FALCON 1790 EXIT DEVICE
INSTALLATION

1790 Touchbar
Rim Panic Device

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BEFORE INSTALLATION

1. Check "Parts List" (see page 16).
4. If door width is non-standard, cut device (see page 10).

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 cylinder into door and secure with two mounting screws. Screws must be flush with surface of door.

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.
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 EL/RX device. (If device is not EL/RX, go to Step 5.)

4.1. Drill 3/8" diameter hole for EL/RX wiring through channel end cap, channel, and inside face of door.

![Diagram showing 3/8" drilled hole](Image)

**NOTE**
Hole must be free of burrs.

4.2. Wire RX switch as shown below. For EL wiring, go to Step 4.3.

![Diagram showing RX switch and wiring](Image)

- The RX switch is activated when the touchbar is depressed.
- Use the Von Duprin EPT-10 power transfer (for three wires), EPT-2 power transfer (for two wires), electric hinge, electric pivot, or door loop to transfer the wiring from the door to the frame.
- Connect the power transfer wires and switch assembly wires with crimp connectors. Unused wires should be insulated separately.

**NOTE**
The RX switch is available only as a factory installed item. Part No. WIRE.1001 can be used only to replace the factory installed RX switch.

**CAUTION**
Wiring must be pulled tight so cable will not interfere with touchbar and channel movement.

![Diagram showing RX switch wiring colors](Image)

- Yellow: NC
- Red: C
- Blue: NO

Switch shown not activated (touchbar not depressed)
4.3. Wire EL solenoid as shown below. All EL1790 devices are fail secure.

**CAUTION**

Wiring must be pulled tight so cable will not interfere with touchbar and channel movement.

**NOTE**

The potted circuit board is a protection circuit. It disconnects power from the solenoid if the plunger does not seat within a specified time. To reset the protection circuitry, remove power from the solenoid and reapply.

Solenoid must be wired to a PS914 power supply with a 900-2RS or 900-4RL option board installed.

**Electrical Specifications**

- Voltage: 24 VDC
- Current: 16 A inrush (0.3 sec.)
- 0.25 A holding
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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).

6 Install TD35 strike for non-mullion applications. (See pg. 13 for frame preparation)

**NOTE**
See page 8 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.

7 Perform functional check.

7.1. Dog device. Latch bolt should clear strike roller when door is opened.
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
EL (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).
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**

![Top Fitting Diagram]

**Bottom Fitting**

![Bottom Fitting Diagram]

**View Showing Optional DOM Filler Plate**

![View Showing Optional DOM Filler Plate Diagram]

**View Showing Threshold Cutout**

![View Showing Threshold Cutout Diagram]
2. Measure mullion and cut as required (Detail A). \( C \) of strike is set at factory to match device template \( C \) 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](image)

**NOTE**

Mullion installed to floor. Do not mount to threshold

**NOTE**

Top and bottom fittings must be used in correct position or strike center line will be incorrect.

![Detail B](image)

![Detail C](image)
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: \( A = \text{door clear opening} - 2\frac{27}{32}'' \)

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.

<table>
<thead>
<tr>
<th>Standard Device Size</th>
<th>Factory Dimension A</th>
<th>Standard Device Minimum Dimension A</th>
<th>EL Device Minimum Dimension A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2' 6&quot;</td>
<td>27.138&quot;</td>
<td>21.138&quot;</td>
<td>25.638&quot;</td>
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<tr>
<td>3' 0&quot;</td>
<td>33.138&quot;</td>
<td>27.138&quot;</td>
<td>31.638&quot;</td>
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<td>3' 6&quot;</td>
<td>39.138&quot;</td>
<td>33.138&quot;</td>
<td>37.638&quot;</td>
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<tr>
<td>4' 0&quot;</td>
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<td>39.138&quot;</td>
<td>43.638&quot;</td>
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</tbody>
</table>

4. Determine touchbar cut length B: \( B = \text{door clear opening} - 5\frac{7}{32}'' \)

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

6. Cut hinge side of touchbar to dimension B from Step 4.

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.

![Diagram](image1)

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.

![Diagram](image2)

9. Clean debris from touchbar and channel.

10. Slide touchbar over touchbar pins. Make sure to install both pins in lower slot in touchbar. If touchbar bracket is removed, it should be reinstalled with stop tabs turned up away from channel.

![Diagram](image3)

11. Reinstall end cap and screws.
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2090 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 10.

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.
INSTALLATION

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 6).

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).

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<thead>
<tr>
<th>Set Screw Hole Plugs</th>
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<tr>
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<tr>
<td>US28</td>
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<tr>
<td>DC13/DC35</td>
</tr>
</tbody>
</table>
INSTALLATION

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DEVICE TEMPLATE

Face of strike and stop or edge of mullion

15/64" dia. drill and countersink with 15/16" dia. tool
2 holes (see Detail A) inside face only

9/16" dia. inside face only

#7 drill and 1/4-20 tap 2 holes in lock stile inside face only

1-3/16" dia. outside face only for cylinder only

13/16" 13/32" 7/8" 1/4" 3/8" 7/8" 42" to finished floor (standard C for DOM 1790)

Door clear opening

Frame edge

3/64" 5/16" dia. x 82° countersink

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.
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STRIKE TEMPLATE

Measured from front of blade

#26 drill and 10-32 tap

5/32" radius 4 places

42" to finished floor (standard C for DOM 1790)

TOUCHBAR PART NUMBERS

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<thead>
<tr>
<th>Finish</th>
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<th>With Dogging Hole</th>
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PARTS LIST

1. See page 15 for touchbar part numbers.
2. Touchbar shown cut away for visibility.

RIM CYLINDER
(optional; sold separately)

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**Package No. ECAP.130**

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**Package No. COVER.120**

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**Package No. PKG.133**

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**Package No. CYLASY.1151**

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**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.