

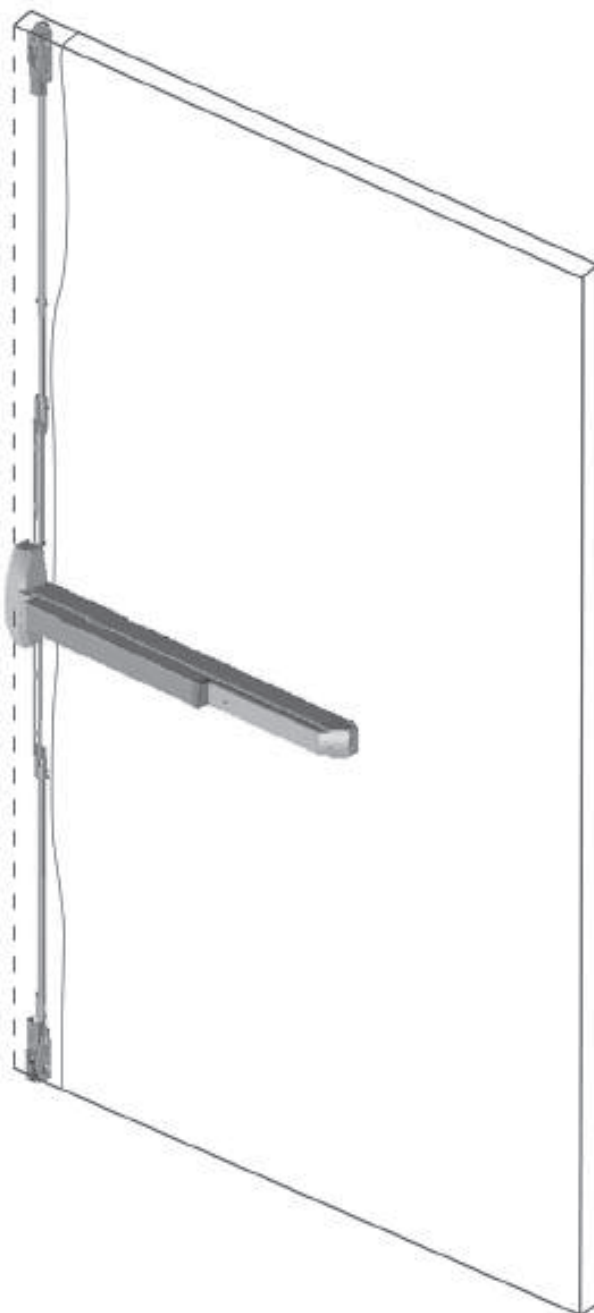
# 6160(F)/6220 Series

## Exit Device

### Installation Instructions

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#### **WARNING**

This product can expose you to lead which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

#### **WARNING**

Attention Installer: Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and ASSA ABLOY makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire-rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

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80-9460-6006-000 09/24

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## 1. General Information

**⚠ IMPORTANT:** Retrofitting or modifying this device may impact fire rating, safety features and warranty. Consult with code specifications to ensure compliance with all codes and ratings.

**NOTE:** These instructions cover standard, reinforced metal doors only. To install options, such as shim kits or interlock brackets, refer to the instructions packed with the optional component. Optional hardware is required for unreinforced metal, composite and wood doors. Device is ready for any applicable ASSA ABLOY trim.

# 6160(F)/6220 Series

## Exit Device

### Installation Instructions

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## 2. Verify Parts and Templates

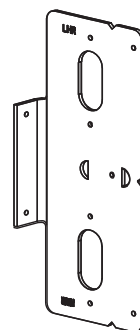
1. Unpack and verify components received using the parts list and exploded view.
2. Read the entire instructions before installing this device.

### ⚠ IMPORTANT:

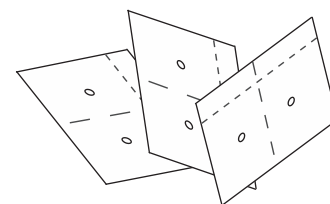
- Verify device is being installed on the correct door, as well as function, finish and size.
  - Use site survey to verify correct product ordered.
  - It is RECOMMENDED this device be installed on new 24" (610) to 48" (1220) metal or wood, pre-drilled, free swinging doors only.
3. Follow all cautions, notes and warnings presented in these instructions.
  4. All dimensions listed are in inches (") and millimeters (mm).

### Plastic and Paper Templates Included

Figure 1



Plastic Template



Paper Template

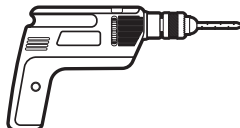
## 3. Tools Required



1/8" Allen Key



Chisel



Drill and Drill Bits



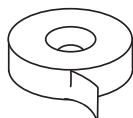
Flashlight



Level



Rubber Mallet



Tape



Measuring Tape



Pencil



Phillips Screwdriver

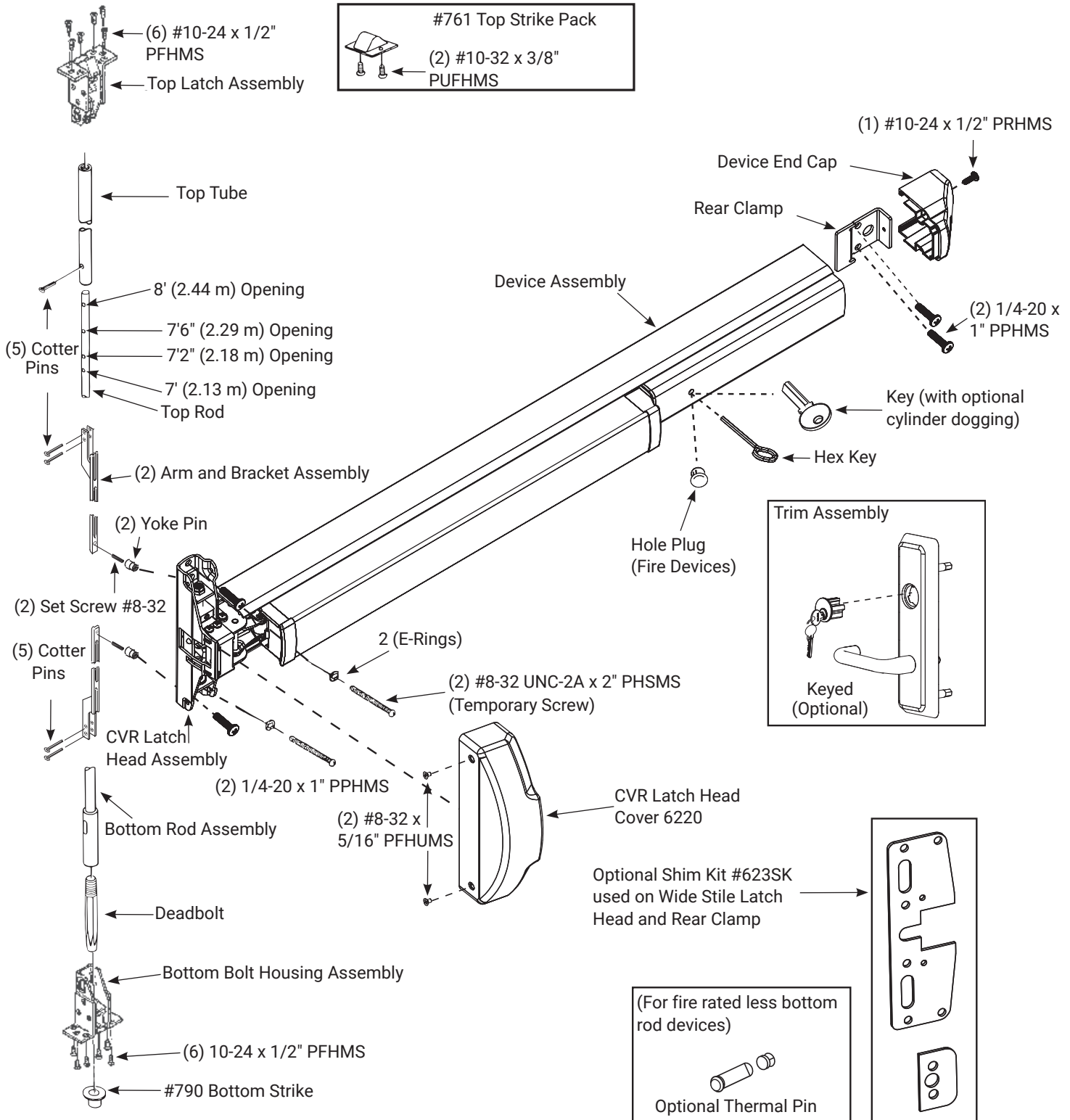


Safety Goggles

### 4. Package Contents

6160 (F) Series (Wide Stile)

Figure 2



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# 6160(F)/6220 Series

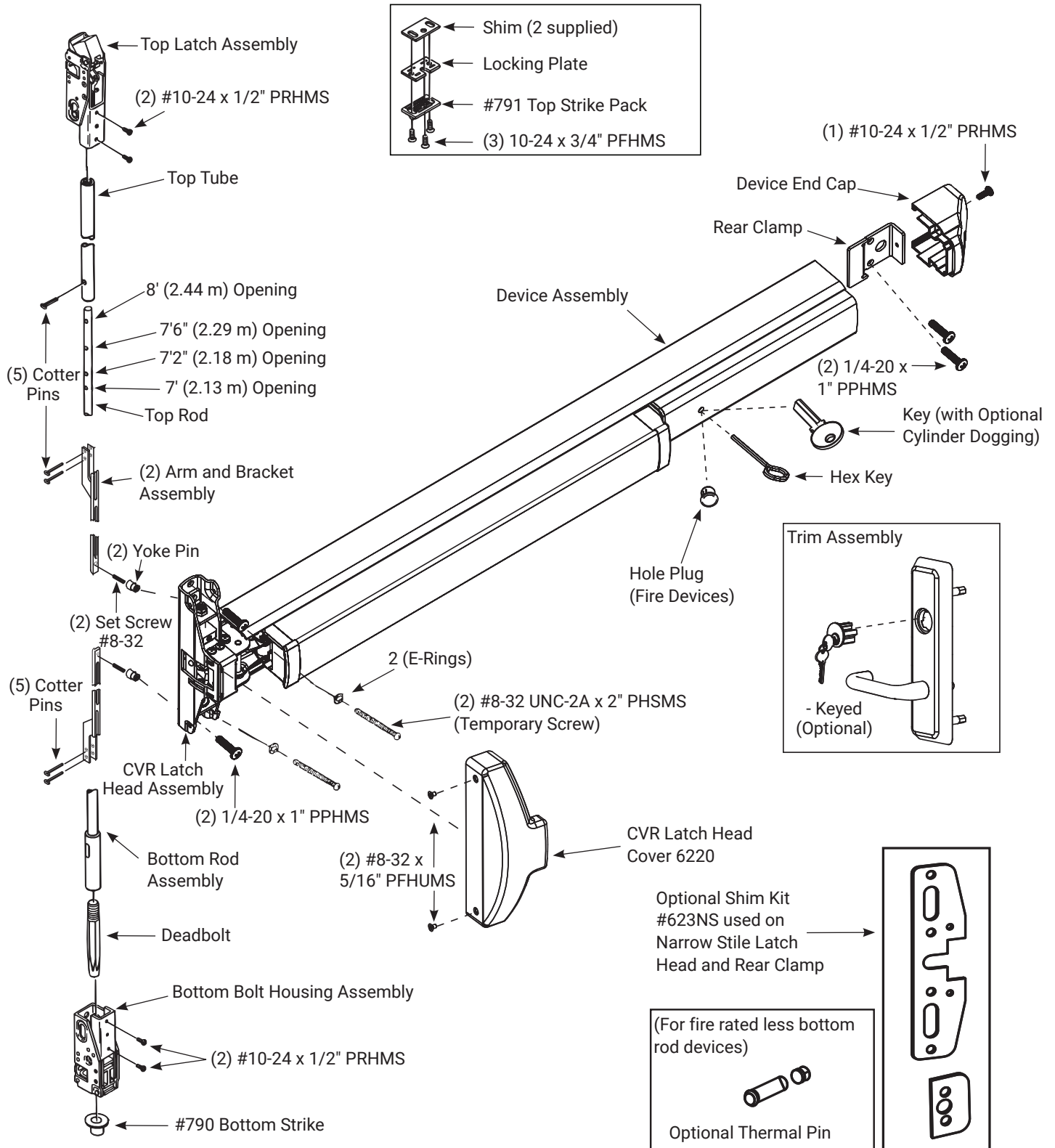
## Exit Device

### Installation Instructions

#### 4. Package Contents cont'd

##### Exploded View - 6220 Series (Narrow Stile)

Figure 3



### 5. Pre-Assembly

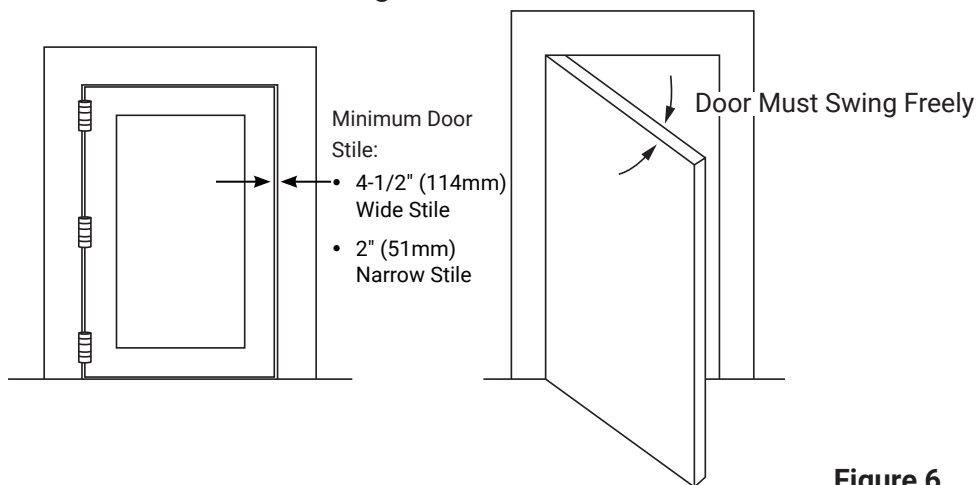
#### A. Before Installation

1. Make sure the door is plumb and level. Check that the hinges are secure and not missing hardware.
2. If surface of the door is free of raised projections, device may be installed without a shim kit. One (1) shim kit is needed for each 1/4" of projection):
  - 6220 – #623NS
  - 6160(F) – #623SK
3. Fully open the door to ensure door does not hit floor as it swings (Figure 4).
4. Determine if door is reinforced. Doors and frame thickness must have three (3) full screw threads to be considered reinforced.

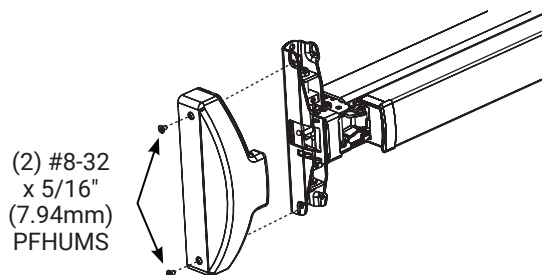
#### ⚠ IMPORTANT:

- Unreinforced Doors use SNB (Sex Nuts and Bolts)
- Unreinforced Frames use Blind Rivet Nuts
- Less Bottom Rod Devices NOT recommended where security is a concern.

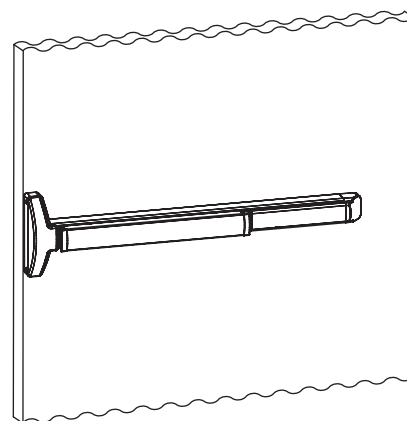
**Figure 4**



**Figure 5**



**Figure 6**



## 5. Pre-Assembly cont'd

### B. Door Reference Lines

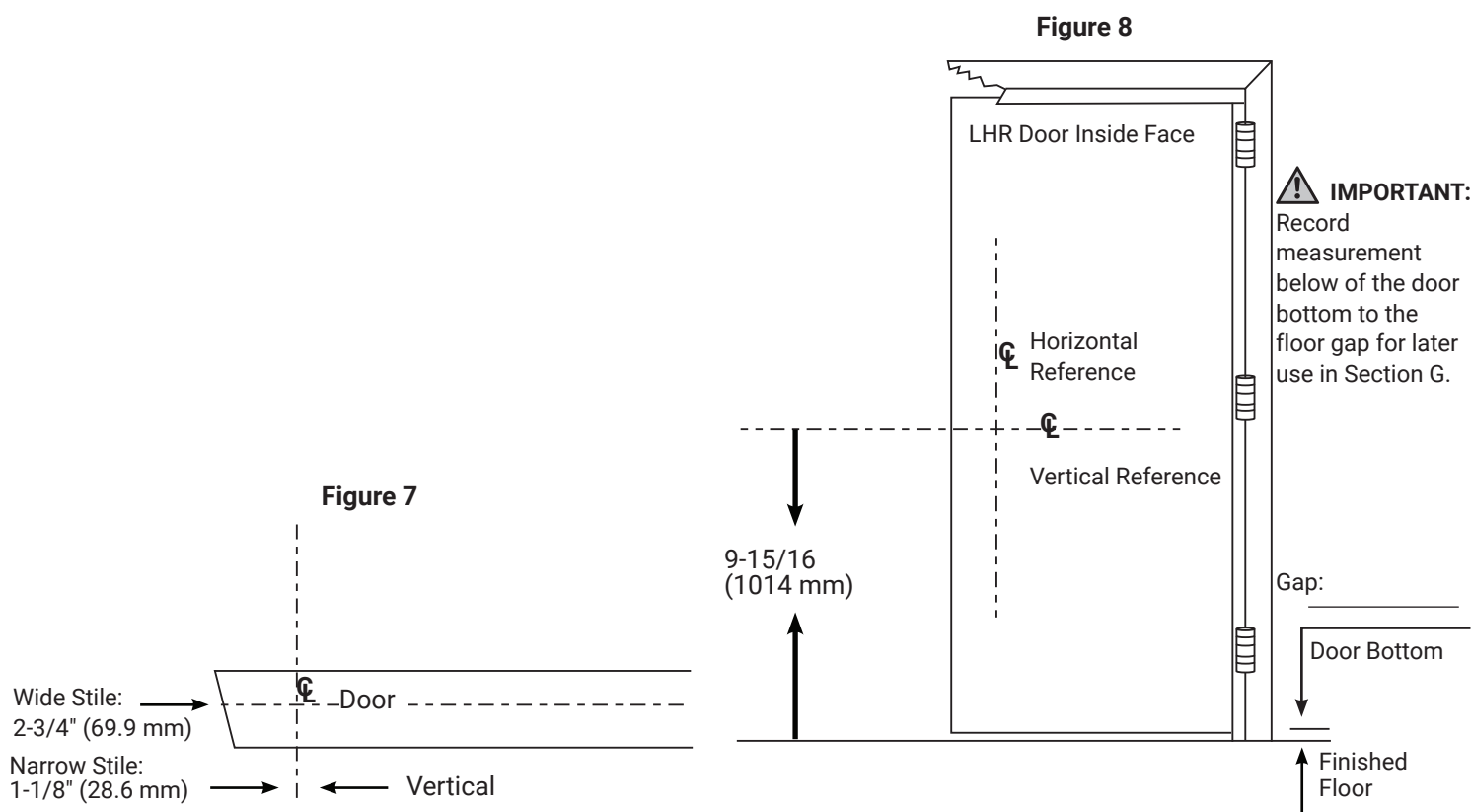
1. Backset is measured from centerline of bevel which is centerpoint of door thickness.

2. Locate and mark horizontal and vertical centerline as shown in Figure 7.

**NOTE:** Standard rail centerline height is 39-15/16" (1015mm) above the finished floor.

3. Measure the gap from bottom of the door to the floor and record in Figure 8 for later use in Section G.

4. Remove the door from the frame.



**Table 1: Door and Frame Preparation**

Hole	Door/Frame	Fastener	Preparation
A	Metal Reinforced	1/4-20 PPHMS	Drill: #7(Ø 0.201") Tap: 1/4-20
	Wood	1/4-20 SNB	Drill: Ø 3/8" thru
	Hollow Metal	1/4-20 SNB	Drill: Ø 5/16 Inside Face and Ø 3/8 Outside Face

### 5. Pre-Assembly cont'd

#### C. Check Device Handing

1. Lock handing is pre-determined by order. Always determine handing from the outside of the door as shown in Figure 9. To change lock handing, remove the four (4) screws from the vertical lifter assembly and remove from the device (Figure 10).
2. Rotate vertical lifter assembly 180 degrees.
3. Place the vertical lifter assembly back into the device. Make sure the vertical lifter sits under the lift block.
4. Re-install screws onto device assembly.

Figure 9

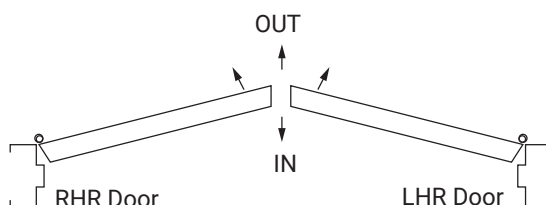
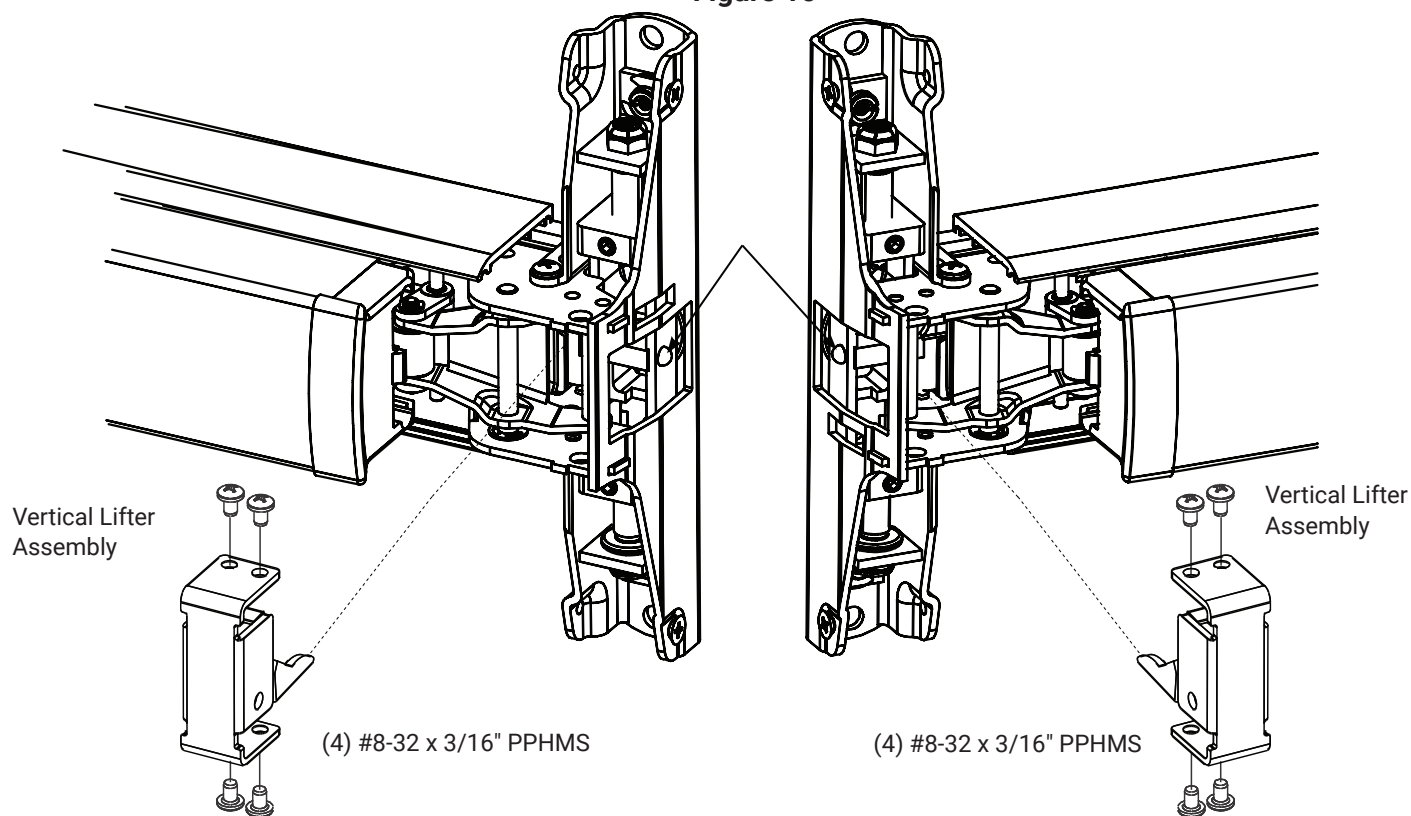


Figure 10





## 5. Pre-Assembly cont'd

### D. Prepare Door and Frame with Templates

**⚠ IMPORTANT:** For Narrow Stile Devices, the Vertical Reference Centerline and the Rod & Strikes Centerline are the same.

**NOTE:** If factory prepared cutouts with field drilled mounting holes are in the door, skip to: Section H Sizing Exit Device. If the door and frame need to be prepared in the field, follow the instructions on templates.

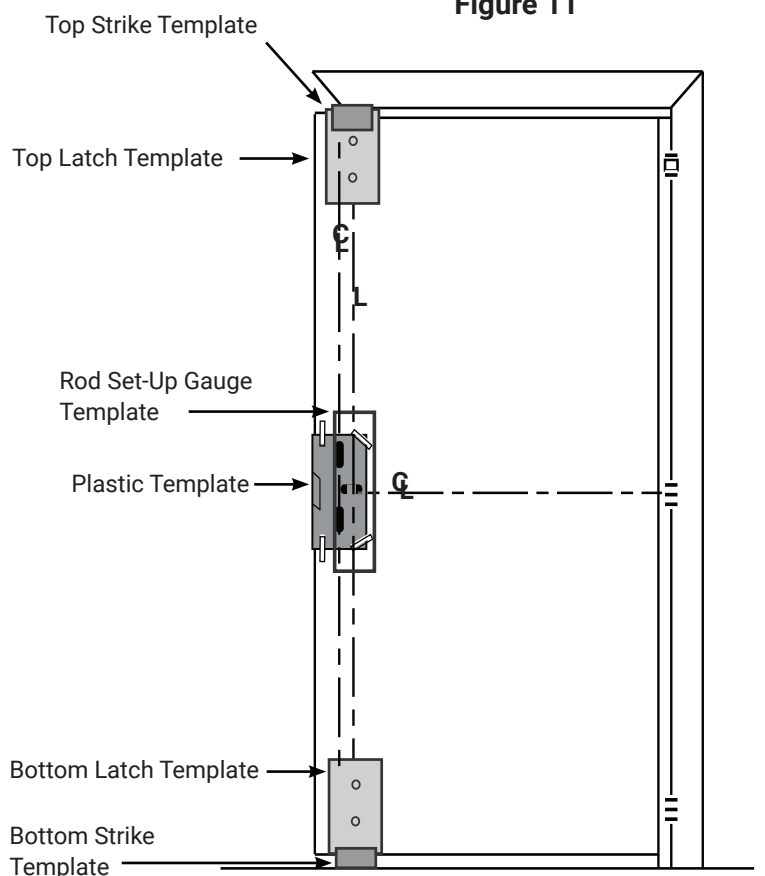
### Plastic Template

Locate and prepare mounting holes as follows (see Figure 11 and Figure 12):

1. Mark the Rod & Strike centerlines as follows:  
Wide Stile - Locate the vertical reference centerline. Measure 11/16" (17.5mm) toward the edge of the door.  
Narrow Stile - Use the vertical reference centerline. Extend line to the top and bottom of the door.
2. Use template and position on door and frame. Align vertical and horizontal reference centerlines on door with notches on template.
3. Tape template to door face. Mark door per template.
4. If trim is used, locate templates packed with trim. Position templates and mark holes per trim instructions.
5. Drill and tap only those holes needed for the device/trim being installed.

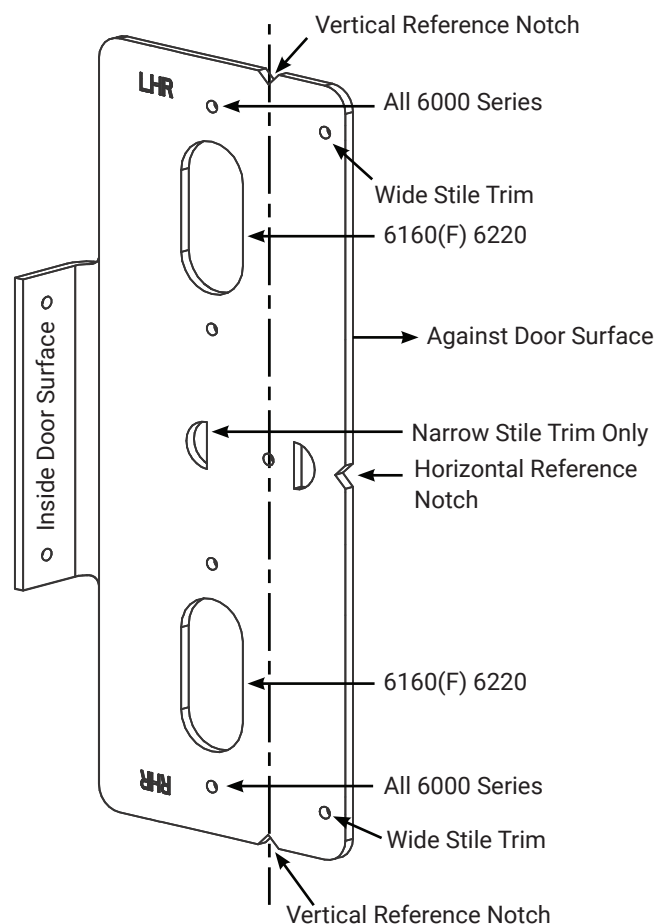
### Template Locations:

**Figure 11**



### Plastic Install Template

**Figure 12**



## 5. Pre-Assembly cont'd

### D. Prepare Door and Frame with Templates cont'd

#### Plastic Template (Device Seat & Trim)

1. Prepare holes as indicated in Figure 13 and "Table 1: Door and Frame Preparation".
2. Unreinforced frames with a total wall thickness of less than 1/8" (3.2mm), require using 10-24 blind rivet nuts to bolt strike.
3. Dimensions given in inches (") and millimeters (mm).
4. Remove template when complete.

**NOTE:** Use templates packed with device. Templates are for reference only, not actual size.

Figure 13

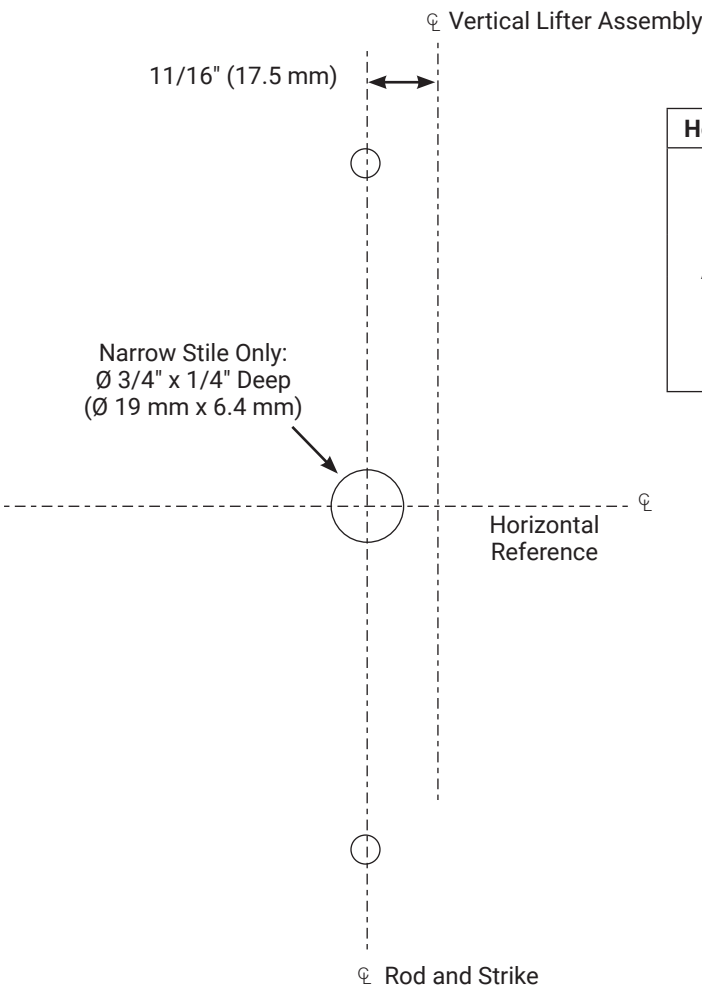


Table 1: Door and Frame Preparation

Hole	Door/Frame	Fastener	Preparation
A	Metal Reinforced	1/4-20 PPHMS	Drill: #7(Ø 0.201") Tap: 1/4-20
	Wood	1/4-20 SNB	Drill: Ø 3/8" thru
	Hollow Metal	1/4-20 SNB	Drill: Ø 5/16 Inside Face and Ø 3/8 Outside Face

## 5. Pre-Assembly cont'd

### D. Prepare Door and Frame with Templates cont'd

#### Top and Bottom Latch Templates

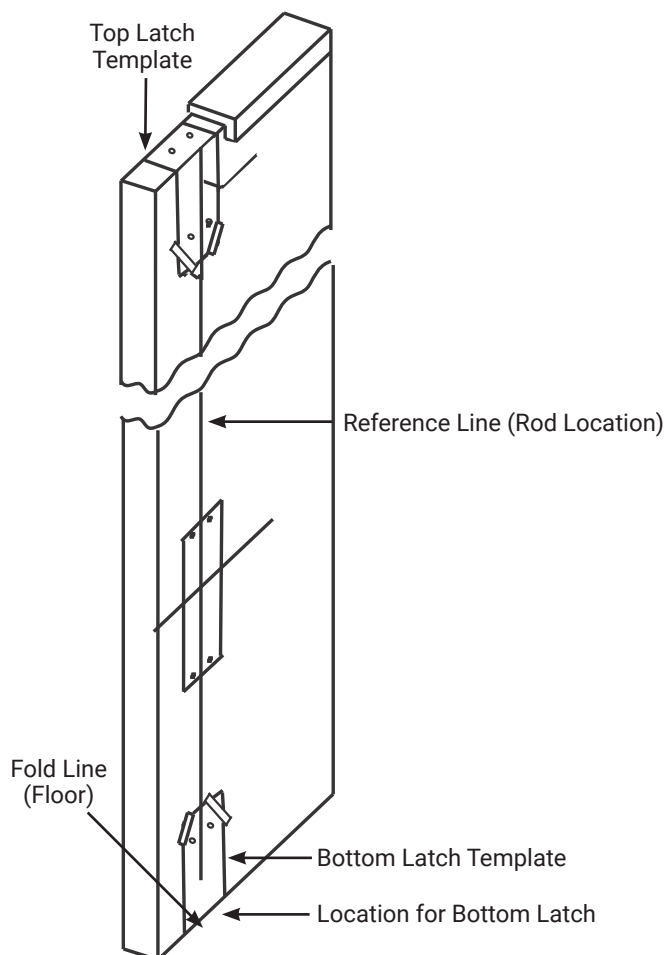
1. Locate the Top Latch Template. See Figure 14 and template for correct positioning.
2. Fold and tape the paper template and mark holes on the door.
3. Drill and tap the latch holes as instructed.
4. Remove template when complete.
5. Complete steps 1 through 4 for the Bottom Latch Template.

#### Top Strike Template

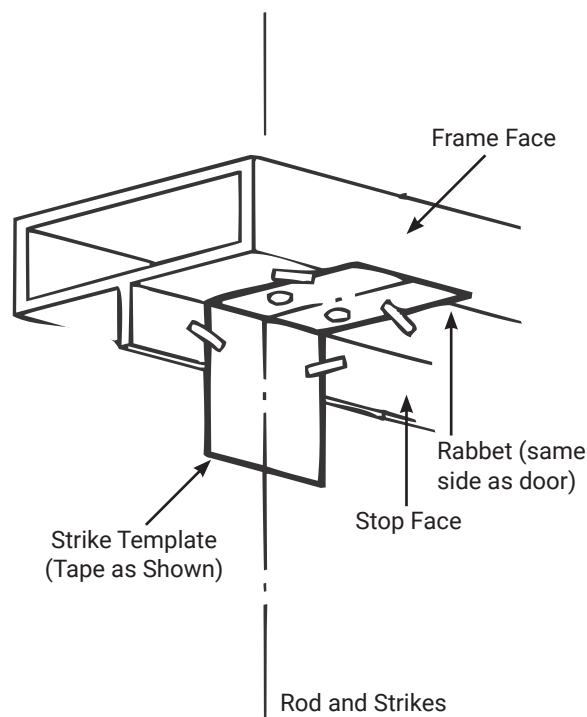
1. Locate the Top Strike Template. See Figure 14 and template for correct positioning.
2. Fold and tape the paper template and mark holes on the frame.
3. Drill and tap the holes as instructed.
4. Remove template when complete.

**Figure 14**

Door with Top and Bottom Latch Templates in Place



Door with Top Strike Template in Place

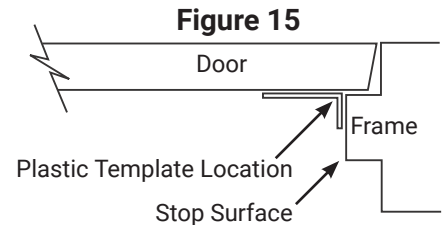


### 5. Pre-Assembly cont'd

#### E. Sizing Exit Device

1. Bar must be cut to size if gap between bar and stop surface is less than 2-7/8" (73mm). See Figure 15, Figure 16 and "Table 2: Standard Device Sizing".
2. With door closed, measure 2-7/8" (73) from stop surface on hinge side of door. Mark vertical reference line on door.
3. Open door. Align mounting holes in latch head with mounting holes in the door. Mark touch bar where it crosses the mark from step 2 above.
4. Before cutting, ensure end cover is in place and there is no gap between it and the touch bar. Cut touch bar on mark from step 3 above. Remove template when complete.

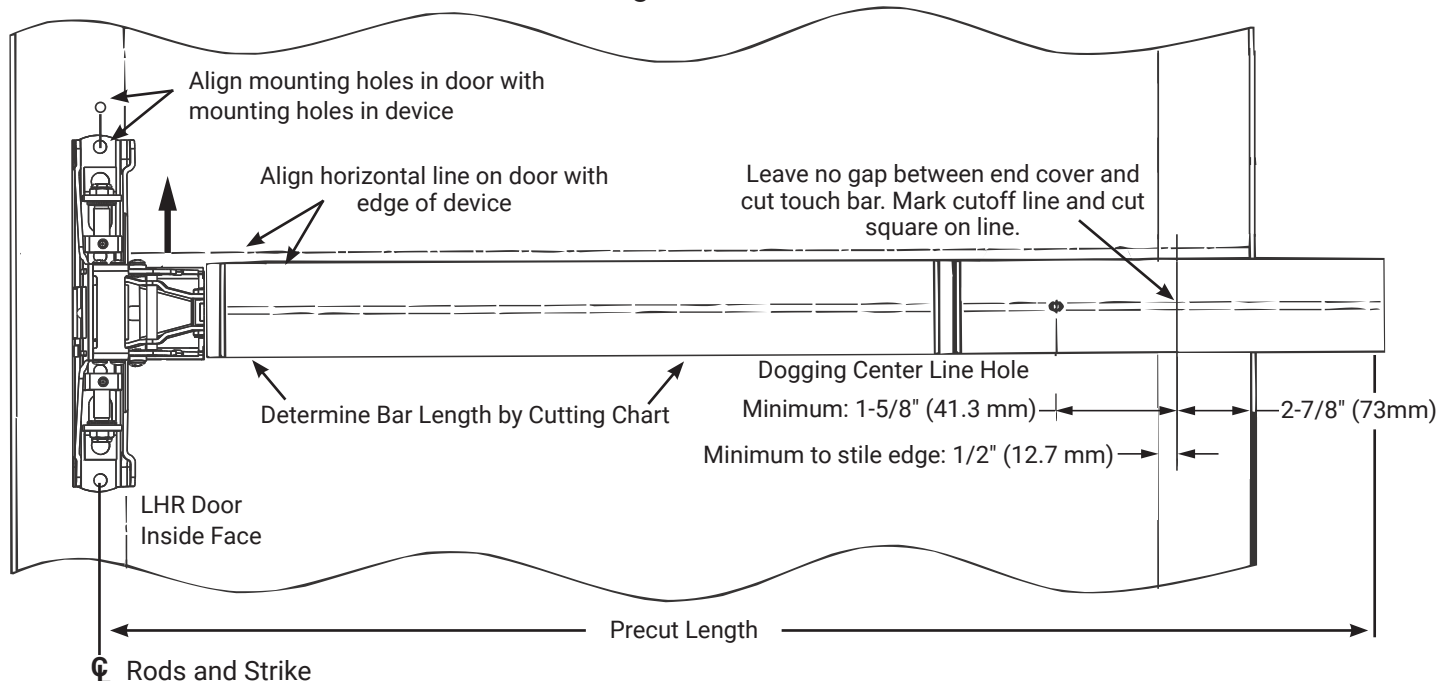
**NOTE:** For devices with dogging, hole must be at least 1-5/8" (41.3mm) from cut end of device.



**Table 2: Standard Device Sizing**

Catalogue Size	Door Width		Precut Length	
	Minimum	Maximum	Narrow	Wide
24	24" (610 mm)	24" (610 mm)	—	18.426" (468 mm)
36	30" (762 mm)	36" (915 mm)	32.196" (818 mm)	30.426" (773 mm)
42	37" (940 mm)	42" (1067 mm)	38.196" (970 mm)	36.426" (925 mm)
48	43" (1092 mm)	48" (1920 mm)	44.156" (1122 mm)	42.036" (1068 mm)

**Figure 16**



# 6160(F)/6220 Series

## Exit Device

### Installation Instructions

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## 6. Assembly

### A. Rod/Latch Assembly and Adjustment

#### 6160 (F) Series

1. Position the door flat with the device side upward, see Figure 17.
2. Set the length of the top rod assembly by determining door length. Slide the tube over the top rod and attach with one (1) cotter pin.

**NOTE:** For alternate door opening heights, locate & drill a 1/8" (3mm) diameter hole in the top rod using the tube as a drill guide.

3. Connect the top and bottom rods to the arm/bracket assemblies using two (2) cotter pins for each assembly.
4. Align the rod setup gauge template over the device cutouts and centerlines. Tape template to the door face.
5. Connect the top latch to the rod assembly.
6. Set the top latch and rod assembly in place on door. Maintain location of 1/8" (3mm) from the top of the door.

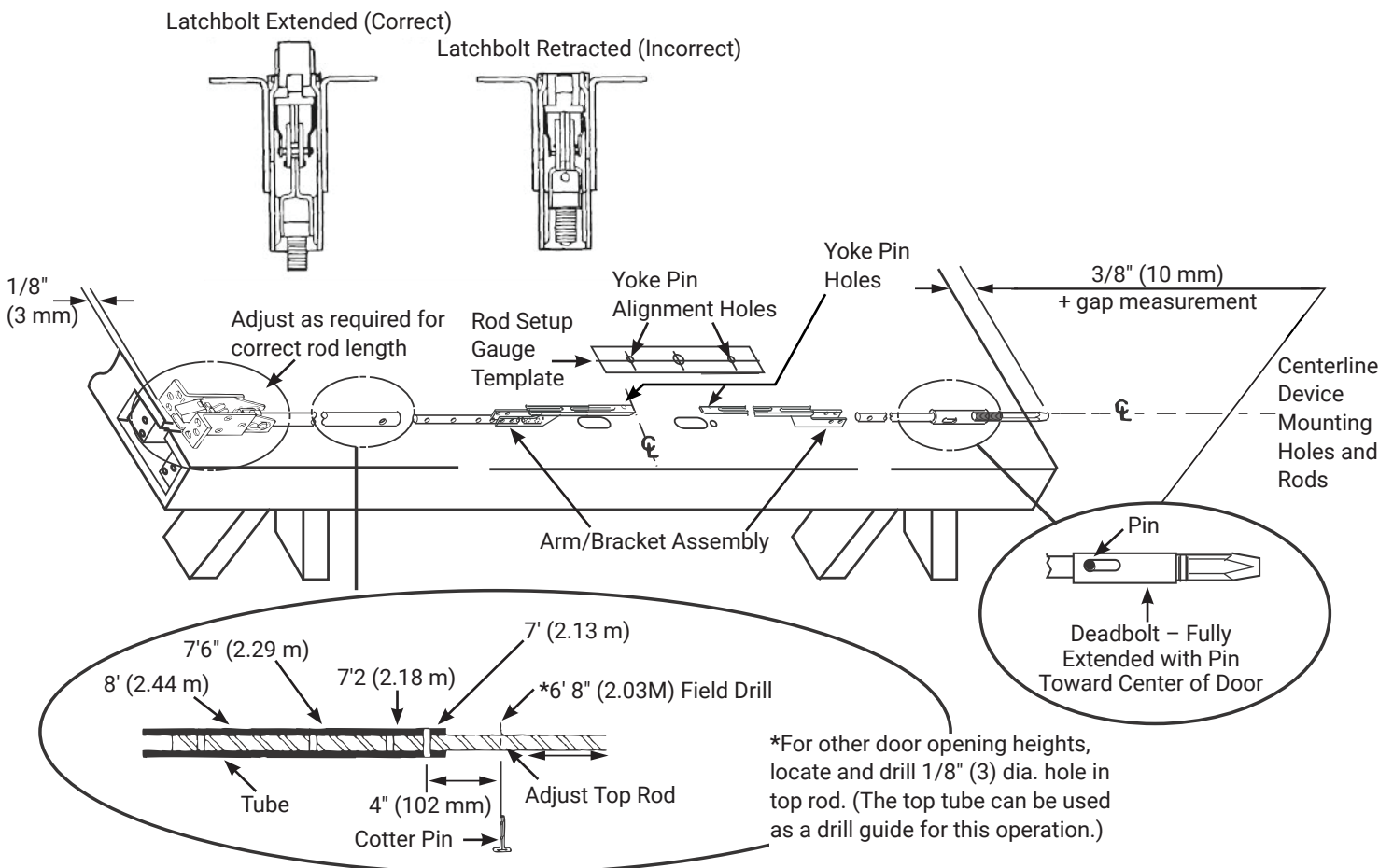
7. Align the yoke pin hole into the arm/bracket assembly with the alignment hole on the rod setup gauge template. Adjust the top latch and rod assembly to proper alignment. Latchbolt must be extended.

**⚠ Important:** Be sure to extend the Latchbolt prior to aligning the top latch and rod assembly.

8. Thread the bottom bolt into the bottom latch assembly. Set the bottom latch rod assembly in place on door.
9. Align the yoke pin hole in the bottom arm/bracket assembly with the alignment hole on the rod setup gauge template. Adjust the bottom bolt until it protrudes 3/8" (10mm) plus the gap measurement from Section H, past the bottom edge of door.
10. Be sure the bottom bolt is fully extended.

Top Latch Assembly

Figure 17



## 6. Assembly cont'd

### A. Rod/Latch Assembly and Adjustment cont'd

#### 6220 Series

1. Position the door flat with the device side upward, see Figure 18.
2. Set the length of the top rod assembly by determining door length. Slide the tube over the top rod and attach with one (1) cotter pin.

**NOTE:** For alternate door opening heights, locate & drill a 1/8" (3mm) diameter hole in the top rod using the tube as a drill guide.

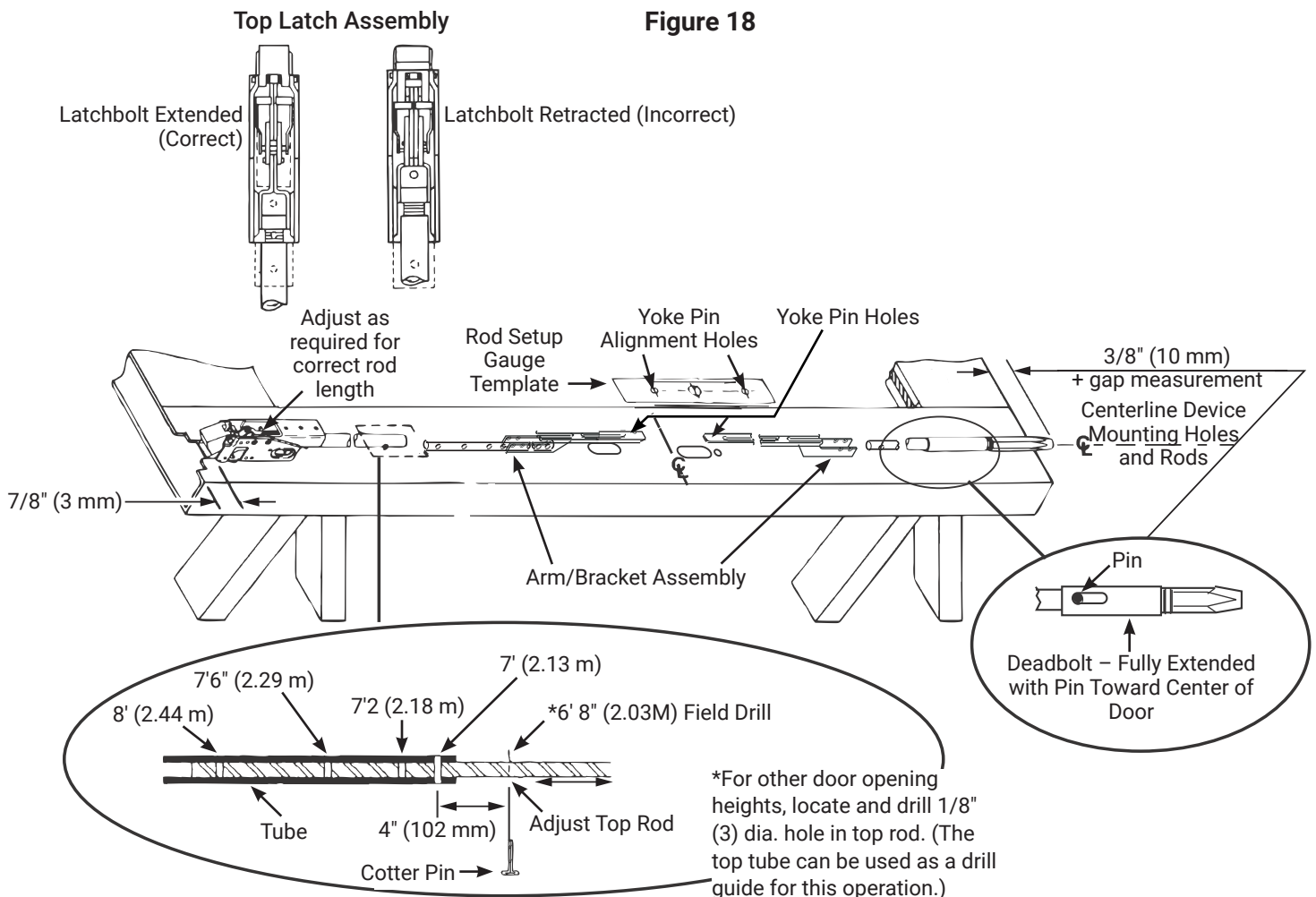
3. Connect the top and bottom rods to the arm/bracket assemblies using two (2) cotter pins for each assembly.
4. Align the rod setup gauge template over the device cutouts and centerlines. Tape template to the door face.
5. Connect the top latch to the rod assembly.
6. Set the top latch and rod assembly in place on door. Maintain location of 7/8" (22mm) from the top of the door.

7. Align the yoke pin hole into the arm/bracket assembly with the alignment hole on the rod setup gauge template. Adjust the top latch and rod assembly to proper alignment. Latchbolt must be extended.

**⚠ Important:** Be sure to extend the Latchbolt prior to aligning the top latch and rod assembly.

8. Thread the bottom bolt into the bottom latch assembly. Set the bottom latch rod assembly in place on door.
9. Align the yoke pin hole in the bottom arm/bracket assembly with the alignment hole on the rod setup gauge template. Adjust the bottom bolt until it protrudes 3/8" (10mm) plus the gap measurement from Section H, past the bottom edge of door.
10. Be sure the bottom bolt is fully extended.

**Figure 18**



## 6. Assembly cont'd

### B. Install Rod Assembly

- Slide rod assemblies into the door as follows:
  - For 6160(F) — Attach top latch and bottom bolt housing assemblies with six (6) #10-24 x 1/2" (12.7mm) PFHMS each, see Figure 19.
  - For 6220 — Attach top latch and bottom bolt housing assemblies with two (2) #10-24 x 1/2" (12.7mm) PRHMS each, see Figure 20.
- Thread #8-32 (PSS) set screw into yoke pins, hex socket end first until 3/8" (9.5mm) extends outside yoke pin.
- Thread #8-32 x 2" (50.8mm) PPHMS temporary screws into slotted end of yoke pins, until seated to hex head set screw.

- Install two (2) yoke pin assemblies into the arm and bracket assemblies.

**NOTE:** Be sure to check the rod action as follows:

- The top rod should move freely until the latch bolt stays retracted and it should release after the bolt releases.
- The bottom rod should move up and down freely, at least 9/16" (14mm).

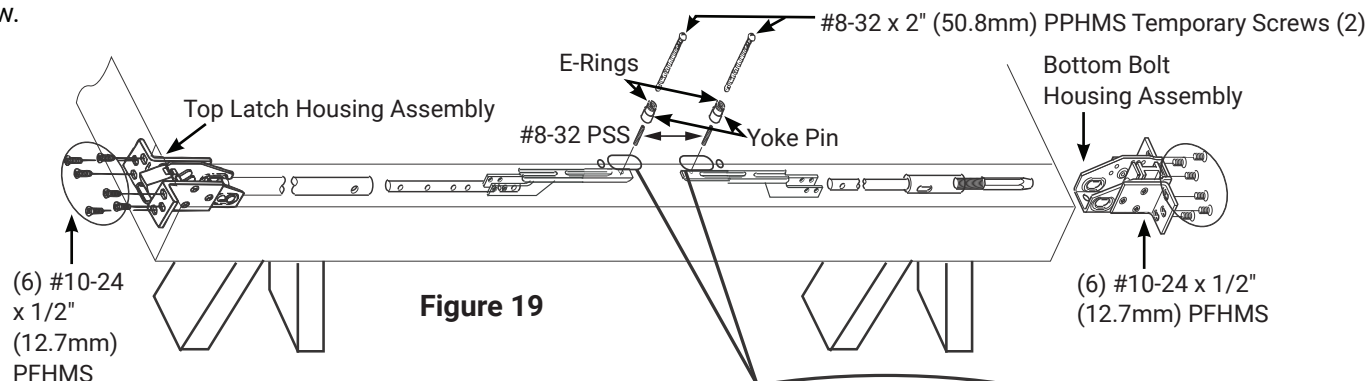


Figure 19

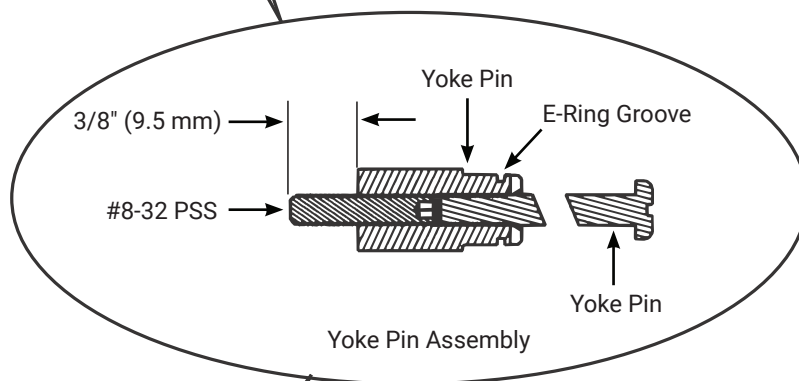
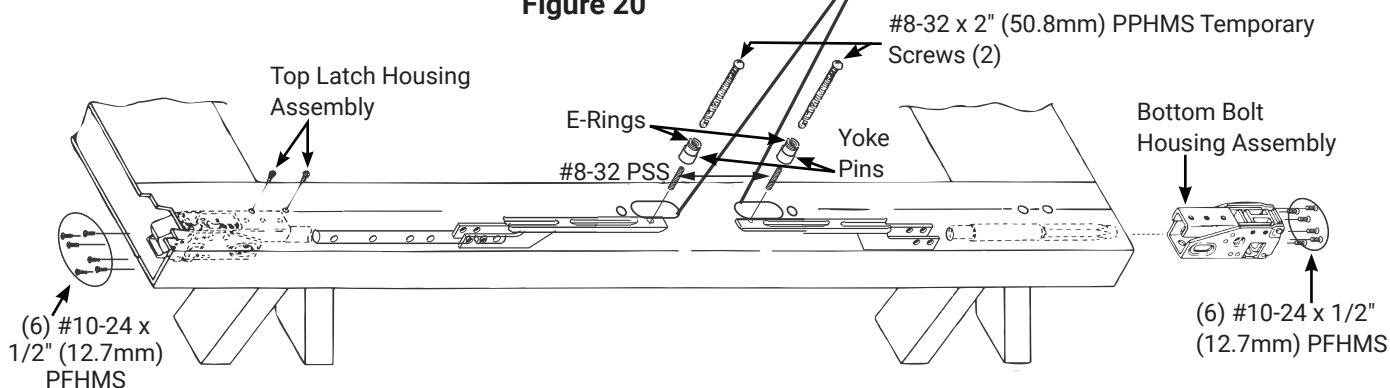


Figure 20





### 6. Assembly cont'd

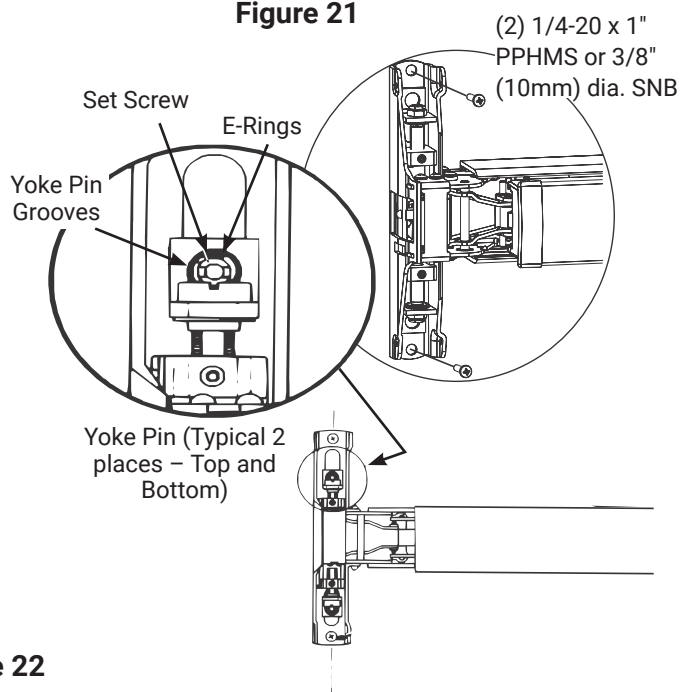
#### C. Install Device Assembly

1. Mount trim following instructions packed with trim (optional).
2. Mount shims following instructions packed with shim kit (optional).
3. Seat the device in place using the Temporary Screws (see Figure 20 in "Install Rod Assembly" on page 15) to position the Yoke Pins to the Latch Head.
4. Install the E-Ring into the Yoke Pin grooves as detailed in Figure 21.
5. Fasten device assembly to door reinforcement with 1/4-20 x 1" PPHMS or 3/8" (10mm) diameter sex nuts or trim studs.
6. Remove temporary screws from yoke pins.
7. With device leveled, center on horizontal reference line of door. Using the rear clamp as a template, locate the rear

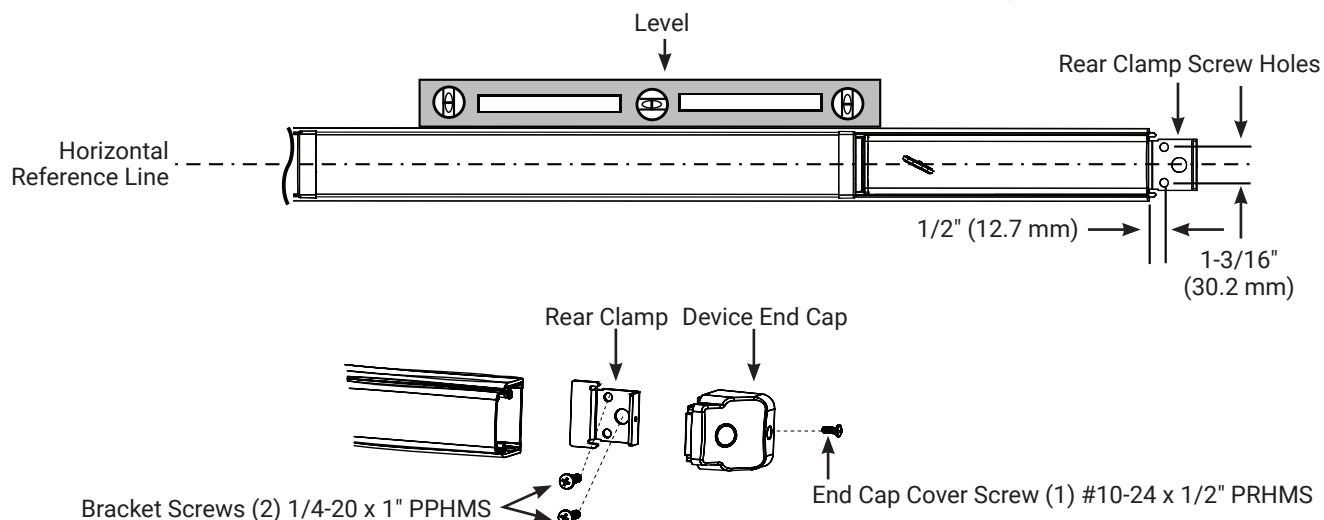
clamp screw holes (Figure 22).

8. Mark and drill rear clamp holes and mount rear clamp using two (2) 1/4-20 PPHMS.
9. Fully tighten device screws. Secure end cap cover with one (1) #10-24 x 1/2" (12.7mm) PRHMS.
10. Rehang door.

**Figure 21**



**Figure 22**





## 6. Assembly cont'd

### D. Install Top and Bottom Strikes

The following must be done when setting the Top Strike (see Figure 12 and Section N):

1. Install Top Strike into the door frame:
  - #761 Strike – use two (2) #10-32x3/8" (9.5mm) PFHMS.
  - #791 Strike – use two (2) #10-24x3/4" (19.1mm) PFHMS (reserve the third screw to install later).
2. Make sure the Strike is in correct alignment with the Top Latch.

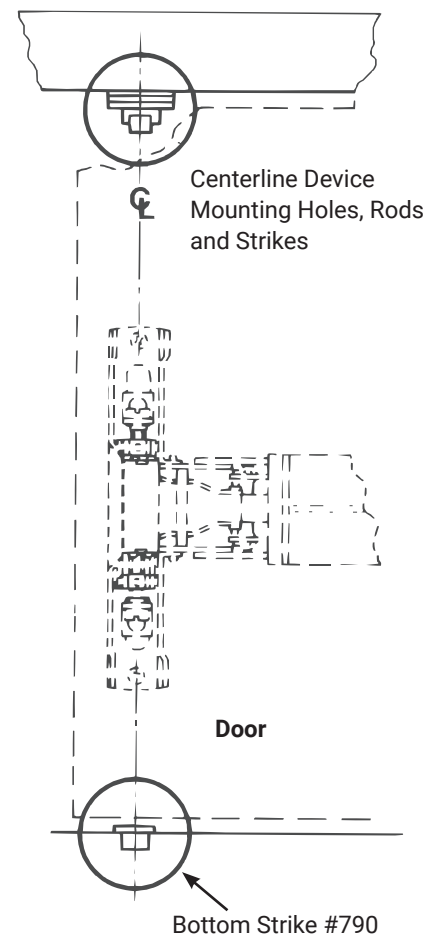
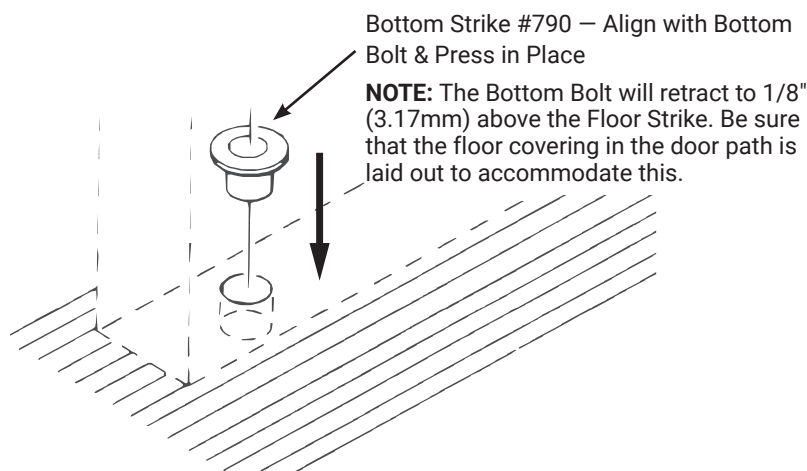
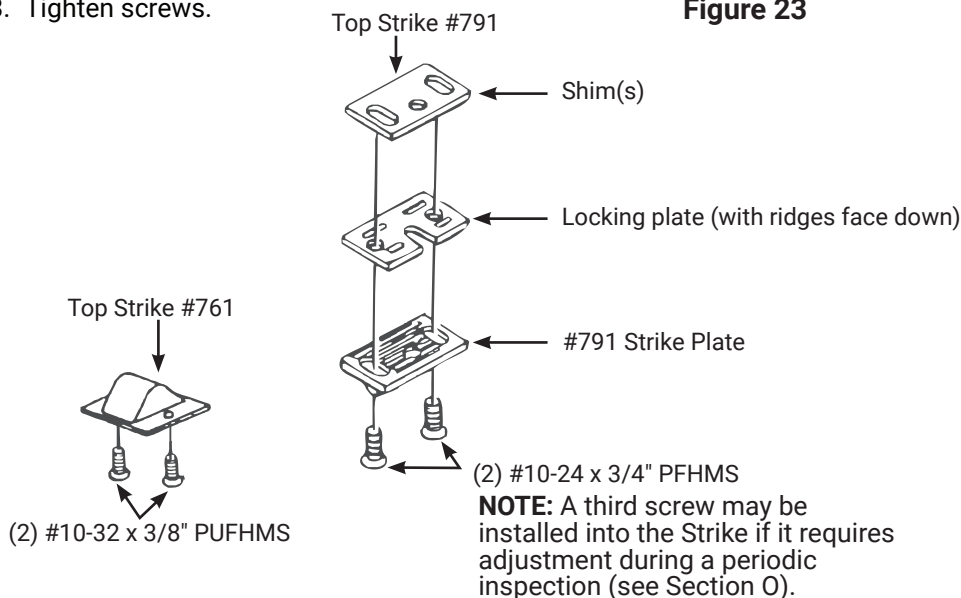
**NOTE:** There are two (2) shims supplied with the #791 Strike. Add them as needed if the Strike does not seat properly into the Top Latch.

3. Tighten screws.

The following must be done when setting the Bottom Strike #790 Template (door must be closed):

1. Locate the Bottom Strike template, see Figure 12 and follow instructions on the template for correct positioning.
2. Fold and tape the paper template on the floor. Mark where the hole will be placed for the Strike.
3. Drill a hole to the depth advised on the template.
4. Remove the template.

**Figure 23**



### 6. Assembly cont'd

#### E. Top and Bottom Rod Adjustment

**NOTE:** Rods should move freely inside the door. Bolts extend automatically and should deadlock when door closes and top strike hits tripping lever. Top bolt should retract flat when the touch bar is fully depressed. Bottom bolt should travel 1/2" and engage 3/8" into the strike when it is in the down position, without dragging on the floor surface when it is in the up position. To adjust the Rod for Proper Bolt Engagement:

1. Use a 3/32" hex wrench to loosen the set screws.
2. Adjust the top rod first with a top adjusting screw. With the device in the dogged position (bolts retracted) or with the touch bar depressed, adjust the top rod so the top latch is flush and the holdback feature is engaged. Lengthen the rod an additional 1/2 turn for proper latchbolt positioning.

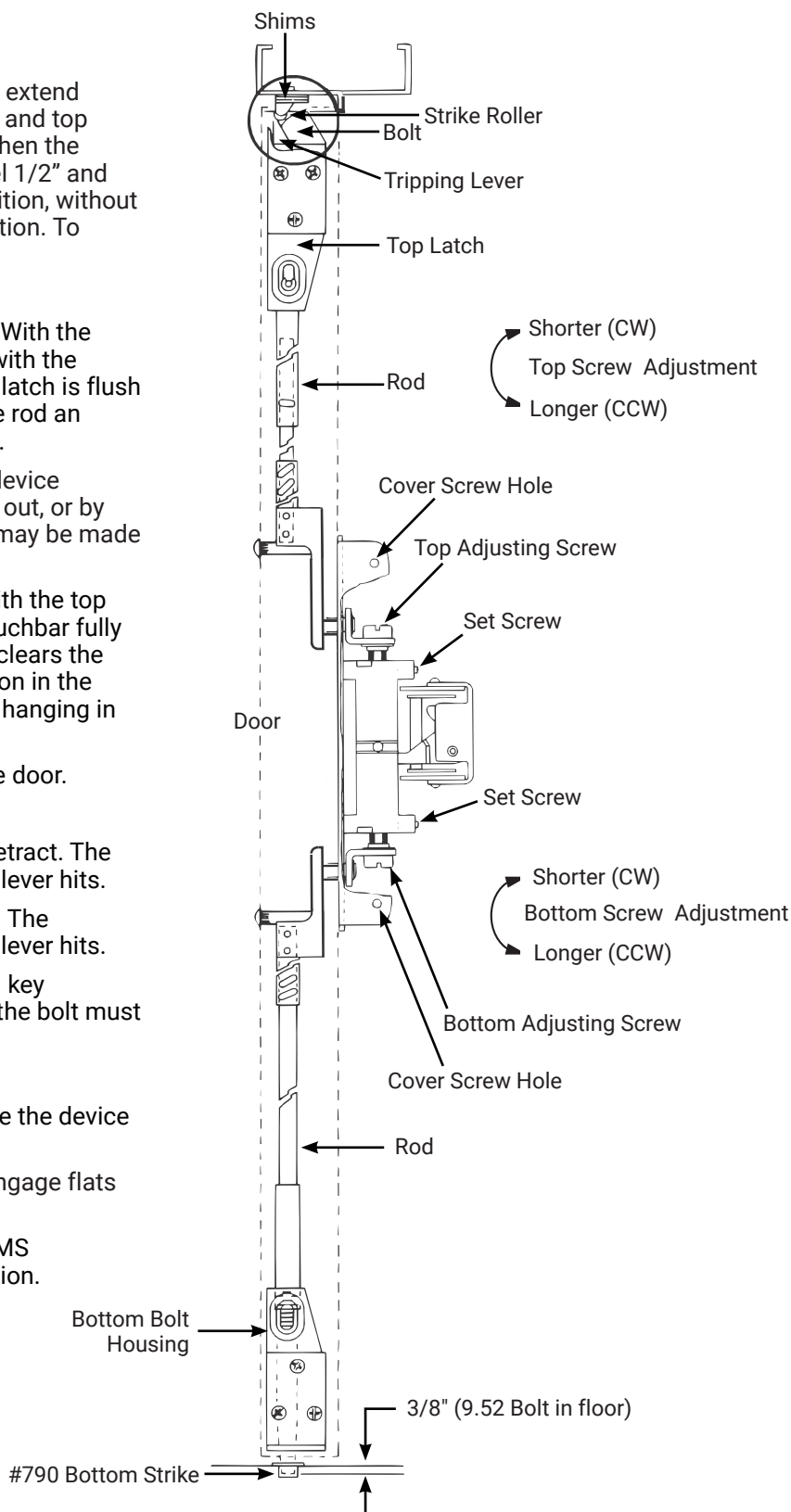
**NOTE:** If adjusting screws bottom out before proper device operation, adjust the device by threading the rod in or out, or by removing the door and device so larger adjustments may be made by moving the cotter pin to a different hole in the rod.

3. Adjust the bottom rod with the adjusting screw. With the top latch retracted in the holdback position and the touchbar fully depressed, adjust the bottom rod so the deadbolt clears the strike by 1/16". The bottom rod should be in position in the active case with the square head of the connector hanging in the guide.
4. Check device operation by opening and closing the door.
5. Check latch bolt retraction on the device:
  - a. Depress the touch bar, the latchbolt must fully retract. The latchbolt should stay fully retracted until the trip lever hits.
  - b. Actuate the trim, the latchbolt must fully retract. The latchbolt should stay fully retracted until the trip lever hits.
  - c. Depress the touch bar while turning the dogging key clockwise. The bar must remain depressed and the bolt must remain retracted.
  - d. Fully tighten the device screws.
6. Retighten both the top and bottom set screws once the device is adjusted and fully functional.

**NOTE:** To avoid thread damage, be sure set screws engage flats on adjusting screws.

7. #791: Install the third screw 10-24 x 3/4"(19) PFHMS (from Section M) into the top strike to lock in position.

Figure 24

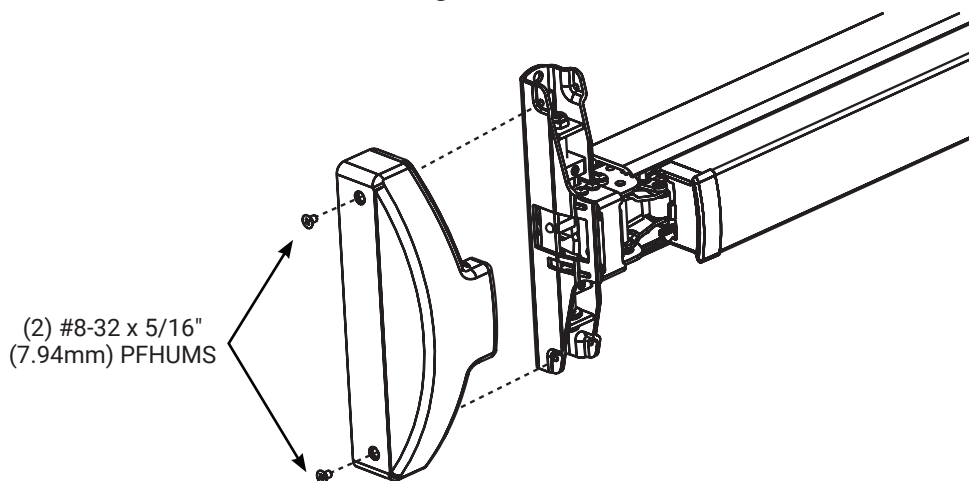


## 6. Assembly cont'd

### F. Install Device Cover

1. Secure Latch Head cover with two (2) #8-32 x 5/16" (7.94mm) PFHUMS. Fully tighten screws (Figure 25).

Figure 25



## 7. Operation and Maintenance

1. Finally, check and inspect operation of (Figure 15):
2. Trim and touch bar
3. Strike plate and bolt engagement
4. Key (optional)
5. Periodically remove covers, inspect and coat mechanisms with a silicone base lubricant. This is required in corrosive environments for proper functionality.
6. Check mounting fasteners periodically and tighten if loose. Apply screw locking compound or change part fasteners if screws continue to back out.
7. Periodic checks (and adjustments) of strikes are required to compensate for wear and tear (e.g. door sagging).

Figure 26

