

***Installation Instructions,
300K Extreme[®] Performance
Rolling Grille***

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Section 2 - Safety Check List

Rolling doors are large, movable objects. They move with the help of electric motors. These items and their components can cause injury. In order to avoid injury to yourself and others, please follow the instructions in this manual.

- Review the potential hazards and preventative measures listed below:

Potential Hazard		Preventative Measure
	⚠ DANGER Pinned or crushed by closing door.	<ul style="list-style-type: none"> • Keep yourself and others clear of opening while door is in motion. • Do not allow children to play near or operate door. • Do not operate if door becomes jammed or broken.
	⚠ WARNING Electrical shock.	<ul style="list-style-type: none"> • Make sure electrical operator is properly grounded. • Turn off source power completely prior to servicing the motor. • Make sure wires are clear of any moving or potentially moving parts. • Avoid pinching wires when installing the motor cover.
	⚠ WARNING Pinched by moving components.	<ul style="list-style-type: none"> • Make sure the motor is turned off and unplugged before working with moving parts such as roller chain and sprockets, drop-out mechanisms, adjusting wheels, etc. • Locate the possible pinch-points of the unit (Drive chain, coil area, bottom bar, etc.) Do not operate the door while someone is near these areas.

Table 2.1 - Potential hazards and Preventative Measures

- Check the following during installation and before leaving the job site:
 - a. Check that the keys and/or cotter pins have been set in place and fit properly at all sprockets or gears.
 - b. Check that the setscrews in each sprocket or gear (one over the key and one offset from the key) have been tightened properly.
 - c. Check all fasteners holding the unit to the building structures.
 - d. Check all fasteners used to assemble the components of the unit together.
 - e. Instruct owner or representative in the proper method of operating the door.

Section 3 - Freight Receiving

- **Upon delivery, check condition of components for damage.**
- **If damage occurred in transit, the installation should not proceed without authorization.**

NOTICE

If the installation proceeds, neither the carrier nor the manufacturer will assume responsibility for replacing the damaged material.

- **If the installation is stopped due to damage, do the following:**
 1. Take pictures of the damage.
 2. Do not move material from point of delivery to other premises once the damaged components are discovered.
 3. Do not unpack, if the damage is visible prior to removing packaging, until an inspection is made.
 4. If the damage is found while removing contents from packaging, the packaging material must be saved until inspection is made.
 5. Container and packaging should be retained by consignee until inspection is made.
 6. Have components inspected by carrier's representative within 15 days from date of delivery.
 7. Consignee must obtain a copy of the Inspection Report.
- **Returning damaged components:**
 1. Obtain permission from carrier to return.
 2. Route the return shipment via the identical carrier(s) involved in the original shipment.
 3. Notify the manufacturer when shipment is returned to manufacture plant.
- **Verify that all components have arrived. Look for the following:**
 1. Job construction drawings featuring different views (elevation, section, plan, etc.)
 2. (2) Guide assemblies; check for guide weathering if included in order
 3. Barrel assembly
 4. Curtain assembly with bottom bar attached
 5. (2) Bracket assemblies (Each bracket should have UHMW bellmouths and greasable bearing or inertia brake pre-assembled)
 6. Operator
 7. Operator cover; may not be included in order
 8. Hood and hood supports; may not be included in order
 9. Hardware
 10. Misc. items
 11. Verify material/finish/color of components matches what is listed on the job construction drawings and/or what was ordered.
- **If the delivery is incomplete:**
 1. Make note on delivery receipt.
 2. Note should be verified by driver's signature.
 3. Notify carrier and manufacturer.

Section 4 - Pre-Installation

- **Read entire instruction manual thoroughly. The manufacturer will not be held responsible for any charges incurred due to improperly installed components.**
 - a. Only trained door systems technicians should perform installation, maintenance, etc.
 - b. Each unit comes with an individual item number. If the job contains multiple units, be sure to locate all the components for each item and separate each.

⚠ WARNING

Do not interchange parts from one door to another.

- c. Find the job construction drawings for the unit being installed and check the dimensions of the opening against those on the drawings. See **Figure 4.1** below.
- d. If the opening dimensions differ from those on the drawings, **do not proceed**, check with distributor/manufacturer to be sure the correct door is being installed.
- e. Check the jambs of the opening for plumb. Check the head/lintel and floor for level. If the unit is to be free standing, for example mounted to tubes, check the floor and ceiling for level and for adequate mounting areas at the top and bottom.

Note: The floor may not be level if a pitched bottom bar is specified.

- **Work Area:**
 - a. The key to a smooth installation is a clean and well-prepared work environment. Once the components have been inspected and the job construction drawings have been reviewed; lay out the components in the order of installation.
 - b. The opening for the door should be cleaned and inspected for rough surfaces and construction debris.
 - c. Lastly the mounting hardware supplied with the door should correspond with the surface and construction features of the opening.

The basic assembly sequence is as follows: guides, springless barrel w/ tapped holes, brackets (pre-assembled with bellmouths and greasable bearing or inertia brake), motor operator, curtain, stoppers, hood, and operator/idler covers.

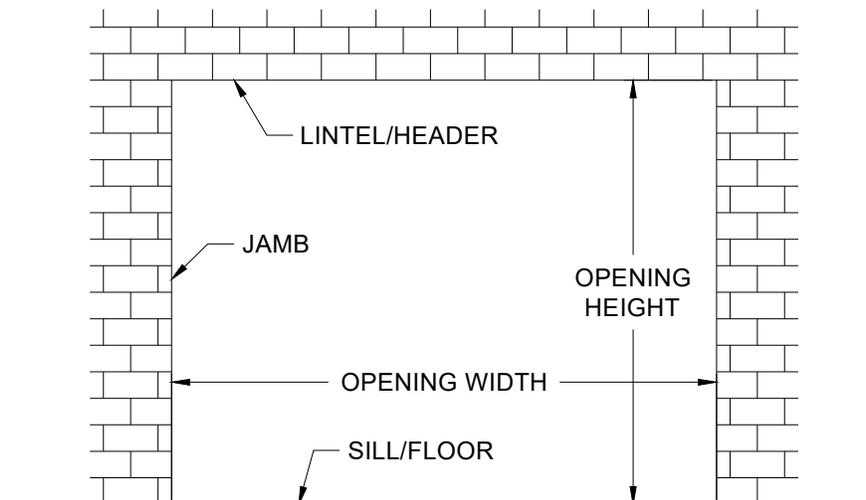


Figure 4.1 - Opening Dimensions and Designations

Section 5 - Guides

▪ Face of Wall Units Mounting to Existing Wall Construction (Figures 5.1 - 5.2):

Note: Determine which guide assemblies are utilized on the unit from the job construction drawings and compare to the diagrams below.¹

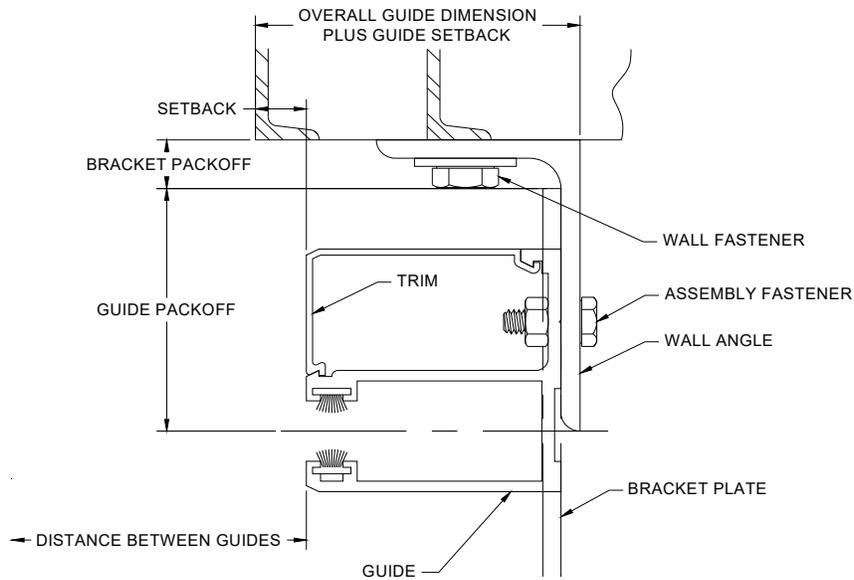


Figure 5.1 - Face of Wall "E" Guide

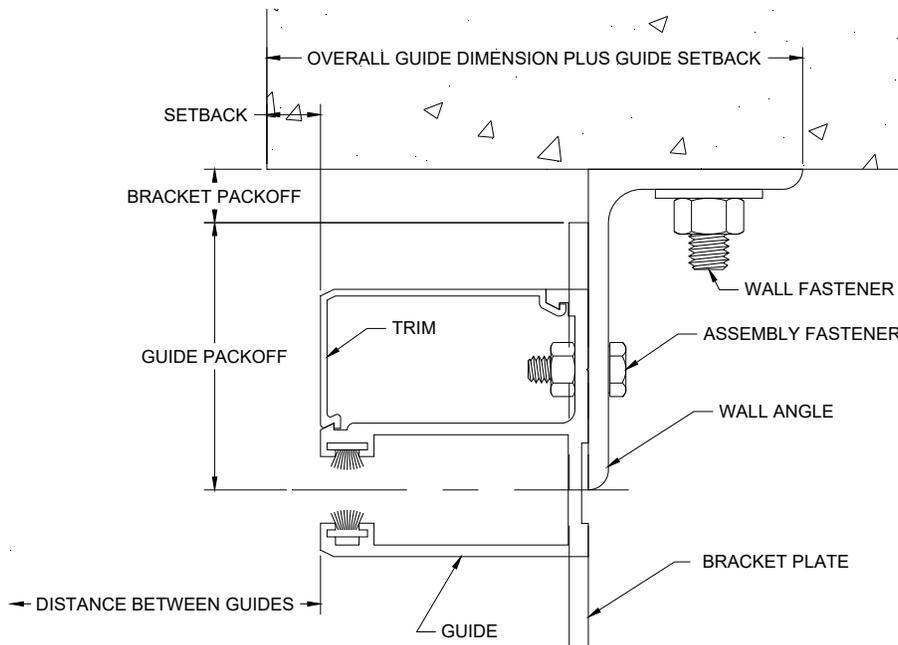


Figure 5.2 - Face of Wall "Z" Guide

¹ The guide assembly may differ from the right to left hand side of the unit. In these cases, follow the directions for each particular guide assembly, as well as the job construction drawings provided with the unit.

Section 5 - Guides

1. Separate the trim and guide from the wall angle if necessary.
2. Measure the distance from the opening/jamb to the heel of the wall angle (on “E” guides) or the toe of the wall angle (on “Z” guides). This distance is referred to as the “*Overall Guide Dimension plus Guide Setback*”; see **Figures 5.1** and **5.2**. See the job construction drawings for the guide setback and overall guide dimensions.
3. Place mark on the floor at measured location. Check the distance between these marks and compare with the job construction drawing. It will be the “*Opening Width*” plus the “*Overall Guide Dimension plus Guide Setback*” at both jambs.

NOTICE

If the measurement does not equal the dimensions on the job construction drawings, **STOP**. Check the guide dimensions against those on the job construction drawings to be sure the correct guides are being installed. If so, repeat previous step and re-check.

4. Scribe a plumb line on the wall from the marks on the floor.
5. Place the wall angle against the scribed line, check the top of the guide for level, and mark the location of the wall fastener mounting holes.
6. If the wall angle is attached to the wall with fasteners, drill mounting holes for the wall fasteners and fasten the wall angle with the hardware provided. Check the job construction drawings for the required wall fastener. Tighten the wall fasteners to the recommended installation torque in the *Torque Specifications Tables* in **Section 11**.
7. If the wall angle is attached to the wall by welding to structural steel, see the job construction drawings for details on weld location, type, pitch, size, etc.²
8. At this point, the aluminum guide extrusion can be reassembled to the wall angle using the hardware provided. It is not necessary to snap the trim into place at this time. Tighten to the recommended installation torque in the *Torque Specifications tables* in **Section 11**.

Note: You may find that delaying the installation of the aluminum guide extrusions until after the curtain is installed may ease the curtain installation process. This is a matter of preference, and will not affect the final product. If this is the case, set the guide extrusions, trim pieces and hardware aside until after the curtain is installed.

- **Face of Wall and Between Jamb Units Mounting to Free-Standing Tubes (Figures 5.3 - 5.4):**

² Minimum recommended weld rod: AWS A5.1, Grade E-70.

Section 5 - Guides

Note: Determine which guide assemblies are utilized on the unit from the job construction drawings and compare to the diagrams below.³

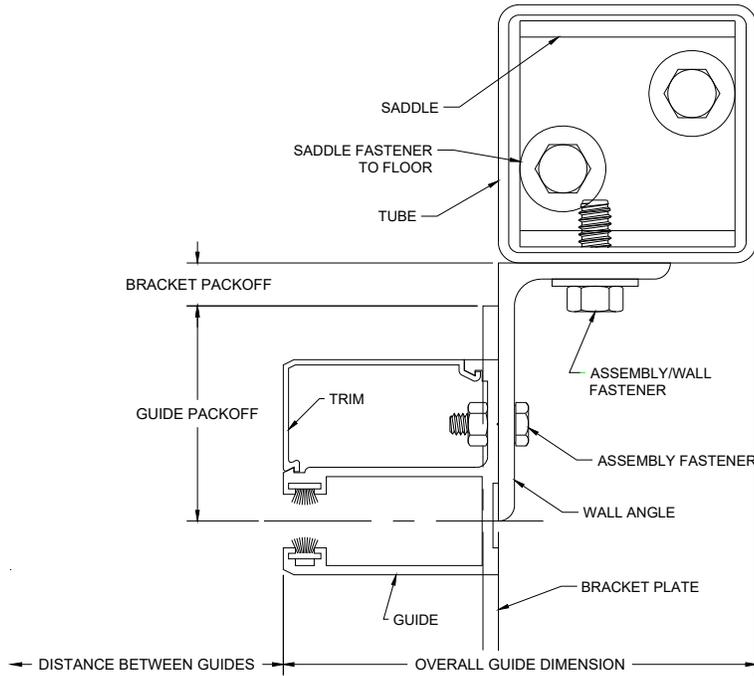


Figure 5.3– Face of Wall “Z” Guide Mounting to Tube

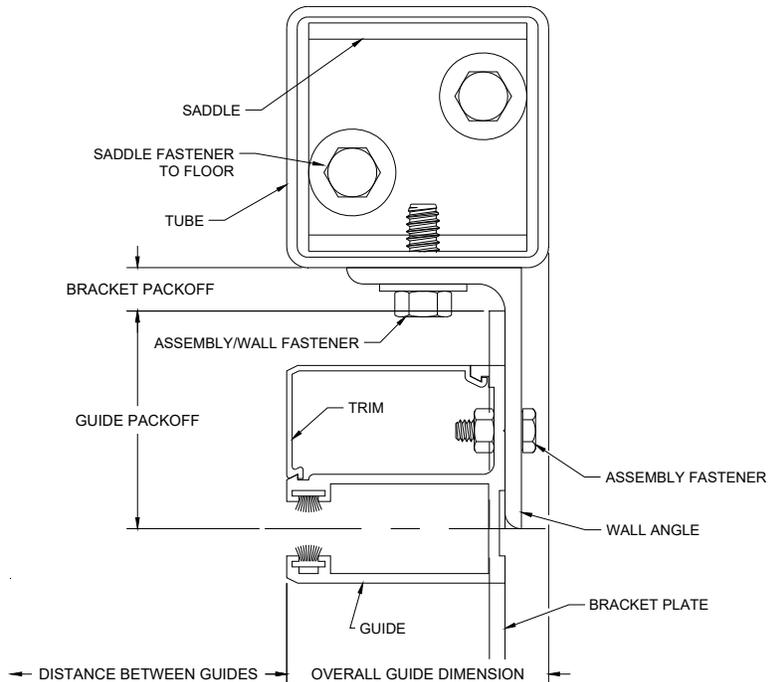


Figure 5.4 – Face of Wall “E” Guide Mounting to Tube

³ The guide assembly may differ from the right to left hand side of the unit. In these cases, follow the directions for each particular guide assembly, as well as the job construction drawings provided with the unit.

Section 5 - Guides

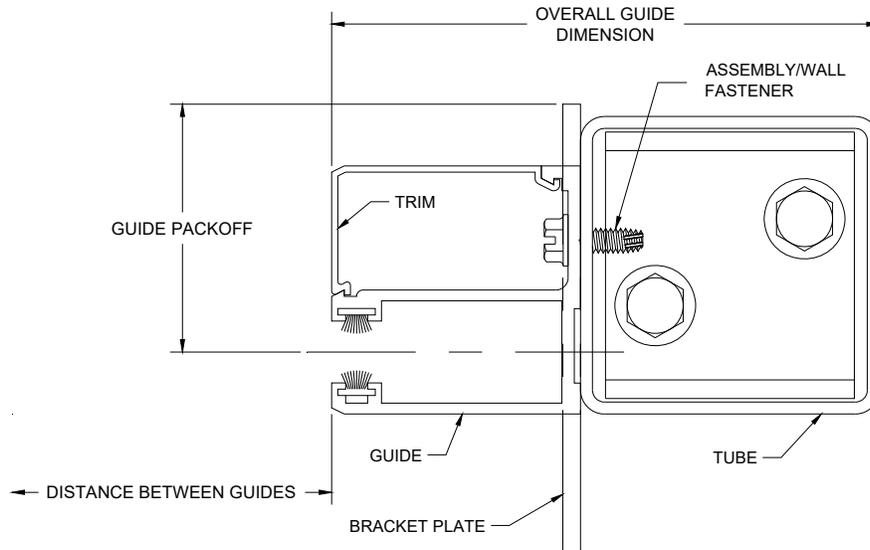


Figure 5.5 – Between Jamb Mounting to Free-Standing Tube

1. Separate the trim pieces, aluminum guide, structural tubes (and wall angles) if required.
2. Refer to the job construction drawings to determine the specified mounting tube location. Measure and mark the location of the mounting tubes.
3. Check the distance between these marks and compare with the job construction drawing. It will be the “Opening Width” plus the “Overall Guide Dimension” at both jamb.

NOTICE

If the measurement does not equal the dimensions on the job construction drawings, **STOP**. Check the guide dimensions against those on the job construction drawings to be sure the correct guides are being installed. If so, repeat previous step and re-check.

4. *Tube Saddles* are provided for installing free-standing tubes. Locate the tube saddles (brackets used to constrain the tube at the bottom). There are two types of saddles: *standard saddles* and *inverted saddles*. Both utilize the same steps for installation. The difference is the mounting flange.

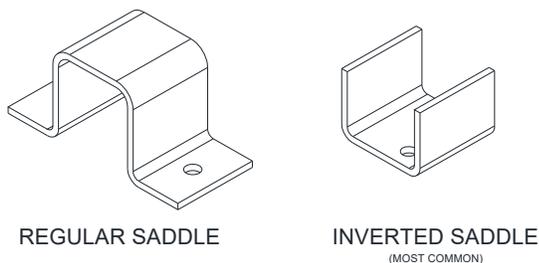


Figure 5.6 – Tube Saddles

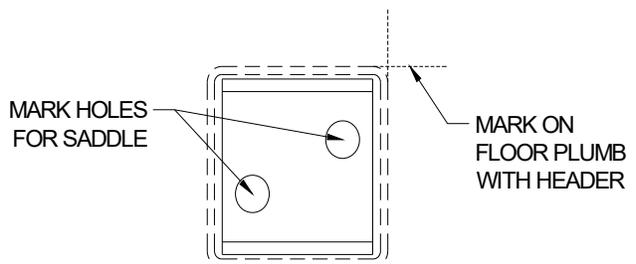


Figure 5.7 – Tube Saddle Hole Location

Section 5 - Guides

5. Use the mark placed on the floor in the previous steps, to locate where the saddle will be and mark the hole locations by placing the saddle on the floor. See **Figure 5.7**.
6. Double check the width dimensions provided on the job construction drawings, then drill holes for the saddle fasteners.
7. Install saddles using the provided hardware.
8. Guides mounting to tubes, sometimes require the use of a slip joint. Locate the Slip Joint Mounting Member(s).

Note: *If the unit does not have slip joints and the top mounting for the tube is not provided by the manufacturer, install as recommended by supplier, then proceed to **Step 13**.*

9. Use the job information and the marks made in the previous steps to determine the correct Slip Joint Mounting Member location. Install using the provided hardware. Use only enough fasteners to hold the Mounting Members securely in place (2), as they will be removed in a later step.
10. Determine the required tube length. Refer to **Figure 5.8**.
 - a. Measure from the “Floor to Slip Joint Mounting Member” as shown in the corresponding figure below. Record this measurement.
 - b. To allow for expansion, the steel tube will need to be cut short. To determine the required “Expansion Allowance”, round the measurement taken in the previous step up to the nearest foot increment. Multiply the rounded value by 1/8 in/ft. Refer to the table below for examples:

Floor to slip joint mounting member (ft)	9	10	11	12	13	14	15	16	17	18	19	20
Expansion Allowance (in)	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/8	2 1/4	2 3/8	2 1/2

Table 5.1 – Slip Joint Expansion Allowances

- c. Calculate the Tube Length:
 $Tube\ Length = \text{“Floor to Slip Joint Mounting Member”} - \text{“Expansion Allowance”}$
- d. Cut the tubes to the calculated “Tube Length”. Make sure you cut the excess tubing from the top. Otherwise you will cut off necessary mounting holes and/or notches.

Note: *If regular saddles are provided, the tube length will have to be adjusted because the tube will sit on the saddle flanges instead of the floor. Subtract the thickness of the flanges from the tube length.*

11. Remove the Slip Joint Mounting Member(s). Place the Slip Joint Mounting Members in the tops of the tubes.
12. Orient the tubes (ensure the guides, mounting holes or notches are facing the correct direction.) Place the bottom of the tube over the saddle. Stand the tube upright and reattach the slip joint mounting member using the previously drilled/marked holes to locate. Use all provided fasteners at this stage. Check that installed tube is plumb.

Section 5 - Guides

- Between Jamb Units Mounting to Wall (Figures 5.9 - 5.10):

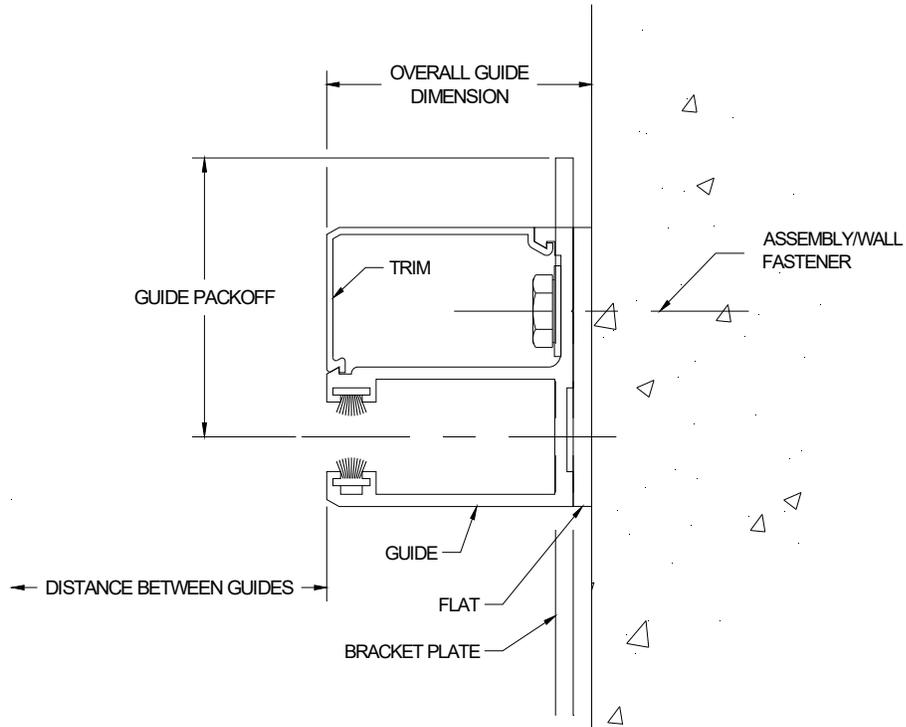


Figure 5.9 – Between Jamb with Back-Up Flat

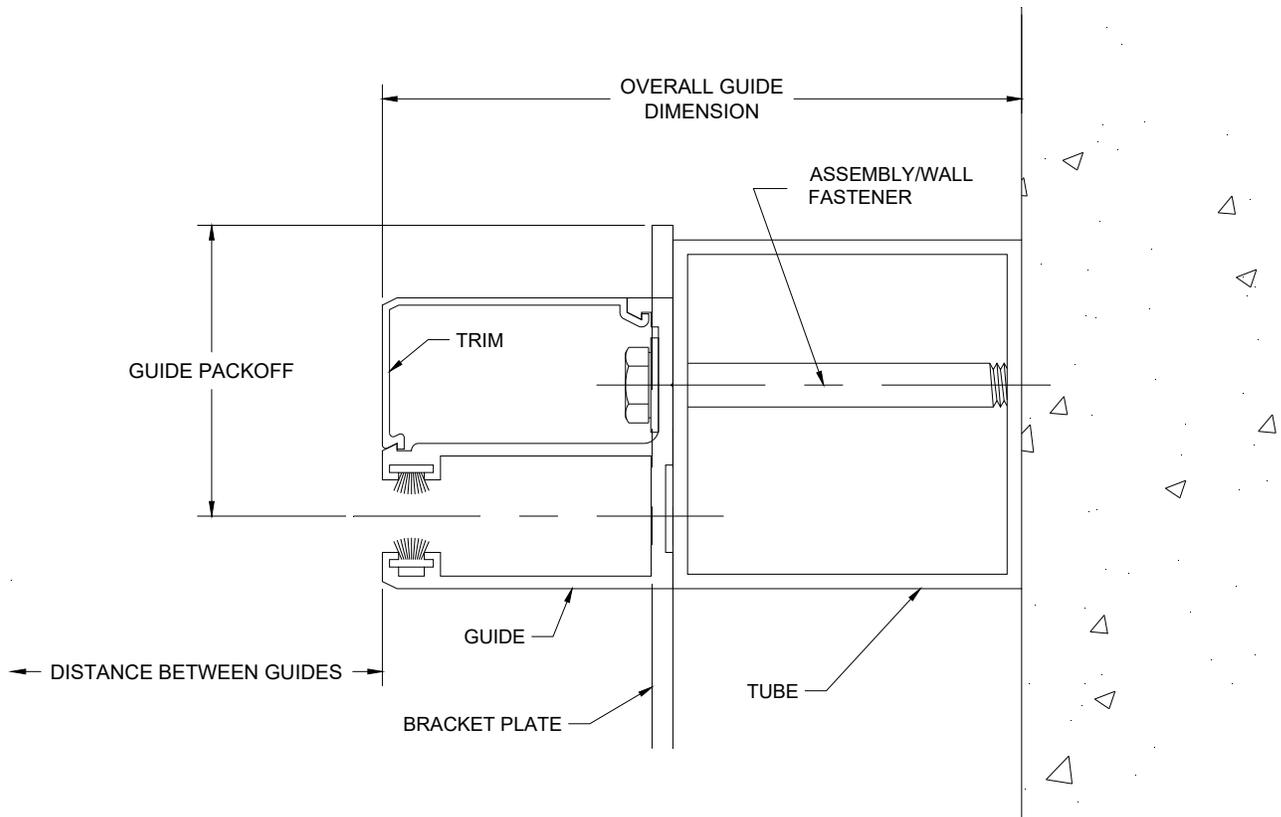


Figure 5.10 – Between Jamb with Tube Mounting to Wall

1. Separate the trim pieces and aluminum guide extrusion from the flat or structural tubes if required.

Section 5 - Guides

2. Refer to the job construction drawings to determine the correct mounting location for the guide assemblies. Measure and mark the mounting locations on the floor.
3. Check the distance between these marks and compare with the job construction drawing. It will be the "Opening Width" plus the "Overall Guide Dimension" at both jambs.

NOTICE

If the measurement does not equal the dimensions on the job construction drawings, **STOP**. Check the guide dimensions against those on the job construction drawings to be sure the correct guides are being installed. If so, repeat previous step and re-check.

4. Using the markings made in the previous step, position the flat/tube in the correct mounting position. Making sure the flat/tube is plumb, mark the mounting hole locations on the jamb wall using the flat /tube as a template. It may be beneficial to also score a line along the edge(s) of the flat/tube in order to realign it later.
5. Remove the flat/tube and prep the mounting holes as required.
6. Align the mounting holes in the aluminum guide extrusion and flat/tube with the prepped holes in the jamb wall.
7. Fasten the guide extrusion and flat/tube to the wall with the hardware provided. Check the job construction drawings for the required wall fastener. Tighten the wall fasteners to the recommended installation torque in the *Torque Specifications Tables* in **Section 11**. It is not necessary to snap the trim into place at this time.

Note: Other mounting styles offer you the choice of waiting until after the curtain is installed to install the aluminum guide extrusions. This option is not available for Between Jamb Units Mounting to Wall.

- **Mixed Guides (One Face of Wall and One Between Jambs):**

1. Refer to the job construction drawings for specific mounting information.
2. Follow the steps in the preceding sections for each of the respective guide configurations.
3. Ensure that the guide centers (centerline of the guide openings) are aligned before proceeding.

NOTICE

Once the guides are installed it is necessary to open the upper portion of the guides where they meet the bell mouths. This will allow the curtain assembly to enter the guides smoothly without hanging up on the top of the guides. **Note: Failure to do this may result in damage if the curtain catches on the tops of the guide during operation.**

The tops can easily be opened by using a crescent wrench with the jaws set open just slightly wider than the thickness of the leg of the guide assembly. Slip the wrench over the leg of the guide slightly below the bell mouths and apply even, outward pressure until the top area of the guides opens outward past the bell mouths. This should be done to both legs of both guide assemblies.

Section 6 - Barrel and Brackets

Preparation of the Barrel and Brackets

Note: Check to see if a hood support will be required. If so, refer to the “**Hood Support Installation**” section before proceeding to the barrel and brackets.

1. Refer to the job construction drawings to determine the “coil side” of the opening, or the side of the opening on which the coil is to be installed. Then determine which jamb wall is your “operator side”, or side on which the operator is to be installed. The following instructions refer to these directional cues.
2. Unpack the barrel assembly. Note the markings on the barrel, see **Figure 6.1** below.

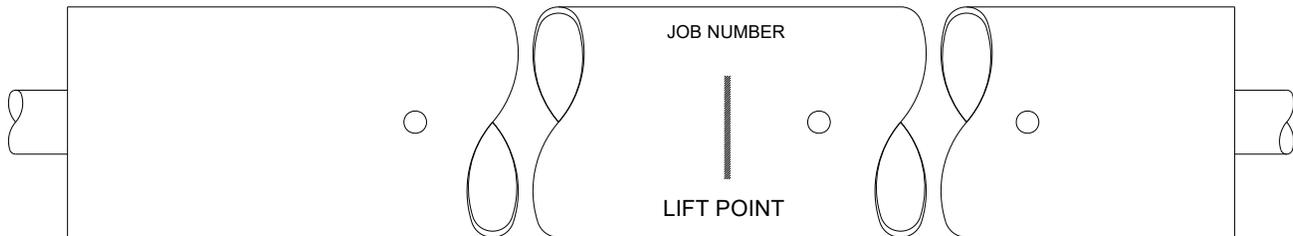


Figure 6.1 – Barrel Markings (right hand operation shown)

3. Position the barrel assembly on the coil side of the opening. Due to the springless shaft construction, there is no difference either side can be an “operator” or “idler” side unlike a traditional sprung shaft. In order to alleviate the bracket installation, place the barrel assembly on blocks or spacers such that it is elevated off the ground.

Note: Choose sufficiently sized blocks. The barrel assembly should be elevated off the ground enough that the brackets can be installed without contacting the floor.

4. Locate the brackets. Determine the “operator” and “idler” brackets by referring to **Figure 6.3**. The “operator” bracket may vary significantly based on the operation of the door. The “idler” bracket will come preassembled with an inertia brake. Place the appropriate bracket on each side of the opening corresponding to the “operator” and “idler” sides previously determined.
5. Prior to installing the idler bracket onto the shaft, install the provided gib key and collar onto the shaft. To install the gib key and collar first place the collar on the idler side gear end. Place the gib key into the key way and slide the bracket onto the shaft aligning the key way of the gear end and the inertia brake. Do not tighten any set screws at this time. See **Figure 6.2** below.

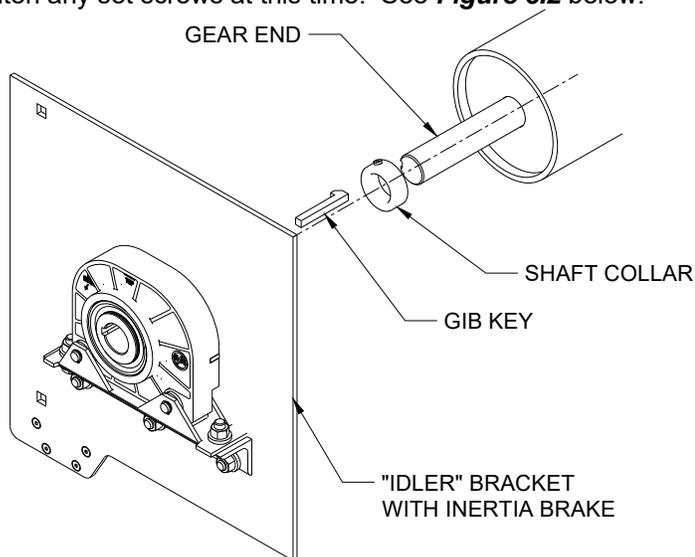


Figure 6.2 – “Idler” Bracket Attachment (right hand operation shown)

Section 6 - Barrel and Brackets

- Slide the operator bracket, pre-assembled with greasable bearing, onto the gear end. Do not tighten any set screws at this time. You may choose to install the drive sprocket at this point (See Motor Operator section for instructions).

Note: Do not install the operator until the barrel and bracket assembly is hoisted into position and securely fastened to the guides. Installing the operator at this stage will cause the assembly to be lopsided and cumbersome, making it difficult and potentially dangerous to hoist into position.

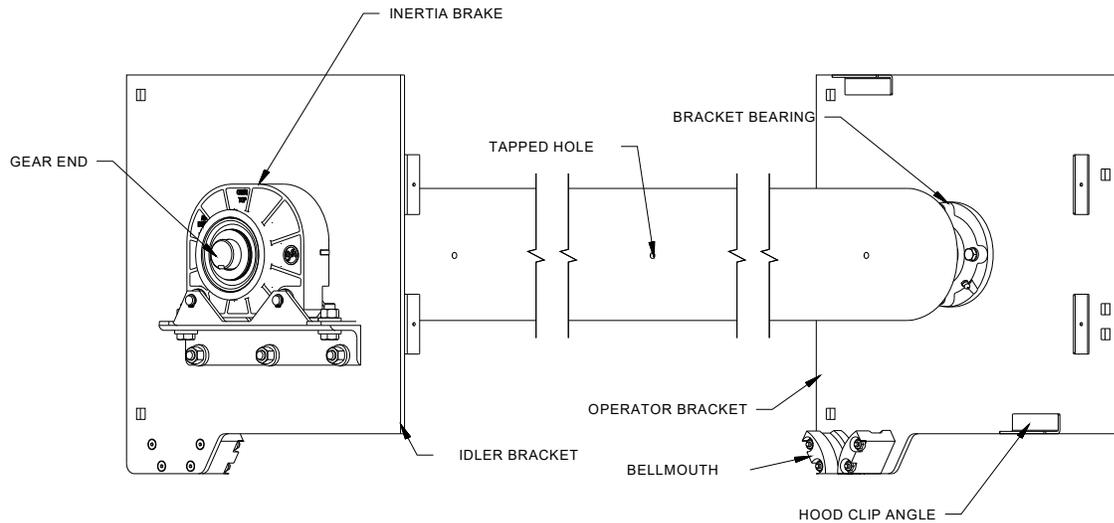


Figure 6.3 – Brackets and Barrel Prior to Installation

▪ Hoisting and Installing Barrel Assembly

- The following methods can be used for hoisting them into place:
 - Crane Hoisting:** Place a sling or lifting agent under the barrel assembly at the “lift point” provided on the barrel, see **Figure 6.1**.
 - Forklift Hoisting:** Space the forks evenly under the “lift point” provided on the barrel, see **Figure 6.1**. Ensure that the barrel assembly is positioned close enough to the tips of the forks that the fastening holes in the bracket can be aligned with those of the guides without the forks contacting the wall. Secure the barrel assembly to avoid the slipping off the tip of the forks.

⚠ WARNING

The addition of brackets may offset the balance slightly from when the “lift point” was marked. Check to make sure the assembly is properly balanced before hoisting.

- Before hoisting, refer to the hardware sheet and ensure that the proper type and quantity of fasteners were provided for the bracket installation. Measure the distance between the brackets and compare that to your wall angles (*or between mounting angles if tubes are present*). Readjust the brackets as needed before hoisting.
- Center the barrel assembly between the guides, keeping approximately 2 feet of clearance between the barrel assembly and wall/guides.
- Raise the barrel assembly up to the approximate bracket mounting level. The brackets should be clear of the guides.

Note: Position the brackets in the upright position, with the mounting holes facing the wall, before moving the assembly towards the wall. It may be difficult to rotate the bracket when in close to the wall.

- Slowly maneuver the barrel assembly towards the guide, and align the mounting holes of the brackets with those of the wall angles (*or mounting angles if tubes are present*).
- Insert the specified bolts and snug tighten, see **Figure 6.4**.

Section 6 - Barrel and Brackets

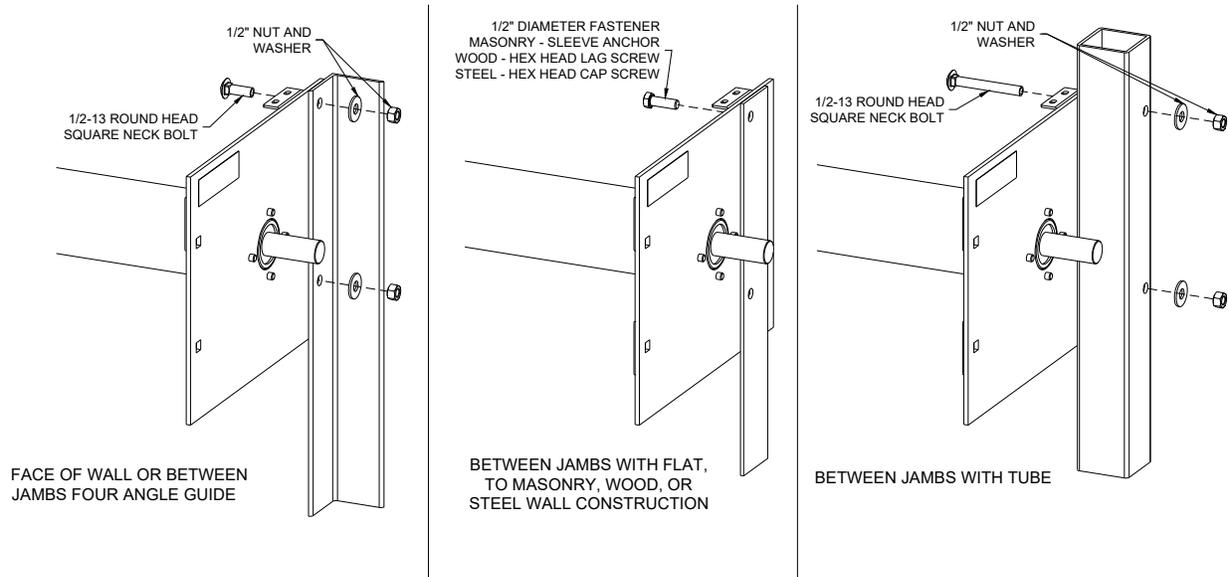


Figure 6.4 – Bracket Mounting Configurations and Hardware

7. Check to see that the barrel is positioned properly between the brackets. That is, so that the proper amount of space is allowed between the barrel and the brackets. The space should be equal at both the operator and idler side. Adjust as necessary.
8. Once the barrel is properly positioned, ensure that the gib key is inserted tightly into the inertia brake. Firmly push the shaft collar against the gib key and tighten the set screws on the shaft collar and the greasable bearing.
9. Place a level in the center of the barrel. If the shaft is **not** level:
 - Check the dimensions of the brackets from the top of the bracket to the center of the barrel.
 - Verify that the bracket mounting fasteners are the same distance from the top of the bracket.
 - a. If the dimensions **are not** correct, contact the Service Department.
 - b. If the dimensions **are** correct, the floor may be out of level, causing the bracket mounting holes in the guides to be out of alignment.
10. Fully tighten mounting bolts to the torque specifications in this manual. See *Torque Specification Tables* in **Section 11**.

NOTICE

Proper pretension of the bracket mounting bolts will ensure the life of the bolts and brackets.

Section 7 - Motor Operator Installation

Motor Operator Installation :

1. Unpack the motor operator from the shipping box and retrieve the *Operator Mounting Bracket* and bolts provided.
2. Mount the operator mounting bracket to the operator using the supplied fasteners. **Note:** *If a motor cover is required refer to the motor cover installation instructions prior to attaching the operator and operator mounting bracket.*
3. Mount the operator-mounting bracket to the operator bracket according to the shop drawings using the supplied fasteners.
4. Install controls and wire the operator. Refer to the wiring diagram provided with the operator for proper connections and voltages. The controls should be installed in an area from which the door/opening is clearly visible. This will allow an individual operating the unit to make a visual inspection of the opening for any obstacles or other potential hazards before setting the door into motion.
5. Wire the inertia brake into the interlock terminals of the operator. First remove the jumper that is between the interlock terminals and then wire the brown and white brake wires to the interlock terminals. See below for a reference list of interlock terminals for common operators. Refer to wiring diagram to ensure that proper terminals are used when wiring the interlock. **Note:** *If there are other interlocks (such as guide mounted) in addition to the inertia brake, they must be wired in series with the inertia brake between the interlock terminals of the operator.*

Note: *Do not attempt to set the upper and lower limits until the curtain is installed.*

Table 7.1 – Common Operator Interlock Terminals

Operator	Terminals
Variable Speed Model FDG	6 to 32
Model SGH or SG	9 to 10
LiftMaster Model GH	2 to 3
Micanan Model Pro GH	1 to 2

Attaching Additional Bracing :

1. Attach a clip angle to the operator mounting bracket and the bracing angle to the clip angle. Snug all bolts.
2. Mount the other supplied clip angle to the bracing angle and swing the bracing angle to the wall or structural support.
3. Align the mounting face of the clip angle with the face of the wall, mark and drill a mounting hole for the size of the supplied mounting fastener, and secure the clip angle to the wall with the fastener.
4. Square the operator-mounting bracket, adjusting the bracing angle as necessary, and fully tighten all the mounting bolts.

Note: *All mounting bolts are supplied with nuts and lock washers.*

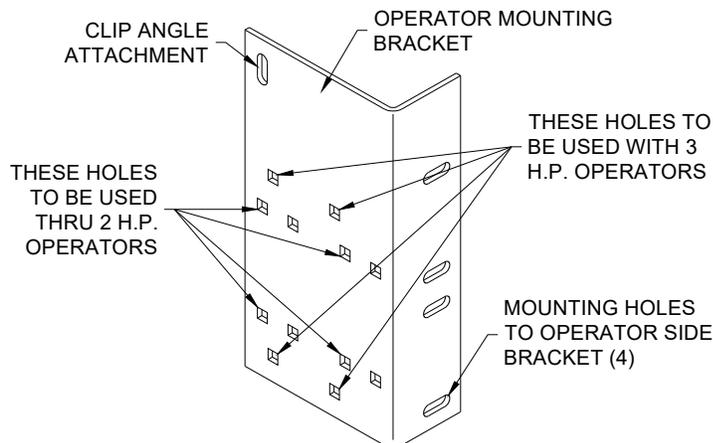


Figure 7.1 - Additional Operator Bracing

Section 7 - Motor Operator Installation

- **Door Sprocket Assembly:**

1. Ensure that the parts are clean and free of any oil, dirt, or paint.
2. Insert the taper bushing into the sprocket. Match the hole pattern of the 2 parts and insert the set screws into the installation holes to secure the parts together. Do NOT tighten the screws at this time.

- **Door Sprocket Installation :**

1. Install the door sprocket onto the operator end of the shaft.
2. Align the door sprocket with the motor sprocket.
3. Align the key way of the sprocket with the key way of the gear end and install the key stock.
4. Evenly tighten the screws on the sprocket to secure it to the shaft. The screws should be torqued to 175 in-lbs.
5. If the sprocket is not aligned, the sprocket can be loosened by the following:
 - a. Remove all of the set screws
 - b. Insert a set screw into the removal hole and tighten it until the bushing and sprocket come apart.

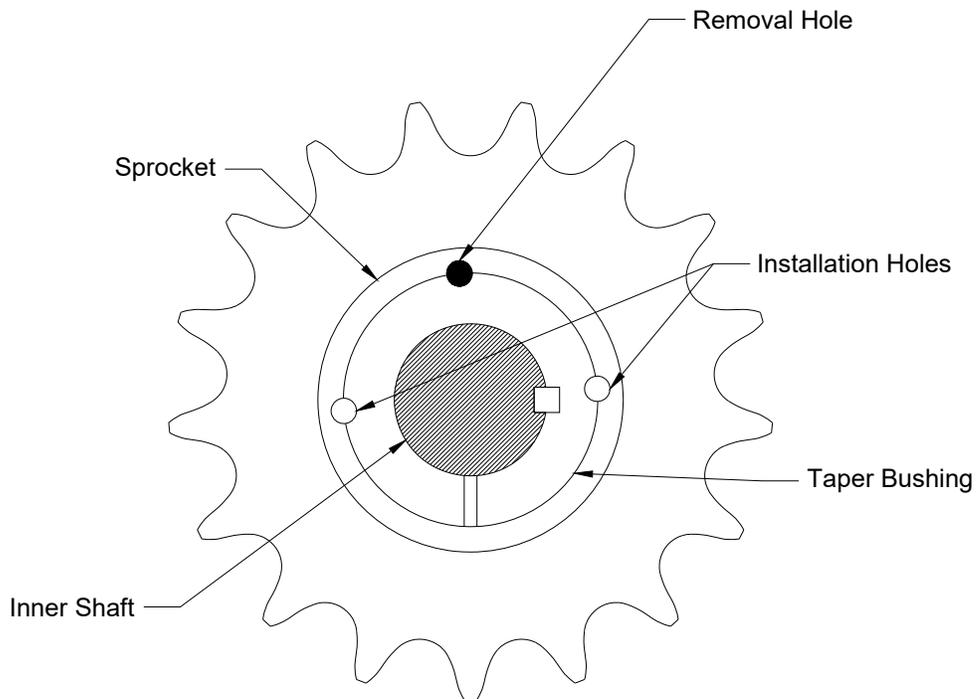


Figure 7.2 – Door Sprocket

Section 9 - Hood Support Installation

▪ Curtain Installation

1. The guides are usually shipped with the stoppers positioned so they will not interfere with the bottom bar to alleviate the installation process. Check to make sure the stoppers are positioned correctly for installation (whether they are installed at this point or not.)

2. Open the curtain packaging. Leave the plastic straps that keep the curtain from uncoiling in place. It may also be beneficial to leave some of the packaging under the curtain to protect the finish during installation.

3. The coil will be provided with the top of the curtain on the outside, thus leaving the fastening sections exposed. Position the coil on the floor between the guides so that the open end of the fastening sections is facing up and nearer the wall.

4. Locate the curtain attachment hardware provided with the unit. Refer to the job information to ensure you have the correct type and quantity.

5. Lift the coil until it is just below the shaft. Using appropriately rated straps, sling the coil from the shaft as shown in **Figure 8.2**. Remove the plastic strapping securing the coil at this point.

6. Uncoil the curtain enough for the fastening sections to reach the attachment points on the shaft. Fasten them by aligning the fastening section with the hole in the shaft, and fasten using the provided hardware (See **Figure 8.1**). If the curtain is too heavy to uncoil by hand, use the method described in the following step to get the fastening sections in position.

7. Uncoiling a slung curtain using the operator:

- For units with operators, use the hand chain override feature of the motor to rotate the shaft in the “open” direction. Be sure not to overrun the limits of the motor. The upper motor limit may have to be adjusted to reel the entire curtain onto the shaft.

8. Continue to rotate the shaft, reeling the curtain out of the sling and onto the shaft until the bottom bar reaches the bottom of the bracket.

Note: If you have not already installed the aluminum guide extrusions, install them now.

9. Feed the bottom bar through the UHMW bellmouths and into the guides. Lower the curtain until the bottom bar is below the stopper location.

10. Since there is no spring tension holding the curtain open, the curtain may fall if released. If the operator cannot be used to hold the curtain in the open position, place C-clamps or vice grips on the guides just below the bottom bar -or- rest the bottom bar on the slings used to hang the shaft in the previous steps to hold the door open

11. Reposition the stoppers so that they protrude into the opening.

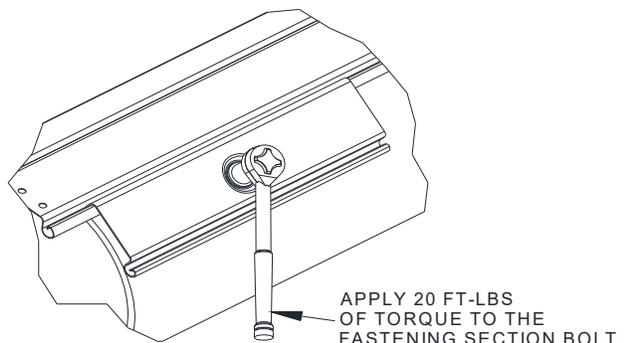


Figure 8.1 - Installing the Fastening Section

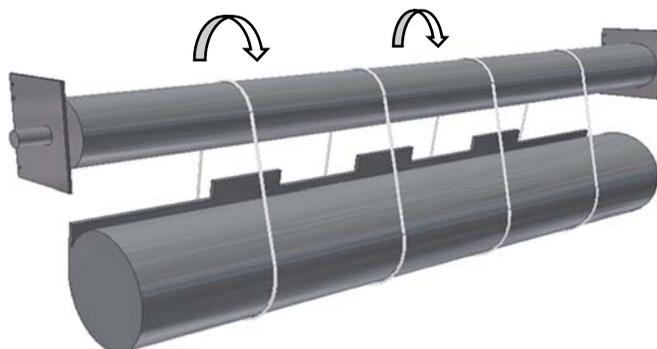


Figure 8.2 - Installing the Curtain

Section 9 - Hood Support Installation

Hood Support installation:

1. Refer to the job information to determine the type and quantity of hood supports required for your door. Hood supports will be noted on the elevation view of the job construction drawings. See **Figure 11.1** for hood support types.

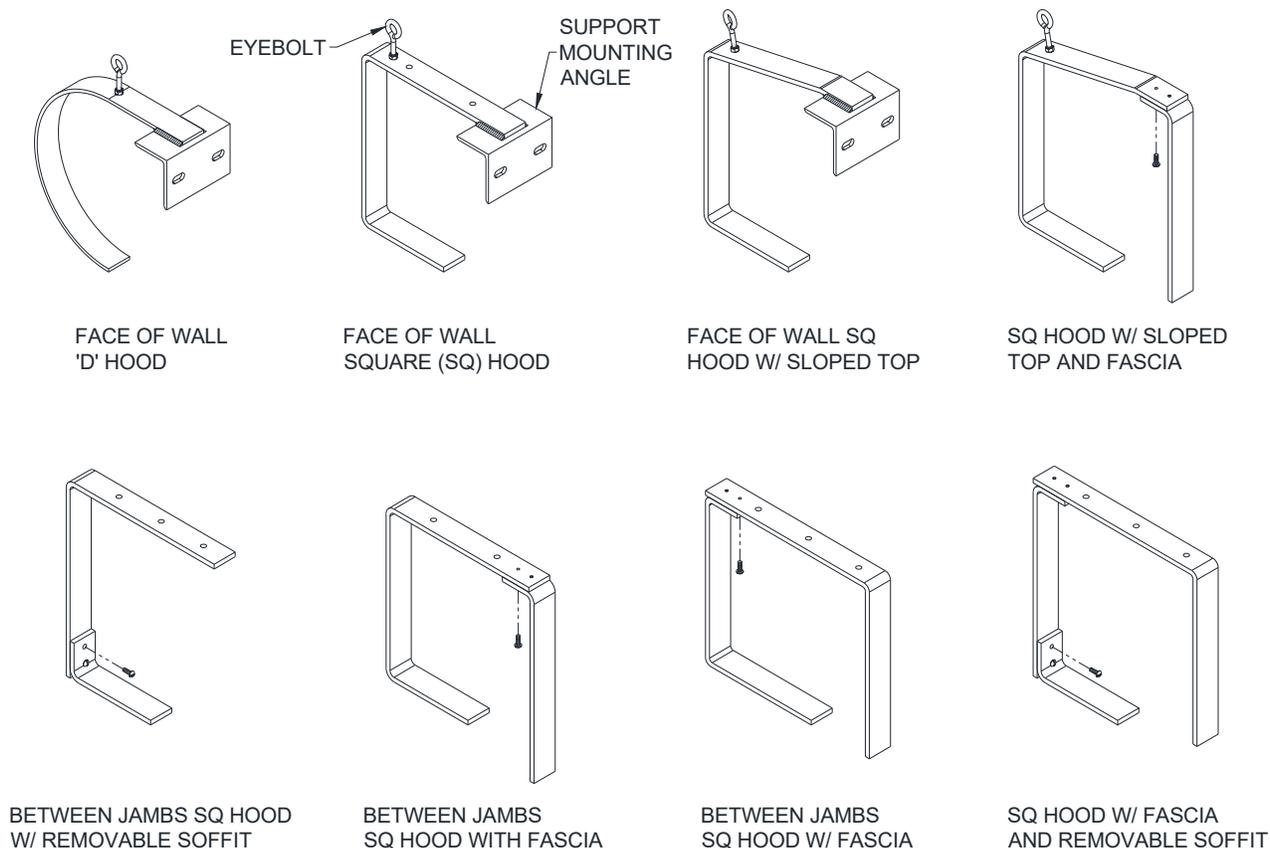


Figure 9.1 - Hood Supports

2. Determine where the support(s) will be located between the guides.
 - a. If multiple supports are required, see the job construction drawings to determine the centerline of each.
 - b. If a single support is required, it will be located at the center of the unit.
3. Mark a line on the lintel or ceiling (for units without a lintel) at the centerline of each support.
4. Check the construction at the support locations to be sure it is strong enough to handle the weight of the hood.

Note: *If the construction is not strong enough, do not proceed until rectified.*

5. The term “top of the coil” refers to the top edge of the brackets and hood which house the curtain (The curtain in the fully open position is referred to as the “coiled curtain”. The top of the coiled curtain is not actually located at the “top of the coil”, it is lower than the top of the coil) Locate the “top of the coil”:
 - a. This is typically at the top of the wall angle or intermediate angle.
 - b. If there is no wall or intermediate angle, see the job construction drawings for the distance from the bottom of the unit to the top of the coil.
 - c. If there is a ceiling at the top of the coil, skip the next step.
6. Mark a line at the top of the coil at both guides of the unit. Project the lines together to make a continuous line.
 - a. This will help locate the top of the hood support which will keep the hood level.
7. If there is no lintel/header, the hood support will be located based on the fascia side of the guide.
8. Project a line from the fascia mounting location (fascia mounting channel or fascia side of the tube) from one guide to the other.
9. Mark a line at the support centerline along the fascia line.
10. Prepare the location of the attachment point of the support(s) prior to installing the barrel. This will make installing the support much easier when the time comes to attach it to the lintel/header or ceiling.
 - a. Hold the support in place at the determined location and mark the mounting hole locations.

Section 9 - Hood Support Installation

- b. Drill holes in the construction.
- 11. Attach the hood support to the lintel/header or ceiling to be sure the mounting holes were located properly.
- 12. Remove the hood support and return to the "**Barrel and Brackets**" section.
- 13. Once the barrel, brackets, curtain are installed, and necessary testing was done on the unit, re-install the hood support.

Section 10 - Hood, Fascia, and Covers

▪ Hood and Fascia installation:

1. Determine what type of hood was provided. This can be done by:
 - Looking for a 'D' hood strap or clip angles welded to the brackets.
 - Looking in the hood box and comparing to the job construction drawings.
2. If a square hood is provided, check the job construction drawings to see if it has multiple parts (such as a two sided hood with a removable soffit, two sided hood without a top piece, two sided hood with a sloped top, etc). See **Figure 10.2** for possible hood configurations.
3. Fasten the hood and fascia accordingly using the fasteners provided. Ensure hoods with multiple sections overlap correctly.
 - 'D' hoods end between the brackets.
 - Square hoods end flush with the outer edge of the brackets.
4. If there is a hood support:
 - 'D' hood sections overlap the centerline of the hood support by 1/2".
 - Square hood sections do **not** overlap at the hood support. They butt against each other and a hood splice cover is provided to cover the joint, see **Figure 10.3**.

Note: If there is a hood support, pre-drill holes in it to ease hood attachment. A #21 drill size is recommended.

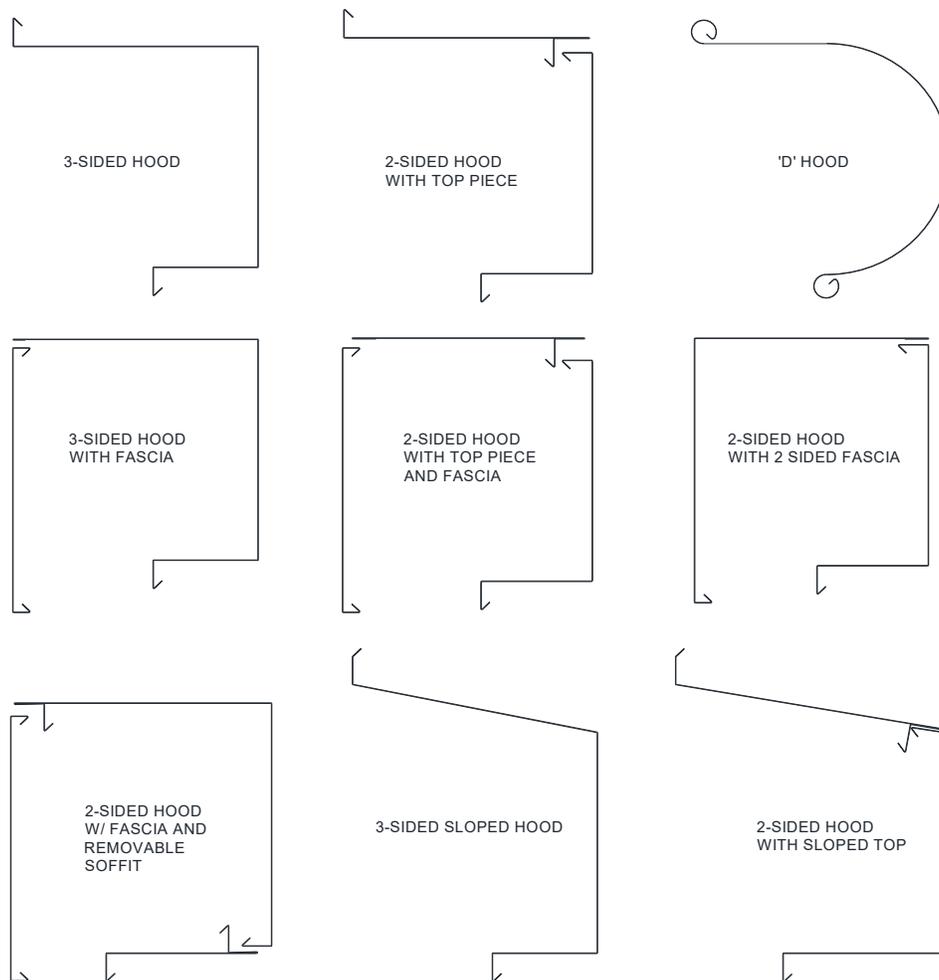


Figure 10.2 - Hood Configurations

Section 10 - Hood, Fascia, and Covers

▪ **Hood Splice Cover:**

1. Hood splice covers are provided for square hoods only. Prior to installing the splice cover, operate the door a few times once you've installed the hood, to verify that the hood is not interfering with the door.
2. Install the splice cover at this time.
3. Slip the bottom return bead on the splice cover into the soffit return on the hood, and then attach the top of the splice cover with the fasteners provided.
4. If there is not return bead on the soffit of the hood, fasten the bottom of the splice cover to the soffit.

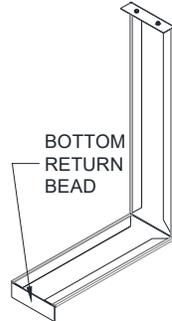


Figure 10.3 - Hood Splice

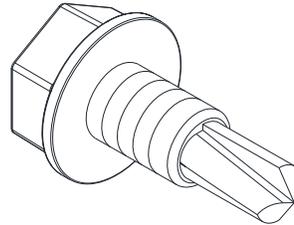


Figure 10.4 – Hood and Cover Screw (#10-16 x 1/2")

▪ **Cover installation:**

1. Once the unit is installed and operating correctly, the covers can be installed.
2. Hood screws may have to be removed and reinstalled to install covers properly.
3. If the cover mounts to the side of the door bracket, pre-drill holes in the bracket to ease installation. A #21 drill size is recommended.
4. If an operator or idler cover is provided, individual installation instructions are provided with each cover along with the necessary hardware to attach the cover.
5. Once the cover is installed, operate the door a few more times to be sure there is no interference between the moving components inside the cover and the cover itself.
6. If the door is mounted on the exterior of the building, a bead of silicone sealant should be applied around the entire perimeter of the cover, as it will provide additional protection to the door components.

Section 11 - Torque Specifications

Table 11.1 - Torque Recommendations for Guide Assembly and Wall Fasteners

Bolt size/type	Torque (ft lbs) ^a
1/4-20 Grade 2 steel bolt	6
5/16-18 Black Oxide Socket Cap	25
3/8-16 18-8 stainless steel bolt	20
3/8-16 Grade 2 steel bolt	20
3/8-16 Grade 5 steel bolt	31
3/8-16 Grade 8 steel bolt	45
1/2-13 Grade 5 steel bolt	75
1/2-13 Grade 8 steel bolt	107
5/8-11 Grade 8 steel bolt	212
3/4-10 Grade 8 steel bolt	376
^a The recommended torque for steel bolts is based on a plated bolt that has not been lubricated.	

Table 11.2 - Torque Recommendations for Solid Masonry Wall Anchors

Anchor Size (nominal)	Manufacturer/Torque (ft lbs) ^a	
	Simpson Wedge-All	Hilti-Kwik Bolt 3
3/8	30	20
1/2	60	40
5/8	90	85
3/4	150	150
^a Torque values for grout filled block are different, reference bolt manufacturer for these values.		

Section 12 - Warranty

Warranty Statement

CornellCookson warrants its High Cycle Grille product against defects in material or workmanship for a period of 24 months from the date of shipment or 300,000 cycles, whichever occurs first. CornellCookson's obligation under this warranty is limited to repairing or replacing, at CornellCookson's discretion, any parts which are determined, by CornellCookson, to be defective. Replacement parts are to be shipped in the same manner as the original order. This warranty does not apply to products that have been altered or repaired by anyone not authorized by CornellCookson to do so. This warranty does not apply to products that have been improperly installed, specified, subjected to improper storage, handling, operation, accident or those which have not been properly maintained. Documentation of a properly executed maintenance program will be required prior to corrective action being authorized.

The design of coiling products by nature will abrade virtually any applied finish. For this reason, CornellCookson does not warrant either standard or optional finishes. Component wear is to be expected in the normal operation of a High Cycle Grille. At their discretion, CornellCookson will evaluate part failure as it relates to the product's ability to operate.

Job specific warranties, or warranties with obligations in addition to those listed above must be stated in writing and signed by CornellCookson.

Preventative Maintenance Schedule					
	Cycles				
	87,500	175,000	262,500	350,000	437,500
Visual Inspection	INSPECT	INSPECT	INSPECT	INSPECT	INSPECT
Bracket Bearings	INSPECT	<u>LUBRICATE</u>	INSPECT	<u>LUBRICATE</u>	INSPECT
Drive Chain	INSPECT	<u>LUBRICATE</u>	INSPECT	<u>LUBRICATE</u>	INSPECT
Limit Nuts/Shaft	INSPECT	<u>LUBRICATE</u>	INSPECT	<u>LUBRICATE</u>	INSPECT
Motor Operator	INSPECT	INSPECT	INSPECT	INSPECT	INSPECT
Operator Brake Operation	TEST	TEST	TEST	TEST	TEST
Inertia Brake	INSPECT	<u>REPLACE</u>	INSPECT	<u>REPLACE</u>	INSPECT
Sensing Edge	TEST	TEST	TEST	TEST	TEST
Photoeyes	TEST	TEST	TEST	TEST	TEST
Maintenance Date					
Cycle Counter Readout					
Servicer Initials					

Section 13 - Maintenance and Troubleshooting

▪ Routine Maintenance:

Note: If any of the following problems exist, **do not** operate the door until repaired.

Component	What to look for and how often the components must be inspected:	Weekly	Monthly	Quarterly	What to do if problem exists:
Curtain & Bottom Bar	Are any curtain components damaged (slats, endlocks, etc.)?	X			Contact Service about replacing damaged parts.
	Is bottom bar damaged?	X			Contact Service about replacing damaged parts.
	Are bottom bar fasteners in place and properly tightened?		X		Fasteners must be inspected/replaced and properly tightened.
	Are fasteners attaching curtain to the barrel in place and properly tightened?		X		Fasteners must be inspected/replaced and properly tightened.
	Do you notice any hang-ups, jamming or other problems preventing the door from moving smoothly throughout the opening?	X			Check for external issues, if none exist, contact Service.
	Do you notice any odd or excessive noise when the door is operated?	X			Check for external issues, if none exist, contact Service.
	If there is a bottom seal, is it damaged?		X		Contact Service about replacing damaged parts.
	If there is locking, does it function properly?	X			Check for external issues, if none exist, contact Service.
Brackets	Are brackets plumb and perpendicular with wall?			X	Contact Service.
	Are bracket fasteners in place and properly tightened?			X	Fasteners must be inspected/replaced and properly tightened.
	Do you notice signs of excessive wear on the bearings (i.e. binding, excessive noise, etc.)?		X		If there is a grease fitting, apply grease, if not, contact Service.
	Is drive chain sufficiently lubricated?			X	Apply chain lube.
	Is drive chain in need of tightening?			X	Contact Service for instructions on how to tension the chain.
	Is drive or driven sprocket damaged?		X		Contact Service about replacing damaged parts.
Guides	Are wall fasteners in place and properly tightened?		X		Fasteners must be inspected/replaced and properly tightened.
	Are guide assembly fasteners in place and properly tightened?		X		Fasteners must be inspected/replaced and properly tightened.
	Is guide gap dimension correct?		X		Check job construction drawings and adjust gap as required. If job construction drawings are not available, contact Service.
	Are any of the guide parts bent or damaged?		X		Contact Service.
	Are stoppers loose, damaged, or missing?		X		Stoppers must be inspected/replaced and properly tightened.
Hood and Fascia	Is hood/fascia dented or damaged?			X	Remove hood/fascia. Repair if possible. If not leave hood/fascia off and contact Service.
	Is curtain rubbing against the hood/fascia?	X			Hood/fascia may have been damaged. Contact Service.
	Is hood/fascia level?			X	Check fasteners, they may be loose or missing. Replace as soon as possible.
	Are guide assembly fasteners in place and properly tightened?		X		Fasteners must be inspected/replaced and properly tightened.
	Is hood support level?			X	Check fasteners, they may be loose or missing. Replace as soon as possible.
Door operation	Does the door require excessive force to open?		X		Check for hang-ups or obstructions. Ensure spring tension is set correctly. Contact Service.

Section 13 - Maintenance and Troubleshooting

	If the door contains locking, does the locking mechanism function properly and securely hold the door in the closed position?		X		Check for damage and other external issues. Contact Service.
	If there is a sensing edge, does it function properly?	X			Cut power and check for loose wires. Contact Service for further instruction.
	If there is a wireless sensing edge, is the red LED lit on the wireless sensing edge receiver?	X			Refer to the <i>Troubleshooting</i> section in the wireless sensing edge manual.
	If there are photoeyes, are they functioning properly?	X			Cut power and check for loose wires. Contact Service for further instruction.
Motor Operator	Are the fasteners attaching the motor-to-the mounting bracket, and mounting bracket-to-the door bracket secure?			X	Fasteners must be inspected/replaced and properly tightened. Contact Service for replacement hardware.
	Are the sprockets properly aligned?			X	Realign the sprockets as secure using the set screws. Recheck chain tension.
	Are the sprocket keys properly aligned with sprockets and securely fastened with the set screws?			X	Reposition the keys so they fully engage the keyway in the sprocket. Tighten the set screws.
	Is the door stopping correctly at the open (before bottom bar contacts the stoppers) and closed (as soon as the bottom bar contacts the floor) positions?		X		Limits may have to be adjusted in the motor operator. Refer to the operator owner's manual or contact Service.
	Is the operator functioning normally?		X		Refer to the <i>Operator Troubleshooting Table</i> on the following page to diagnose the problem.
	Does the drive chain have sufficient tension?		X		Shims may have to be used to space out motor operator or a link may have to be removed from drive chain.
Inertia Brake	Is the red tab pushed out of the housing?	X			Contact Service.
	Is the safety brake making any unusual noise or vibrating while the door is operating?	X			Contact Service.

- **Operator Troubleshooting:**

Note: If you suspect you are having an issue with your operator, use the following table to determine the potential causes. If the provided solution does not eliminate the issue, or the table does not address your particular problem, contact the Service Department.

Section 13 - Maintenance and Troubleshooting

Component	Problem	Potential Cause	Solution
Motor Operator	Motor Operator does not run when OPEN or CLOSE button is pushed	The circuit breaker may be flipped or fuse blown.	Reset breaker or replace fuse. Contact Service if replacement fuse is needed.
		The thermal overload may be tripped.	Reset thermal overload.
		Manual interlock switch is open (on units with emergency operator).	Close manual interlocks.
		External interlock may be opened.	Close external interlock.
	Motor operator runs but the door does not move	Sprocket key may be missing or drive chain may be broken.	Contact Service for repair parts. Install key or replace chain.
		Clutch may be slipping.	Adjust if possible. Contact Service otherwise.
	Motor hums but does not run	Door or drive chain may be jamming.	Check for hang-ups or obstructions. Try to operate manually. If issue persists, contact Service.
		Dead phase in 3 phase system.	Check power supply.
		Brake does not release.	Check power to brake solenoid.
		Open motor winding.	Check that all connections are secure.
	Motor operator runs in wrong direction and limits do not function	3 phase operator power supply is out of phase.	Interchange any 2 power leads to unit.
	Door drifts when motor shuts off	Brake may be improperly adjusted or broken.	Check brake components. Contact Service for replacement parts or adjust instructions.
	Motor operator does not shut off at full OPEN or at full CLOSE position	Limits may need adjustment.	Refer to the operator owner's manual to readjust limits.
		Sprocket on limit shaft may be slipping or limit drive chain may be broken.	Ensure sprocket key is correctly installed and set screws are tightened. Contact Service for replacement chain if broken.
Limit switch may be defective.		Contact Service.	
Limit Switches	Limit switch does not hold setting	Drive chain may be too loose, allowing the chain to jump sprocket teeth.	Adjust chain to proper tension. Contact Service for additional information.
		Limit nut retainer not engaging slots in limit nuts.	Be sure retainer is securely engaged in slots of both limit nuts.
		Limit nuts binding on screw threads, allowing them to jump position on retainer.	Lube screw thread. Check that limit nuts turn freely.

Appendix A - Inertia Brake Replacement

Inertia Brake Replacement Instructions

Inertia brake must be replaced every 175,000 cycles.

▪ Procedure to Replace Inertia Brake (Figure 15.1):

1. Run door to fully closed position.
2. Support the weight of the shaft and curtain on the brake side of the grille.
3. Remove the bolts from the brake mounting angle and slide off the old brake.
4. Separate the wires from the old inertia brake.
5. Slide the new inertia brake on the shaft ensuring that the key and keyway is aligned and attach to the brake mounting angle. (Make sure directional arrow on brake points toward the direction of barrel rotation as door closer).
6. Connect the wires to new inertia brake.
7. Operate door and check for proper operation.

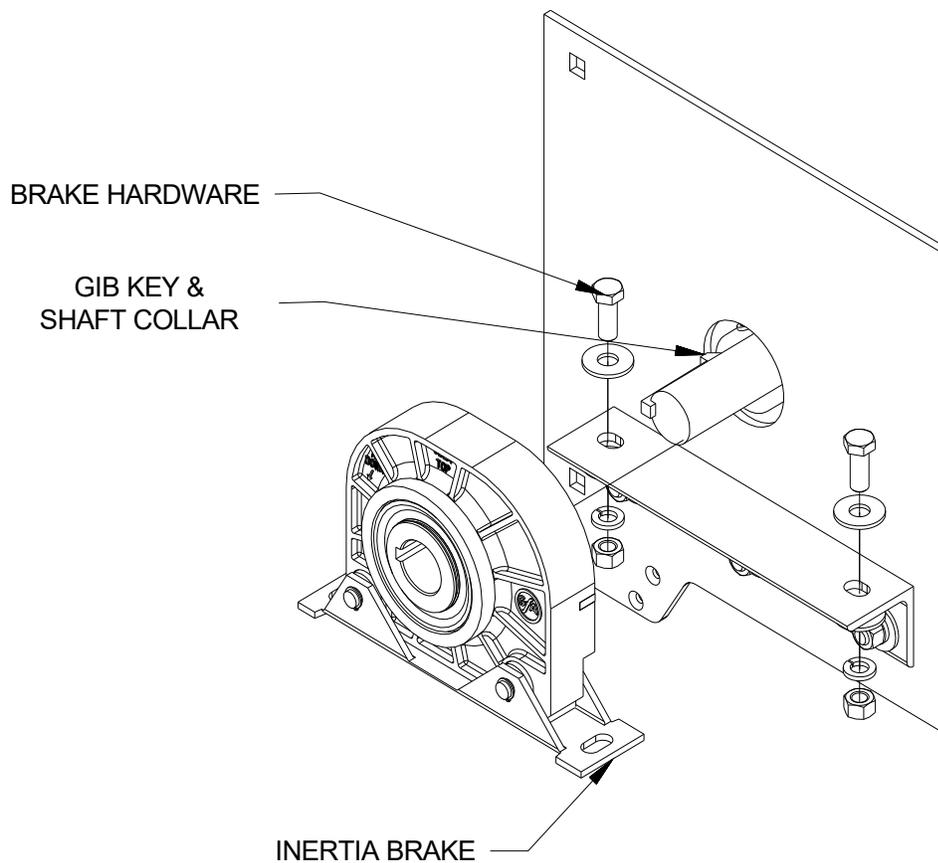


Figure 14.1 – Inertia Brake Assembly