



# *SentryGate*<sup>™</sup> 4

INSTALLATION INSTRUCTIONS

ES 10-258

**NOTE:** Read all instructions carefully, checking shop drawings supplied for any special conditions. Open all crated materials and check for damaged or missing parts prior to installation.

**NOTE:** Proper operation is a direct result of proper installation. To ensure that your SentryGate™4 will function at it's maximum potential, work to minimal tolerances when leveling sill and establishing distance between guides.

**NOTE:** Left hand (LH) or right hand (RH) of the unit is taken as you face the door opening from the coil side of the unit.

**NOTE:** Refer to hardware list provided to identify fasteners supplied.

**1. Inspection:**

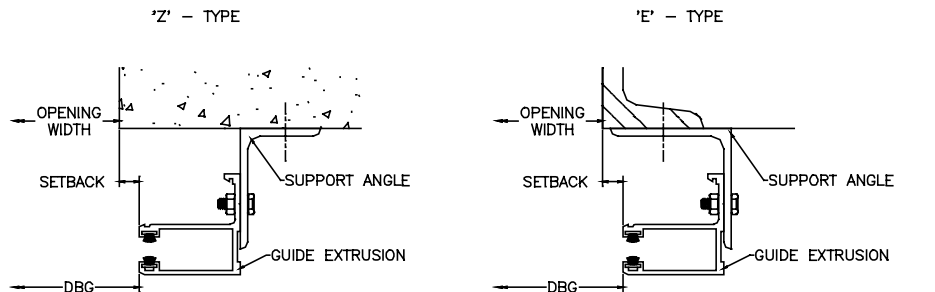
Establish opening width and height and check against the opening size shown on the shop drawings. Check sill and level if necessary.

**2. Install guide assemblies:**

Figure 2-1 shows three types of guide configurations.

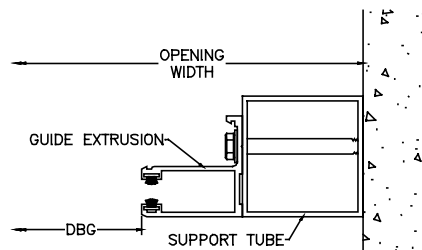
**Figure 2-1**

A: FACE OF WALL



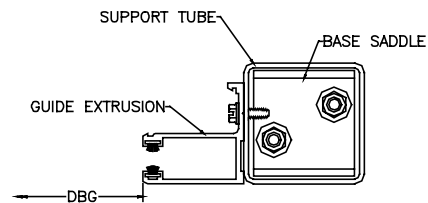
B: BETWEEN JAMBS

SUPPORT TUBE MOUNTED TO WALL



C: BETWEEN JAMBS

SUPPORT TUBE FASTENED TO BASE SADDLE AND SUPPORTED BY CONSTRUCTION ABOVE



A. Face of wall ('E' or 'Z')

B. Between jambs with support tube mounted to jamb.

C. Between jambs with support tube fastened to base saddle and supported by construction above.

If guide is type [A] or [B]:

1. Set left hand guide support in place according to the guide detail and plumb.
2. Mark hole locations on wall and remove guide support.
3. Drill and prepare holes for wall fasteners.
4. Return the guide support into position and install wall fasteners securing guide in place.
5. Measure from the lh guide assembly the distance between the guide supports and make a reference mark for locating the rh guide support.
6. Place the rh guide support on the reference mark, plumb and level with respect to the lh jamb.
7. Repeat steps 2 through 4 for the rh guide support.

If guide is type [C]:

1. Position left hand guide support according to guide detail.
2. Mark support tube location on floor and remove support tube.
3. Center base saddle on support tube location marks. Mark floor for saddle fasteners and remove base saddle
4. Drill and prepare holes for saddle fasteners.
5. Return base saddle and secure in place.
6. Position guide support tube over the base saddle and plumb.
7. Secure top of support tube to construction above. Unless a length is specified, steel tubes are supplied in 20' lengths (aluminum tubes in 14' lengths) and are to be fitted at time of installation.
8. Measure from the lh guide assembly the distance between the guide support tubes and make a reference mark for locating the rh guide support tube.
8. Place the rh guide support tube on the reference mark.
9. Repeat steps 2 through 7 for the rh guide support tube.

### **3. Preparation for hood support mounting:**

If a hood is supplied with more than one section, a hood support is required. It is advisable to locate the hood support(s) prior to shaft assembly installation because, when installed, the shaft assembly limits access and makes it difficult to prepare holes for hood support attachment. Check support layout relative to the length of hood sections supplied. Mark holes and drill and prepare for fasteners. Do **not** install hood support at this time.

### **4. Shaft positioning:**

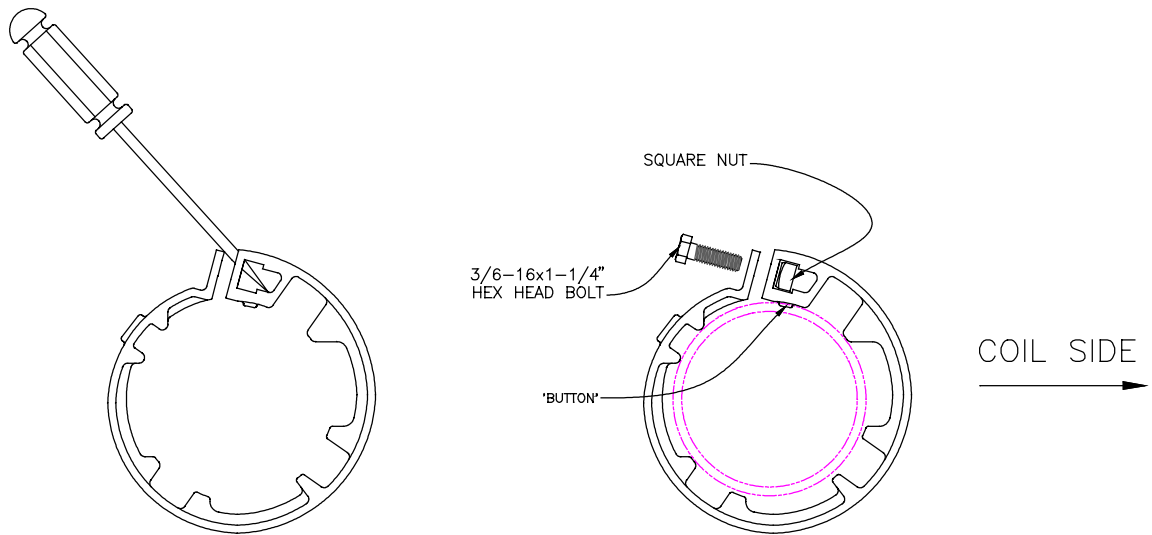
Check the markings on the shaft assembly. The adjustor side will be labeled "LH ADJUST" or "RH ADJUST". Position the shaft assembly according to these markings and hoist the shaft assembly approximately 2 or 3 feet above floor for ring installation.

Note: Left hand or right hand is taken as you face the door opening from the coil side of the unit.

**5. Ring installation (4" pipes only):**

Figure 5-1 shows the proper orientation of the ring on the shaft assembly.

***Figure 5-1***



1. Spread the ring enough to allow it to slip onto the shaft assembly by inserting a screwdriver into the closed portion of the cast iron ring as shown in Figure 5-1.
2. Slide ring into position on the shaft assembly so that the 'button' falls into the pre-drilled locator hole.
3. Install the 3/8-16 x 1-1/4" hex head bolt through holes in ring and into the square nut.
4. Be sure that the ring is square on the shaft and tighten hex bolt until ring clamps securely to the shaft assembly.
5. Repeat steps 1 through 4 until all rings are installed.

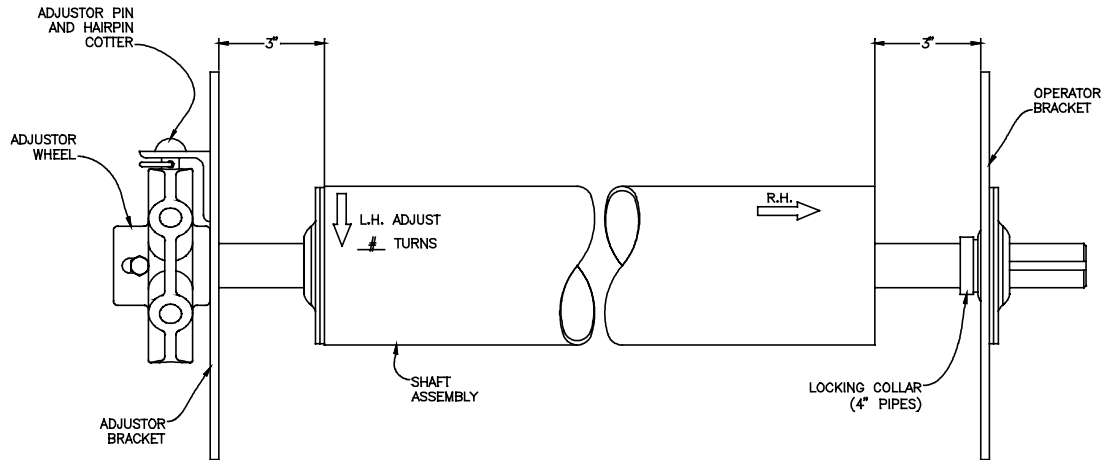
Note: A 3/8-16 x 3/4" hex head bolt and a 3/8" flat washer are included in the ring hardware package for each ring to be used later for curtain attachment.

**6. Bracket and Shaft installation:**

Figure 6-1 through Figure 6-4 show the available shaft configurations. Identify the type of shaft assembly supplied and follow the instructions for that style of shaft.

Note: Figure 6-1 through Figure 6-4 show a right hand operator / left hand adjustor as viewed from the coil side of the unit.

**Figure 6-1**

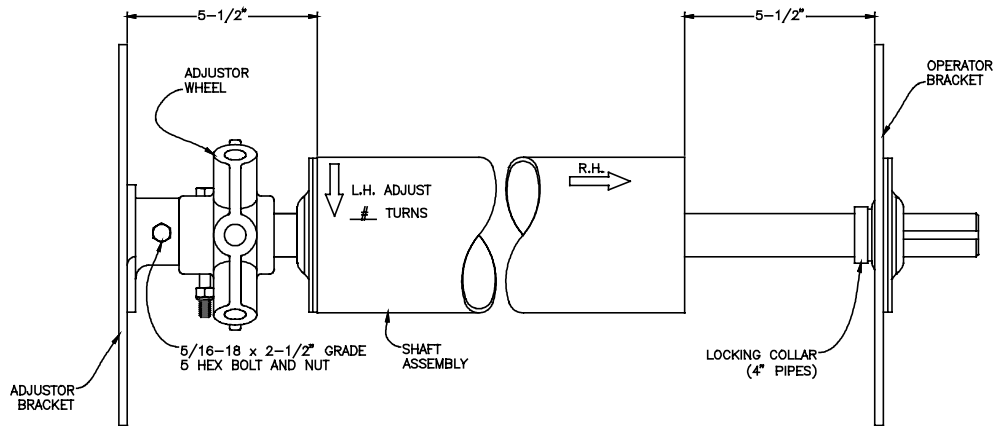


OUTSIDE ADJUST / OUTSIDE GEAREND  
(4" AND 6" PIPES)

If shaft is outside adjust / outside gearend:

1. Remove adjustor wheel (if necessary).
2. Slide adjustor bracket plate onto shaft.
3. Reinstall adjustor wheel.
4. Install adjustor pin through clip angle to align adjustor wheel.
5. Fasten adjustor wheel securely to the shaft and remove the adjustor pin.
6. Slide operator bracket onto shaft and locate inside of bracket plate 3" from the edge of the pipe.
7. On 4" pipes, slide locking collar until shoulder engages the flange bearing on the bracket plate. It may be necessary to rotate collar to get it to fully engage the flange bearing. Using a hammer and a punch, rotate the collar until it locks the bearing to the shaft. Tighten setscrew on collar.
8. For chain or crank operated units, slide driven sprocket onto shaft and align with drive sprocket from the operator. Tighten setscrews on sprockets. Install roller chain and adjust chain tension. Tighten operator mounting bolts securely.
9. Refer to Figure 6-5 for bracket position on support. Hoist shaft assembly with brackets into place. Fasten bracket plates to guide supports using bracket mounting hardware provided.

**Figure 6-2**

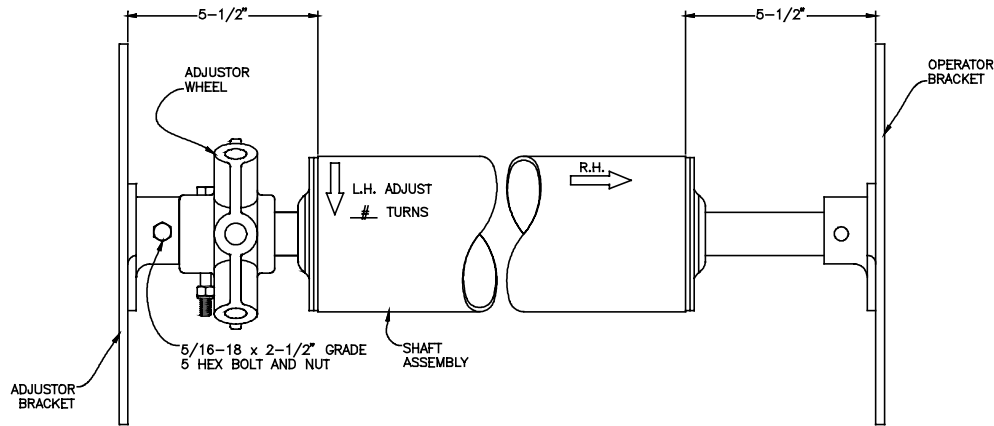


INSIDE ADJUST / OUTSIDE GEAREND  
(4" PIPES)

If shaft is inside adjust / outside gearend:

1. Remove 5/16-18 x 2-1/2" hex head bolt and nut from adjustor bracket lug.
2. Install adjustor bracket to guide support using bracket mounting hardware provided. Refer to Figure 6-5 for bracket position on support.
3. Slide operator bracket onto shaft and locate inside of bracket plate 5-1/2" from the edge of the pipe.
4. On 4" pipes, slide locking collar until shoulder engages the flange bearing on the bracket plate. It may be necessary to rotate collar to get it to fully engage the flange bearing. Using a hammer and punch, rotate the collar until it locks the bearing to the shaft. Tighten setscrew on collar.
5. For chain or crank operated units, slide driven sprocket onto shaft and align with drive sprocket from the operator. Tighten setscrews on sprockets. Install roller chain and adjust chain tension. Tighten operator mounting bolts securely.
6. Hoist shaft assembly with operator bracket and place adjustor side of shaft into adjustor bracket lug. Reinstall 5/16-18 x 2-1/2" hex head bolt into adjustor bracket lug and through shaft temporarily to keep shaft from slipping out of adjustor lug. Fasten operator bracket plate to guide support using bracket mounting hardware provided.

**Figure 6-3**



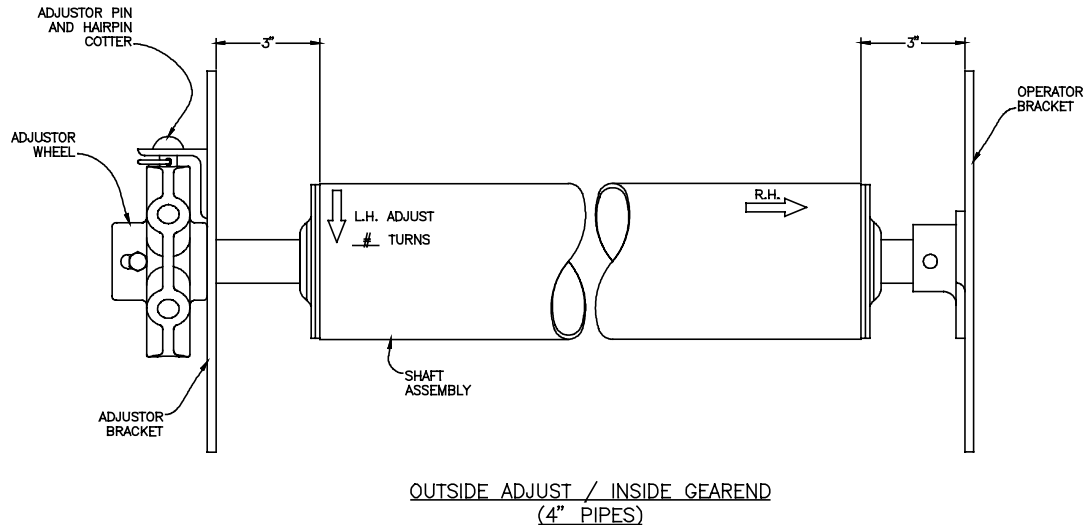
INSIDE ADJUST / INSIDE GEAREND  
(4" PIPES)

If shaft is inside adjust / inside gearend (push-up operation only):

1. Remove 5/16-18 x 2-1/2" hex head bolt and nut from adjustor bracket lug.
2. Install brackets to guide supports using the bracket mounting hardware provided. Refer to Figure 6-5 for bracket position on support.
3. Hoist shaft assembly and place into bracket lugs. Reinstall 5/16-18 x 2-1/2" hex head bolt into adjustor bracket lug and through shaft temporarily to keep shaft from slipping out of adjustor lug.

***CAUTION:*** *The gearend of the shaft assembly is not fastened to the bracket lug. When positioning shaft assembly, be careful not to shift gearend out of lug.*

**Figure 6-4**



If shaft is outside adjust / inside gearend (push-up operation only):

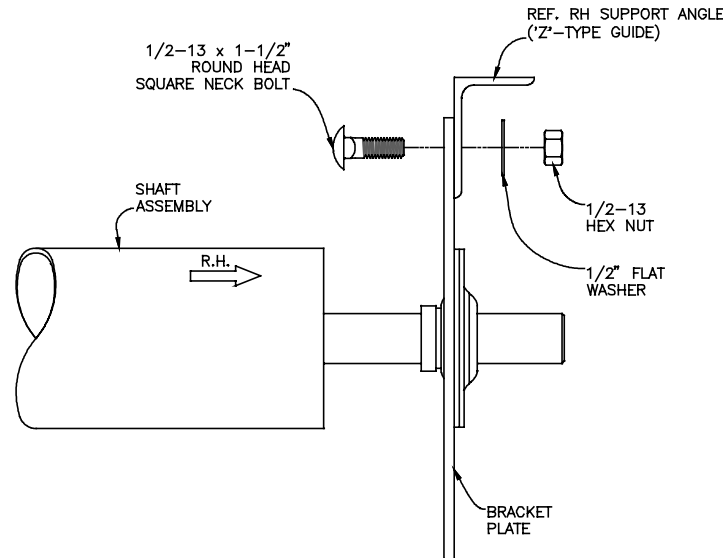
1. Remove adjuster wheel (if necessary).
2. Slide adjuster bracket plate onto shaft.
3. Reinstall adjuster wheel.
4. Install adjuster pin through clip angle to align adjuster wheel.
5. Fasten adjuster wheel securely to the shaft and remove the adjuster pin.
6. Install operator bracket plate to guide support using bracket mounting hardware provided. Refer to Figure 6-5 for bracket position on support.
7. Hoist shaft assembly with adjuster bracket and place operator side of shaft into operator bracket lug. Fasten adjuster bracket plate to guide support using bracket mounting hardware provided.

***CAUTION:*** The gearend of the shaft assembly is not fastened to the bracket lug. When positioning shaft assembly, be careful not to shift gearend out of lug.



Figure 6-5 shows the proper bracket position on a guide support.

**Figure 6-5**  
*(RH bracket plate shown viewed from above coil)*



1. Bracket plate is mounted on inside of guide support angle / tube.
2. Heads of bracket fasteners are located on the inside of the bracket plate.

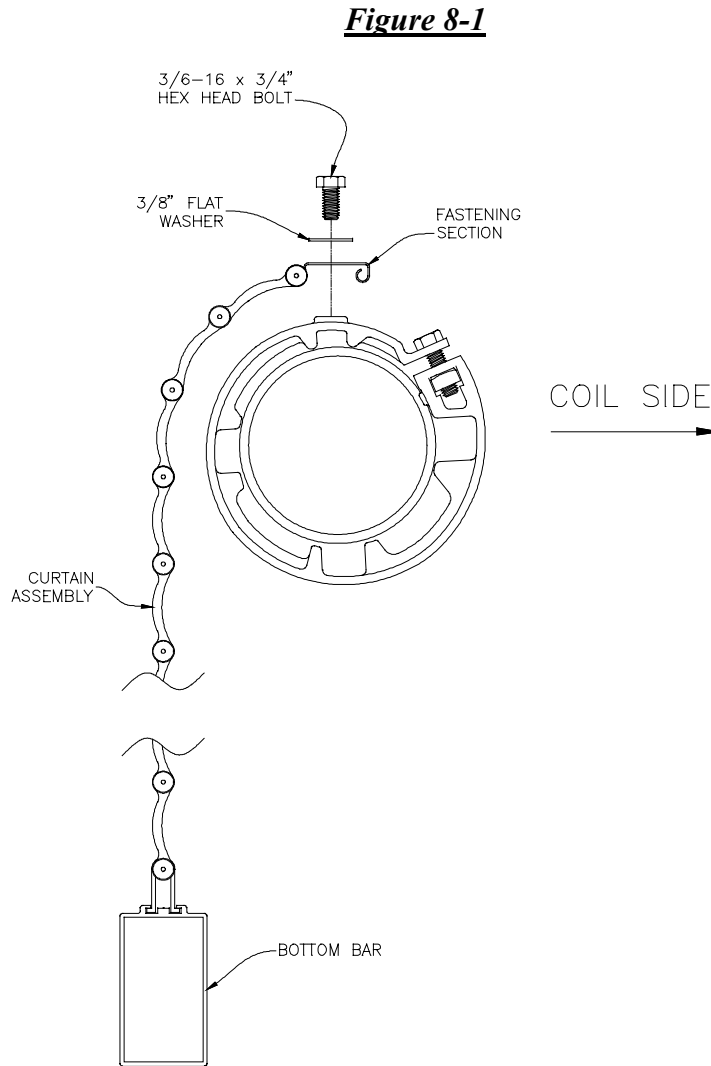
***CAUTION:*** Be sure that the heads of all bracket mounting fasteners are located on the inside of the bracket plate. Curtain damage may occur during operation if bracket hardware is mounted incorrectly.

**7. Motor Installation (motor operated units only):**

1. Install motor operator as shown on the motor arrangement drawing supplied in the motor carton.
2. Slide driven sprocket onto shaft and align with drive sprocket from the motor. Tighten setscrews on sprockets. Install roller chain and adjust chain tension. Tighten motor mounting bolts securely.
3. Brace/support motor to existing construction to limit motor movement. Cornell provides bracing angles for standard installations. Installer is to provide additional support/bracing if required for adequate support.
4. Follow manufacturer's instructions and reference wiring diagrams included with operator when making electrical connections (coil cord, reelite, interlocks, sensing edge, etc.)

## 8. Curtain Installation:

Refer to Figure 8-1 for the proper orientation of the curtain as it attaches to the shaft assembly.



1. Position rolled curtain at base of guides.
2. Hoist curtain and attach the curtain fastening sections to the rings using the 3/8-16 x 3/4 inch hex head bolts and 3/8 inch flat washers supplied in the ring hardware packages. On a unit with a 6 inch pipe, fastening sections are directly attached to the shaft assembly with a 3/8-16 x 5/8 inch hex head bolt and 3/8 inch flat washer.
3. Uncoil curtain and allow bottom bar to sit on the floor.

**9. Apply spring charge:**

There are 2 general types of spring adjustor wheels:

1. Outside adjust (Figure 6-1 and Figure 6-4).
2. Inside adjust (Figure 6-2 and Figure 6-3).

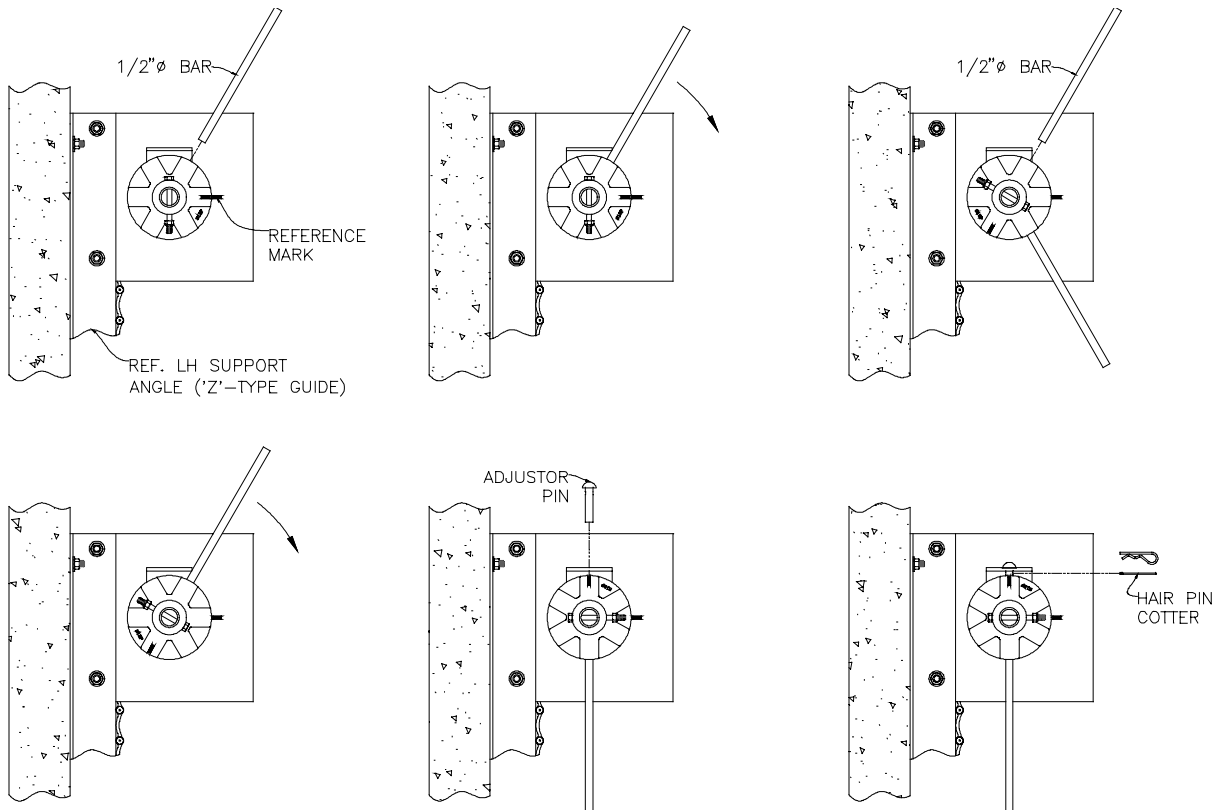
Determine the type of adjustor and follow the corresponding instructions below.

**WARNING!** *Serious injury or death may occur. Components are under extreme spring tension. Adjustments should be made by qualified installers only.*

**WARNING!** *Do not stand in front of adjusting wheel while charging springs. Serious injury can result should a rod slip during the spring charging process.*

Outside Adjust: (Refer to Figure 9-1)

**Figure 9-1**  
(Left hand adjustor shown.)



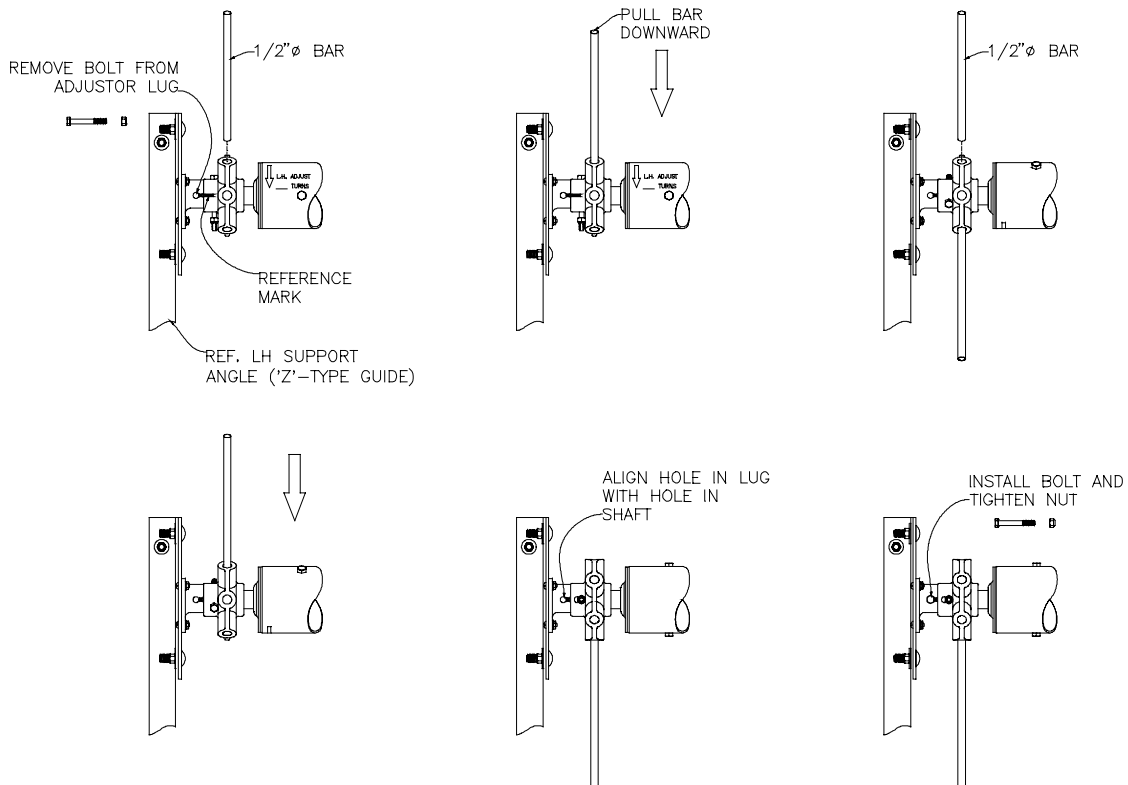
1. Place a mark on the edge of the adjusting wheel and a corresponding mark on the bracket plate to be used as a reference when counting the number of turns applied.
2. Insert a 1/2" rod into one of the pockets of the adjusting wheel and turn the wheel in the direction of raising the door. Insert a second rod into a pocket near the top of the adjusting wheel and remove the first rod. Turn the wheel in the same direction as before. Continue this process until the number of required turns is applied. The number of required turns is labeled on the adjustor side of the shaft assembly. This number represents the number of turns required with the curtain in the closed position. It may be necessary to partially raise the curtain as it becomes increasingly difficult to apply spring tension.

***WARNING!*** When applying spring tension, it is important that the curtain assembly is sufficiently secured to prevent it from running into the coil area.

3. Insert adjuster pin through hole in clip angle on adjuster bracket and into a pocket of the adjusting wheel. Insert hair pin cotter into hole in adjuster pin.

Inside Adjust: (Refer to Figure 9-2)

***Figure 9-2***  
(Left hand adjuster viewed from coil side of unit.  
Wall and curtain not shown for clarity.)

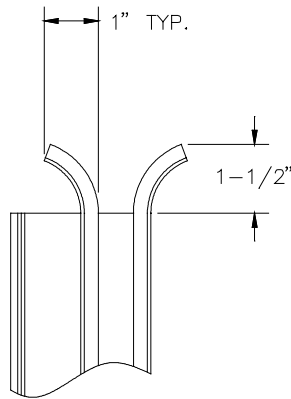


1. Remove 5/16-18 x 2-1/2" hex head bolt from adjuster bracket lug.
2. Place a mark on the edge of the adjusting wheel and a corresponding mark on the bracket lug to be used as a reference when counting the number of turns applied.
3. Insert a 1/2" rod into one of the pockets of the adjusting wheel and turn the wheel in the direction of raising the door. Insert a second rod into a pocket near the top of the adjusting wheel and remove the first rod. Turn the wheel in the same direction as before. Continue this process until the number of required turns is applied. The number of required turns is labeled on the adjuster side of the shaft assembly. The curtain may have a tendency to rise as spring tension is applied therefore; it may be necessary to hold the curtain in the closed position until all spring tension is applied.
4. Install 5/16-18 x 2-1/2" hex head bolt through hole in bracket lug and inner shaft. Attach nut and tighten.

### 10. Attach guide extrusions:

1. Raise curtain to the open position and secure temporarily to prevent curtain from over coiling.
2. Flare the top of each guide extrusion as shown in Figure 10-1.

**Figure 10-1**



3. Install the guide extrusions so that the curtain and the bottom bar are captured in the guide gap.
4. Fasten the guide extrusions securely to the guide supports using the assembly fasteners provided.
5. Position stoppers using the pre-drilled holes and tighten fasteners.
6. Remove any clamps or other devices used to temporarily hold curtain and allow bottom bar to rest against stoppers.

NOTE: Do **not** install snap-on guide trim (if supplied) until operation is checked and adjustments are made.

### 11. Check operation:

1. Operate curtain to full closed and full open position several times and check balance of springs. Add or remove spring tension as required.

***CAUTION: Do not add more than one full turn of spring tension. This may reduce spring life and result in premature shaft failure.***

2. Check alignment of sprockets and chain tension. Adjust as necessary.
3. Check all mounting hardware for secure attachments.
4. Check locking mechanism to be sure locks operate properly and without binding. Adjust lock strike if necessary by loosening the pan head screw and sliding the lock strike until the slide bolt is centered in the slot.

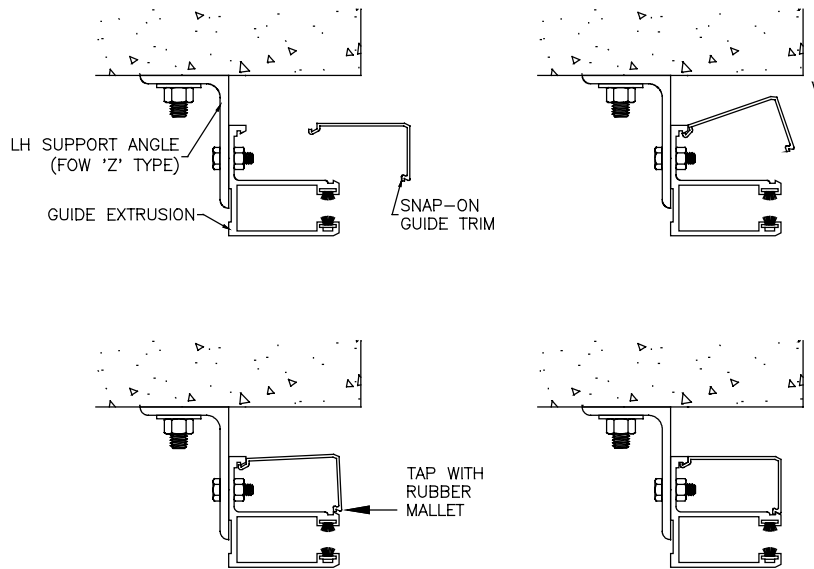
### 12. Hood/Fascia Installation:

1. Install hood support(s), if required, into prepared holes and fasten securely. Note: Hood supports may need to be supported by construction above.
2. Install hood/fascia sections. The end of the hood should overlap bracket plate and set flush with the outside edge of the plate. Sections do not overlap each other at hood supports.
3. Fasten hood/fascia sections using #10 x 1/2" self-drilling screws through hood and into the pre-drilled hole in the hood clip angle.
4. Apply hood label to the center of each hood section.

**13. Snap-on guide trim installation (if supplied):**

Refer to Figure 13-1 for installing the snap-on guide trim.

**Figure 13-1**  
(LH guide shown as viewed from above)

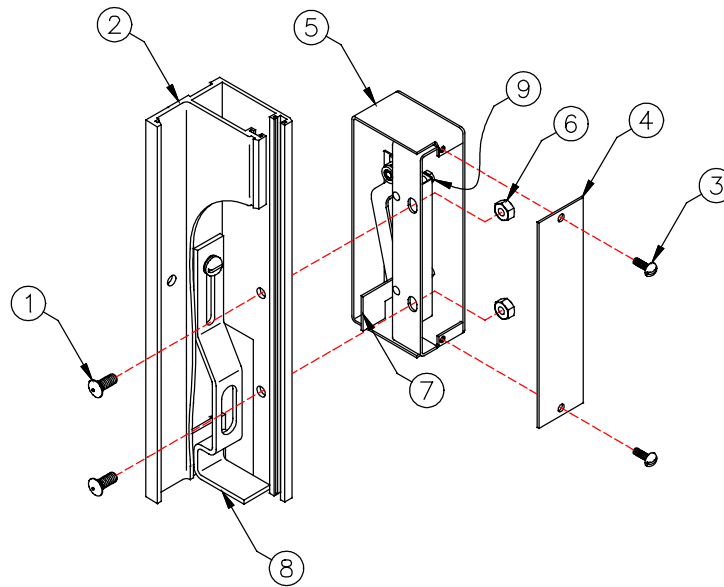


1. Insert the locking hook on the large edge of guide trim into the guide extrusion.
2. Rotate snap-on trim until short edge contacts the guide extrusion.
3. Using a rubber mallet, tap trim until it snaps into the locked position.

**14. Guide mounted interlock installation (if supplied):**

Guide mounted interlocks are installed in pairs (lh and rh) on motor operated units with bottom bar locking (unless motor is equipped with an MMI-motor mounted interlock). Refer to figure 14-1 for installation.

**Figure 14-1**  
*(RH interlock shown)*



1. Raise curtain to the open position.
2. Insert two 1/4-20 x 5/8" round head ribbed neck bolts (1) into pre-drilled holes in the rh guide extrusion (2).
3. Remove the faceplate screws (3) and the interlock switch faceplate (4).
4. Place interlock switch (5) onto mounting bolts and install two 1/4-20 hex nuts (6). Be sure that the interlock paddle (7) is positioned behind the lock strike (8).
5. Adjust interlock paddle by loosening two 11mm hex nuts (9) securing the interlock mechanism to the interlock body. Paddle should be centered on the hole of the lock strike. Tighten mechanism to interlock body.
6. Lower curtain to the fully closed position. Check to see if the bottom bar lock trips the interlock switch. Interlock switch should make an audible "click" if functioning correctly. If interlock switch does not "click", adjust micro-switch as necessary and retest.
7. Repeat steps 1 through 6 for the lh guide.
8. Connect interlocks to the motor operator in series. Refer to motor operator schematic.
9. Re-install interlock switch faceplates.