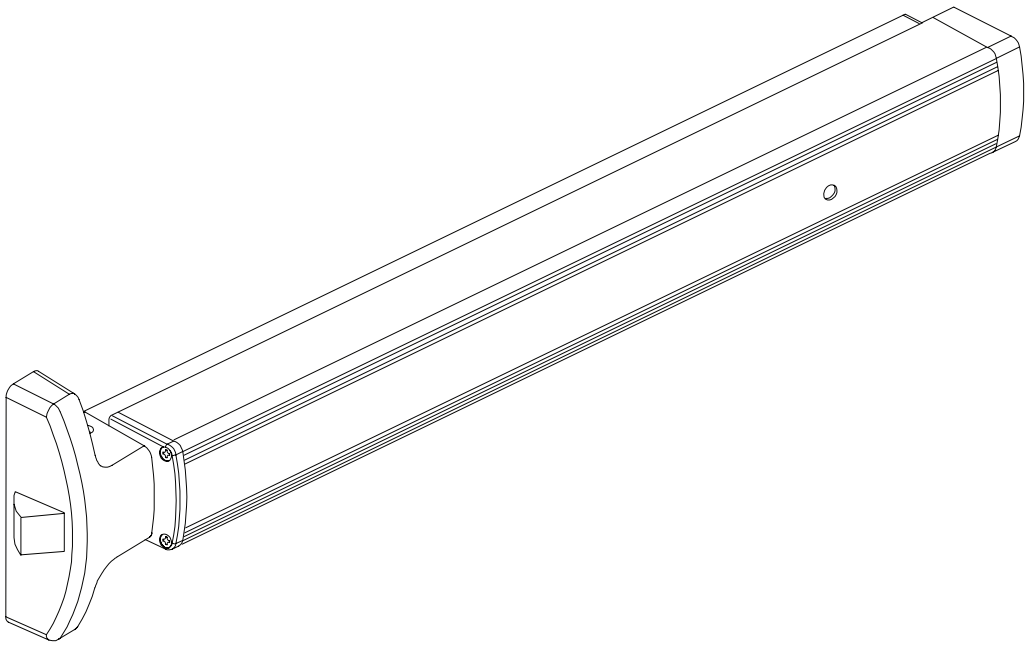
ININST.1001

Rim Panic Device

1790 / MEL 1790 Touchbar

FALCON®

Installation Instructions



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ALLEGION™

Customer Service

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ININST.1001 Rev. 10/23-h

BEFORE INSTALLATION

1. Check "Parts List" (see page 20).

2. Prepare door using template on page 18.

3. Prepare frame using template on page 19.

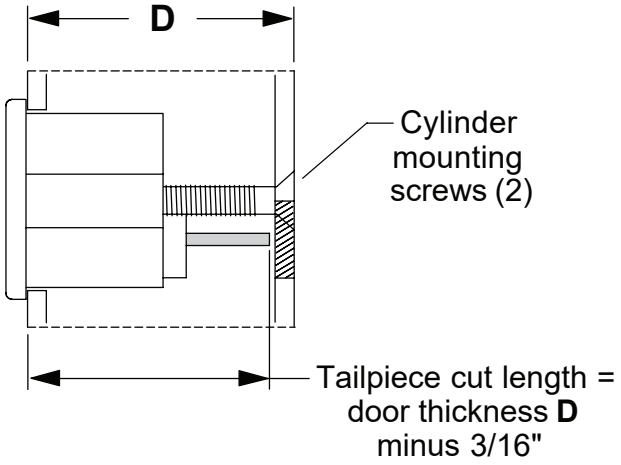
4. If door width is non-standard, cut device (see page 14).

INSTALLATION

1 Install outside cylinder. (If no outside cylinder, go to Step 3.)

1.1. Cut cylinder tailpiece to correct length.

> **⚠ NOTE**
>
> If 5/32" spacer is used, as in Kawneer applications, cut length is 1-23/32" for a 1-3/4" thick door.



1.2. Install 1-1/4" Rim cylinder into door and secure with two mounting screws. Screws must be flush with surface of door. **Tailpiece should be horizontal as shown**.

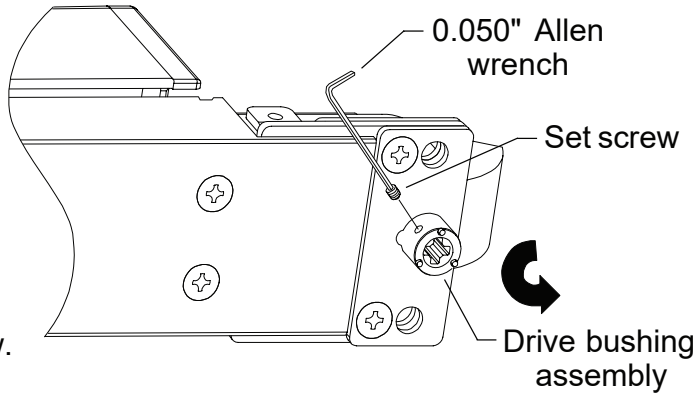
2 If necessary, change key function to hold back (HB).

> **⚠ NOTE**
>
> Device is set at factory for night latch (NL) function.
> To convert to HB, perform Steps 2.1-2.3.
> For NL function, skip Steps 2.1-2.3 and go to Step 3.

2.1. Remove the set screw from the drive bushing assembly using 0.050" Allen wrench supplied in PKG.133.

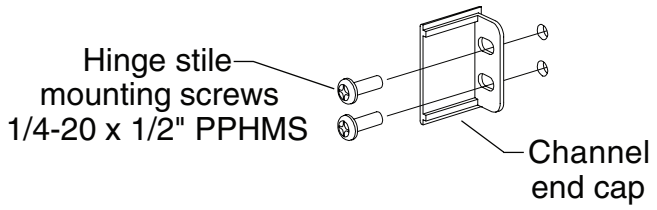
2.2. Rotate internal drive bushing counterclockwise until it stops against the internal stop.

2.3. Maintain position of drive bushing and continue. Do not reinstall set screw.

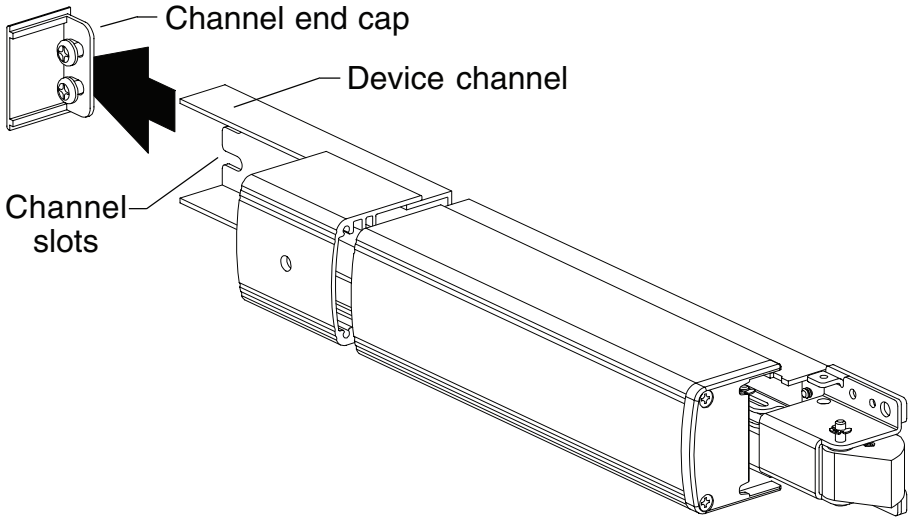


3 Mount device.

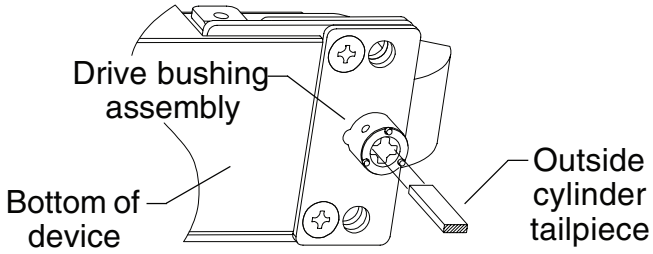
3.1. Start two hinge stile mounting screws (1/4-20 x 1/2" pan head) in channel end cap. Leave screws loose.



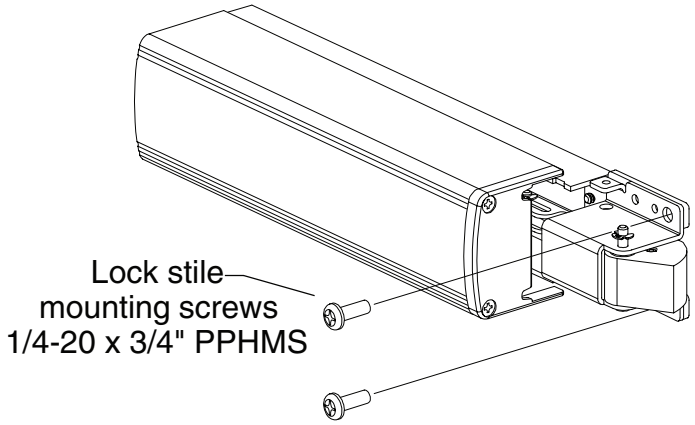
3.2. Slide device channel under channel end cap aligning channel slots.



3.3. If using outside cylinder, align drive bushing assembly over tailpiece maintaining drive bushing position.

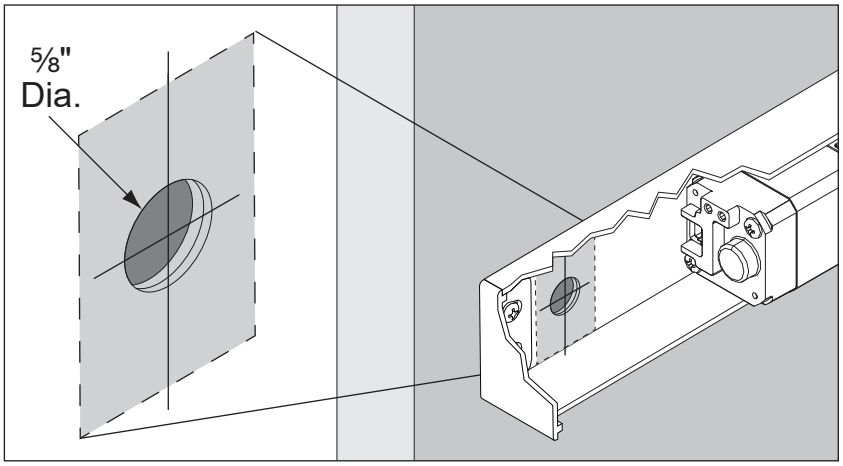


3.4. Attach device to door at lock stile using two lock stile mounting screws (1/4-20 x 3/4" pan head) and tighten securely all four mounting screws.



4 Prepare hole and wire MEL/RX device. (If device is not MEL/RX, go to Step 5.)

4.1. Drill wire access hole in device channel and door.

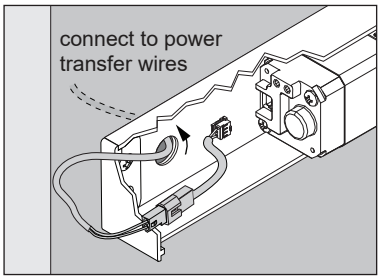


⚠ NOTE

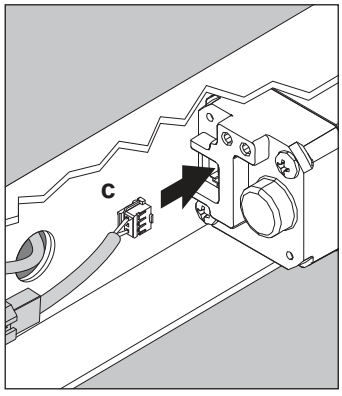
Hole must be free of burrs.

4.2. Route MEL cable thru device.

Route furnished 6’ MEL two-piece cable thru device end mounting bracket to connect MEL device to power transfer wires.



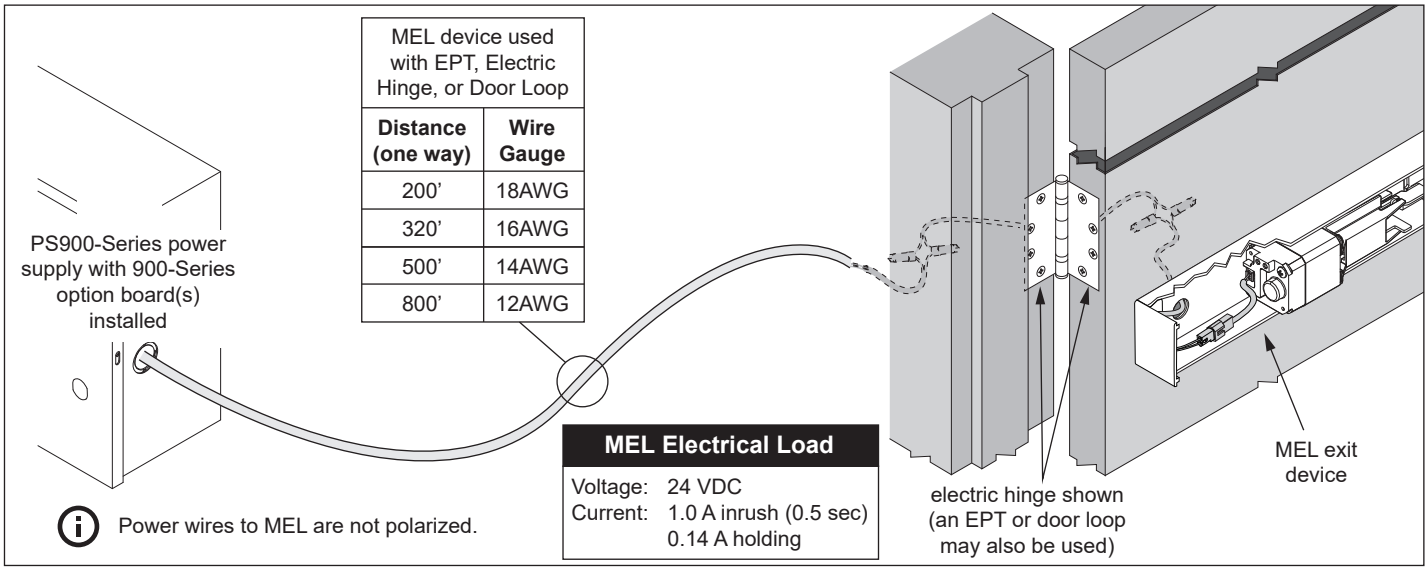
4.3. Plug cable connector into MEL motor.



⚠ WARNING

To avoid risk of electric shock, turn off AC power to power supply before installing or wiring option board.

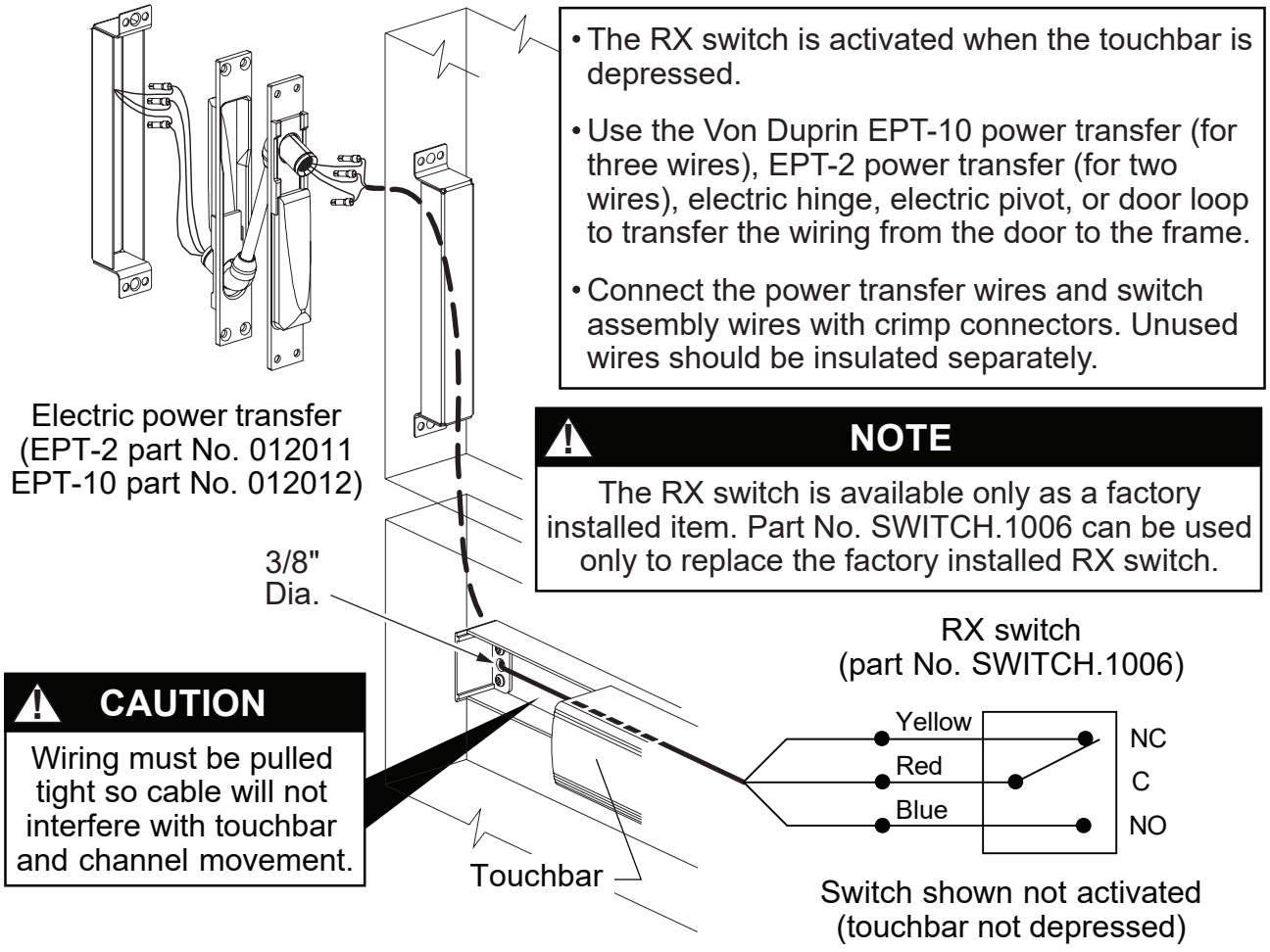
4.4. Complete Wiring



4.5. Confirm equipment compatibility

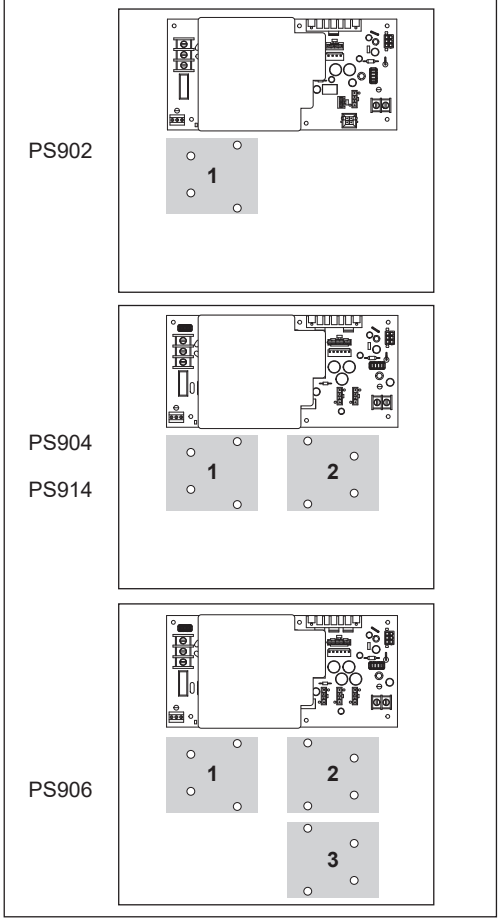
MEL is compatible with the following equipment (refer to individual instructions as needed):
PS900-Series power supplies - PS902, PS904, PS906, PS914
900-Series option boards - 900-2RS, 900-4R, 900-4RL

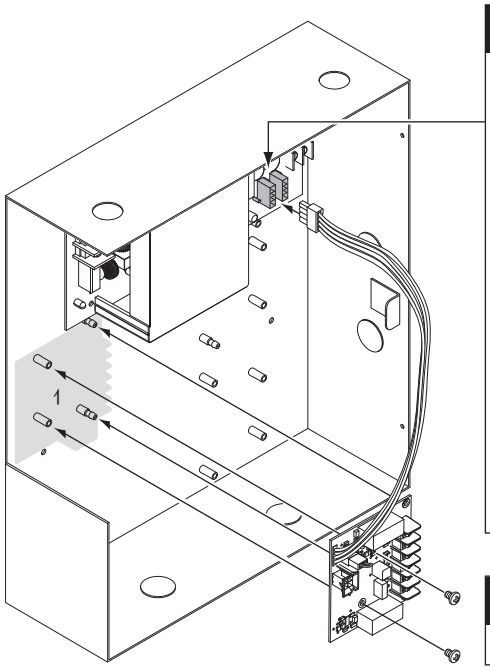
4.6. Wire RX switch as shown below.



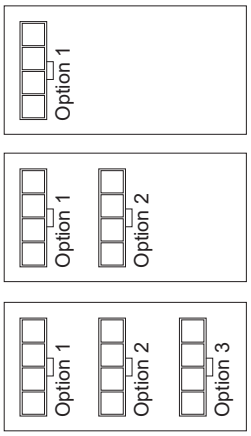
4.7. Install 900-2RS, 4R, or 4RL option board(s) into power supply

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





b **Plug Option Board Cable into any Available Option Connector**



c **Secure Board(s) with Screws**

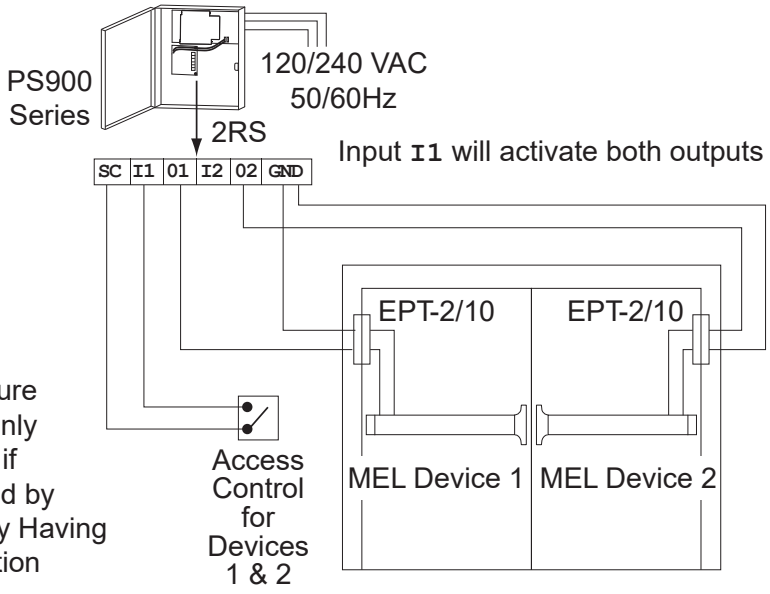
WARNING

Fire alarm (FA) option board required if MEL is installed in fire exit hardware.

Notes:
1. 24 VDC output setting required when MEL device connected.
2. If installing board in location 2 or 3, rotate board 180˚.
3. Latchbolt retraction of (2) sequenced MEL devices requires more than 1 second to complete.
4. When powering multiple components, verify that the amperage requirements of all components combined does not exceed the power supply output rating.

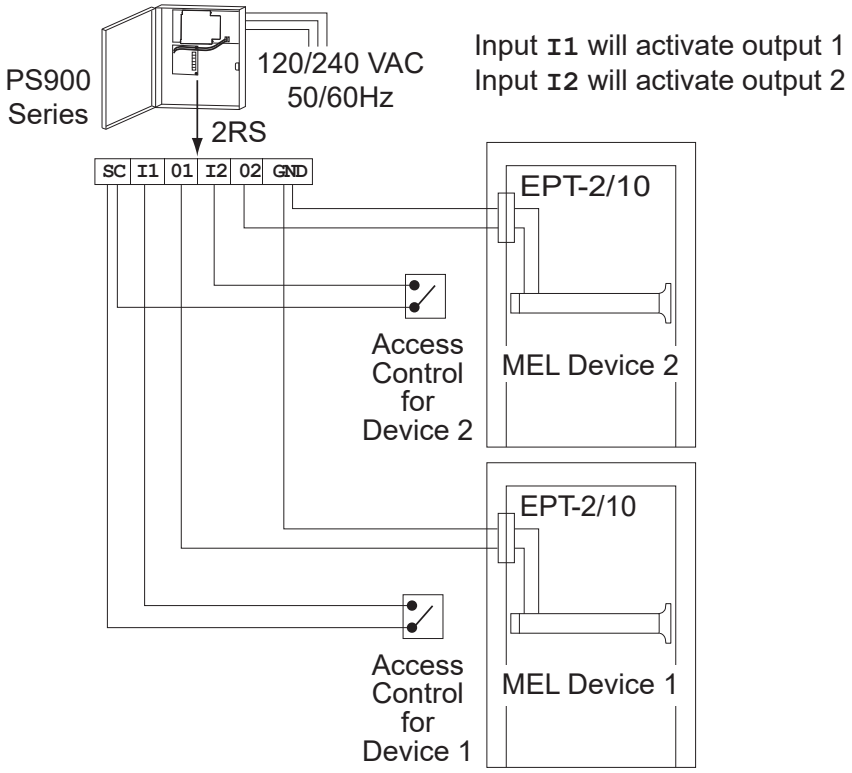
4.8. Connect input and output wires to option board (2RS shown)

Sequential Mode - Typical Wiring



Note:
Fail secure output only allowed if approved by Authority Having Jurisdiction

Individual Mode - Typical Wiring



4.9. Check operation

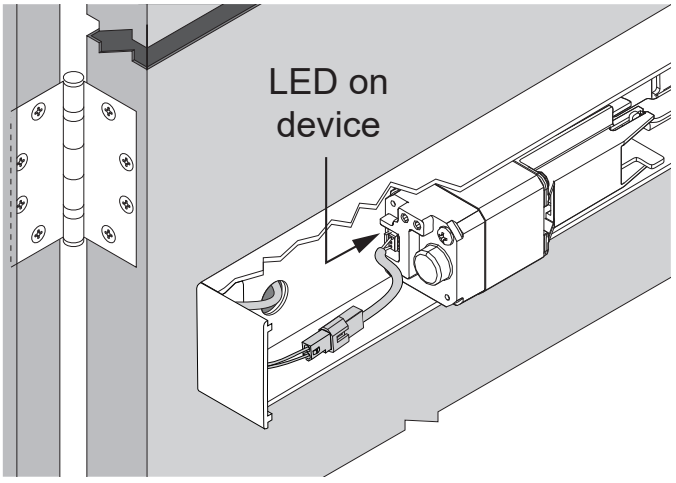
a. Activate each input and verify all MEL devices operate properly.
b. If any device does not operate properly, see next page for troubleshooting.

4.10. MEL Troubleshooting

If necessary, troubleshoot operation (LED is only visible with the mechanism case removed)

Power at the MEL	MEL Response	Condition/Solution
24 VDC	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** Remove power. Depress pushbar and make sure latchbolt retracts and extends fully. If necessary, disconnect any vertical rods or mortise lock from device center case, and reapply power. If motor holds, mechanical adjustments may be required per the device instructions.*
	LED - flashing green/red Latchbolt - not retracted	**Excessive tamper (while power applied, the pushpad was pulled out at least 3 times)** Wait 15 seconds and latchbolt will retract again OR remove and reapply power to clear condition.
24 VDC 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.
29 VDC or greater	LED - flashing red Latchbolt - will not retract	**Input voltage is too high for proper operation** Wrong power supply, power supply defective.
13 VDC 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 24 VDC, then reapply AC power and verify proper operation.
0 VDC	LED - off Latchbolt - not retracted	**No input voltage** Problem with the power supply, control switch, or wiring.

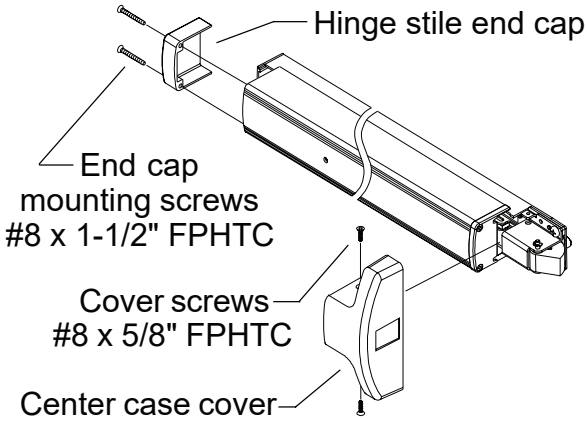
**For information about adjusting exit devices, you can find their installation instructions in the support area at www.allegion.com/us or call Technical Services at 1-877-671-7011*



5 Install covers.

5.1. Install center case cover with two cover screws (#8 x 5/8" FPHTC).

5.2. Install hinge stile end cap with two end cap mounting screws (#8 x 1-1/2" FPHTC).



⚠ NOTE

Device must be undogged to install center case cover.

6 Install TD35 strike for non-mullion applications. (See pg. 19 for frame preparation)

⚠ NOTE

See page 12 for mullion installation.

6.1. Apply strike to frame as shown. Tighten screws marked **A** so strike is flush with front of blade as shown.

6.2. Drill and tap for screws marked **B** while maintaining alignment of strike and blade stop.

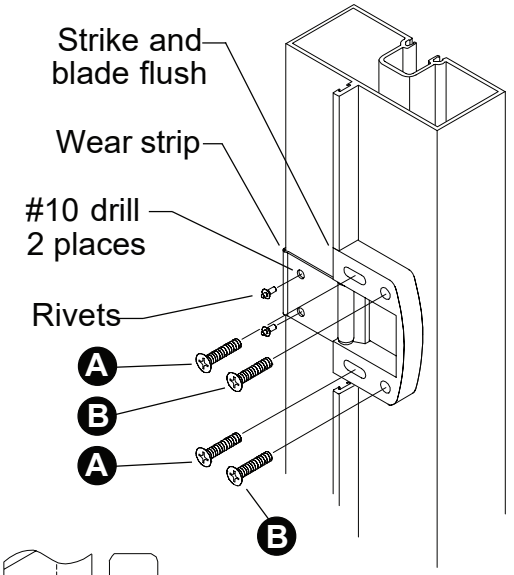
6.3. Secure strike.

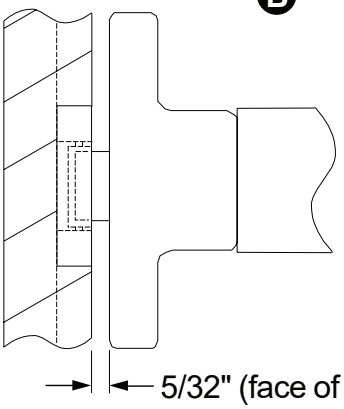
6.4. Place wear strip under front of strike and mark two holes as shown.

6.5. Drill through two places with #10 drill for wear strip mounting holes.

6.6. Install rivets to wear strip and frame and secure with hammer.

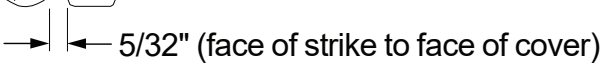
6.7. Verify clearance between cover and strike as shown.





⚠ NOTE

Shimming may be required to maintain 5/32" dimension.



7 Perform functional check.

7.1. Dog device. Latch bolt should clear strike roller when door is opened.

TOUCHBAR DOGGING

NOTE

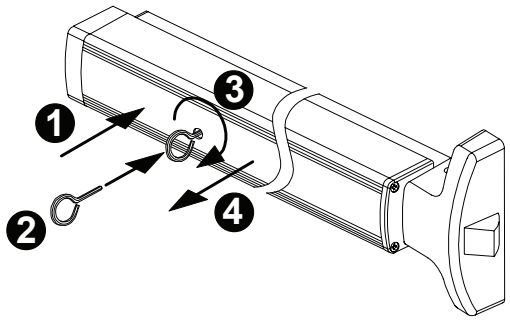
These instructions are for touchbar dogging of **new style** DOM 1790 devices. **New style** devices have two cover screws installed vertically into the center case cover. (Old style devices have four cover screws installed horizontally into the center case cover.)

NOTE

MEL (electric latch retraction) devices cannot be mechanically dogged using the touchbar. If mechanical hold back is required in addition to electric latch hold back, use the pull side HB key cylinder option.

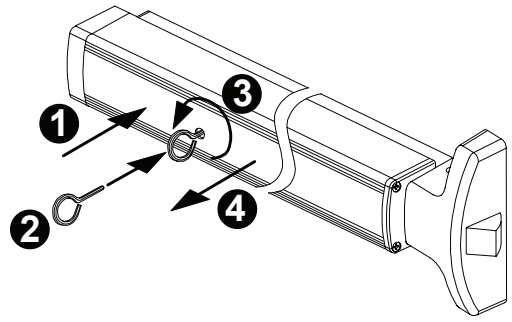
To Dog Device (hold latch retracted)

1. Depress touchbar with hand and maintain pressure on touchbar.
2. Insert dogging key into hole on touchbar.
3. Rotate key approximately 1/8 turn clockwise.
4. Release pressure on touchbar (touchbar will remain depressed to door).



To Undog Device (panic latch locks upon closing)

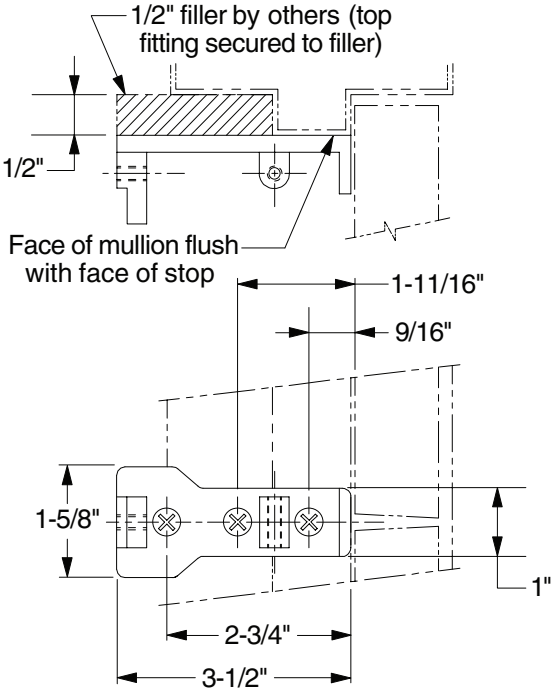
1. Depress touchbar with hand and maintain pressure on touchbar.
2. Insert dogging key into hole on touchbar.
3. Rotate key approximately 1/8 turn counterclockwise.
4. Release pressure on touchbar (touchbar will extend from door).

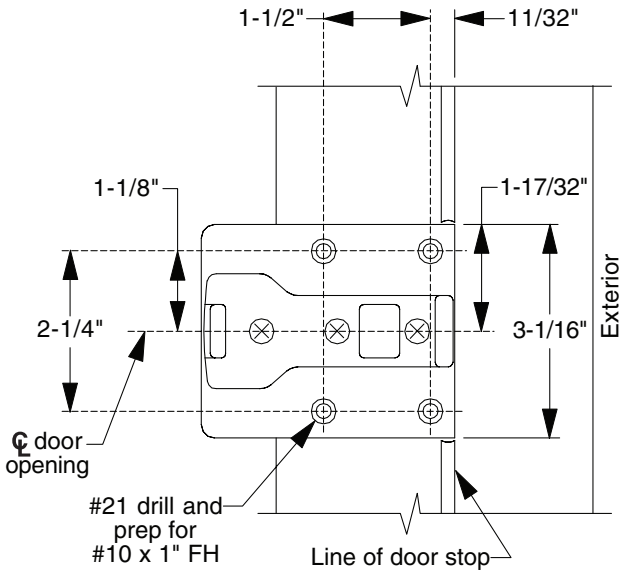


RM170 MULLION INSTALLATION

1. Mount top and bottom fittings (see below). To install fittings, line up fittings with center of doorway and flush with doors. Cut out threshold to receive bottom fitting.

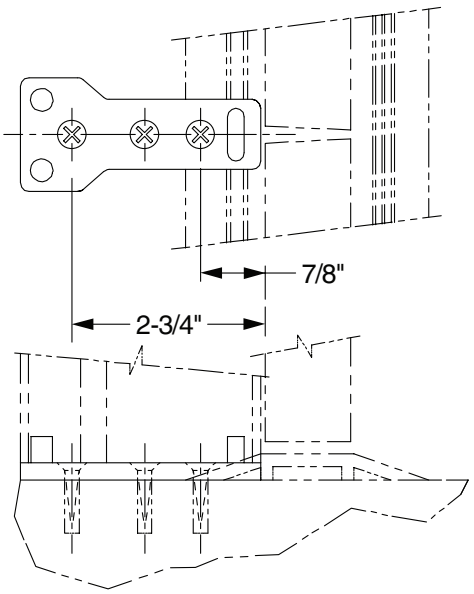
Top Fitting

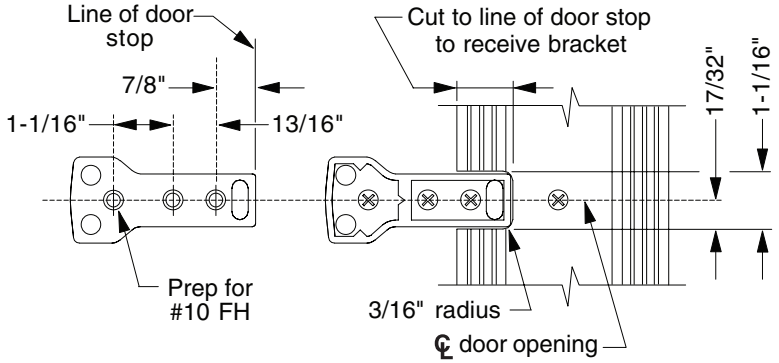




View Showing Optional DOM Filler Plate

Bottom Fitting





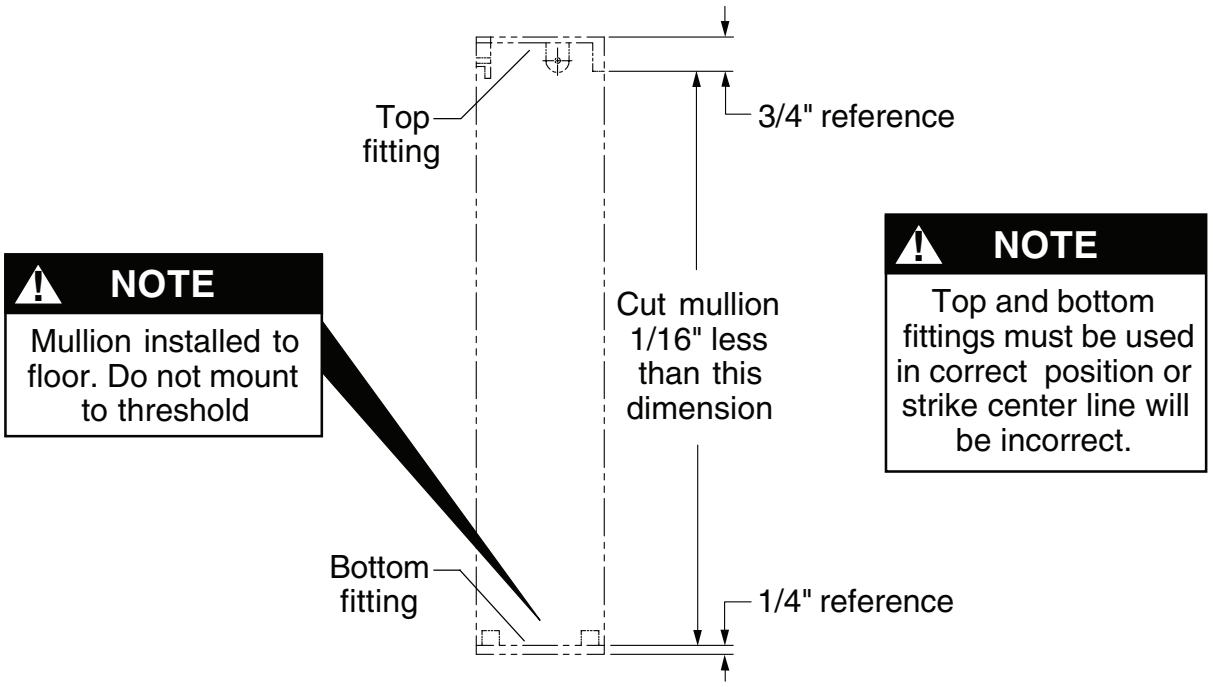
View Showing Threshold Cutout

2. Measure mullion and cut as required (Detail A). ℄ of strike is set at factory to match device template ℄ dimension of 42" to finished floor.

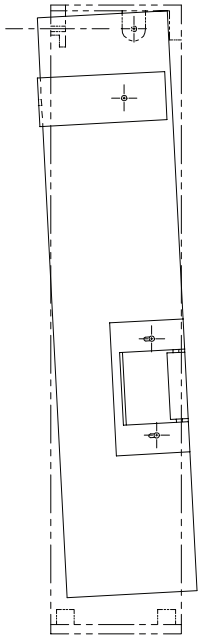
3. Slide mullion over top fitting and swing into position on bottom fitting (Detail B).

4. Slide mullion clamp over top fitting and secure with three screws.

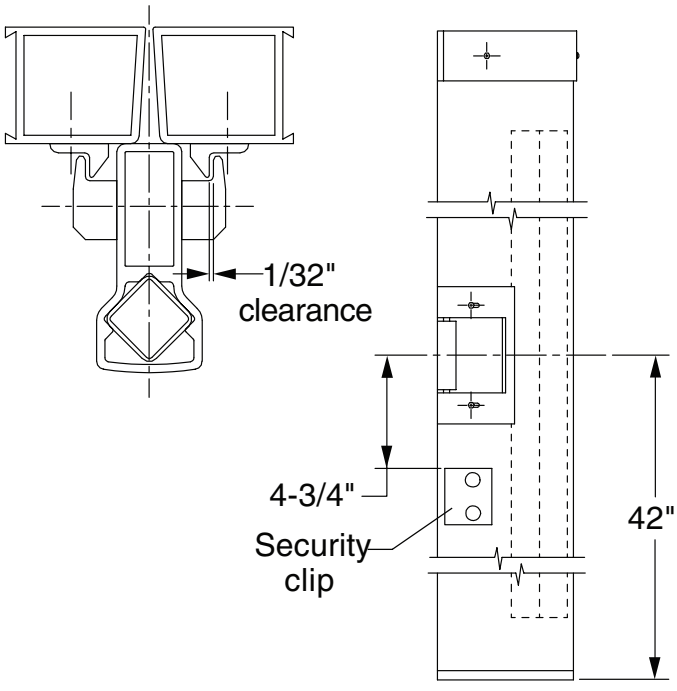
5. Locate security clips on door (Detail C). Prepare holes with #21 drill and 10-32 tap and assemble.



Detail A



Detail B



Detail C

FIELD SIZING DEVICE

Note: These instructions assume a 1/2" blade stop on the door frame.

1. Determine door clear opening. This is the distance inside the frame.

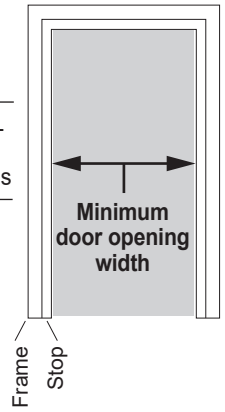
2. Determine channel cut length **A**: **A = door clear opening – 2-27/32"**

3. Verify that **A** determined in Step 2 is not less than minimum **A** dimension listed in table. (Standard 1790 device sizes can be shortened by up to 6" and EL devices can be shortened by up to 1.5"). Cut channel.

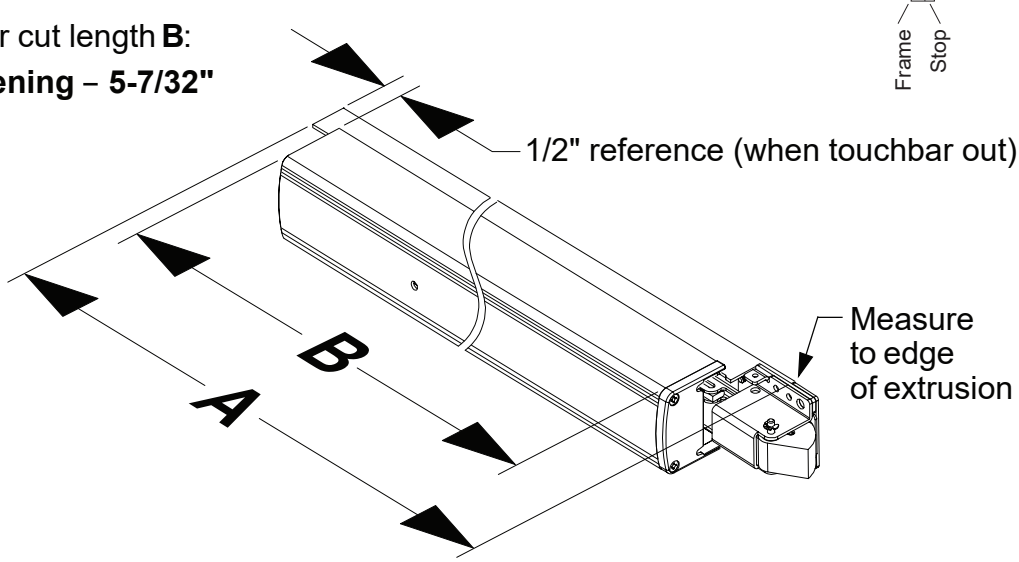
Standard Device Size	Factory Dimension A	Standard Device Minimum Dimension A	EL Device Minimum Dimension A
2' 6"	27.138"	21.138"	25.638"
3' 0"	33.138"	27.138"	31.638"
3' 6"	39.138"	33.138"	37.638"
4' 0"	45.138"	39.138"	43.638"

Minimum door opening widths

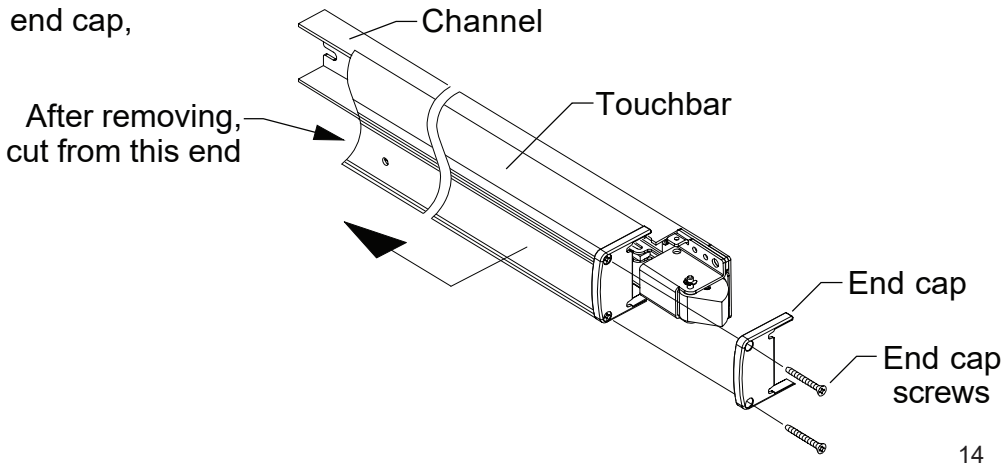
Case 1:- 2'6"			Case 2:- 3'0"			Case 3:- 3'6"			Case 4:- 4'0"		
Factory dims	Standard Device min dims	EL/MEL Device min dims	Factory dims	Standard Device min dims	EL/MEL Device min dims	Factory dims	Standard Device min dims	EL/MEL Device min dims	Factory dims	Standard Device min dims	EL/MEL Device min dims
Min door opening width			Min door opening width								
31.25"	**25.25"**	**29.75"**	**37.25"**	**31.25"**	**35.75"**	**43.25"**	**37.25"**	**41.75"**	**49.25"**	**43.25"**	**47.75"**



4. Determine touchbar cut length **B**:
B = door clear opening – 5-7/32"



5. Remove two end cap screws, end cap, and touchbar.

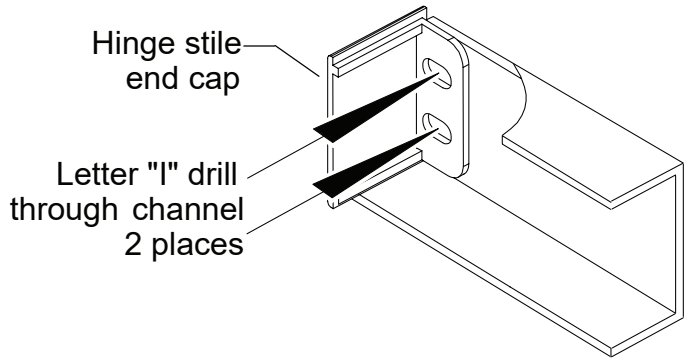


6. Cut **hinge side** of touchbar to dimension **B** from Step 4 on previous page.

7. **Cover device mechanism to keep chips out** and cut channel to dimension **A** from Step 2.

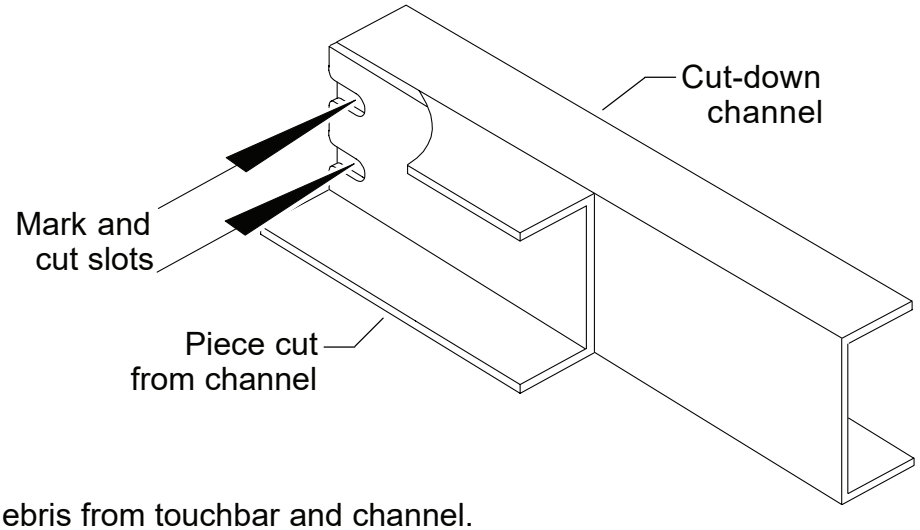
8. If hinge stile has not been prepared for channel hinge stile 1/4-20 mounting screws:

   Place hinge stile end cap into hinge end of channel. Drill through the center of end cap slots using a letter "I" drill. These two holes will be used to transfer location of mounting screw holes to hinge stile when device is applied to door.



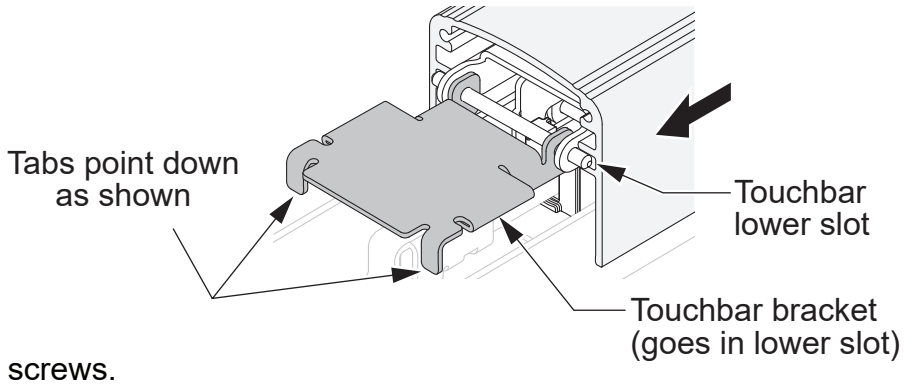
   If hinge stile has been prepared for channel hinge stile 1/4-20 mounting screws:

   Using end cut from channel in Step 3 as a template, place backs of channel sections against each other and align ends. Mark slot pattern on the cut-down channel. Following all safety precautions, use a drill and aluminum saw to cut slots in cut-down channel section.



9. Clean debris from touchbar and channel.

10. Slide pushbar over touchbar pins. Make sure to install both pins in lower slot in pushbar. If touchbar bracket is removed, it should be reinstalled with stop tabs pointed down towards channel.

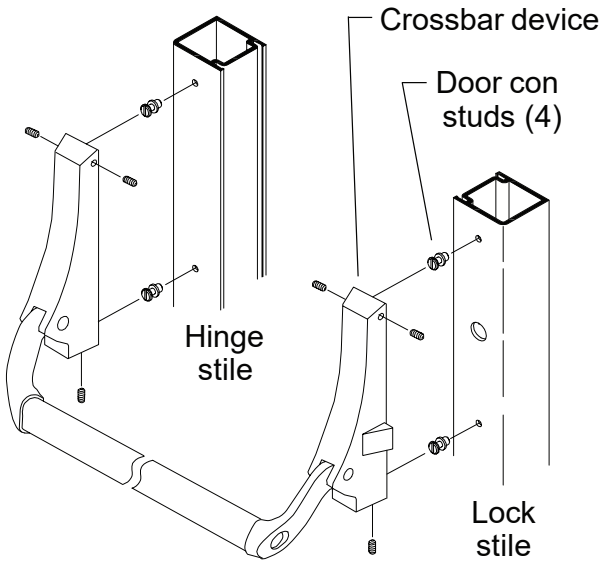


11. Reinstall end cap and screws.

2090 TO 1790 RETROFIT INSTRUCTIONS

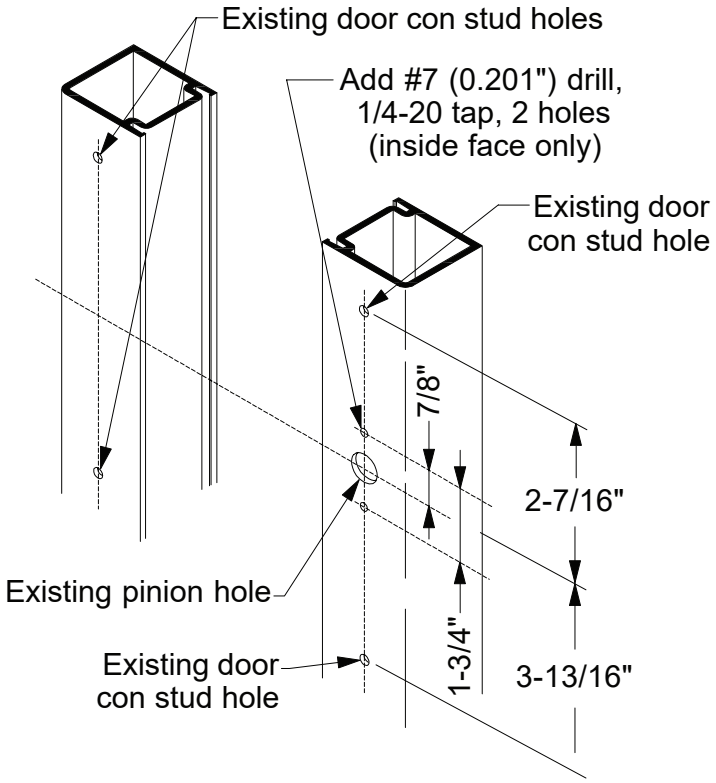
Note: Retrofitting double doors requires replacement of the RM70 mullion with a RM170 mullion. This is because they have different device center lines.

1. Remove crossbar device and door con studs from door as shown.



2. If door width is non-standard, size device using field sizing directions on page 14.

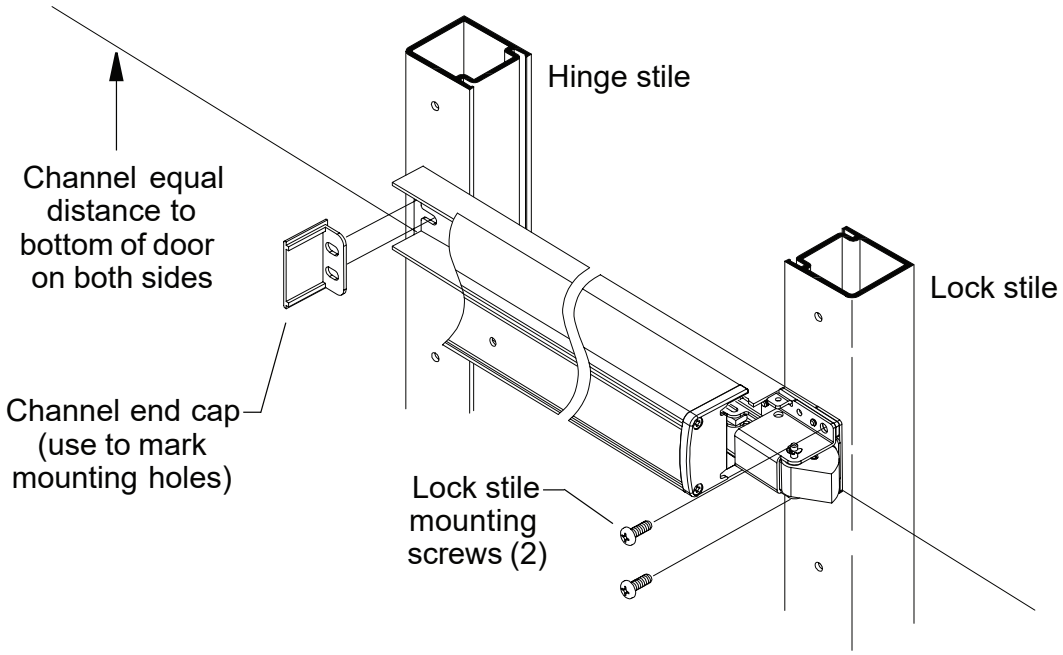
3. Using existing pinion or door con stud hole as a reference, locate the two 1/4-20 mounting holes on the lock stile. Drill and tap 1/4-20, inside face only.



4. Mount the device to the lock stile using the supplied 1/4-20 x 3/4" pan head screws.

5. Position the device horizontally on the door (same distance from bottom of door to bottom of channel on both stiles).

6. Position channel end cap in end of channel and use to mark locations for hinge mounting holes.



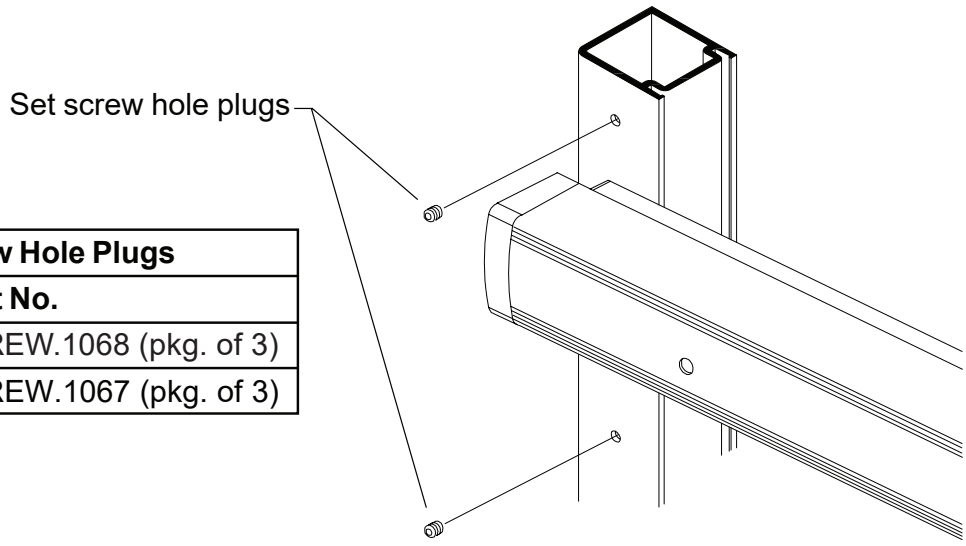
7. Remove the device from the door.

8. Drill and tap through two 1/4-20 mounting holes on hinge stile, inside face only.

9. Remove the old 2090 strike and replace with TD35 strike (see Step 6 on page 10).

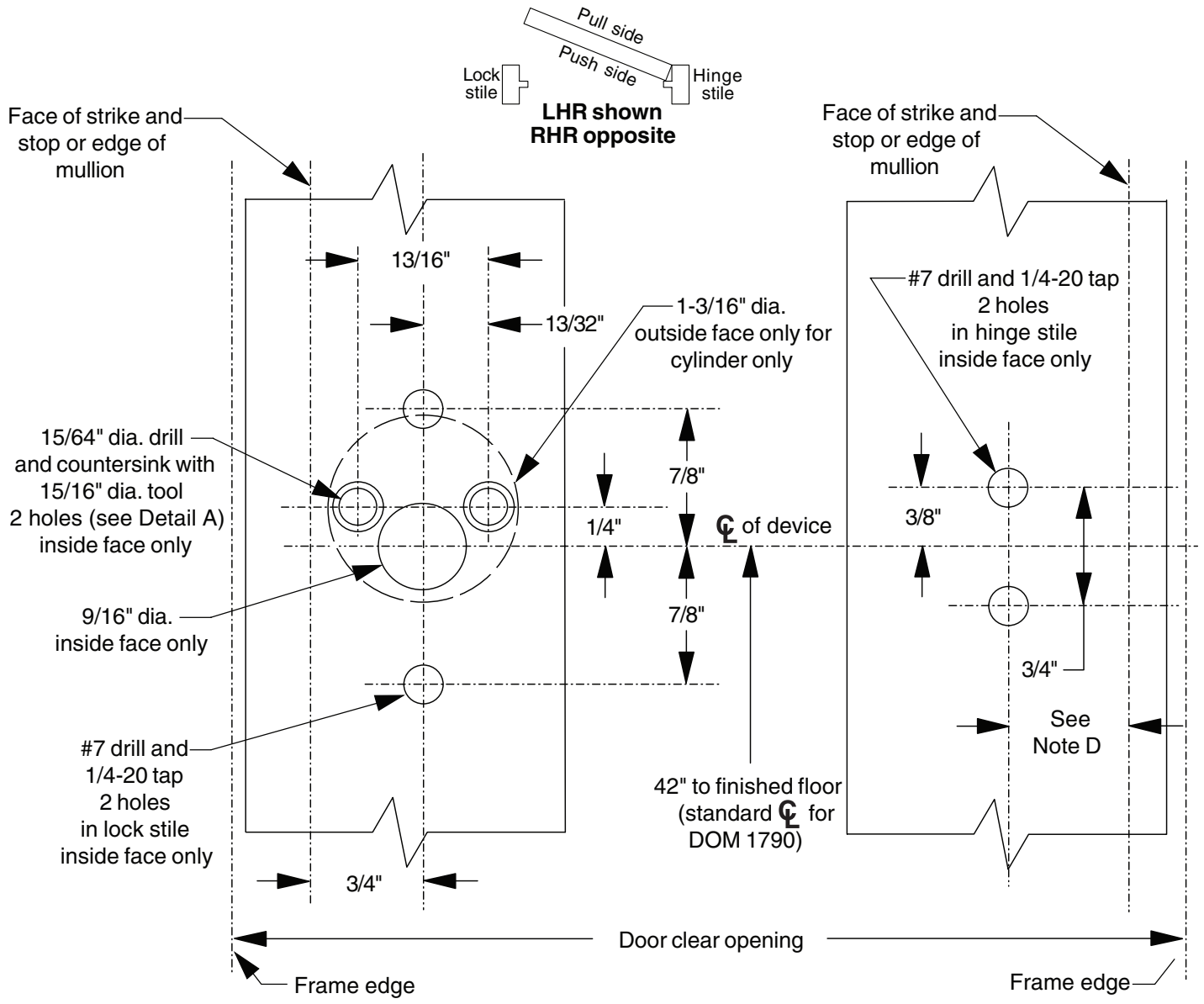
10. Continue on with 1790 installation instructions.

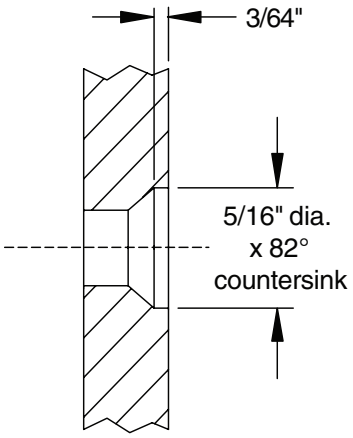
11. When installation is complete, install supplied set screw hole plugs in exposed 2090 door con stud holes (two on hinge stile and one on lock stile).



Set Screw Hole Plugs	
Finish	**Part No.**
US28	SCREW.1068 (pkg. of 3)
DC13/DC35	SCREW.1067 (pkg. of 3)

DEVICE TEMPLATE





Detail A (for cylinder)

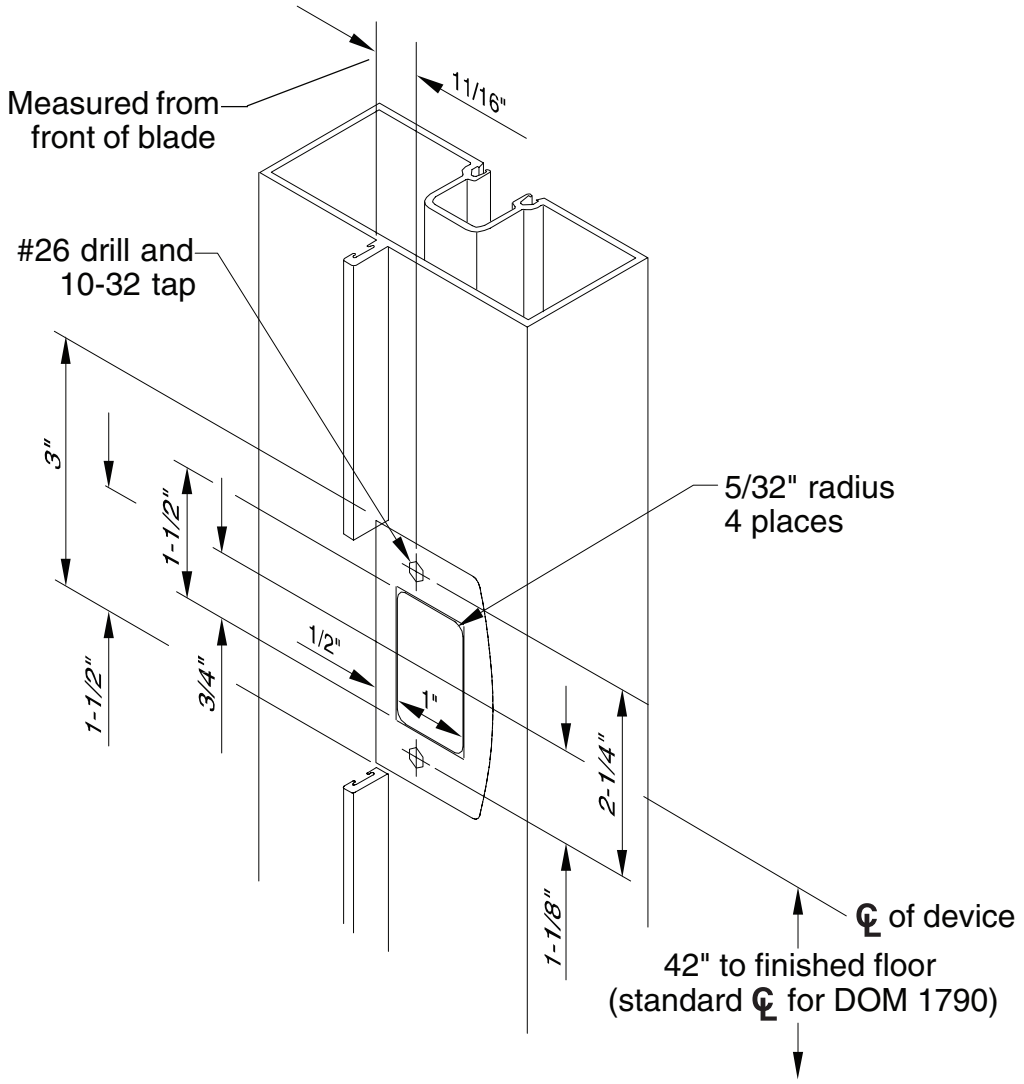
⚠ NOTES

1. All holes inside face only except as noted.
2. All dimensions for 1-3/4" thick, 1/8" wall doors. Consult factory for others.

⚠ NOTE D

Dimensions from face of door blade stop to mounting hole center lines 3/4" minimum.

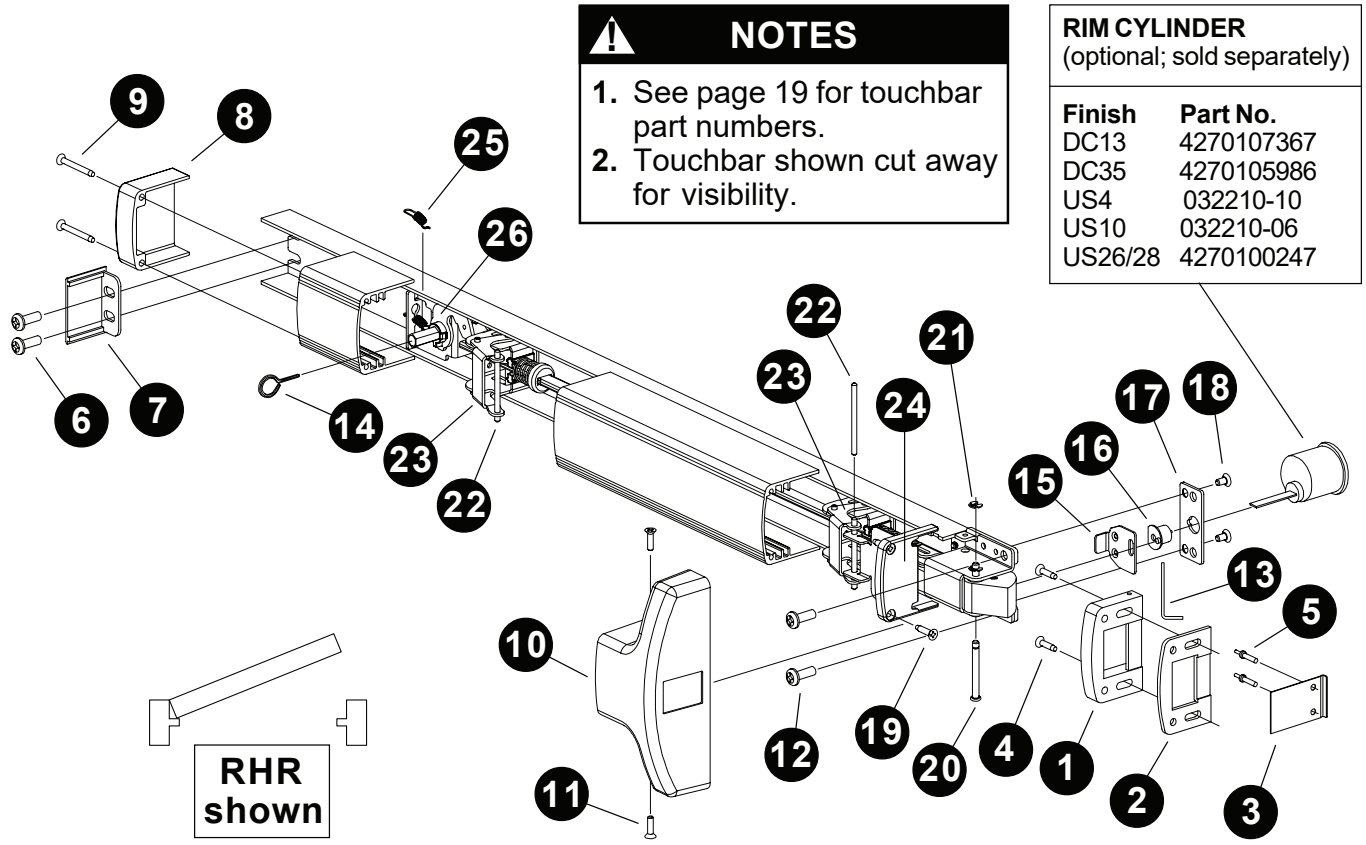
STRIKE TEMPLATE



TOUCHBAR PART NUMBERS

	30" Nominal Device Length (24.785" Extrusion Length)		36" Nominal Device Length (30.785" Extrusion Length)		42" Nominal Device Length (36.785" Extrusion Length)		48" Nominal Device Length (42.785" Extrusion Length)	
Finish	**Without Dogging Hole**	**With Dogging Hole**	**Without Dogging Hole**	**With Dogging Hole**	**Without Dogging Hole**	**With Dogging Hole**	**Without Dogging Hole**	**With Dogging Hole**
DC13	EXT.825	EXT.828	EXT.399	EXT.609	EXT.439	EXT.736	EXT.443	EXT.739
DC35	EXT.826	EXT.829	EXT.400	EXT.631	EXT.441	EXT.737	EXT.444	EXT.740
US3	EXT.2323	EXT.2351	EXT.2324	EXT.2355	EXT.2341	EXT.2359	EXT.2298	EXT.2363
US10	EXT.2333	EXT.2352	EXT.2334	EXT.2356	EXT.2345	EXT.2360	EXT.2303	EXT.2364
US26	EXT.2338	EXT.2353	EXT.2339	EXT.2357	EXT.2349	EXT.2361	EXT.2304	EXT.2365
US26D	EXT.2340	EXT.2354	EXT.2289	EXT.2358	EXT.2350	EXT.2362	EXT.2294	EXT.2366
US28	EXT.830	EXT.827	EXT.398	EXT.608	EXT.438	EXT.646	EXT.442	EXT.738

PARTS LIST



Package No. 4270107393

Item	Quantity	Description	Part No.
1	1	Strike	4270107227
2	1	Shim	SHIM.150
3	1	Wear strip	4270109590
4	2	#10 x 1" FPHSMS	4270104524
5	2	Drive rivet	4299101022

Package No. ECAP.130

Item	Quantity	Description	Part No.
6	2	1/4-20 x 1/2" PPHMS	4299100074
7	1	Channel end cap	ECAP.127
8	1	Hinge stile touchbar end cap	ECAP.128
9	2	#8 x 1-1/2" FPHTC	4270104557

Package No. COVER.120

Item	Quantity	Description	Part No.
10	1	Center case cover	COVER.106
11	2	#8 x 5/8" FPHTC	SCREW.1056

Package No. PKG.133

Item	Quantity	Description	Part No.
12	2	1/4-20 x 3/4" PPHMS	964221-89
13	1	0.050" Allen wrench	4270109548
14	1	5/32" hex dogging key	4270106944

Package No. 179CA

Item	Quantity	Description	Part No.
15	1	Slider	SLIDER.101
16	1	Drive bushing	CAMASY.101

Note: These parts are optional and are required with a rim cylinder. When installed at the factory, these parts are oriented for NL/HB operation. To convert from EO to NL or HB operation, use this kit and a rim cylinder.

Item	Quantity	Description	Part No.
17	1	Channel spacer	SPACER.107
18	2	#10-16 x 3/8" UFPHMS (DC13 or DC35)	SCREW.1036
		or	
	2	#10-16 x 3/8" UFPHMS (US28)	SCREW.1026
19	2	#8 x 3/4" FPHTF	4270109556
20	1	Latch bolt pin	969467-89
21	1	Retaining ring	964066-89
22	2	Touchbar pin	PIN.125
23	2	Touchbar anchor	BRKT.128
24	1	Lock stile touchbar end cap	ECAP.129
25	1	Dogging spring	971493-89
26	1	Dogging assembly (DC13 or DC35)	KIT.1022
		or	
		Dogging assembly (US28)	KIT.1021