

# VON DUPRIN®

## Installation Instructions



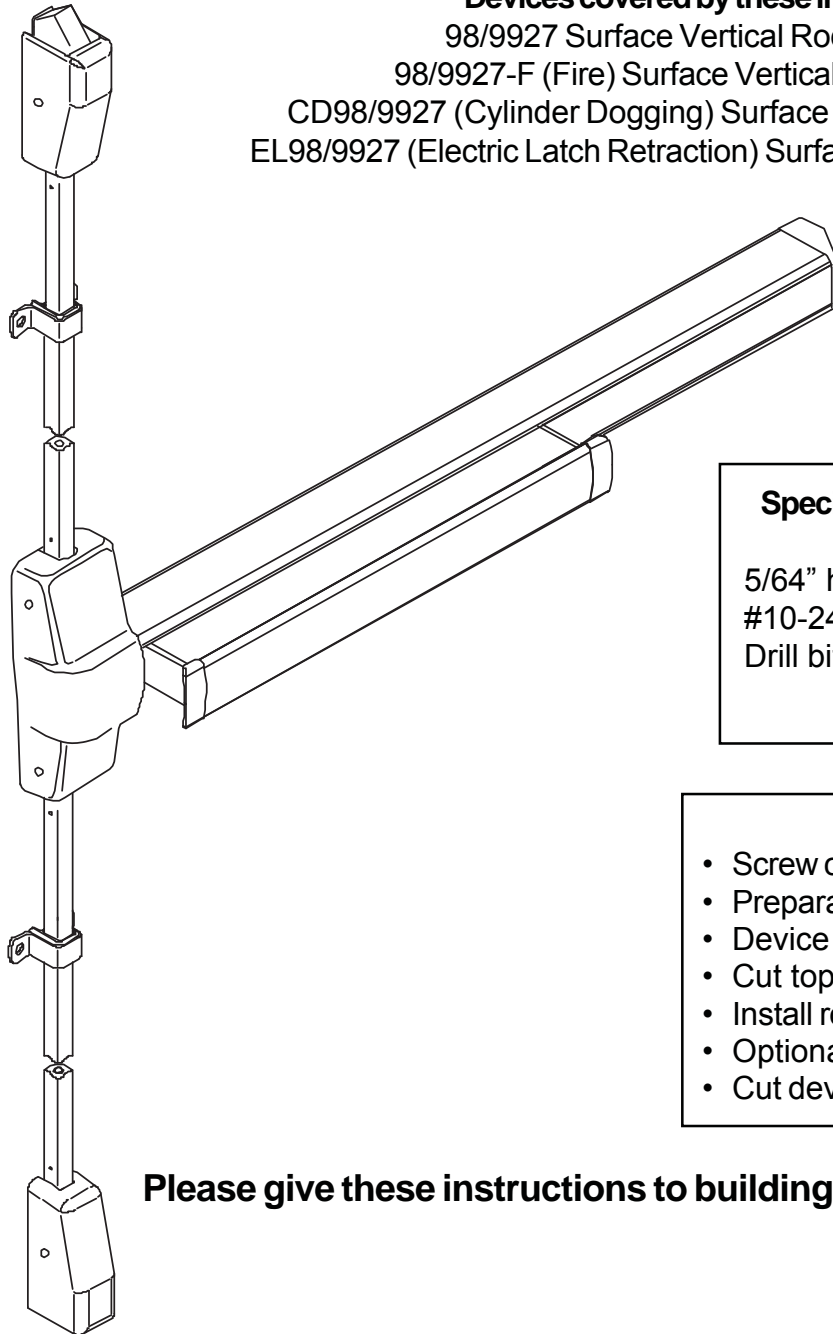
911375-00



### 98/9927 Surface Vertical Rod Exit Device

#### 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"

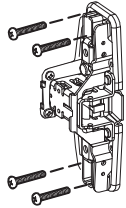
#### Index:

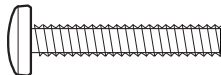
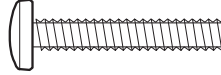
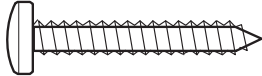

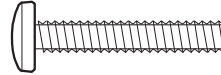
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- Cut top rod ..... 6
- Install rod extension ..... 6
- Optional equipment ..... 7-8
- Cut device ..... 8

**Please give these instructions to building owner after device is installed**

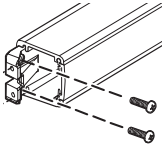
# SCREW CHART

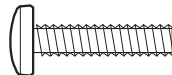
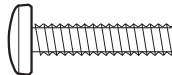
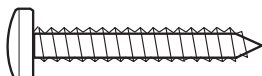
**A**



	#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**



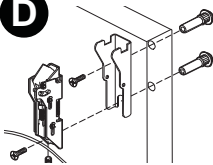
	#10-24 X 3/4"	Surface mount or Sex bolts (1-3/4" door)
	#10-24 X 1-1/8"	Sex bolts 2-1/4" door
	#10 x 1-1/4" Wood screw	Surface mount (wood)

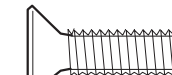

**C**



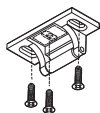
	#10-16 x 3/8" Thread cutting	Endcap
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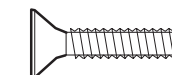
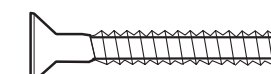
**D**



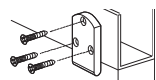
	1/4-20 X 3/4"	1-3/4" door
	1/4-20 X 1-1/4"	2-1/4" door

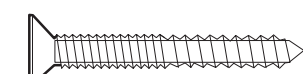
**E**



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

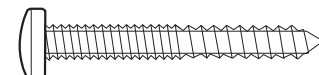
**F**



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



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



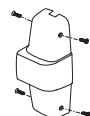
	#8-32 X 1/4"	Latch covers
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**I**



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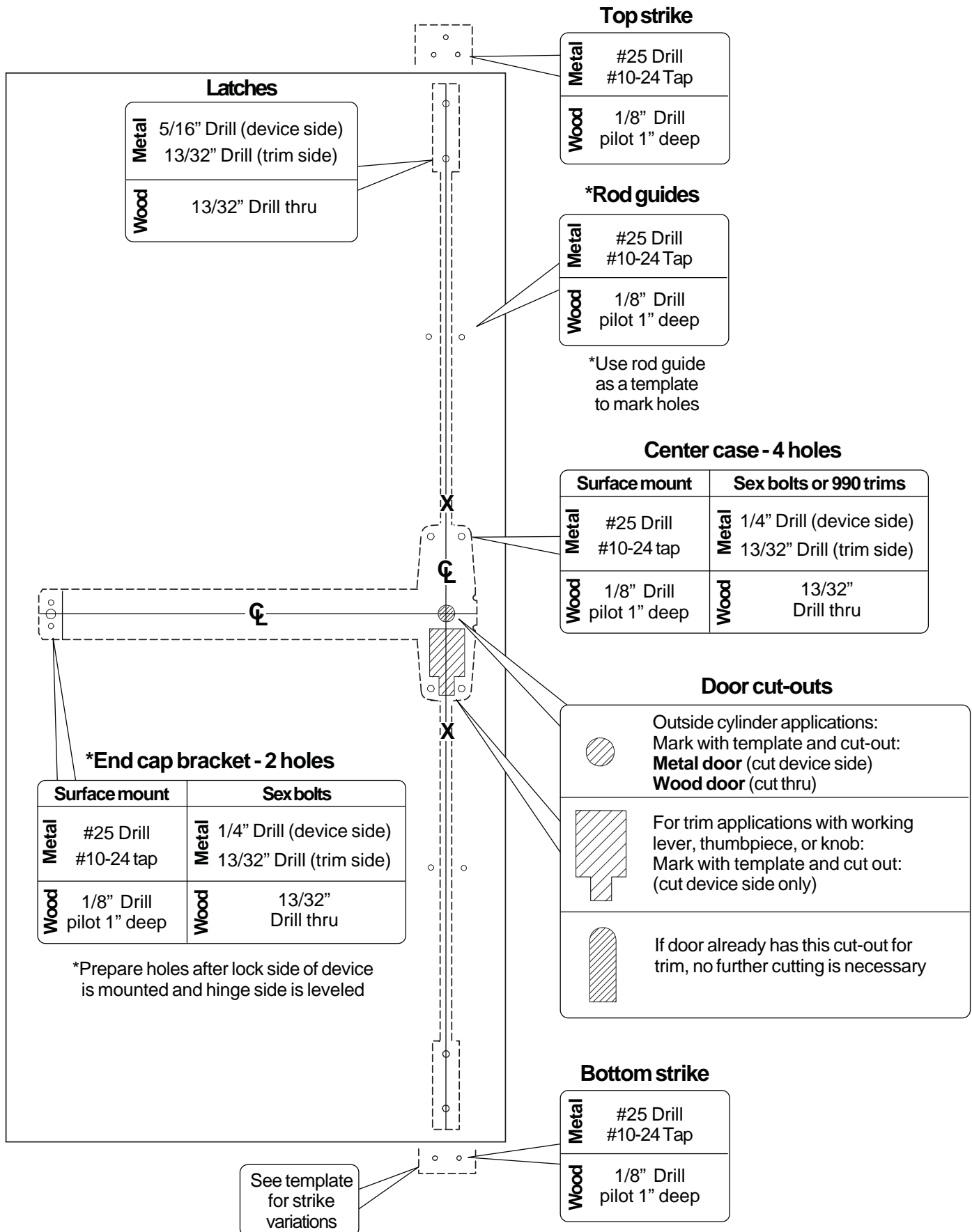
**J**



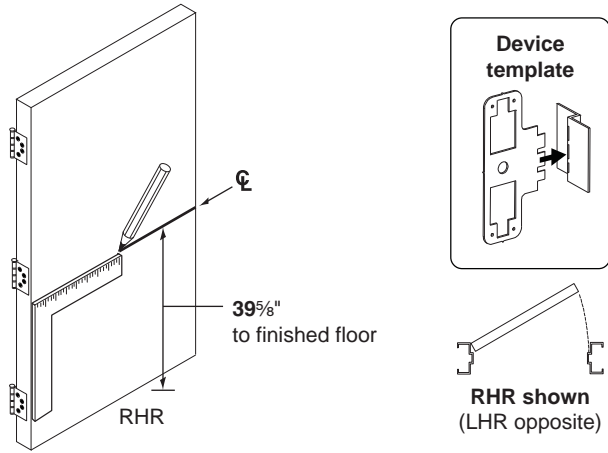
	#8-18 x 3/8" Thread cutting	Center case cover
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# PREPARATION CHART

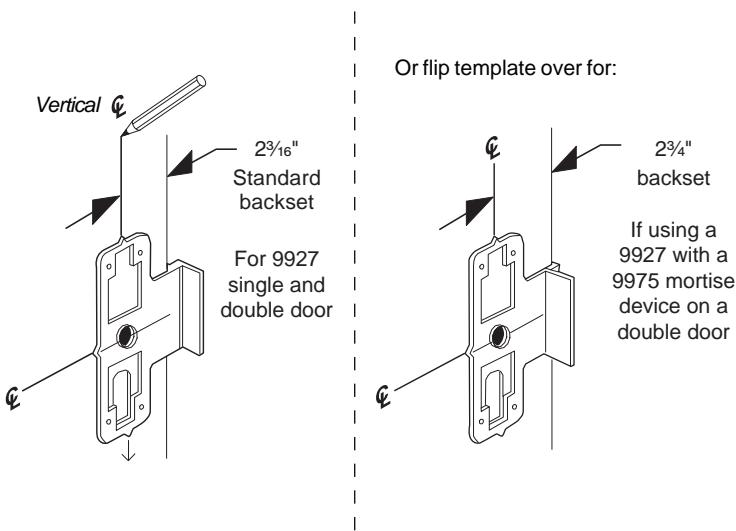
Go to instructions on next page before using Preparation Chart



# 1 Draw Horizontal Center Line (☉) and Assemble Device Template



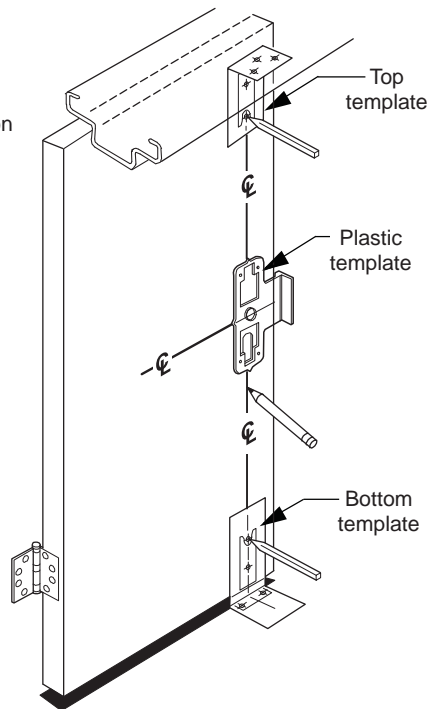
# 2 Position Template as Shown and Mark Vertical ☉



# 3 Align Top and Bottom Templates Along ☉ and Prepare Door

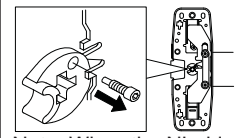
See "Preparation Chart" on page 3 for drill, tap, and cut-out information

See trim instructions for pull side door preparation. Line X-X in trim instructions is same as vertical device ☉.



# 4 If Using an Outside Cylinder, Check NL Drive Screw

## NL drive screw

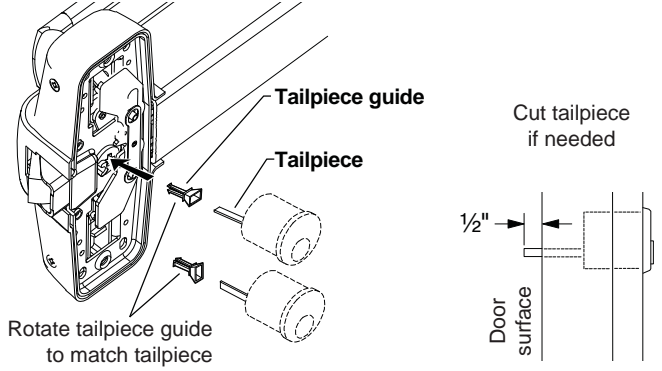


When installing trim that has a functional lever, knob, or thumb piece AND an outside cylinder to lock and unlock the trim, remove NL drive screw from back of device.

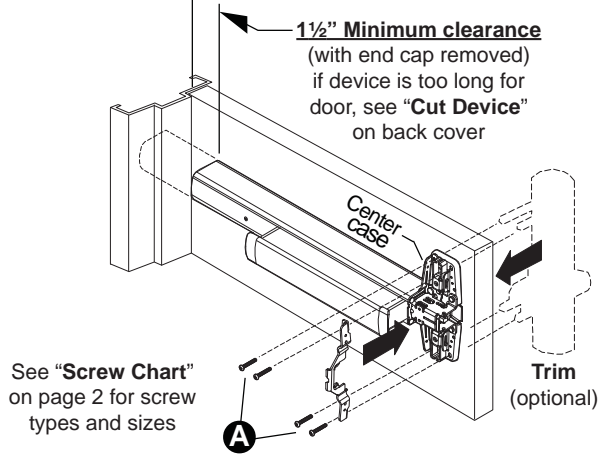
DO NOT remove NL drive screw for the following application: **NL, EO, DT, TP-2, L-2, and K-2.**

With "BE" trim, device may need to be rehandled. See instructions on back of trim.

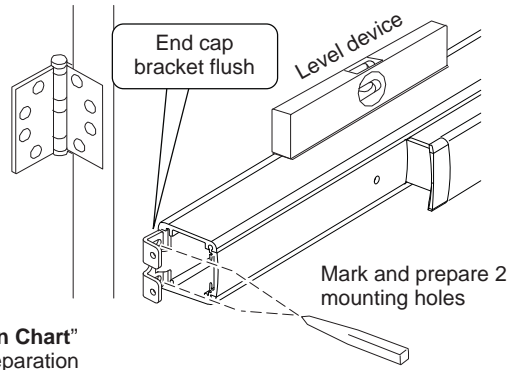
# 5 Install Tailpiece Guide



# 6 Install Trim (if using) and Secure Device Center Case to Door



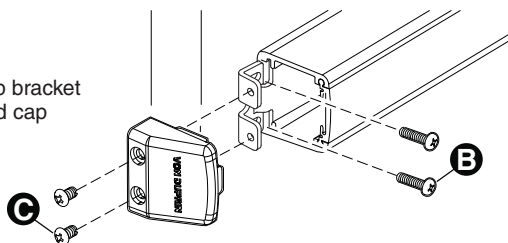
# 7 Mark and Prepare 2 Holes for End Cap Bracket



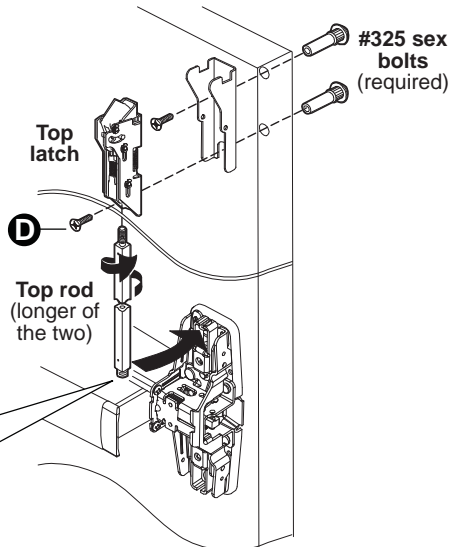
See "Preparation Chart" on page 3 for preparation information

## 8 Install End Cap Bracket and End Cap

Secure end cap bracket and end cap



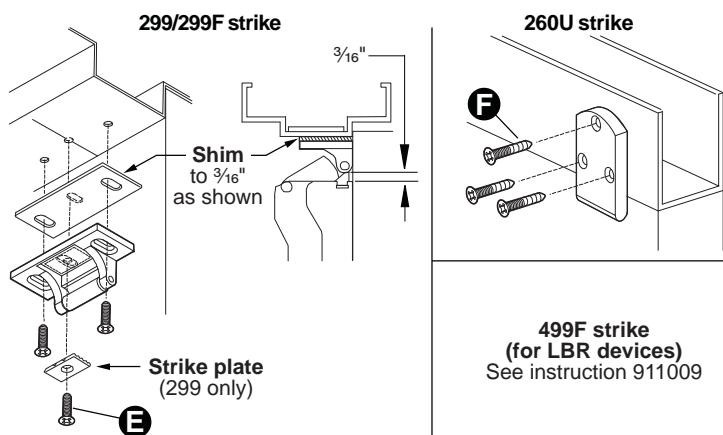
## 9 Install Top Latch and Rod



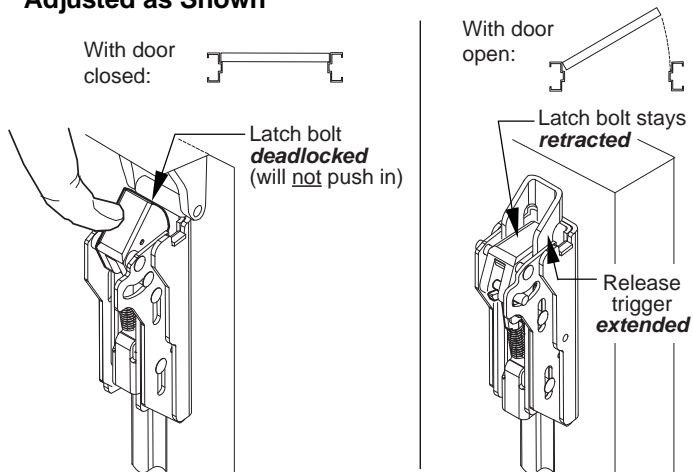
If top rod is too long, see "Cut Top Rod" on page 6

If top rod is too short, see "Install Rod Extension" on page 6

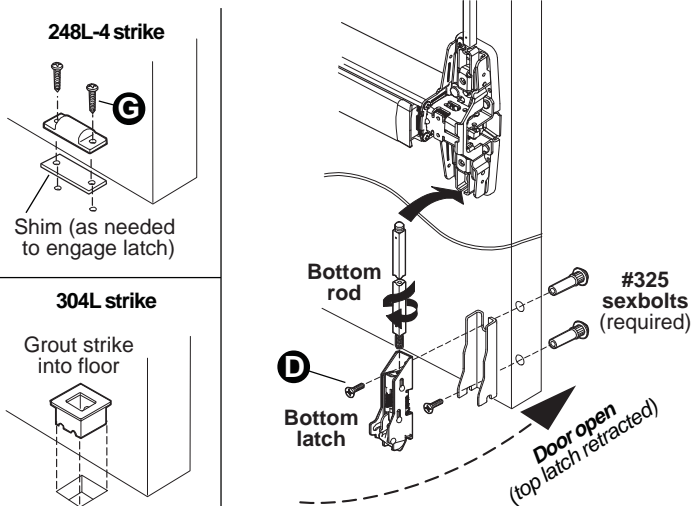
## 10 Install Top Strike



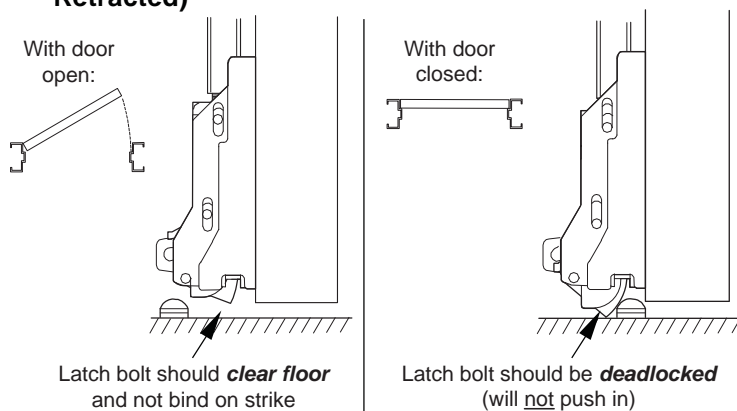
## 11 Adjust Top Rod (Screw Rod Into or Out of Latch) Until Adjusted as Shown



## 12 Install Bottom Strike, Latch, and Rod

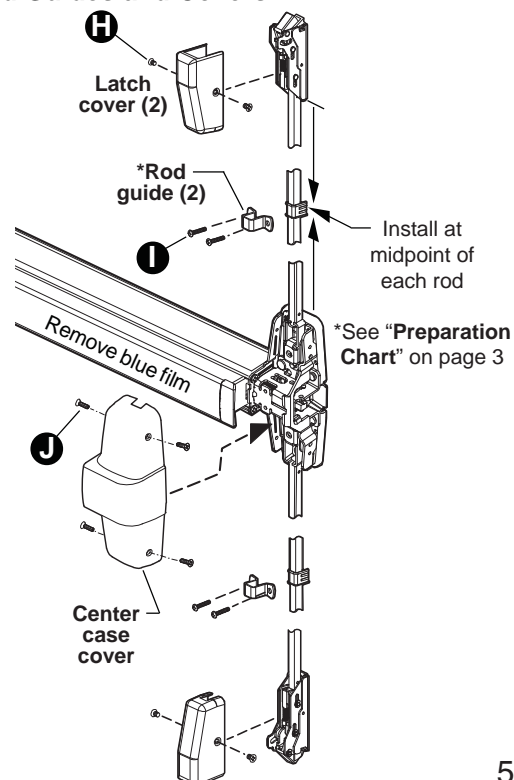


## 13 Adjust Bottom Rod with Door Open (Top Latch Retracted)



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

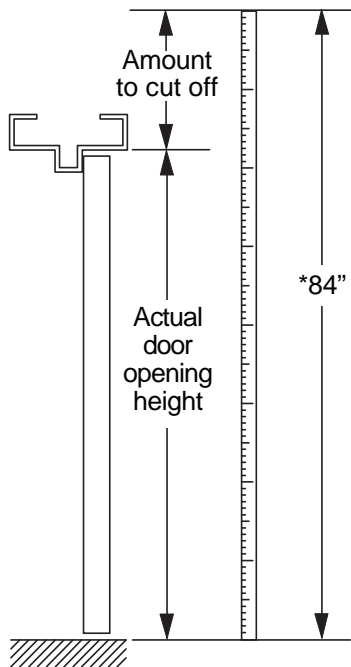
## 14 Install Rod Guides and Covers



# CUT TOP ROD

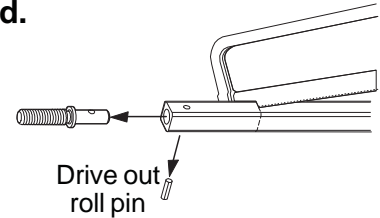
## 1. Measure amount to cut off rod as shown below.

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

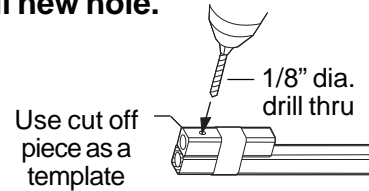


\*Rods are factory sized for 7' (84") door. Measure actual door height and subtract that number from 84" to get amount to cut off top rod.

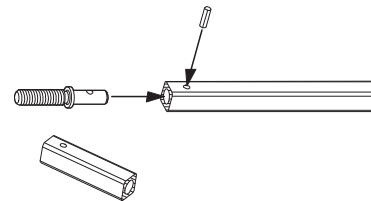
## 2. Cut rod.



## 3. Drill new hole.

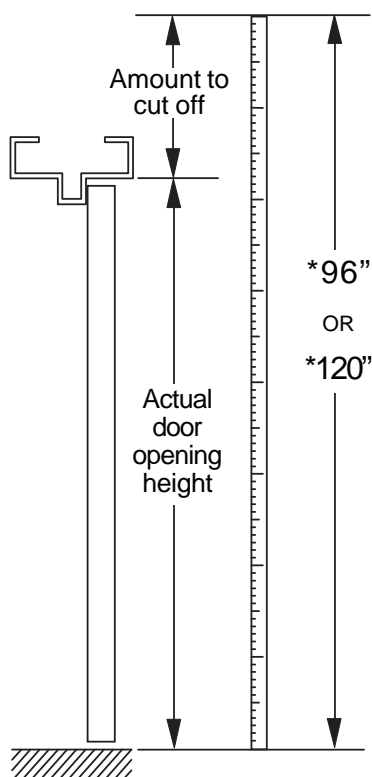


## 4. Reinstall rod end and roll pin.



# INSTALL ROD EXTENSION

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

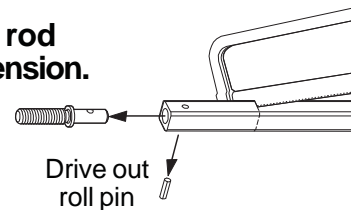


### \*Standard door heights:

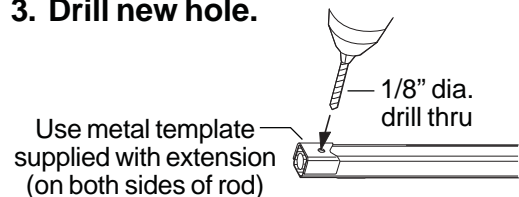
With no extension	7' (84")
With 1' extension	8' (96")
With 3' extension	10' (120")

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

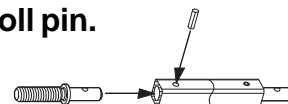
## 2. Cut rod extension.



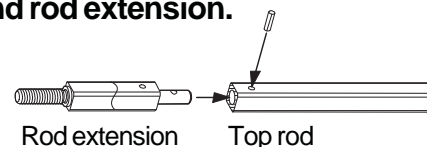
## 3. Drill new hole.



## 4. Reinstall rod end and roll pin.

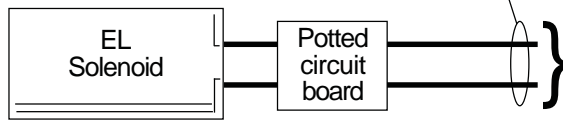


## 5. Connect top rod and rod extension.



# OPTIONAL EQUIPMENT

12 AWG required for distances up to 200'  
14 AWG permitted for distances 0-100'



## ELECTRICAL SPECIFICATIONS

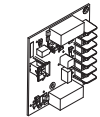
Voltage: 24 VDC  
Current: 16 A inrush (0.3 sec.)  
0.25 A holding

## NOTE

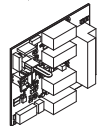
When power is applied to the **potted circuit board**, the solenoid receives a momentary signal to retract and a separate signal to hold as long as power is applied. When attempting to retract solenoid again, power must be removed from the circuit and reapplied.

## EL WIRING

**Solenoid draws 16 A inrush current from PS914. Solenoid must be wired to a 900-2RS logic board:**



If 900-2RS logic board, refer to instructions 44487056.

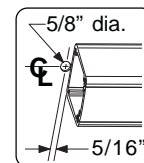


If 900-4RL logic board, refer to instructions 44487080.

Solenoid

Potted Circuit Board  
Install after device has been mounted on door

Do not cut device with potted circuit board installed



Drill 5/8" dia. wire access hole thru device side of door.

Electric power transfer

## Troubleshooting solenoid operation

If the solenoid fails to retract the latch bolt when power is applied, recheck wiring for proper connections.

If solenoid retracts latch bolt momentarily but will not remain in energized position:

1. Check wiring for proper connections, gauge, and distances.
2. Check for latch bolt binding caused by improper strike installation, warped door, etc.

## EL ADJUSTMENT PROCEDURE

### A. Check for proper function:

1. Make sure device is not dogged.
2. Depress pushbar and make sure latch bolt retracts and extends fully (see page 5, step 11 & 13).
3. Electrically energize solenoid and hold.
4. Check latch bolt(s) for full retraction (must clear strike (see page 5, step 11 & 13).
5. Release solenoid and check latch bolt extension (see page 5, step 11 & 13).
6. Continue to Section B if device does not function electrically.

### B. Determine if dogging rod adjustment is too long or short:

1. The dogging rod adjustment is **too long** if latch bolt does not retract and clear strike (see section C for adjustment).
2. The dogging rod adjustment is **too short** if latch bolt does not fully extend **or** latch bolt fully retracts but solenoid releases while energized (see Section D for adjustment).

### C. Adjust solenoid if dogging rod is **too long** (see Figure 3):

1. Remove end cap ① and dogging cover ②.
2. Loosen cap screw ③.
3. Hold plunger ⑤ depressed in solenoid housing ⑥.  
**Note:** Push hard against plunger ⑤ to overcome an internal spring in solenoid housing ⑥.
4. Turn threaded bushing ④ in to shorten dogging rod ⑦ so latch bolt fully retracts.
5. Tighten cap screw ③.  
**Note:** Cap screw ③ must be tightened against flat on threaded bushing ④. Apply a few drops of Loc-Tite 222 to threads of cap screw ③.
6. Replace dogging cover ② and end cap ①.
7. Return to Section A to check for proper function.

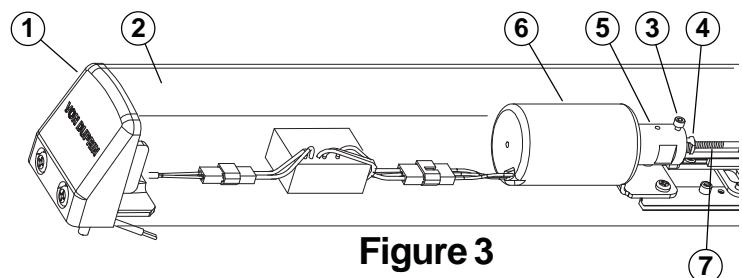


Figure 3

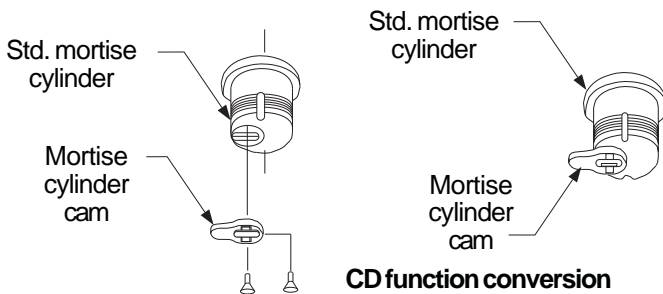
### D. Solenoid adjustment if dogging rod adjustment is **too short** (see Figure 3):

1. Remove end cap ① and dogging cover ②.
2. Loosen cap screw ③.
3. Hold plunger ⑤ depressed in solenoid housing ⑥.
4. Turn threaded bushing ④ out to lengthen dogging rod ⑦ so plunger ⑤ just bottoms in solenoid housing ⑥ and latch bolt is fully retracted.  
**Note:** Push hard against plunger ⑤ to overcome an internal spring in solenoid housing ⑥.
5. Tighten cap screw ③.  
**Note:** Cap screw ③ must be tightened against flat on threaded bushing ④. Apply a few drops of Loc-Tite 222 to threads of cap screw ③.
6. Replace dogging cover ② and end cap ①.
7. Return to Section A to check for proper function.

# OPTIONAL EQUIPMENT - CONTINUED

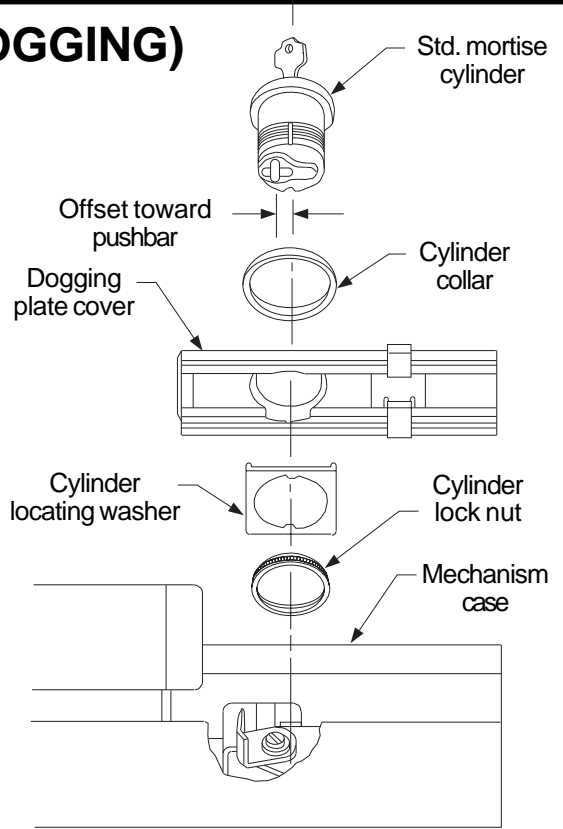
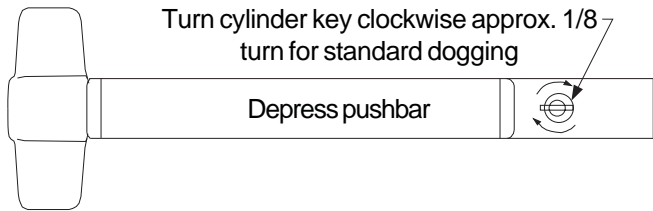
## CD (CYLINDER DOGGING)

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**

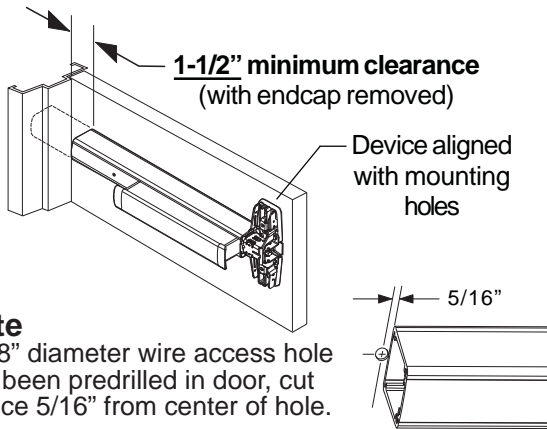
### Dogging procedure



**Figure 2**

## CUT DEVICE

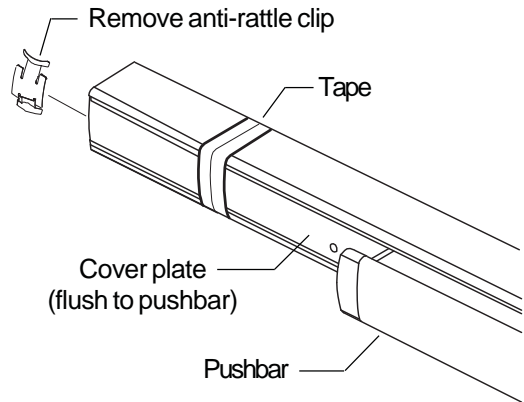
### 1 Measure amount to cut off device.



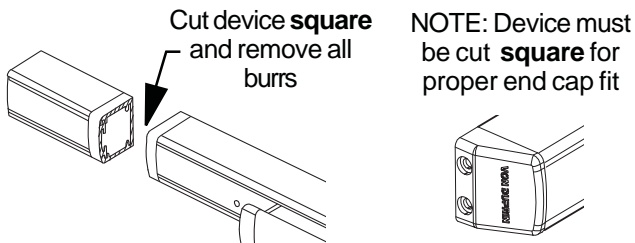
**Note**

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.



### 3 Cut device square.



### 4 Slide anti-rattle clip into device.

