



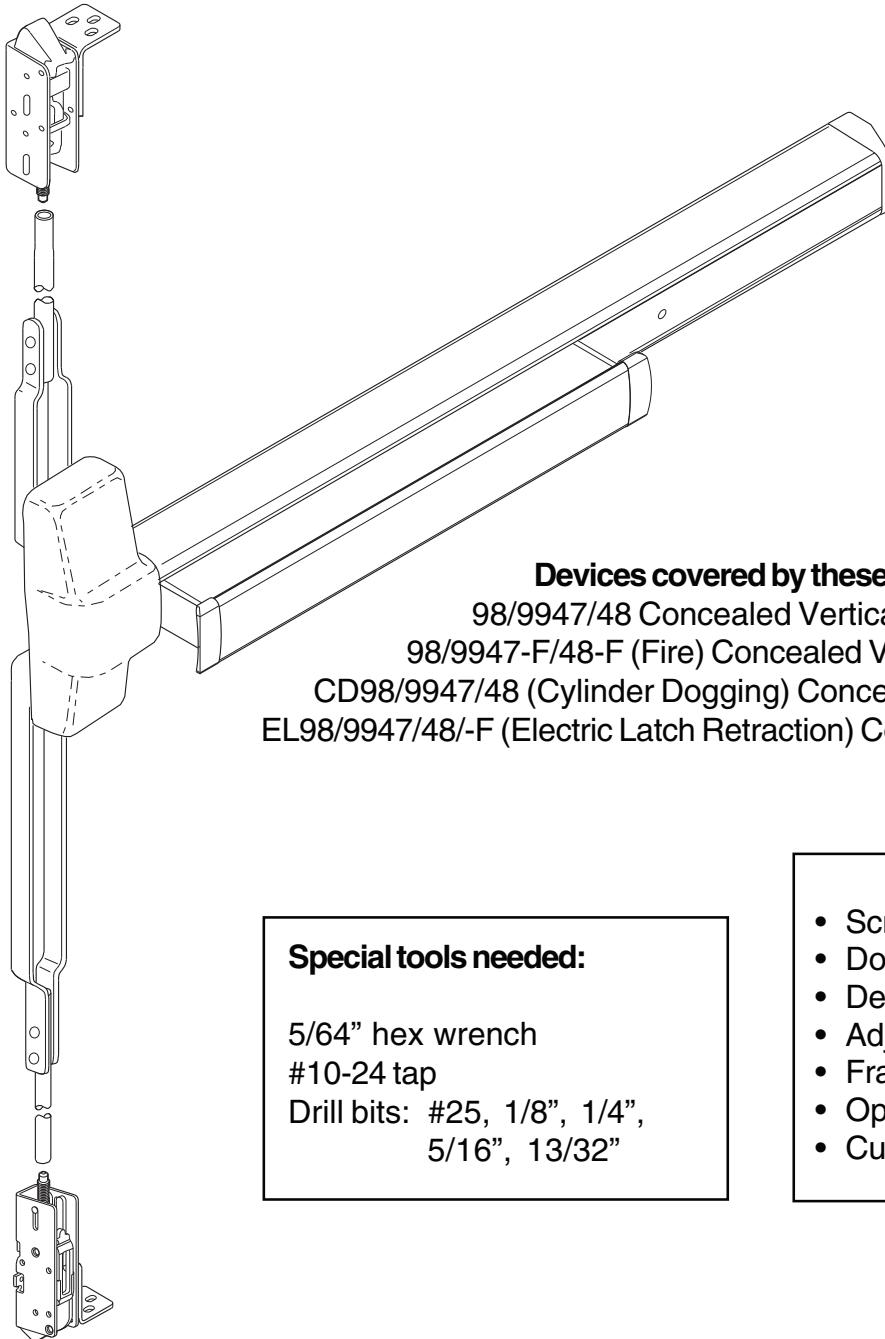
98/9947

VON DUPRIN®

911376-00

Concealed Vertical Rod Exit Device
Metal Door Applications

Installation Instructions



Devices covered by these instructions:

98/9947/48 Concealed Vertical Rod Exit Device
98/9947-F/48-F (Fire) Concealed Vertical Rod Exit Device
CD98/9947/48 (Cylinder Dogging) Concealed Vertical Rod Exit Device
EL98/9947/48/-F (Electric Latch Retraction) Concealed Vertical Rod Exit Device

Special tools needed:

5/64" hex wrench
#10-24 tap
Drill bits: #25, 1/8", 1/4",
5/16", 13/32"

Index:

• Screw chart	2
• Door preparation chart	3
• Device installation	4-6
• Adjust rods	7
• Frame preparation chart	7
• Optional equipment	8
• Cut device	8



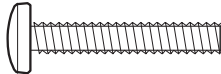
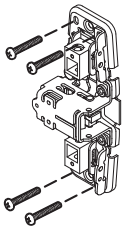
Customer Service

1-877-671-7011 www.allegion.com/us

© Allegion 2016
Printed in U.S.A.
911376-00 Rev. 07/16-f

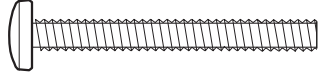
SCREW CHART

A



#10-24 x 1"

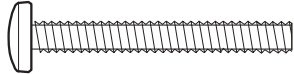
Surface mount or
Sex bolts (1-3/4" door)



#10-24 x 1-1/2"

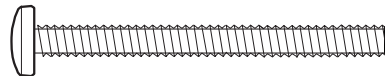
Sex bolts (2-1/4" door)

- Packaged with trim -



#10-24 x 1-3/8"

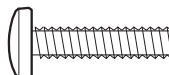
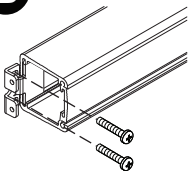
990 trims (1-3/4" door)



#10-24 x 1-7/8"

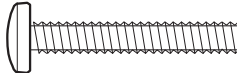
990 trims (2-1/4" door)

B



#10-24 x 3/4"

Surface mount or
Sex bolts (1-3/4" door)



#10-24 x 1-1/8"

Sex bolts (2-1/4" door)

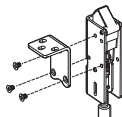
C



#10-16 X 3/8" Thread cutting

End cap

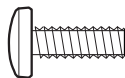
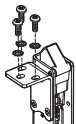
D



#10-32 X 1/4"

Bracket to latch

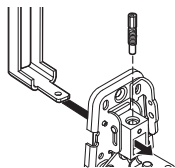
E



#10-24 X 1/2"

Bracket to door

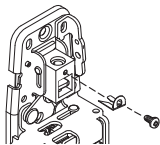
F



Rod adjusting screw

Retaining clip

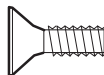
G



#8-32 X 5/16"

Retaining clip

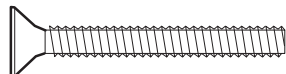
H



#10-24 X 1/2"

338 strike

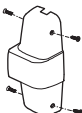
I



#10-24 X 1-1/2"

Ratchet release

J

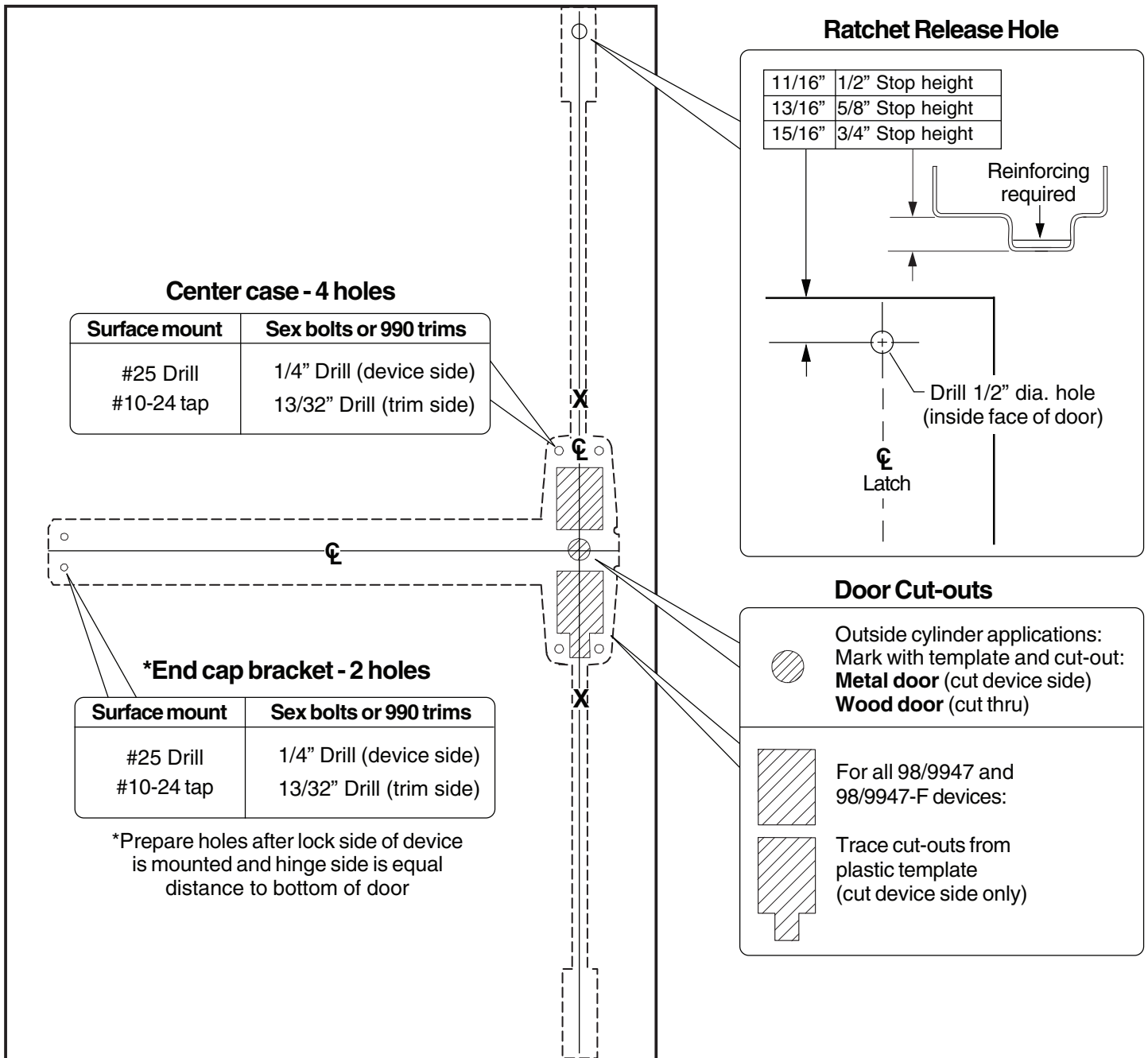


#8-18 x 3/8" Thread cutting

Center case cover

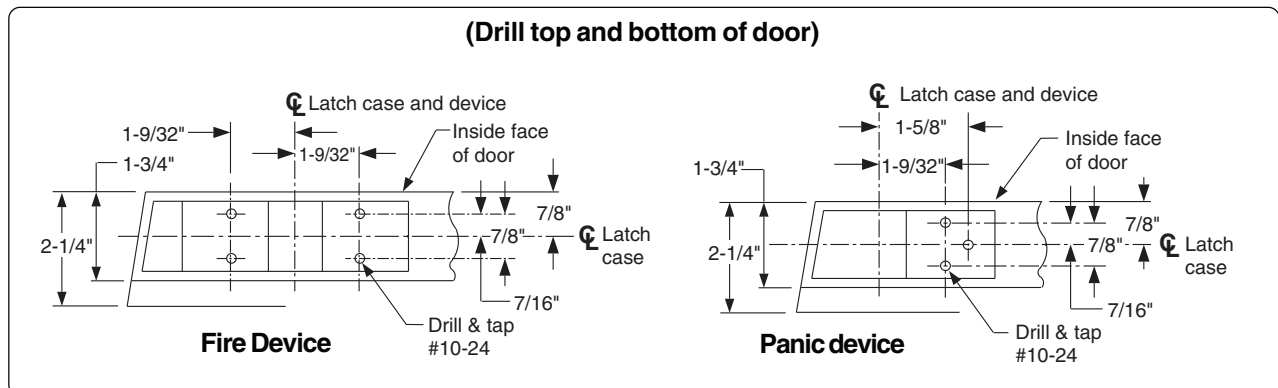
DOOR PREPARATION CHART

Go to instructions on next page before using preparation chart

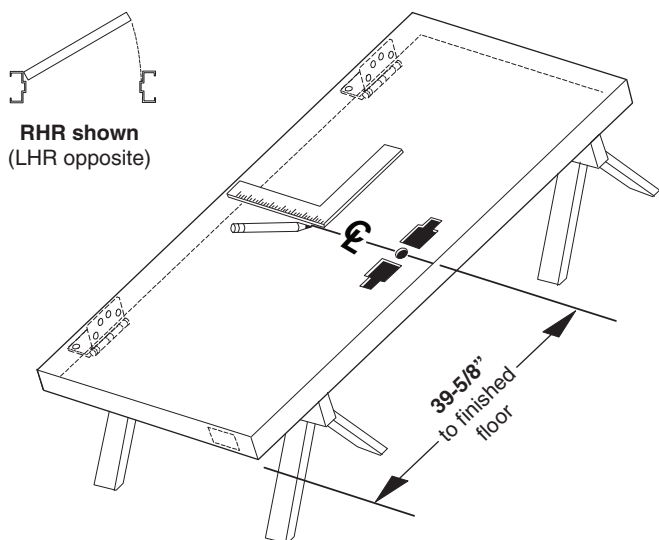


Latch Cases

(Drill top and bottom of door)

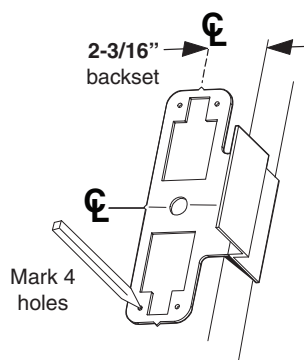


1 Draw Horizontal Device Center Line (☿)

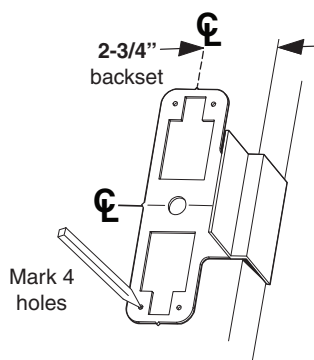


2 Determine Correct Backset, then Mark 4 Holes for Device Center Case Using Template

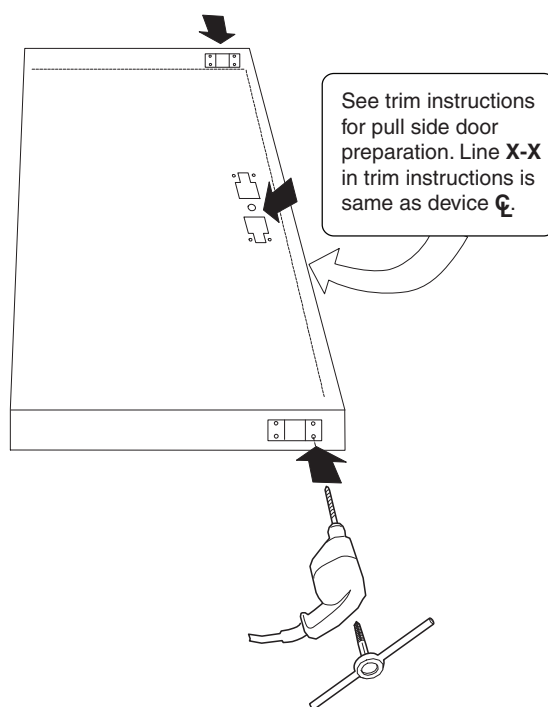
98/9947
(non-fire rated device)
single or double door



98/9947-F
(fire rated device)
or **98/9947**
double door with
98/9975 (mortise device)
on opposite door



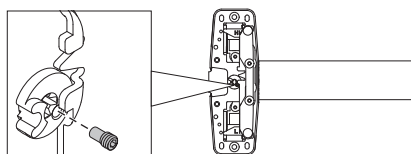
3 Prepare Door per Preparation Chart on Page 3



4 If Necessary, Remove NL Drive Screw

NL drive screw

Factory installed on back of center case



With the NL drive screw removed, key locks and unlocks lever, knob, or thumb piece. For the trims listed below, **REMOVE** NL drive screw.

996L
996K

696TP
697TP

990TP

With the NL drive screw installed, key retracts latch bolt. **DO NOT** remove NL drive screw for the following applications:

NL, EO, DT trims and 98/99-2 double cylinder devices (i.e. TP-2, L-2, and K-2).

*996L-BE
*996K-BE

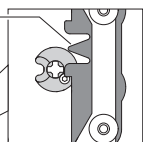
*E996L
*E996L-BE

*696TP-BE
*697TP-BE

*990TP-BE

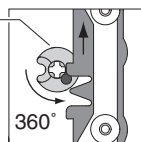
* If the trim being installed is "BE" (i.e. 996L-BE), the trim lock tumbler on the back of the device must be in the **UP** position before device is installed. This allows the trim to be unlocked at all times.

trim lock
tumbler in
UP position



Correct
Orientation
(RHR shown)

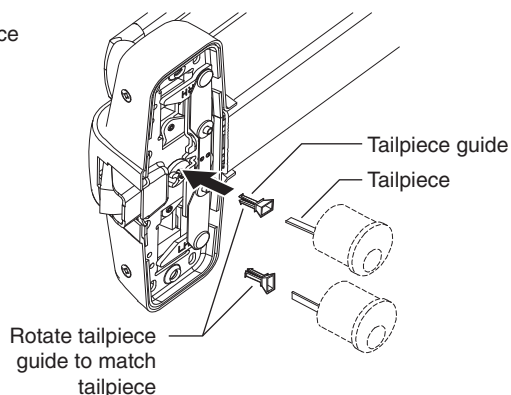
If necessary,
remove drive
screw and
rotate cam
until trim lock
tumbler is in
UP position,
then reinstall
drive screw



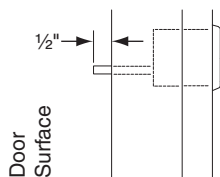
Incorrect
Orientation

5 If Using a Cylinder with a Tailpiece, Prepare Device and Cylinder

a. Install tailpiece guide.

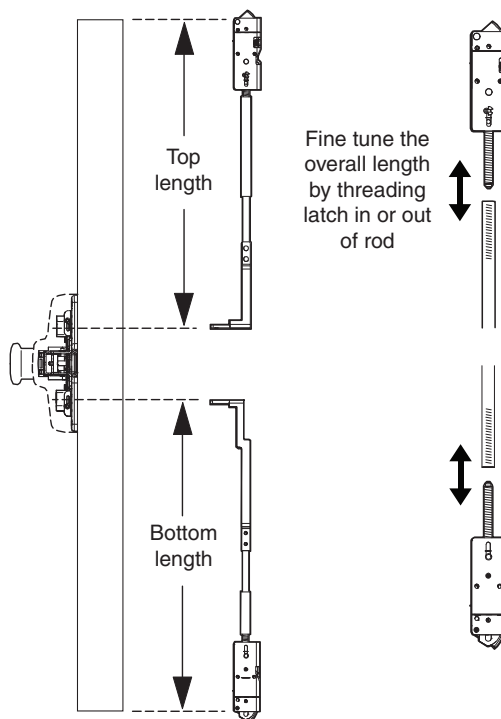


b. Cut tailpiece as needed.



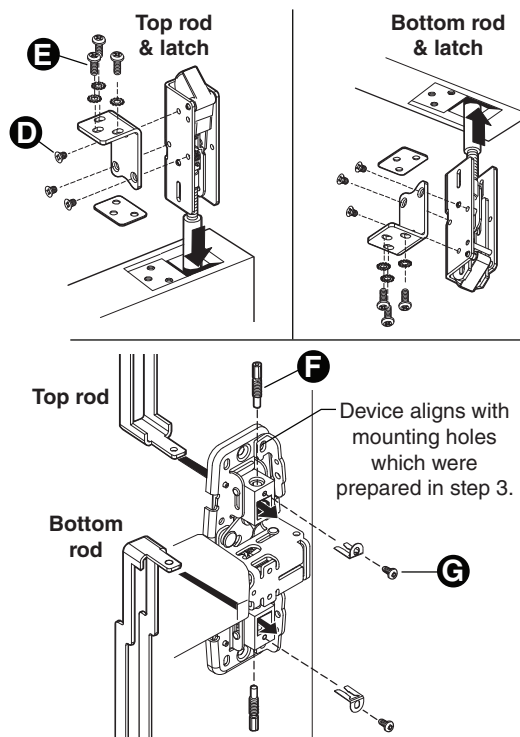
6 Assemble Rods and Latches and Adjust Length for Proper Door Height

Follow red and blue instruction cards on rods to set initial rod length

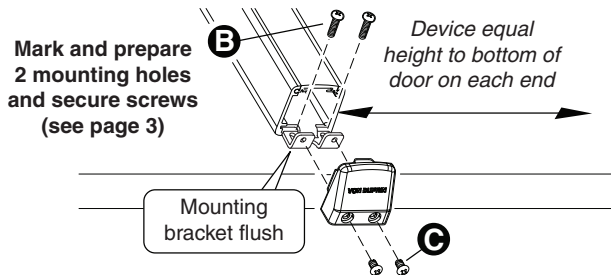
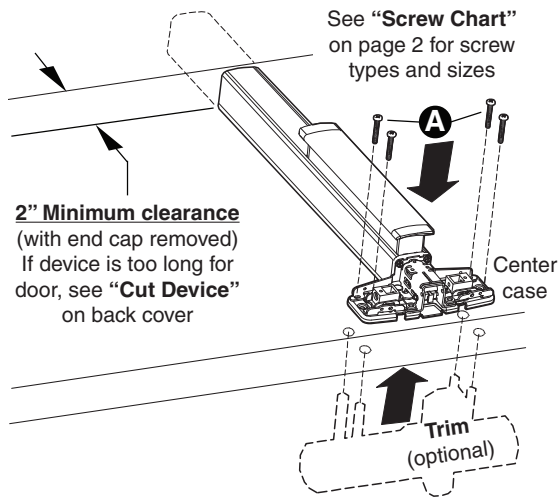


7 Install Rods and Latches as Shown

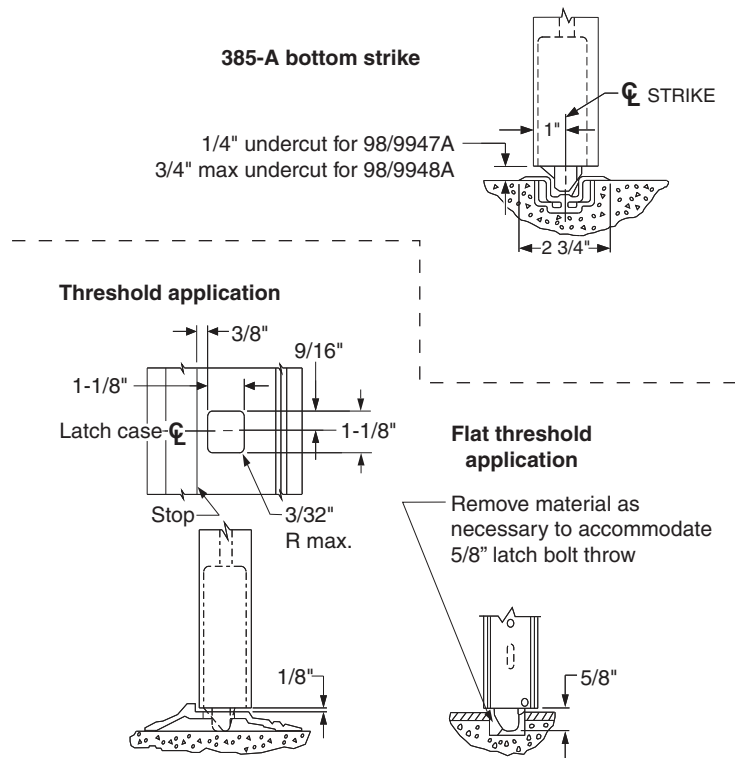
Note: Fire devices use brackets on both sides of latches



8 Secure Device to Door as Shown, then Hang Door on Frame

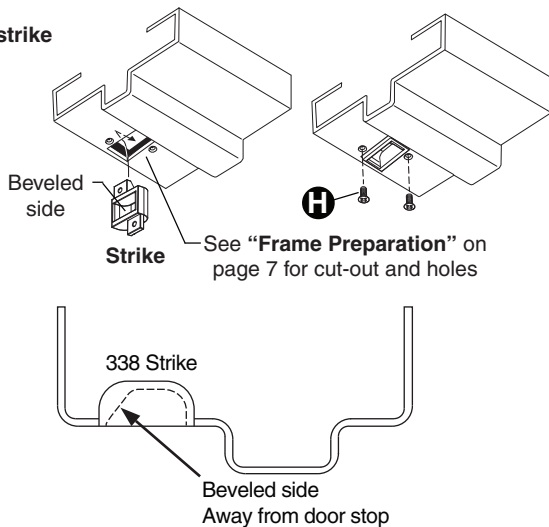


10 Install Bottom Strike or Prepare Threshold

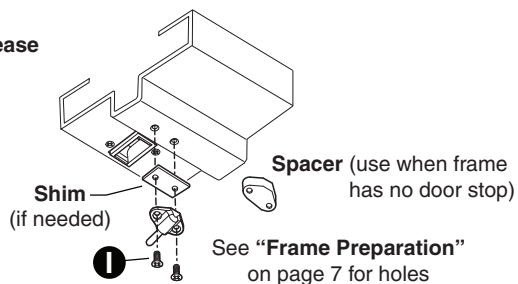


9 Install Top Strike and Ratchet Release

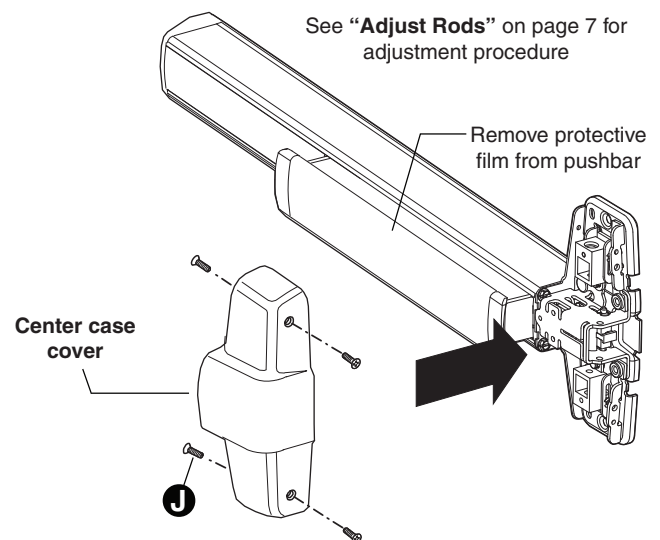
338 Top strike



Ratchet release

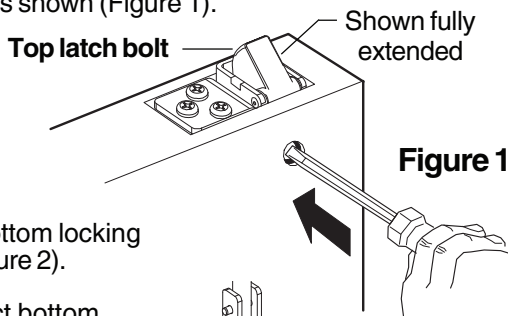


11 Adjust Rods and Install Center Case Cover

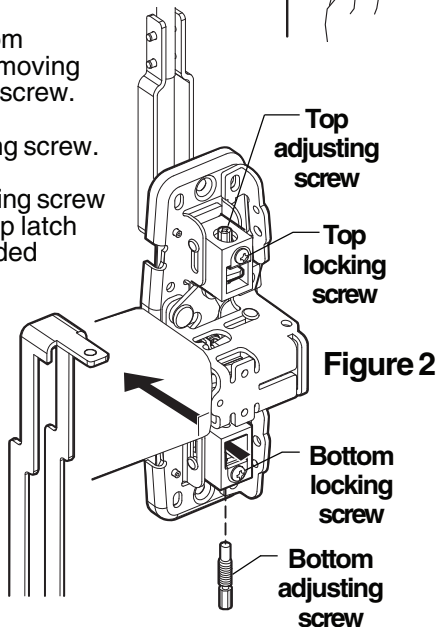


ADJUST RODS

1. Open door and release top latch bolt as shown (Figure 1).

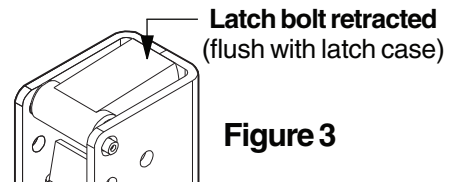


2. Loosen bottom locking screw (Figure 2).
3. Disconnect bottom vertical rod by removing bottom adjusting screw.
4. Loosen top locking screw.
5. Rotate top adjusting screw clockwise until top latch bolt is fully extended (Figure 1).
6. Check top latch bolt for deadlocking (latch bolt should not push in).
7. Turn top locking screw in. Do not over-tighten

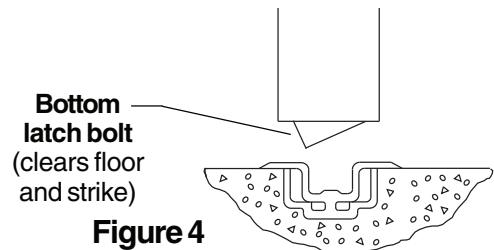


8. Depress pushbar and release.

9. Make sure top latch bolt stays retracted as shown.



10. Install bottom adjusting screw through bottom rod (Figure 2).
11. With top latch bolt still retracted, adjust bottom rod so latch bolt clears floor and bottom strike.



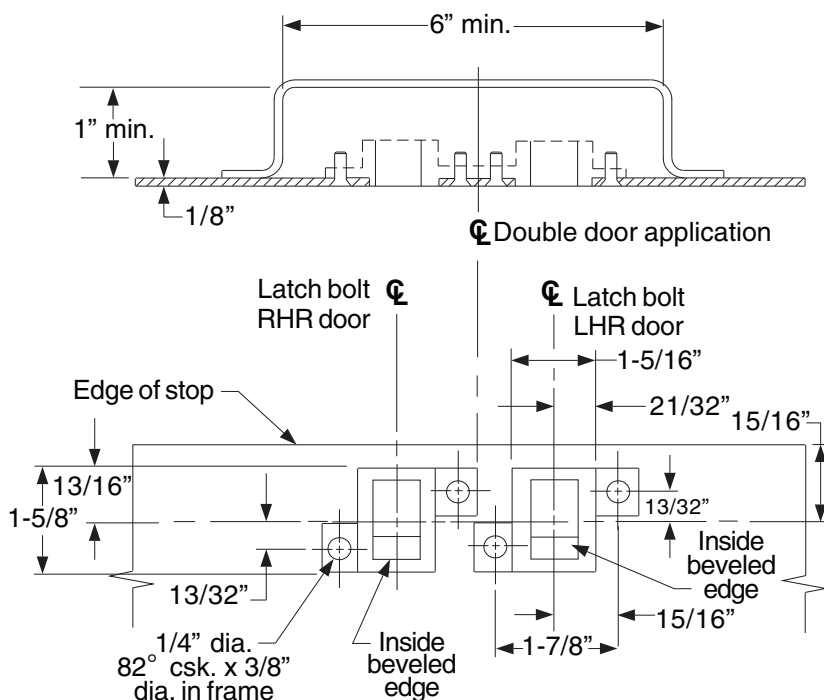
12. Turn bottom locking screw in. Do not over-tighten.
13. Check device operation by opening and closing door several times from the outside.

Redo adjustment procedure if :

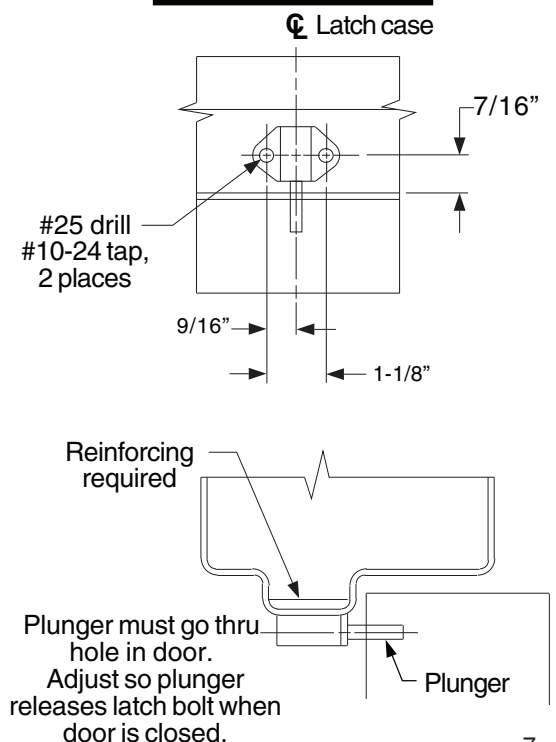
- Top latchbolt is not held retracted
- Bottom latchbolt does not clear floor and bottom strike

FRAME PREPARATION

TOPSTRIKE



RATCHET RELEASE



OPTIONAL EQUIPMENT - CONTINUED

CD (CYLINDER DOGGING)

1. Remove mortise cylinder cam and reinstall in reverse (Figure 6).
2. Insert key and rotate cam to install the cylinder to the cover plate (Figure 7).
3. Remove key to slide cover plate in position in the mechanism case.

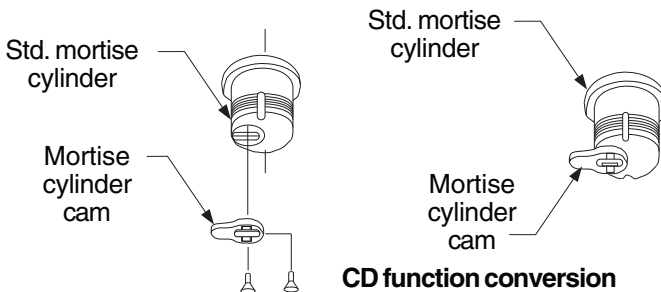


Figure 6

Dogging procedure

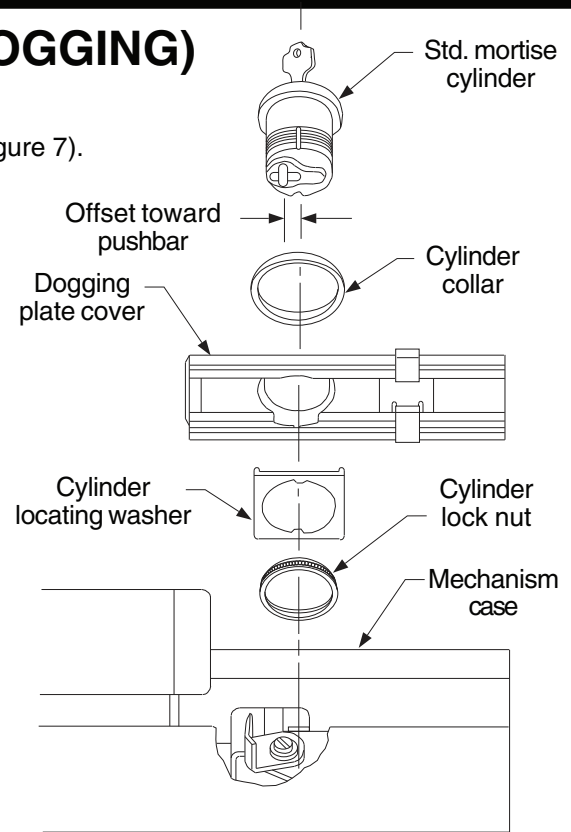
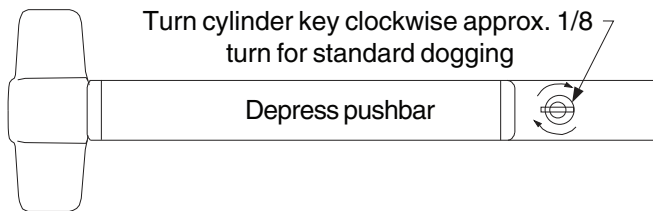
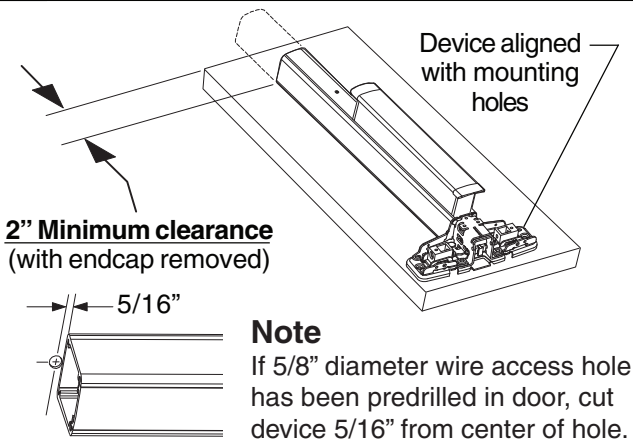


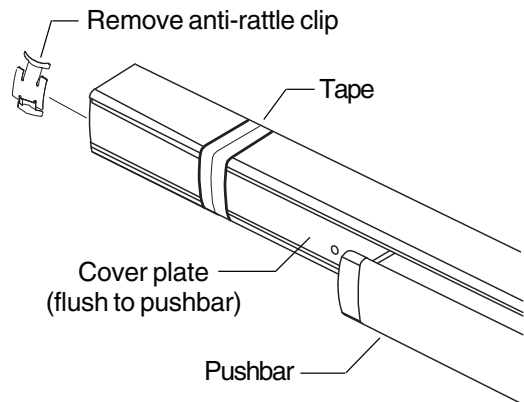
Figure 7

CUT DEVICE

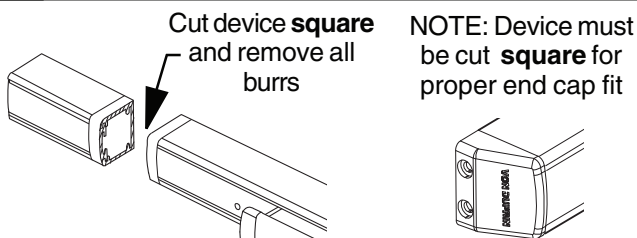
1 Measure amount to cut off device.



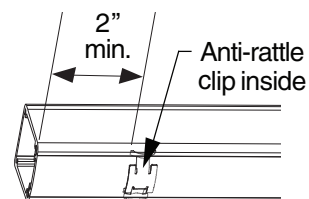
2 Tape and mark area being cut.



3 Cut device square.



4 Slide anti-rattle clip into device.





921268-00

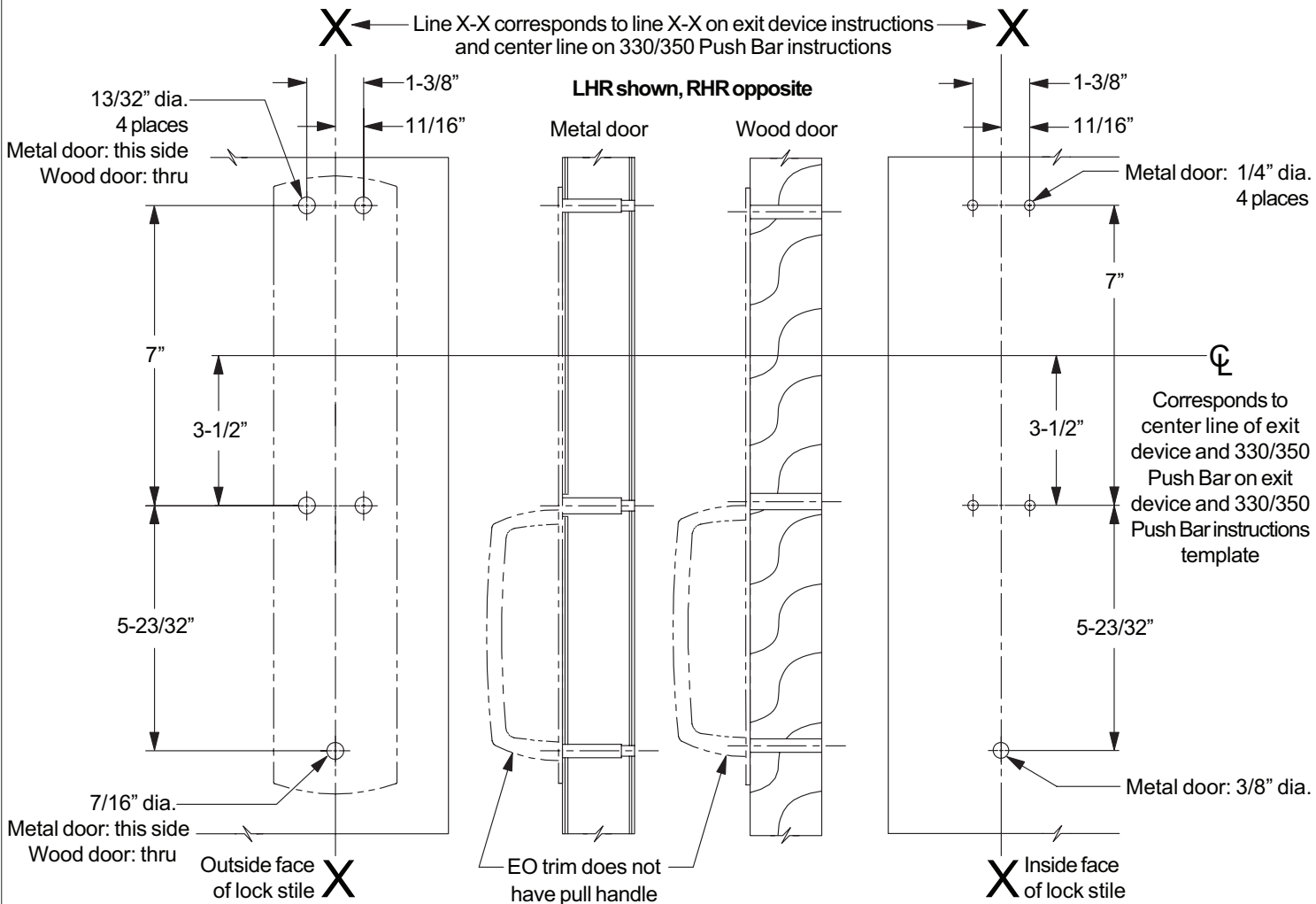
990DT/EO

VON DUPRIN®

Trim for all 98/99 Exit Devices and 330/350 Push Bar

Installation Instructions

- 1 Prepare door for exit device or 330/350 Push Bar.
- 1a See exit device or 330/350 Push Bar instructions for holes, line X-X (on exit device instructions), and center lines.
- 2 Prepare door for trim:
- 2a Transfer vertical center line (line X-X on exit device instructions) from inside (exit device side) of door to outside (trim side) of door. Use extra care if edge of door is beveled. Be sure center line is parallel to edge of door.
- 2b Locate and prepare holes as shown.
- 3 Apply trim.
- 3a If using trim with exit device, apply exit device, thru-bolt to trim (4 places), and use screw and #12 countersink washer for lower trim mounting stud.
- 3b If using trim with 330/350 Push Bar, use screw with #12 countersink washer for lower trim mounting stud and four screws with #10 countersink washers for other trim mounting studs.



For cutouts on inside face of door, see exit device instructions



941114-00

Control for Metal Door Applications

376-T, 376-T-NL, and 376-T-BE

VON DUPRIN®

Installation Instructions

1. Prepare door for exit device (see exit device instructions).
2. Prepare door for control:
 - A. Transfer center line from inside (exit device side) of door to outside (control side) of door. Use extra care if edge of door is beveled. Be sure center line is parallel to edge of door.
 - B. Locate and prepare holes as shown on other side.
3. Install rod member:
 - A. Slide rod member onto top rod (see Figure 1).
 - B. Install top rod connector (see exit device instructions).
 - C. Position rod member so it is visible in control side door cutout. Slightly tighten socket set screws to hold rod member in position.
 - D. Install and adjust top and bottom rod assemblies (see exit device instructions).
 - E. Adjust rod member so top surface is 1/8" above the center line of the thumbturn (Figure 2). Tighten rod member socket set screws.
4. Prepare control:
 - A. If necessary, change control cylinder plate for desired control function (Figure 3).
 - B. Install cylinder for 376-T or 376-T-NL control (Figure 4).
 - C. If necessary, move 1/4-20 x 1" socket set screws and mounting studs for handing of door (Figure 5).
5. Press exit device pushbar to retract latch bolts; install control.
6. Test key, control, and exit device action.

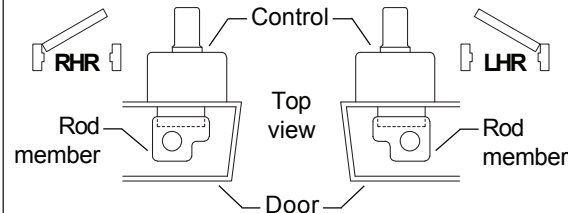


Figure 1. Rod member position for door handing.

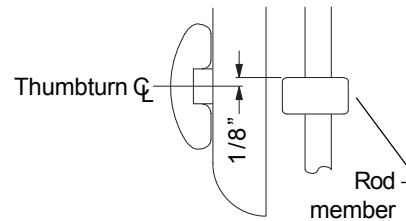


Figure 2. Rod member adjustment.

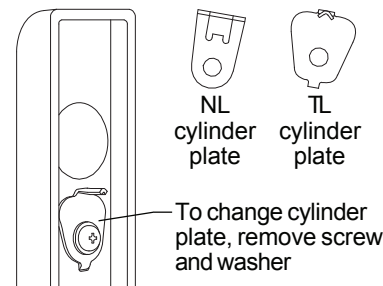


Figure 3. NL and TL function cylinder plates.

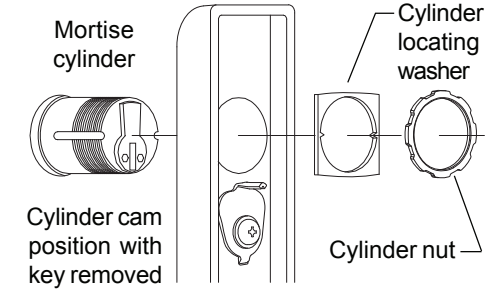


Figure 4. Cylinder installation.

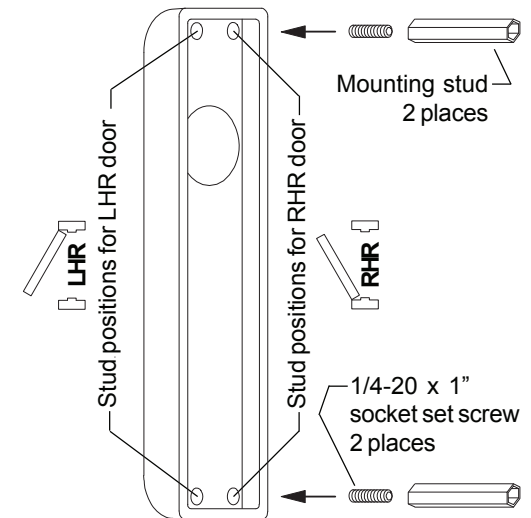
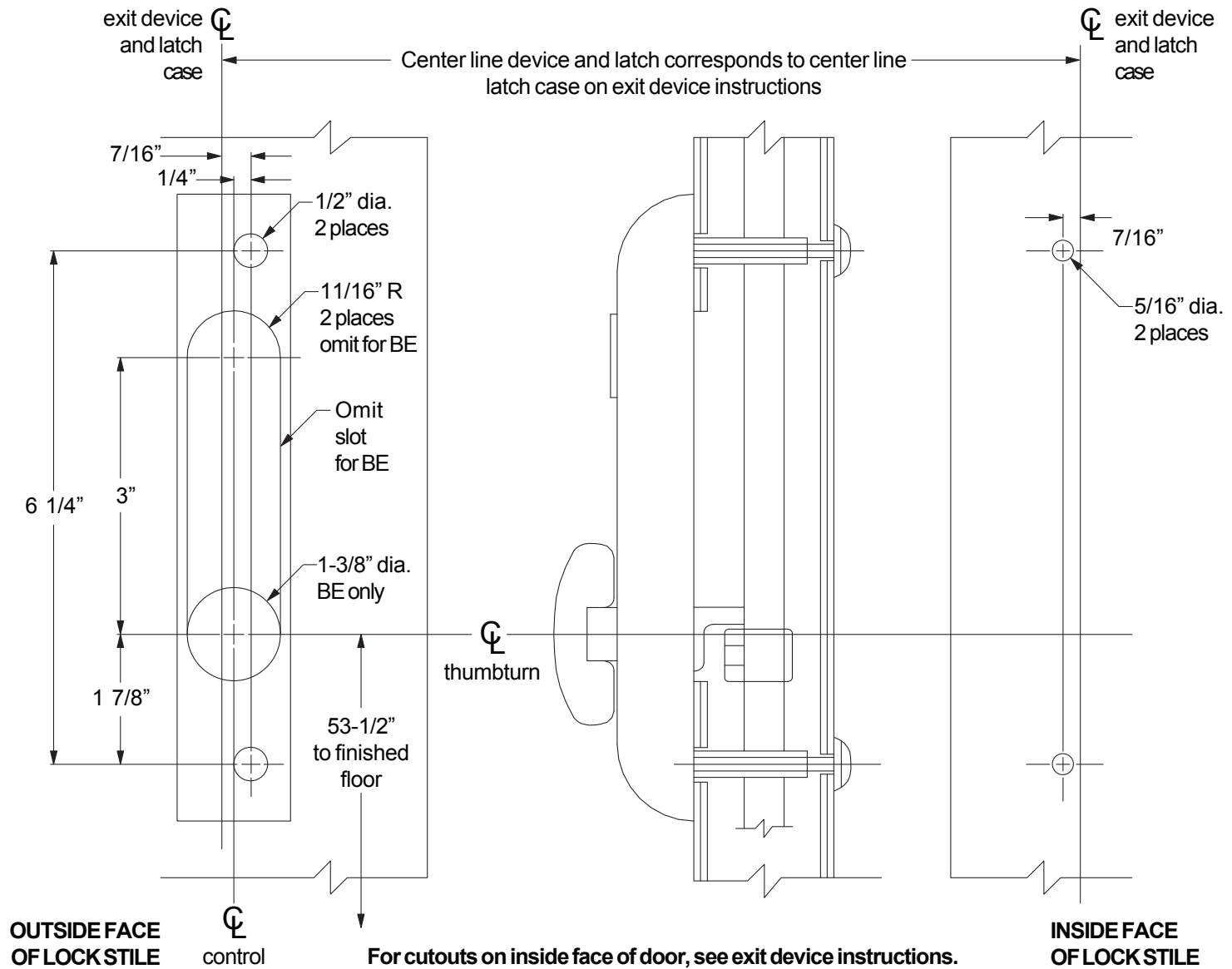


Figure 5. Mounting stud positions.

Device Application Schedule
3347/3547 Vertical Rod Device
3347-F/3547-F Vertical Rod Device
3347A/3547A Vertical Rod Device
3347A-F/3547A-F Vertical Rod Device
5547 Vertical Rod Device
98/9947 Vertical Rod Device
98/9947-F Vertical Rod Device

Do not use this control with 3347/3547 or 3347A/3547A devices with 1-1/16" latch case backset on bullnose edge doors with weather strip channel.



Customer Service

1-877-671-7011 www.allegion.com/us



© Allegion 2014
Printed in U.S.A.
941114-00 Rev. 01/14-b



24908386

QEL 33A/35A, 98/99 Series

VON DUPRIN®

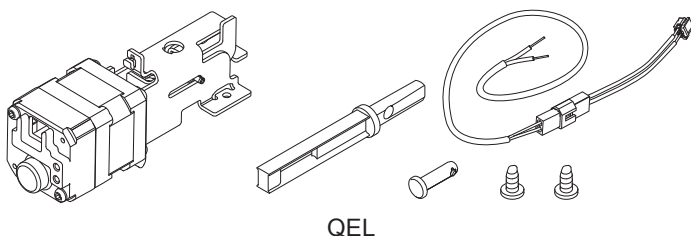
Conversion Kit

Installation Instructions

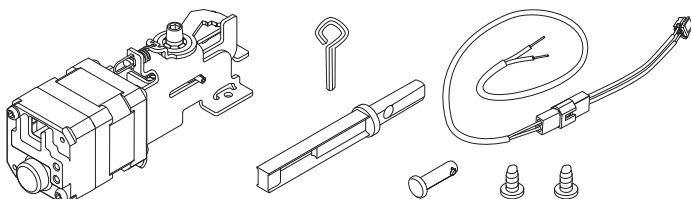


1. This kit converts all 33/35A and 98/99 series mechanical exit devices to quiet electric latch (QEL) retraction devices.
2. This kit can also be used for motor replacement on existing QEL devices.
3. Install according to instructions or device will not function and panic or fire label will be void.
4. The QEL wiring must be attached to the fire alarm system if installed on fire exit hardware.
5. If existing device is fire rated or less dogging a QEL baseplate conversion kit is required.

Parts



QEL



HD-QEL (Hex Dogging QEL)



WARNING

If existing exit device is fire rated, do not install HD-QEL (hex dogging) type motor. Doing so will void fire rating.

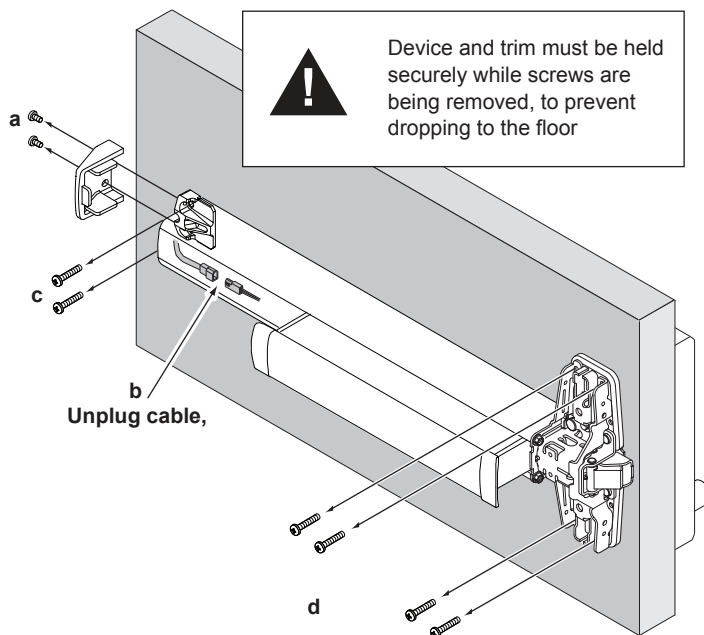
1 Disconnect Power

To avoid risk of shock, disconnect AC power from power supply before proceeding with this conversion. If using 900-BB Battery Backup option, unplug all four wires from battery terminals.

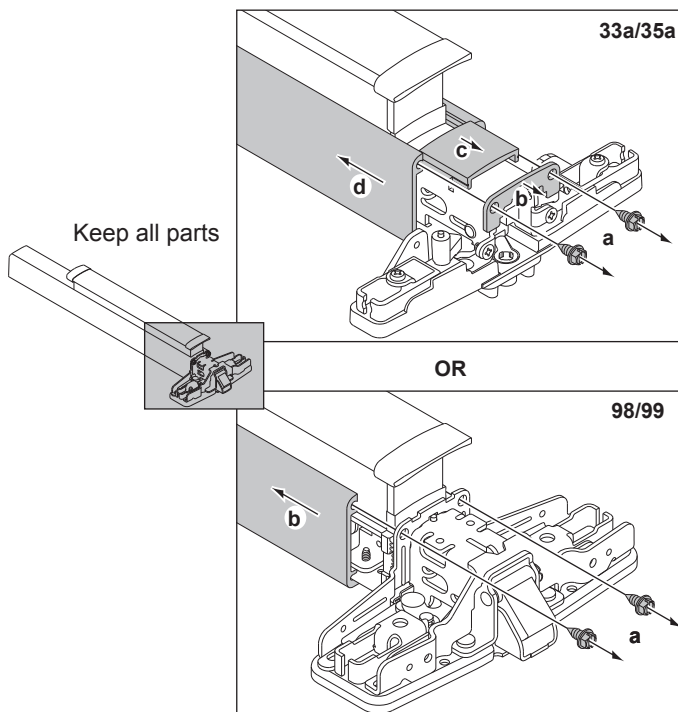
2 Detach Vertical Rods if present

Refer to device instructions as needed.

3 Remove Exit Device from Door



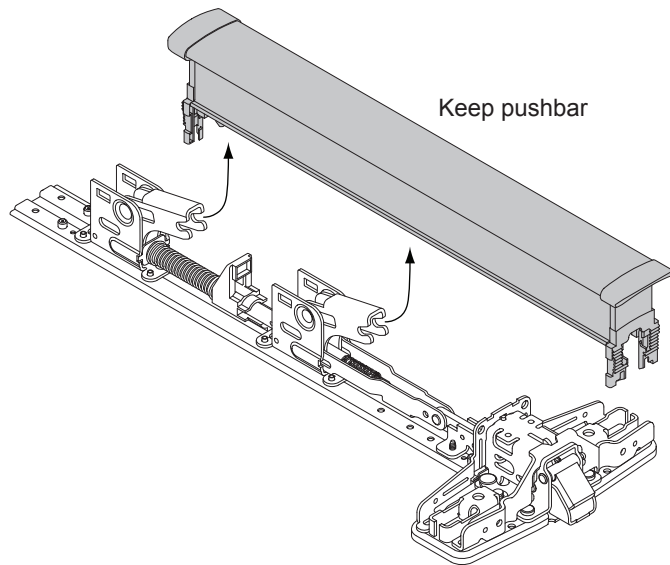
4 Remove Mechanism Case



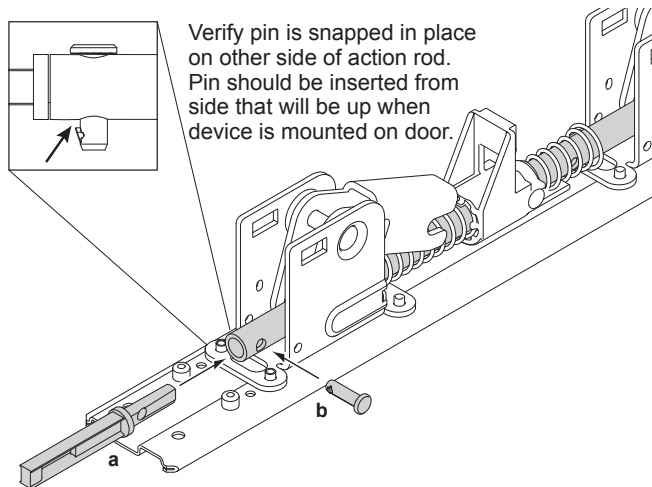
FIRE OR LESS DOGGING DEVICE

(Applies to exit devices built after October 2014.
Baseplate conversion kit required for earlier devices.)

1. Remove pushpad from baseplate.

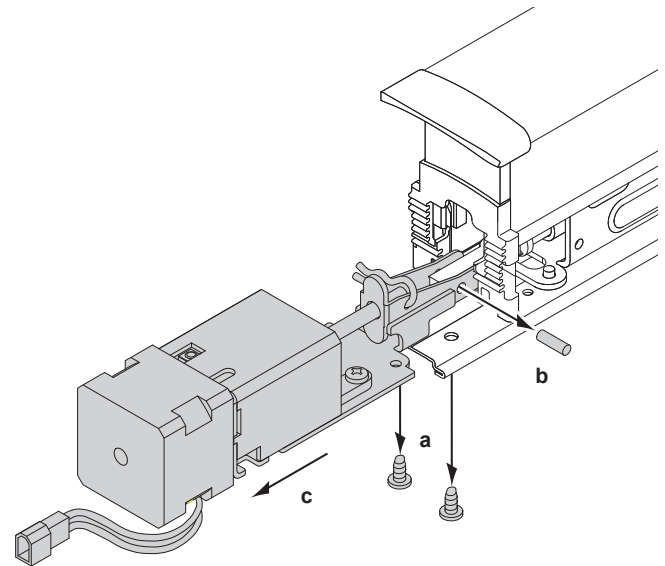


2. Install connector and pin.

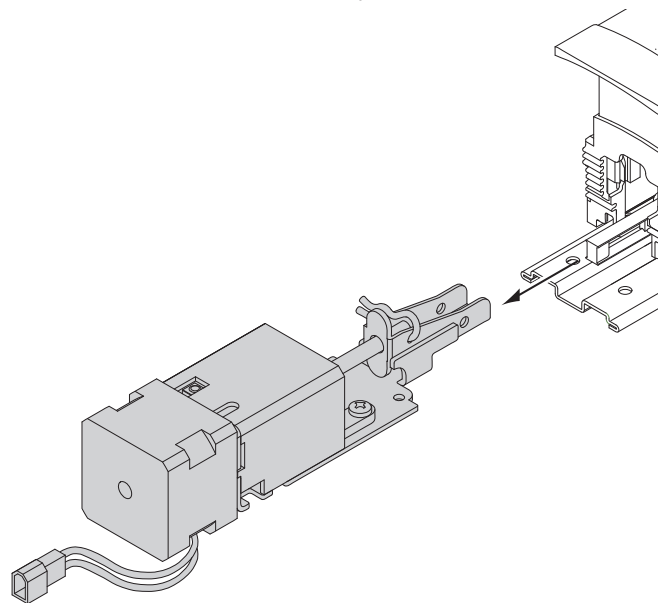


QEL DEVICE (built prior to December 2014)

1. Remove existing QEL motor

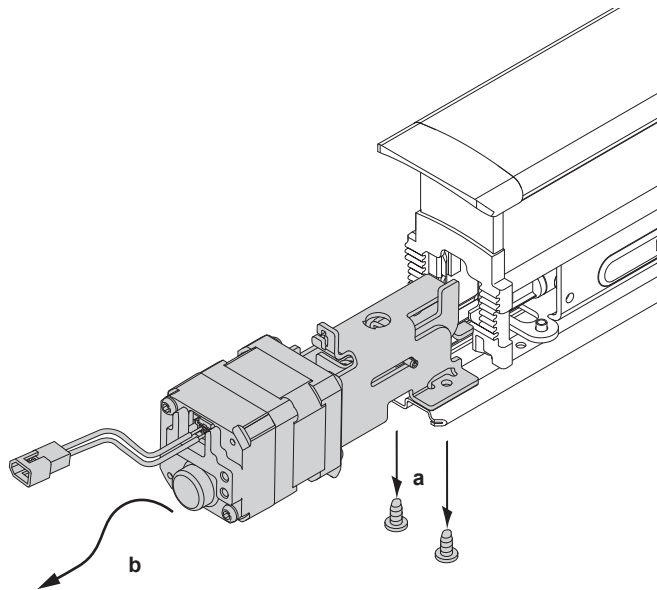


2. Discard old QEL motor assembly.

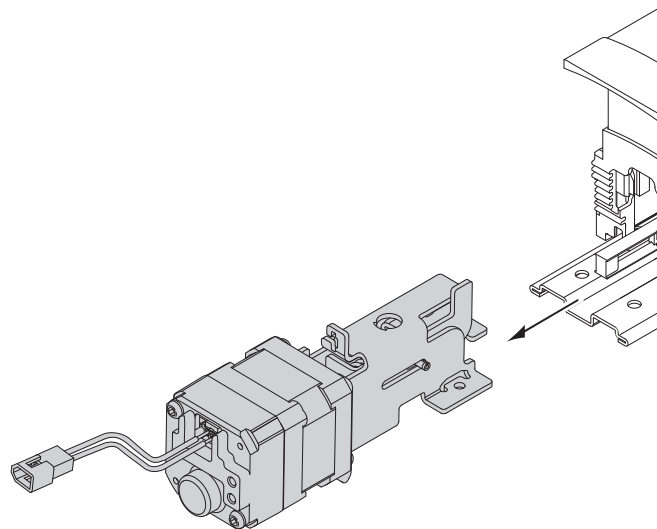


QEL DEVICE (built after December 2014)

1. Remove existing QEL motor.

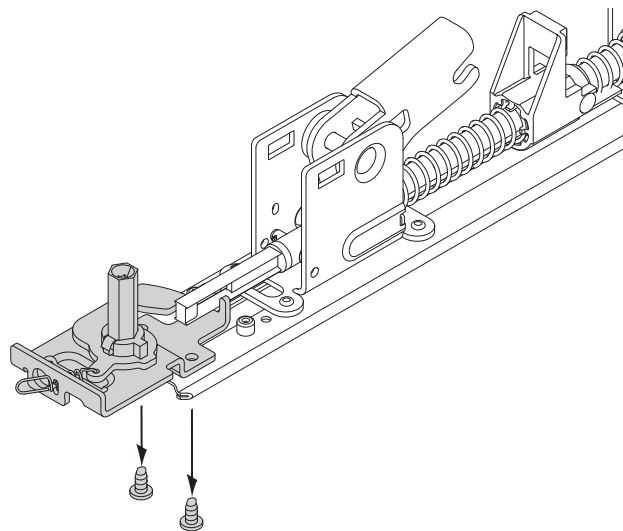


2. Discard old QEL motor assembly.

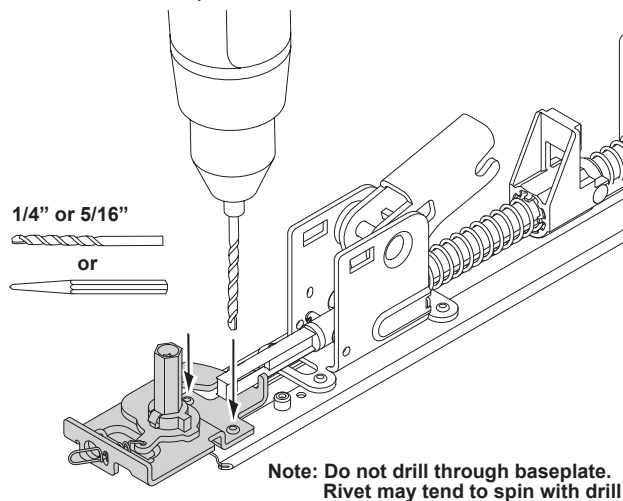


PANIC DEVICE (with dogging assembly)

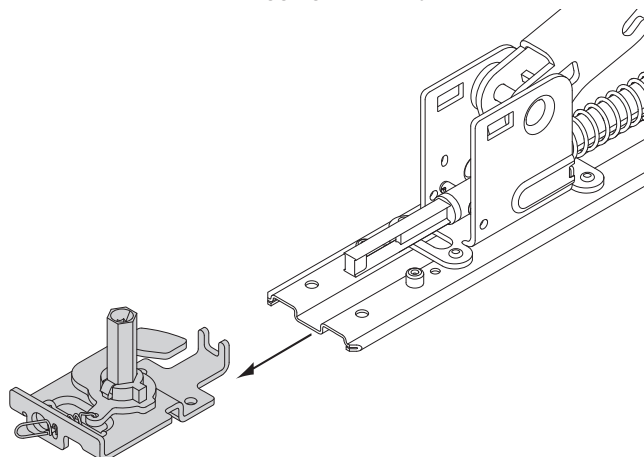
1. Remove two screws from dogging assembly. If riveted see below.



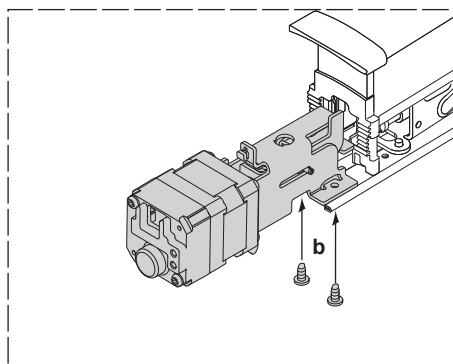
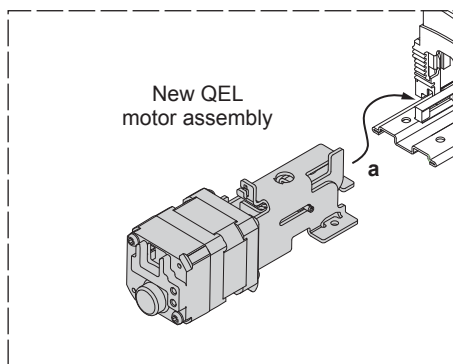
2. Drill or use center punch on two rivet heads until rivets can be removed from baseplate.



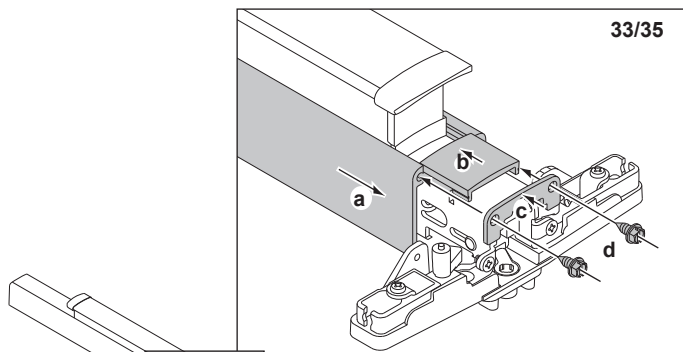
3. Remove and discard dogging assembly.



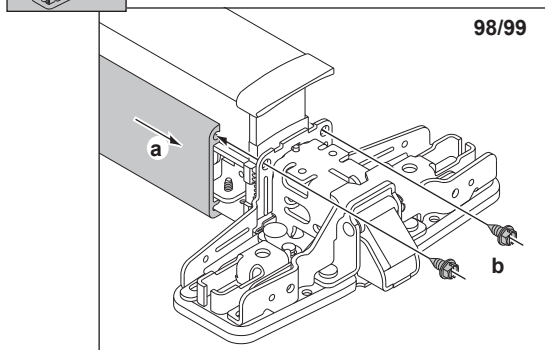
6 Install New QEL Motor Assembly



7 Install Mechanism Case

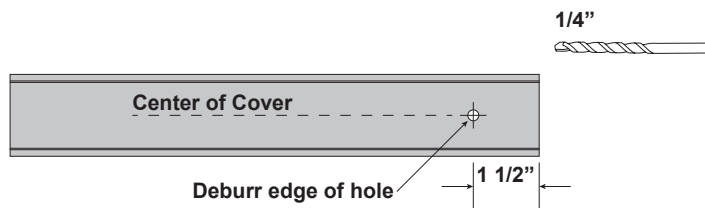


OR

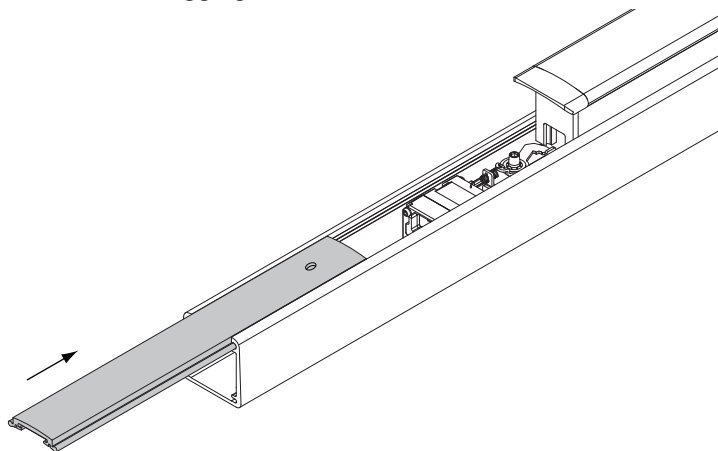


8 Prepare dogging cover for HD dogging key (if applicable and only on panic devices).

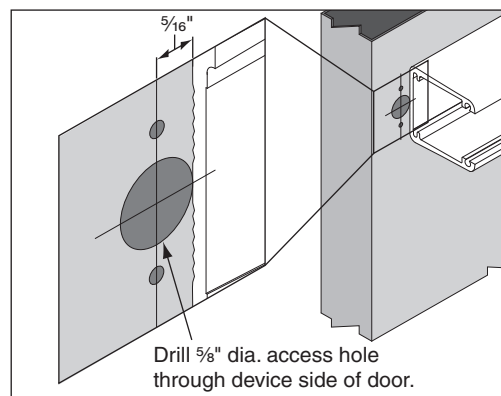
8a Locate and drill hole



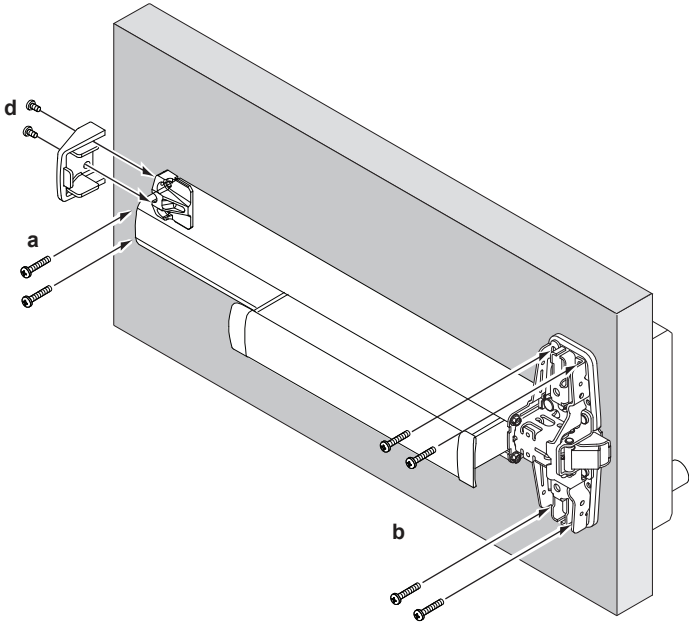
8b Install dogging cover



9 Drill Wire Access Hole (if required)



10 Attach Exit Device to Door



For more detailed installation instructions for specific Exit Devices, visit the Support area of the Allegion website at www.allegion.com/us

11 Confirm Equipment Compatibility

The QEL is compatible with the following equipment (refer to individual instructions as needed):

- PS900-SERIES Power Supplies - PS902, PS904, PS906, PS914
- 900-SERIES Option Boards - 900-2RS, 900-4R, 900-4RL, 900-2Q
- PS873 Power Supply Plus 871-2, 871-2Q, 873-4TD/AO Option Boards

12 Route Two Wires from QEL Exit Device to Power Supply

QEL Electrical Load

Voltage: 24 VDC
Current: 1.0 A inrush (0.5 sec)
0.14 A holding

PS900-Series power supply with 900-Series option board(s) installed

QEL device used with EPT, Door Loop, or Electric Hinge/Pivot

Distance (one way)	Wire Gauge
200'	18AWG
320'	16AWG
500'	14AWG
800'	12AWG

EPT shown. A door loop or electric hinge/pivot may also be used.

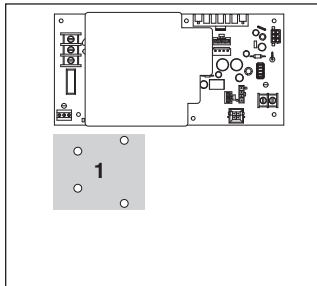
QEL Exit Device

Note: Power wires to QEL are not polarized.

13 Install 900-2Rs, 4RI, or 4R Option Board(s) into Power Supply

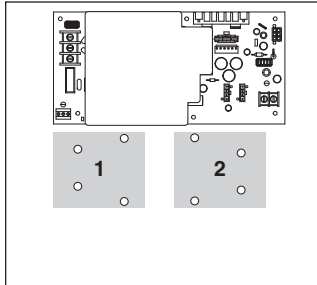
a Review Available 900 series Option Board Mounting Locations (Gray)

PS902

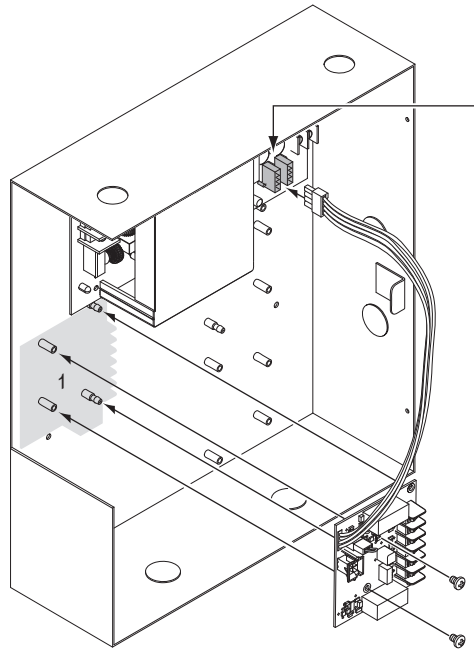
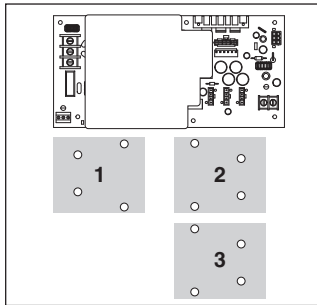


PS904

PS914



PS906



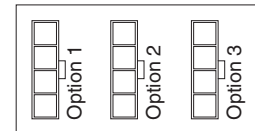
b Plug Option Board Cable into any Available Option Connector



PS902
1 Board



PS904, 914
2 Boards



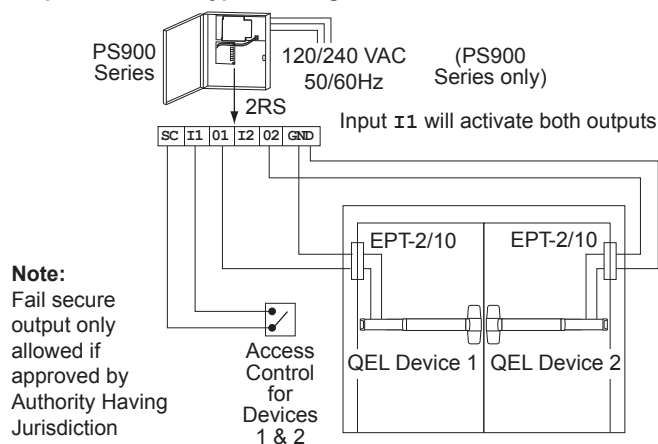
PS906
3 Boards

c Secure Board(s) with Screws

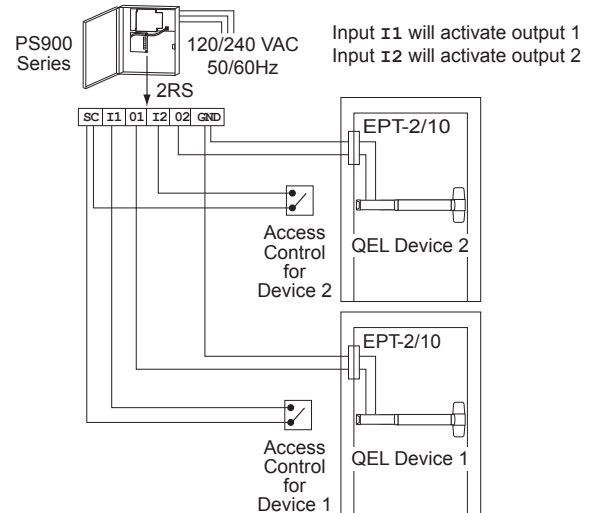
- Notes:**
1. 24VDC output setting required when QEL device connected
 2. If installing board in location 2 or 3, rotate board 180°
 3. The QEL is compatible with an existing 900-2Q board if currently installed.
 4. Latchbolt retraction of (2) sequenced QEL's requires more than 1 second to complete.
 5. When powering multiple components, verify that the amperage requirements of all components combined does not exceed the power supply output rating.

14 Connect Input and Output Wires to Option Board (2RS Shown)

Sequential Mode - Typical Wiring



Individual Mode - Typical Wiring



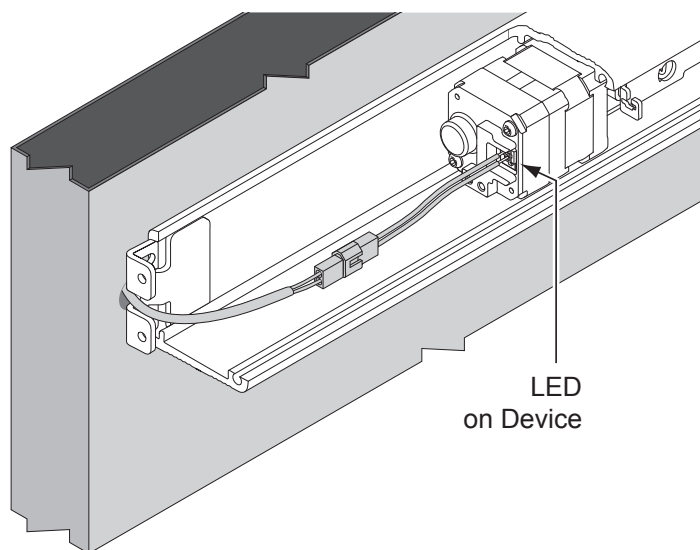
15 Check Operation

- A. Activate each input and verify all QEL devices operate properly.
- B. If any device does not operate properly, see step 16 for troubleshooting.

16 If Necessary, Troubleshoot Operation (LED is only visible with the mechanism cover removed)

Power at the QEL	QEL Response	Condition/Solution
24VDC	LED - Solid green Latchbolt - retracted	Operation normal, latch retracted immediately
	LED - Solid red after latchbolt attempts to retract multiple times	Latchbolt cannot fully retract mechanically Verify mechanical adjustment (on vertical rod or mortise lock devices if used). Remove and reapply input voltage to reset this condition.* See <i>Check Mechanical Operation</i> on page 8 as needed.**
	LED - Flashing green/red Latchbolt - not retracted	Excessive tamper (while power applied, the pushpad was pulled out at least 3 time) Wait 15 seconds and latchbolt will retract again OR remove and reapply power to clear condition
24VDC low	LED - Flashing green Latchbolt - retracted	Voltage low during latchbolt retraction (latchbolt retracts at reduced force) Wire length is too long, wire gauge is too small or power supply has poor regulation
29VDC or greater	LED- Flashing red Latchbolt - will not retract	Input voltage is too high for proper operation Wrong power supply, power supply defective.
13VDC or lower		Input voltage is too low for proper operation Wrong power supply, power supply defective or not set to the proper output voltage. To set, remove AC power from power supply, change power supply setting from 12 to 24VDC, then reapply AC power and verify proper operation.
0VDC	LED - off Latchbolt - not retracted	No input voltage Problem with the power supply, control switch or wiring
0VDC	LED - off Latchbolt - retracted	No input voltage Mechanical dogging is engaged

*For information about adjusting exit devices, you can find their installation instructions in the support area at www.allegion.com/us or call Technical Services at 1-877-671-7011



17 Check Mechanical Operation

33A/3527A	98/9927	98/9947WDC
33A/3547A	98/9947	98/9957
		98/9975

33/3549A	98/9949
33/3550A-WDC	98/9949WDC
	98/9950WDC

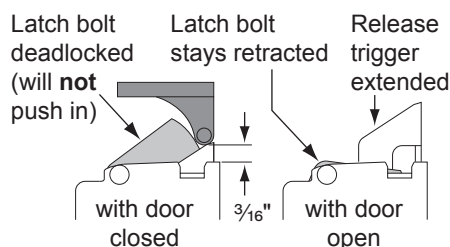
1. Make sure device is not dogged for SD-QEL / HD-QEL.
2. Depress pushbar and make sure latch bolt retracts and extends fully (see Figure 1).
3. If latch bolt does not retract or extend fully, adjustments may be required per the device installation instructions.

1. Make sure device is not dogged for SD-QEL/HD-QEL.
2. Depress pushbar. Door should begin to open with pushbar depressed halfway.
3. Close door. Top latch should be secure. If two point latch, bottom latch should be secure as well.
4. If device does not function as described in steps 2 and 3, adjustments may be required per the device installation instructions.

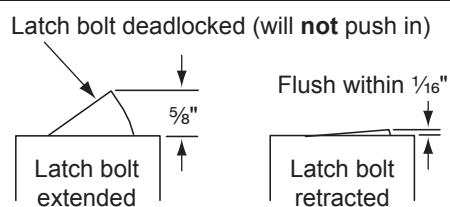
Any HD Device

1. Fully depress pushbar.
2. Insert hex dogging key and turn clockwise.
3. Release pushbar and verify latchbolt remains retracted.
4. Fully depress pushbar.
5. Insert hex dogging key and turn counter clockwise.
6. Release pushbar and verify latchbolt extends fully.

33A/3527A, 98/9927, 98/9957



33A/3547A, 98/9947, 98/9947WDC



98/9975

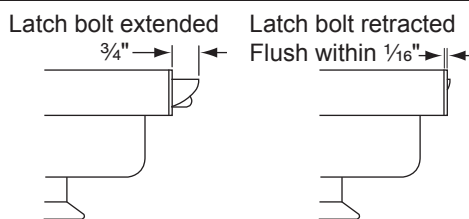


Figure 1

Customer Service

1-877-671-7011 www.allegion.com/us



© Allegion 2015
Printed in U.S.A.
24908386 Rev. 11/15-b