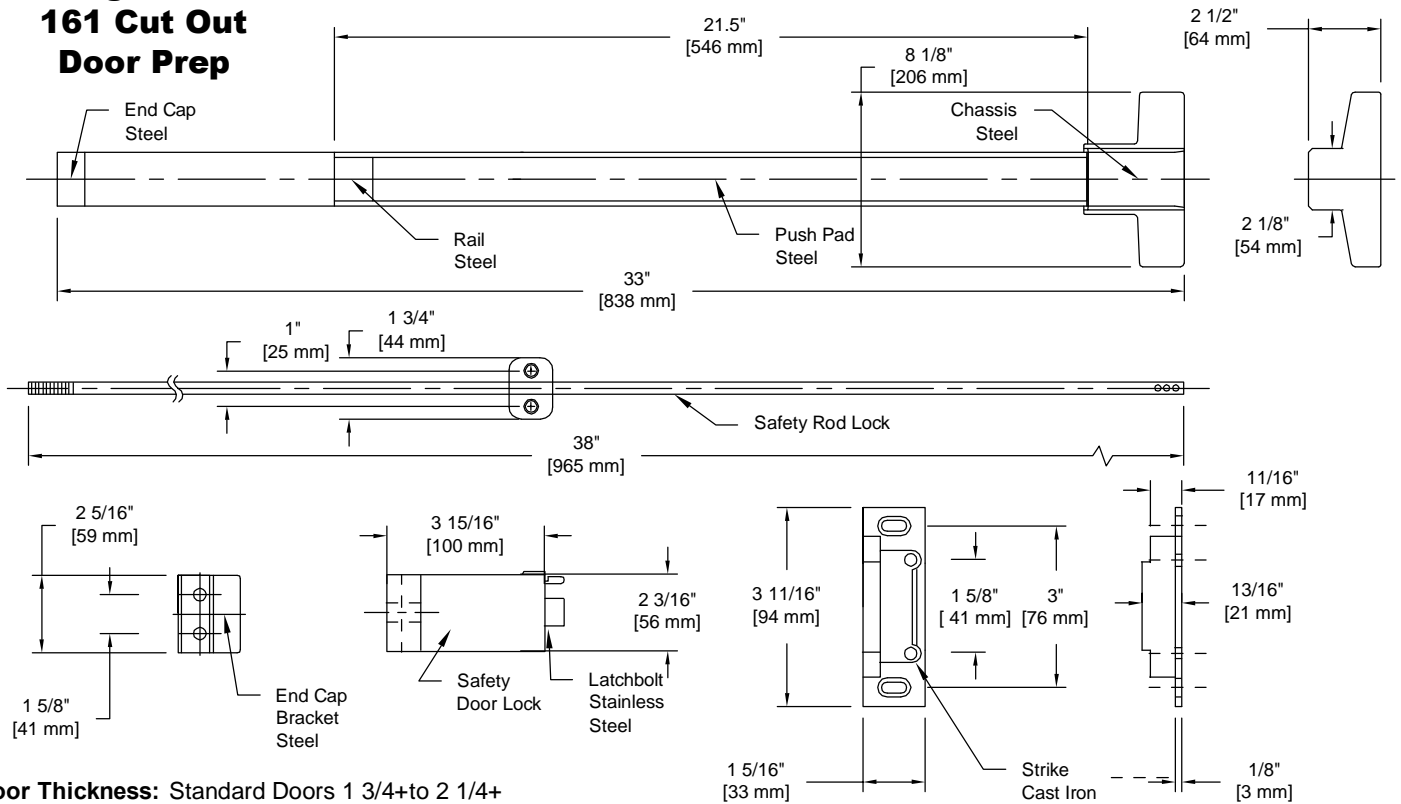


PRODUCT DATA SHEET

Product Description: Surface vertical rod exit device, for 28" to 42" wide doors. UL10C 3 hour fire rated, ANSI A156.3 Grade 1. Non handed. Rail and push pad are fabricated from heavy gauge steel with a duranodic bronze finish. Trim available in the following functions: classroom, storeroom, passage and dummy. Device and trim for 161 standard cut out. Mounting hardware and 239 strike included. ADA compliant.

Designed For 161 Cut Out Door Prep



Door Thickness: Standard Doors 1 3/4" to 2 1/4"

Latch Bolt: Stainless Steel 3/4" Throw

Strike: 239 Standard

ANSI/BHMA: Exit Device: A156.3 Grade 1



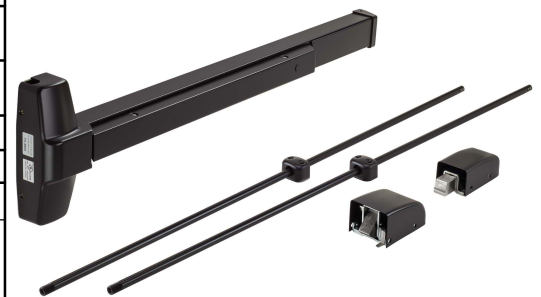
Overall Size: 33" W X 8 1/8" H X 2 1/2" D

Material: Steel, Cast Iron, Stainless Steel

Finish: Duranodic Bronze

Cross Reference

Manufacturer	Part Number
CAL-ROYAL	F2260



Description:

Surface Vertical Rod Exit Device, Fire Rated, 32", UL10C, ANSI Grade 1

Part Number:

PE55003684VFPB

Date

09/16

Rev.

02

Sheet 1 of 1



FALCON®

D-1105

F19-V & 19-V



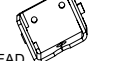
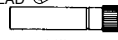







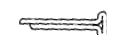

















Exit Devices

Installation Instructions

1 PARTS CHECK

- 1) MAKE SURE THE CORRECT DEVICE IS BEING USED.
- 2) MAKE SURE DEVICE IS CORRECT HANDING, IF NOT, SEE PAGE 10 (FIGURE 1 OR FIGURE 2).
- 3) MAKE SURE ALL NEEDED PARTS ARE ON HAND.

NOTE: LIST DOES NOT REFLECT ALL POSSIBLE APPLICATIONS.

1) (F) 19-V DEVICE  NOTE: DEVICE IS FIELD REVERSIBLE	4) SCREW PACK FOR PANIC DEVICE DOGGING KEY (1 QTY.)  MOUNTING BRACKET (1 QTY.)  SEX BOLT – 1/4"-20 THREAD (3 QTY.)  1/4" - 20 x 3/4" TPHMS (1 QTY.)  1/4" - 20 x 3/4" FPHMS (2 QTY.)  #10 x 1-1/4" FPHSMS (6 QTY., 2 FINISHED)  CHANNEL END CAP (1 QTY.)  #10-24 x 3/8" UFPHMS w/NYLON PATCH (2 BLACK)  #10 x 1-1/4" PPHSMS (6 QTY. [4 BLACK])  1/8" x 3/4" COTTER KEY (2 QTY)  ROD GUIDE (2 QTY.) 	5) SCREW PACK FOR FIRE DEVICE MOUNTING BRACKET (1 QTY.)  SEX BOLT – 1/4" - 20 THREAD (3 QTY.)  1/4" - 20 X 3/4" TPHMS (1 QTY.)  1/4" - 20 x 3/4" FPSMS (2 QTY.)  #10 - 24 X 3/4" FPHMS (6 QTY.)  CHANNEL END CAP (1 QTY.)  #10-24 x 3/8" UFPHMS w/NYLON PATCH (2 BLACK)  #10 - 24 x 3/4" PPHMS (6 QTY. [4 BLACK])  1/8" x 3/4" COTTER KEY (2 QTY)  ROD GUIDE (2 QTY.) 																					
2) STRIKE  4163/3788  2126A  2130  4155 <table><tr><td>FIRE</td><td>TOP</td><td>(F)19-V</td></tr><tr><td></td><td>BOTTOM</td><td>3788</td></tr><tr><td>PANIC</td><td>TOP</td><td>2130</td></tr><tr><td></td><td>BOTTOM</td><td>4163</td></tr><tr><td></td><td>BOTTOM</td><td>2130</td></tr><tr><td></td><td>OPT. BOTTOM</td><td>2126A</td></tr><tr><td></td><td>OPT. BOTTOM</td><td>4155</td></tr></table>	FIRE	TOP	(F)19-V		BOTTOM	3788	PANIC	TOP	2130		BOTTOM	4163		BOTTOM	2130		OPT. BOTTOM	2126A		OPT. BOTTOM	4155	3) LATCHES & BOTTOM BOLTS  TOP LATCH  BOTTOM LATCH  BOLT ASSEMBLY	6) VERTICAL RODS (LENGTHS FOR 7'0" OPENINGS) TOP ROD = 36-7/8" BOTTOM ROD = 34-5/8"
FIRE	TOP	(F)19-V																					
	BOTTOM	3788																					
PANIC	TOP	2130																					
	BOTTOM	4163																					
	BOTTOM	2130																					
	OPT. BOTTOM	2126A																					
	OPT. BOTTOM	4155																					

- 4) MAKE SURE OUTSIDE TRIM (IF BEING USED) HAS BEEN PROVIDED AND IS THE CORRECT HANDING. SEE PAGE 10, NOTE #4 FOR TRIM CAM POSITION.



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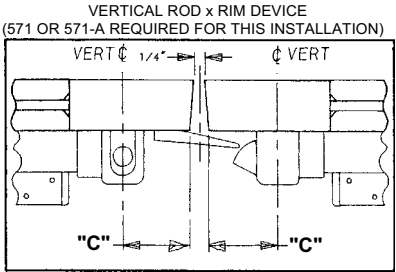
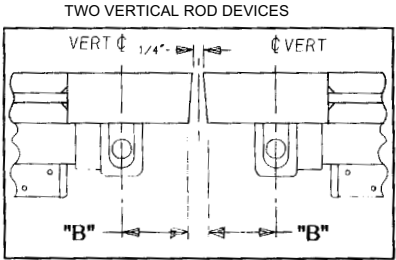
2 DOOR LAYOUT

(NOTE: FOR FACTORY PREPARED DOORS, VERIFY LAYOUT.)

- 1) DOOR MUST BE FITTED AND HUNG PROPERLY BEFORE PROCEEDING.
- 2) MARK VERTICAL ϕ AND DEVICE REF. ϕ ON DOOR AND FRAME (SEE FIGURES & CHARTS BELOW).

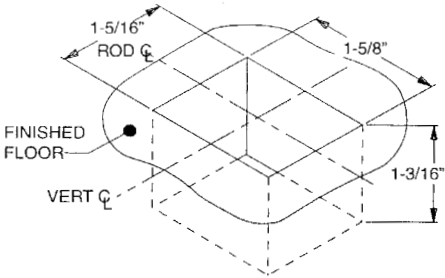
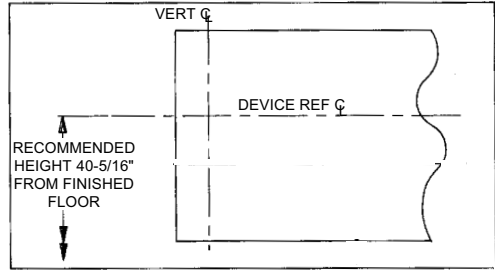
A) VERTICAL ϕ :

INSTALLATION	1-3/4" MIN.	3" MIN.
(F)19-V x (F)19-V	"B"=1-5/16"	"B"=2-1/4"
19-V x 19-R (w/ 571 STRIKE)	-	"C"=2-5/16"
19-V x 19-R (w/ 571-A STRIKE)	-	"C"=1-13/16"



NOTE: 571 & 571-A ARE NOT APPROVED FOR FIRE RATED APPLICATIONS.

B) DEVICE REF ϕ : (HORIZONTAL)



CAVITY PREPARATION FOR
2130 BOTTOM STRIKE

5 REVERSING INSTRUCTIONS

TO CHANGE THE HANDING OF A 19-V DEVICE

- 1) REMOVE CHASSIS COVER (2 SCREWS, COVER IS NOT SHOWN).
- 2) REMOVE HOUSING **A** (2 SCREWS).
- 3) REMOVE SLIDEBAR LEVER **B** AND DRAWBAR LEVER **C**.
- 4) ROTATE RETRACTOR CAM **D** TO CORRECT POSITION, SEE FIGURE 1 (RHR) OR FIGURE 2 (LHR).
NOTE: FOR INSTALLATIONS WITH NO TRIM, RETRACTOR CAM **D** SHOULD POINT TOWARDS BOTTOM OF DOOR.
- 5) INVERT DRAWBAR LEVER **C** AND INSTALL ON OPPOSITE PIVOT PIN **E**. SEE FIGURES BELOW.
- 6) INSTALL SLIDE BAR LEVER **B** MAKING SURE TEETH ARE ENGAGED WITH DRAWBAR LEVER **C** AND THAT NUB ON **B** FITS WITHIN SLOT IN **F**.
- 7) REASSEMBLE HOUSING **A** (2 SCREWS).
- 8) PROCEED WITH DEVICE INSTALLATION.

NOTE: RETRACTOR CAM **D** AND DRAWBAR LEVER **C** SHOULD POINT IN THE SAME DIRECTION AND TOWARDS THE TOP OF THE DOOR WHEN DEVICE IS INSTALLED WITH TRIM.

NOTE: A RHR DEVICE REQUIRES RHR TRIM, SEE TRIM INSTALLATION SHEET FOR TRIM REVERSING PROCEDURES.

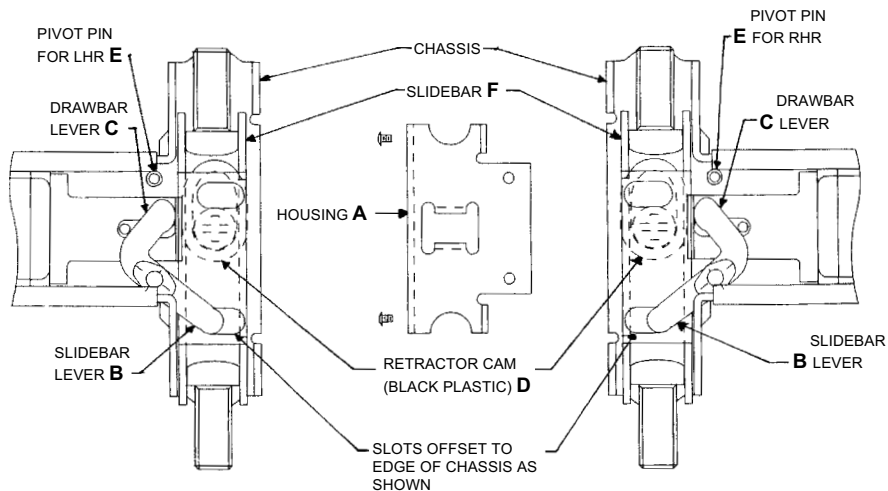
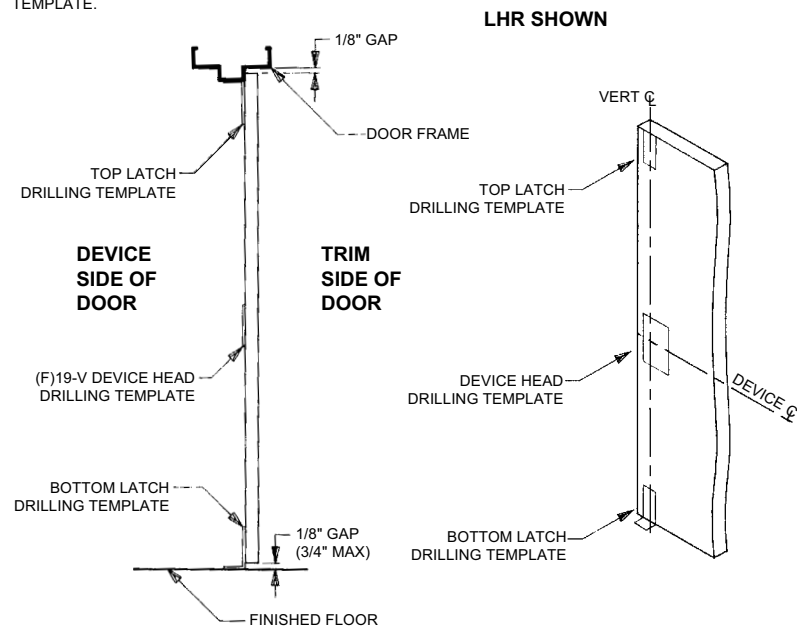


FIGURE 1: RHR

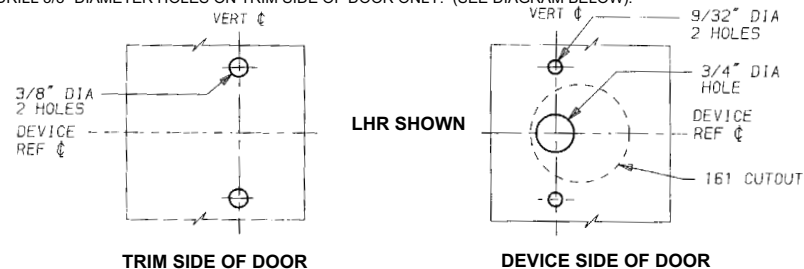
FIGURE 2: LHR

3 DOOR & HARDWARE PREPARATION

- 1) REMOVE PAPER TEMPLATES FROM CENTER OF THIS BOOK.
- 2) TAPE DRILLING TEMPLATE ON DOOR AND FRAME USING VERTICAL ϕ AND REF ϕ OF DEVICE (REFER TO 2). CENTERPUNCH AND DRILL HOLES FOR DEVICE AND STRIKE MOUNTING AFTER DRILLING HOLES, REMOVE DRILLING TEMPLATE.



- 3) USING OUTSIDE TRIM, PREPARE DOOR USING SEPARATE TRIM DIRECTION SHEET. FOR SEXBOLT INSTALLATIONS, DRILL 3/8" DIAMETER HOLES ON TRIM SIDE OF DOOR ONLY. (SEE DIAGRAM BELOW).

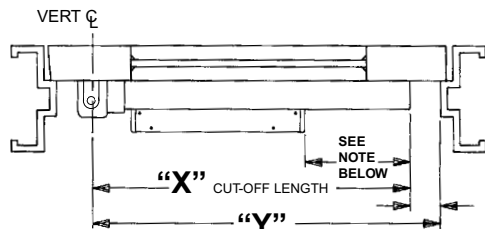


TRIM SIDE OF DOOR

DEVICE SIDE OF DOOR

4) DETERMINE DEVICE LENGTH.

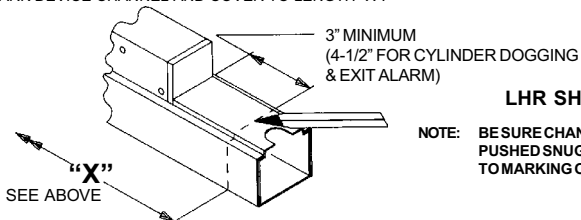
- LOCATE VERTICAL ϕ ON DOOR.
- MEASURE DISTANCE "Y" FROM VERT. ϕ TO STOP SURFACE ON HINGE SIDE.
- SUBTRACT 1" FOR RECOMMENDED CLEARANCE (FOR DOOR STILES LESS THAN 2-3/4" WIDE, SUBTRACT 3/4").
- LENGTH OF DEVICE FROM VERT. ϕ TO CUT-OFF LENGTH IS "X".



LHR SHOWN

NOTE: FOR STANDARD DOGGING: 3" MIN.
FOR CYLINDER DOGGING: 4-1/2" MIN.
FOR EXIT ALARM AND ELECTRIC DOGGING: 7" MIN.

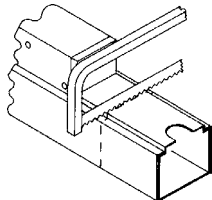
- IF DEVICE IS LONGER THAN "X", CUT THE DEVICE.
 - MARK DEVICE CHANNEL AND COVER TO LENGTH "X".



LHR SHOWN

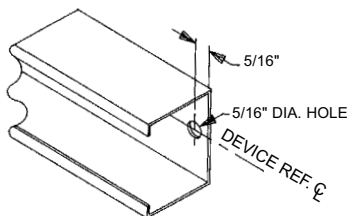
NOTE: BE SURE CHANNEL COVER IS PUSHED SNUG TO PUSHBAR PRIOR TO MARKING OR CUTTING TO SIZE

- CUT BOTH CHANNEL AND CHANNEL COVER TO MARKED DIMENSION AND REMOVE BURRS.



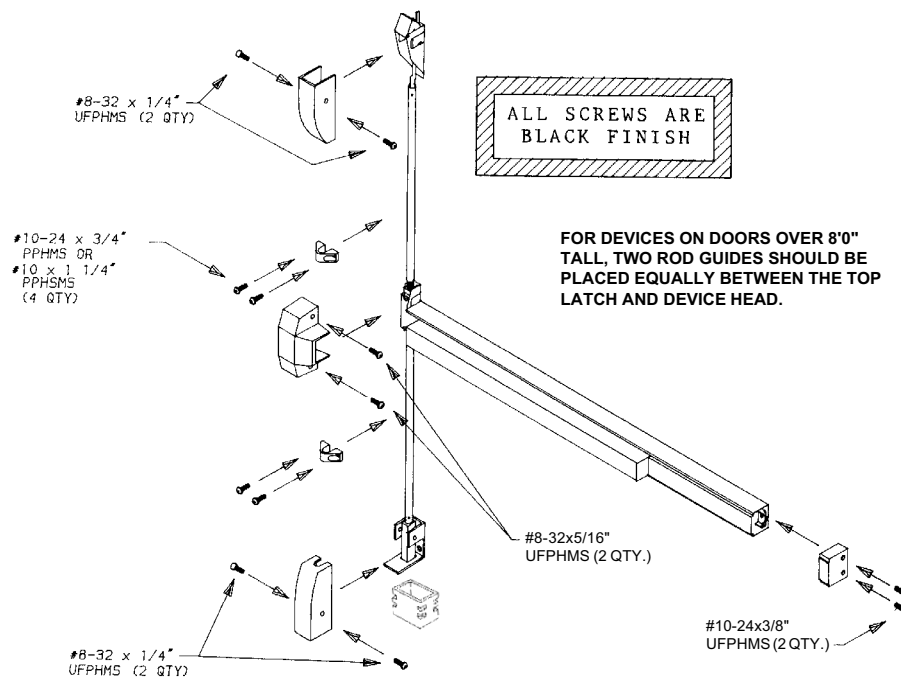
NOTE: FACTORY RECOMMENDS SAWING RATHER THAN GRIND CUT TO SIZE. GRINDING CAN DAMAGE THE FINISH OF THE DEVICE AND SAWING RESULTS IN LESS DAMAGE TO THE DEVICES'S FINISH.

- DRILL MOUNTING HOLE.
REMOVE CHANNEL COVER AND DRILL 5/16" DIA. HOLE ON DEVICE REF. ϕ 5/16" FROM END OF CHANNEL.



10) APPLY STRIKES & COVERS (NOTE: ALL SCREWS ARE BLACK).

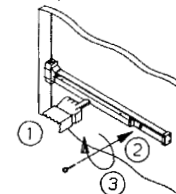
- ATTACH COVERS TO CHASSIS AND LATCHES.
- INSTALL ROD GUIDES.
- SLIDE IN CHANNEL COVER.
- ATTACH CHANNEL END CAP.
- INSTALL STRIKES TO TOP OF DOOR FRAME AND TO FLOOR OR THRESHOLD.
- CHECK FOR SMOOTH OPERATION.



FOR DEVICES ON DOORS OVER 8'0" TALL, TWO ROD GUIDES SHOULD BE PLACED EQUALLY BETWEEN THE TOP LATCH AND DEVICE HEAD.

11) CHECK DOGGING OPERATION: (PANIC APPLICATION ONLY)

- DEPRESS TOUCHBAR, INSERT AND TURN DOGGING KEY CLOCKWISE TO DOG DEVICE.



LHR SHOWN

- REMOVE DOGGING KEY; TOUCHBAR WILL REMAIN DEPRESSED.
- REINSERT DOGGING KEY AND TURN IT IN OPPOSITE DIRECTION (COUNTER-CLOCKWISE). PUSH ON TOUCHBAR AND IT WILL "POP OUT."
- FOR CYLINDER DOGGING, REFER TO INSTALLATION INSTRUCTION D-4080.

9) VERTICAL ROD ADJUSTMENT.

A) TOP LATCH ADJUSTMENT.

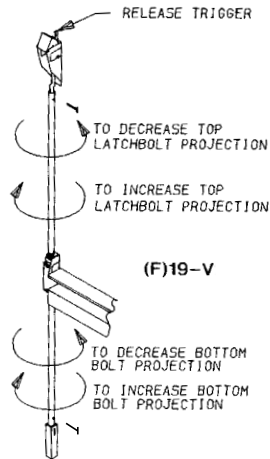
- 1) RELEASE TOP LATCHBOLT USING RELEASE TRIGGER.
- 2) CHECK TOP LATCHBOLT PROJECTION, LATCHBOLT PROJECTION SHOULD BE 5/8" TO 3/4".
- 3) IF THE TOP LATCHBOLT DOES NOT PROJECT THIS MUCH, REMOVE THE COTTER KEY FROM THE TOP ROD AND TURN THE TOP ROD ONE FULL TURN (SEE BELOW). RE-INSERT THE COTTER KEY. RECHECK THE INCREASED LATCHBOLT PROJECTION. REPEAT UNTIL TOP LATCHBOLT PROJECTION IS 5/8" TO 3/4".
- 4) SLOWLY DEPRESS TOUCHBAR; LATCHBOLT SHOULD REMAIN IN RETRACTED POSITION.
- 5) IF LATCHBOLT DOES NOT REMAIN IN RETRACTED POSITION, REMOVE COTTER KEY. DECREASE TOP LATCHBOLT PROJECTION BY ROTATING ROD 1/2 TURN (SEE BELOW).
- 6) RE-INSERT COTTER KEY, REPEAT PROCESS UNTIL LATCHBOLT REMAINS IN RETRACTED POSITION.

B) BOTTOM BOLT ADJUSTMENT (TOP LATCH SHOULD REMAIN IN RETRACTED POSITION).

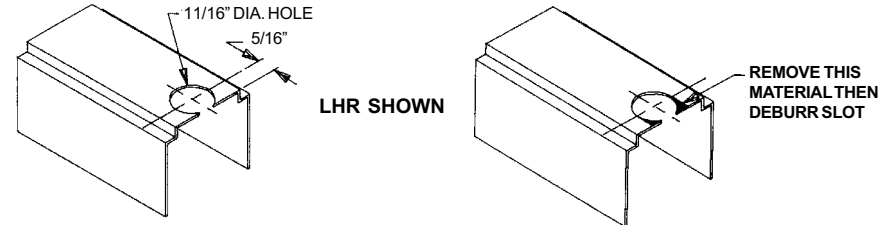
- 1) REMOVE COTTER KEY, ROTATE ROD 1/2 TURN UNTIL BOTTOM BOLT CLEARS FINISHED FLOOR.
- 2) RE-INSERT COTTER KEY.

C) IF TRIM IS BEING USED, OPERATE TRIM AND CHECK FOR FULL LATCHBOLT RETRACTION. IF TOP LATCHBOLT DOES NOT REMAIN IN RETRACTED POSITION, DECREASE TOP AND BOTTOM LATCHBOLT PROJECTION (SEE BELOW).

D) BEND COTTER KEYS AROUND RODS AND RELEASE TOP LATCHBOLT USING RELEASE TRIGGER.



7) PREPARE ACCESS SLOT IN CHANNEL COVER. DRILL AN 11/16" DIA. HOLE 5/16" FROM JUST CUT END OF CHANNEL COVER. REMOVE REMAINING MATERIAL TO COMPLETE SLOT USING A SAW OR FILE.



8) IF DOOR OPENING IS NOT 7'0", DETERMINE TOP ROD LENGTH BASED ON A 40-5/16" DEVICE REF. Q FROM FINISHED FLOOR.

A) FOR DOOR OPENINGS UNDER 7'0":

- 1) SUBTRACT DOOR OPENING FROM 7'0" OPENING.
- 2) SUBTRACT ANSWER FROM PART 1 FROM 36-7/8" TO DETERMINE TOP ROD LENGTH. (EXAMPLE : 6'8" DOOR OPENING - 7'0" - 6'8" = 4" 36-7/8"-4"= 32-7/8" TOP ROD)

B) FOR DOOR OPENINGS ABOVE 7'0":

- 1) SUBTRACT 7'0" FROM DOOR OPENING.
- 2) ADD ANSWER FROM PART 1 TO 36-7/8" TO DETERMINE TOP ROD LENGTH. (EXAMPLE: 8'10" DOOR OPENING - 8'10"-7'0"=22" 36-7/8"+22"=58-7/8")

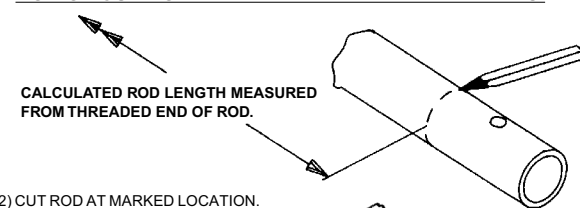
9) MODIFY TOP ROD TO REQUIRED LENGTH.

A) FOR RODS THAT ARE TOO LONG, FOLLOW PROCEDURE BELOW TO CUT ROD TO SIZE.

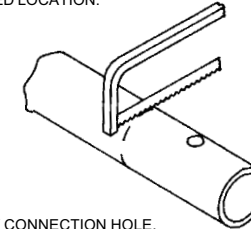
- 1) MARK RODS TO REQUIRED LENGTH.

NOTE: ROD MUST BE MEASURED FROM THREADED PORTION OF ROD.

DO NOT CUT ROD AT END WITH INTERNAL THREADS.

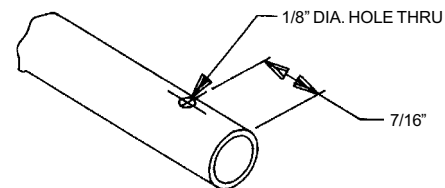


2) CUT ROD AT MARKED LOCATION.

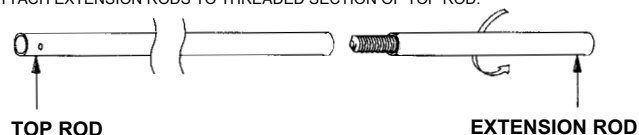


3) DRILL COTTER KEY CONNECTION HOLE.

DRILL 1/8" DIA. HOLE THRU ON VERTICAL ROD 7/16" FROM END OF ROD JUST CUT.



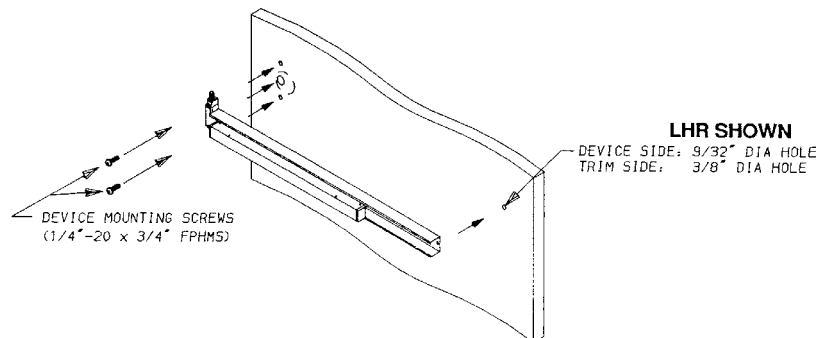
- B) FOR RODS THAT ARE TOO SHORT, FOLLOW PROCEDURE BELOW.
1) ATTACH EXTENSION RODS TO THREADED SECTION OF TOP ROD.



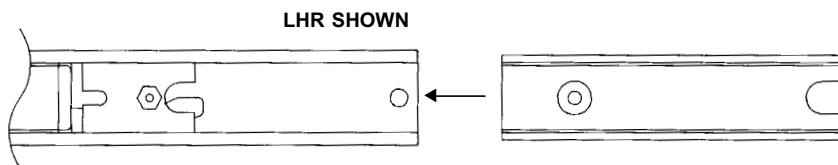
- 2) FOLLOW INSTRUCTIONS TO MARK, CUT & DRILL TOP ROD (SEE STEP 1 OF PART A OF PREVIOUS PAGE).

4 HARDWARE INSTALLATION

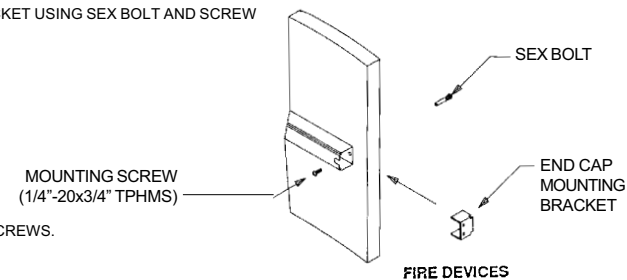
- 1) MOUNT OUTSIDE TRIM (WHEN REQUIRED) PER DIRECTIONS IN TRIM BOX, OR INSTALL OUTSIDE SEX BOLTS.
- 2) MOUNT DEVICE - THROUGHBOLT DEVICE TO TRIM OR SEXBOLTS.
- 3) LOCATE, MARK AND DRILL END CAP MOUNTING HOLE:
 - A) LEVEL DEVICE.
 - B) MARK CENTER OF 5/16" DIA. HOLE AT END OF CHANNEL.
 - C) DRILL 9/32" DIA. HOLE THRU DOOR.
 - D) DRILL 3/8" DIA. HOLE ON TRIM SIDE OF DOOR USING 9/32" DIA. HOLE AS GUIDE.



- 4) INSTALL CHANNEL COVER.

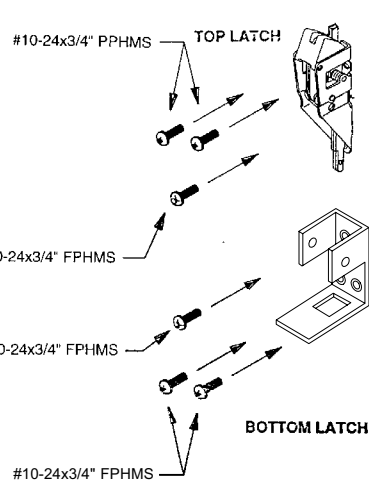
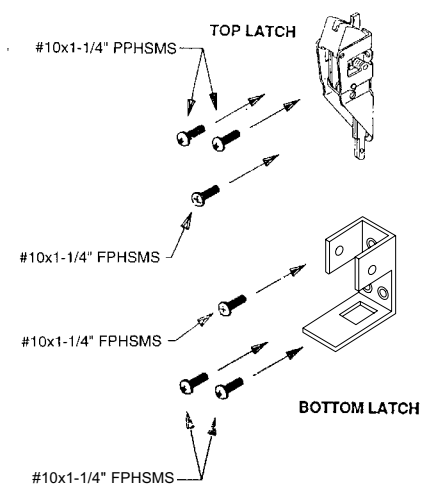


- 5) INSTALL END CAP MOUNTING BRACKET USING SEX BOLT AND SCREW

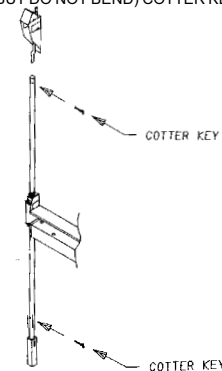


- 6) TIGHTEN ALL DEVICE MOUNTING SCREWS.
7) INSTALL TOP & BOTTOM LATCHES.

PANIC DEVICES



- 8) THREAD RODS ONTO DEVICE CENTERSLIDE. INSERT ROD CONNECTORS FROM TOP LATCH INTO OPPOSITE END OF TOP ROD AND INSERT (BUT DO NOT BEND) COTTER KEY THROUGH ROD AND ROD CONNECTOR. INSERT BOLT ASSEMBLY INTO OPPOSITE END OF BOTTOM ROD AND INSERT (BUT DO NOT BEND) COTTER KEY THROUGH ROD AND BOLT ASSEMBLY.





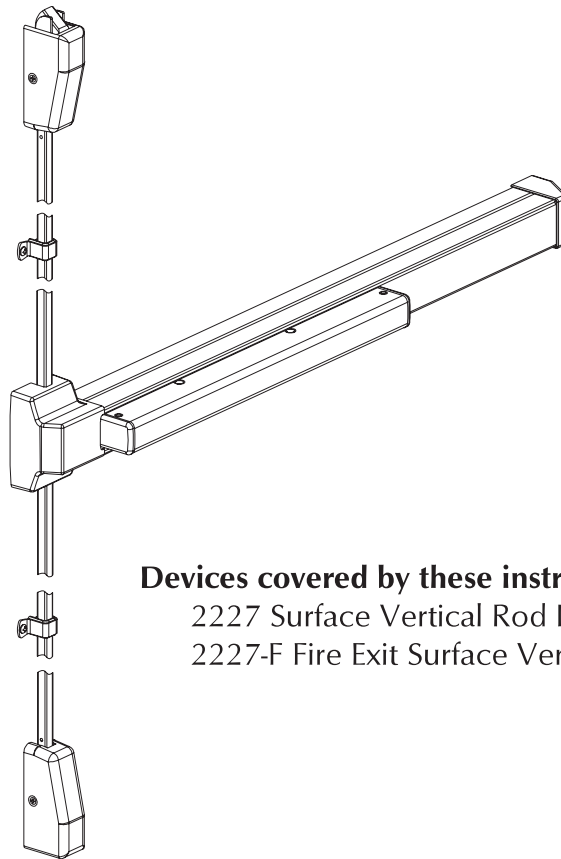
911334-00

Surface Vertical Rod Device

2227

VON DUPRIN®

Installation Instructions



Devices covered by these instructions:

2227 Surface Vertical Rod Device

2227-F Fire Exit Surface Vertical Rod Device

BEFORE STARTING INSTALLATION

1. Check hardware schedule for strikes, fasteners, and other special requirements.
2. Check carton label for trim, strikes, options, and order number.
3. Read all instructions, including instructions provided with any options used: trim, alarm kit, glass bead kit, latch guard kit, and rod guard kit.
4. Gather special tools required:
 - #10-24 tap
 - #25 drill bit
 - 1/8" dia. drill bit
 - 1/4" dia. drill bit
 - 5/16" dia. drill bit
 - 13/32" dia. drill bit
 - Hacksaw
 - 7/8" dia. hole saw

Customer Service

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911334-00 Rev. 01/14-b

GENERAL INFORMATION

Review pages 2 and 3 so you can identify the hardware and understand the terminology used in the instructions.

See page 16 for the “Metric Conversion Table” if needed.

These exit devices can be installed on the door widths listed below:

Device Size	Code/Standard Requirement	Door Size
Standard 3' (32")	NFPA101	24-3/4" to 36"
Standard 4' (44")	NFPA101	30-3/4" to 48"



NOTE

Dogging panic device during high traffic periods will increase life of device. To dog, depress pushbar and turn hex key one-quarter turn clockwise.

MAINTENANCE

Von Duprin 2227 exit devices are designed and built to be maintenance free; however, such factors as installation, severity of use, environmental conditions, and changes in the condition of the door opening may require that maintenance and/or device adjustment be performed. The following guidelines are recommended to the building owner to insure proper device operation:

1. Check device operation for smooth operation periodically.
2. Check strikes (keeper) and latches to insure they are secure.
3. Check latches and other moving parts for binding or sluggish operation due to dirt or chemical buildup. Clean parts with soap and water and then lubricate with graphite-based or silicone lubricants. Do not use petroleum-based lubricants.

OUTSIDE TRIM

No outside trim supplied for EO (exit only) application



Escutcheon
(optional for
EO application)



DT
(pull when
dogged)



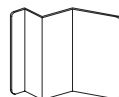
NL
(key retracts
latch bolt)



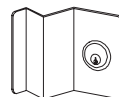
TP
(key locks
thumbpiece)



TP-BE
(thumbpiece;
unlocked)



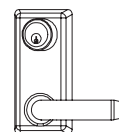
DT
(pull when
dogged)



NL
(key retracts
latch bolt)



K
(key locks
knob)



L
(key locks
lever)

2227/2227-F PARTS LIST

Item Quantity Description

In end cap package:

1 4 #8-18 x 1/2" undercut flat head machine screw

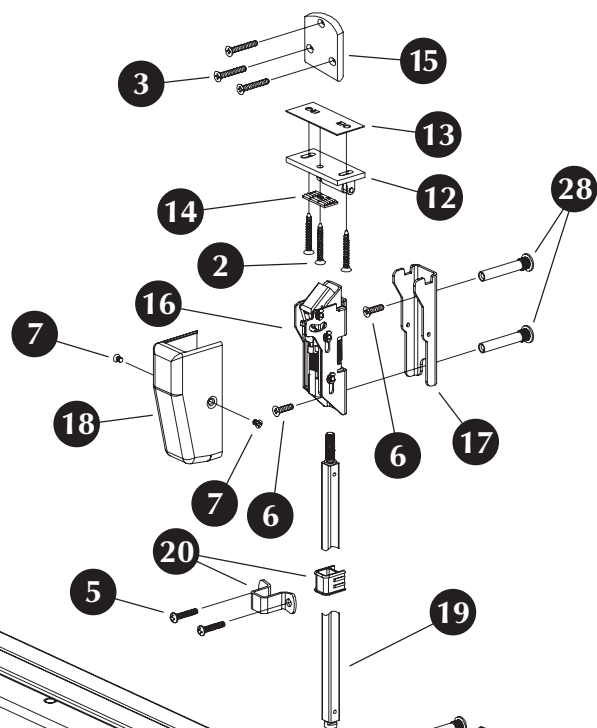
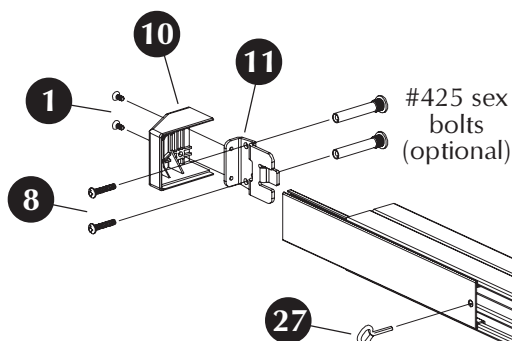
In 299/299F strike package:

2 3 #10-24 x 3/4" flat head machine screw (metal frame)

2 3 #10-24 x 1-1/2" flat head wood screw (wood frame)

In 260U strike package:

3 3 #10-12 x 10-24 x 1-1/4" oval head combination screw



Item Quantity Description

In 248L-4 strike package:

4 2 #10-12 x 10-24 x 1-1/4" oval head combination screw

In rod guide mounting package:

5 4 #10-12 x 10-24 x 1" pan head combination screw

In latch mounting package:

6 4 1/4-20 x 3/4" undercut flat head machine screw

6 4 1/4-20 x 1-1/4" undercut flat head machine screw

In each of two (2) latch cover mounting packages:

7 2 #8-32 x 1/4" undercut flat head machine screw

In device mounting screw package:

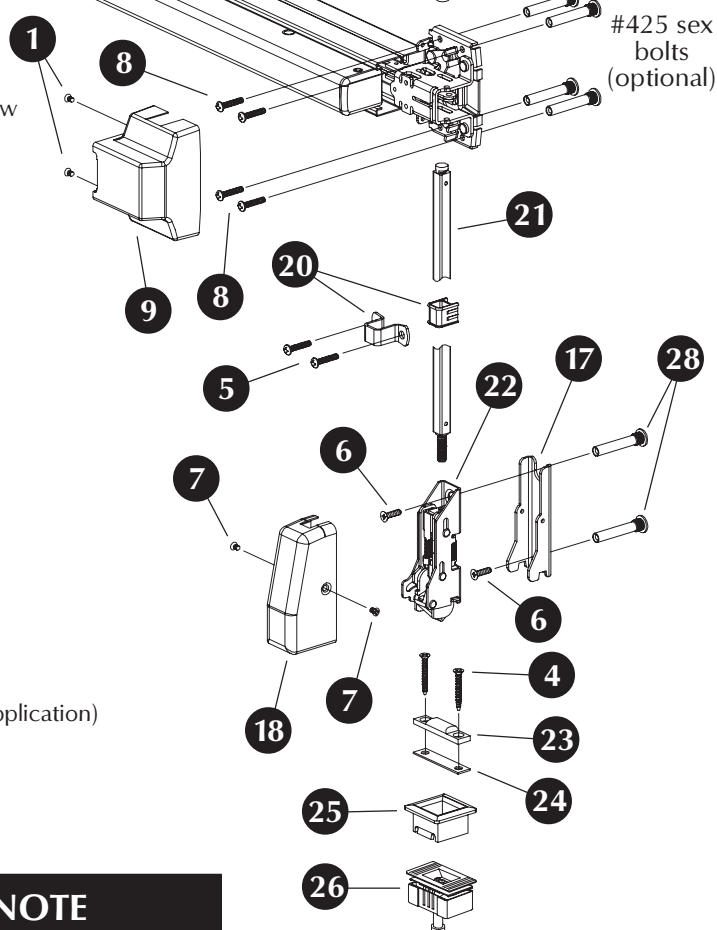
8 4 #10-24 x 1" pan head machine screw

8 4 #10-24 x 1-1/2" pan head machine screw

8 6 #10-24 x 1-1/4" pan head sheet metal screw

8 2 #10-24 x 3/4" pan head machine screw

8 2 #10-24 x 1-1/8" pan head machine screw



NOTE

#325 sex bolts must be used to install latches on all types of doors.

INSTALLATION

1 Cut device if necessary.

1.1. Device length **A** must be at least 3" shorter than opening **B** (Figure 1-1).

1.2. If necessary, cut device so **A** is at least 3" shorter than **B** (Figure 1-2).

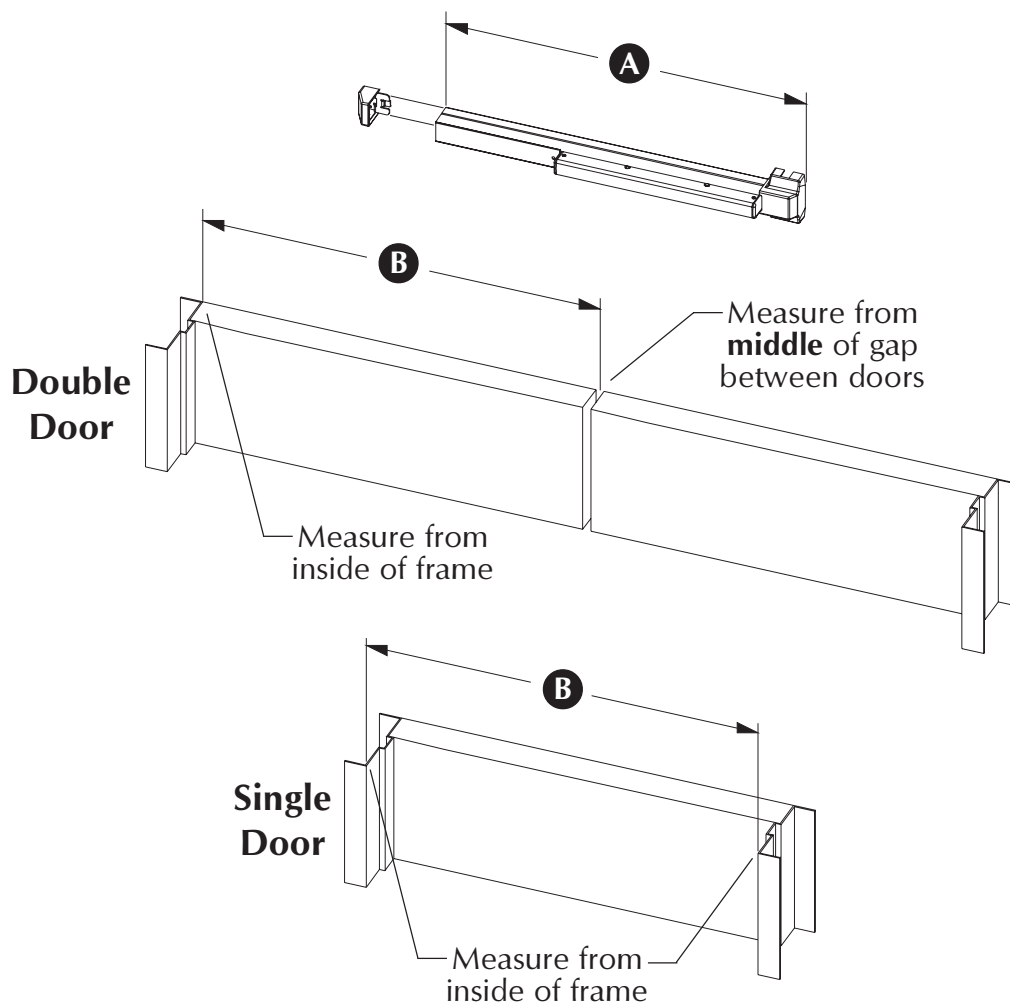
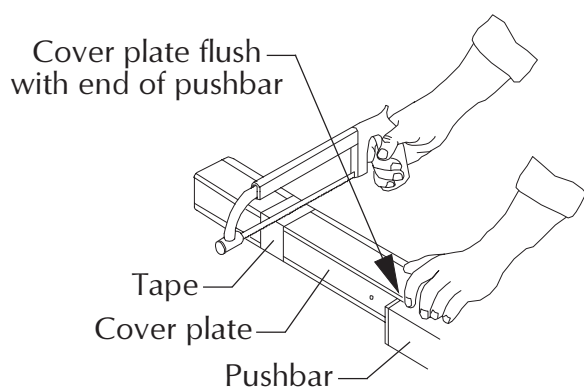


Figure 1-1



NOTE

If using ALK exit alarm option, install ALK cover plate before cutting device.

Figure 1-2

2 Prepare door.

- 2.1. Mark center line locations \mathbb{C} as shown (Figure 2-1).
- 2.2. Tape templates to door aligned with center lines \mathbb{C} .
- 2.3. Mark and prepare mounting holes per templates.
- 2.4. Prepare door for outside trim (see trim instructions).



NOTE

For wood fire doors with metal edge, increase backset so device center case clears metal edge.

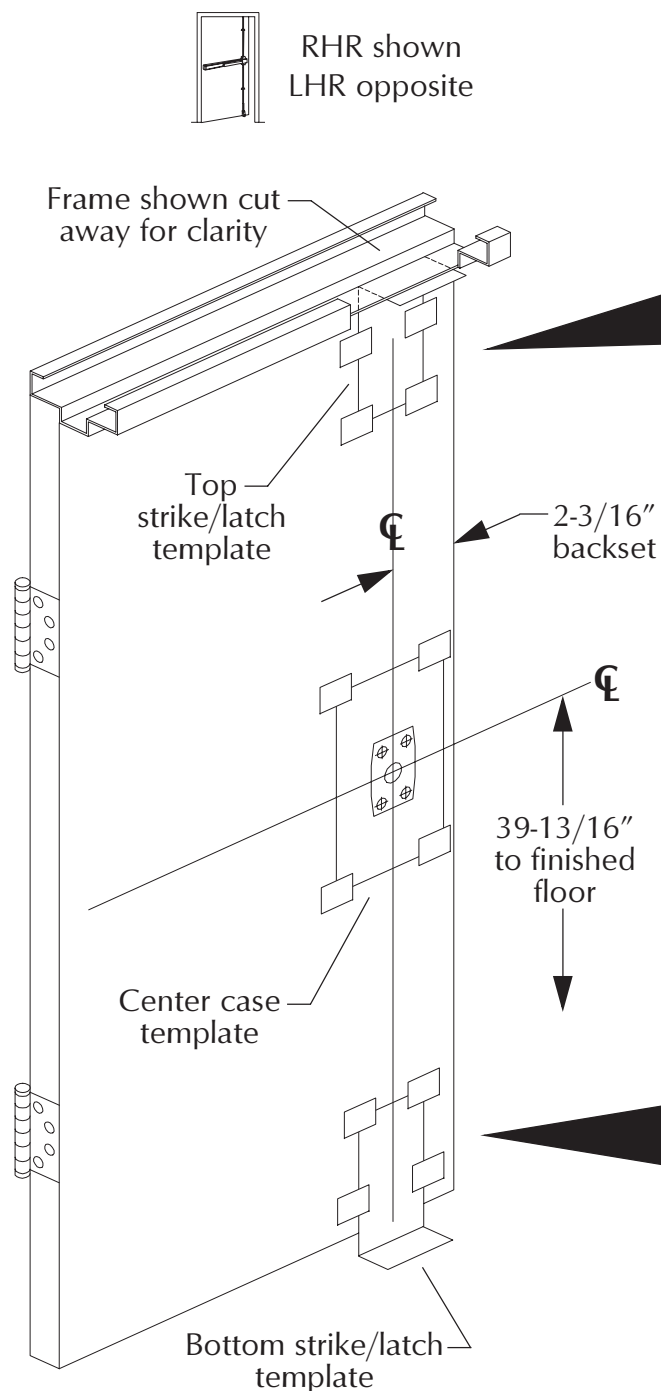
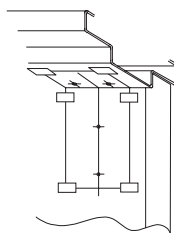
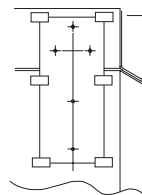


Figure 2-1

Top Strike/Latch Template Positions

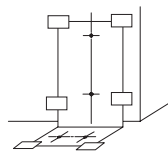


299, 299F, or 499F strike (Template #2)
Place template fold against bottom of stop

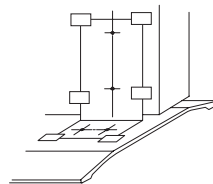


260U strike for flush transom (Template #5)
Place mark on template even with top of door

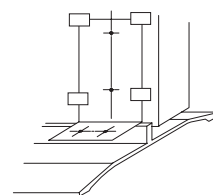
Bottom Strike/Latch Template Positions



304L strike (Template #3) or 248L-4 strike without threshold (Template #6)
Place template fold against finished floor



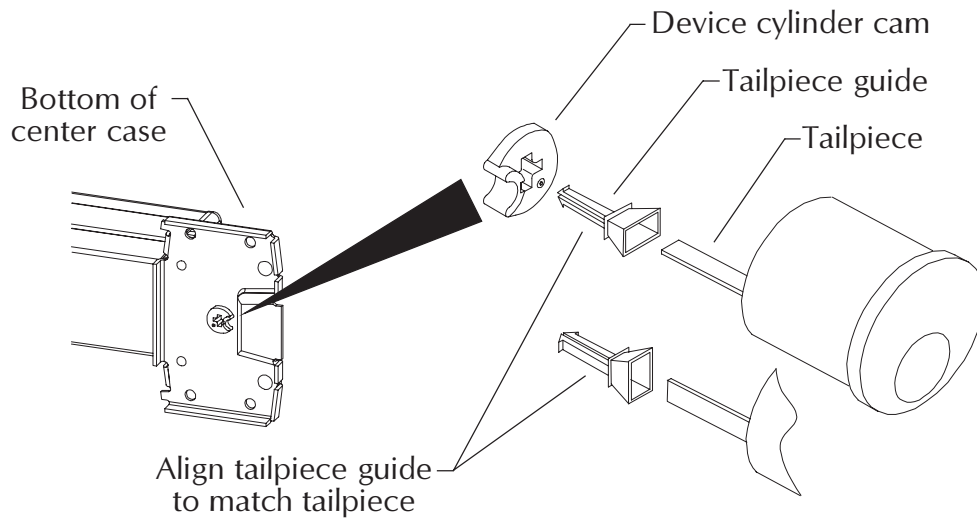
248L-4 strike with threshold (Template #6)
Place template fold against top of threshold



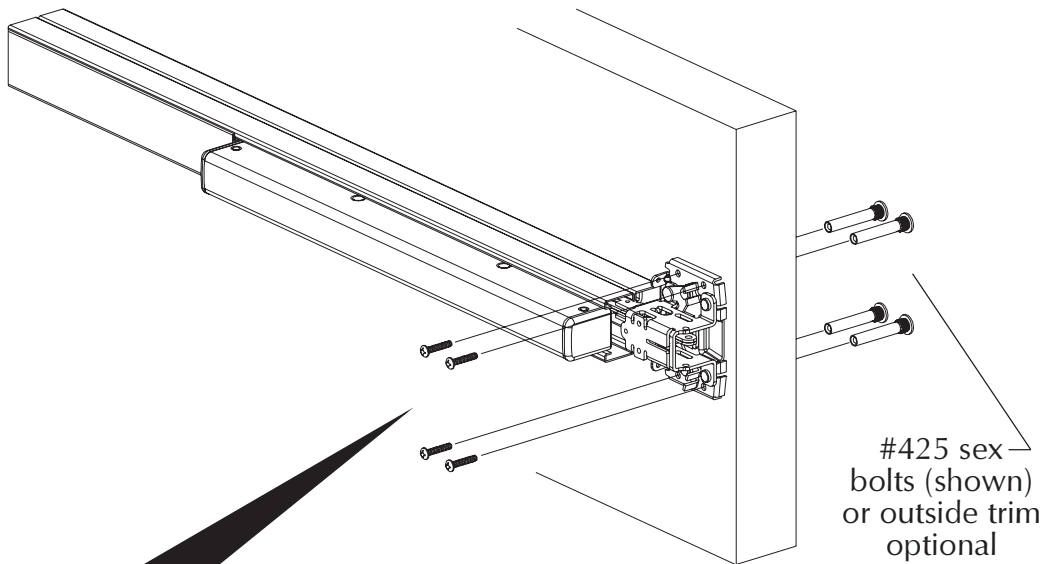
Latch track threshold (Template #4)
Place template fold against top of latch track

3 Install device.

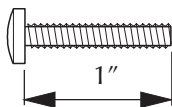
3.1. If using cylinder in trim, install tailpiece guide (packaged with trim) in device.



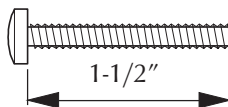
3.2. Install device to door at center case.



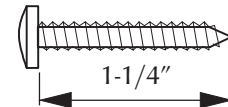
Use screws from device mounting screw package



#10-24 pan head machine for metal door surface mount, sex bolts on 1-3/4" door, or outside trim on 1-3/4" door

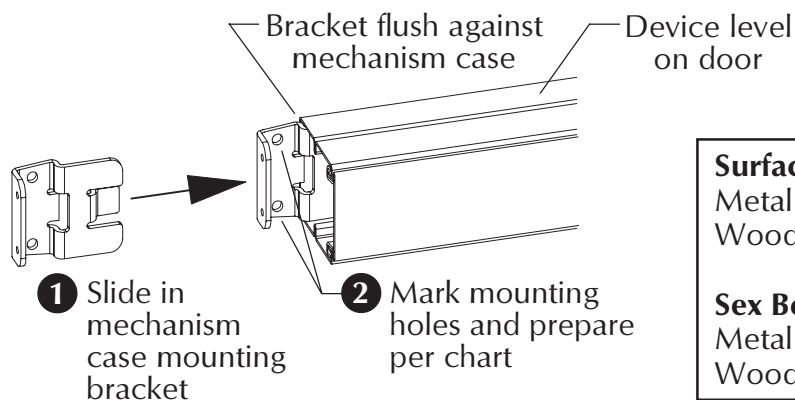


#10-24 pan head machine for sex bolts on 2-1/4" door or outside trim on 2-1/4" door



#10-24 pan head sheet metal for wood door surface mount

3 Install device (continued).



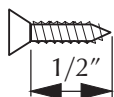
Surface Mount

Metal Door: #25 drill and #10-24 tap inside
Wood Door: 1/8" pilot drill, 1" deep, inside

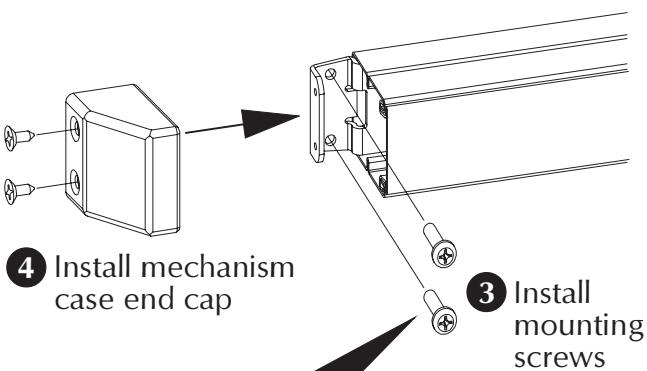
Sex Bolts

Metal Door: 1/4" drill inside, 13/32" drill outside
Wood Door: 13/32" drill thru

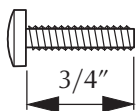
Use screws from end cap package



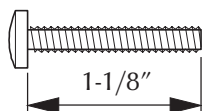
#8-18 undercut flat head machine



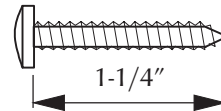
Use screws from device mounting screw package



#10-24 pan head machine for metal door surface mount or sex bolts on 1-3/4" door

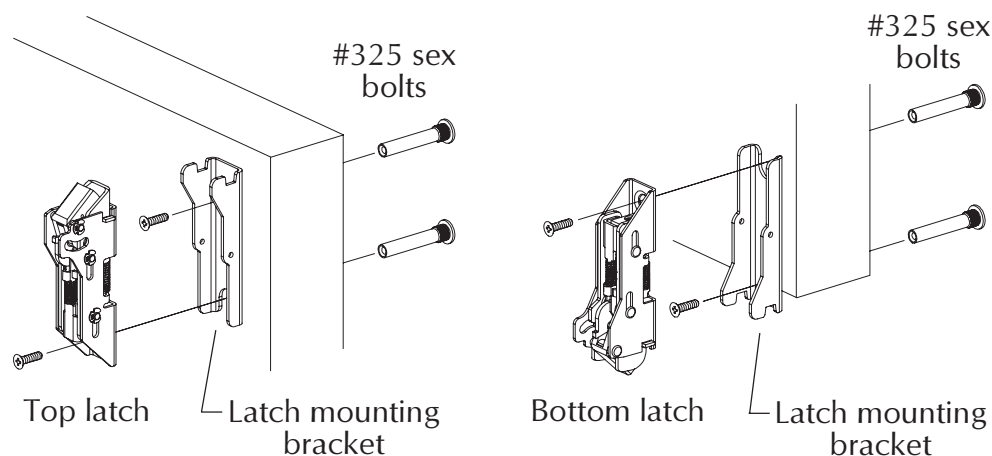


#10-24 pan head machine for sex bolts on 2-1/4" door



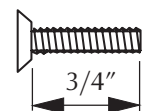
#10-24 pan head sheet metal for wood door surface mount

4 Install top and bottom latches.

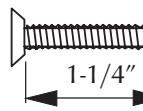


Use screws from latch mounting package

1/4-20 undercut flat head machine



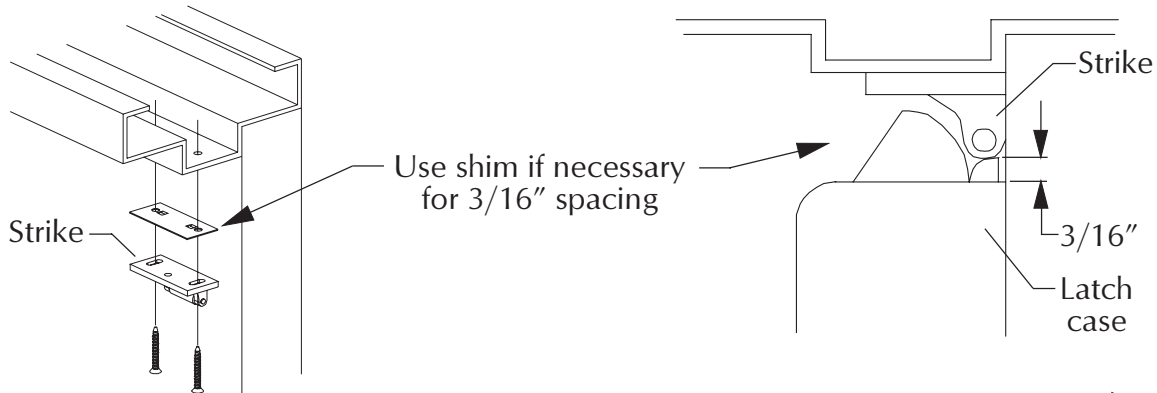
1-3/4" door



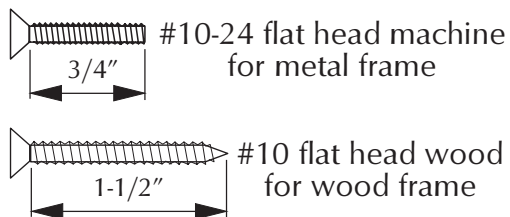
2-1/4" door

5 Install top strike.

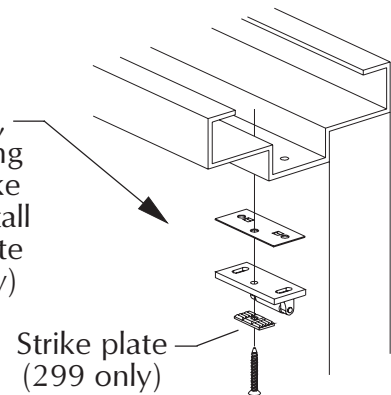
299 and 299F Strikes



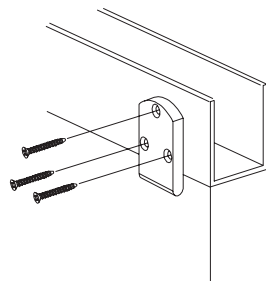
Use screws from 299/299F strike package



After strike is adjusted, prepare center mounting hole same as other strike mounting holes and install center screw (strike plate used for 299 strike only)

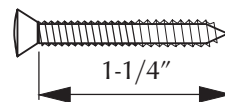


260U Strike



Use screws from 260U strike package

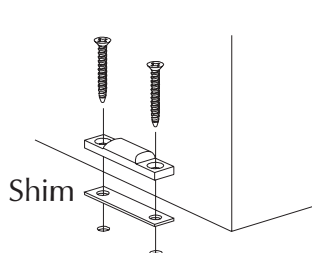
#10-12 x 10-24 oval head combination



6 Install bottom strike.

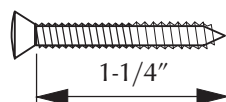
248L-4 Strike

Add shim(s) so strike engages extended latch bolt but clears latch case



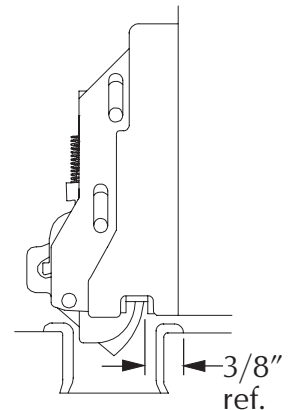
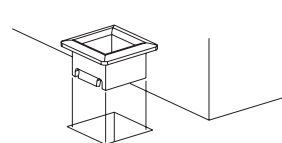
Use screws from 248L-4 strike package

#10-12 x 10-24 oval head combination



304L Strike

Grout strike into floor



7 If door height is less than 84", cut top rod. (Uncut top rod is about 38-3/4" overall.)

7.1. Find amount to cut off (Figure 7-1).

7.2. Cut top rod (Figure 7-2).

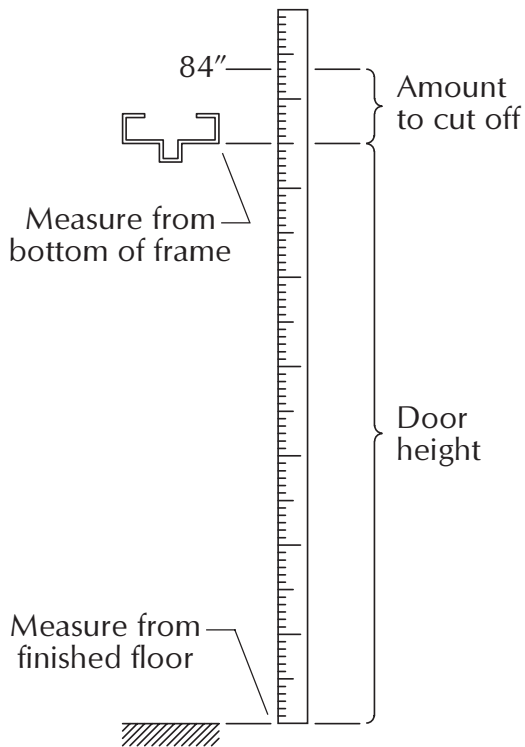


Figure 7-1

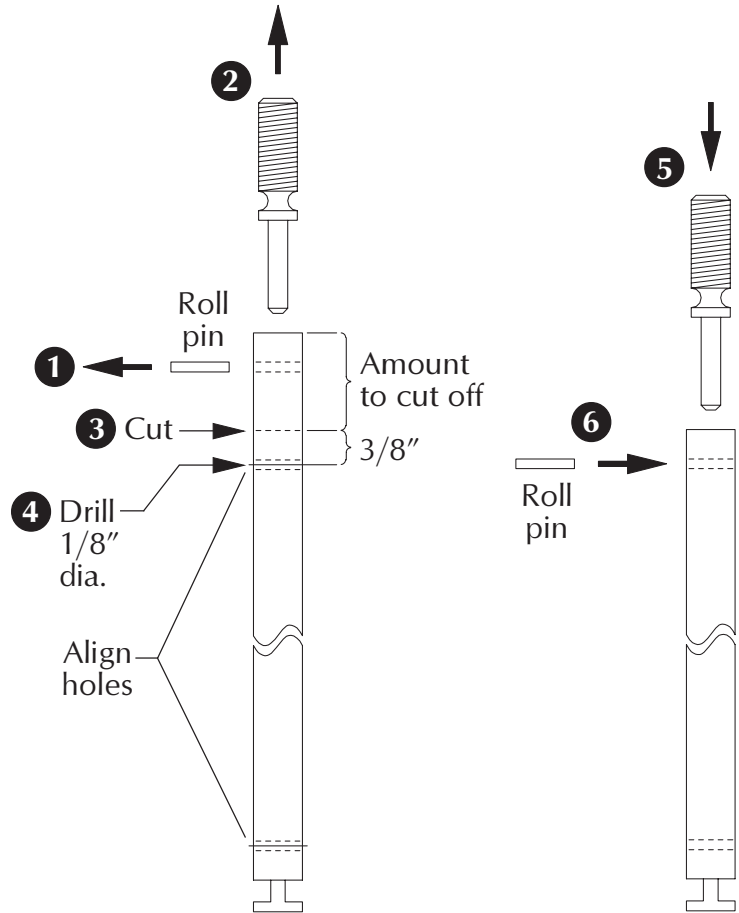
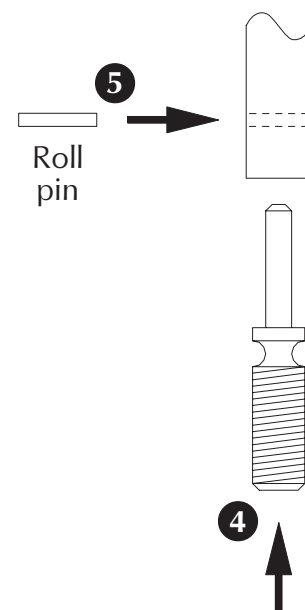
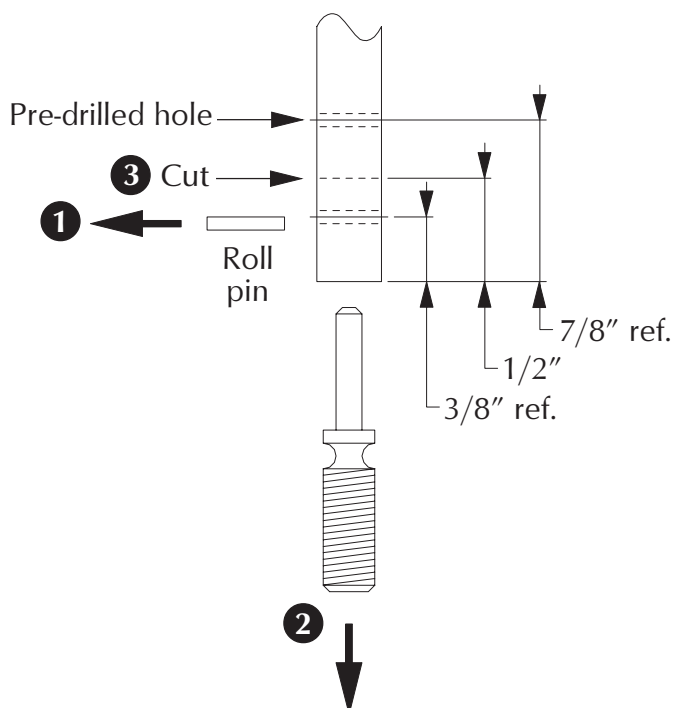


Figure 7-2

8 If using threshold, cut bottom rod. (Uncut bottom rod is about 34-7/8" overall.)



9 If door height is more than 84", prepare rod extension.

9.1. Find amount to cut off rod extension (Figure 9-1).

9.2. Cut rod extension (Figure 9-2).

9.3. Drill hole in rod extension (Figure 9-3).

9.4. Assemble rod extension rod (Figure 9-4).

9.5. Connect rod extension to top rod (Figure 9-5).



IMPORTANT

For door heights less than 88", cut top rod instead of rod extension.

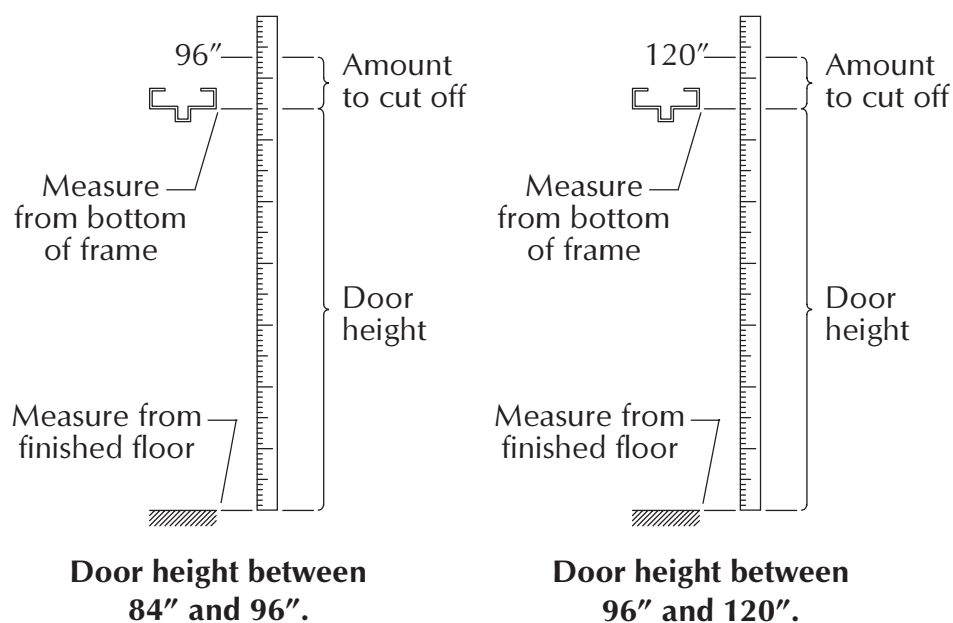


Figure 9-1

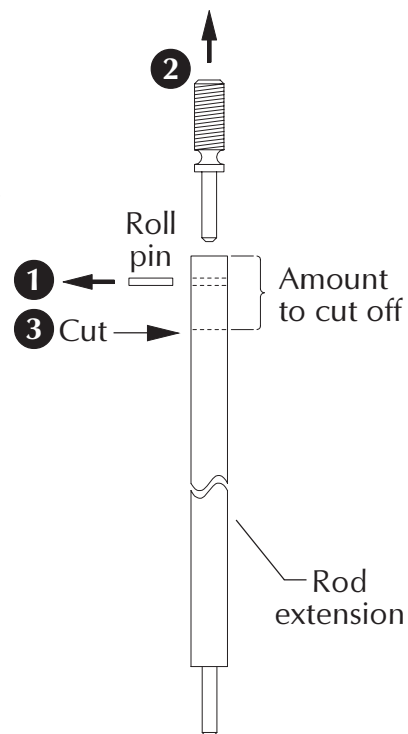


Figure 9-2

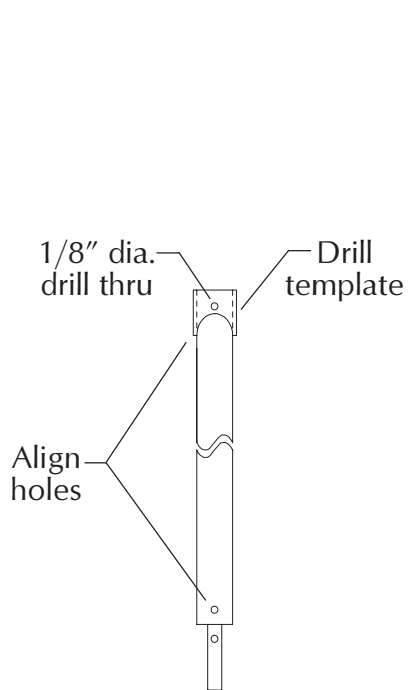


Figure 9-3

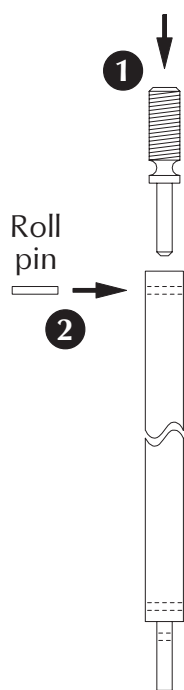


Figure 9-4

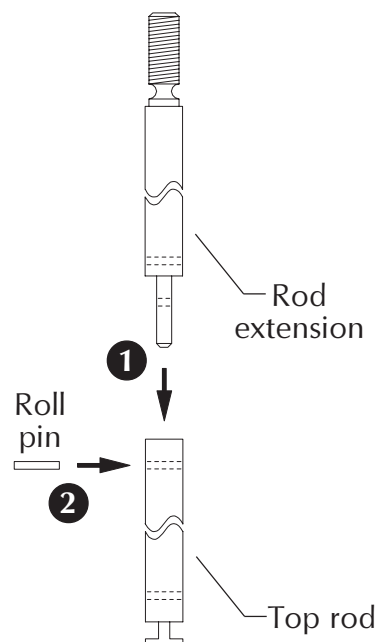
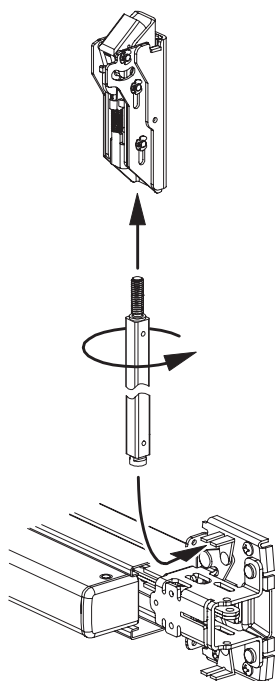


Figure 9-5

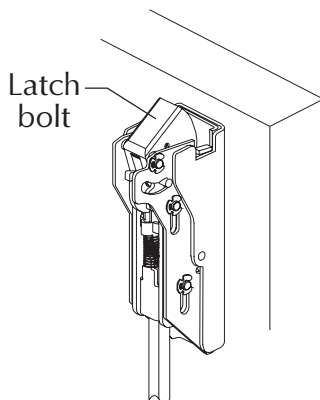
10 Install and adjust top rod.

Install

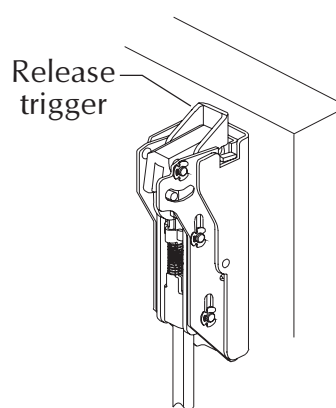


Adjust (screw rod into or out of latch)

With door closed:
Latch bolt fully extended
and deadlatched
(will not push in)

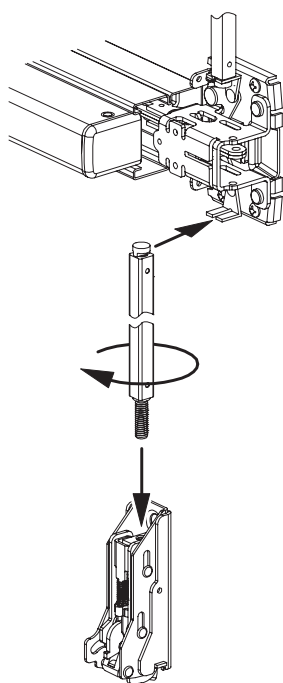


With door open:
Latch bolt flush with
or slightly below latch case
and release trigger extended



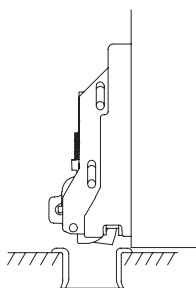
11 Install and adjust bottom rod.

Install (with door open)

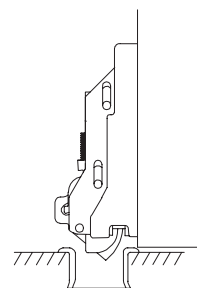


Adjust (screw rod into or out of latch)

With door open:
Latch bolt clears floor
and does not bind on strike

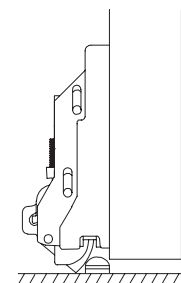
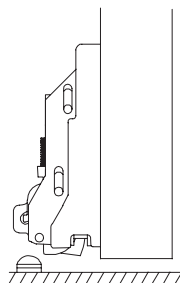


With door closed:
Latch bolt fully extended
and deadlatched
(will not push in)



304L strike

248L-4 strike



12 Install rod guides, center case cover, and latch covers.



NOTE

If using rod or latch guards, skip this step and see rod or latch guard instructions.

12.1. Disconnect top and bottom rods from center case. Slide rod guide bases **1** (with legs of bases against door) onto rods. Connect rods to center case.

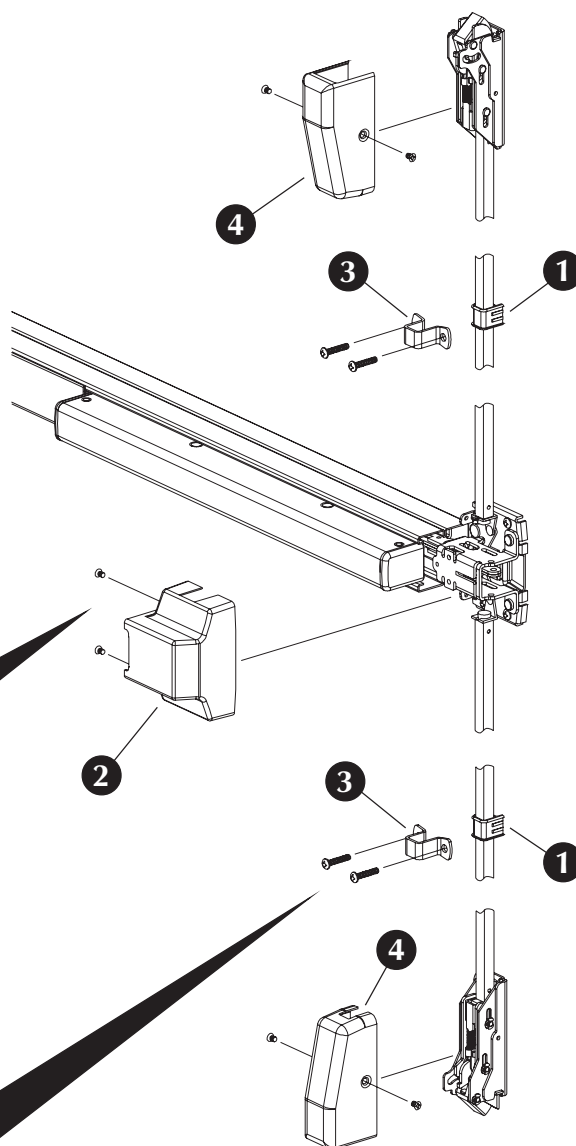
12.2. Install center case cover **2**.

12.3. Place rod guides **3** over rod guide bases **1**. Position rod guide/base midway between center case and latch and mark and prepare rod guide mounting holes:

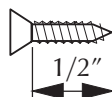
Metal door: #25 drill and #10-24 tap, inside
Wood door: 1/8" dia. pilot drill x 3/4" deep, inside

12.4. Install rod guides **3** over rod guide bases **1**.

12.5. Install latch covers **4**.

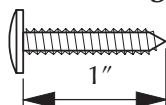


Center case: Use screws from end cap package:



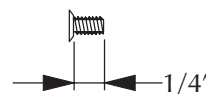
#8-18 undercut
flat head machine

Rod guides: Use screws from rod guide mounting package:



#10-12 x 10-24
combination

Latch covers: Use screws from latch cover mounting package:



#8-32 undercut
flat head machine

TEMPLATE #1 (LHR)



NOTE

For wood fire doors with metal edge, increase backset so device center case clears metal edge.

2227/2227-F Device

Refer to Step #2 when using this template

Template to scale

☒ of device

To edge of LHR door (if edge of door is beveled, measure from high edge of bevel)

2-3/16" backset

Mounting holes, 4 places, see schedule below

☒ of device

7/8" dia., inside, for K, L, and TP trim only

1-11/16"

1-11/16"

5/8"

5/8"

Mounting Hole Schedule

Surface Mount

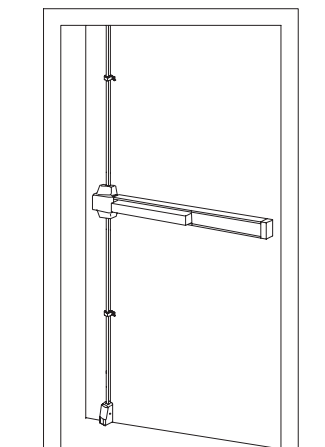
Metal Door: #25 drill and #10-24 tap, inside
Wood Door: 1/8" dia. drill x 1" deep (pilot hole)

Outside Trim

Metal Door: 1/4" dia. drill, inside
Wood Door: 13/32" dia. drill, thru

Sex Bolts

Metal Door: 1/4" dia. drill, inside, and 13/32" dia. drill, outside
Wood Door: 13/32" dia drill, thru



LHR

TEMPLATE #1 (RHR)

2227/2227-F Device

Refer to Step #2 when
using this template

Template to scale



NOTE

For wood fire doors with metal edge, increase backset so device center case clears metal edge.

℄ of device

2 3/16" backset

To edge of RHR door (if edge of door is beveled, measure from high edge of bevel)

1-11/16"

1-11/16"

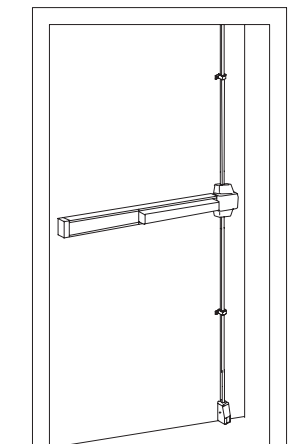
Mounting holes,
4 places,
see schedule below

℄
of device

7/8" dia., inside,
for K, L, and TP
trim only

5/8"

5/8"



RHR

Mounting Hole Schedule

Surface Mount

Metal Door: #25 drill and #10-24 tap, inside
Wood Door: 1/8" dia. drill x 1" deep (pilot hole)

Outside Trim

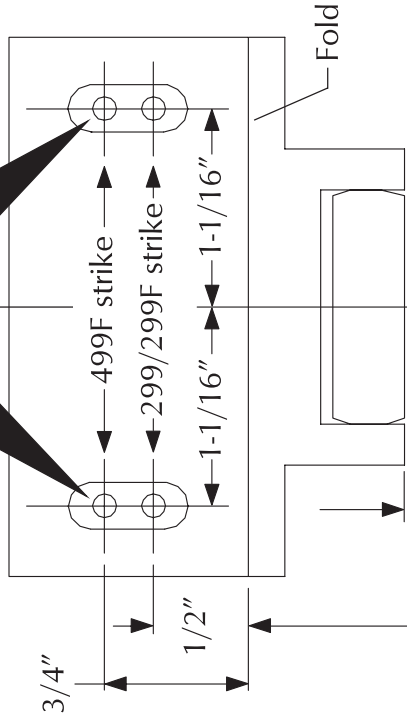
Metal Door: 1/4" dia. drill, inside
Wood Door: 13/32" dia. drill, thru

Sex Bolts

Metal Door: 1/4" dia. drill, inside, and
13/32" dia. drill, outside
Wood Door: 13/32" dia drill, thru

TEMPLATE #2 299/299F/499F Strike and Top Latch

299/299F/499F Strike Mounting Holes, 2 Places
Metal Frame: #25 drill and #10-24 tap, inside
Wood Frame: 1/8" dia. drill x 1" deep (pilot hole)



Q device
and
latch

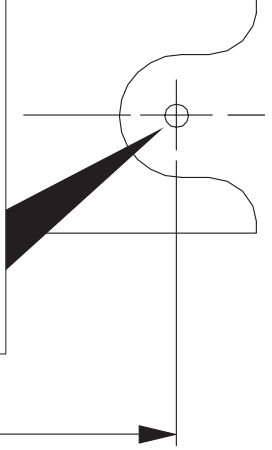
2-3/16"

3/16"

Latch Mounting Holes, 2 Places
Metal Door: 5/16" dia. drill, inside, and
13/32" dia. drill, outside
Wood Door: 13/32" dia drill, thru

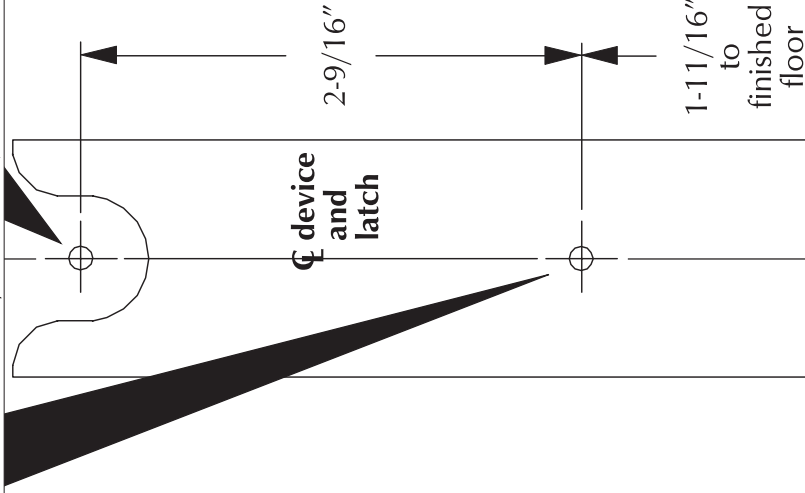
Q device
and
latch

2-9/16"



TEMPLATE #3 304L Strike and Bottom Latch

Latch Mounting Holes, 2 Places
Metal Door: 5/16" dia. drill, inside, and
13/32" dia. drill, outside
Wood Door: 13/32" dia drill, thru

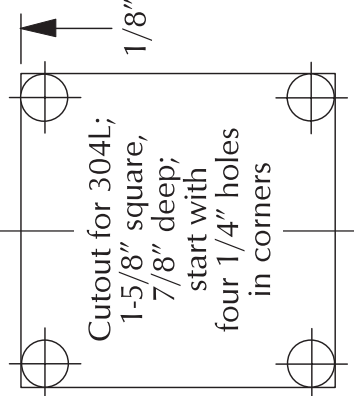


Q device
and
latch

2-9/16"

1-11/16"
to
finished
floor

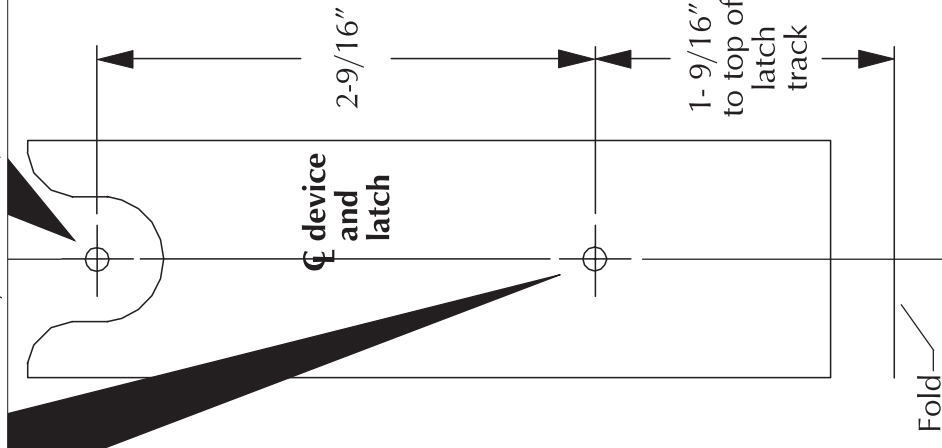
Fold



Cutout for 304L;
1-5/8" square,
7/8" deep;
start with
four 1/4" holes
in corners

TEMPLATE #4 Threshold Latch Track and Bottom Latch

Latch Mounting Holes, 2 Places
Metal Door: 5/16" dia. drill, inside, and
13/32" dia. drill, outside
Wood Door: 13/32" dia drill, thru



Q device
and
latch

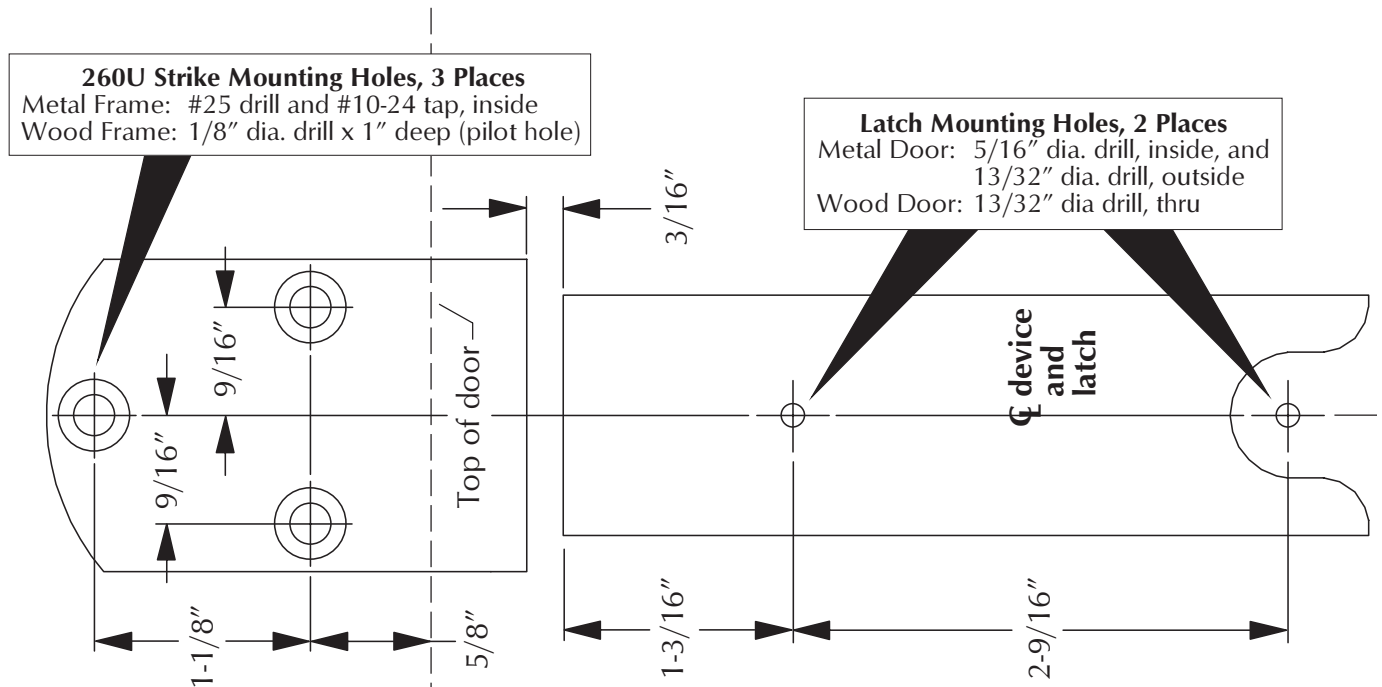
2-9/16"

1-9/16"
to top of
latch
track

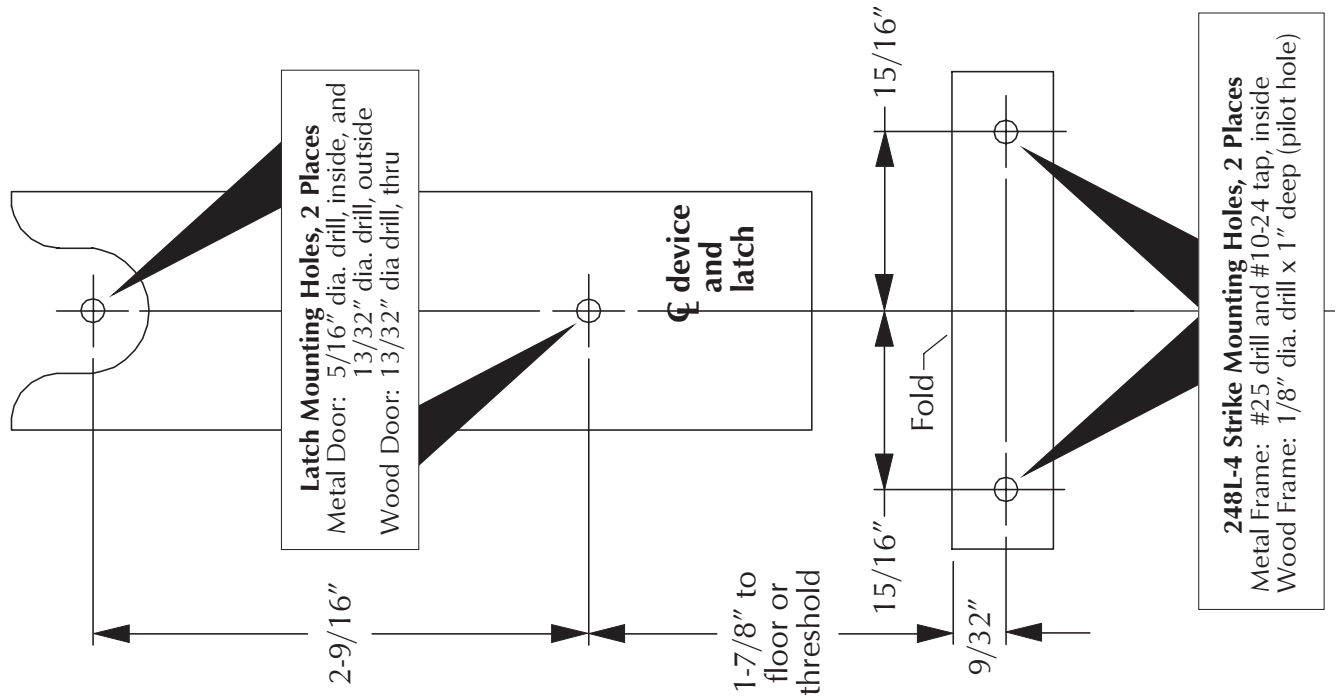
Fold

**Refer to Step #2 when
using these templates**
Templates to scale

TEMPLATE #5 260U Strike and Top Latch



Metric Conversion Table							
inches	mm	inches	mm	inches	mm	inches	mm
1/8	3	3/4	19	1-11/16	43	36	914
3/16	5	7/8	22	1-3/4	45	37-1/2	953
1/4	6	15/16	24	2-3/16	56	39-13/16	1011
9/32	7	1	25	2-1/4	57	44	1118
5/16	8	1-1/16	27	2-9/16	65	48	1219
3/8	10	1-1/8	29	3	76	84	2134
13/32	10	1-1/4	32	24-3/4	629	88	2235
1/2	13	1-1/2	38	30-3/4	781	96	2438
9/16	14	1-9/16	40	32	813	120	3048
5/8	16	1-5/8	41	33-1/2	851		



Refer to Step #2 when using these templates. Templates to scale.