

1786 MEL RIM EXIT DEVICE

Installation Instructions

January 2020

038321EN



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Introduction

These instructions show the general installation sequence and procedure for typical installation. Installation Instructions are a supplement to the approved shop drawings and notations on installation and glazing. Use in conjunction with those drawings.

Consult the KawneerDirect website for the latest updates to these instructions before beginning work on your project.



WARRANTY DISCLAIMER




Any modification of the Exit Device done in the field shall void the warranty of this product. Kawneer cannot guarantee the proper function of an Exit Device that has gone through any type of modification.

Contacting Kawneer

For contact information, visit kawneer.com.





Conventions Used in this Document

These symbols identify special types of information that can help you use the document more effectively.

Symbol	Description
 NOTE	Denotes general information that provides additional context or guidance
 IMPORTANT	Denotes information to which you should pay special attention
 TIP	Denotes information that can help you perform a task more efficiently

Safety Notices


These symbols identify hazards and conditions related to personal safety and equipment.

Symbol	Description
 DANGER	Indicates an imminent hazard that will result in death
 WARNING	Indicates a hazard that can result in serious personal injury or death
 CAUTION	Indicates a hazard that can result in personal injury
 NOTICE	Indicates a situation that can result in equipment or property damage, but poses no risk of personal injury

Tools Required for Installation

- Tape measure
- Level
- Drill
- Drill bits: #16 (0.177"), #26 (0.147"), 1/4" and 5/16"
- Phillips head screwdriver
- Utility knife
- Rubber mallet
- Side cutters or snips
- Wire stripping tool


Wiring And Parts Identification



NOTICE

1. Coordinate all wiring with a licensed electrical installer.
2. Install exit device **for interior applications only**. Exterior installation may result in damage to device.
3. Point-to-point wiring diagram to be supplied for each project at time of installation.
4. Do not exceed 200' of run with 18/2 wire from power supply to exit device.

Basic Wiring Diagram

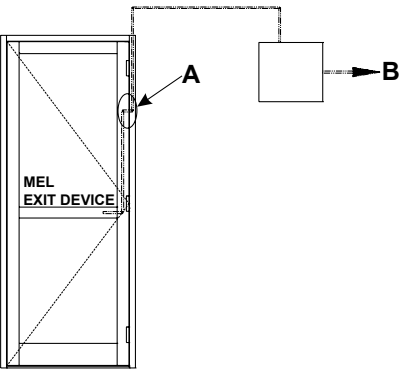


NOTE

Refer to 050421 or 050425 Wiring Diagrams for additional information.

Electrical Specification

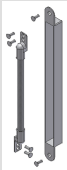
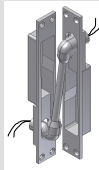
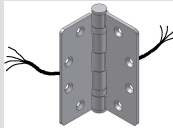
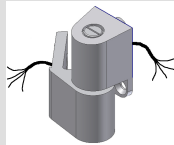

Voltage	24 Vdc ± 10%
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A	Power Transfer (Example: EPT wire transfer) Kawneer 050396
B	NP1 Power Supply Kawneer 050419 (Reference power supply specifications for more features)

Power Transfers

Available Power Transfers

	EPT		Kawneer EL Butt Hinge	Kawneer EL Offset Pivot ¹	Optional EL Offset Pivot ¹
					
	KAWNEER 050396	Von Duprin EPT KAWNEER 050405 2 wires (18ga.)	KAWNEER 037238 4 wires (28ga.)	KAWNEER 050392-RH KAWNEER 050393-LH 4 wires (28ga.)	KAWNEER 50397-RH KAWNEER 050398-LH 4 wires (28ga.)
Von Duprin EPT KAWNEER 050406* 10 wires (24ga.)		KAWNEER 037239 ² 8 wires (28ga.)	KAWNEER 050394-RH ² KAWNEER 050395-LH ² 8 wires (28ga.)	KAWNEER 050398-RH ² KAWNEER 050399-LH ² 8 wires (28ga.)	
Available With					
190/350/500 STANDARD	X		X	X	X
HEAVY WALL	X		X		X
250T/350T/500T Insulpour™	X		X	X	X



NOTICE
¹ Do not disassemble offset pivots. Disassembling these pivots will break wire.

² For use with device and auxiliary hardware such as RX switch.

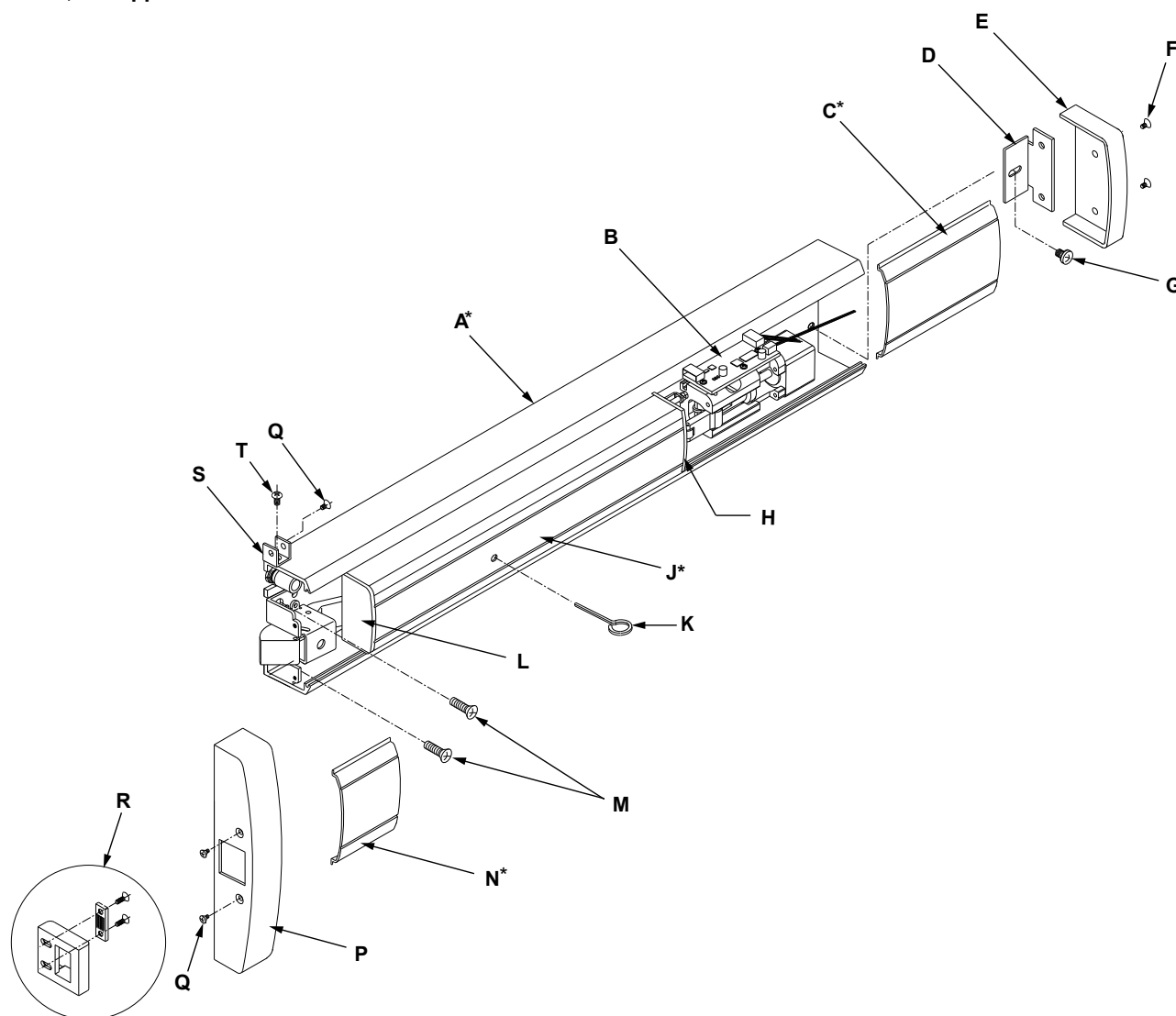
Parts Breakdown



REQUIRED POWER SUPPLY

Use only the NP1 Power Supply (050419) with this exit device. No other power supplies are permitted. Using a power supply by others will void the warranty.

RH Shown, LH Opposite



REF	QTY	DESCRIPTION
A *	1	EXIT DEVICE BASE ASSEMBLY (SIZED ACCORDING TO PART NUMBER)
B	1	MEL (MOTOR ELECTRIC) MECHANISM / CIRCUIT BOARD / END CAP BRACKET WITH RX SWITCH
C *	1	HINGE/PIVOT FILLER PLATE (SIZED ACCORDING TO PART NUMBER)
D	1	END CAP MOUNTING BRACKET
E	1	HINGE/PIVOT END CAP (BLACK MATTE FINISH)
F	2	END CAP FASTENERS (BLACK)
G	1	HINGE/PIVOT STILE ATTACHMENT FASTENER
H	1	BRACKET WITHIN PUSH PAD NOT SHOWN, BUT INCLUDED WITH END CAP ASSEMBLY
J*	1	PUSH PAD ASSEMBLY

REF	QTY	DESCRIPTION
K	1	DOGGING KEY
L	2	PUSH PAD END CAPS (BLACK MATTE FINISH)
M	2	#12-24 EXIT DEVICE ATTACHMENT FASTENER
N*	1	LATCH FILLER PLATE
P	2	METAL HOUSING COVER (BLACK MATTE FINISH)
Q	4	HOUSING COVER ATTACHMENT FASTENERS (BLACK)
R	1	"S" STRIKE PACKAGE WITH FASTENERS AND LOCK BLOCK (133588)
S	2	HOUSING COVER BRACKET
T	2	HOUSING COVER BRACKET FASTENERS

* Indicates part to be in a color to blend with door finish.

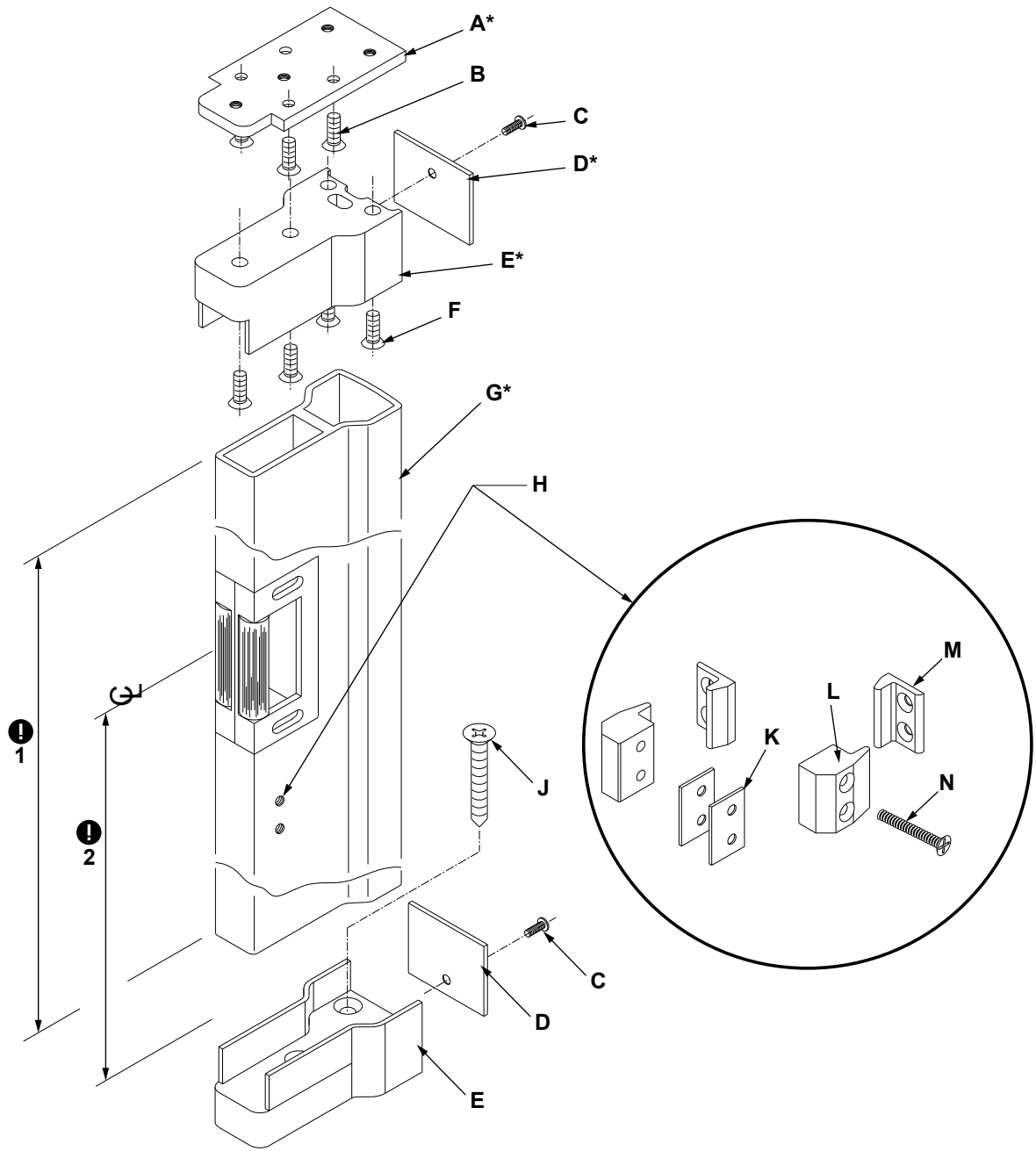
Available Finishes

KAWNEER FINISH	MANUFACTURER FINISH
17 CLEAR	US28/628
40 BRONZE	DBZ 313

Touch Bar Rim Exit Device Numbers

Kawneer Part Number	Exit Device Height	Exit Device Handing
133580MEL	3'-0"	Non Handed
133581MEL	3'-6"	Non Handed
133582MEL	4'-0"	Non Handed

Removable Mullion Package



REF	QTY	DESCRIPTION
A *	1	SHOE MULLION MOUNTING PLATE
B	4	#14 x 1-1/2" FHTF - FASTENERS FOR UPPER SHOE MOUNTING PLATE TO HEAD
C	2	1/4-20 x 7/8" OHMS - BACK PLATE ATTACHMENT FASTENERS
D*	2	BACK PLATE FOR SHOE MULLION
E*	2	SHOE MULLION

REF	QTY	DESCRIPTION
F	4	1/4-20 x 3/4" FHMS - FASTENERS FOR UPPER SHOE TO PLATE
G*	1	VERTICAL MULLION (SIZED ACCORDING TO PART NUMBER)
H	N/A	MULLION STABILIZER PREP (STABILIZER PACKAGE SHIPPED WITH MULLION)
J	4	1/4-20 x 1-1/8" FHMS W/ANCHORS - FASTENERS FOR LOWER SHOE TO FLOOR
K	4	STABILIZER SHIMS
L	2	MULLION STABILIZERS
M	2	DOOR STABILIZERS
N	8	#10-24 x 7/8" OHMS - FASTENERS FOR MULLION STABILIZERS

* Indicates part to be in a color to blend with door finish.



IMPORTANT: SPECIAL DIMENSIONS

1. 82-7/16" FOR STOCK 7'0" DOOR OPENING: VARIABLE HEIGHT DOOR OPENING CUT SIZE = DO - 1.5625
2. 40 11/16" UNIT W/THRESHOLD

Available Finishes

KAWNEER FINISH	MANUFACTURER FINISH
17 CLEAR	US28/628
40 BRONZE	DBZ 313

190/350/500 STANDARD DOORS

133586 STANDARD HEIGHT (7'-0" DOOR OPENING or 82-7/16" PART)

133587 STANDARD HEIGHT (8'-0" DOOR OPENING or 94-7/16" PART)

250T/350T/500T INSULPOUR™ DOORS

133586A11 STANDARD HEIGHT (7'-0" DOOR OPENING or 82-7/16" PART)

133587A11 STANDARD HEIGHT (8'-0" DOOR OPENING or 94-7/16" PART)

350/500 HEAVY WALL DOORS

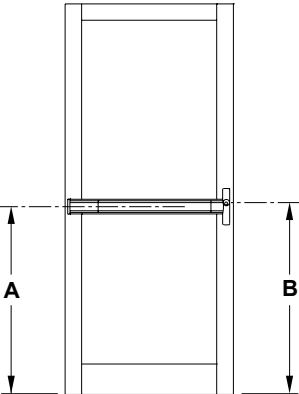
133586A8 STANDARD HEIGHT (7'-0" DOOR OPENING or 82-7/16" PART)

133587A8 STANDARD HEIGHT (8'-0" DOOR OPENING or 94-7/16" PART)

Installation

Install Cylinder

Device Height



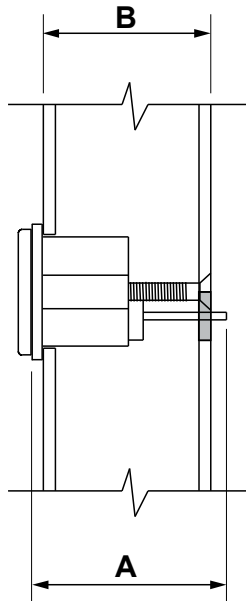
A	40" height to device center line
B	41-9/32" height to cylinder center line

1. Prep parts to proper length for door thickness.
 - a. Shorten rim cylinder (037305 or by others) tailpiece
 - b. Break off mounting fasteners

**NOTICE**

Cylinder mounting screws must be flush with door surface.

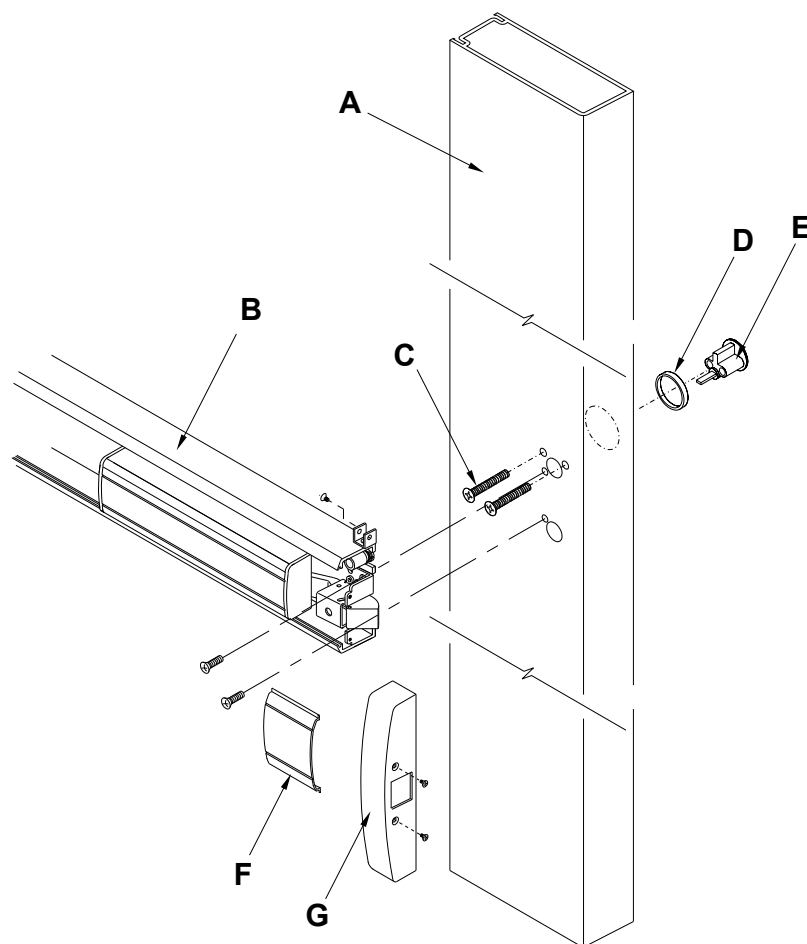
- c. Select cylinder ring



A	Door Thickness (B)	Cylinder Ring Part Number
2-1/16"	1-3/4"	047790
2-5/16"	2"	047790
2-7/16"	2-1/4"	118427

2. Slide ring onto cylinder.
3. Locate 1-3/16" factory prepped thru hole on exterior side of door and insert rim cylinder with ring.

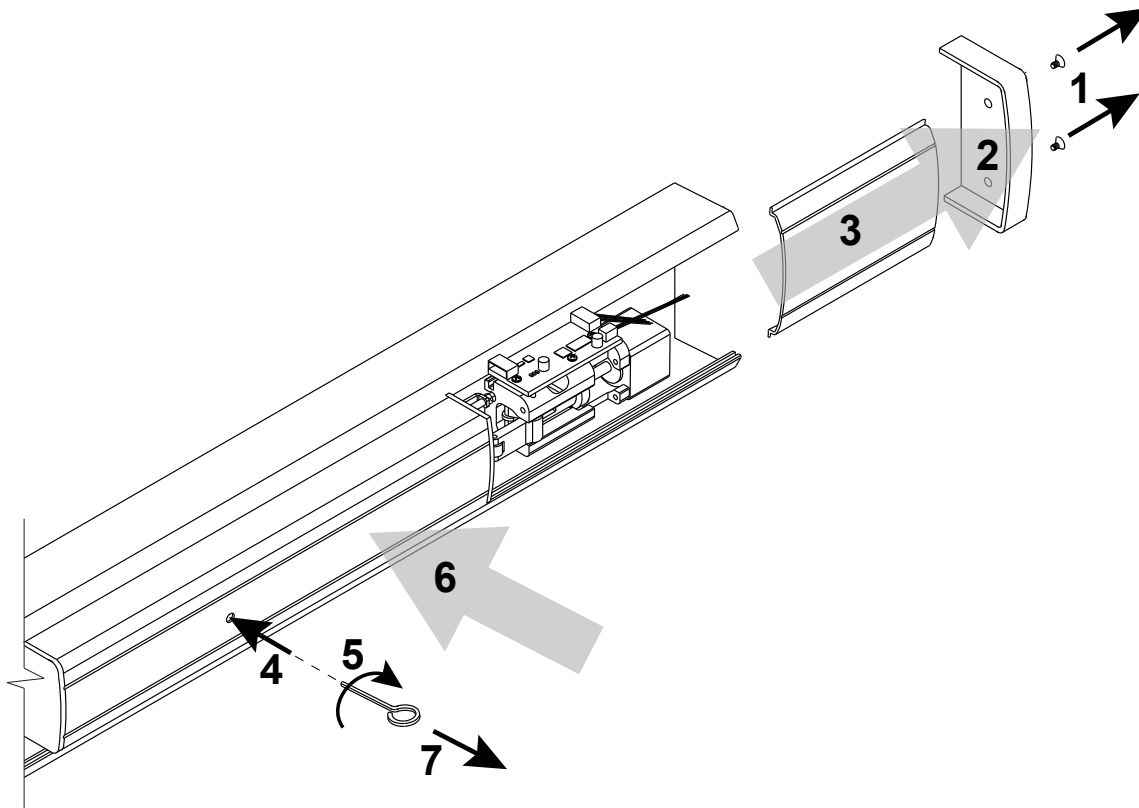
4. Secure cylinder to interior side of door with two (2) break-off fasteners and factory prepped holes.



A	DOOR STILE
B	EXIT DEVICE
C	CYLINDER MOUNTING SCREWS: Break-off type fasteners to support 1-3/4" thru 2-1/4" door thickness
D	CYLINDER RING
E	CYLINDER
F	FILLER PLATE
G	HOUSING COVER

Dogging MEL Device

Read all steps before adjusting MEL device.

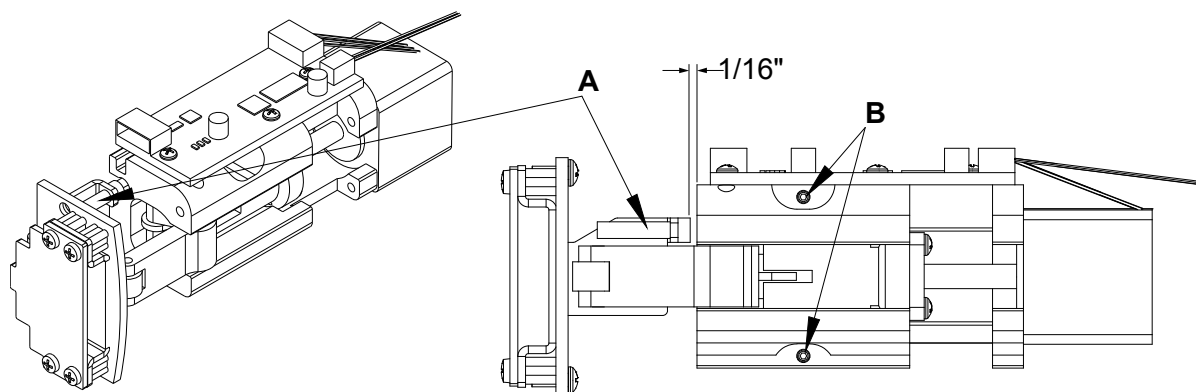


For factory-installed exit device, begin at [Step 4](#):

1. Remove two (2) #6-32 x 1/4" (black) FHM screws securing end cap.
2. Remove pivot-end cap.
3. Slide pivot-end filler plate toward pivot end to expose MEL mechanism.
4. Insert 1/8" hex dogging key through hole in center of push pad.
5. Turn key clockwise 1/4 turn or until mechanism stops completely and hold.
6. Press push pad into exit device base.
7. Remove dogging key.

Adjust MEL (Motor Electrified) Mechanism

If distance between request-to-exit switch and motor assembly is greater or less than 1/16", perform the following steps to adjust the mechanism:



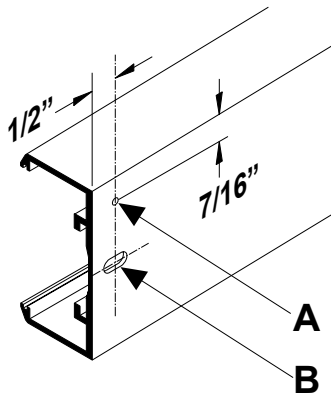
A	Request-to-Exit Switch
B	5/64" Socket Hex Set Screw

1. Loosen top and bottom set screws with 5/64" hex key.
2. Slide MEL mechanism until there is 1/16" clearance between request-to-exit switch and motor assembly.
3. Tighten top and bottom set screws with 5/64" hex key to secure MEL mechanism.

Fabricate Wire Access

After adjusting the MEL mechanism, follow these steps to prep the 5/16"-diameter wire access hole.

1. For factory fabrication, place exit device face down a protective surface to expose the back side and prevent damage to finish.
2. Mark and prep for a 1/8" wire-access pilot hole. Locate the pilot hole:
 - on the pivot-end of the exit device, directly above the 1/4"-20 slotted attachment hole;
 - approximately 1/2" from edge of exit device housing; and,
 - 7/16" from top of exit device base assembly.



A	1/8" Pilot Hole Location
B	1/4"-20 Slotted Attachment Hole

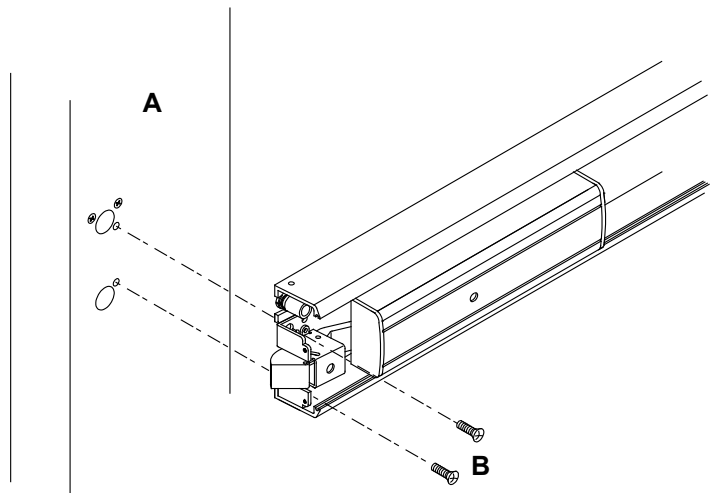
3. Drill the 1/8" pilot hole.



NOTICE

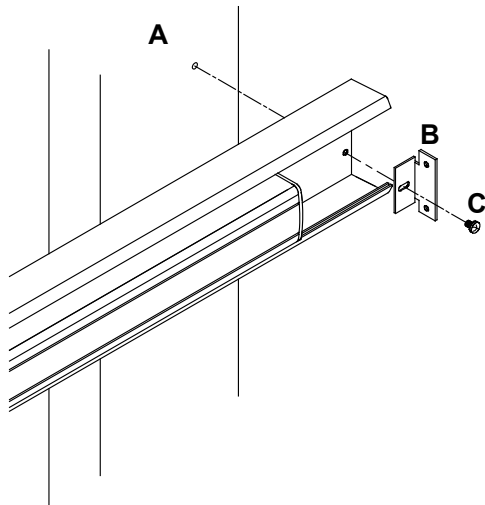
Protect MEL mechanism while drilling. Chips and debris can damage the device.

- 4. For factory fabrication, attach device to door:
 - a. Attach exit device to lock stile of door with two (2) #12-24 PHM screws.



A	Lock Stile
B	#12-24 Fasteners

- b. Attach exit device to pivot stile of door using a (1) 1/4"-20 x 1/2" fastener with provided end-cap mounting bracket.



MEL mechanism not shown for clarity

A	Pivot Stile
B	End Cap Mounting Bracket
C	1/4"-20 x 1/2" Fastener

5. Using the 1/8" pilot hole as a guide, drill a 5/16" wire access hole (at a slight upward angle) directly through the exit device base assembly and door stile.

**NOTICE**

Protect MEL mechanism while drilling. Chips and debris can damage the device.

6. Remove all burrs inside and outside to prevent wire damage.
7. Use an approved wire connector to attach the MEL (Motor Electrified) mechanism to door wiring.
8. Transfer the wiring from door to frame using the 5/16" wire-access hole and an approved EPT (electric power transfer) device. (See ["Power Transfers"](#), page 8.)
9. Complete connections between door wiring and EPT.

**IMPORTANT**

When using (electrified) EL butt hinges or EL offset pivots, you must use four (4) 28-gauge wires to complete wire transfer from door to frame.

10. Connect EPT (electric power transfer) to NP1 (Kawneer-approved power supply) with 18/2 wire, a maximum of 200 feet from exit device.

**NOTICE**

Do not disassemble Kawneer offset pivots. Disassembling these pivots will break wire.

11. Use 1/8" hex key to release dogging device.
12. Test exit device for proper electrical activation. (Refer to ["Troubleshooting Guide"](#), page 35 as needed.)
13. Slide in filler plate at pivot end to cover exit device internal mechanisms.

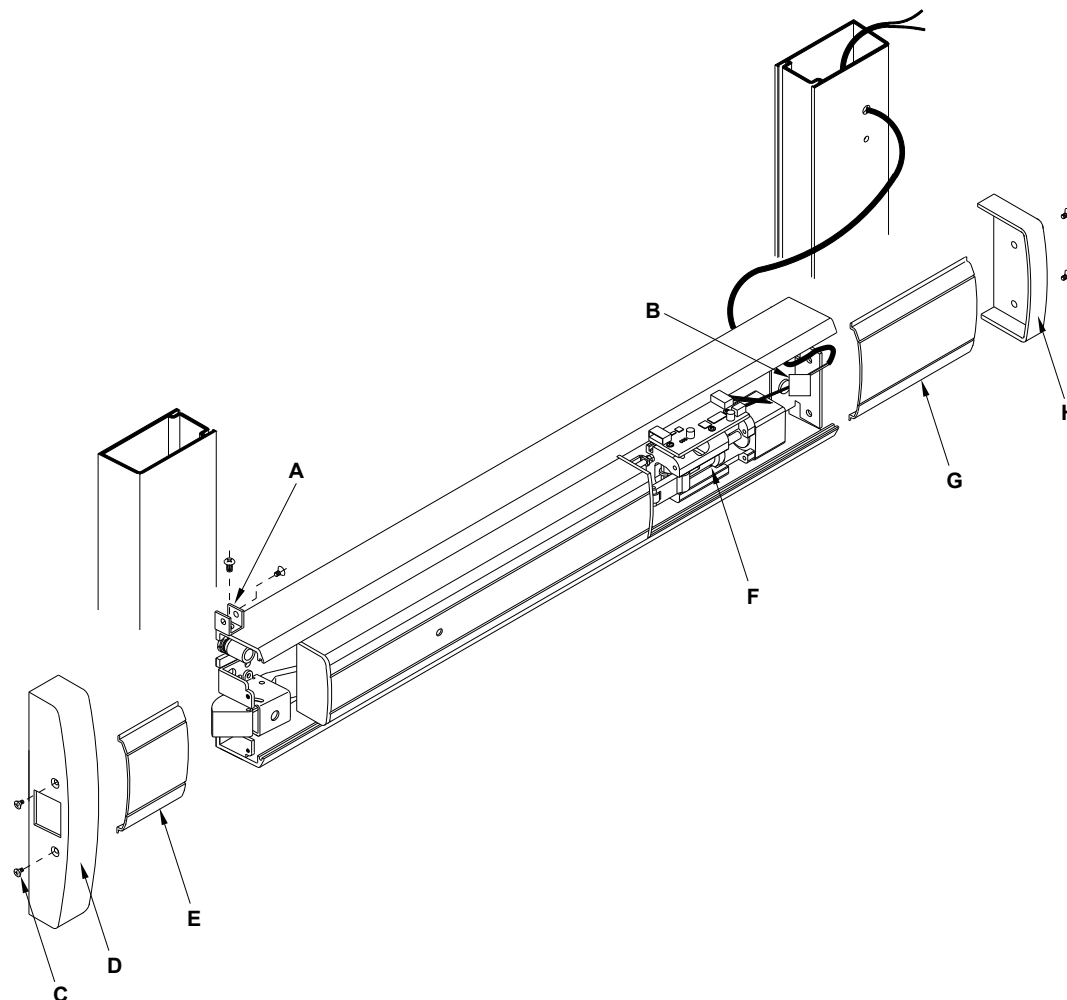
**NOTICE**

Avoid contacting circuit board or internal mechanisms with filler plate. Impacts may damage circuit board and prevent proper operation of exit device.

14. Install black pivot-end cap with (2) black #6-32 x 1/4" FHM screws.

15. For factory fabrication, install lock end housing covers:

- a. Attach housing-cover brackets on top and bottom of exit device base assembly at lock stile with one (1) #6-32 x 1/4" PHM screw per bracket.
- b. Attach black, metal, lock-end housing cover at lock stile with four (4) black #6-32 x 1/4" FHM screws.

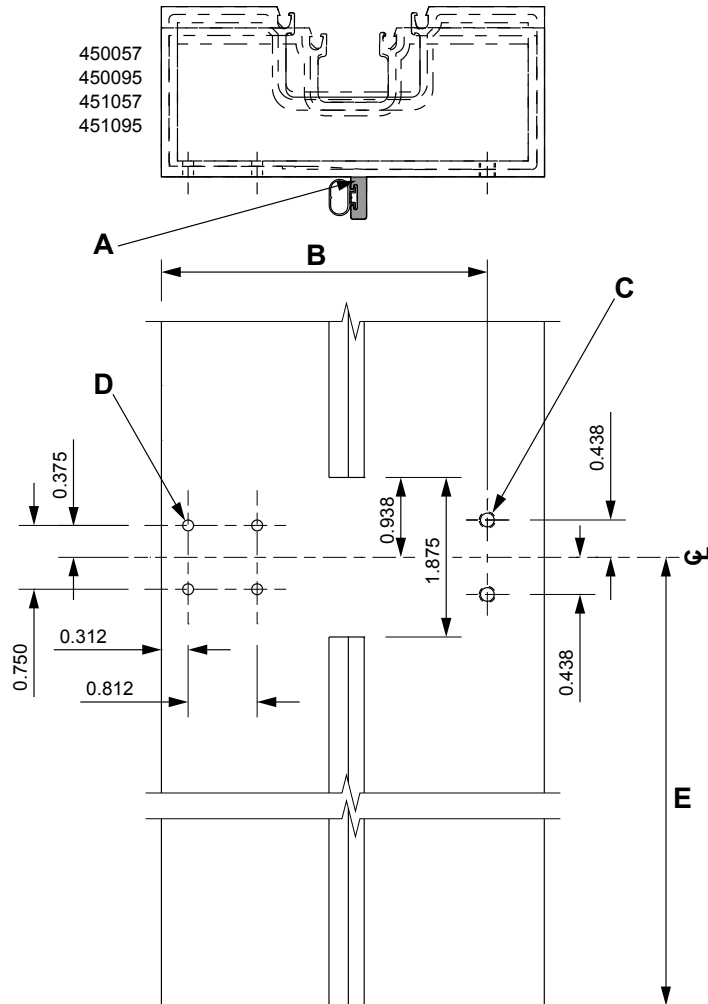


A	Housing Cover Bracket w/ #6-32 x 1/4" PHMS
B	Approved Wire Connector
C	(6) #6-32 x 1/4" FHMS
D	Lock-end Housing Cover
E	Lock-end Filler Plate
F	MEL (Motor Electrified)
G	Pivot-end Filler Plate
H	Pivot-end Cap

Install Strike

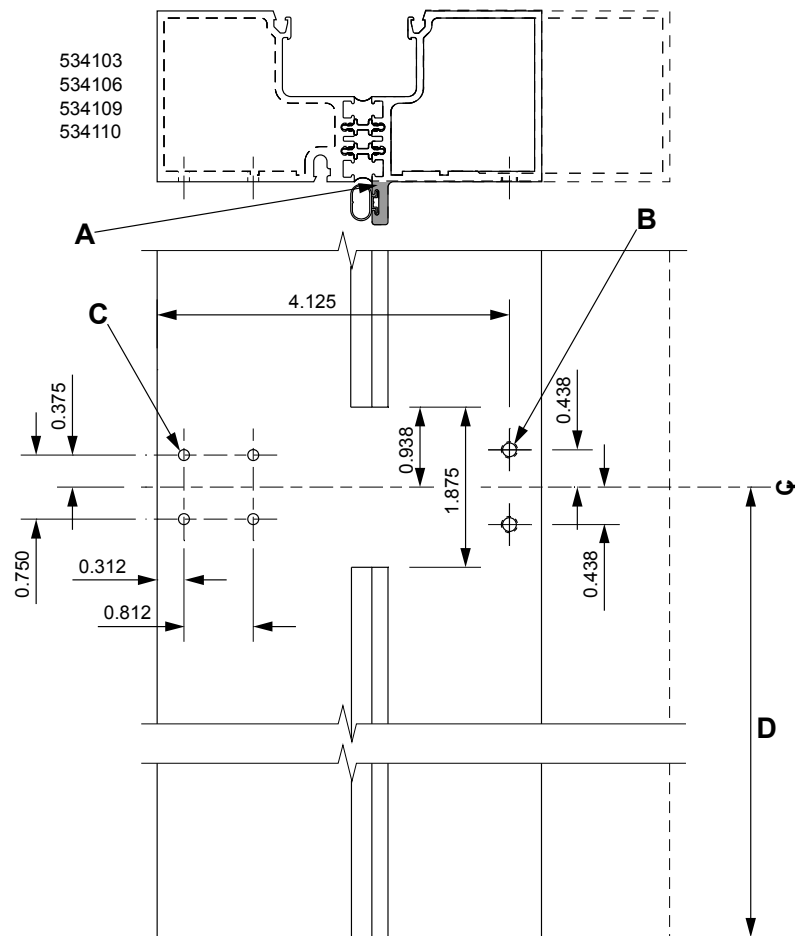
1. Prep door jamb for strike:

190/350/500 Standard Door or Heavy Wall Door with TRIFAB™ 450/451 Framing



Bottom, Left Hand Shown - Right Hand Opposite

A	Fin to be milled flush with face of mullion
B	3.580 Standard Doors / 3.830 Heavy Wall Door
C	0.149 dia. thru hole tap for #10-24 UNF-2B two (2) places
D	0.128 dia. four (4) places
E	40.000 + Bottom Door Clearance (40.687 with standard 11/16" clearance)

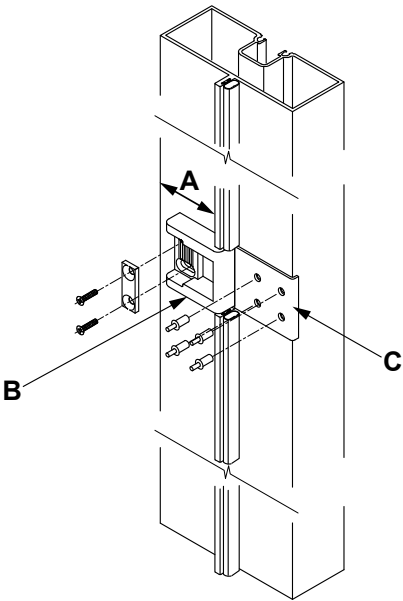
2-1/4" Doors with TRIFAB™ 451T Framing**Bottom, Left Hand Shown - Right Hand Opposite**

A	Fin to be milled flush with face of mullion
B	0.149 dia. thru hole tap for #10-24 UNF-2B two (2) places
C	0.128 dia. four (4) places
D	40.000 + Bottom Door Clearance (40.687 with standard 11/16" clearance)

2. Attach strike to door jamb with (2) #10-32 UNF-2B fasteners provided.
3. Close door and adjust strike as needed to hold door tight against weathering.

4. Attach stainless steel rub plate with four (4) 1/8" drive rivets provided.

Door Size	Rub Plate Package
1-3/4"	133641, included with exit device
2"	133645, purchased separately
2-1/4"	

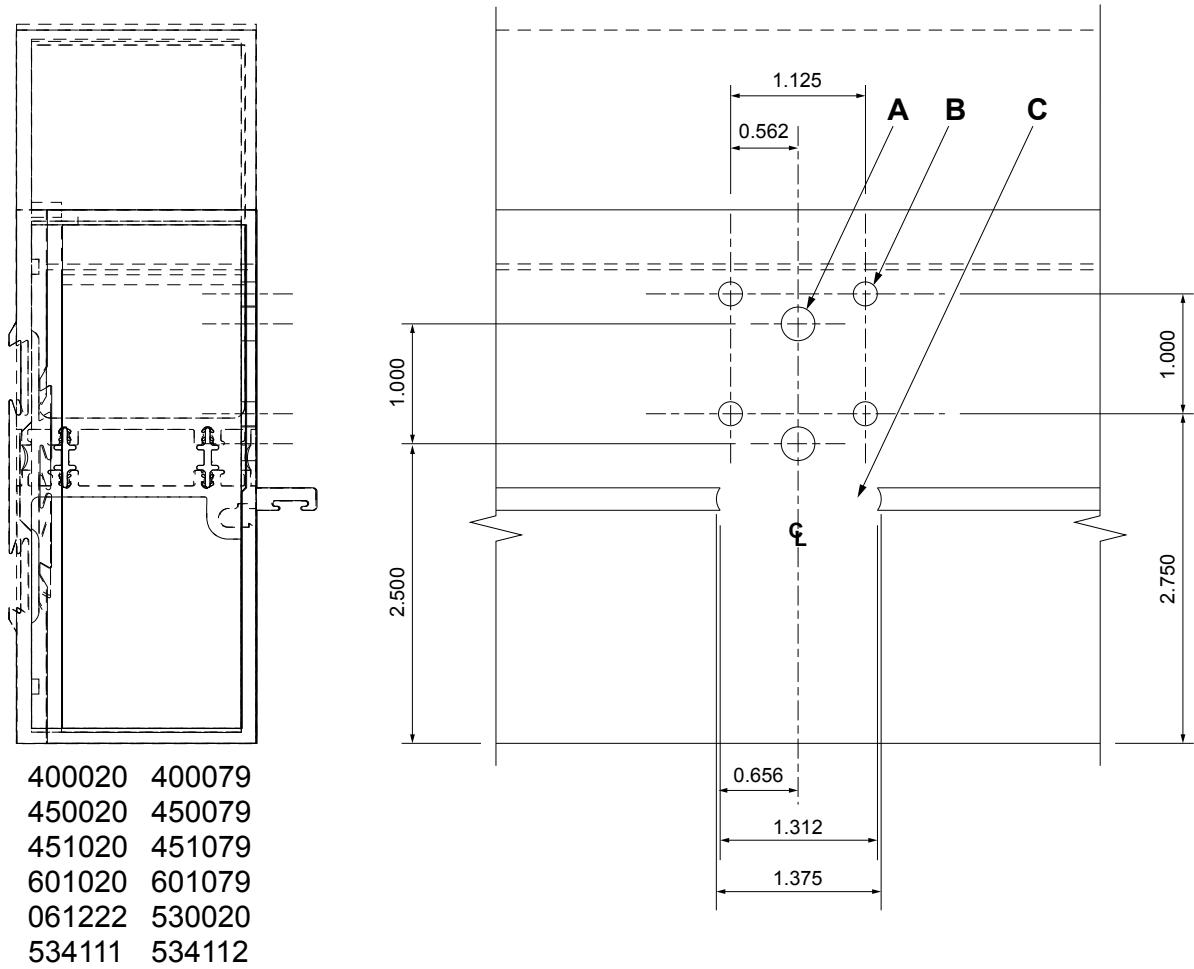


A	Adjust as required
B	Strike
C	Rub Plate Package

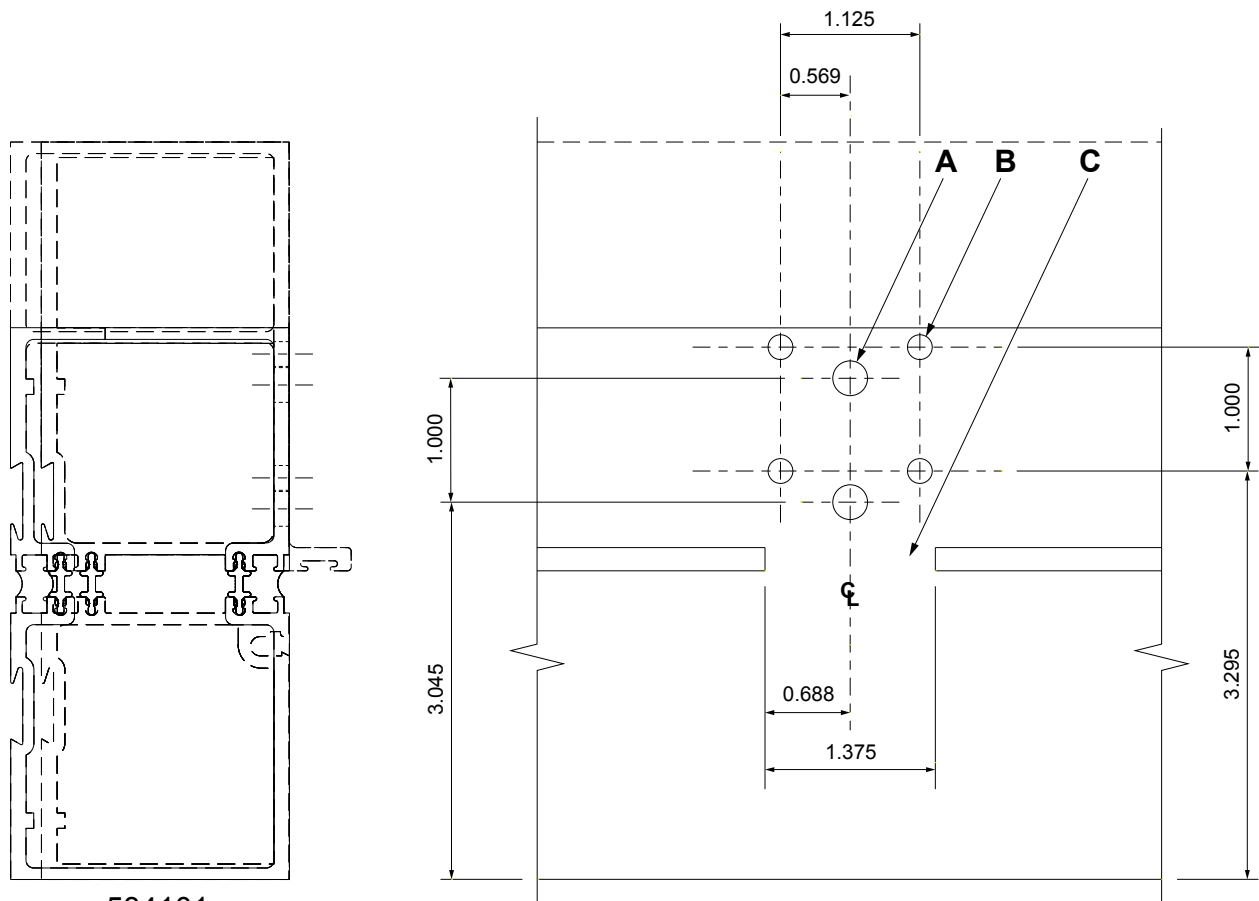
Prep for Removable Mullion

1. Prep removable mullion header/transom bar:

Standard Doors Header/Transom Bar Prep



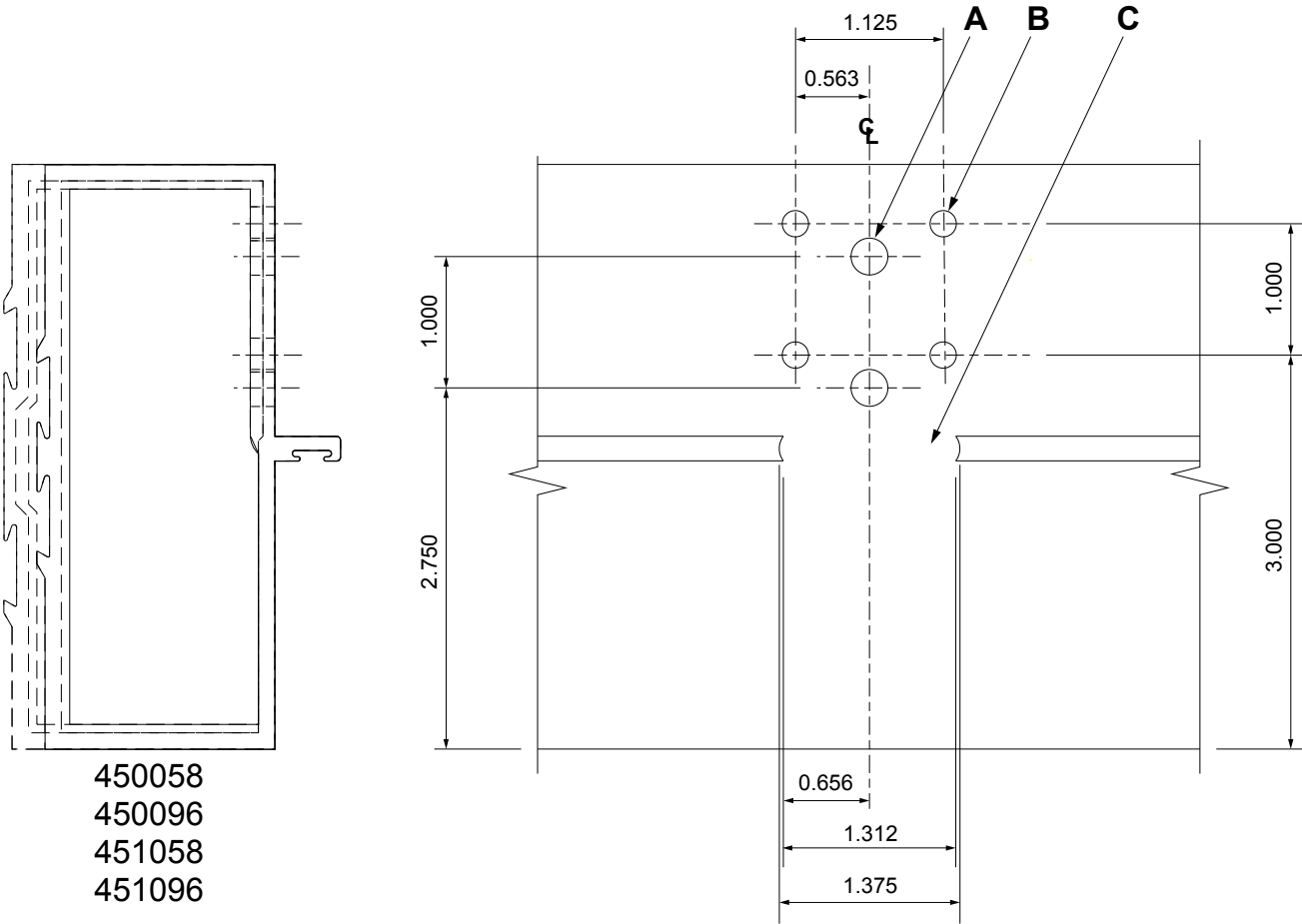
A	0.281 dia. thru hole two (2) places
B	0.201 dia. (#7 drill) thru hole for #14 self-tapping fastener four (4) places
C	Remove door stop fin. Must be flush to maximum of 0.010 deep. (No raised burrs allowed)

250T/350T/500T INSULPOUR™ Doors Header/Transom Bar Prep


534101
534102
534104
534105
534111
534112

A	0.281 dia. thru hole, two (2) places
B	0.201 dia. (#7 drill) thru hole for #14 self-tapping fastener, four (4) places
C	Remove door stop fin. Must be flush to maximum of 0.010 deep. (No raised burrs allowed.)

350/500 Heavy Wall Doors Header/Transom Bar Prep

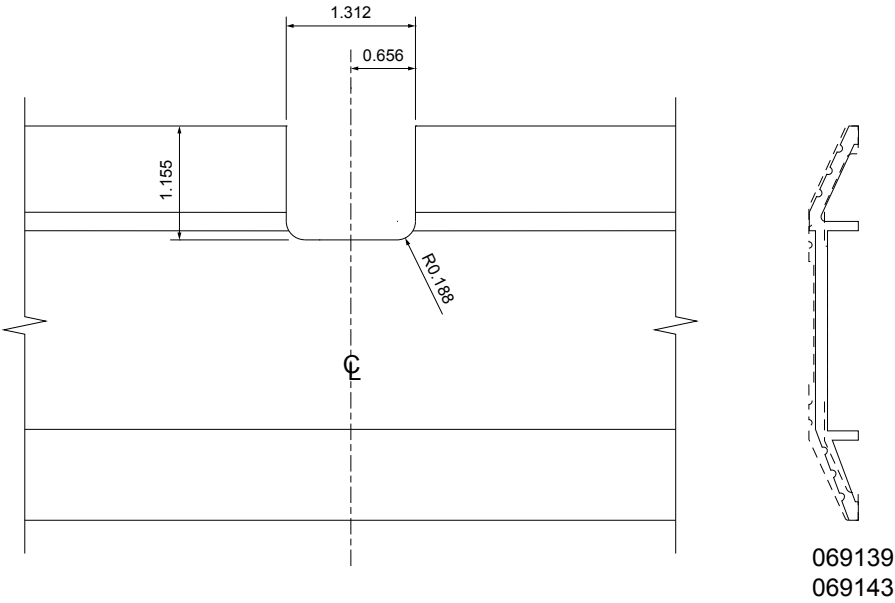


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450096
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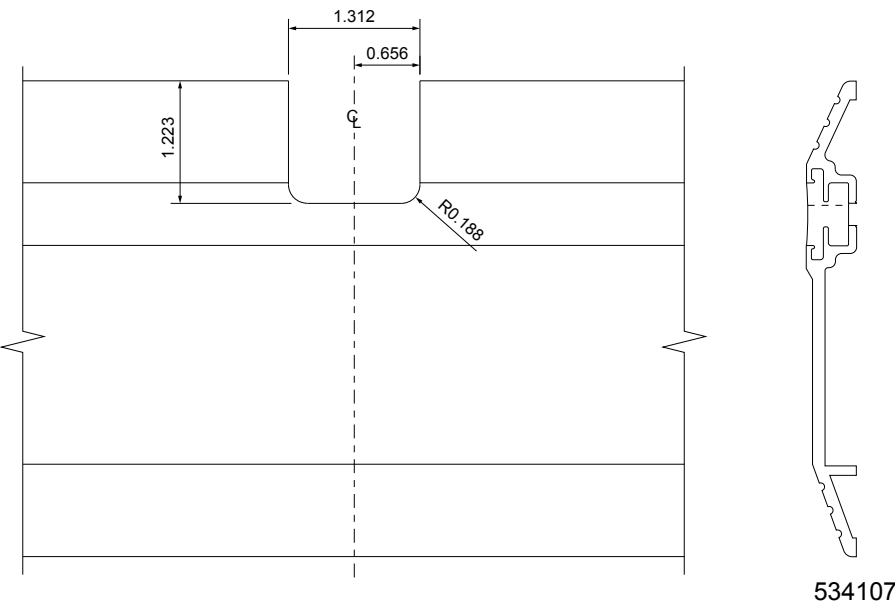
A	0.281 dia. thru hole, two (2) places
B	0.201 dia. (#7 drill) thru hole for #14 self-tapping fastener, four (4) places
C	Remove door stop fin. Must be flush to maximum of 0.010 deep. (No raised burrs allowed.)

2. Prep removable mullion threshold:

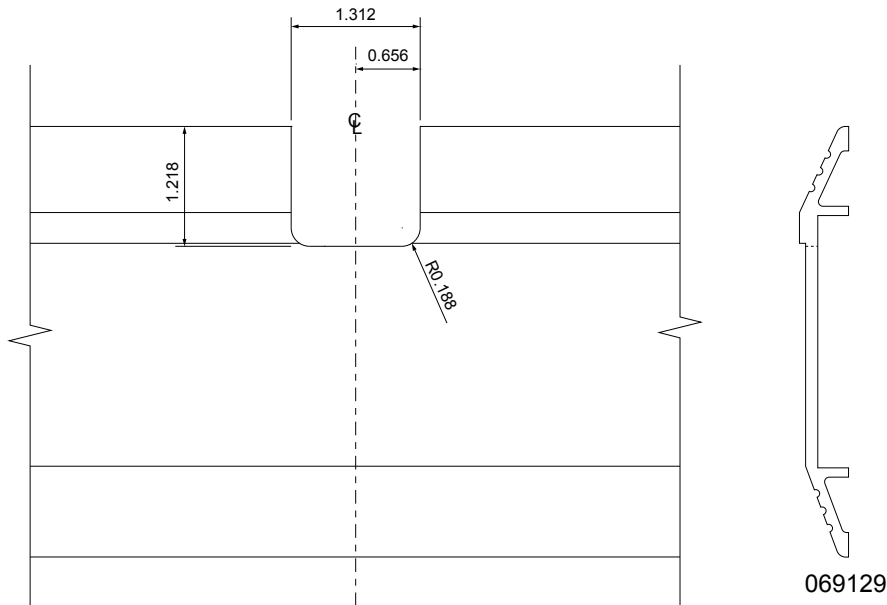
Standard Doors Removable Mullion Threshold Prep



250T/350T/500T INSULPOUR™ Doors Removable Mullion Threshold Prep

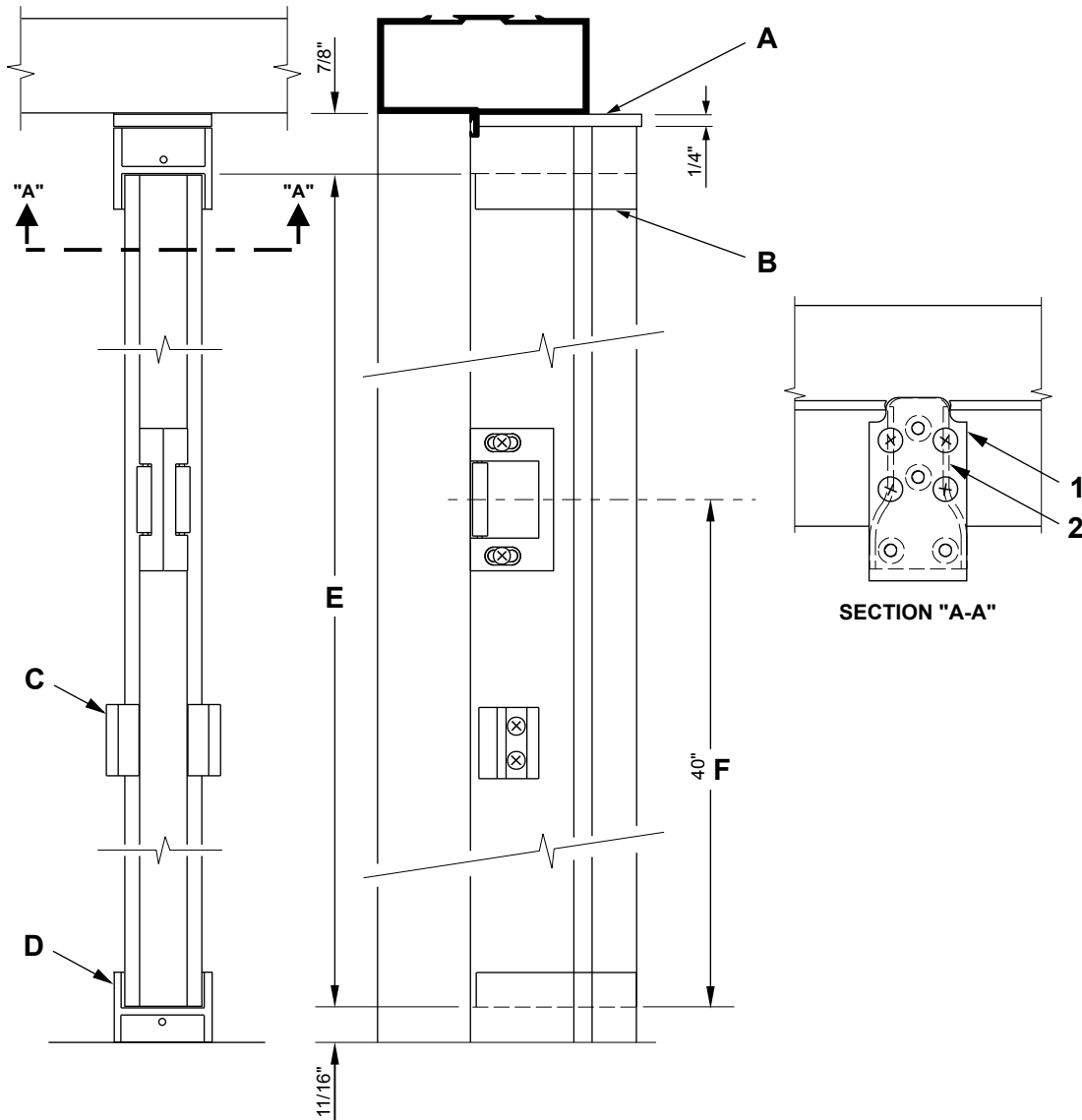


350/500 Heavy Wall Doors Removable Mullion Threshold Prep



Install Removable Mullion

Removable Mullion Without Threshold

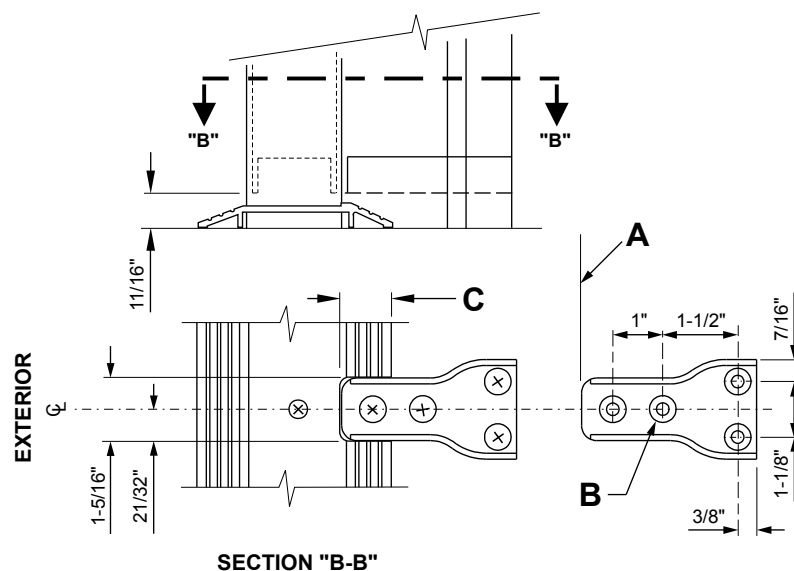


A	Shoe Mullion Mounting Plate
B	Top Shoe Mullion
C	Mullion Stabilizer
D	Bottom Shoe Mullion
E	Frame Opening Minus 1-9/16" (With or Without Threshold)
F	40" Bottom of Door to Centerline of Strike

1. Attach shoe mullion mounting plate to header/transom bar with four (4) #14 x 1-1/2" FHTF.

2. Attach top shoe mullion (shown with dashed line for clarity) to mounting plate on header/transom bar with four (4) 1/4"-20 x 3/4" FHMS.
3. Secure bottom shoe mullion to floor with four (4) 1/4"-20 x 1-1/8" FHMS and 1/4"-20 floor anchors.

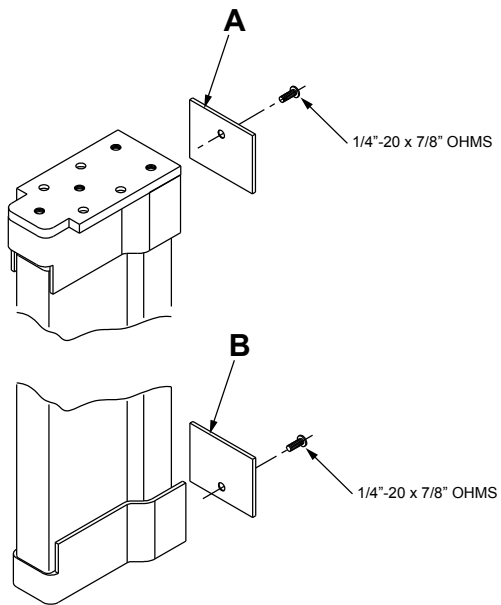
Bottom Shoe Mullion with Threshold



A	Line of Door Stop
B	Prep for (4) 1/4"-20 X 1-1/8" FHMS with 1/4"-20 Floor Anchor
C	See "Prep for Removable Mullion" [25] for details of threshold preparation.

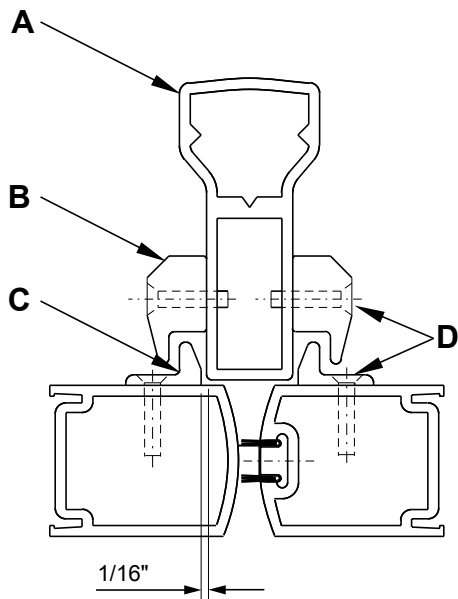
4. Check removable mullion for correct length from bottom of mullion to centerline of strike. Cut top of mullion to proper overall length if required.
5. Slip removable mullion into top shoe mullion. Pick up and swing onto bottom shoe mullion.

6. Install back plates onto shoe mullion at header/transom bar and threshold with (2) 1/4"-20 x 7/8" OHMS.



A	Back Plate for Shoe Mullion at Header/Transom Bar
B	Back Plate for Shoe Mullion at Threshold

7. Install mullion stabilizer.



A	Removable Mullion
B	Frame Portion Stabilizer
C	Door Portion Stabilizer
D	(8) #10-24 X 7/8" OHMS

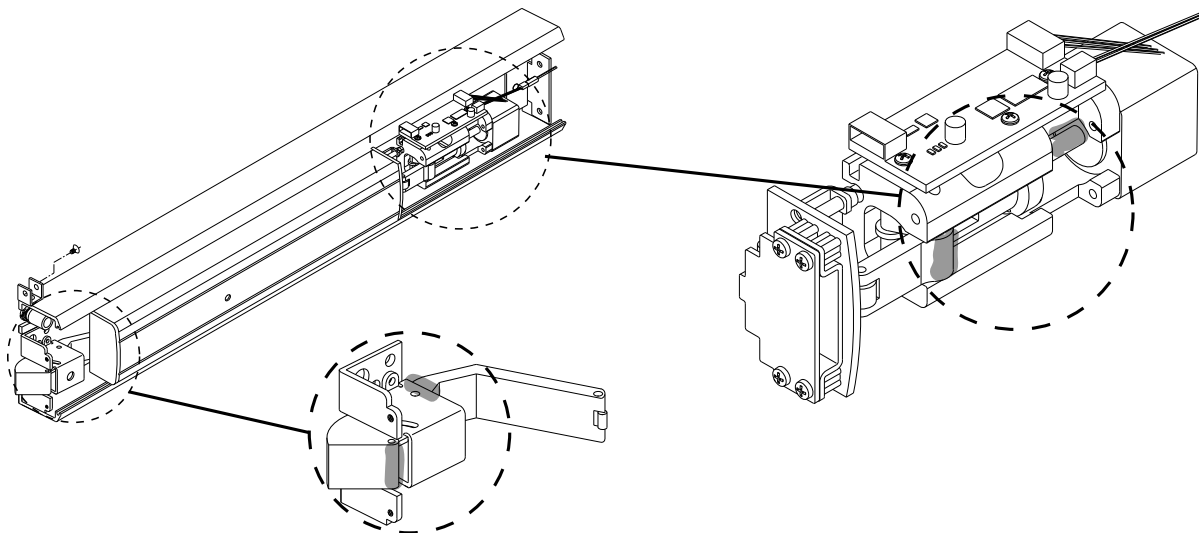
- Attach frame portion stabilizers (B) in holes provided on mullion with 2 ea. #10-24 x 7/8" OHM screws.
- Close door and align door portion (C) on the door, allowing 1/16" for clearance, as shown.
- Mark hole centers, drill and tap for #10-24 x 7/8" OHM screws in door.
- Attach door portion stabilizers (C) to door with 2 ea. #10-24 x 7/8" OHM screws.

Lubrication

Exit devices are lubricated before delivery. Periodic lubrication will increase exit device life by preventing excess wear of moving parts. Lubricate exit device every four months with Duralube or equivalent. Lubricate the shaded surfaces shown below.


To access lubrication points, remove the following parts:

1. Metal Housing cover (black matte finish) at lock end attached with (4) #6-32 x 1/4" FHM screws.
2. Pivot-end cap (black matte finish) attached with (2) #6-32 x 1/4" FHM screws.
3. Slide-in filler plate at both ends.



Troubleshooting Guide

Use the following table to troubleshoot issues with the 1786 MEL Rim Exit Device:

Symptom	Cause	Solution
Intermittent EL device operation	Wrong power supply is used.	NP1 is the only approved power supply.
	Too many EL devices are run on a power supply.	NP1 runs 2 devices.
	Wire size too small.	Use minimum wire gauge of 18/2.
	Wire run too long.	Do not exceed 200 feet of wire run from power supply to exit device.
	Wire run from power supply to devices has been split.	Do not split wire run from power supply to exit device.
	Output power is not run directly to exit device.	NP1 has 2 outputs which accommodate 2 wires for 2 devices (one wire per device).
	Poor power transfer connection.	Inspect power transfer connection and replace any broken wires.
	(4) or (2) Wire EL hinging or power transfer used with auxiliary hardware. (i.e. single RX switch.)	(8) or (10) Wire EL hinging or power transfer options must be used to guarantee a suitable electrical application. Exit device requires (4) wires to achieve proper performance.
	Wiring not coordinated with licensed electrical installer.	EL wiring should always be coordinated with licensed electrical installer.
Latch not releasing upon electrical activation - Binding	Door is not installed plumb within framing system.	Adjust door to eliminate bind.
	Hold-open time on access control is not set correctly.	Correct hold-open time on access control.
	RX switch not receiving a signal.	1/16" distance required between request-to-exit switch and MEL (Motor Electrified) mechanism. (See "Adjust MEL (Motor Electrified) Mechanism" , page 17)
	Power supply voltage not set to full power. 	Check output voltage adjustment in power supply. Increasing the voltage to full power will resolve most issues when a pair of doors is activated at the same time. Adjust output voltage: 1. Locate adjustment dial. 2. Turn adjustment dial clockwise to increase output voltage.
	Excessive stack pressure.	Request building owner adjust HVAC system.



NOTE

If the above table does not resolve issues, please call AHT (Advanced Hardware Technologies) at 866-738-4916 for technical assistance. Contact information is located within the NP1 power supply.

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