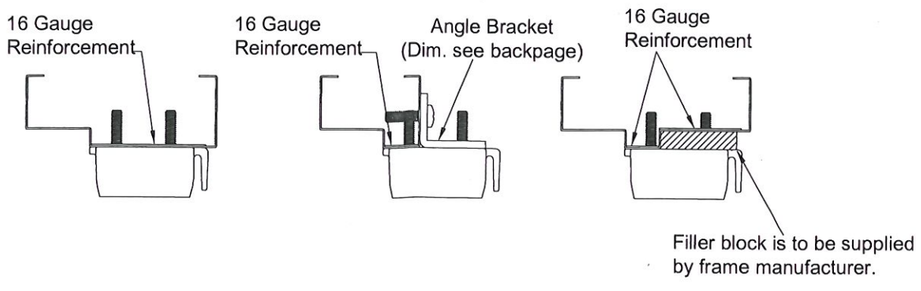
① Measure distance from frame to bottom mullion fitting.

② Determine mullion length by formula and cut . Remove all burrs and sharp edge.

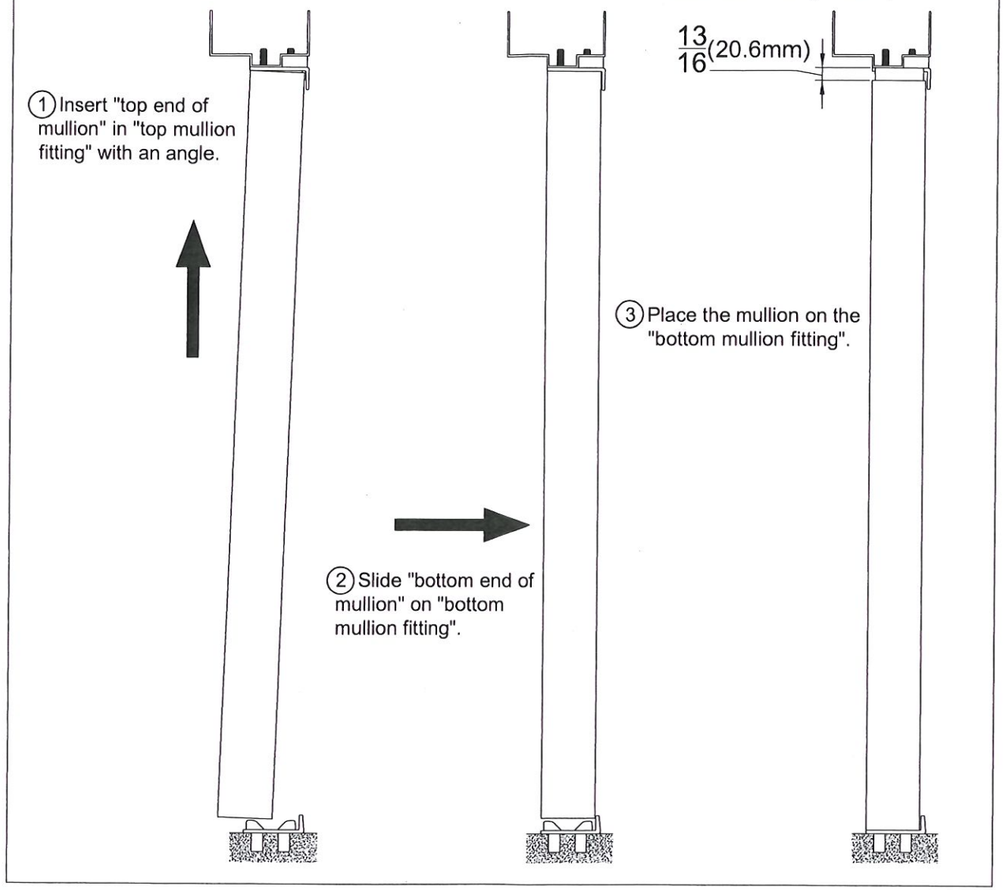
3. Install top mullion fitting.



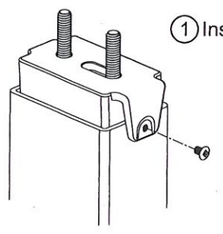
Mounting Top mullion fitting on optional frame styles:



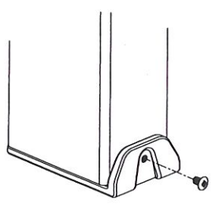
4. Final installation.



5.Install set screws.



① Install Phillips Pan Head Machine Screw 8-32 x 1/4" on top mullion fitting and fasten it.

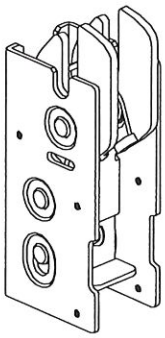


② Install Phillips Pan Head Machine Screw 8-32 x 1/4" bottom mullion fitting and fasten it.

KEYED REMOVABLE MULLIONS

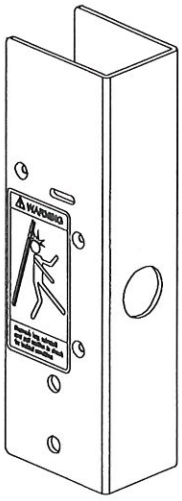
1000 Series Mullion
INSTALLATION INSTRUCTIONS

This kit includes the following parts

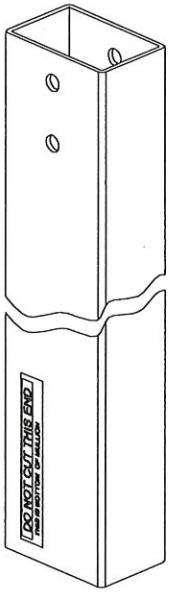


Locking Mullion Assembly

Top Mullion Fitting Shim



Sleeve



Mullion Body

Top Mullion Fitting

Bottom Mullion Fitting

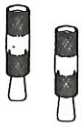
Cylinder Locking Washer

Cylinder Locking Nut

Screws Chart

Flat Phillips Head Machine Screw
8-32 x 3/8"

Sex Bolt



Expansion Anchor

Phillips Pan Head Machine Screw
5/16-18 x 1-1/4"

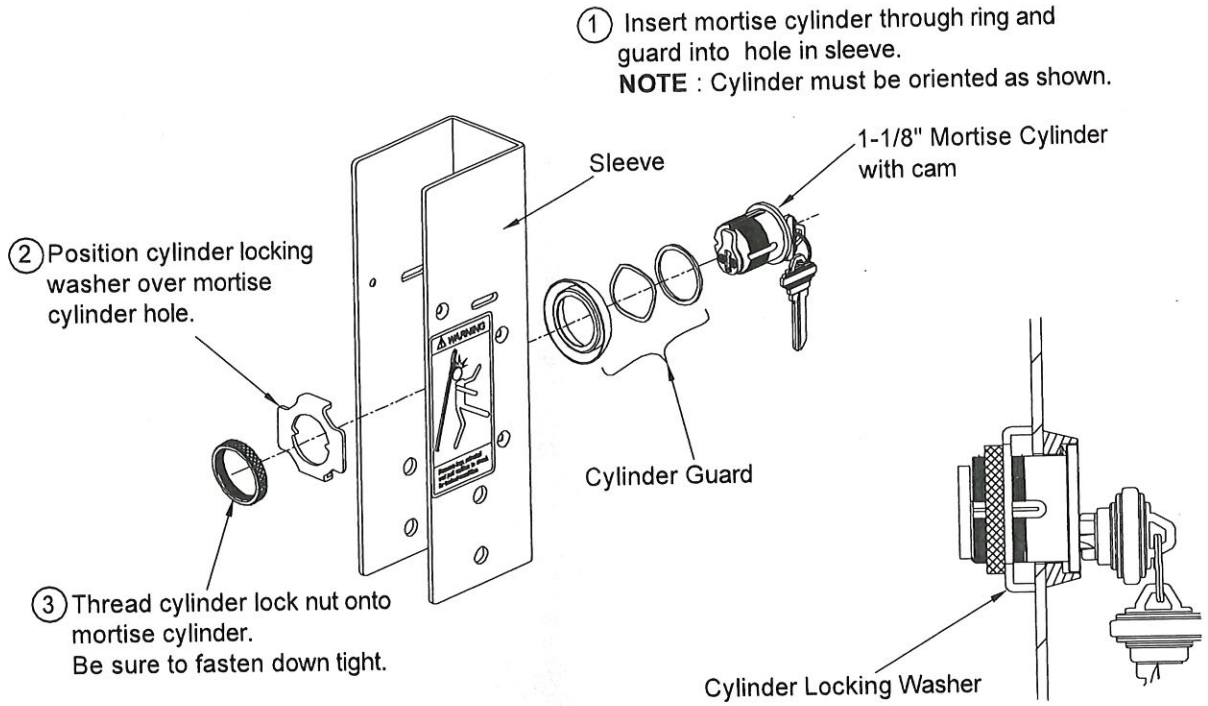
Phillips Pan Head Machine Screw
8-32 x 1/4"

Phillips Pan Head Machine Screw
5/16-18 x 3/4"

Flat Phillips Head Machine Screw
1/4-20x1-1/16

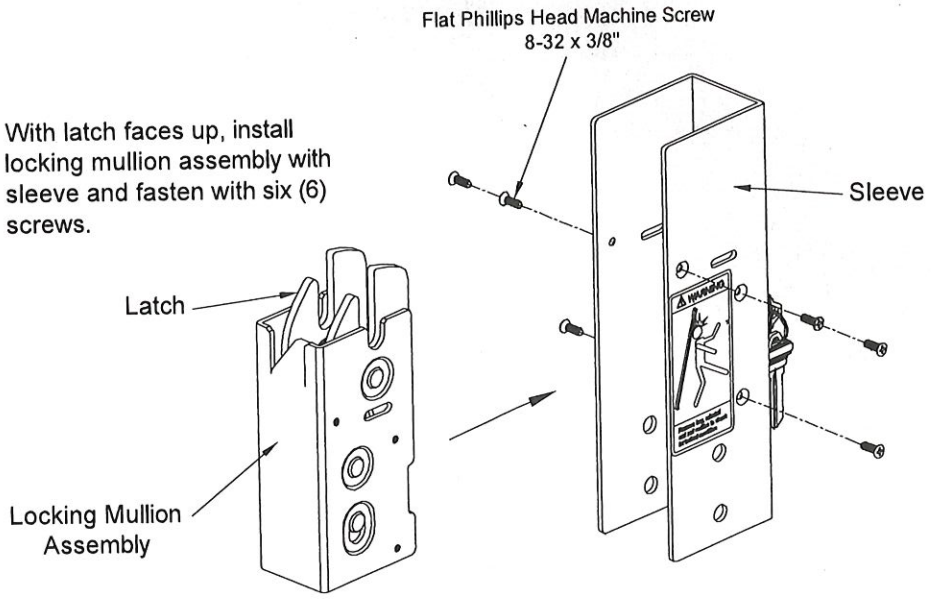
1. Prepare the locking unit.

1. Install Mortise Cylinder onto Sleeve

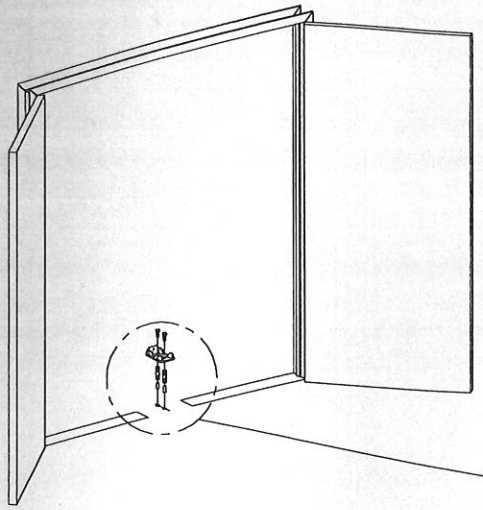


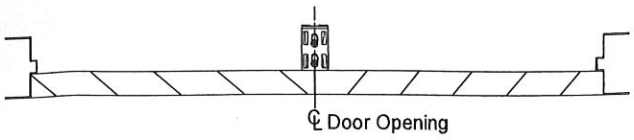
2. Assemble Locking Mullion Assembly With Sleeve

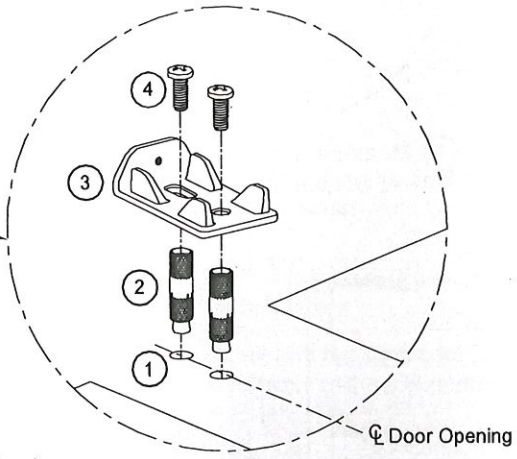
With latch faces up, install locking mullion assembly with sleeve and fasten with six (6) screws.



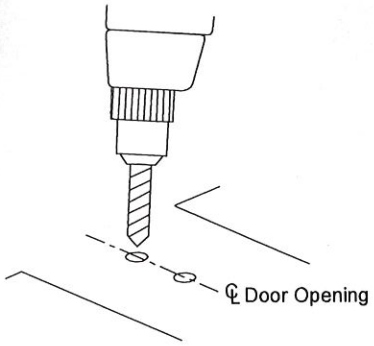
2. Install bottom mullion fitting.



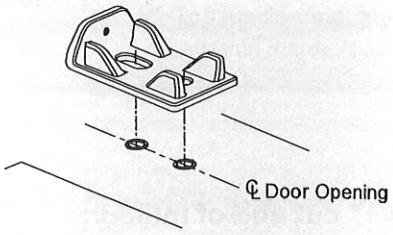




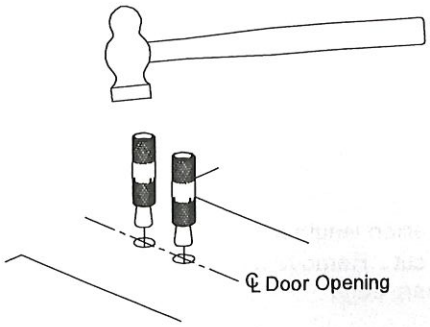
(1) Drill 1/2" diameter x 2" deep holes
(Use bottom mullion fitting as template to cut threshold to allow bottom mullion fitting to sit on the floor)



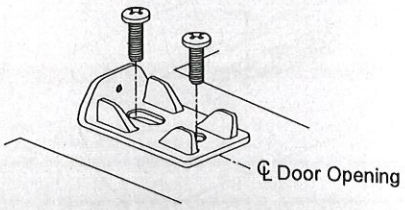
(3) Position bottom mullion fitting.



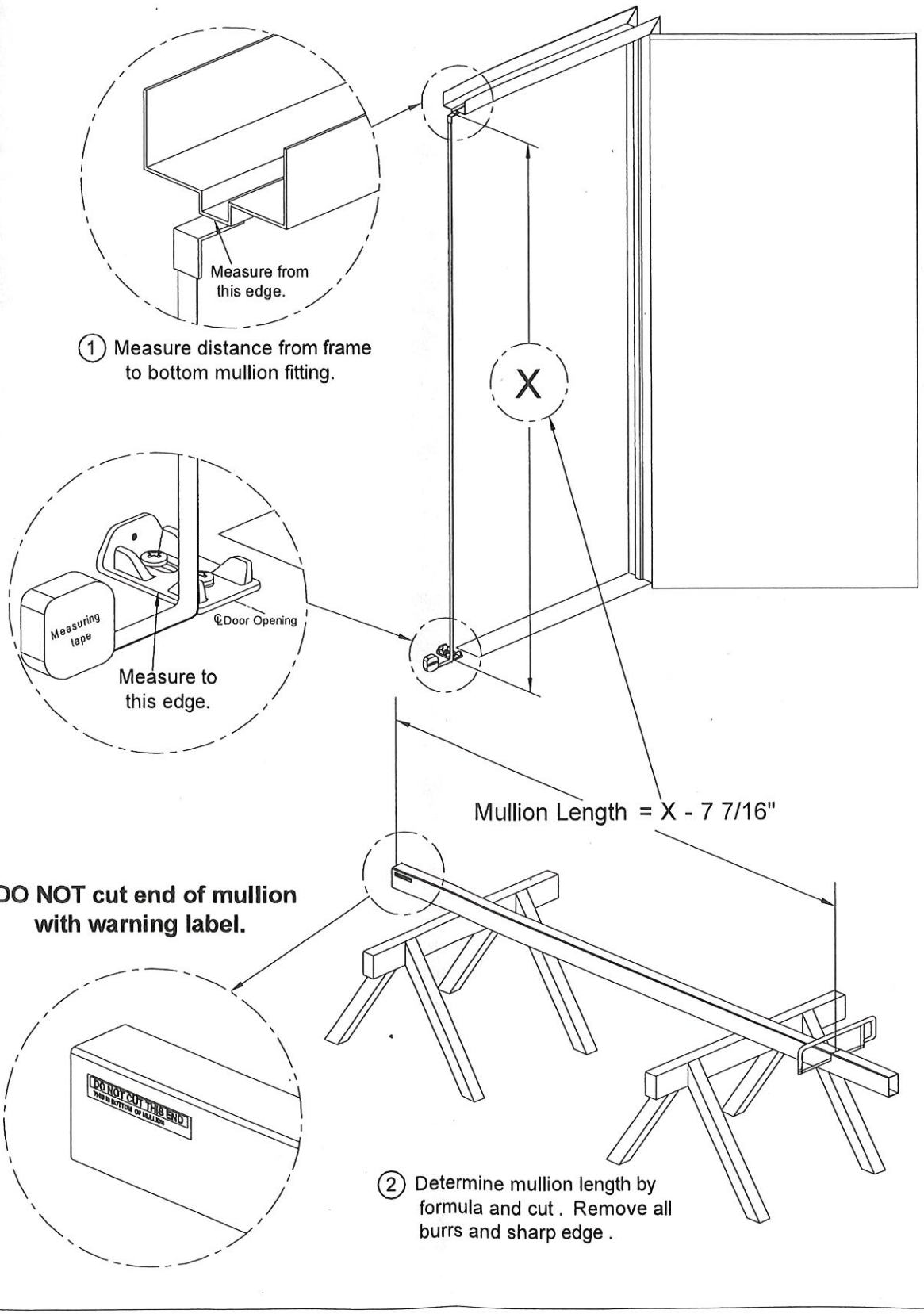
(2) With a hammer, install expansion anchors until flush with floor.



(4) Install screws.
(Phillips Pan Head Machine Screw 5/16-18 x 3/4")



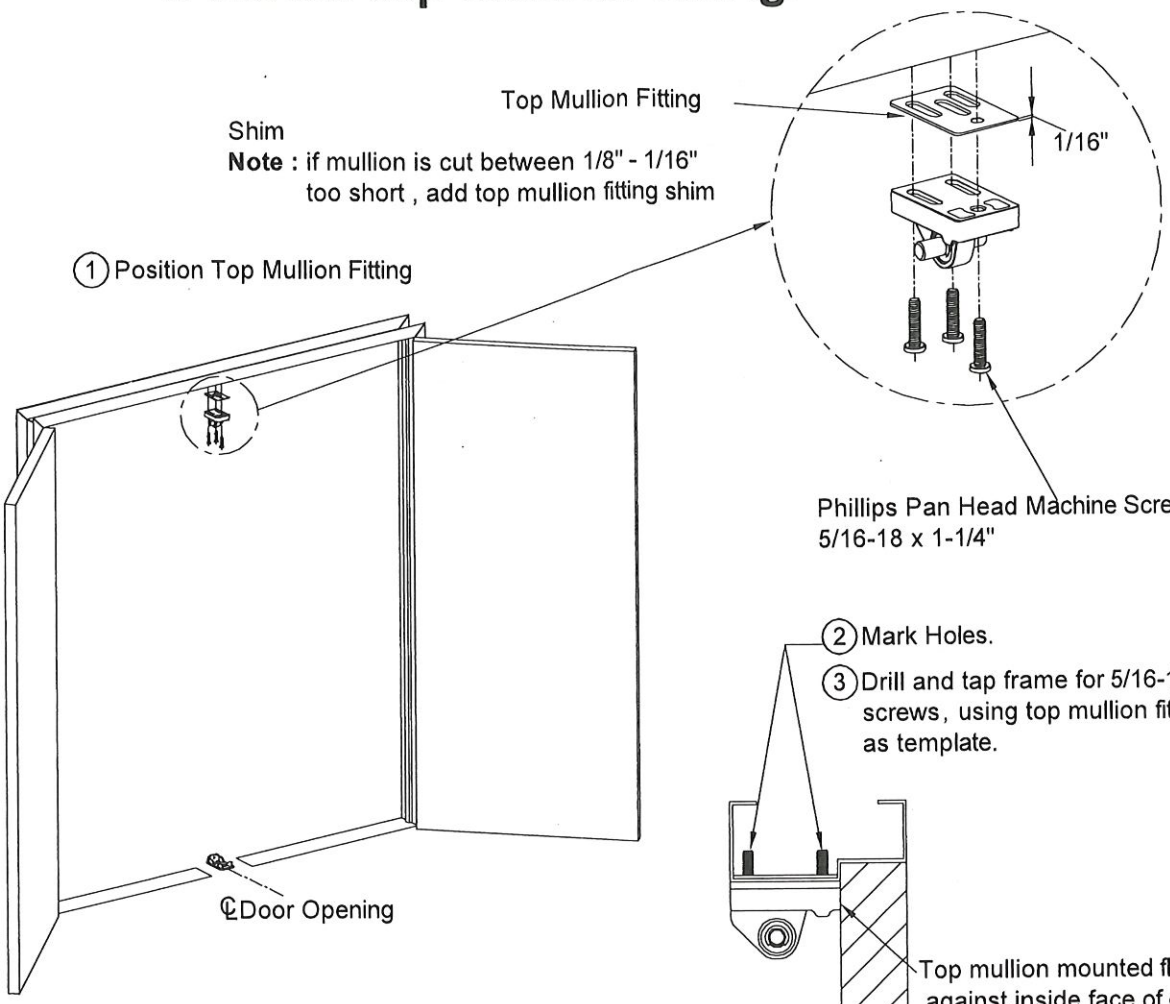
3. Size mullion.



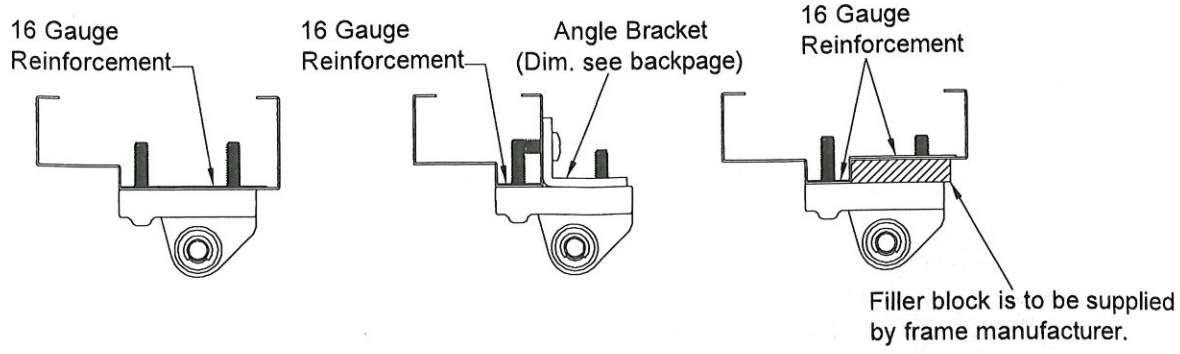
① Measure distance from frame to bottom mullion fitting.

② Determine mullion length by formula and cut . Remove all burrs and sharp edge .

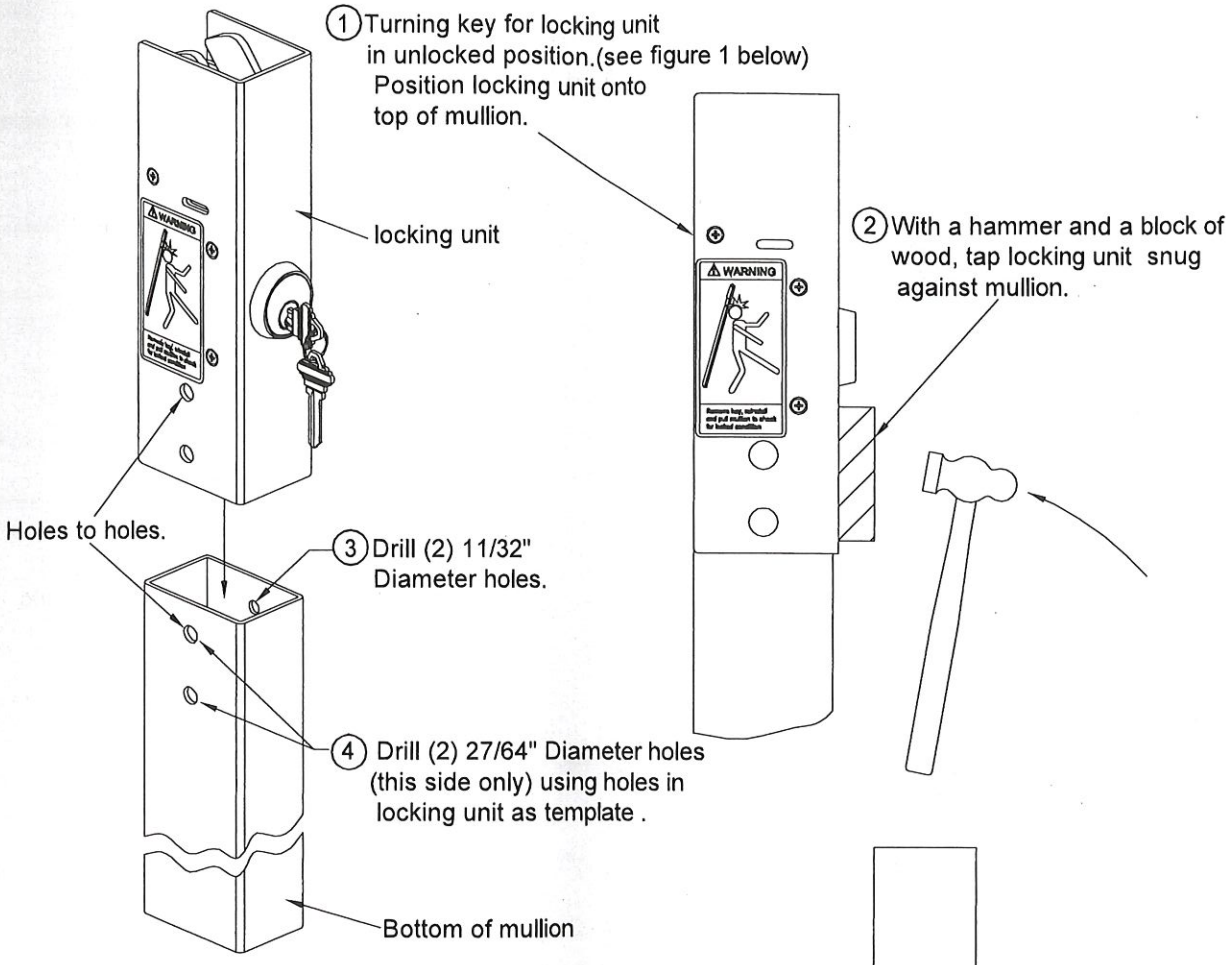
4. Install top mullion fitting.



Mounting Top mullion fitting on optional frame styles:



5. Attach locking unit to mullion.



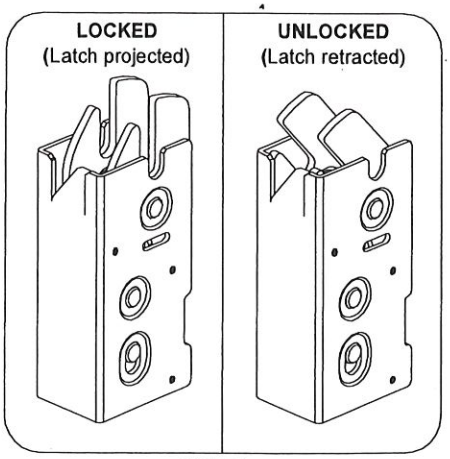
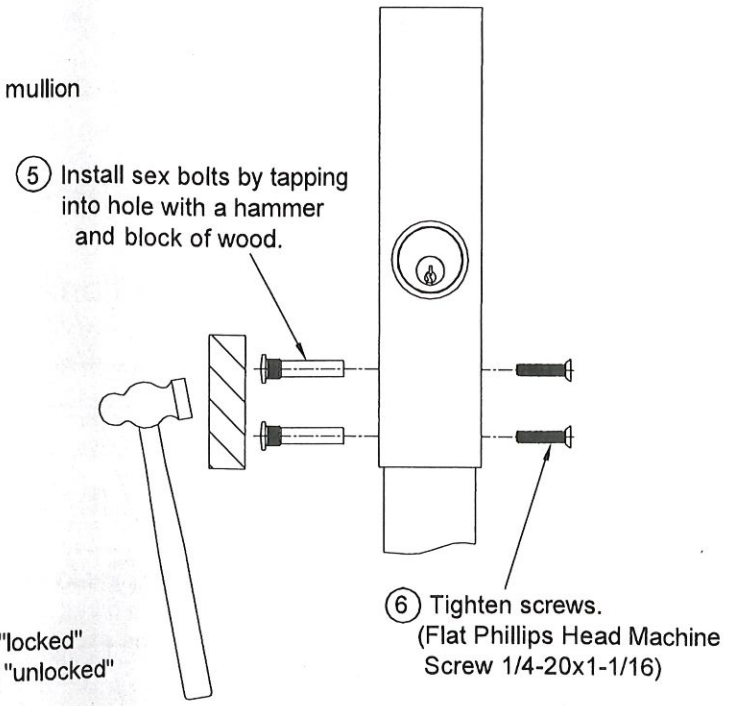


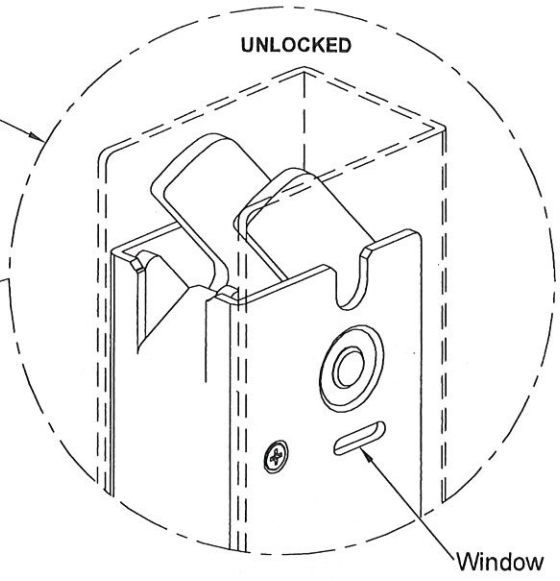
Figure1

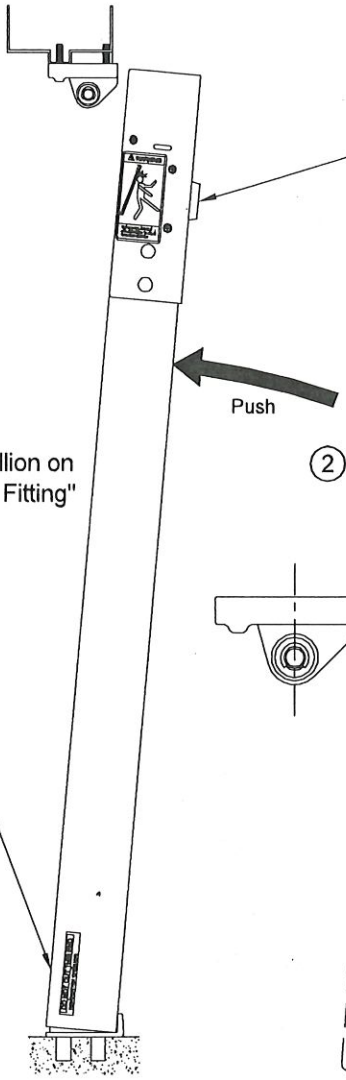


Locking Mullion Assembly is factory set in "locked" position (Latch projected), set assembly in "unlocked" position (Latch retracted) while installation.

6. Final installation.

Note : Make sure "Locking Unit" in unlocked position before sliding mullion into top mullion fitting.





① Fit bottom of mullion on "Bottom Mullion Fitting" at an angle.

② Slide mullion toward "Top Mullion Fitting" in position, check to make sure the mullion in locked position through window as **figure 2** shown.

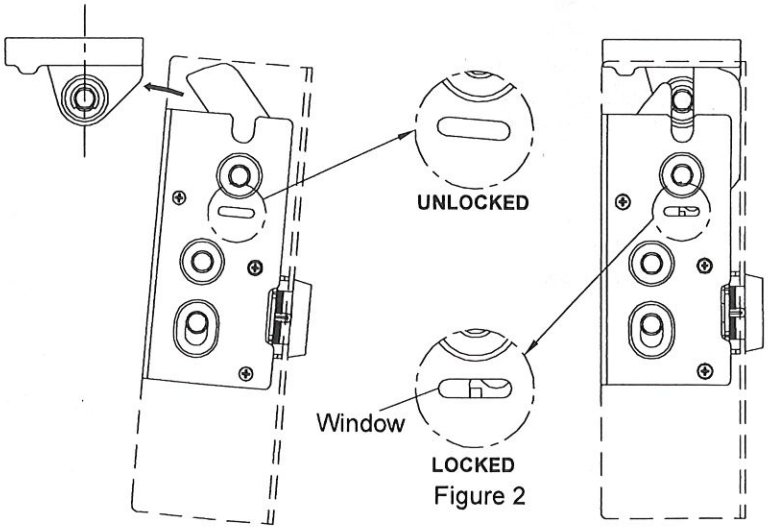
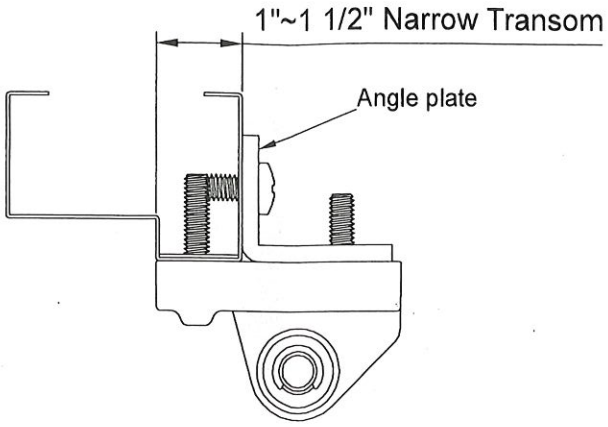


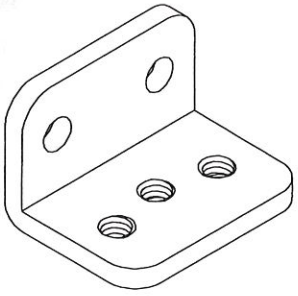
Figure 2

7. Operation

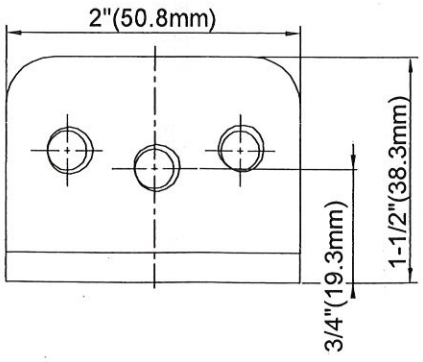
Rotate key to unlock and remove mullion

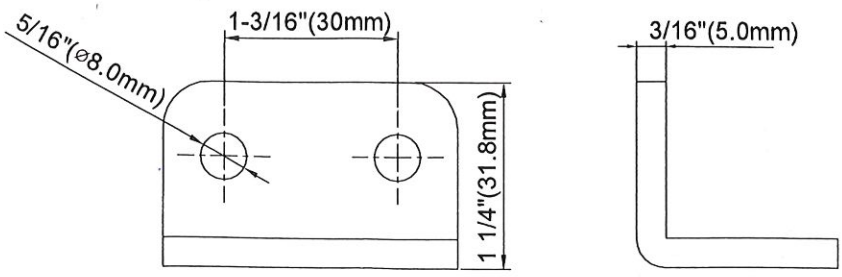
Dimension of angle plate





P/N 618352-010
Angle Plate





4 APPLY AC VOLTAGE TO PS101 AND TEST DEVICES. OPERATION SUMMARY

100-2 OPERATION SUMMARY				
MODE	INPUT		OUTPUT	
	I1	I2	O1	O2
SEQUENTIAL	OV	OV	OV	OV
	24V	=I1	24V	24V
	=I2	24V	24V	24V
INDIVIDUAL	OV	OV	OV	OV
	OV	24V	OV	24V
	24V	OV	24V	OV
	24V	24V	24V	24V

All DC voltages referenced to 100-2 ground terminal.

TROUBLE SHOOTING

SYMPTOM	CAUSE	SOLUTION
COVER GREEN LED OFF	No AC input voltage	See "PS101 / PS102 POWER SUPPLY"
NO PS101 OUTPUT, GREEN LED OFF	No AC input voltage	See "PS101 / PS102 POWER SUPPLY"
	Output current exceeds max rating ⚠ See "CAUTION" below ⚠ Voir "ATTENTION" ci-dessous	1. Reduce output current. 2. Replace fuse F2. Use 4 A slow blow, 250V. ⚠ See "CAUTION" below. ⚠ Voir "ATTENTION" ci-dessous
	100-FA not properly connected	See "100-FA FIRE ALARM BOARD"
12V ON OUTPUT INSTEAD OF 24V OR VICE VERSA	Improper DC output selection	See "PS101 / PS102 POWER SUPPLY"
ELR DEVICE TRIES, BUT FAILS, TO PULL LATCHBOLT	Wire size too small from power supply to ELR device, or wire run too long	See "100-2 INSTALLATION"
	Device adjusted improperly	Consult factory

⚠ CAUTION!

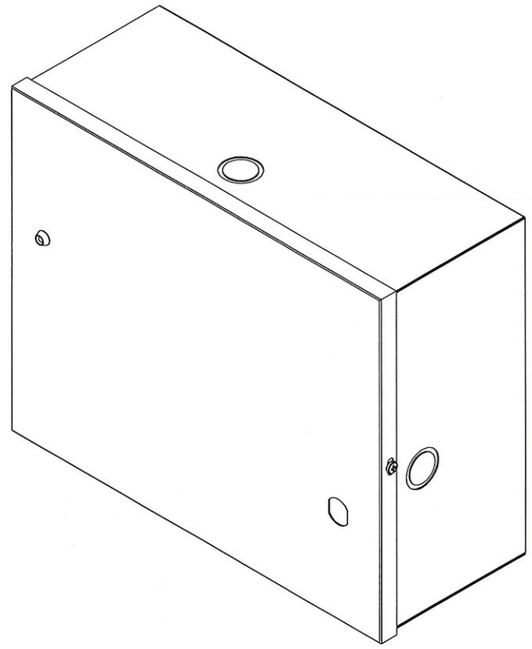
FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE, FOR REPLACEMENT OF FUSE, PLEASE RETURN TO MANUFACTURER / AUTHORIZED DEALERS FOR SERVICING.

⚠ ATTENTION!

AFIN DE MAINTENIR UNE PROTECTION CONTINUE CONTRE LES RISQUES D'INCENDIE, VEUILLEZ VOUS ADRESSER AU FABRICANT OU À SES REVENDEURS AUTORISÉS POUR PROCÉDER AU REMPLACEMENT DES FUSIBLES ET À L'ENTRETIEN.

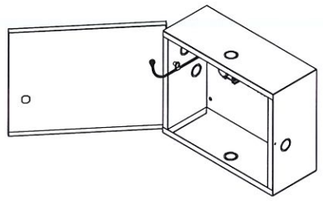
PS101 / PS102 CLASS 2 POWER SUPPLY

INSTALLATION INSTRUCTIONS



PS101 / PS102 Class 2 Power Supply

SPECIFICATIONS:



INPUT : PS101 - 120VAC, 1.0 Amperes 50 / 60 Hz
PS102 - 240VAC, 0.5 Amperes 50 / 60 Hz

OUTPUT : 24VDC, 2 Amperes
12VDC, 4 Amperes

ELR Compatible - 24VDC, 16 Amp-inrush (0.3 sec.).
When using ELR device: 100-2 option board required - see page 7~8.
Output protected with 4 A slow blow, 250V, fuse (F2)

⚠CAUTION!

FOR CONTINUED PROTECTION AGAINST THE RISK OF FIRE, FOR REPLACEMENT OF FUSE, PLEASE RETURN TO MANUFACTURER / AUTHORIZED DEALERS FOR SERVICING.

⚠ATTENTION!

AFIN DE MAINTENIR UNE PROTECTION CONTINUE CONTRE LES RISQUES D'INCENDIE, VEUILLEZ VOUS ADRESSER AU FABRICANT OU À SES REVENDEURS AUTORISÉS POUR PROCÉDER AU REMPLACEMENT DES FUSIBLES ET À L'ENTRETIEN.

NOTE: During battery backup (100-BB required),
Output range becomes 10.92-12VDC, 4 A or 22.2-23.9VDC, 2 A.

ENCLOSURE: 10" H x 12.5" W x 5.0" D Hinged cover box
20 GA steel, five(5) 1/2" x 3/4" knockouts total

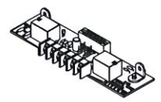
TEMPERATURE: 32-120 degrees F (0-49 degrees C)

RELATIVE HUMIDITY: 93%RH

NOTE:
1. If installing a PS101 with an ELR device, see Page 7~8 of these instructions and exit device instructions under "optional equipment - ELR".
2. If installing PS101 with a DE device, see DE instructions.
3. UL Listed (voltage range compatible) devices may be used.
4. For Canadian applications, the device must be installed in accordance with Canadian Electrical Code, Comply with CAN/CSA-C22.2 No. 107.1.
5. Product wiring methods shall be in accordance with NFPA70.
6. For indoor use only.
7. For Attack Class I installation only.

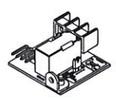
100-2, 100-FA, 100-BB, 100-K Options

OPTIONS FUNCTION



No.6-32 x 15/32"
2 PCS

100-2 Two(2) Zone
Controller Board (Page 7~8)



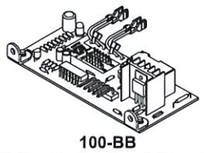
No.6-32 x 15/32"
1 PCS

100-FA
Fire Alarm Board (Page 5~6)

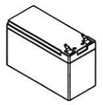
Buckle piece
1 PCS

100-K
Key Lock (Page 6)

Keys
1 PCS



100-BB
Battery Backup Board (Page 4)



Batteries
2 PCS

No.6-32 x 15/32"
2 PCS

Cable Clamp
1PCS

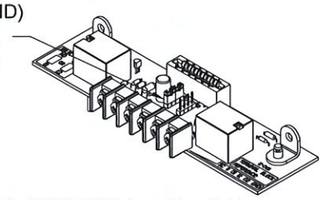
No.8-32 x 7/32"
1PCS

100-2 INSTALLATION

The 100-2 option provides control over two zones. One or two 100-2 boards can be installed on each PS101.
NOTE: 1. 100-2 board only provides to 24VDC output.
2. Relay rated for 0.6 PF induction load.

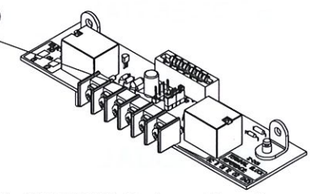
1 ENSURE AC BREAKER IS OPEN, (DISCONNECT BATTERIES IF YOU HAVE THIS OPTION).
SELECT BETWEEN INDIVIDUAL OR SEQUENTIAL OUTPUTS.

For Individual (IND) operation, install jumper on E1 as shown.



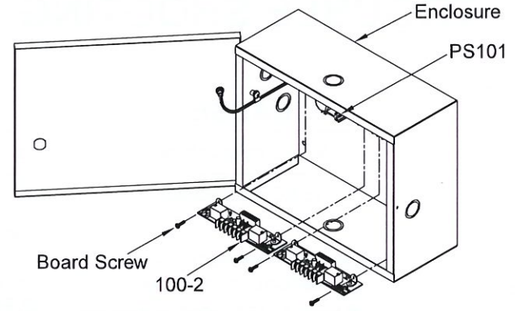
INDIVIDUAL OUTPUTS (must be field programmed):
Input 1 will control output 1.
Input 2 will control output 2.

For Sequential (SEQ) operation, install jumper on E2 as shown.



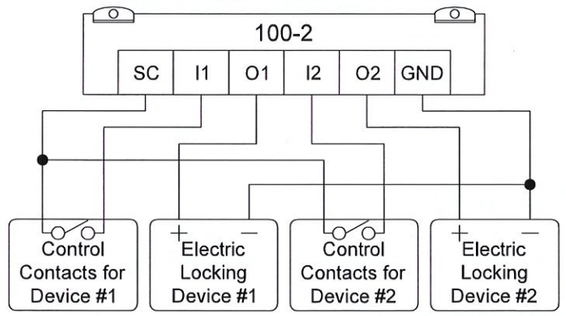
SEQUENTIAL OUTPUTS (factory shipped):
Input 1 will sequence both outputs. (O2 followed by O1)

2 INSTALL 100-2 ONTO EITHER PS101 RECEPTACLE AS SHOWN.

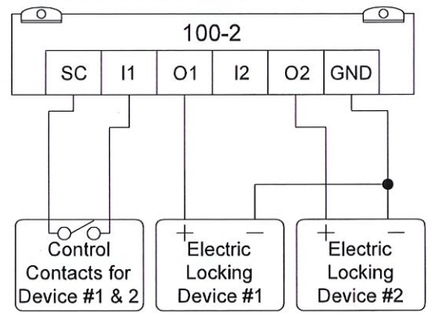


3 CONNECT INPUTS AND OUTPUTS (WIRE AS INDIVIDUAL OR SEQUENTIAL MODE).

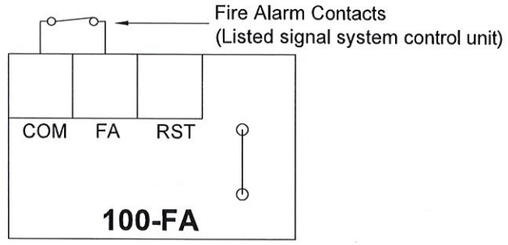
TYPICAL WIRING - INDIVIDUAL MODE



TYPICAL WIRING - SEQUENTIAL MODE

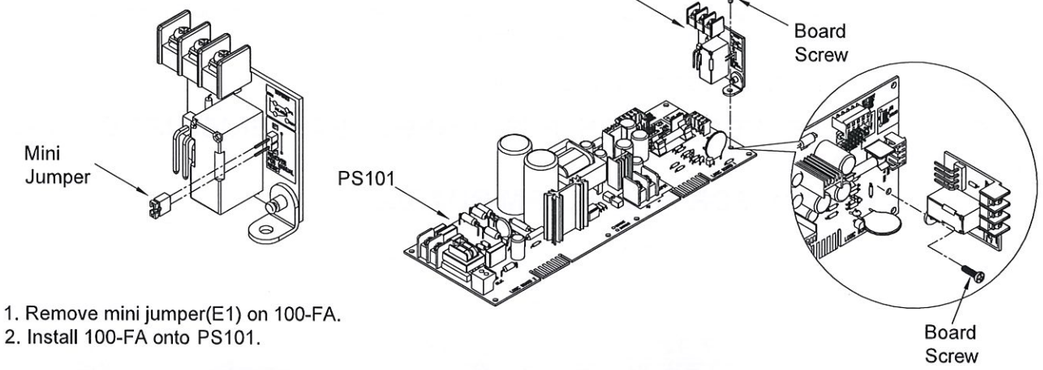


NOTE: When using an ELR device :
Use 12 AWG stranded wire for outputs O1 and O2 between PS100 and ELR device (200' run maximum).
Use 14 AWG stranded wire for outputs O1 and O2 between PS100 and ELR device (100' run maximum).
Use 18 AWG stranded wire for control contact input I1 and I2 (1000' run maximum) to actuator button, access control devices, etc.

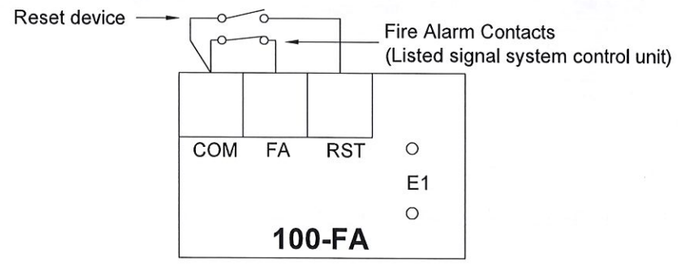


2. Connect normally closed fire alarm contacts.
3. Restore AC input voltage and reconnect batteries (if you have this option).
   The green LED on the power supply will illuminate.

MANUAL RESET



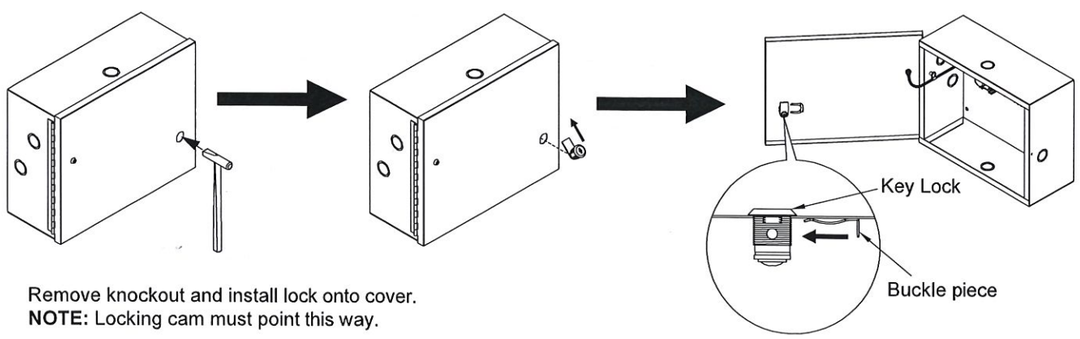
1. Remove mini jumper(E1) on 100-FA.
2. Install 100-FA onto PS101.



3. Restore AC input voltage and reconnect batteries (if you have this option).
4. Momentarily close the reset device contacts. The green LED on the power supply will illuminate.

NOTE: If the reset device contacts are left in the closed position, the 100-FA will not work properly.

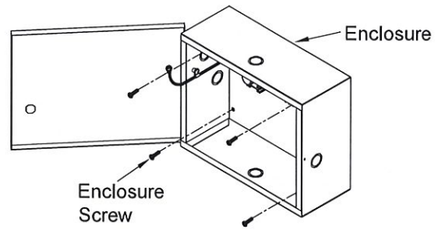
100-K KEYLOCK OPTION



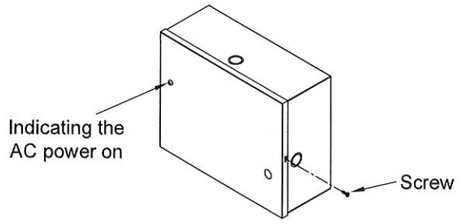
Remove knockout and install lock onto cover.
NOTE: Locking cam must point this way.

PS101 / PS102 POWER SUPPLY

1 MOUNT POWER SUPPLY.

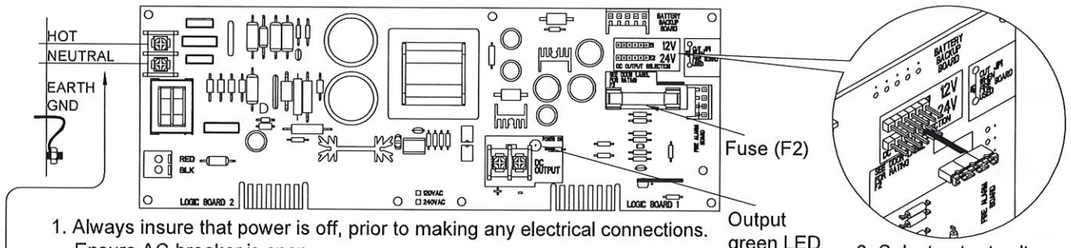


Install power supply with fore(4) screw.
NOTE: 1. For surface mounting only.
2. AC power wire must be installed with conduit.



To secure door closed, install screw as shown.

2 AC POWER CONNECTION.



3. Select output voltage.

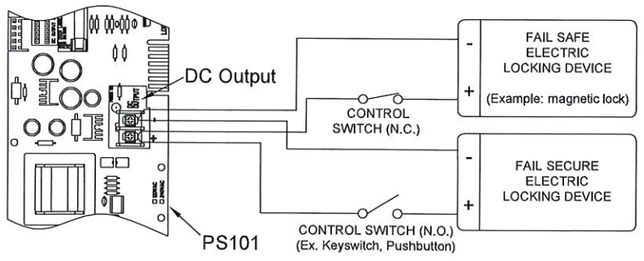
1. Always insure that power is off, prior to making any electrical connections. Ensure AC breaker is open.
2. For supply connections, use wire suitable for at least 90°C temperature.
3. Select output voltage (12 VDC or 24 VDC).
4. Connect AC voltage to two(2) 6" black and white leads (hot and neutral) or remove the 6" leads and apply the AC voltage directly to terminal block.

NOTE: Maintain 1/4" spacing between AC input wiring and any other wiring (such as DC output wiring, switch contact wiring, etc.).

5. Close breaker to turn on power supply,verify green LED on cover is illuminated.
6. Verify green LED is illuminated, indicating output voltage is present.

NOTE: PS101 supports optional logic cards (such as 100-2 board) which perform door control and monitoring function.

3 BASIC WIRING INFORMATION.



Fail Safe: Upon ultimate power loss, the locking device will unlock. Use of the PS101 controlled output is not intended to replace the function of Listed panic hardware for emergency exit.

Fail Secure: Upon ultimate power loss, the locking device will remain locked. Install after consulting with local authority having jurisdiction.
Listed panic hardware may be required to allow emergency exit from the secured area. Use of the PS101 controlled output is not intended to replace the function of Listed panic hardware for emergency exit.

1. Temporarily remove AC voltage from PS101 while connecting loads to output terminal block.
2. Wire Devices.
3. See "TROUBLE SHOOTING" table at end of instructions if devices do not work properly.

100-BB BATTERY BACKUP BOARD

SPECIFICATIONS:

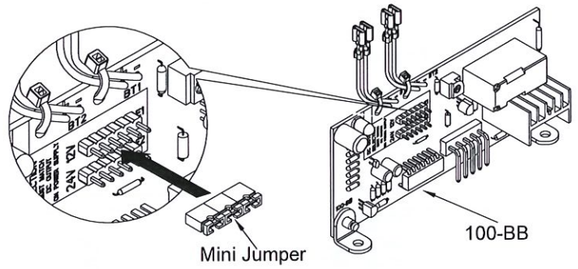
BATTERY BACKUP TIME: 2 hours at 100% load

BATTERIES: Two(2) 12V,7AH Lead Acid

CAUTION: Charge only specifications:12V , 7AH Lead acid batteries. Other types of batteries may burst causing personal injury and damage. Observe the proper polarity when connecting the batteries.

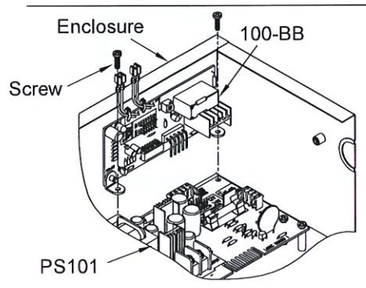
ATTENTION: Utiliser avec une batterie plomb-acide 12V-7AH uniquement. L'utilisation d'autres types de batteries présente un risque d'explosion qui peut provoquer des dommages matériels et des blessures corporelles. Respecter la polarité lors de l'installation des batteries.

1 ENSURE AC BREAKER IS OPEN.
PREPARE BATTERY BACKUP BOARD FOR POWER SUPPLY.

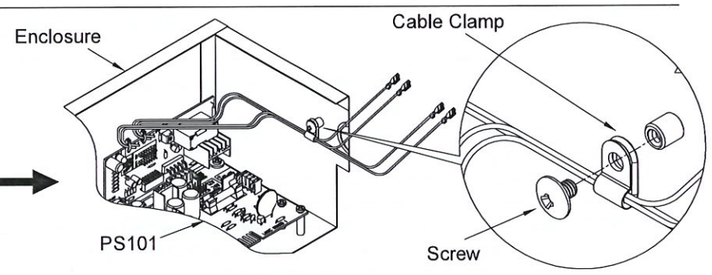


1. Ensure AC breaker is open.
2. Select output voltage. Must match power supply voltage (12 VDC or 24 VDC).

2 INSTALL 100-BB ONTO PS101.

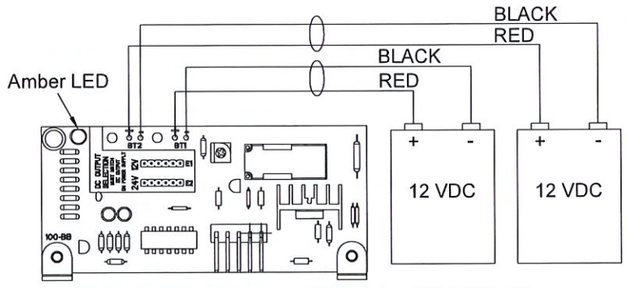


1. Install 100-BB onto PS101.

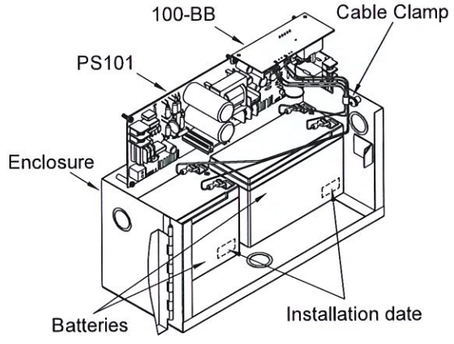


2. For 100-BB wiring ,Install Cable Clamp on Enclosure as shown.

3 CONNECT 100-BB LEADS TO BATTERIES.



1.Being careful to connect RED to"+"and BLACK to"-".
2.Set battery installation date.
3.Place batteries in bottom of enclosure.
4.Close AC breaker. If the batteries is low, the amber LED on.



100-FA FIRE ALARM BOARD

The 100-FA option consists of one printed circuit board that plugs onto the PS101 power supply.
In the event a fire alarm is active, this board will remove power from the PS101 output and any logic board output.
The Fire Alarm board can be configured for Automatic or Manual reset.

NOTE: 1. Listed Panic Hardware shall be used to allow emergency exit from the protected area.
2. Fire Alarm, then all wirings between FACP and Power Supply need to be wired for Fail Safe.
3. Relay rated for resistive load.

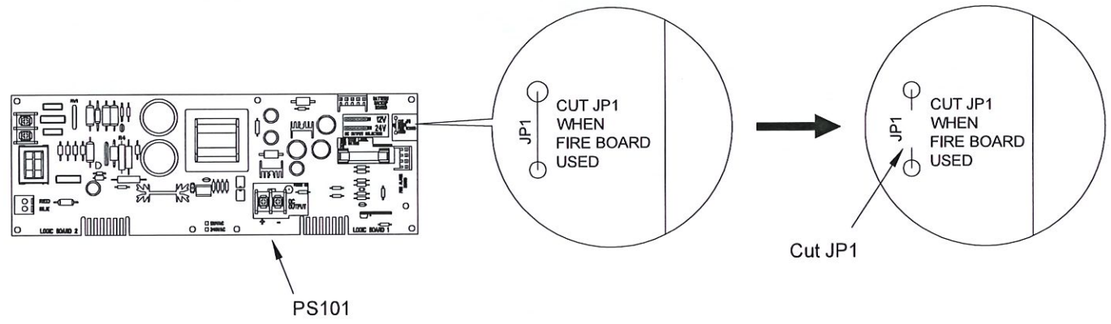
SPECIFICATIONS:

AUTOMATIC RESET: After a fire alarm condition is terminated, the 100-FA option will immediately restore power to all loads.The 100-FA is shipped in the Automatic configuration.

MANUAL RESET: After a fire alarm condition is cleared (or following a power outage), the 100-FA option will not restore power until a reset device has been toggled.

RESET DEVICE CONTACTS: 24 VDC, 0.1 A rating required.

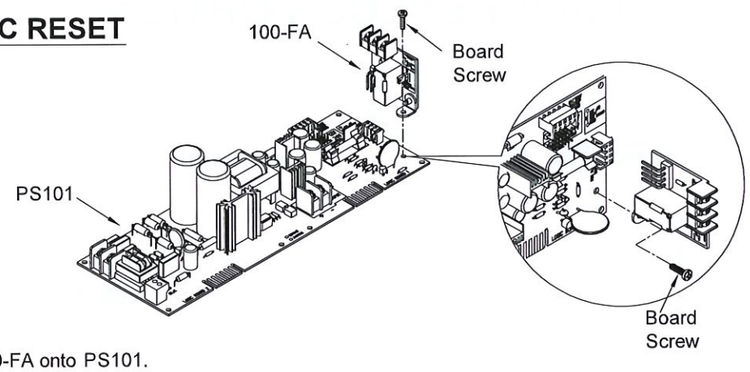
1 ENSURE AC BREAKER IS OPEN, (DISCONNECT BATTERIES IF YOU HAVE THIS OPTION).
CUT JUMPER (JP1) FOR FIRE ALARM BOARD.



Jumper labeled "CUT JP1 WHEN FIRE BOARD USED" on the left side of the JP1 and cut.

2 PREPARE FIRE ALARM BOARD FOR POWER SUPPLY.
CONFIGURE 100-FA AS AUTOMATIC OR MANUAL RESET.

AUTOMATIC RESET



1. Install 100-FA onto PS101.