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Before Installation

1. Check “Series 1990 Parts List” (see page 5).
2. Prepare door, threshold, and head jamb: aluminum door page 7; hollow metal door page 8; threshold and head jamb page 6.

<table>
<thead>
<tr>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Handing of device can be changed.</td>
</tr>
<tr>
<td>2. Latch mounting center lines need not be the same as the housing center lines. The operating rod can work at an angle to permit mounting of latches so they will clear projections inside the door.</td>
</tr>
</tbody>
</table>
| 3. Crossbar length equals the distance between the housing vertical centerlines minus 1-3/4”.

INSTALLATION

1 Install rod assemblies.

1a For hollow metal door, attach latch brackets to sides of top and bottom latches with #10-32 x 1/4” UFPH machine screws (Figure 1-1).

1b Slide top rod assembly into door. Hollow metal door: Secure each latch bracket to door with two #10-32 x 3/8” FPH machine screws. Aluminum door: Secure top latch to door with two #10-32 x 1/4” UFPH machine screws through face of door into front mounting holes on latch.

1c Install bottom rod assembly into door. If using rod latch (RL) bottom rod assembly: For hollow metal door, secure each latch bracket to door with two #10-32 x 3/8” FPH machine screws; for aluminum door, secure top latch to door with two #10-32 x 1/4” UFPH machine screws through face of door into front mounting holes on latch.

1d For hex bottom rod, install hex rod guide in door with #10-24 x 3/8” UFPHTC screws (Figure 1-2).

1e Install rod bearing bushing over end of each rod and secure with retaining ring (Figure 1-3).

1f Check latch operation and rod length adjustment:
   a. Place traveler over rod ends.
   b. Slide traveler up. Top latch should release and hold rods in up position, and bottom latch should be completely retracted (flush with bottom edge of door).
   c. Move top latch back to locked position. Rods should drop down, locking top latch and extending bottom latch approximately 1/2”.
   d. If necessary, adjust rod lengths for correct operation. Remove traveler after adjustment.
2 Install cylinder

Install cylinder. If required, cut cylinder tailpiece as shown. Heads of cylinder mounting bolts must be flush with door surface.

![Diagram of cylinder installation with dimensions and notes]

3 Install pinion cam and traveler.

Position flat spots on pinion cam as shown.

![Diagram of pinion cam and traveler installation with notes]

NOTE

Apply a light coating of Duralub or equivalent lubricant to prolong pinion cam life.

Figure 3-1

Figure 3-2
4 Install retractor.

Install retractor over pinion cam (Figure 4-1). **Position retractor as shown in Figure 4-2 for holdback (HB) or night latch (NL) function.**

**Hold-back (HB):** Turning key one complete rotation retracts latch bolt. If key is removed in this position, latch bolt stays retracted. Returning key to original position before removing allows latch bolt to extend.

**Night latch (NL):** Turning key as far as it will go retracts latch bolt. Key must be returned to original position to be removed, leaving the door locked.

5 Install top strike.

Install top strike with four #8-32 x 1/4” flat head Phillips undercut screws. The top strike is fabricated off center to permit pin adjustment by rotating the strike 90°. Use strike shims (supplied with strike) as needed to adjust the projection of the strike pin.

6 Install housing mounting studs, housings, and crossbar.

6a Install four housing mounting studs (Figure 6-1).

6b Install lock stile housing over mounting studs and secure with set screws (Figure 6-2). Test operation.

6c Install crossbar and hinge stile housing (Figure 6-3). Secure housing with set screws. Secure crossbar with two 1/4-20 x 1” Taptite screws.
<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
<th>Description</th>
<th>Item</th>
<th>Qty.</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>2</td>
<td>Housing</td>
<td>17</td>
<td>4</td>
<td>Latch bracket (hollow metal doors only)</td>
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<td>8</td>
<td>#10-32 x 1/4&quot; UFPHMS</td>
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<td>Lever arm, RH</td>
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<td>8</td>
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<td>Crossbar</td>
<td>20</td>
<td>1</td>
<td>PB48 strike</td>
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<td>4</td>
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<td>3</td>
<td>PB48 strike shim</td>
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<td>6</td>
<td>6</td>
<td>1/4-20 x 3/8&quot; hex socket head set screw</td>
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<td>4</td>
<td>#8-32 x 1/2&quot; UFPHTC</td>
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<td>1</td>
<td>1/8&quot; Allen wrench</td>
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<td>4</td>
<td>#10-32 x 1/4&quot; UFPHMS</td>
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<td>Hex rod guide</td>
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<td>#10-24 x 3/8&quot; UFPHTC</td>
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<td>7/16-14 x 3/4&quot; hex socket head dogging screw</td>
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<td>Dogging key</td>
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<td>Rim cylinder (optional; sold separately)</td>
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<td>Spring pin</td>
<td>31</td>
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<td>Traveler</td>
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<td>1/4-20 x 1&quot; Taptite</td>
<td>32</td>
<td>1</td>
<td>Retractor</td>
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</tbody>
</table>
### TOP ROD ASSEMBLY

- **SU latch**
  - 4270101806
- **Jam nut 3/8"-24**
  - NUT.101 (Pkg of 10)
- **Top rod:**
  - Bent rod 35.125" long (7' door)
    - 4270100017 (can be shortened by 5")
  - Bent rod 47.125" long (8' door)
    - 4270100018 (can be shortened by 13")
- **Optional ES (electric strike) top latch** (not shown)
  - 4270100346

### ROD LATCH (RL) BOTTOM ROD ASSEMBLY

- **Bottom rod:**
  - Bent rod 35.125" long
    - 4270100017 (can be shortened by 5")
- **Jam nut 3/8"-24**
  - NUT.101 (Pkg of 10)
- **RL bottom latch**
  - 4270100521

### HEX BOTTOM ROD ASSEMBLY

- **Bottom rod:**
  - Bent rod 37.812" long
    - 4270101825 (can be shortened by 6")
- **Jam nut 3/8"-24**
  - NUT.101 (Pkg of 10)
- **Hex bolt**
  - 4270101830
- **Optional PL (pullman) bottom latch** (not shown)
  - 4270101482

### HEAD JAMB AND THRESHOLD PREPARATION

#### Upper Strike

**Head Jamb Preparation**

- Stop
- 11/32"
- 21/32"
- 11/16"
- 11/16"
- #29 (0.136") dia. drill
- #8-32 tap, 4 places
- Bottom plan view of head jamb (looking up)

#### Rod Latch (RL) or Hex Bolt

**Threshold Preparation**

- Stop
- "E"
- 3/4" dia.; cut strike opening for bottom latch thru threshold
- Top plan view of threshold

#### Pullman Latch

**Threshold Preparation**

- Stop
- "E"
- Cut strike opening for bottom latch thru threshold
- Top plan view of threshold
ALUMINUM DOOR PREPARATION

Pullman (PL) and Rod Latch (RL) Door Preparation

Hex Bottom Bolt Door Preparation

**NOTES**

D: Dimension from door stop face to housing is 3/4" minimum for medium and wide stiles.

E and F: Dimension from door stop face to top or bottom latch can be the same as “D” or can vary to suit door conditions.
HOLLOW METAL DOOR PREPARATION

Lock Stile

Hinge Stile

1/8" 7/16" 1/4" 3/16" 1/4" R

See note

Cutout on inside face only

7/8" 1/4" 3/16" 1/4" D

See note

Face of door stop

#9 (0.196" dia.) thru inside face 1/4-20 tap, 2 places

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

15/64" dia. c'sink with 5/16" dia. tool, 2 places

9/16" dia. ream

1/4" 13/16" 13/16" 1-1/2"

1/2" 41-5/16" to bottom of door

3-13/16" 6-1/4"

1/4" device

E See note

E

Face of door stop

1/4"

3/16" Bottom of door

F

Top and Bottom Latch Bracket

Door Preparation

NOTES

D: Dimension from door stop face to housing C is 3/4" minimum for medium and wide stiles.

E and F: Dimension from door stop face to top or bottom latch C can be the same as "D" or can vary to suit door conditions.

NOTE

Reinforcement in head jamb for top strike is 3/16" minimum. Reinforcement in stile for panic device is 1/8" minimum.