



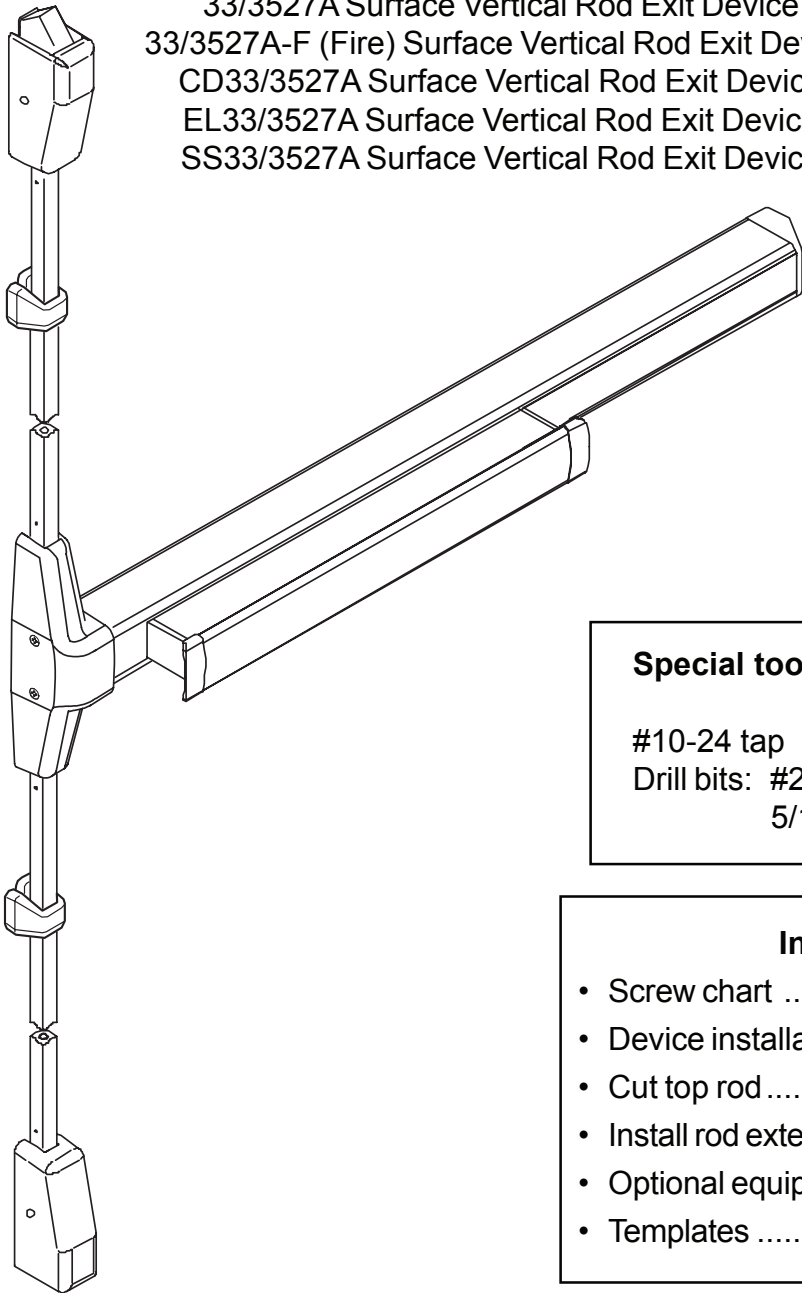
911403-00

Surface Vertical Rod Exit Device

33/3527A

VON DUPRIN®

Installation Instructions



Devices covered by these instructions:

- 33/3527A Surface Vertical Rod Exit Device
- 33/3527A-F (Fire) Surface Vertical Rod Exit Device
- CD33/3527A Surface Vertical Rod Exit Device
- EL33/3527A Surface Vertical Rod Exit Device
- SS33/3527A Surface Vertical Rod Exit Device

Special tools needed:

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

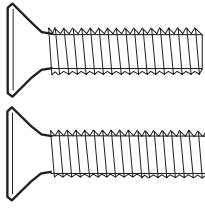
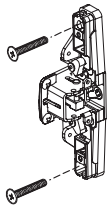
Index:

- Screw chart 2
- Device installation 3-6
- Cut top rod 7
- Install rod extension 7
- Optional equipment 8
- Templates 9-14

Please give these instructions to building owner after device is installed

SCREW CHART

A



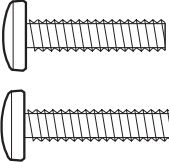
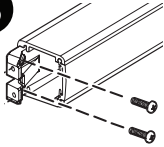
1/4-20 x 1"

Trim mount or sex bolts:
(1-3/4" door)

1/4-20 x 1-1/2"

(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)

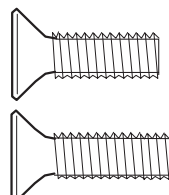
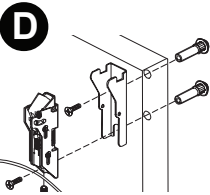
C



#10-16 X 3/8" Thread cutting

End cap

D



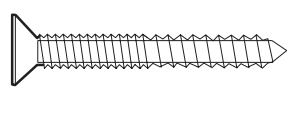
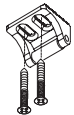
1/4-20 X 3/4"

1-3/4" door

1/4-20 X 1-1/4"

2-1/4" door

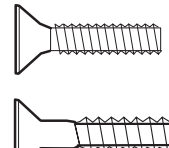
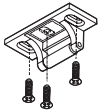
E



#10-12 x 10-24 x 1-1/4" combination

Metal or wood frame

F



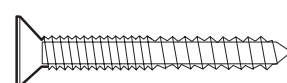
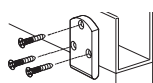
#10-24 X 3/4"

Metal frame

#10-24 X 1-1/4" wood screw

Wood frame

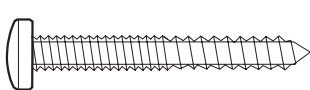
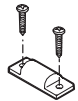
G



#10-12 x 10-24 x 1-1/4" combination

Metal or wood frame

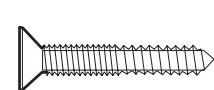
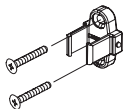
H



#10-12 x 10-24 x 1-1/4" combination

Variable floor surfaces

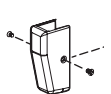
I



#8-16 x 8-32 x 1" combination

Metal or wood door

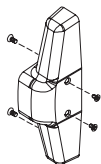
J



#8-32 X 1/4"

Latch covers

K

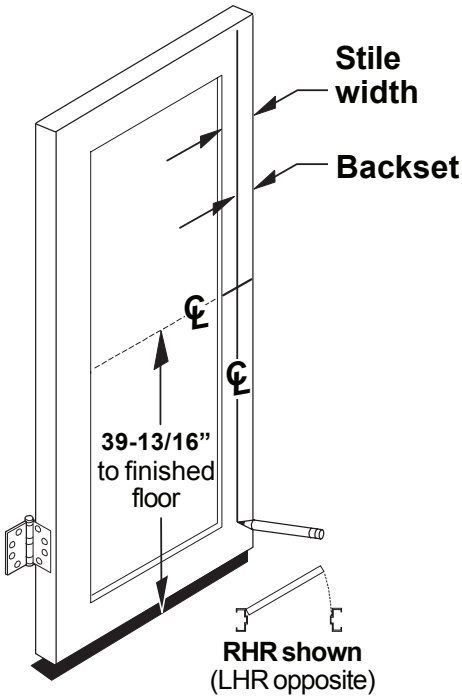


#8-18 x 3/8" thread cutting

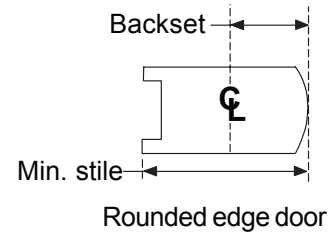
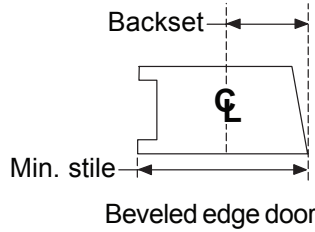
Center case cover

1

Figure backset and draw device center lines (☿) on door as shown.



Backset is measured from outer edge of door as shown. Minimum stile is less glass stop (rectangular glass stop is recommended for stiles less than 2-1/8")



Backset	Min. stile	Application
1-3/16"	2" - 2-3/4"	Two vertical rod devices
1-1/2"	2-3/4" - 3-3/4"	
1-7/8"	3-3/4" - 5"	
2-1/2"	5" to flush	
1-11/32"	2" - 2-3/4"	Single door
1-1/2"	2-3/4" - 3-3/4"	
1-7/8"	3-3/4" - 5"	
2-1/2"	5" to flush	
2-7/32"	3" min.	Vertical rod and rim device

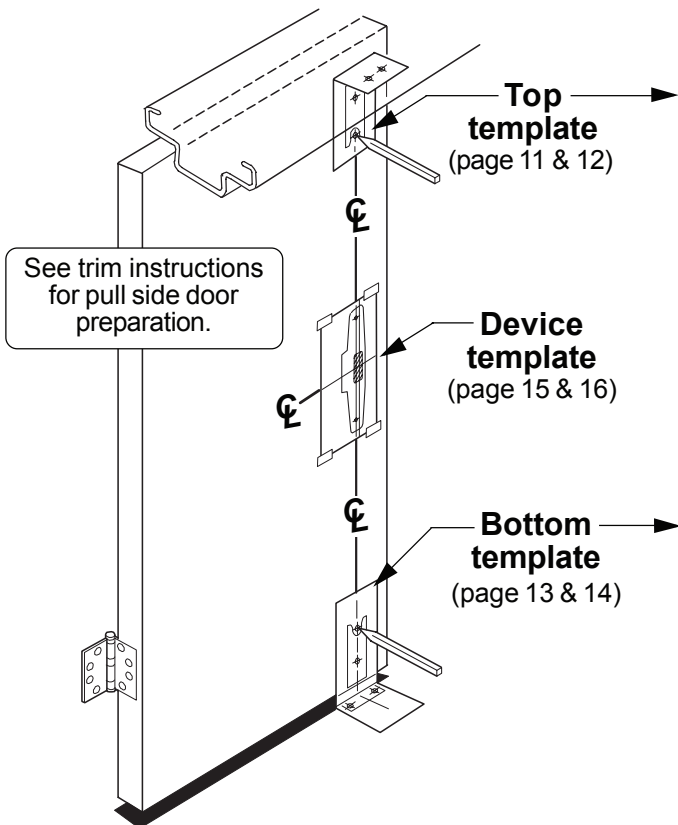
Note: For 299/299F top strike use minimum backsets shown below.

Double doors: 1-3/8" min. backset
2-3/16" min. stile

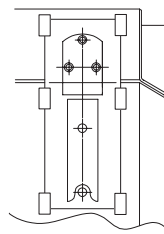
Single door: 1-7/8" min. backset
2-11/16" min. stile

2

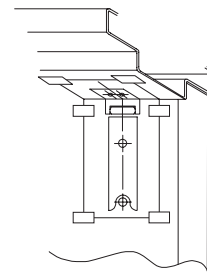
Tape templates to door and prepare door and frame per templates.



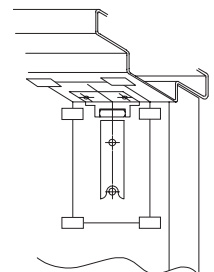
260U strike



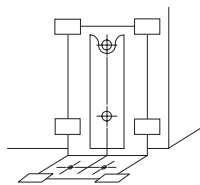
266 strike



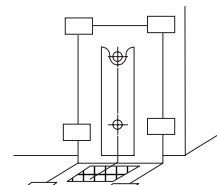
***299/299F strike**



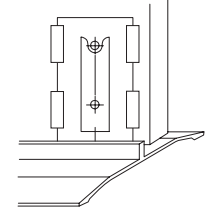
248L-4 strike



304L strike



Latch track



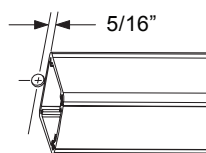
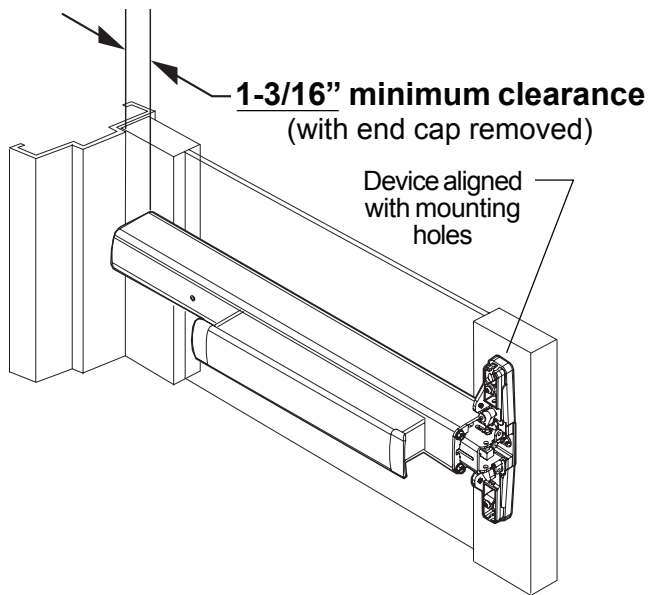
*For 299/299F top strike use minimum backsets shown below.

Double doors: 1-3/8" min. backset, 2-3/16" min. stile

Single door: 1-7/8" min. backset, 2-11/16" min. stile

3

Measure to determine length to cut device.



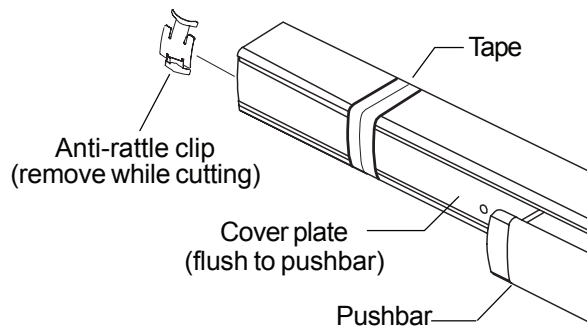
Note

If 5/8" diameter wire access hole has been predrilled in door, cut device 5/16" from center of hole.

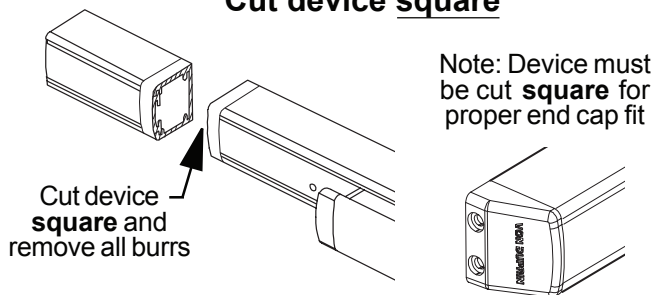
4

Cut device to length.

Prepare device for cutting

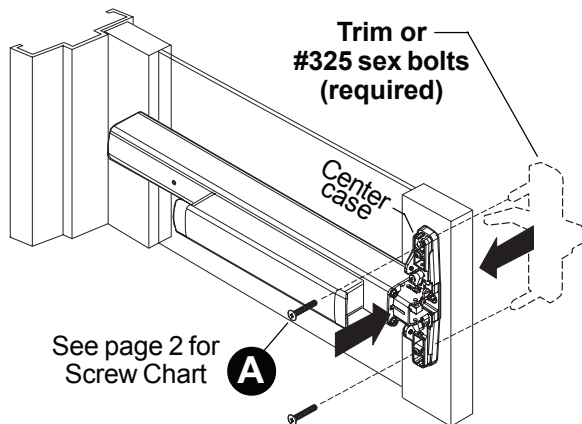
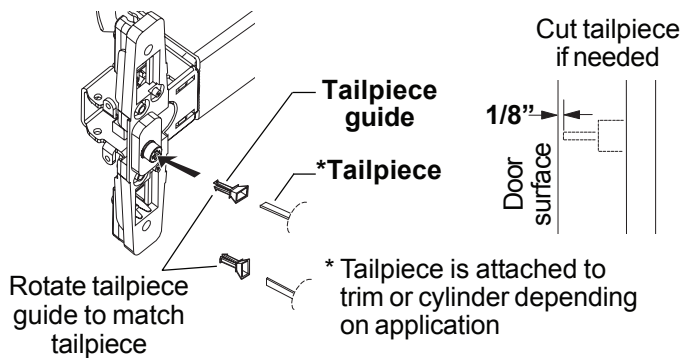


Cut device square



5

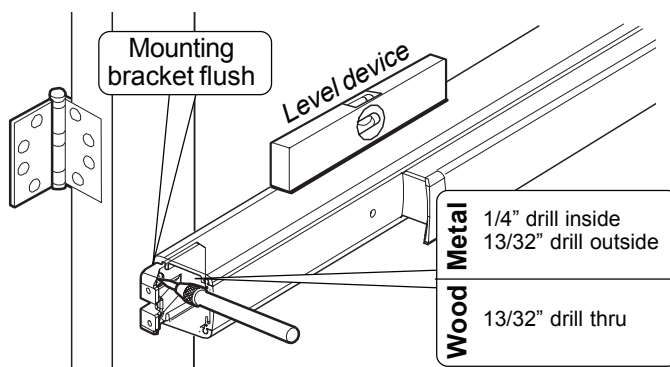
Install tailpiece guide and trim (or sex bolts) and secure device center case to door.



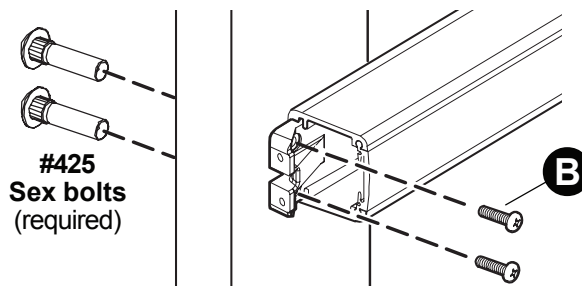
6

Install hinge stile mounting bracket.

Mark and prepare 2 mounting holes

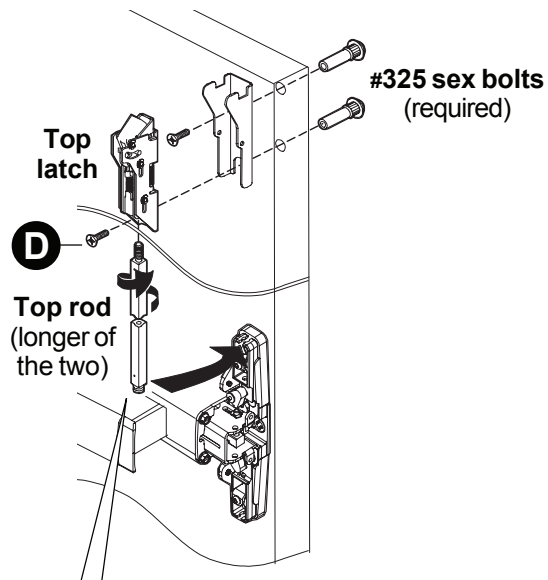


Secure mounting bracket



7

Install top latch and rod.



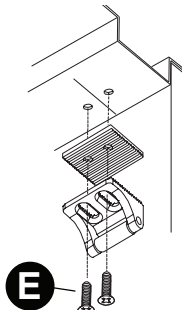
If top rod is too long, see “Cut top rod” on page 7

If top rod is too short, see “Install rod extension” on page 7

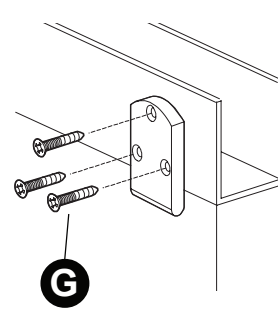
8

Install top strike.

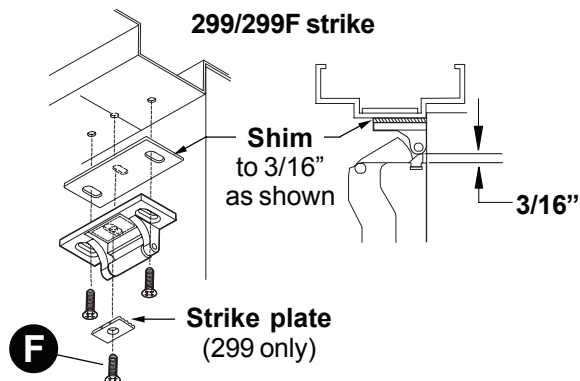
266 strike
For panic device application only



260U strike
For panic device application only



299/299F strike



9

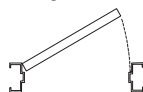
Adjust top rod until latch bolt acts as shown.

Adjust rod by threading rod into latch clockwise to shorten, or counterclockwise to lengthen.

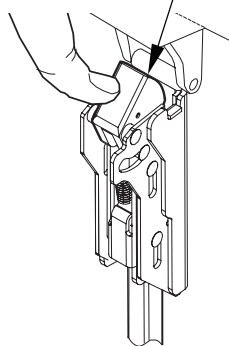
With door closed:



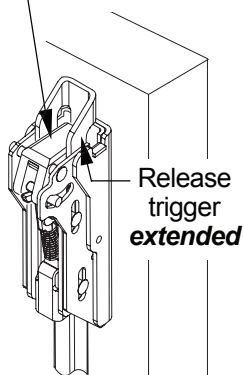
With door open:



Latch bolt **deadlocked**
(will not push in)



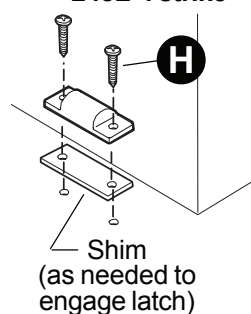
Latch bolt stays **retracted**



10

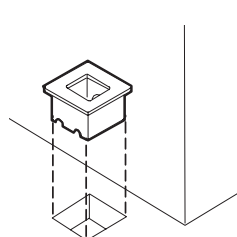
Install bottom strike, latch, and rod.

248L-4 strike



Use 248L-4 strike for panic device application only.
Use 304L for fire doors

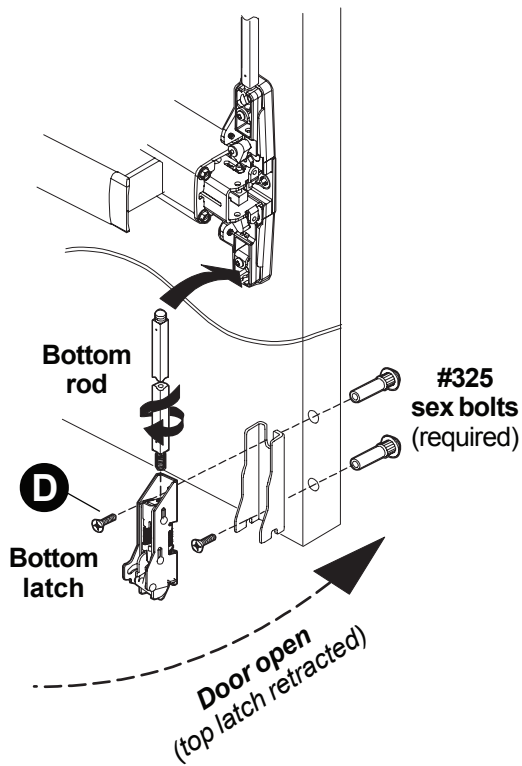
304L strike



Grout strike into floor

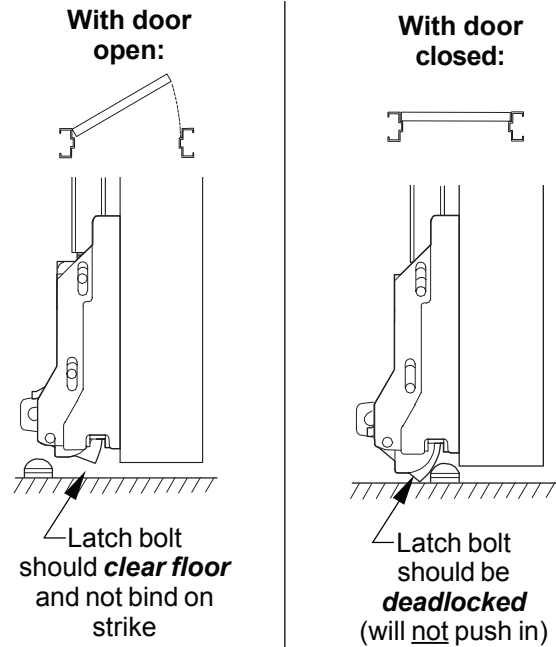
11

Install bottom rod.



12

Adjust bottom rod with door open (top latch retracted).

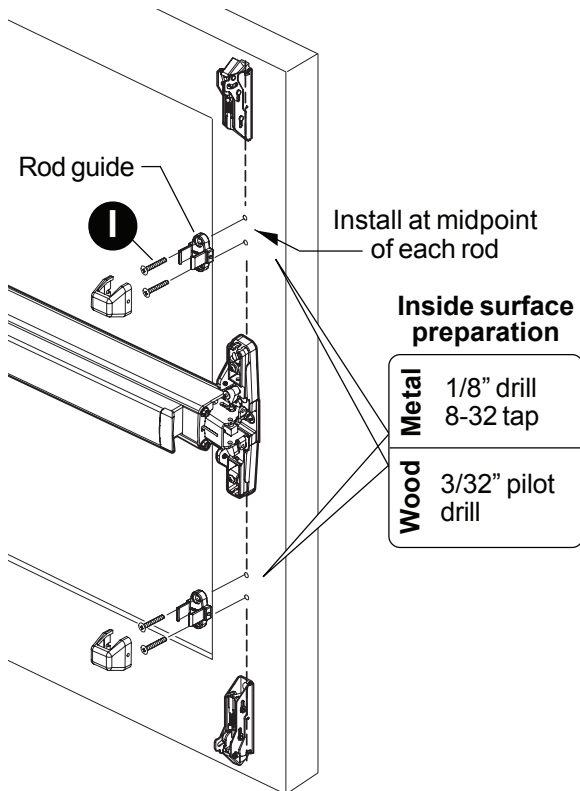


Open and close door a few times and check for deadlocking when door is closed

Readjust rods if needed

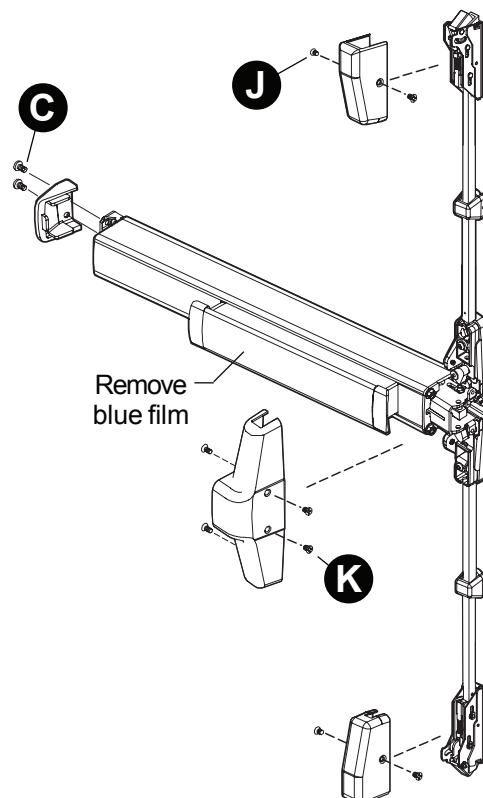
13

Install rod guides.



14

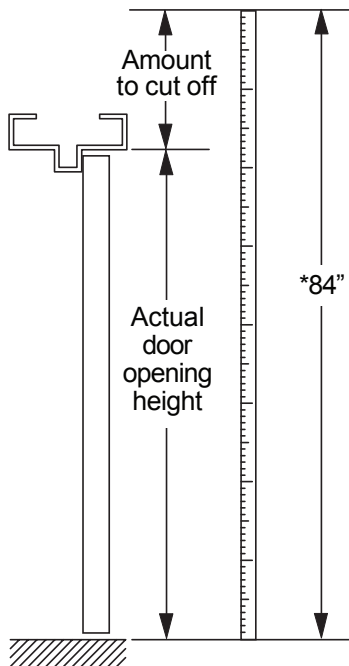
Install covers and end cap.



CUT TOP ROD

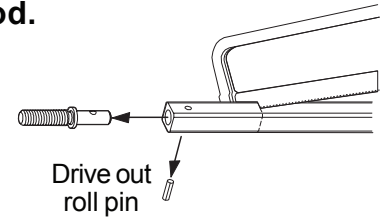
1. Measure amount to cut off rod as shown below.

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

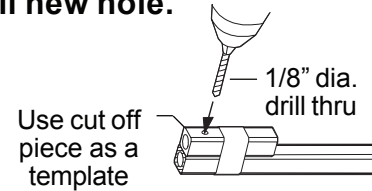


*Rods are factory sized for 7' (84") door. Measure actual door opening height and subtract that number from 84" to get amount to cut off top rod.

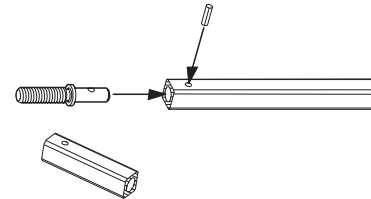
2. Cut rod.



3. Drill new hole.

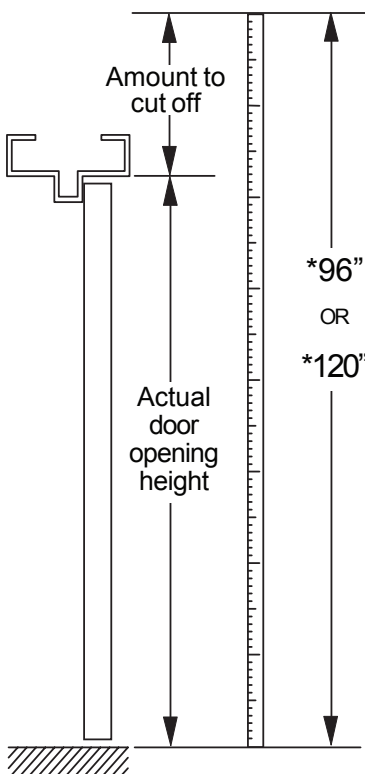


4. Reinstall rod end and roll pin.



INSTALL ROD EXTENSION

1. Measure door opening to determine amount to cut off rod extension.

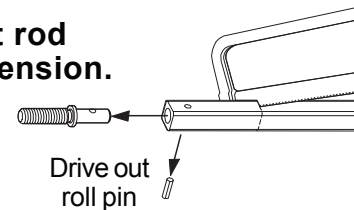


*Standard door heights:

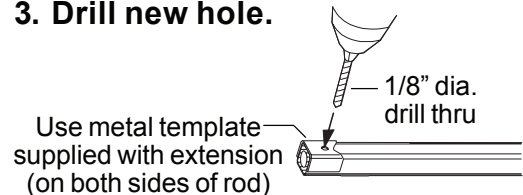
With no extension	7' (84")
With 1' extension	8' (96")
With 3' extension	10' (120")

*Rods are factory sized for door heights shown above. Measure actual door opening height and subtract that number from 96" (for 1' extension) or 120" (for 3' extension) to get amount to cut off extension.

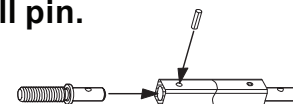
2. Cut rod extension.



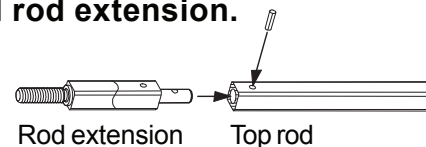
3. Drill new hole.



4. Reinstall rod end and roll pin.



5. Connect top rod and rod extension.



OPTIONAL EQUIPMENT

CD (CYLINDER DOGGING)

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

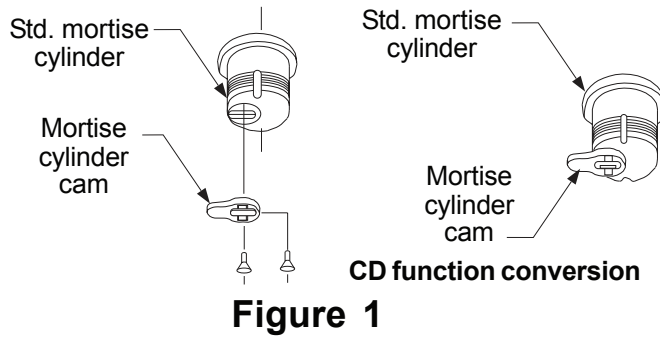


Figure 1

Dogging procedure

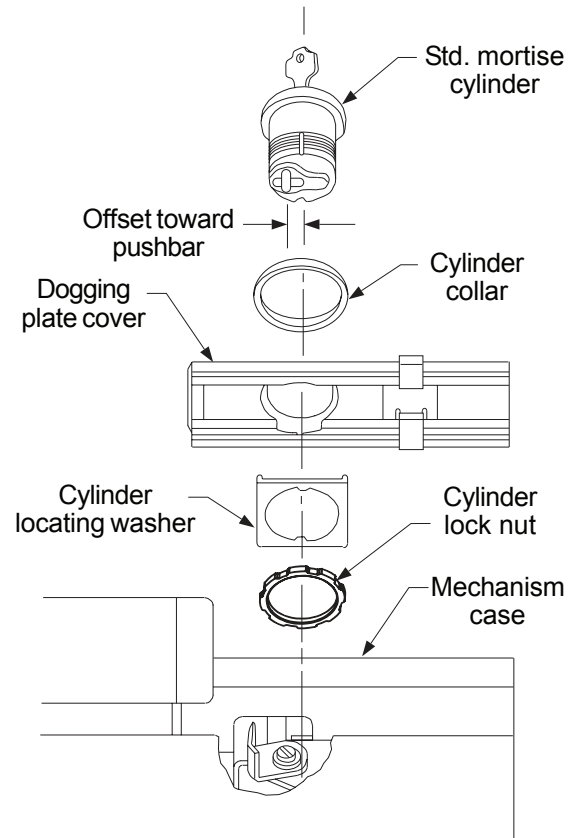
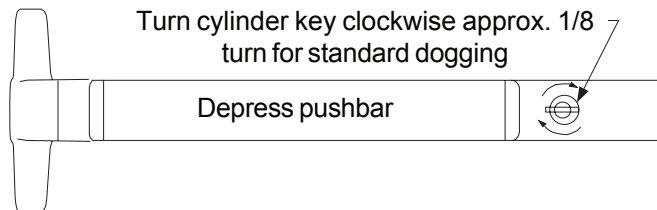
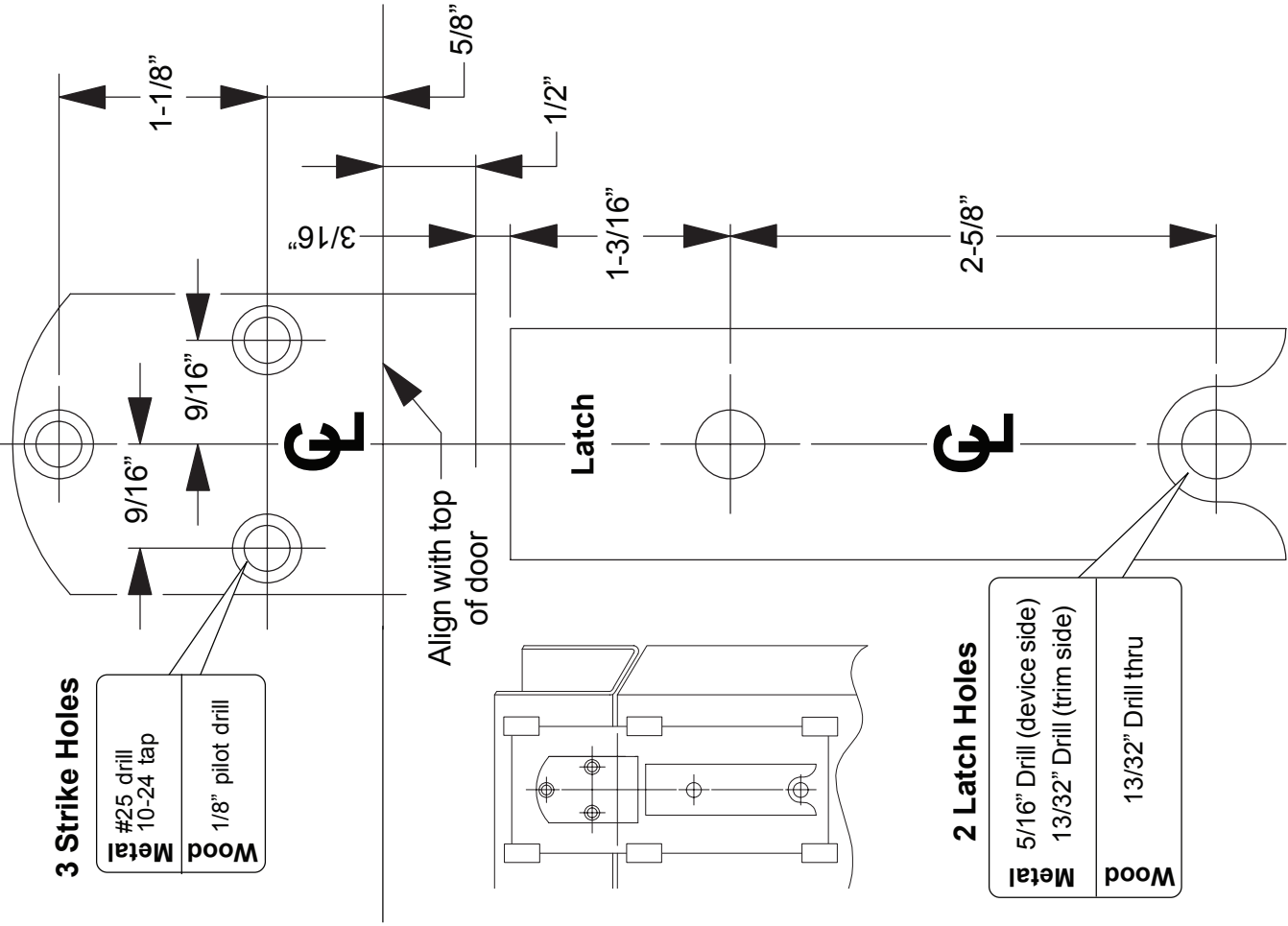


Figure 2

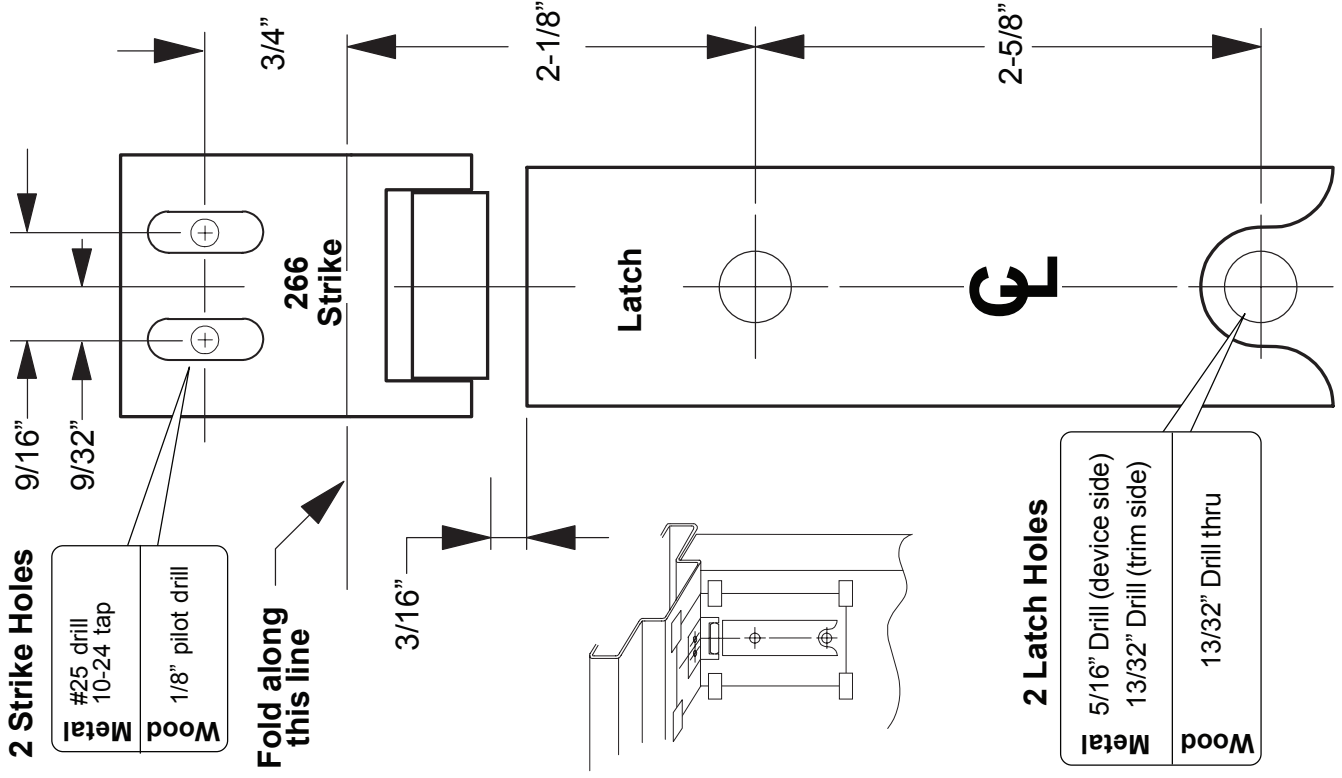
TOP LATCH AND 260U STRIKE

For panic device application only



TOP LATCH & 266 STRIKE

For panic device application only



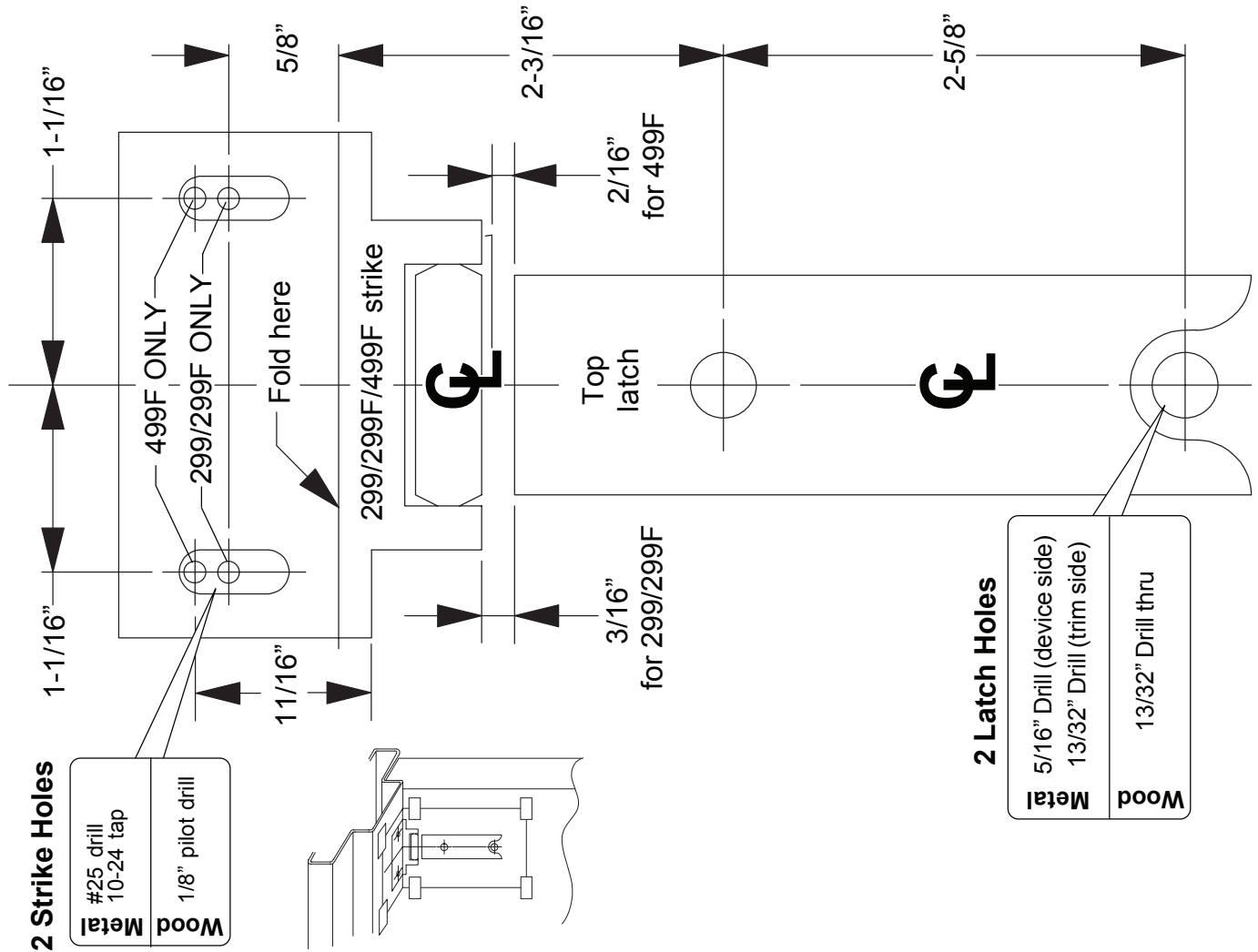
TOP TEMPLATE - CONTINUED

Note: For 299/299F top strike use minimum backsets shown below.

Double doors: 1-3/8" min. backset, 2-3/16" min. stile

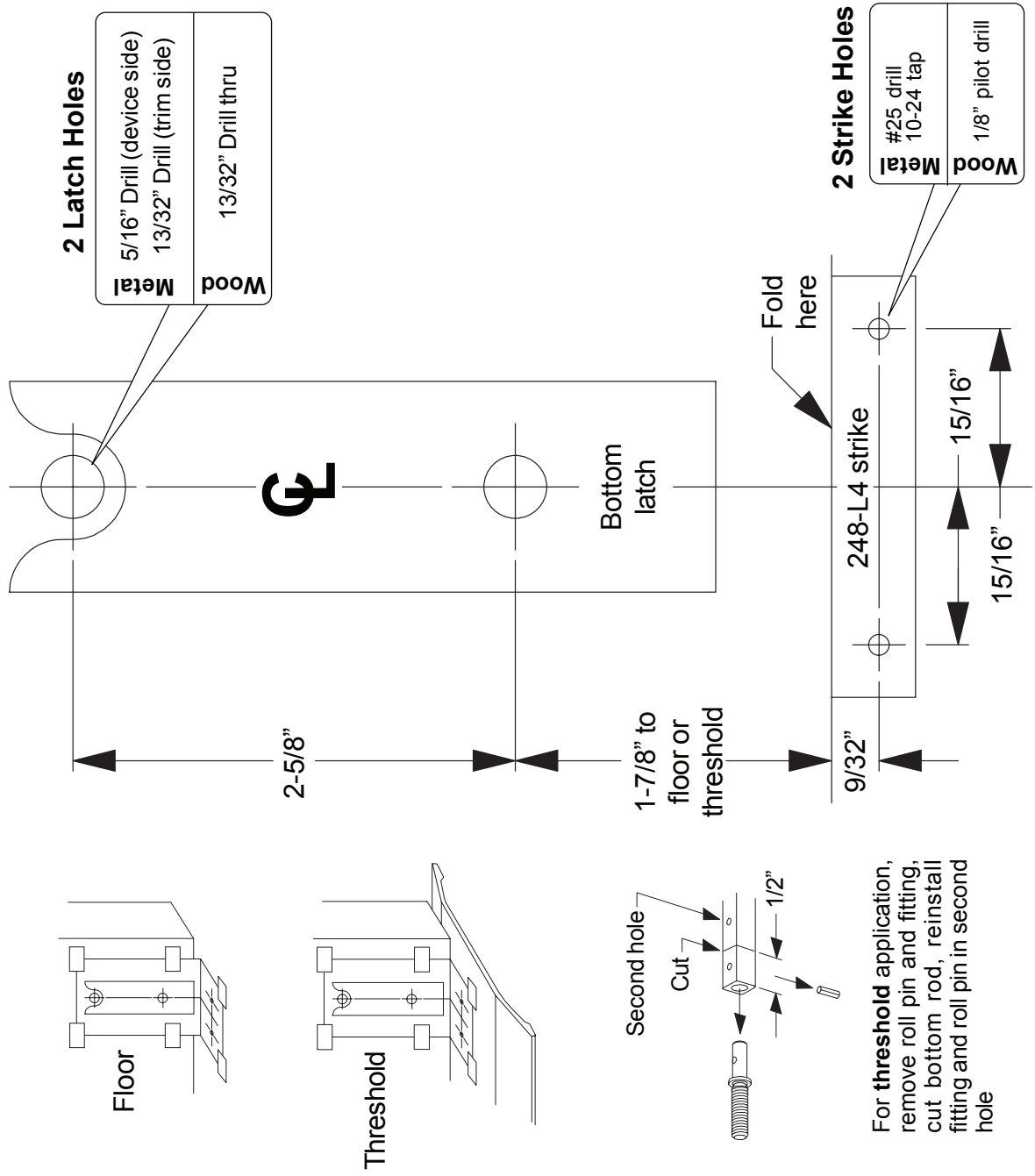
Single door: 1-7/8" min. backset, 2-11/16" min. stile

TOP LATCH & 299/299F/499F STRIKE

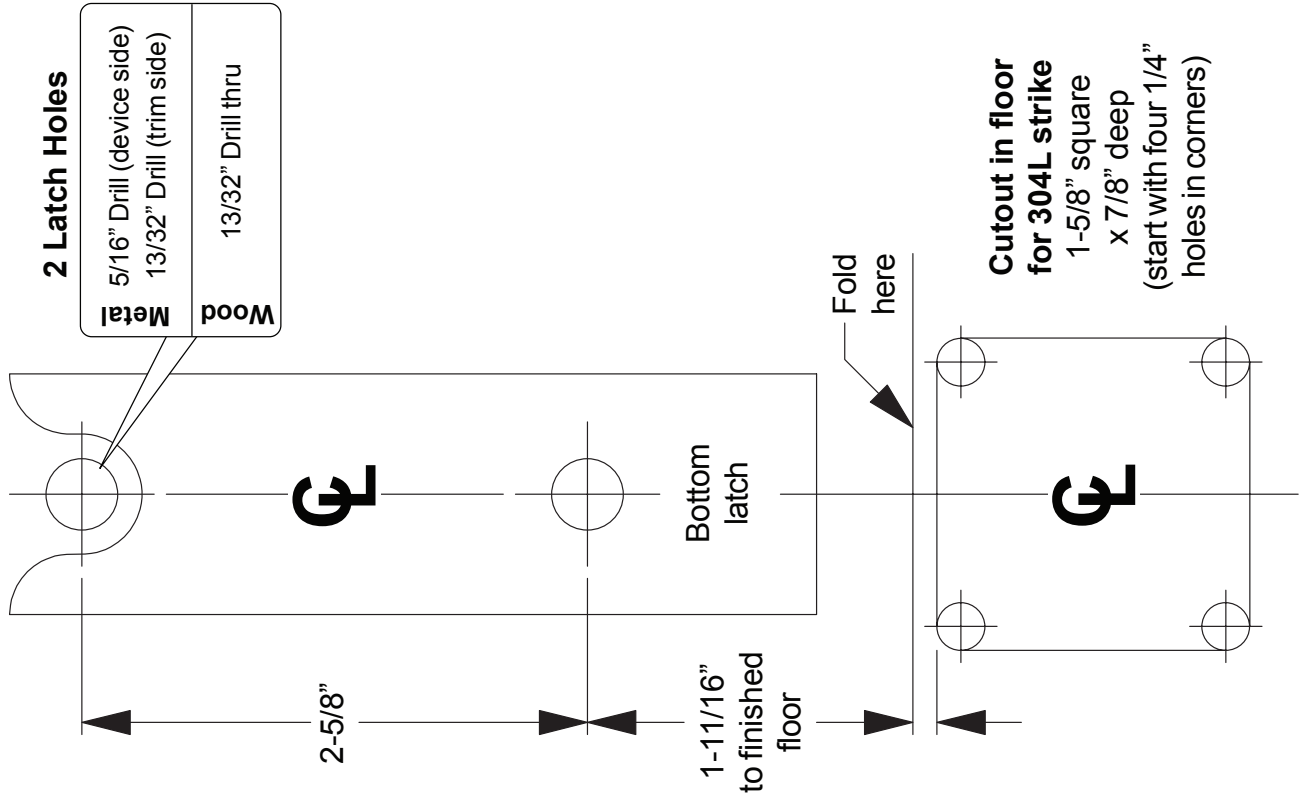


BOTTOM LATCH AND 248-L4 STRIKE

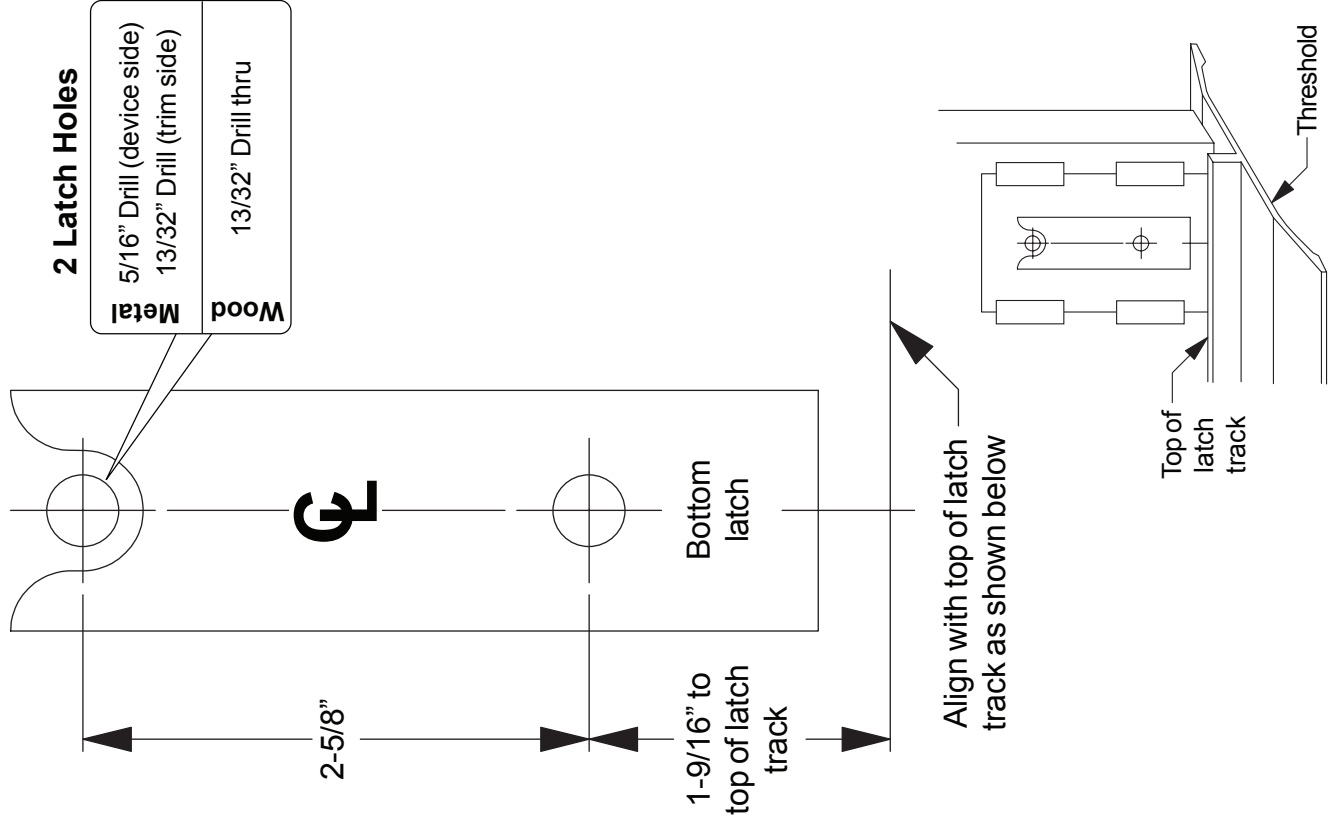
For panic device application only



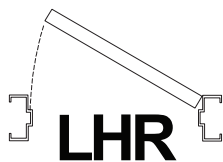
BOTTOM LATCH AND 304L STRIKE



BOTTOM LATCH AND LATCH TRACK



33/3527A Device Template



X

CL of device

**Cut-out device side only
5/8" deep for wood door**

3-1/8"

7/8"

7/8"

CL of device

1/4" Radius

3-1/8"

7/8"

19/32"

1/4"

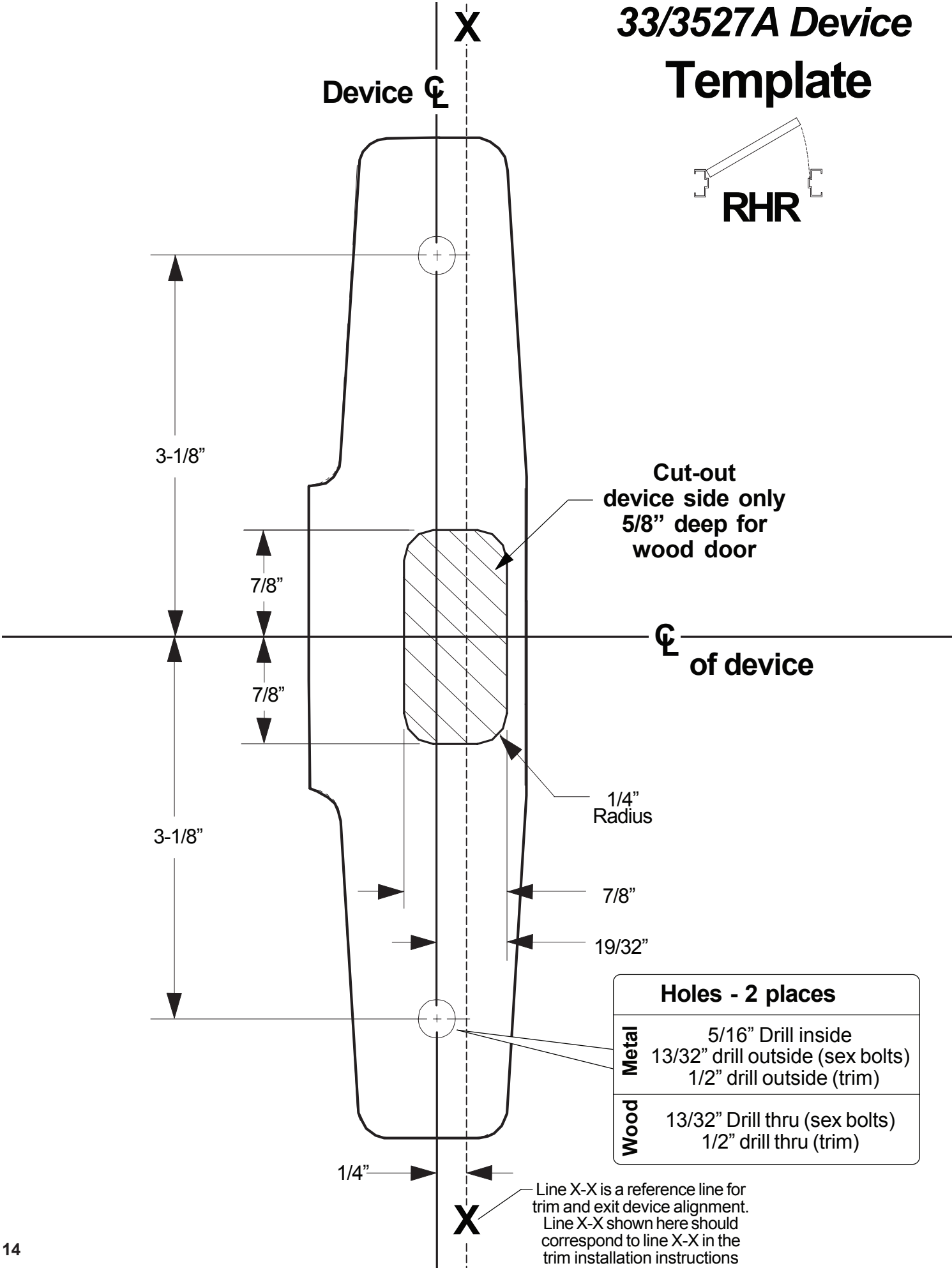
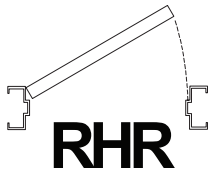
Line X-X is a reference line for trim and exit device alignment.
Line X-X shown here should correspond to line X-X in the trim installation instructions

X

Holes - 2 places

Metal	5/16" Drill inside 13/32" drill outside (sex bolts) 1/2" drill outside (trim)
Wood	13/32" Drill thru (sex bolts) 1/2" drill thru (trim)

33/3527A Device Template



Customer Service

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911403-00 Rev. 12/16-d



24908386

QEL 33A/35A, 98/99 Series

VON DUPRIN®

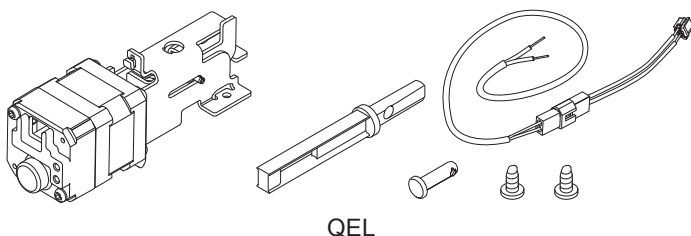
Conversion Kit

Installation Instructions

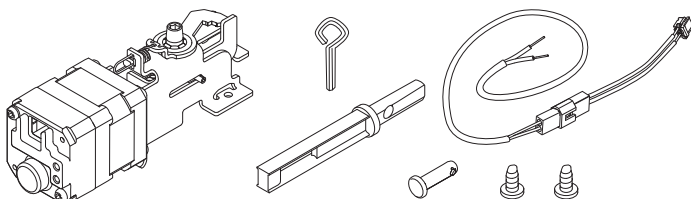


1. This kit converts all 33/35A and 98/99 series mechanical exit devices to quiet electric latch (QEL) retraction devices.
2. This kit can also be used for motor replacement on existing QEL devices.
3. Install according to instructions or device will not function and panic or fire label will be void.
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.

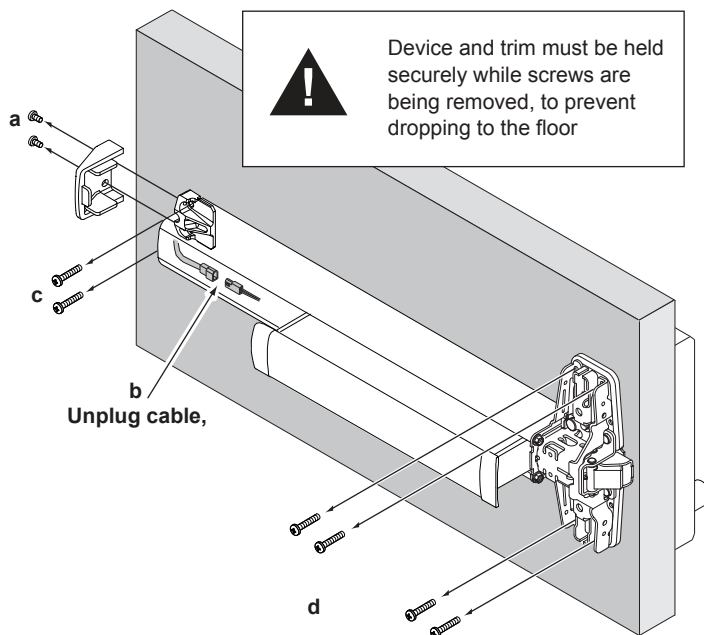
1 ⚠ Disconnect Power ⚠

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.

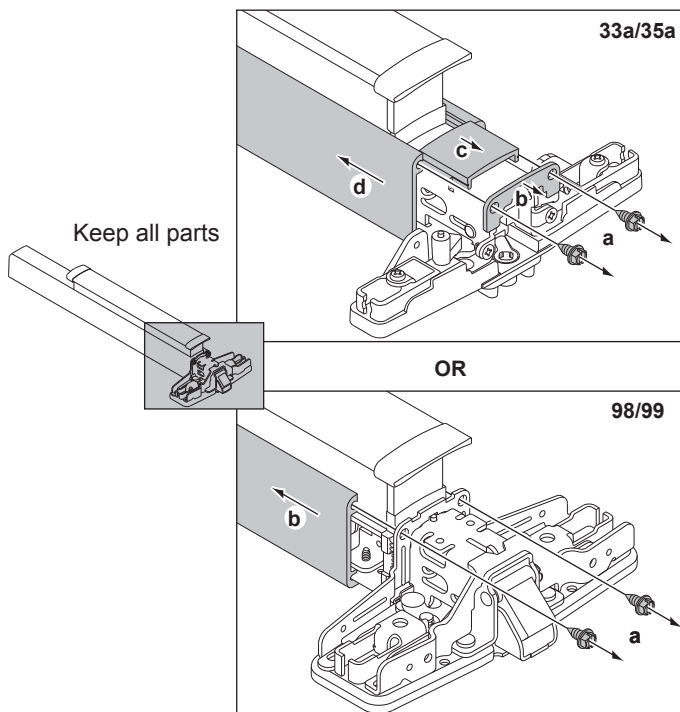
2 Detach Vertical Rods if present

Refer to device instructions as needed.

3 Remove Exit Device from Door



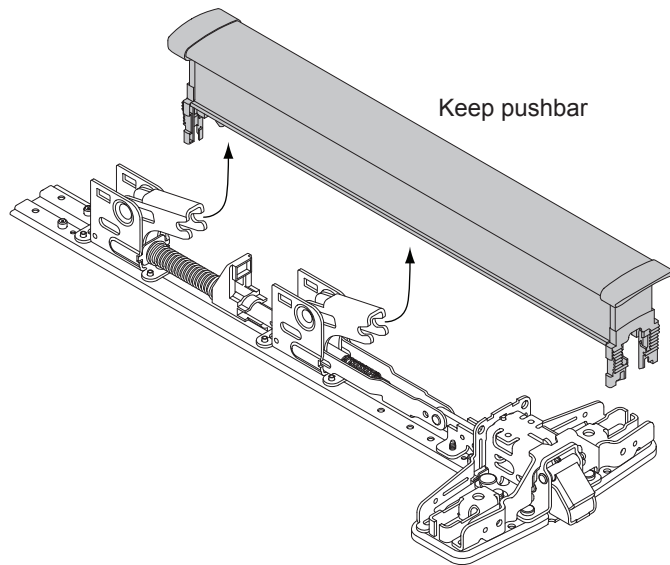
4 Remove Mechanism Case



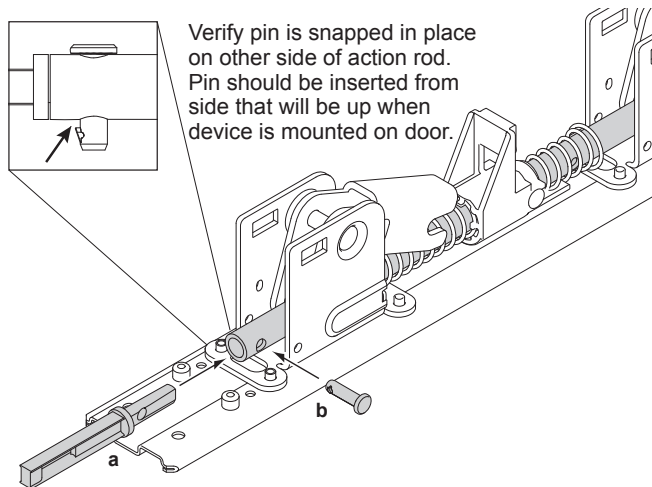
FIRE OR LESS DOGGING DEVICE

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

1. Remove pushpad from baseplate.

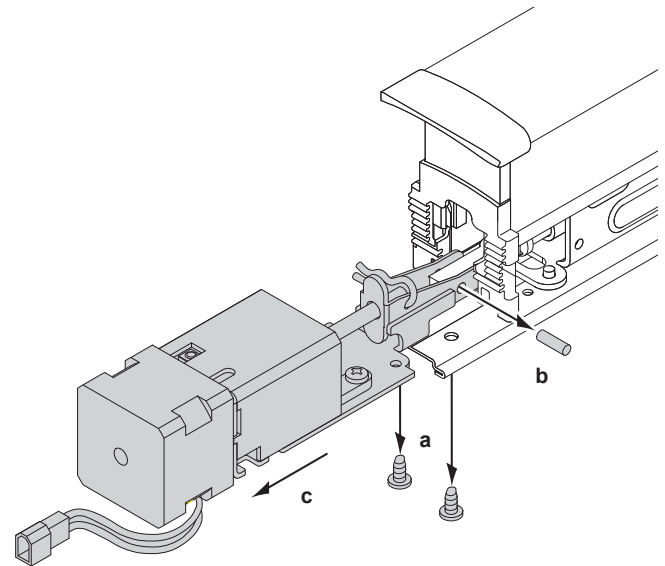


2. Install connector and pin.

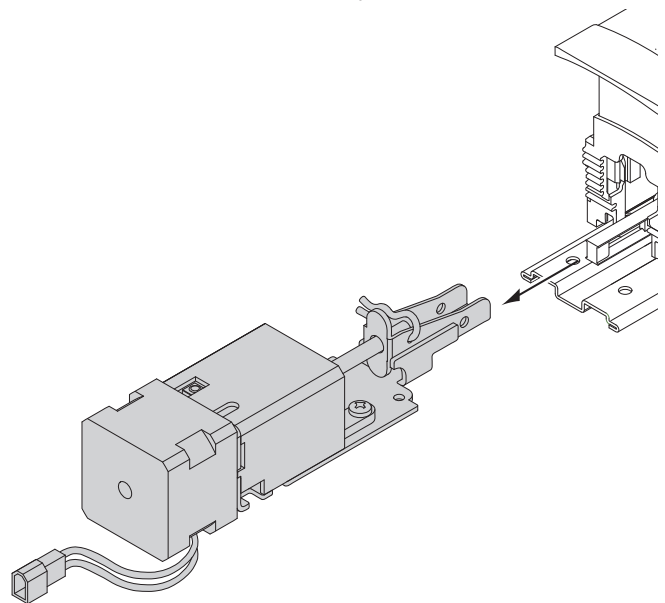


QEL DEVICE (built prior to December 2014)

1. Remove existing QEL motor

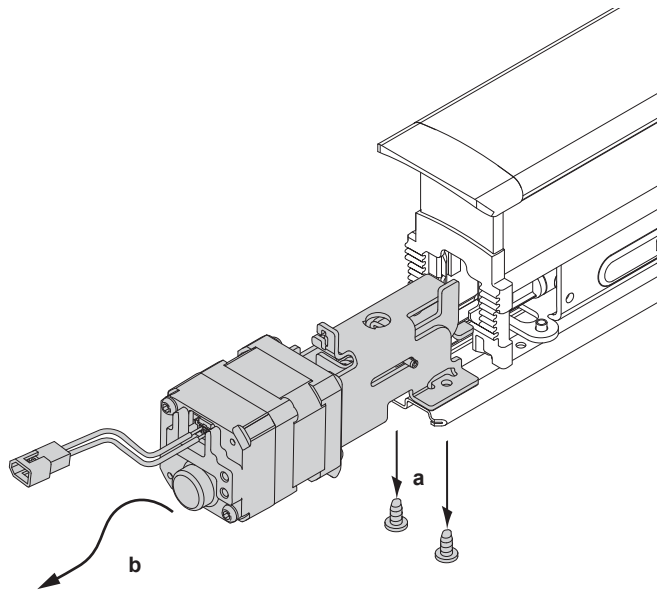


2. Discard old QEL motor assembly.

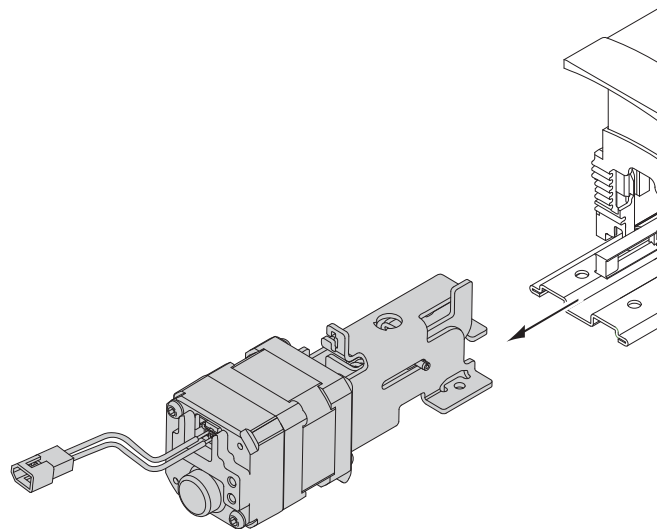


QEL DEVICE (built after December 2014)

1. Remove existing QEL motor.

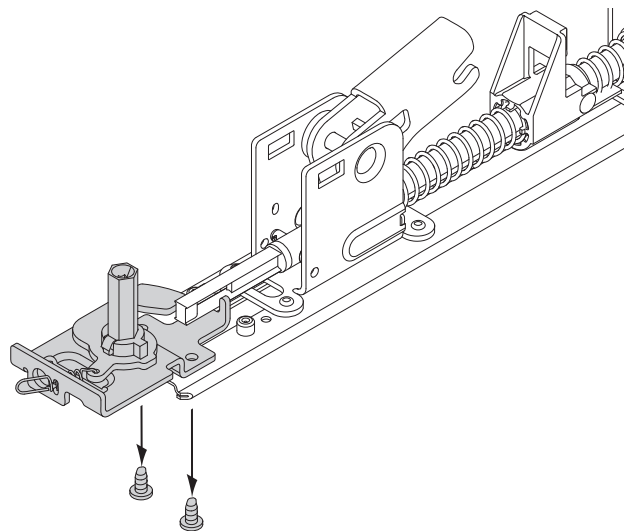


2. Discard old QEL motor assembly.

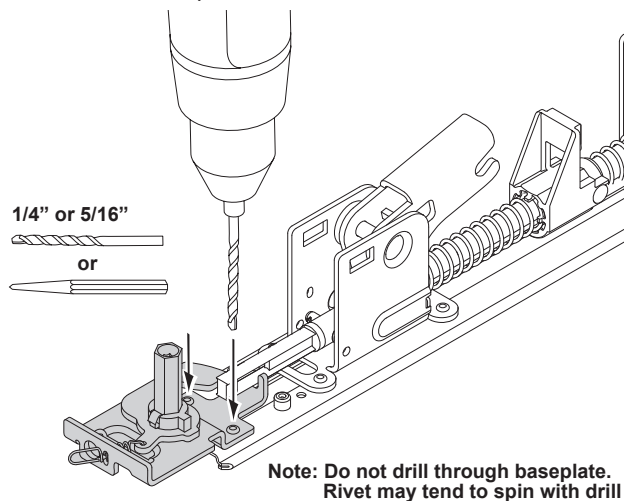


PANIC DEVICE (with dogging assembly)

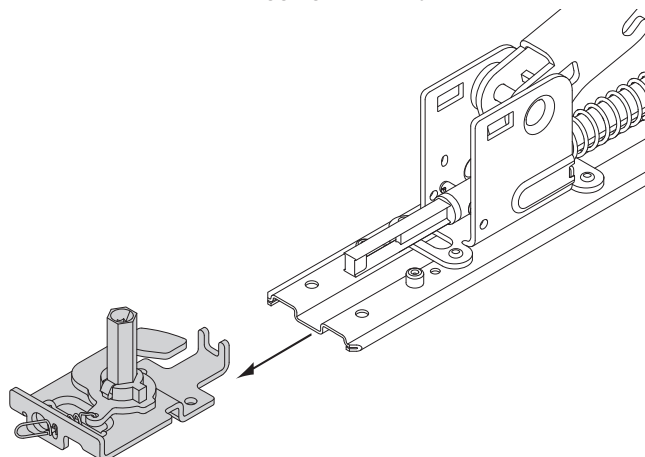
1. Remove two screws from dogging assembly. If riveted see below.



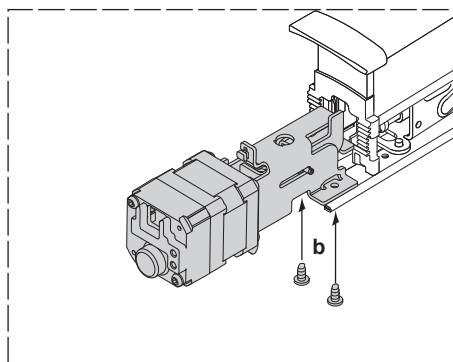
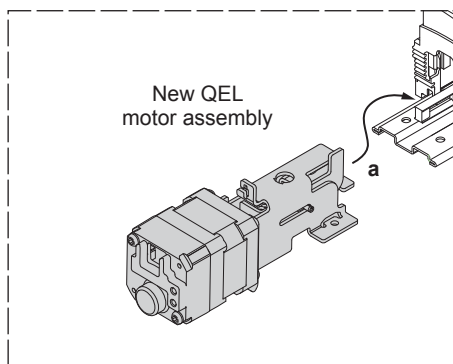
2. Drill or use center punch on two rivet heads until rivets can be removed from baseplate.



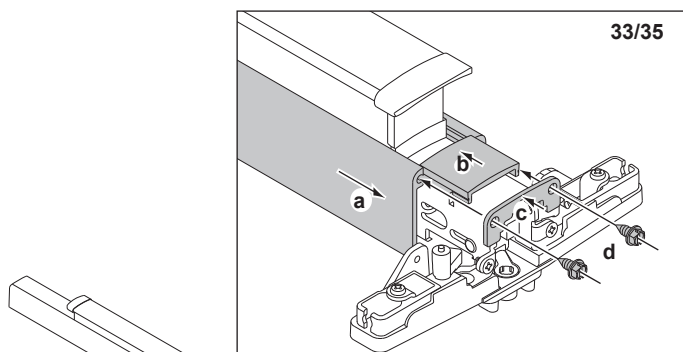
3. Remove and discard dogging assembly.



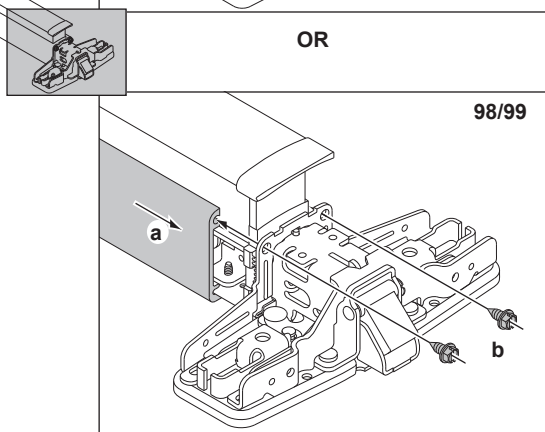
6 Install New QEL Motor Assembly



7 Install Mechanism Case

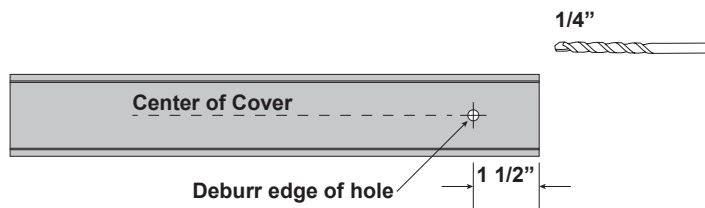


OR

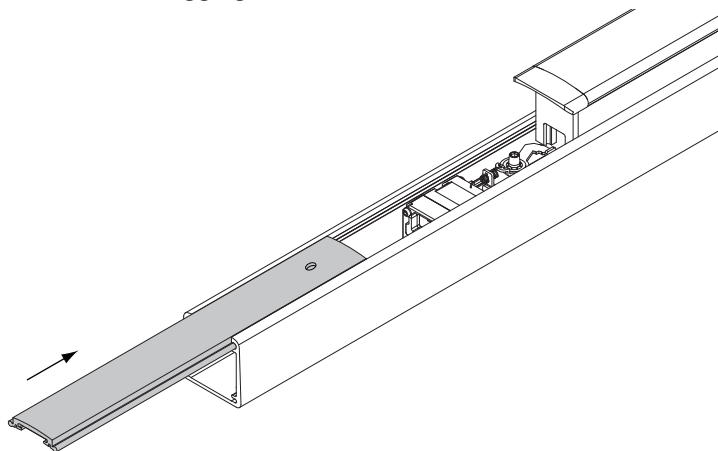


8 Prepare dogging cover for HD dogging key (if applicable and only on panic devices).

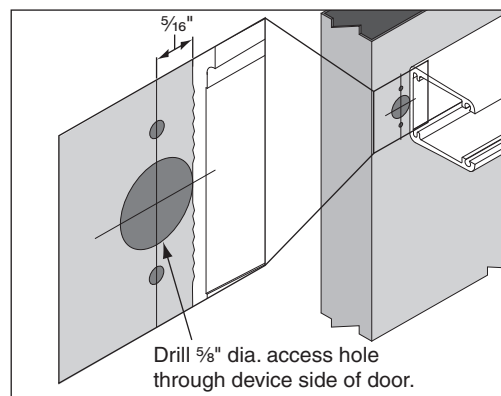
8a Locate and drill hole



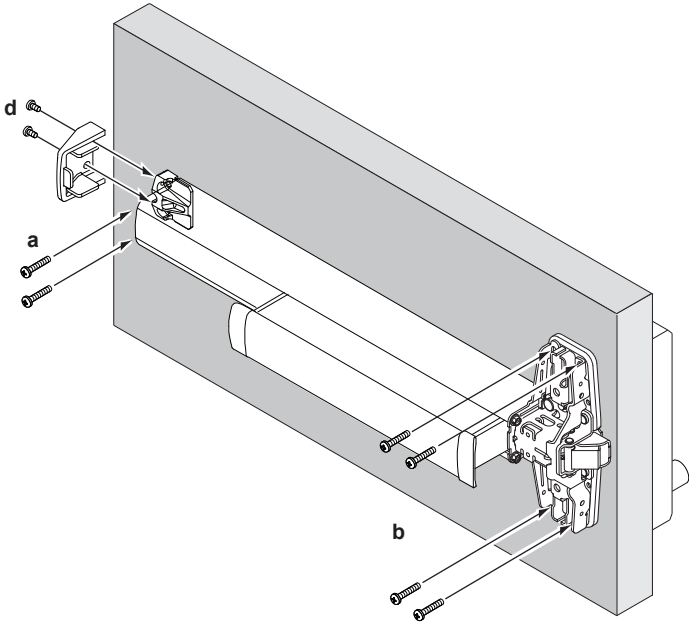
8b Install dogging cover



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.

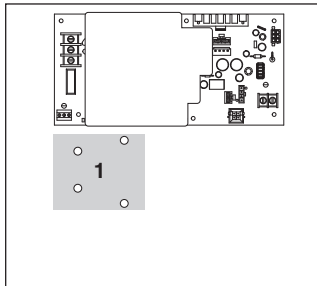
QEL Exit Device

Note: Power wires to QEL are not polarized.

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

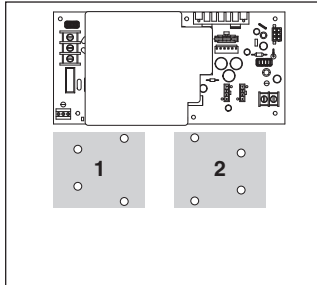
a Review Available 900 series Option Board Mounting Locations (Gray)

PS902

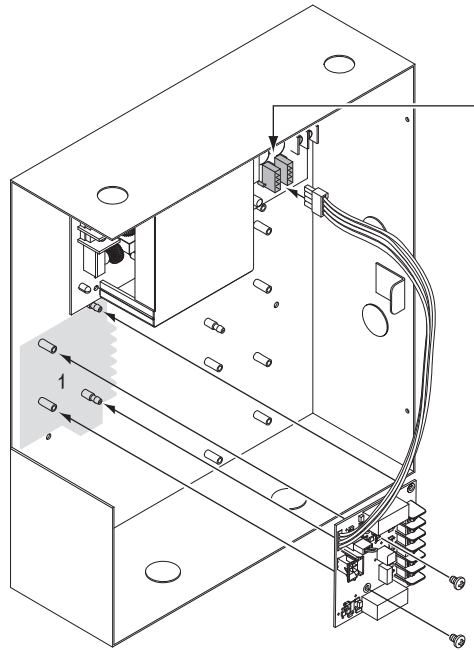
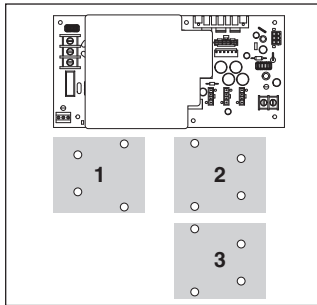


PS904

PS914



PS906



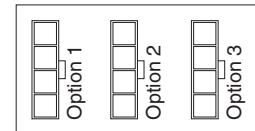
b Plug Option Board Cable into any Available Option Connector



PS902
1 Board



PS904, 914
2 Boards



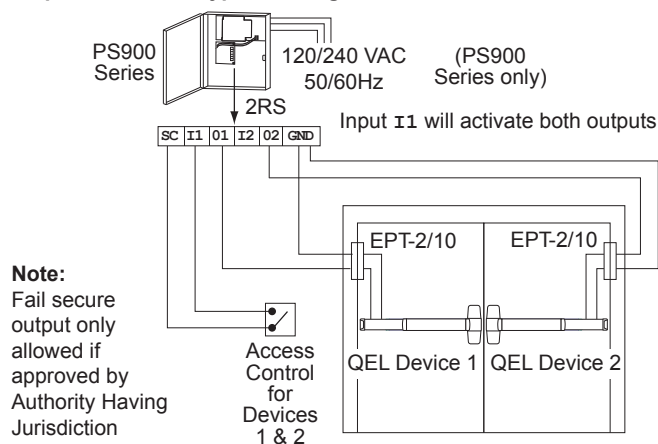
PS906
3 Boards

c Secure Board(s) with Screws

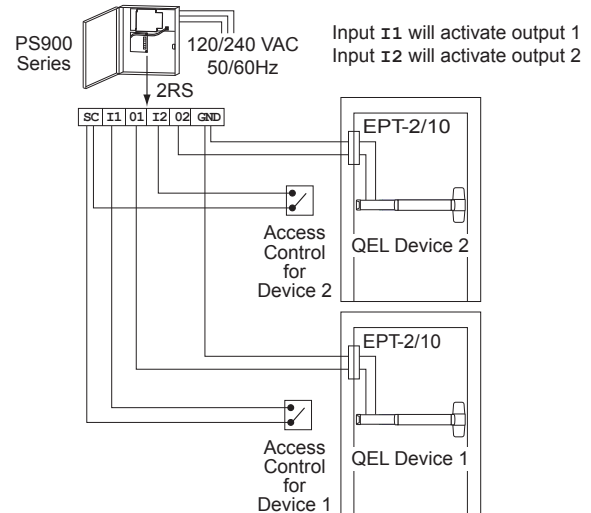
- Notes:**
1. 24VDC output setting required when QEL device connected
 2. If installing board in location 2 or 3, rotate board 180°
 3. The QEL is compatible with an existing 900-2Q board if currently installed.
 4. Latchbolt retraction of (2) sequenced QEL's requires more than 1 second to complete.
 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



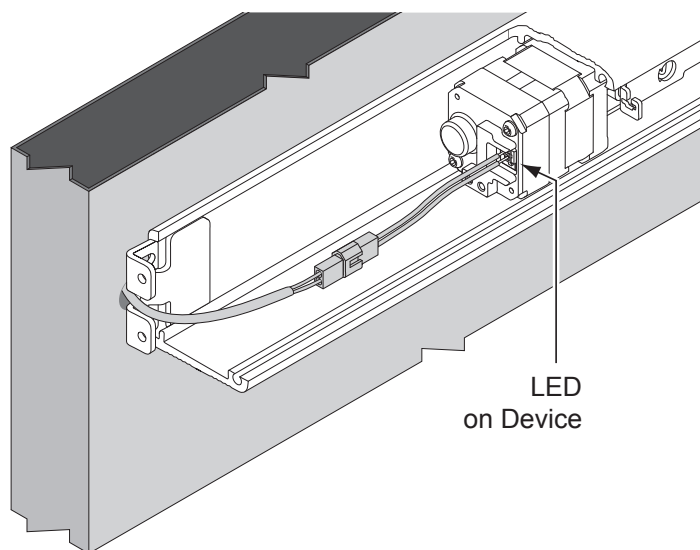
15 Check Operation

- 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

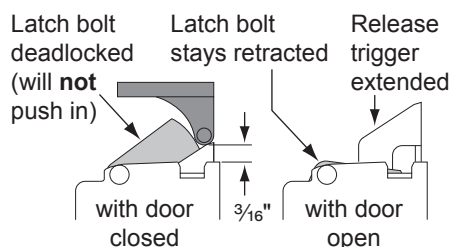
1. Make sure device is not dogged for SD-QEL / HD-QEL.
2. Depress pushbar and make sure latch bolt retracts and extends fully (see Figure 1).
3. If latch bolt does not retract or extend fully, adjustments may be required per the device installation instructions.

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.

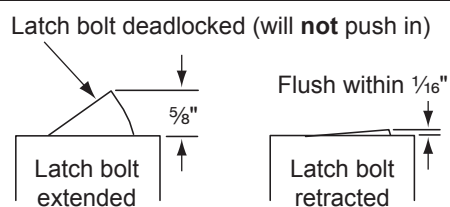
Any HD Device

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

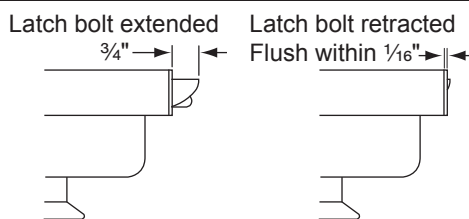


Figure 1

Customer Service

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



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24908386 Rev. 11/15-b