



911404-00

33/3547A

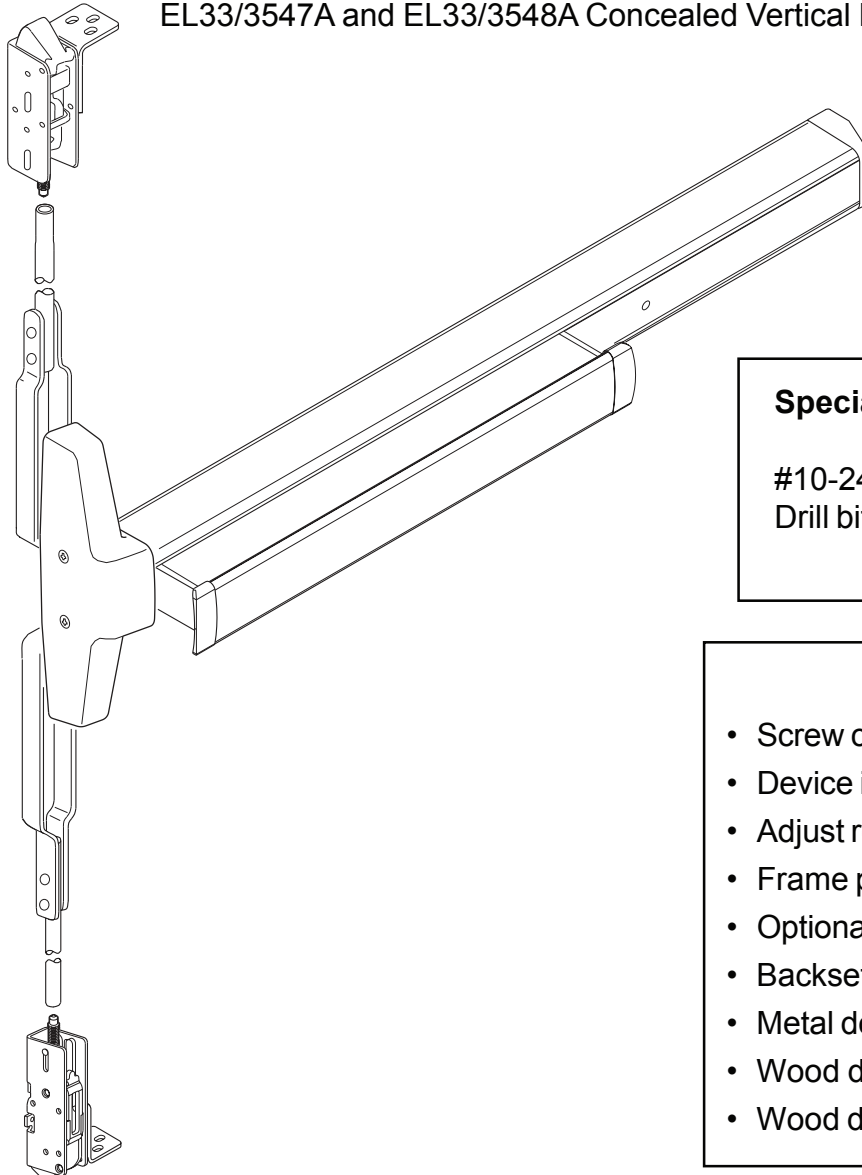
VON DUPRIN®

Concealed Vertical Rod Exit Device

Installation Instructions

Devices covered by these instructions:

33/3547A and 33/3548A Concealed Vertical Rod Exit Device
33/3547A-F and 33/3548A-F Fire Concealed Vertical Rod Exit Device
CD33/3547A and CD33/3548A Concealed Vertical Rod Exit Device
EL33/3547A and EL33/3548A Concealed Vertical Rod Exit Device



Special tools needed:

#10-24 tap
Drill bits: #25, 5/16",
13/32", 1/2"

Index:

- Screw chart 2
- Device installation 3-5
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- Frame preparation 7
- Optional equipment 8
- Backset information 9
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- Wood door templates 15-16

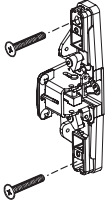
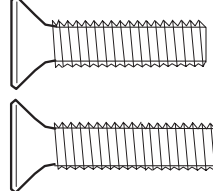
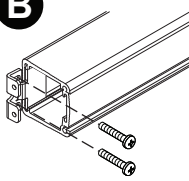
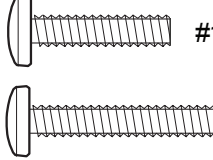


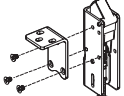

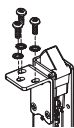
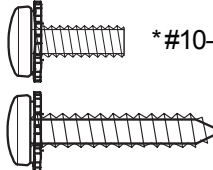


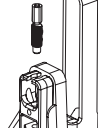
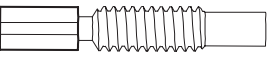
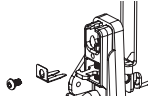

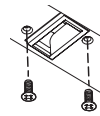
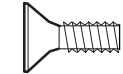

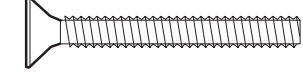
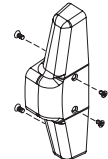



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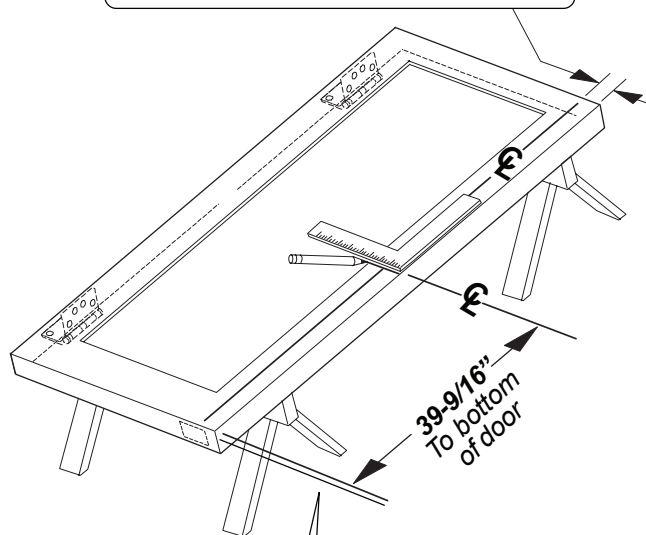
SCREW CHART

A 		1/4-20 x 1" _____ 1/4-20 x 1-1/2" _____	Trim mount or sex bolts: (1-3/4" door) (2-1/4" door)
B 		#10-24 X 3/4" _____ #10-24 X 1-1/8" _____	Surface mount or Sex bolts (1-3/4" door) 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" _____ *#10 X 1" Wood screw _____ *Used with external tooth lock washer	Bracket to door Bracket to door
F 		#10-32 X 3/8" Socket head _____	Rod attachment
G 		Rod adjusting screw _____	Rod length adjustment
H 		#8-32 X 5/16" _____	Retaining clip
I 		#10-24 X 1/2" _____	338 Strike
J 		#10-24 X 1-1/2" _____	Ratchet release
K 		#8-18 x 3/8" Thread cutting _____	Center case cover

1

Draw horizontal and vertical device center lines (℄).

See "Backset information" on page 9



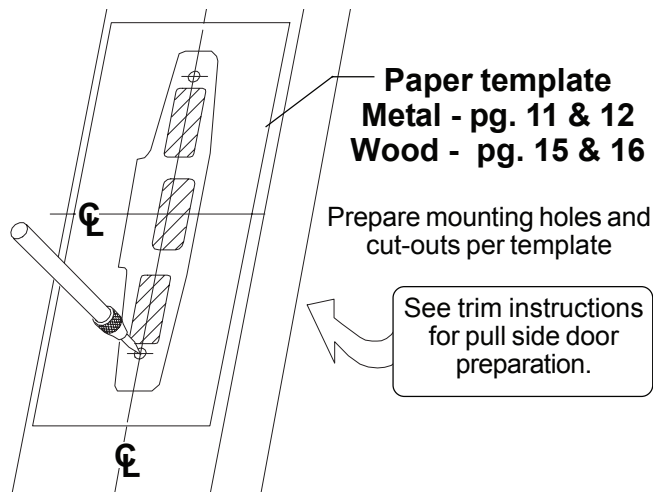
Once hung, door should have 1/4" undercut (gap) at bottom of door to finished floor

RHR shown
(LHR opposite)

2

Place paper device template on door and prepare door.

For wood doors - See pages 13 & 14 for special door preparation instructions.



Paper template
Metal - pg. 11 & 12
Wood - pg. 15 & 16

Prepare mounting holes and cut-outs per template

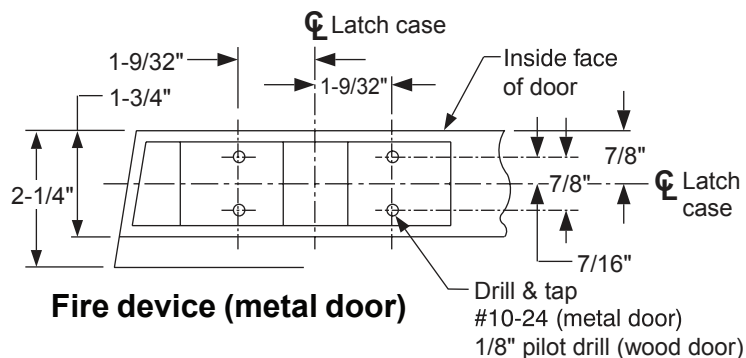
See trim instructions for pull side door preparation.

RHR shown
(LHR opposite)

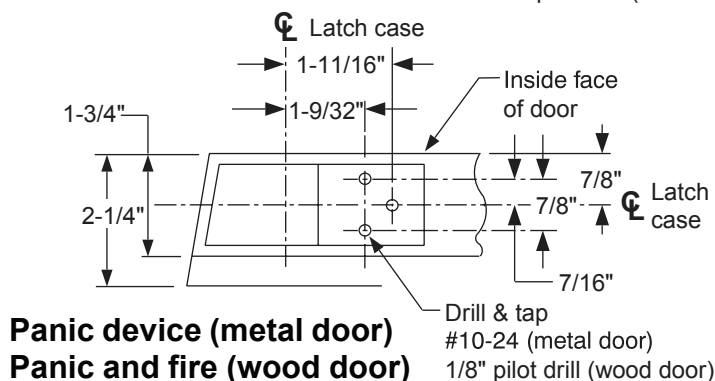
3

Prepare top and bottom of door for latch mounting brackets.

Latch cases
(drill top and bottom of door)



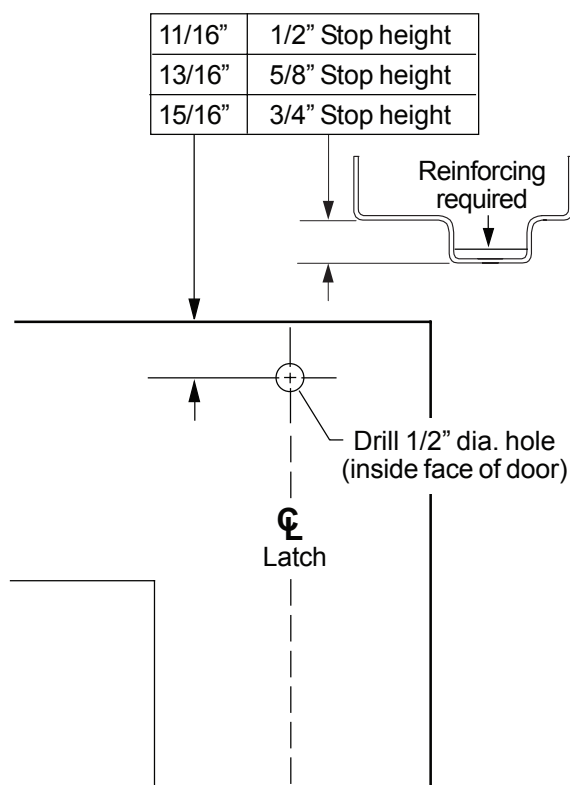
Fire device (metal door)



Panic device (metal door)
Panic and fire (wood door)

4

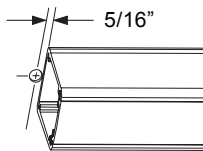
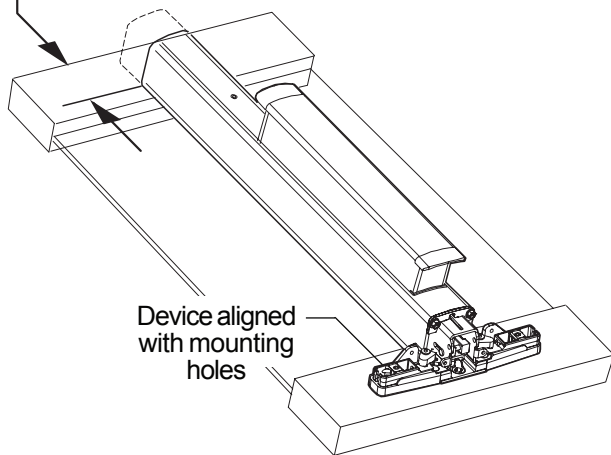
Drill ratchet release hole in door.



5

Measure to determine length to cut device.

1-3/16" minimum clearance
(with end cap removed)



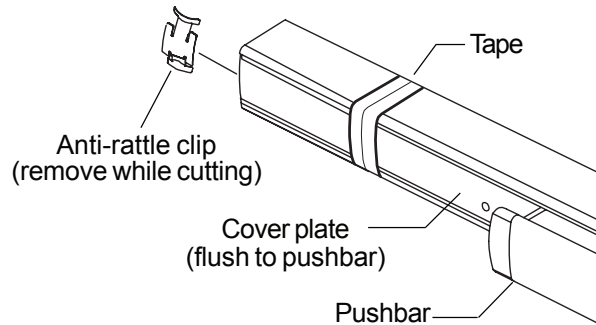
Note

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

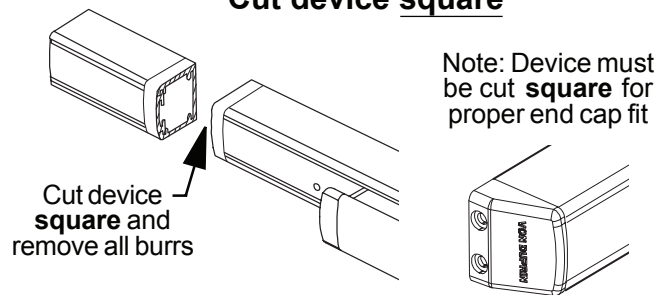
6

Cut device to length.

Prepare device for cutting



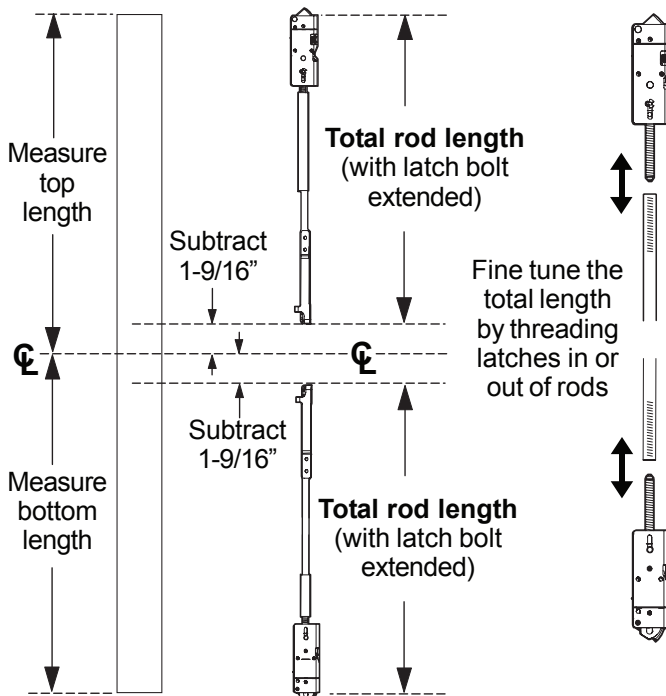
Cut device square



7

Assemble rods and latches and adjust length.

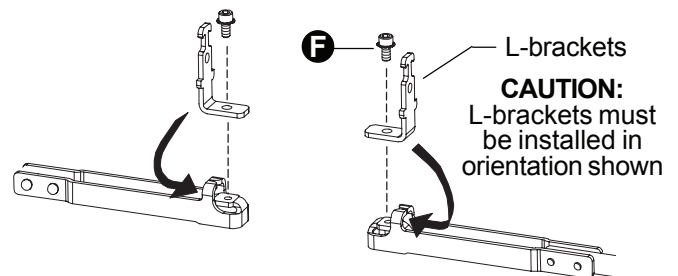
Follow white and brown instruction cards on rods to set initial rod length



8

Install rods as shown.

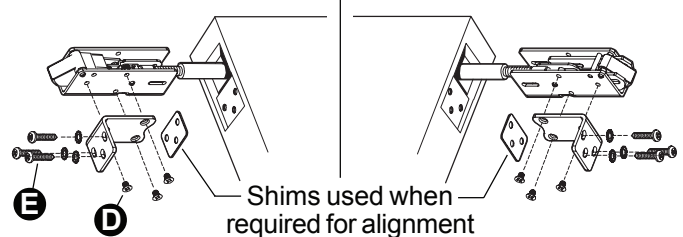
Rods are shipped with L-bracket attached. Insert rods with L-bracket pointing toward lock stile. Rotate rod until L-bracket protrudes through door cutout. If this is not possible, remove L-bracket and re-insert rod, then re-attach L-brackets.



NOTE: Fire devices on metal doors use brackets on both sides of latches

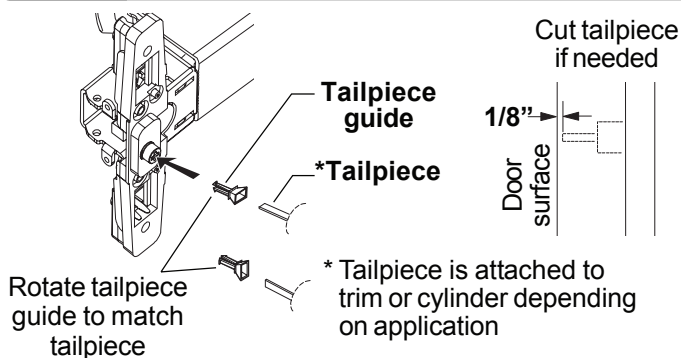
Top latch & rod

Bottom latch & rod

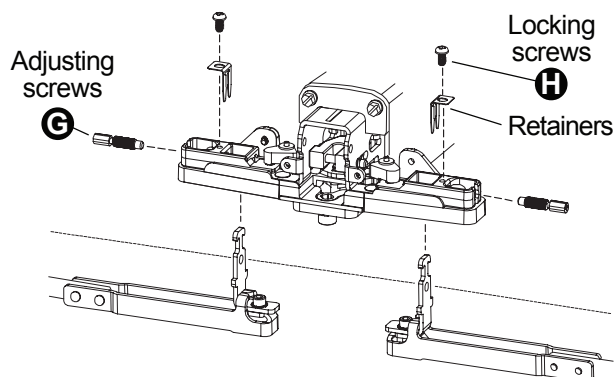


9

Install tailpiece guide and attach rods to center case.

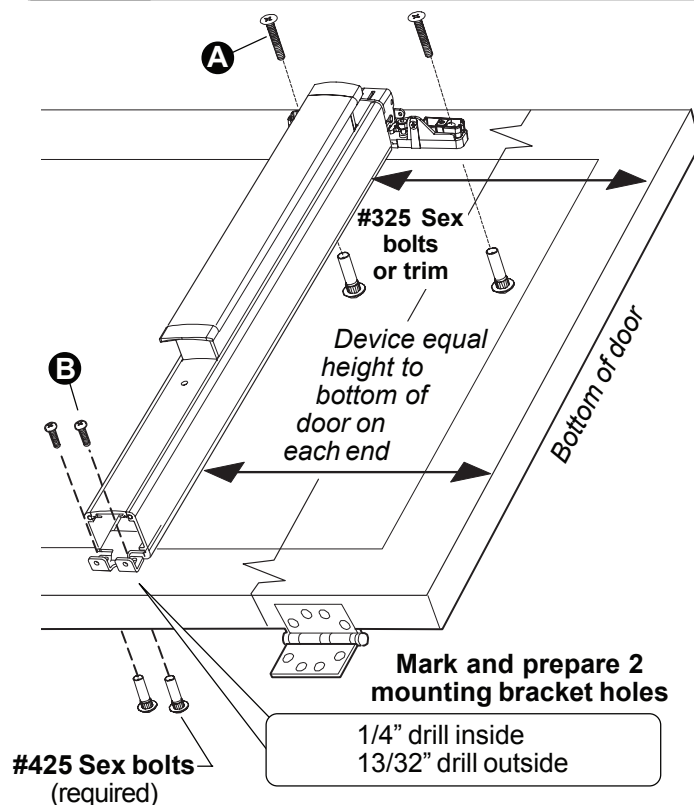


Place device over L-brackets and install adjusting screws, then install retainers and locking screws



10

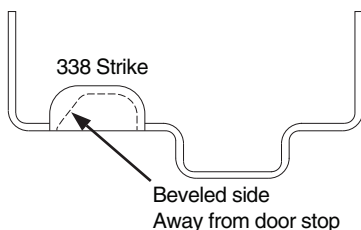
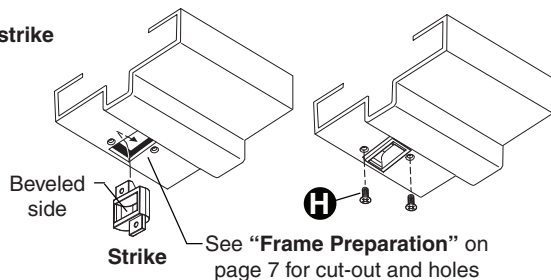
Secure device to door and mount door to frame.



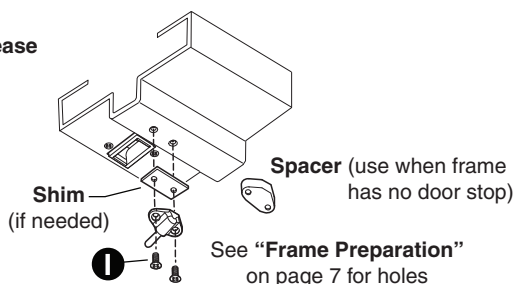
11

Install top strike and ratchet release.

338 Top strike



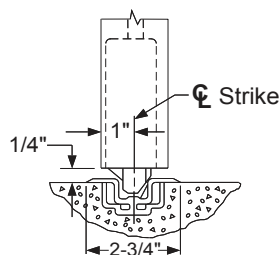
Ratchet release



12

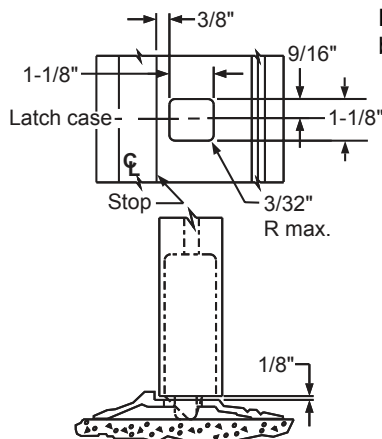
Install bottom strike or prepare threshold.

385-A Bottom strike



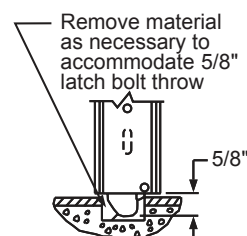
385-A strike has two pieces. Grout bottom piece into floor and attach top piece to bottom with screw through slot.

Threshold application



Note: Thresholds are not to be used with 33/3547A-F

Flat threshold application



ADJUST RODS

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

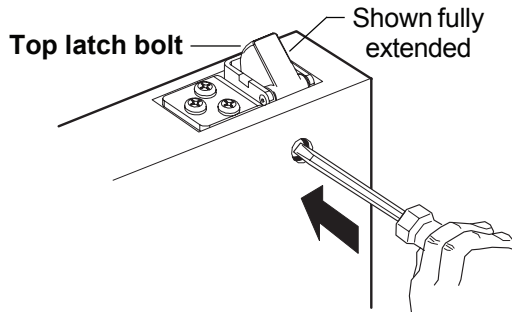


Figure 1

2. Remove bottom locking screw and retaining clip (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).

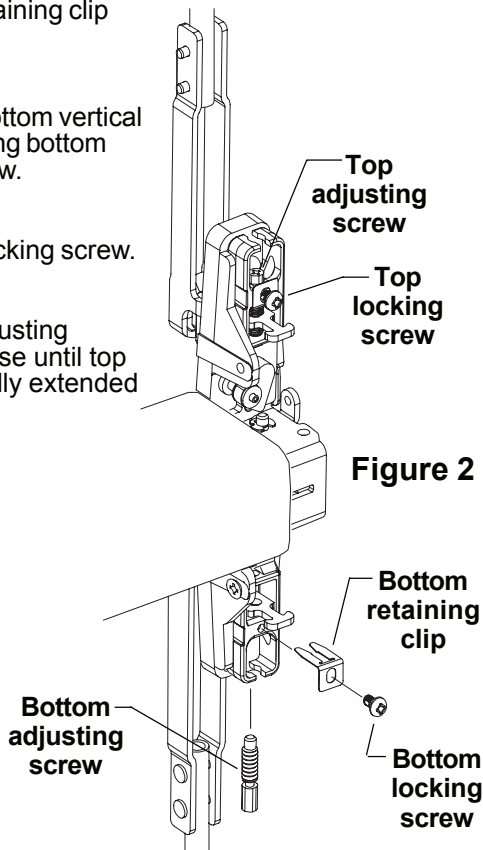
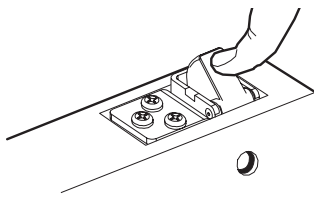


Figure 2

6. Check top latch bolt for deadlocking (latch bolt should not push in).



7. Turn top locking screw in against flat on adjusting screw. Do not over-tighten.

8. Depress pushbar and release.

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

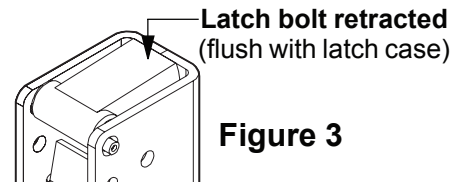


Figure 3

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

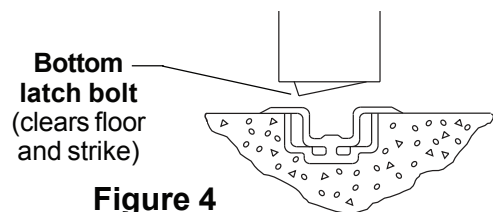


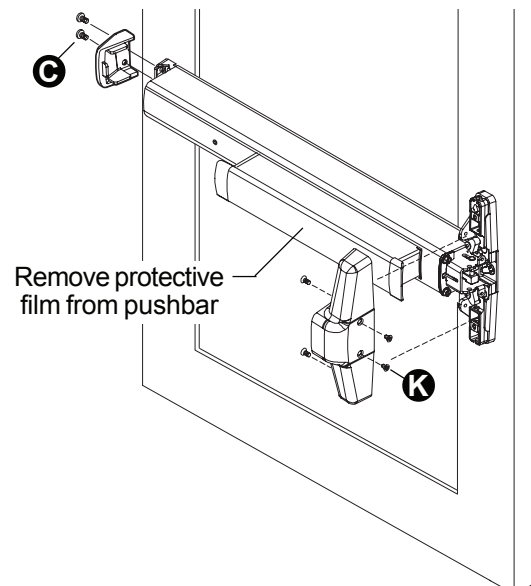
Figure 4

12. Close door and check bottom latch bolt for dead locking.
13. After bottom rod is fully adjusted per steps 11 and 12, turn bottom locking screw in against flat on adjusting screw. Do not over-tighten.
14. 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

15. Install end cap and center case covers.



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.

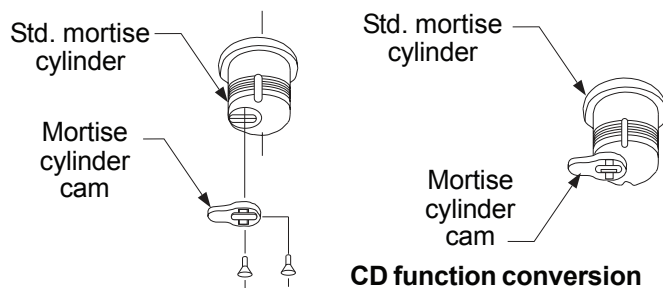


Figure 1

Dogging procedure

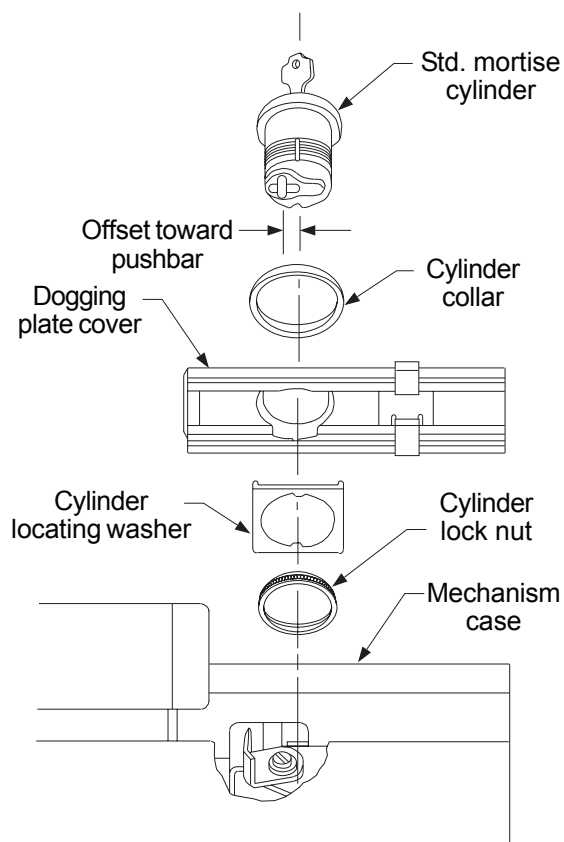
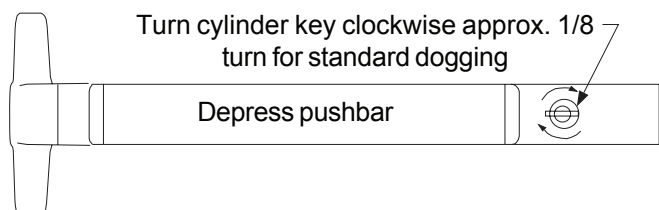
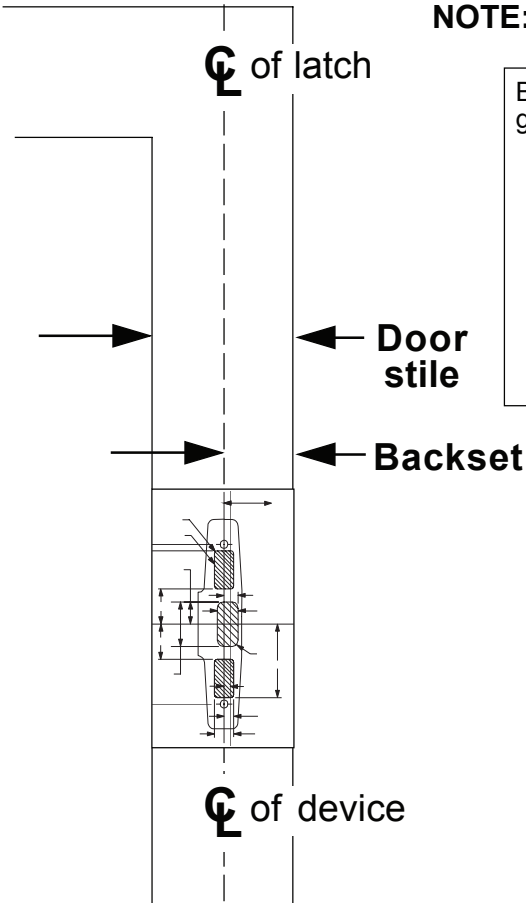


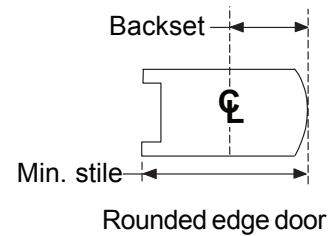
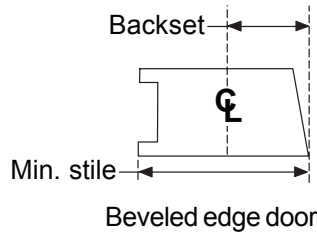
Figure 2

BACKSET INFORMATION

NOTE: For 2" stile doors see bottom half of page



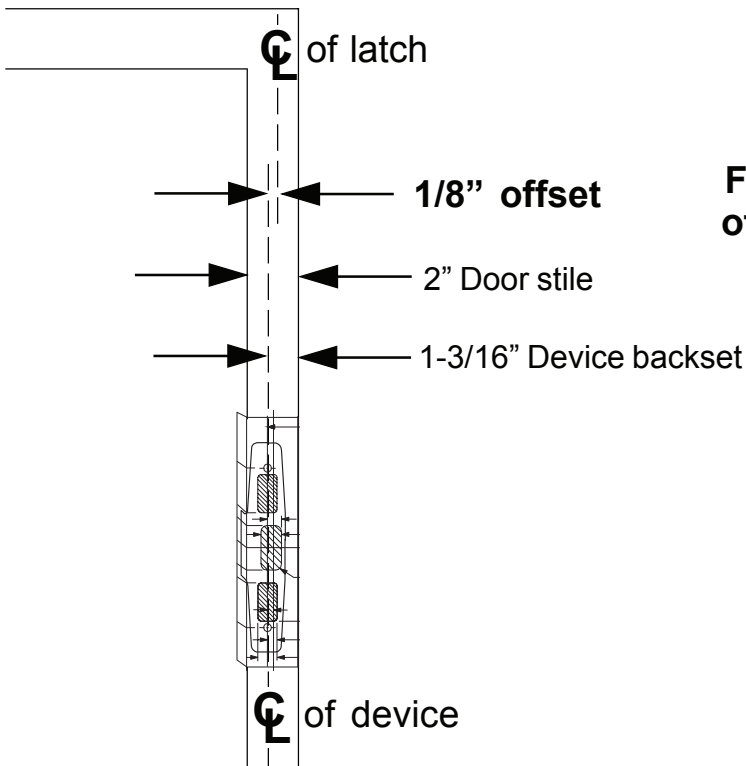
Backset is measured from outer edge of door as shown. Minimum stile is less glass stop (rectangular glass stop is recommended for stiles less than 2-1/8")



Backset Table

Door type	Backset	Min. stile	Application
Wood	1-5/16"	NA	All
Metal	1-3/16"	2-1/8" - 2-3/4"	Two vertical rod devices (panic)
	1-1/2"	2-3/4" - 3-3/4"	
	1-7/8"	3-3/4" - 5"	
	2-1/2"	5" to flush	
	1-1/2"	2-1/2" - 3-3/4"	Single door (panic)
	1-7/8"	3-3/4" - 5"	
	2-1/2"	5" to flush	
	2-3/4"	3-5/8" to flush	Fire applications

SPECIAL INSTRUCTIONS FOR 2" STILE DOORS



For 2" stile doors ONLY! Latch CL is offset 1/8" from Device CL as shown

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intentionally
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METAL DOOR RHR

33/3547A Device template

X

RHR

Backset

See "Backset
Information"
on page 9

Device ϕ

1/8" Radius

Cut-outs
device side
only

Sex
bolts

5/16" drill inside
13/32" drill outside

Trim

5/16" drill inside
1/2" drill outside

For 3347A-F on hollow
metal doors #7 drill,
1/4-20 tap if no outside
trim or sex bolts
are used.

7/8"

3-1/8"

2-7/8"

1-3/8"

19/32"

7/8"

ϕ
of device

1-3/8"

1/4"
Radius

3-1/8"

2-7/8"

1-3/4"

1/4"

13/32"

13/16"

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

LHR

METAL DOOR LHR

33/3547A Device template

← **Backset** →

See "Backset
Information"
on page 9

⌀ of device

1/8" Radius

Cut-outs
device side
only

**Sex
bolts**

5/16" drill inside
13/32" drill outside

Trim

5/16" drill inside
1/2" drill outside

For 3347A-F on hollow
metal doors #7 drill,
1/4-20 tap if no outside
trim or sex bolts
are used.

19/32"

7/8"

⌀ of device

1/4"
Radius

2-7/8"

1/4"

13/32"

13/16"

7/8"

2-7/8"

3-1/8"

1-3/8"

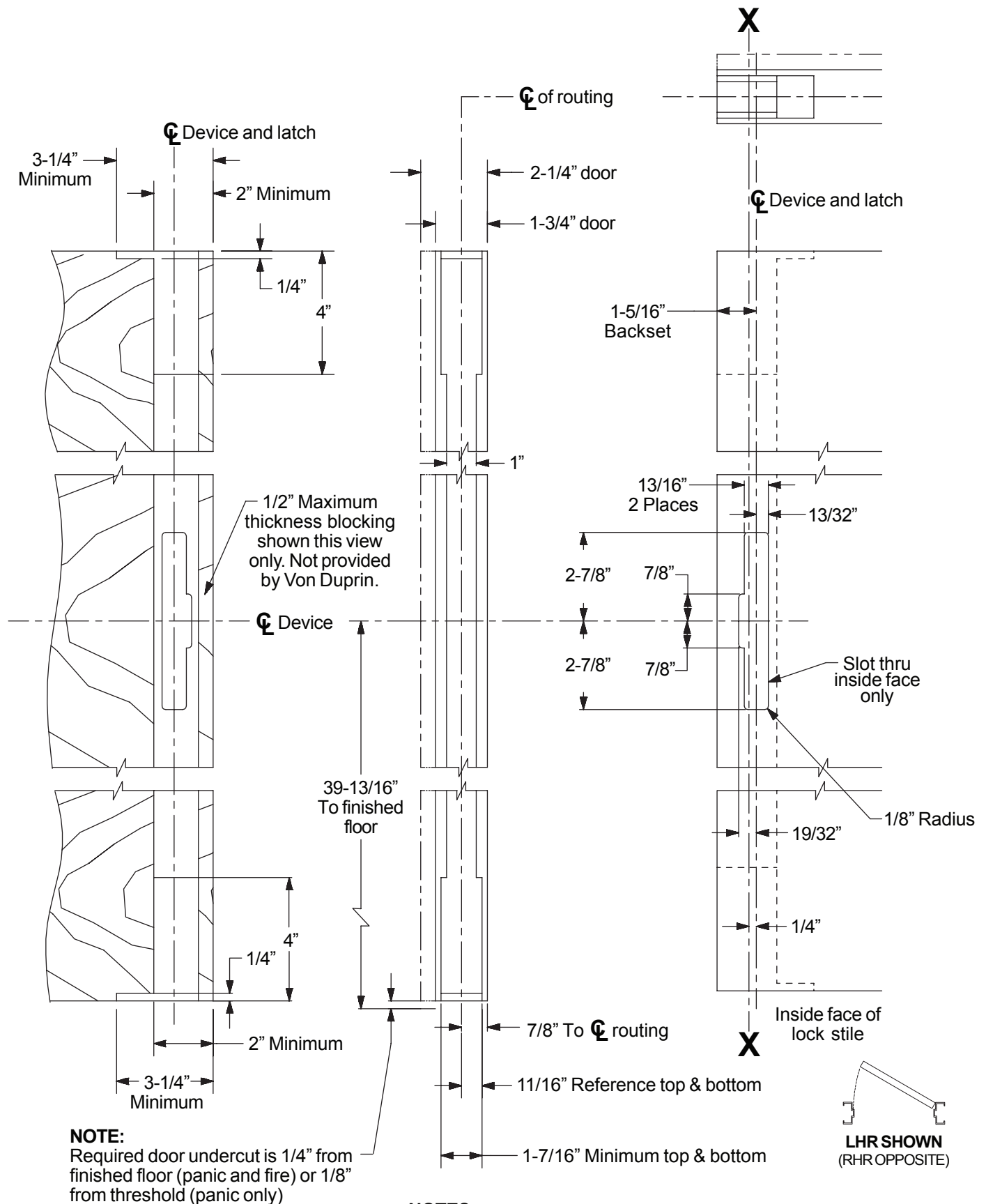
1-3/8"

1-3/4"

3-1/8"

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

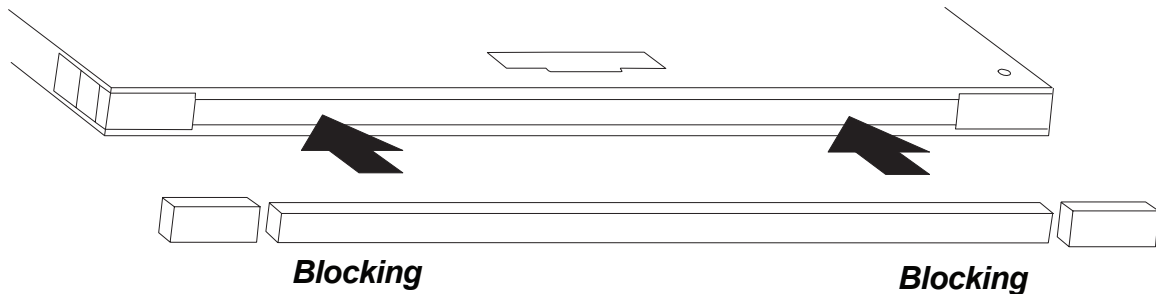
WOOD DOOR PREPARATION - DOOR ROUTING



WOOD DOOR PREPARATION - DOOR BLOCKING AND WRAP

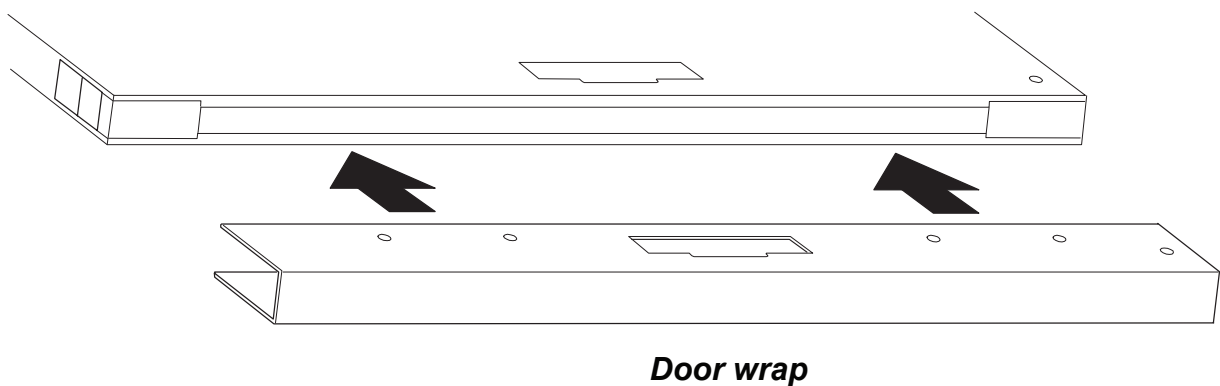
A. Install door blocking. See page 13 for door blocking dimensions.

Note: If not using door wrap, the blocking can be installed after device is installed.



B. Install door wrap if needed. Door wrap is required for Fire rated (F) devices.

Note: Required on fire doors only, not supplied by Von Duprin
(See door manufacturer's requirements)

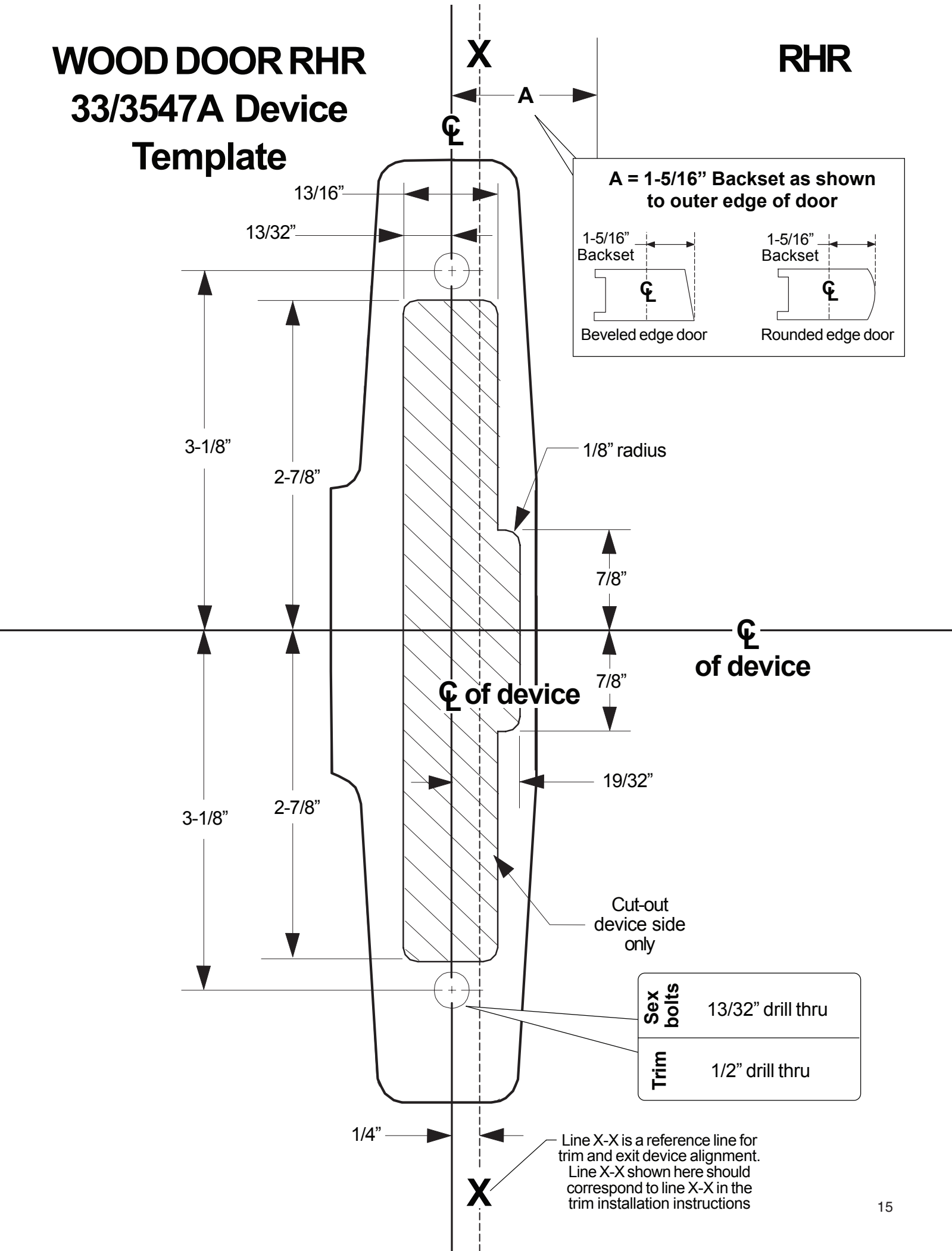


WOOD DOOR RHR

33/3547A Device

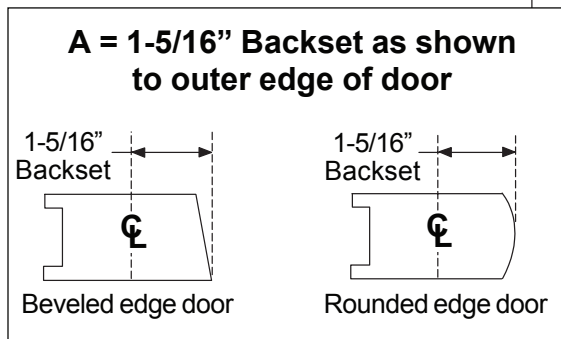
Template

RHR



LHR

WOOD DOOR LHR 33/3547A Device Template



1/8" radius

7/8"

☒
of device

7/8"

19/32"

Cut-out
device side
only

☒ of device

13/16"

13/32"

2-7/8"

3-1/8"

2-7/8"

3-1/8"

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

Sex bolts	13/32" drill thru
Trim	1/2" drill thru



24908386

QEL 33A/35A, 98/99 Series

VON DUPRIN®

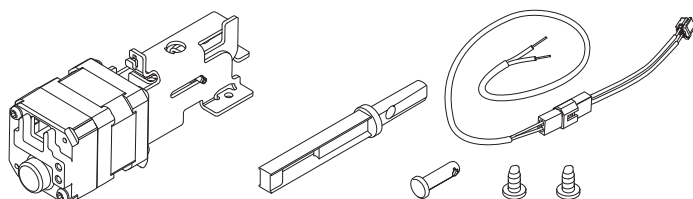
Conversion Kit

Installation Instructions

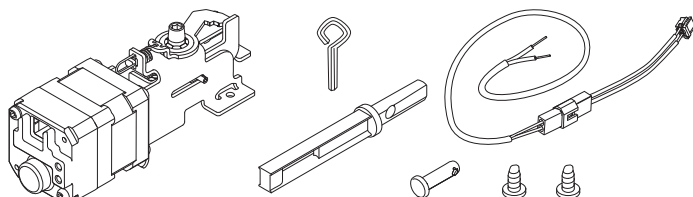


1. This kit converts all 33/35A and 98/99 series mechanical exit devices to quiet electric latch (QEL) retraction devices.
2. This kit can also be used for motor replacement on existing QEL devices.
3. Install according to instructions or device will not function and panic or fire label will be void.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

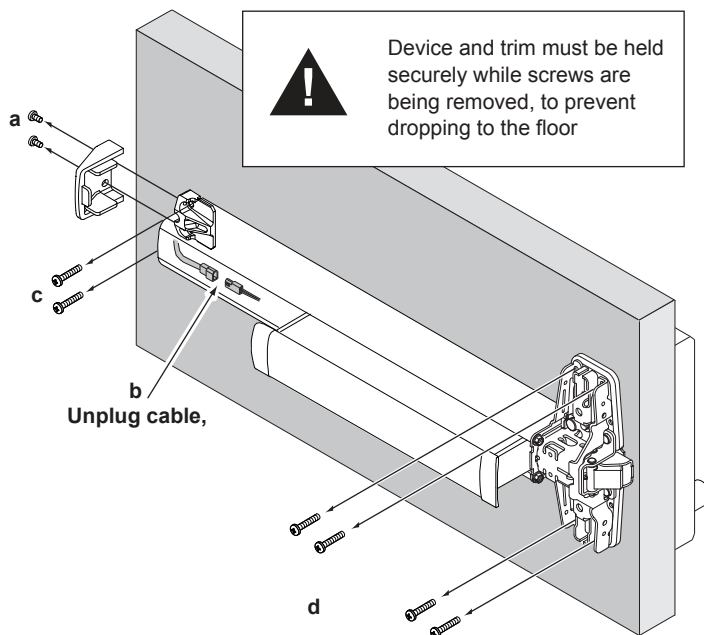
1 Disconnect Power

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.

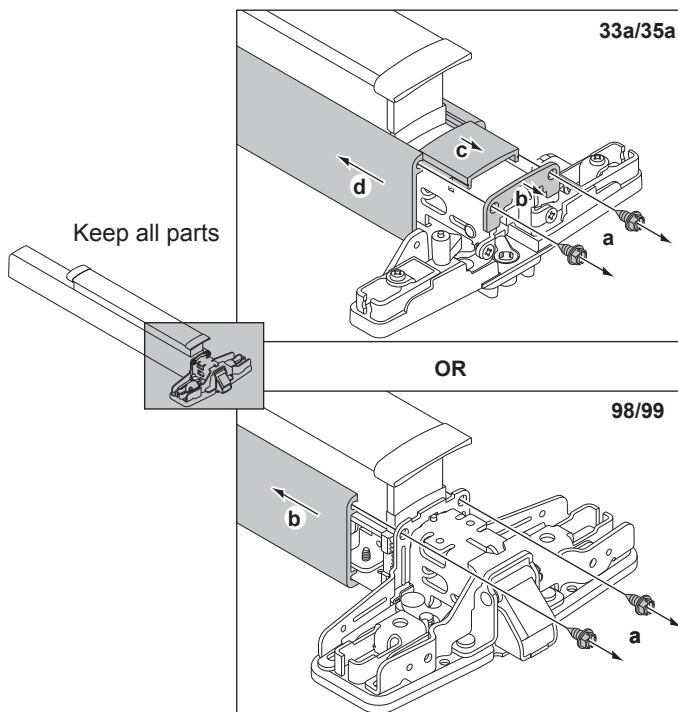
2 Detach Vertical Rods if present

Refer to device instructions as needed.

3 Remove Exit Device from Door



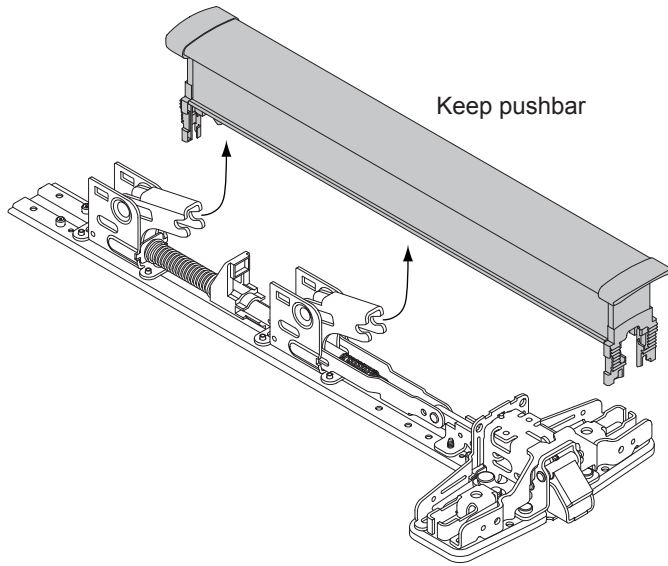
4 Remove Mechanism Case



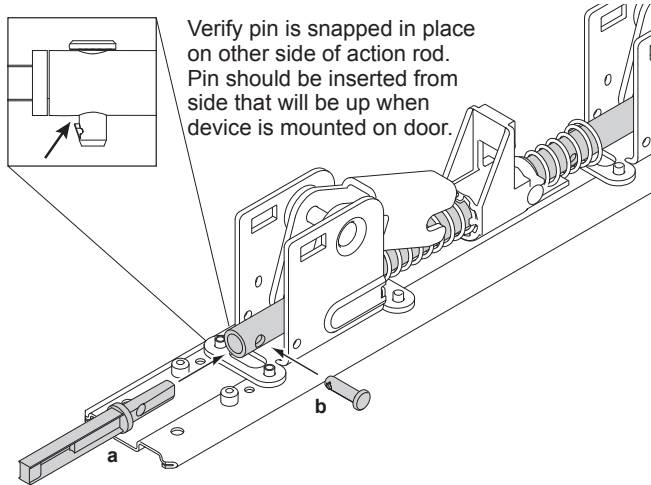
FIRE OR LESS DOGGING DEVICE

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

1. Remove pushpad from baseplate.

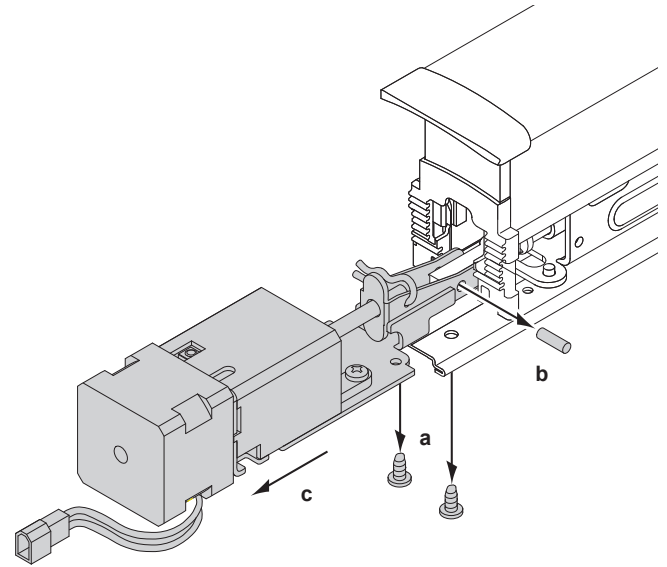


2. Install connector and pin.

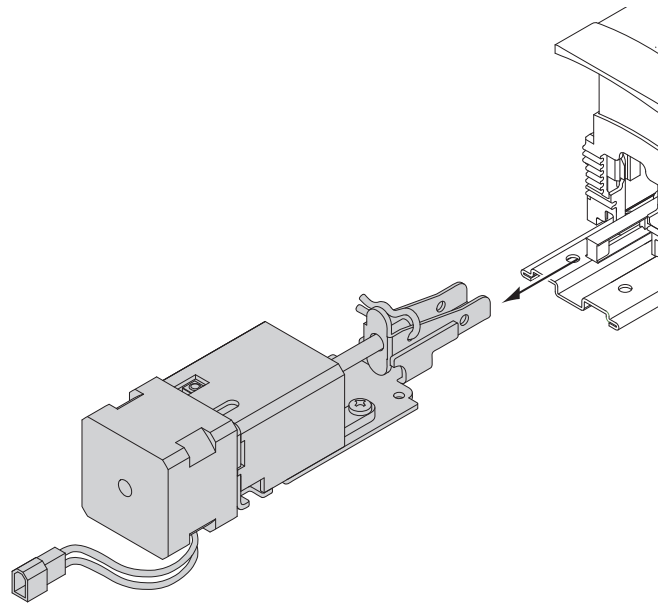


QEL DEVICE (built prior to December 2014)

1. Remove existing QEL motor

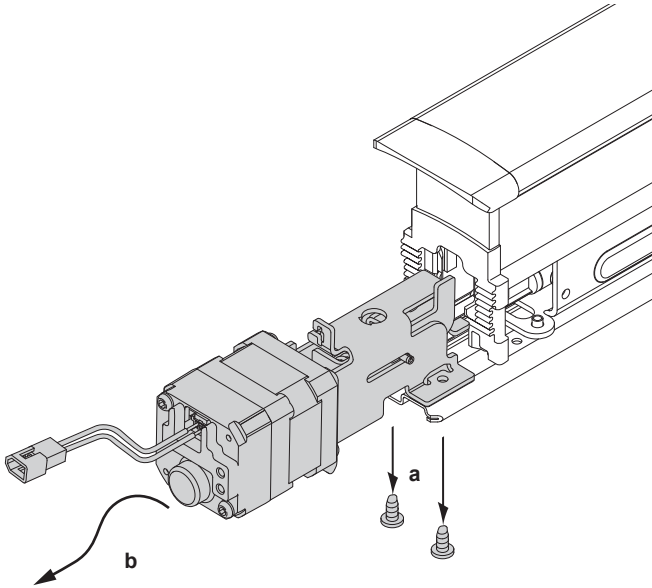


2. Discard old QEL motor assembly.

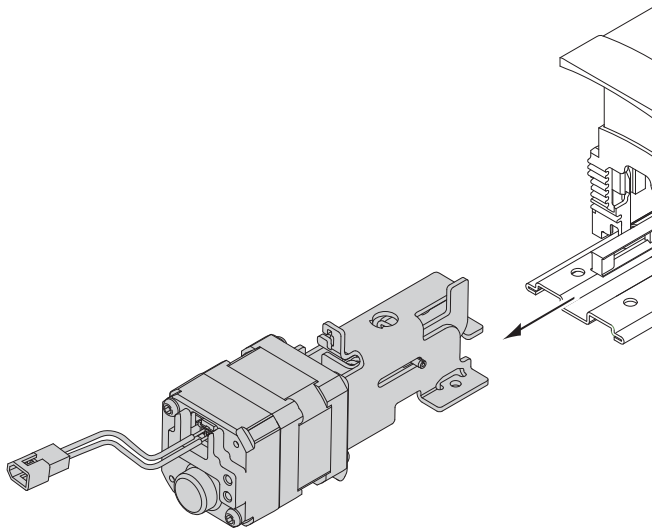


QEL DEVICE (built after December 2014)

1. Remove existing QEL motor.

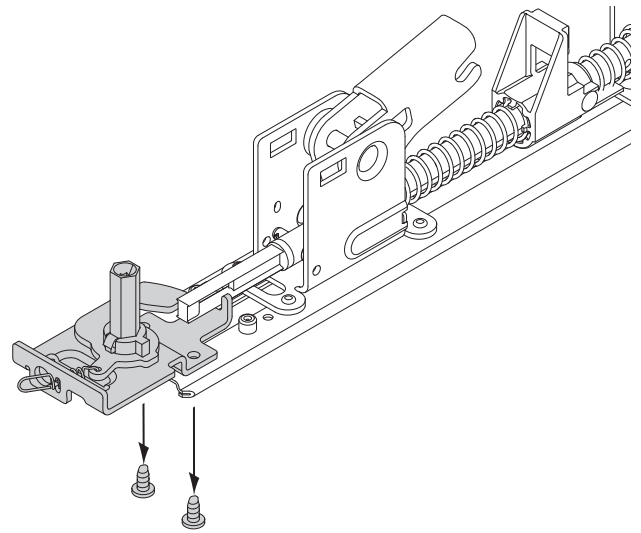


2. Discard old QEL motor assembly.

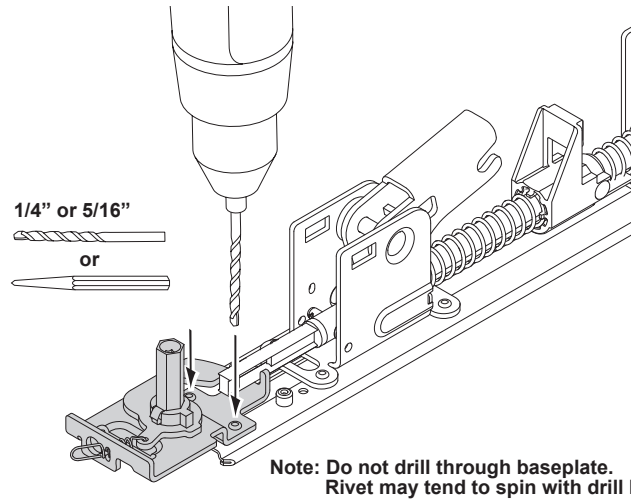


PANIC DEVICE (with dogging assembly)

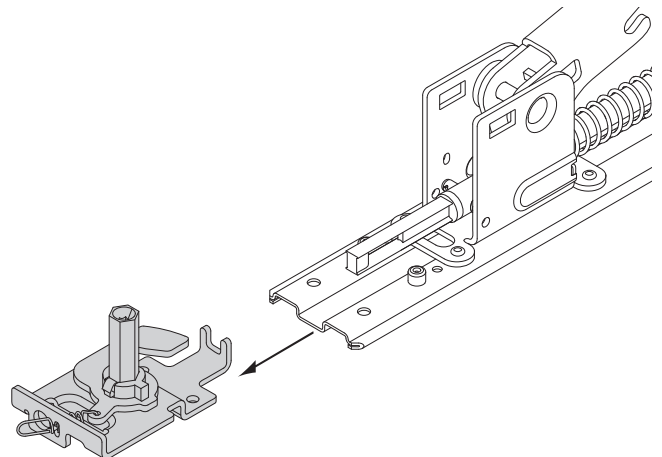
1. Remove two screws from dogging assembly. If riveted see below.



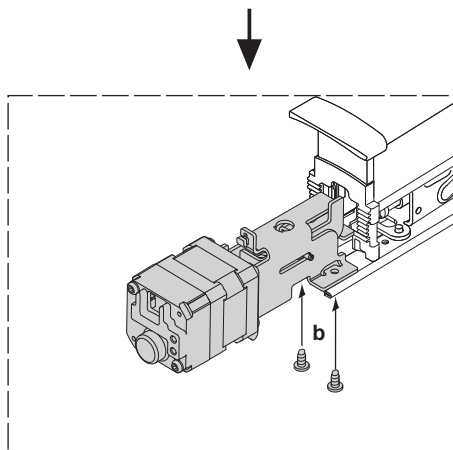
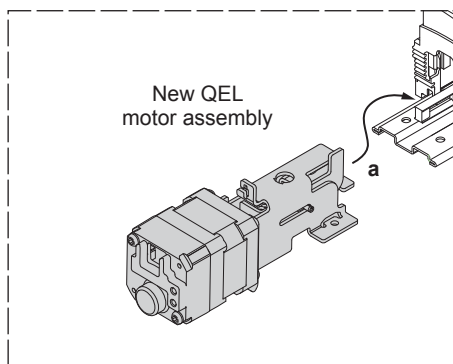
2. Drill or use center punch on two rivet heads until rivets can be removed from baseplate.



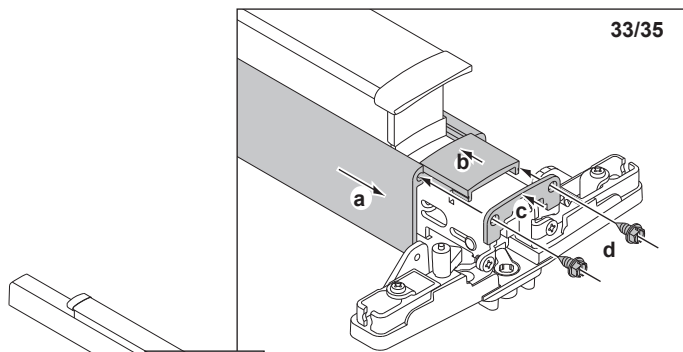
3. Remove and discard dogging assembly.



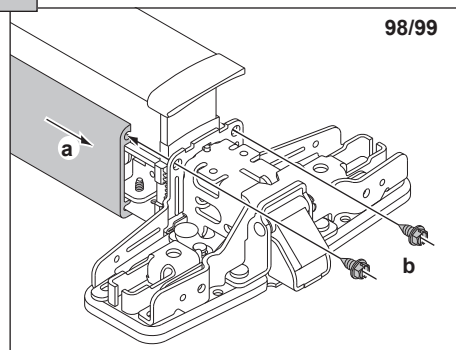
6 Install New QEL Motor Assembly



7 Install Mechanism Case

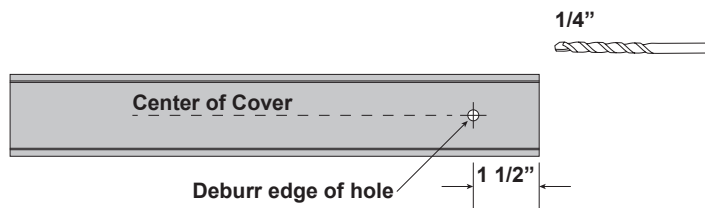


OR

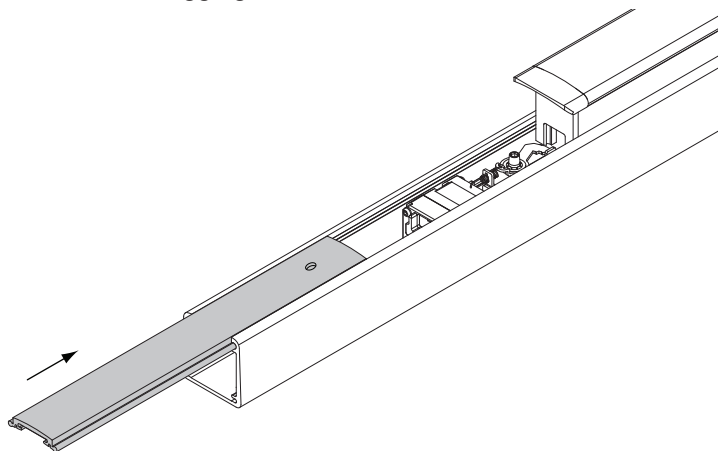


8 Prepare dogging cover for HD dogging key (if applicable and only on panic devices).

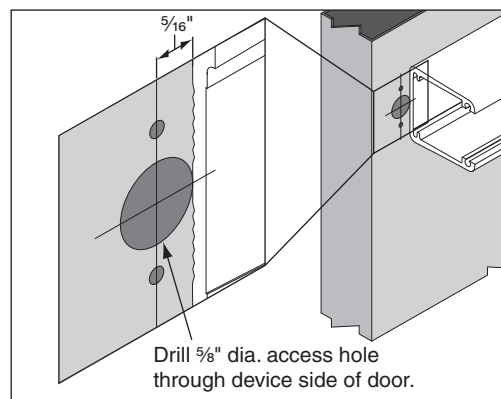
8a Locate and drill hole



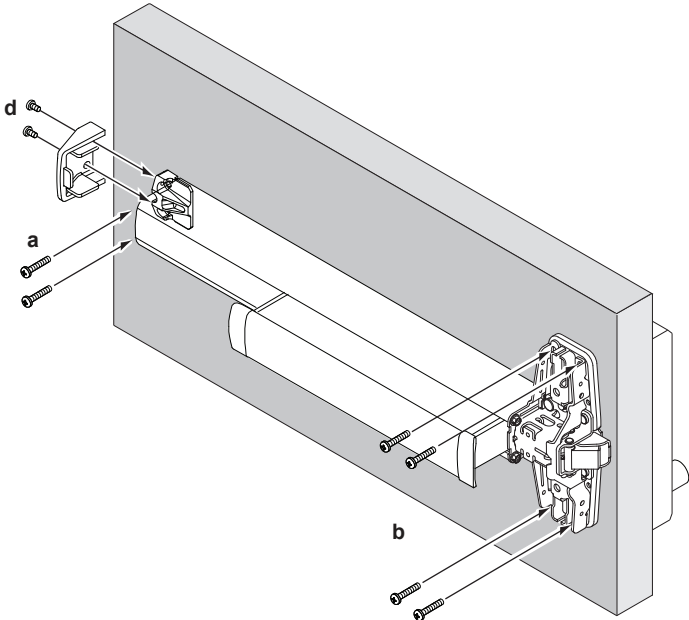
8b Install dogging cover



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.

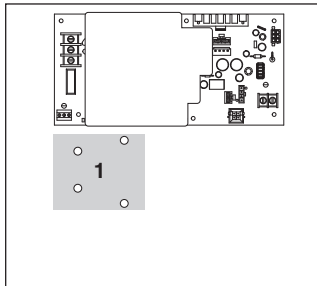
QEL Exit Device

Note: Power wires to QEL are not polarized.

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

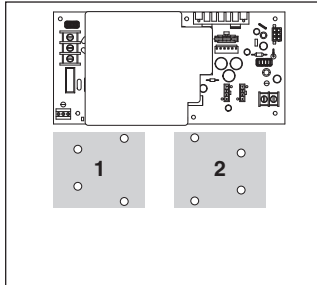
a Review Available 900 series Option Board Mounting Locations (Gray)

PS902

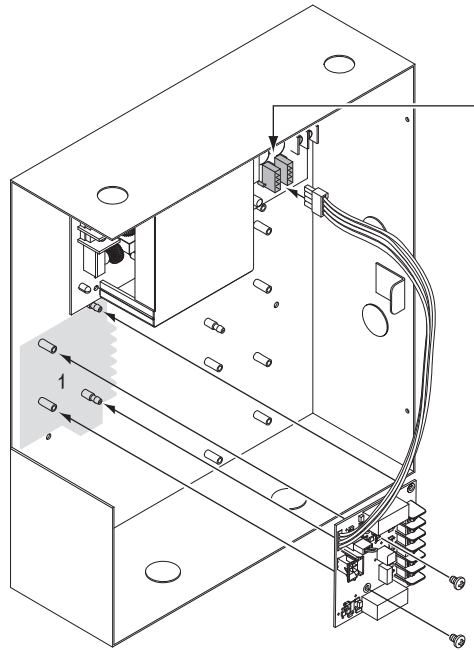
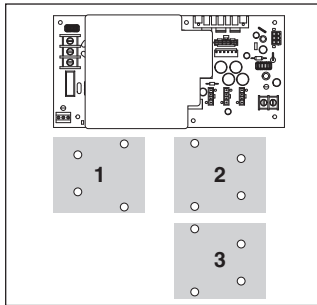


PS904

PS914



PS906



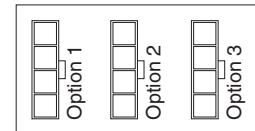
b Plug Option Board Cable into any Available Option Connector



PS902
1 Board



PS904, 914
2 Boards



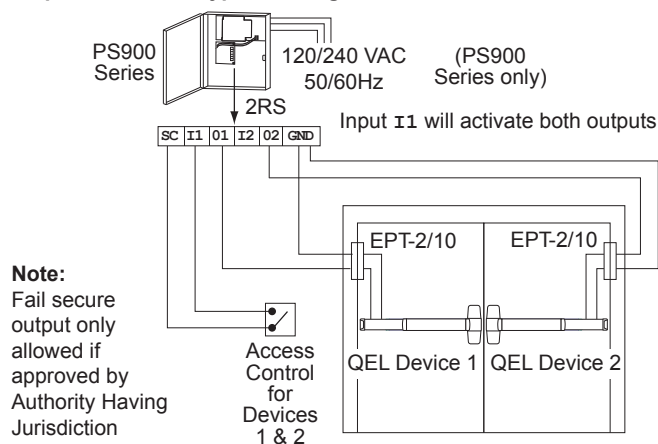
PS906
3 Boards

c Secure Board(s) with Screws

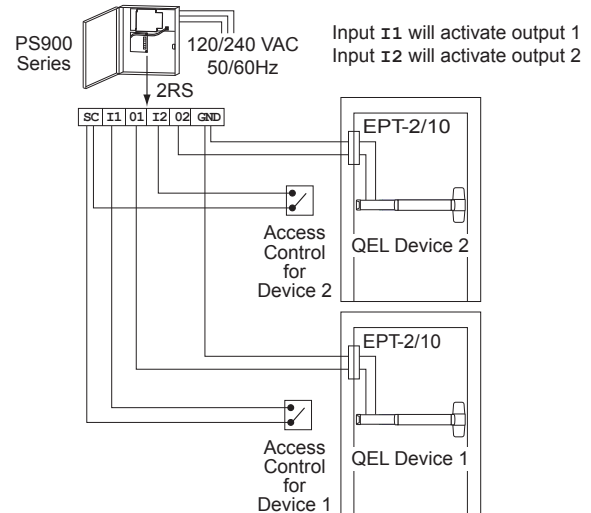
- Notes:**
1. 24VDC output setting required when QEL device connected
 2. If installing board in location 2 or 3, rotate board 180°
 3. The QEL is compatible with an existing 900-2Q board if currently installed.
 4. Latchbolt retraction of (2) sequenced QEL's requires more than 1 second to complete.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



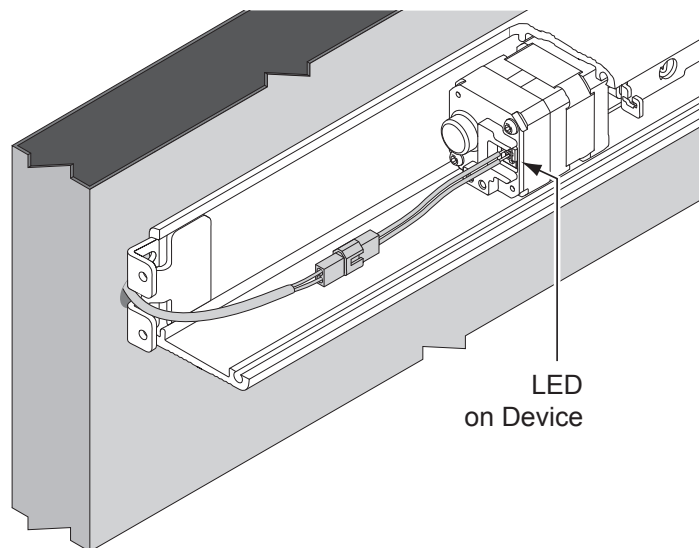
15 Check Operation

- 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

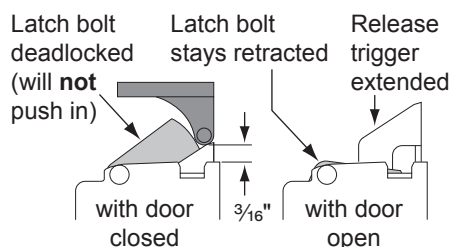
1. Make sure device is not dogged for SD-QEL / HD-QEL.
2. Depress pushbar and make sure latch bolt retracts and extends fully (see Figure 1).
3. If latch bolt does not retract or extend fully, adjustments may be required per the device installation instructions.

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.

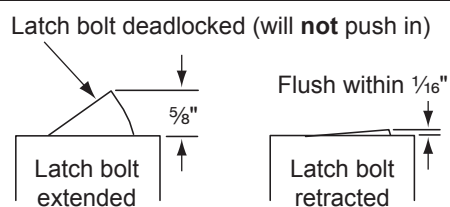
Any HD Device

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

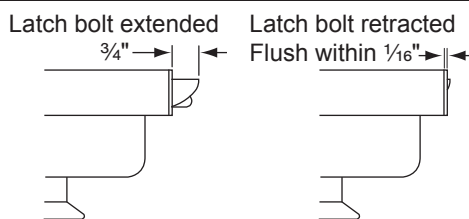


Figure 1

Customer Service

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



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