Devices covered by these instructions:
98/9927 Surface Vertical Rod Exit Device
98/9927-F (Fire) Surface Vertical Rod Exit Device
CD98/9927 (Cylinder Dogging) Surface Vertical Rod Exit Device
EL98/9927 (Electric Latch Retraction) Surface Vertical Rod Exit Device

Special tools needed:
5/64” hex wrench
#10-24 tap
Drill bits: #25, 1/8”, 1/4”, 5/16”, 13/32”

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### SCREW CHART

#### A
- **#10-24 X 1"** — Surface mount or Sex bolts (1-3/4" door)
- **#10-24 X 1-1/2"** — Sex bolts (2-1/4" door)
- **#10 x 1-1/4" Wood screw** — Surface mount (wood)
- **- Packaged with trim -**
  - **#10-24 X 1-3/8"** — 990 trims (1-3/4" door)
  - **#10-24 X 1-7/8"** — 990 trims (2-1/4" door)

#### B
- **#10-24 X 3/4"** — Surface mount or Sex bolts (1-3/4" door)
- **#10-24 X 1-1/8"** — Sex bolts 2-1/4" door
- **#10 x 1-1/4" Wood screw** — Surface mount (wood)

#### C
- **#10-16 X 3/8" Thread cutting** — End cap

#### D
- **1/4-20 X 3/4"** — 1-3/4" door
- **1/4-20 X 1-1/4"** — 2-1/4" door

#### E
- **#10-24 X 3/4"** — Metal frame
- **#10 x 1-1/2" Wood screw** — Wood frame

#### F
- **#10-12 x 10-24 x 1-1/4" Combination** — Metal or wood frame

#### G
- **#10-12 x 10-24 x 1-1/4" Combination** — Variable floor surfaces

#### H
- **#8-32 X 1/4"** — Latch covers

#### I
- **#10-12 x 10-24 x 1" Combination** — Metal or wood door

#### J
- **#8-18 X 3/8" Thread cutting** — Center case cover
PREPARATION CHART

Go to instructions on next page before using Preparation Chart

Latches

Metal

5/16” Drill (device side)
13/32” Drill (trim side)

Wood

13/32” Drill thru

Top strike

Metal

#25 Drill
#10-24 Tap

Wood

1/8” Drill
pilot 1” deep

*Rod guides

Metal

#25 Drill
#10-24 Tap

Wood

1/8” Drill
pilot 1” deep

*Use rod guide as a template to mark holes

Center case - 4 holes

Surface mount | Sex bolts or 990 trims
---|---
Metal | #25 Drill
1/4” Drill (device side)
13/32” Drill (trim side)

Wood

1/8” Drill
pilot 1” deep

Wood

13/32” Drill thru

Door cut-outs

Outside cylinder applications:
Mark with template and cut-out:

Metal door (cut device side)
Wood door (cut thru)

For trim applications with working lever, thumbpiece, or knob:
Mark with template and cut out:
(cut device side only)

If door already has this cut-out for trim, no further cutting is necessary

*End cap bracket - 2 holes

Surface mount | Sex bolts
---|---
Metal | #25 Drill
1/4” Drill (device side)
13/32” Drill (trim side)

Wood

1/8” Drill
pilot 1” deep

Wood

13/32” Drill thru

*Prepare holes after lock side of device is mounted and hinge side is leveled

Bottom strike

Metal

#25 Drill
#10-24 Tap

Wood

1/8” Drill
pilot 1” deep

See template for strike variations

*End cap bracket - 2 holes

Surface mount | Sex bolts
---|---
Metal | #25 Drill
1/4” Drill (device side)
13/32” Drill (trim side)

Wood

1/8” Drill
pilot 1” deep

Wood

13/32” Drill thru

*Prepare holes after lock side of device is mounted and hinge side is leveled
1. **Draw Horizontal Center Line (C) and Assemble Device Template**

   - Draw a horizontal center line (C) on the door template.
   - Assemble the device template according to the instructions.

2. **Position Template as Shown and Mark Vertical C**

   - Position the template as shown in the diagram.
   - Mark the vertical line (C) on the template.
   - If using a tailpiece, rotate the tailpiece guide to match the tailpiece.

3. **Align Top and Bottom Templates Along C and Prepare Door**

   - Align the top and bottom templates along the center line (C).
   - Prepare the door according to the instructions.
   - See the "Preparation Chart" on page 3 for drill, tap, and cut-out information.

4. **If Necessary, Remove NL Drive Screw**

   - If using a cylinder with a tailpiece, prepare the device and cylinder.
   - Install the tailpiece guide as needed.
   - Cut the tailpiece as needed.

5. **If Using a Cylinder with a Tailpiece, Prepare Device and Cylinder**

   - Install the tailpiece guide.
   - Cut the tailpiece as needed.
6 Install Trim (if using) and Secure Device Center Case to Door

- 1½” Minimum clearance (with end cap removed) if device is too long for door, see “Cut Device” on back cover

7 Mark and Prepare 2 Holes for End Cap Bracket

- See “Preparation Chart” on page 3 for preparation information

8 Install End Cap Bracket and End Cap

- Secure end cap bracket and end cap

9 Install Top Latch and Rod

- Top latch
- Top rod (longer of the two)
- #325 sex bolts (required)

- If top rod is too long, see “Cut Top Rod” on page 7
- If top rod is too short, see “Install Rod Extension” on page 7

10 Install Top Strike

- 299/299F strike
- 499F strike (for LBR devices) See instruction 911009

- Shim to ¾”) as shown

11 Adjust Top Rod (Screw Rod Into or Out of Latch) Until Adjusted as Shown

- With door closed:
  - Latch bolt deadlocked (will not push in)
- With door open:
  - Latch bolt stays retracted

- Release trigger extended
Install Rod Guides and Covers

- Remove blue film
- Latch cover (2)
- Rod guide (2)
- Install at midpoint of each rod
- See "Preparation Chart" on page 3

Adjust Bottom Rod with Door Open (Top Latch Retracted)

With door open:
- Latch bolt should clear floor and not bind on strike

With door closed:
- Latch bolt should be deadlocked (will not push in)

Open and close door a few times and check for deadlatching when door is closed. Readjust rods if needed.
CUT TOP ROD

1. Measure amount to cut off rod as shown below.
   Note: Rod cutting is required for doors shorter than 7”.

   "84"

   Actual door opening height

   "96"

   * Standard door heights:
     With no extension 7’ (84”)
     With 1’ extension 8’ (96”)
     With 3’ extension 10’ (120”)

   * Rods are factory sized for 7’ (84”) door. Measure actual door opening height and subtract that number from 84” to get amount to cut off top rod.

2. Cut rod.

   Drive out roll pin

3. Drill new hole.

   Use cut off piece as a template

4. Reinstall rod end and roll pin.

   Install rod extension

INSTALL ROD EXTENSION

1. Measure door opening to determine amount to cut off rod extension.

   "96"

   OR

   "120"

   Actual door opening height

   * Rods are factory sized for door heights shown above. Measure actual door opening height and subtract that number from 96” (for 1’ extension) or 120” (for 3’ extension) to get amount to cut off extension.

2. Cut rod extension.

   Drive out roll pin

3. Drill new hole.

   Use metal template supplied with extension (on both sides of rod)

4. Reinstall rod end and roll pin.

   Connect top rod and rod extension.

   Rod extension Top rod

Note: Rod cutting is required for doors shorter than 7’.

Amount to cut off

Amount to cut off

*96"

*120"

Actual door opening height

Actual door opening height

* Standard door heights:
  With no extension 7’ (84”)
  With 1’ extension 8’ (96”)
  With 3’ extension 10’ (120”)

Rods are factory sized for 7’ (84”) door. Measure actual door opening height and subtract that number from 84” to get amount to cut off top rod.

Rods are factory sized for door heights shown above. Measure actual door opening height and subtract that number from 96” (for 1’ extension) or 120” (for 3’ extension) to get amount to cut off extension.
1. Remove mortise cylinder cam and reinstall in reverse (Figure 1).
2. Insert key and rotate cam to install the cylinder to the cover plate (Figure 2).
3. Remove key to slide cover plate in position in the mechanism case.

**Figure 1**

**Dogging procedure**

Turn cylinder key clockwise approx. 1/8 turn for standard dogging

Depress pushbar

**Figure 2**

**CUT DEVICE**

1. Measure amount to cut off device.

   1-1/2” minimum clearance (with endcap removed)

   Device aligned with mounting holes

   **Note**

   If 5/8” diameter wire access hole has been predrilled in door, cut device 5/16” from center of hole.

2. Tape and mark area being cut.

   Remove anti-rattle clip

   **Cover plate** (flush to pushbar)

   **Pushbar**

3. Cut device square.

   Cut device **square** and remove all burrs

   **NOTE:** Device must be cut **square** for proper end cap fit

4. Slide anti-rattle clip into device.

   **2” min.**

   Anti-rattle clip inside