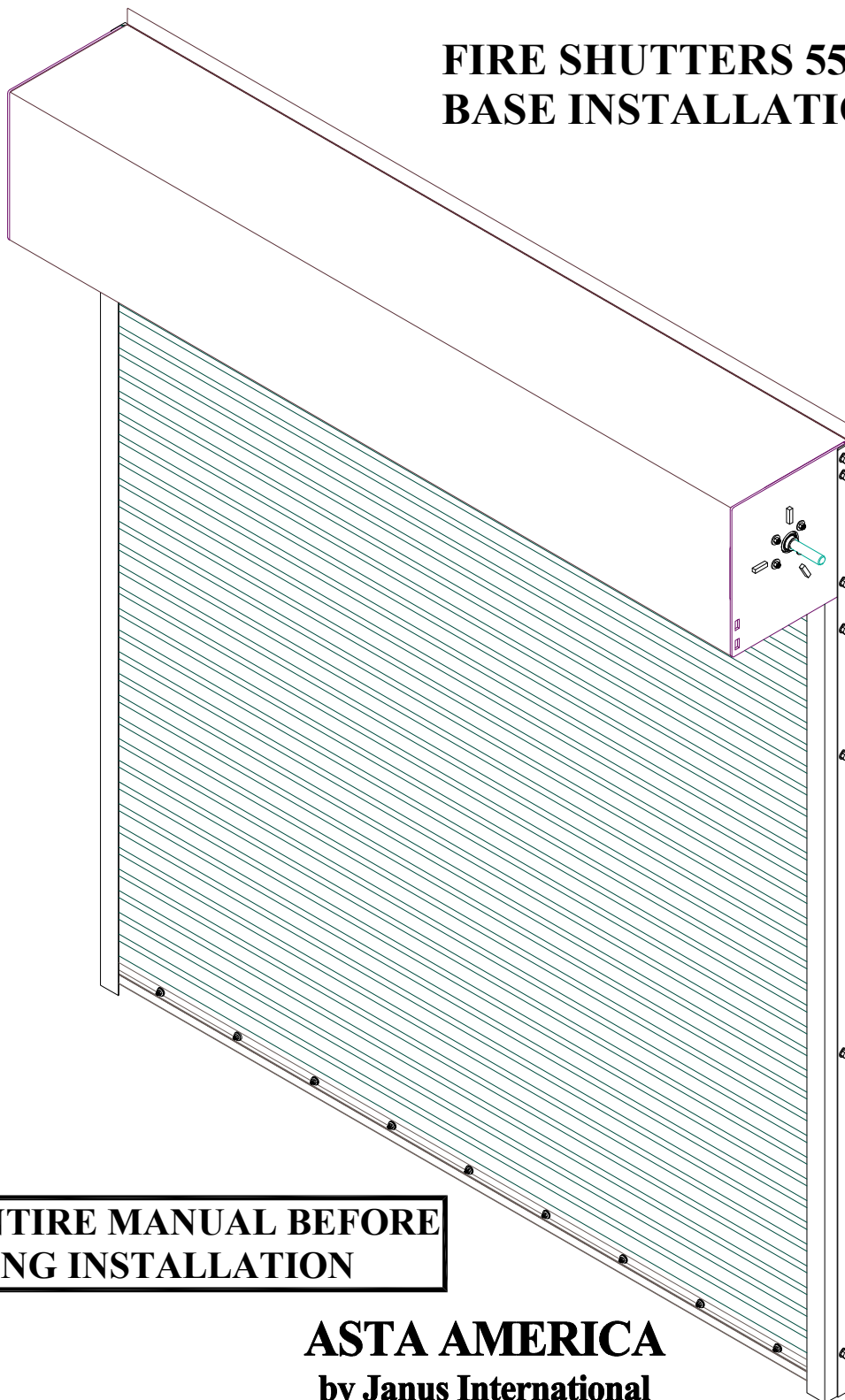




ASTAAMERICA

BY JANUS INTERNATIONAL

**FIRE SHUTTERS 550 SERIES
BASE INSTALLATION MANUAL**



**READ ENTIRE MANUAL BEFORE
BEGINNING INSTALLATION**

ASTA AMERICA
by Janus International


CARTERSVILLE, GA
astaamerica.com


SAFETY INFORMATION


OVERVIEW OF POTENTIAL HAZARDS

Counter Shutters are large, heavy objects that move with the help of springs under high tension and electric motors. Since moving objects, springs under tension, and electric motors can cause injuries, your safety and the safety of others depend on you reading the information in this manual. If you have questions or do not understand the information presented, call your nearest service representative.

In this section, and those that follow, the words "Danger", "Warning", and "Caution" are used to emphasize important safety information. For example:

 **DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

 **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

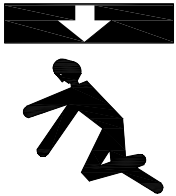



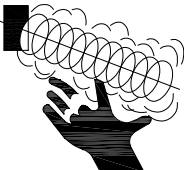

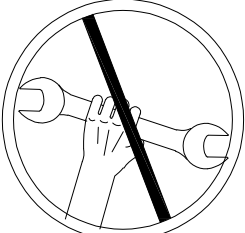

 **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in injury or property damage.

WARNING!

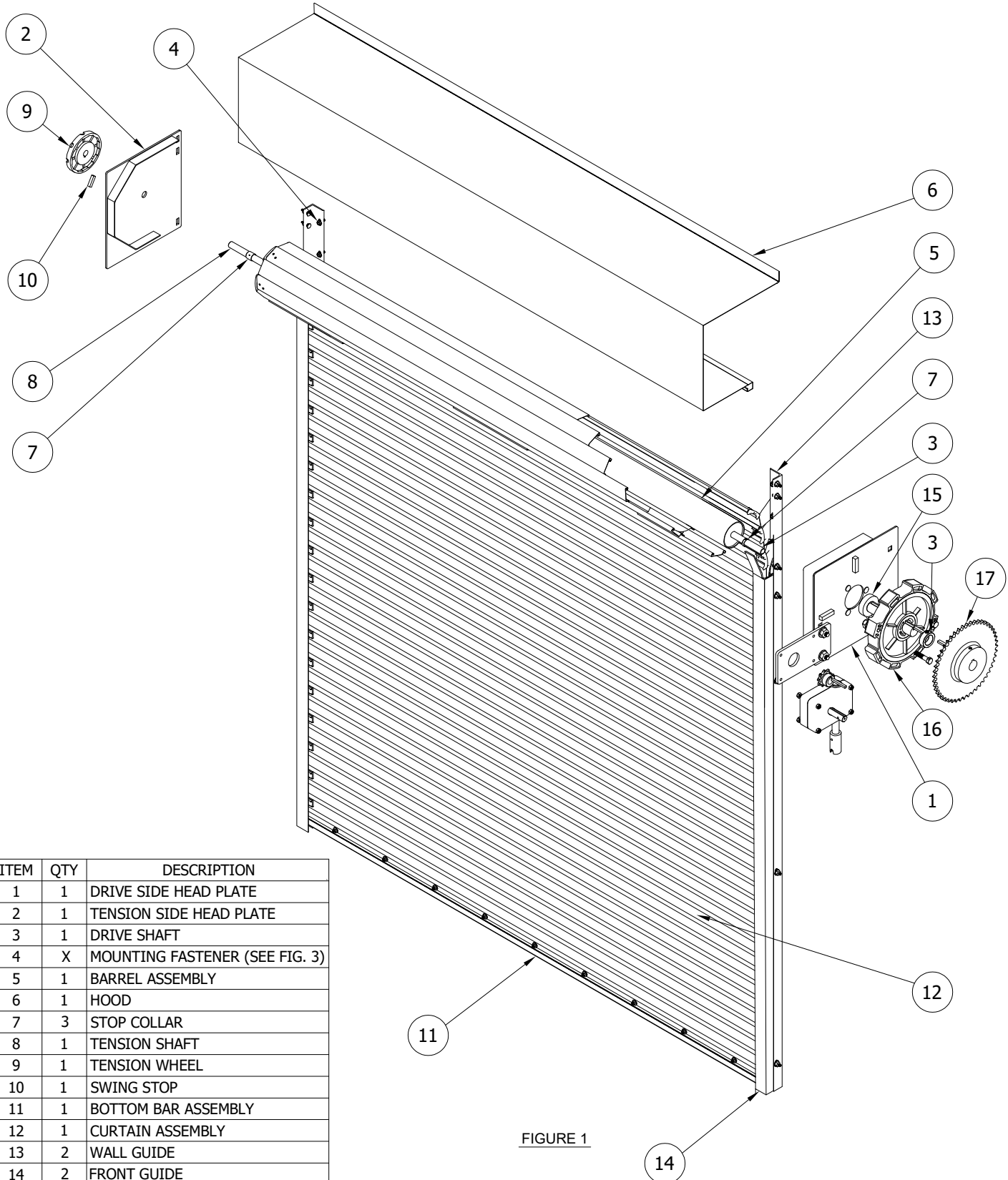
A Counter Shutter is a large heavy object that moves with the help of springs under extreme tension and electric motors. Moving objects and springs under tension and electric motors can cause serious injuries or death. For your safety and the safety of others, follow these instructions.

CAUTION

Use proper lifting equipment and correct lifting procedures to avoid damage or injury.

POTENTIAL HAZARD	EFFECT	PREVENTION
 <p>MOVING SHUTTER</p>	 WARNING Could result in death or serious injury	Keep people clear of opening while Counter Shutter is moving. DO NOT allow children to play with the Operator. DO NOT operate a Shutter that jams or one that has a broken spring.
 <p>ELECTRICAL SHOCK</p>	 WARNING Could result in death or serious injury	Turn off power before removing operator cover. When replacing operator cover, make sure wires are not pinched or near moving parts. Operator must be properly grounded.
 <p>HIGH SPRING TENSION</p>	 WARNING Could result in death or serious injury	DO NOT try to remove, repair or adjust springs or anything to which Shutter spring parts are fastened, such as steel brackets or other like items. Repairs and adjustments must be made by a trained shutter system technician using proper tools and instructions.
	 WARNING Could result in death or serious injury	Counter Shutter must be fully opened when making adjustments. Repairs and adjustments must be made by a trained rolling shutter systems technician using proper tools and instructions.

TYPICAL FIRE SHUTTER



ITEM	QTY	DESCRIPTION
1	1	DRIVE SIDE HEAD PLATE
2	1	TENSION SIDE HEAD PLATE
3	1	DRIVE SHAFT
4	X	MOUNTING FASTENER (SEE FIG. 3)
5	1	BARREL ASSEMBLY
6	1	HOOD
7	3	STOP COLLAR
8	1	TENSION SHAFT
9	1	TENSION WHEEL
10	1	SWING STOP
11	1	BOTTOM BAR ASSEMBLY
12	1	CURTAIN ASSEMBLY
13	2	WALL GUIDE
14	2	FRONT GUIDE
15	1	BUSHING
16	1	VISCOUS GOVERNOR
17	1	DRIVE SPROCKET

FIGURE 1

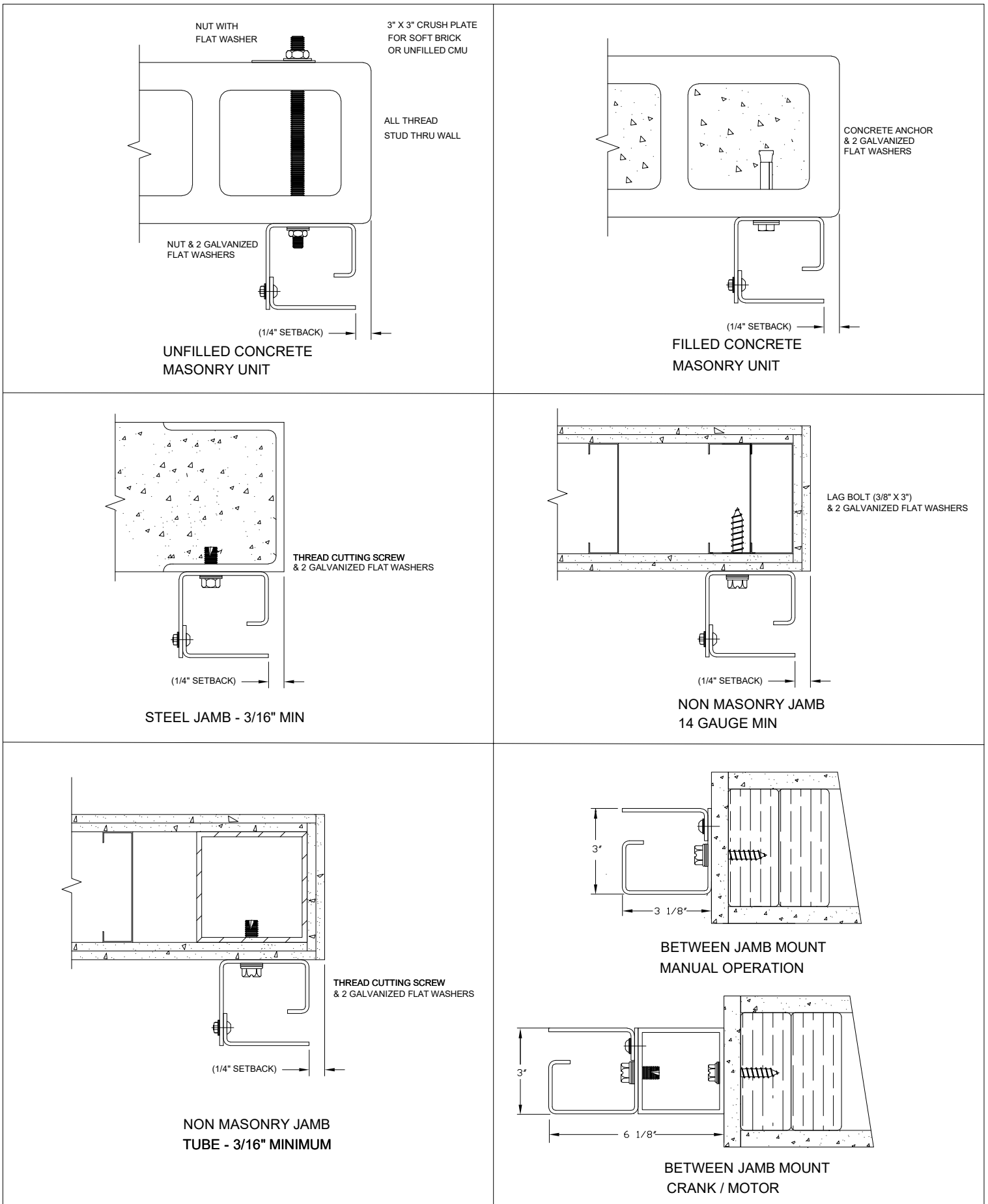


FIGURE 2

FASTENER CHART

JAMB	FASTENER	DRILL SIZE	NOTES
STEEL	3/8-16 X 1-1/4" TYPE 23 THD CUT SCREW	11/32"	3/16" THICK STEEL JAMB MINIMUM
	3/8-16 X 1-1/4" HEX BOLT AND NUT	7/16"	
	3/8 LAG SCREW	1/8"	
CONCRETE OR FILLED BLOCK	3/8" X 1-7/8" SLEEVE ANCHOR	3/8"	CLEAR HOLES OF CONCRETE DUST BEFORE INSTALLING FASTENER
UNFILLED BLOCK OR SOFT BRICK	3/8" THREADED ROD & NUTS	7/16"	INSTALL CRUSH PLATES ON OPPOSITE SIDE OF WALL
NON MASONRY	3/8 X 3 LAG BOLT	7/16"	14 GAUGE STEEL STUD MINIMUM WOOD STUD
	3/8 X 3 LAG BOLT	1/4"	

FIGURE 3

1. Pre-Installation Evaluation
 - a. Verify that your measurements match the opening width, height, headroom, sideroom and backroom dimensions shown on shop drawing.
 - b. Verify that jamb construction is the same as shown in shop drawing and that construction is suitable for mounting guides.
 - c. Verify that guides can be mounted plumb.
 - d. Verify that all shutter parts are available.
2. Procedure for laying out guides
 - a. Find and mark centerline of opening and mark as shown in Figure 5.
 - b. Determine "W" dimension from the shop drawing.
 - c. Center "W" dimension on sill using center line of opening and clearly mark at each jamb.
 - d. Sill marks should precisely equal "W" dimension and reflect the location of the wall angle's perpendicular leg as shown in Figure 5.

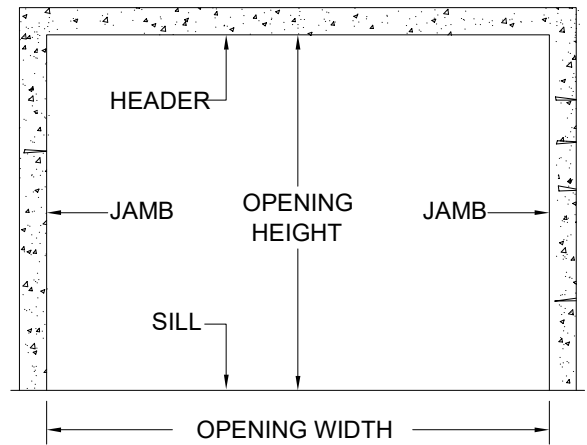


FIGURE 4

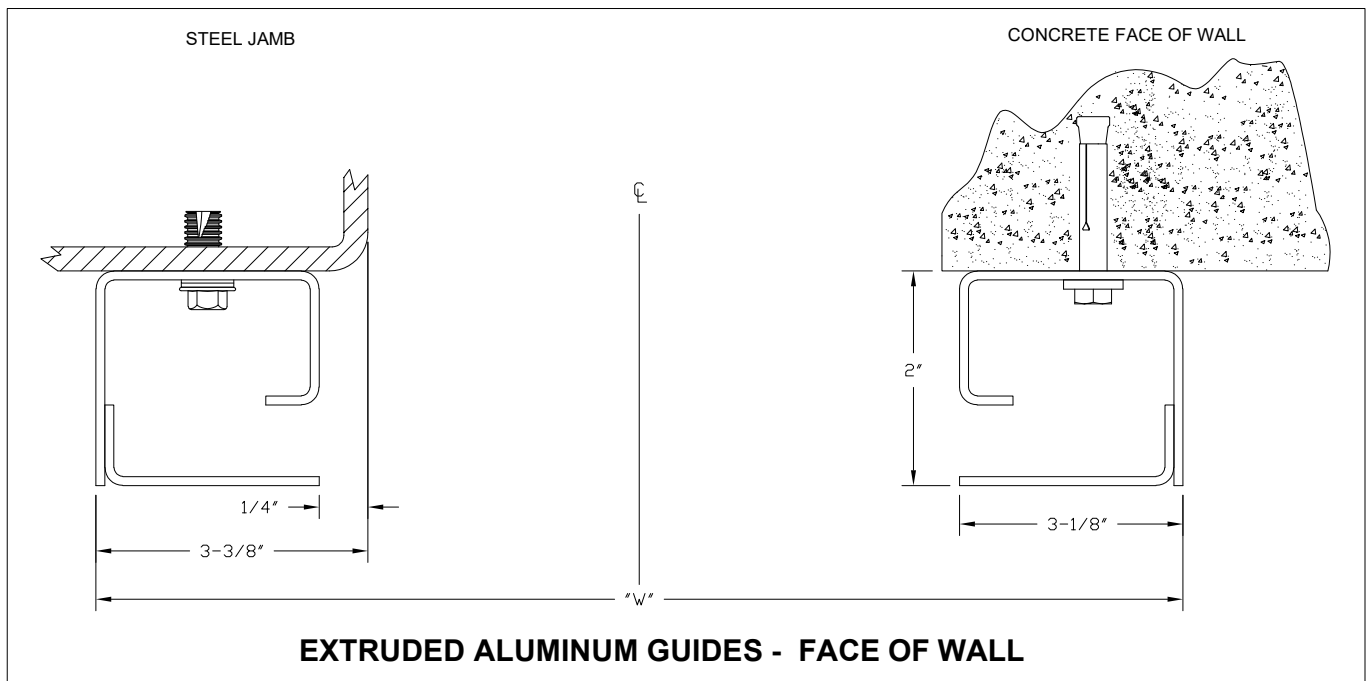


FIGURE 5

3. Procedure for shooting level reference marks
 - a. Create level elevation marks at left and right jamb faces using a level reference device or survey instrument as shown in Figure 6.

✓ Be positive about the accuracy of your level elevation reference marks!

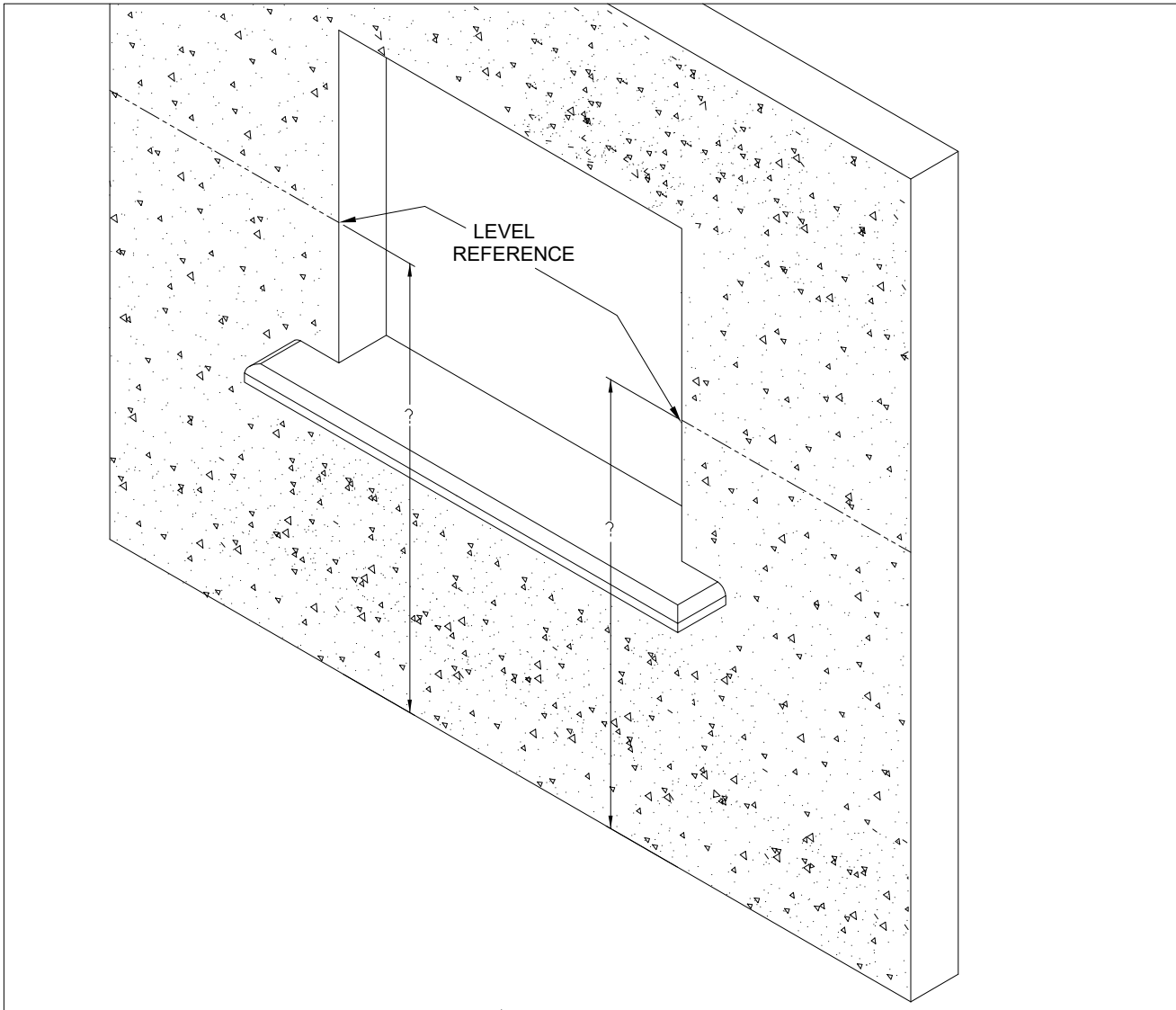


FIGURE 6

- b. Measure the distance from each level reference mark to the sill to determine if the sill is level.

✓ If there is a difference in measurements from the marks to the sill, the sill is not level. You must shim the wall angle with the longest reference measurement to verify that both wall guides are mounted to the same elevation.

4. Procedure for installing guide angles
 - a. Use a plumb bob or similar device to establish a true plumb reference.
 - b. Install first wall angle plumb vertically at the correct elevation, and at the correct "W" dimension sill mark.
 - c. This Fire Shutter is designed to expand upward, requiring all jamb fasteners to have two galvanized flat washers and to be located in the top of all slots.
 - d. Install second wall angle by placing it at the "W" dimension marked on the sill at the second jamb as shown in Figure 7. Shim if necessary.

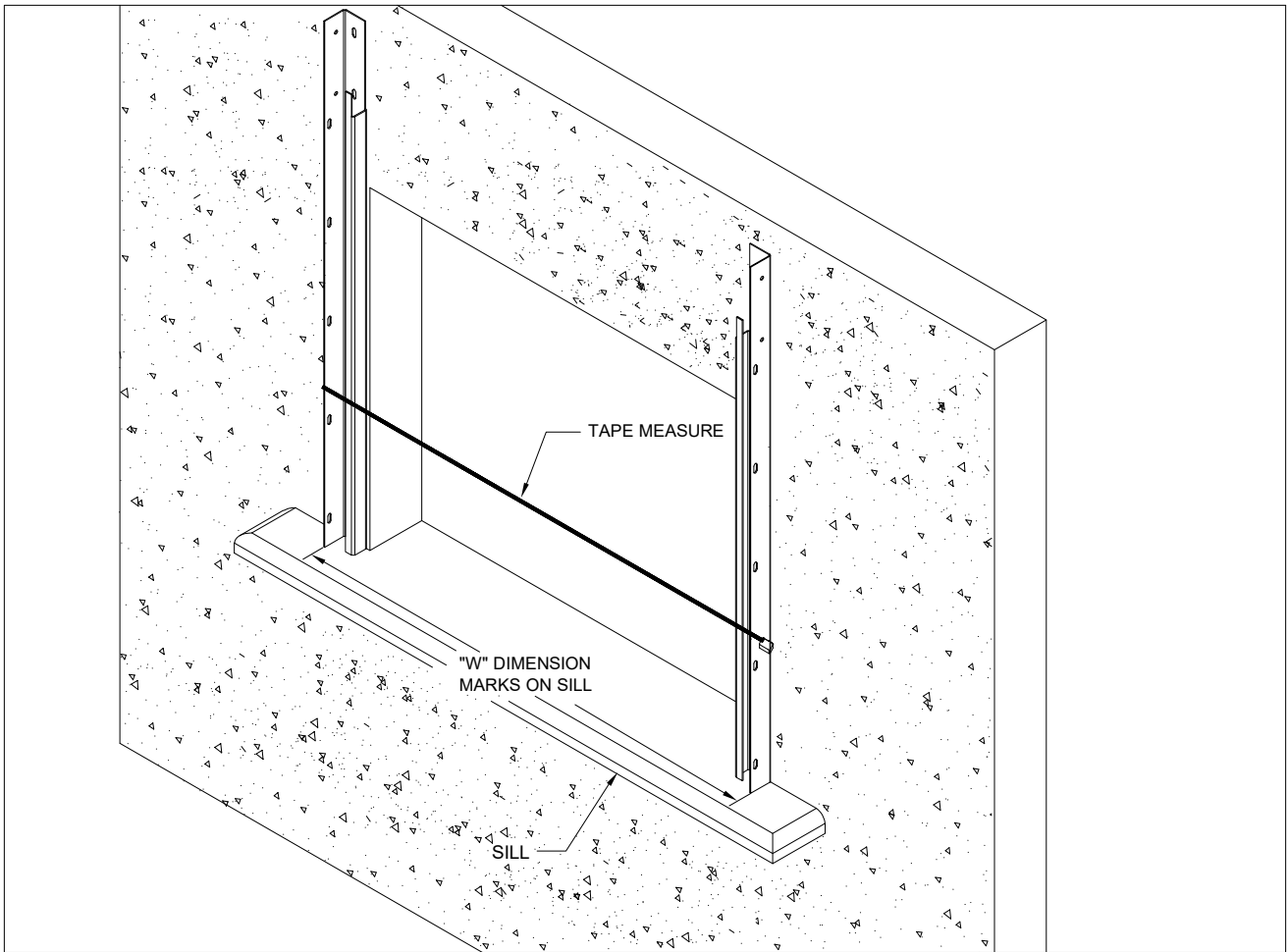


FIGURE 7

- e. Use a tape measure while attaching the second wall angle to maintain a consistent "W" dimension all the way to the top as shown in Figure 7.
- f. Outer angle is attached to the wall angle using two galvanized flat washers as shown in Figure 8.

NOTE: Use only fasteners provided and approved by ASTA America. Reference Figure 3 to determine correct jamb fastener type for your application, and for drill bit size, etc.

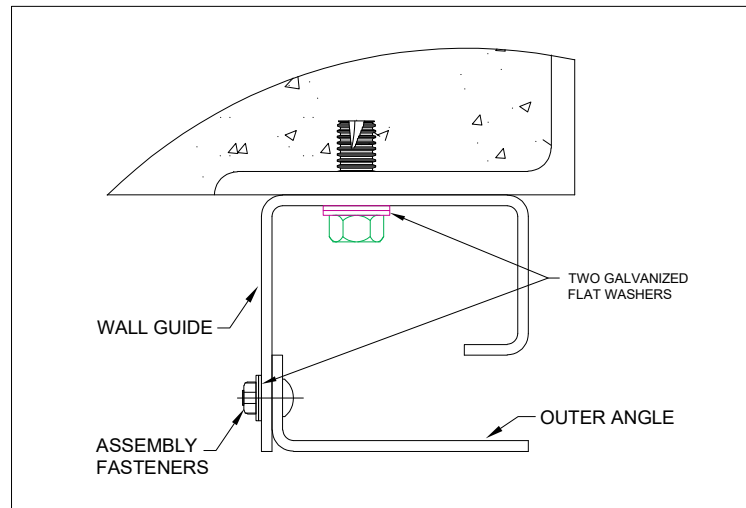


FIGURE 8

5. Procedure for assembling barrel and headplate assemblies.

a. Proceed at ground level and identify components as shown in Figures 9, 10 and 11.

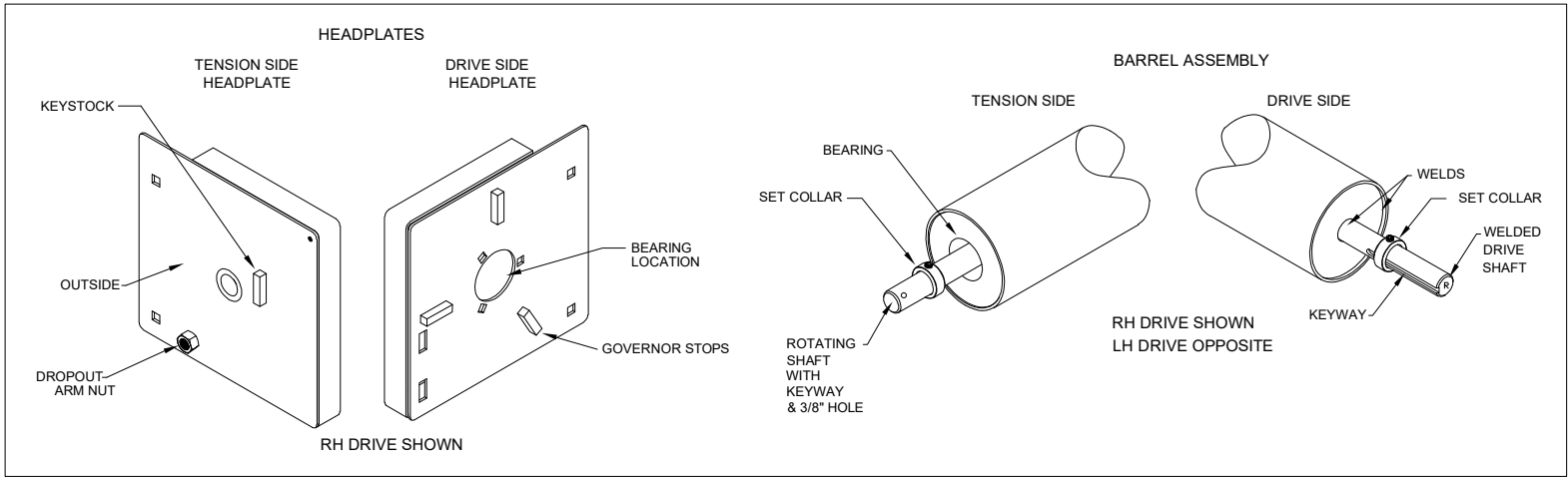


FIGURE 9

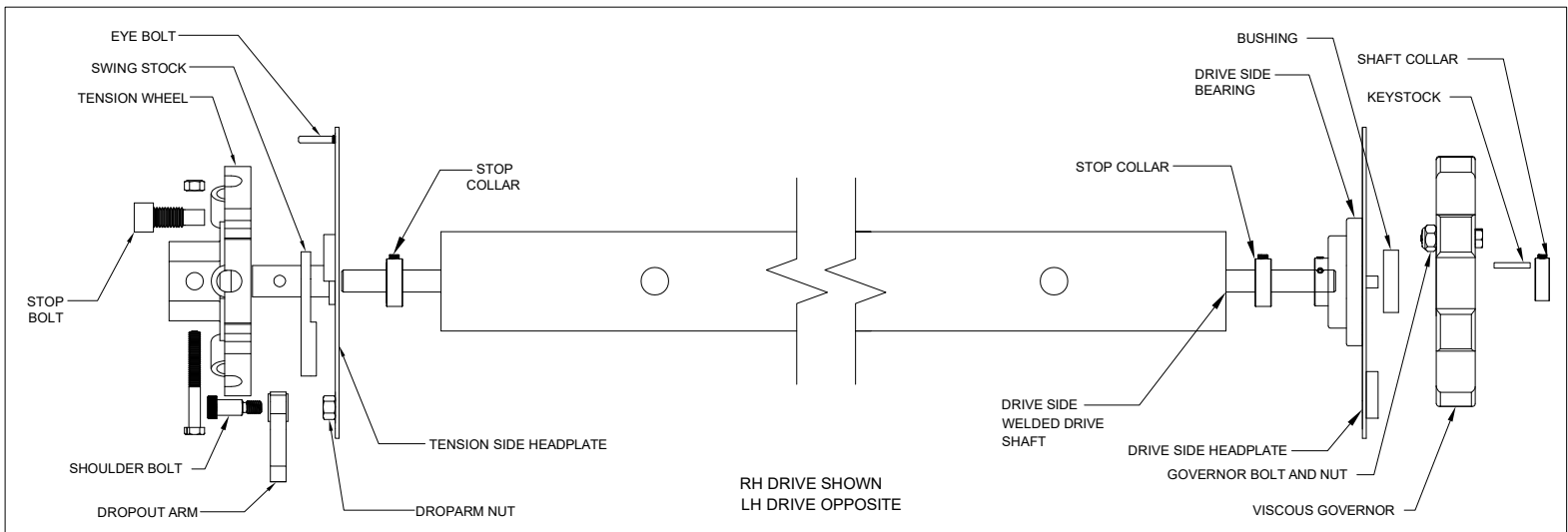


FIGURE 10

b. Assemble tension side headplate as shown in Figure 10.

c. Assemble drive side headplate as shown in Figure 10 for manual operation.

d. Assemble drive side headplate as shown in Figure 11 for optional awning crank.

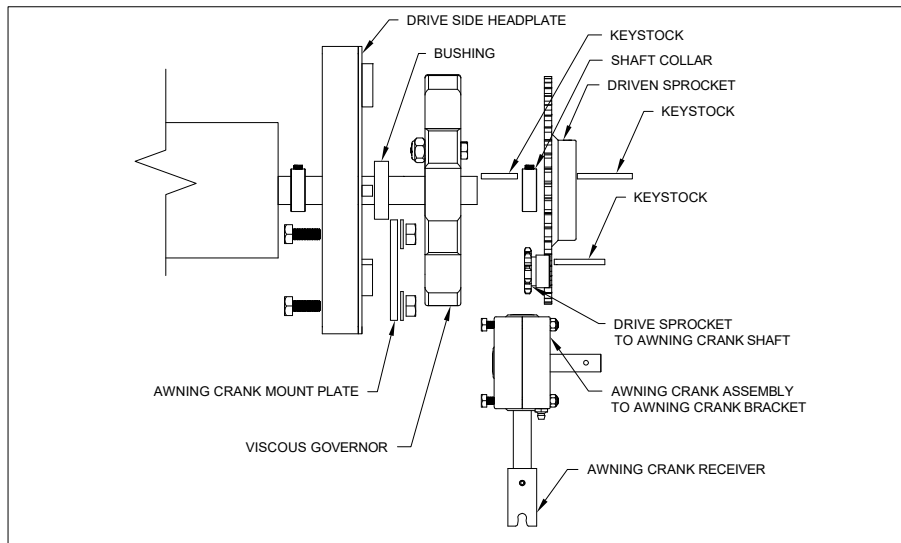


FIGURE 11

6. Procedure for installing barrel and headplates to guide assembly.
 - a. Carefully secure barrel to hoisting equipment and raise into position at top of wall angles. Attach headplate brackets to wall angles as shown in Figure 12.
 - b. VERIFY THAT BARREL IS DEAD LEVEL BEFORE TIGHTENING HEADPLATE BOLTS!
 - c. Set spacing between headplates adequate for later hood installation as shown in Figure 17.
 - d. Verify that barrel is unrestricted and free to rotate before proceeding.

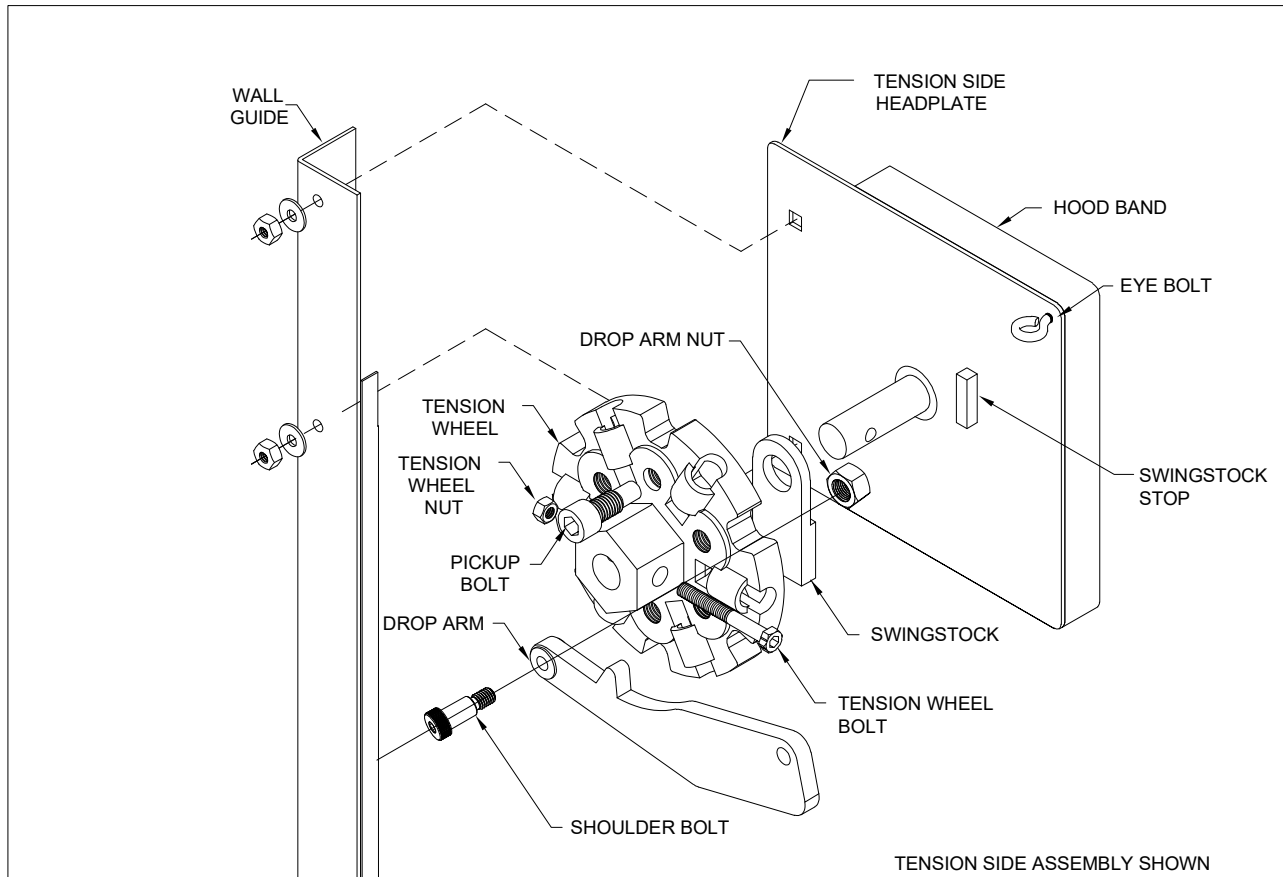


FIGURE 12





WARNING

Use proper lifting equipment and correct lifting procedures. Failure to do so could result in death or serious injury.

NOTE: At this time, you may refer to the supplemental operator instructions to install the operator bracket, operator, test handle and cable assemblies.

- ✓ Refer to the Appendix "A" for related fusible link and cable routing drawings.

SLINGING: IMPORTANT SAFETY PRECAUTIONS

Use only straight-eye choker style slings with a minimum 5,000 lb weight rating.

Use slings of a length that keeps the factory rolled curtain as close to the barrel assembly as possible.

Close and secure sling ends with a clevis or chain shackle of adequate size that features a **SCREW-IN STYLE PIN ONLY. DO NOT USE A CLIP RETAINED SHACKLE OR CLEVIS PIN!!**

7. Procedure for slinging curtain to barrel

- a. Using hoisting equipment, suspend the curtain assembly below the barrel on two or more slings.
- b. Center the factory rolled curtain assembly between the guides as shown in Figure 13.
- c. Use locking pliers to temporarily fasten two or more segmented starter slats to slings.
- d. Roll curtain, slings and barrel as one unit in order to pull the starter slats and curtain over the top of the barrel.
- e. Attach segmented starter slats to barrel using ASTA America supplied cap head screws and remove locking pliers.

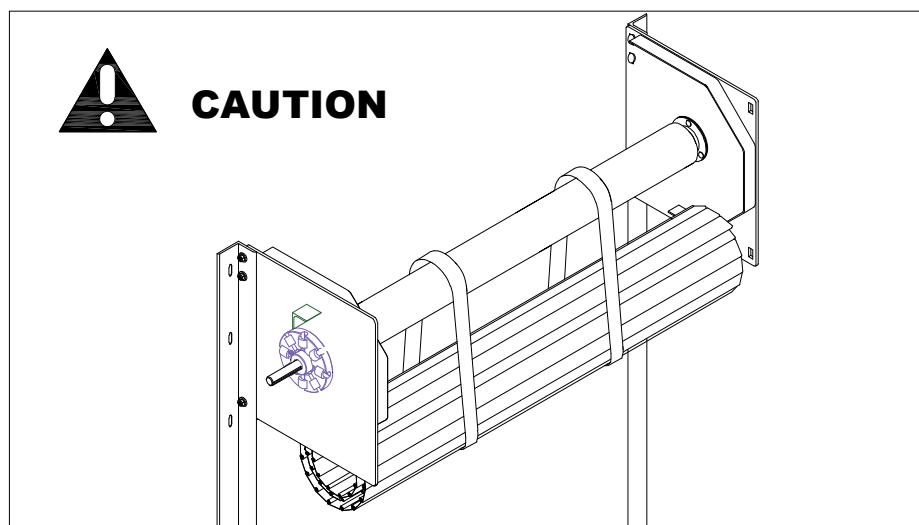


FIGURE 13

- ✓ It may be necessary to use the hoisting equipment to lift the weight of the curtain enough to allow rotation of the barrel to bring the attachment lugs into position with segmented starter slats.
- ✓ When starter slats are attached to the barrel lugs, you may lower the hoisting equipment and proceed with the next step.
- f. Center curtain slats individually between the guide throats as you slowly rotate the barrel and roll the curtain onto the barrel.
- g. Transfer the entire curtain assembly onto the barrel, but leave the bottom bar hanging 3"-4" below the bottom bar stop location.
- h. Secure curtain at this time to prevent downward rotation.

- i. Install guide service cutouts with bottom bar stops pre-attached as shown in Figure 14. Note that shorter guide sets may not include service cutouts.
- j. Tighten guide assembly fasteners securely with two heavy galvanized washers per bolt as shown in Figure 8.

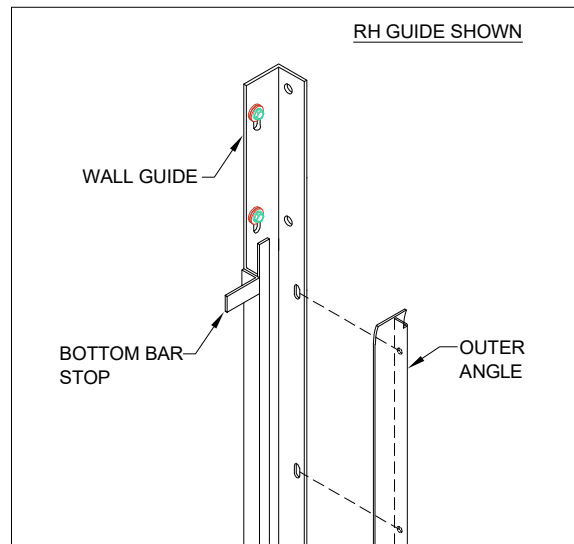


FIGURE 14

USE ONLY HEAVY GALVANIZED WASHERS PROVIDED BY ASTA.
DO NOT SUBSTITUTE WASHERS OF ANY OTHER TYPE OR SOURCE!

8. Procedure for applying tension preload to barrel assembly

- a. Install locking pliers to service cutouts approximately 4" down from bottom bar stops to arrest any downward curtain travel as shown in Figure 15.
- b. Release and lower the curtain to rest slack upon the locking pliers. Barrel should be free to rotate at this time.
- c. Apply tension from the top, downward, as shown in Figure 15 to the preload amount shown on tension headplate label and on barrel sticker.

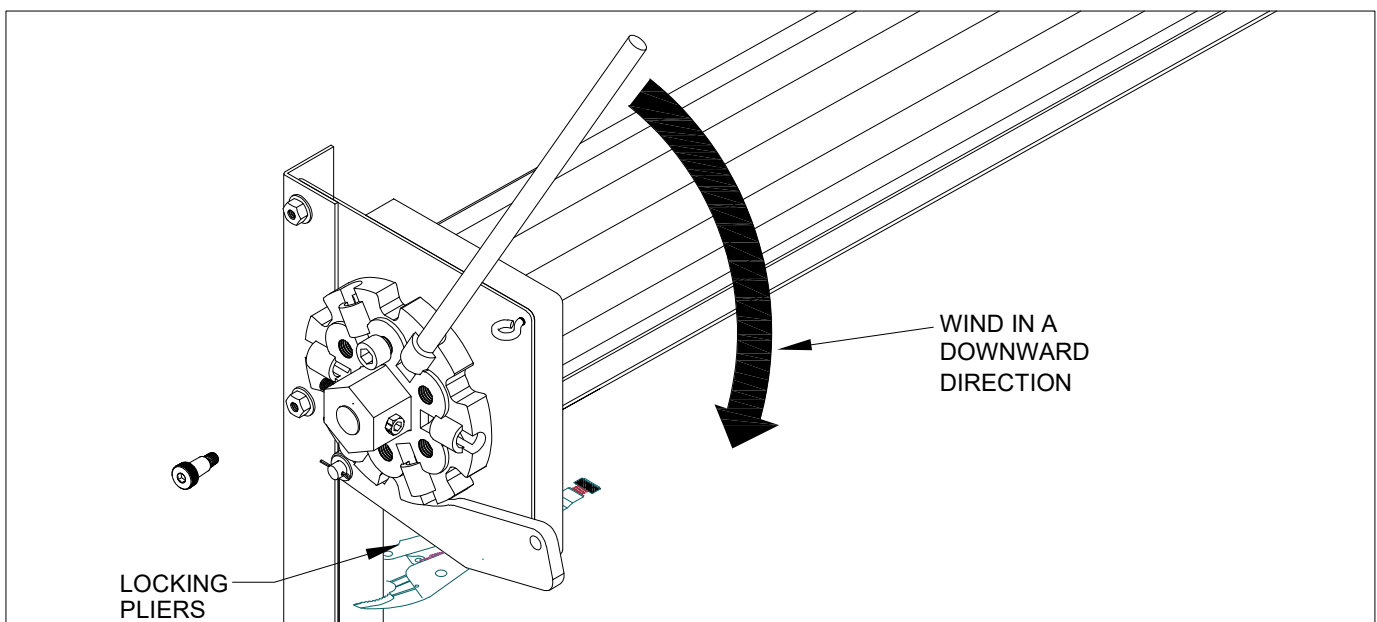


FIGURE 15



WARNING: Use two solid steel winding bars of a diameter matching the tension wheel lugs. Use of undersized or non-solid steel binding bars will result in component failure, injury, or death.

- d. Bottom bar should rise from locking pliers and come to rest touching stops when full preload tension has been applied.
- e. Engage tension wheel drop arm at this time and fix tension wheel securely. Rig cable as shown in figure 8.
- f. You may now remove slings.

9. Procedure for checking correct operation

- a. Clear the closing path of the shutter.
- b. Lower and raise the shutter several times.
- c. Inspect curtain to certify that it is centered and does not rub on the headplates.
- d. Make any necessary tension adjustments, hoist adjustments or operator limit adjustments in order to achieve reliable operation and complete range of travel with no binding or dragging.
- e. Verify that all fasteners are correctly installed and secured tightly.
- f. Attach the product safety labels as directed on labels.
- g. Apply sensing edge warning label if applicable.

Important Notes for a correctly balanced and functional shutter:

- ✓ The bottom bar must fully rest on the sill when in the closed position.
- ✓ The bottom bar must rest on the stops when in the fully open position.
- ✓ The bottom bar must be level in both the open and closed position.

10. Procedure for installation of the Hood(s)

- a. If provided, mount intermediate hood support to a structurally stable location on wall as shown in Figure 16 using installer supplied fasteners.
- b. Attach hood to headplate hood bands with self-drilling fasteners provided and approved by ASTA America. Use two fasteners per flat hood surface as shown in Figure 17.
- c. Overlap multiple hood segments and attach to center hood supports with self-drilling fasteners.

- d. Attach top hood flange securely to the wall with installer supplied fasteners.
- ✓ Use masonry fasteners at 24" on center for masonry walls.
 - ✓ On non-masonry walls install hood flange to each available wall stud with 3" long fasteners.
 - ✓ The use of fire caulk may be required to eliminate gaps unsuitable to contractor or the Authority Having Jurisdiction.

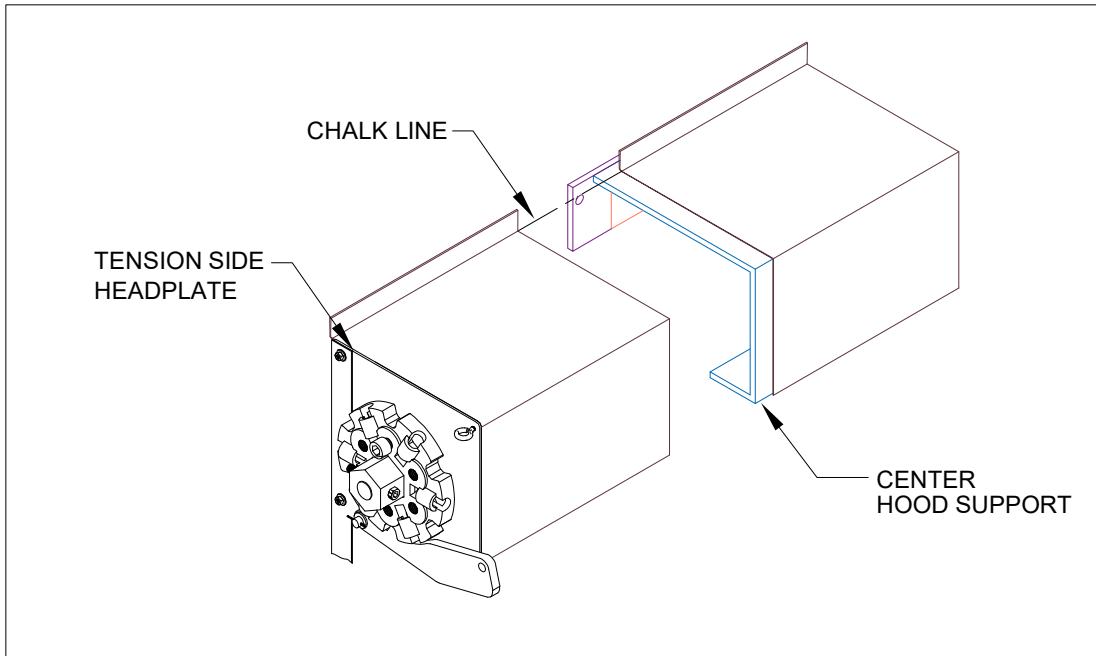


FIGURE 16

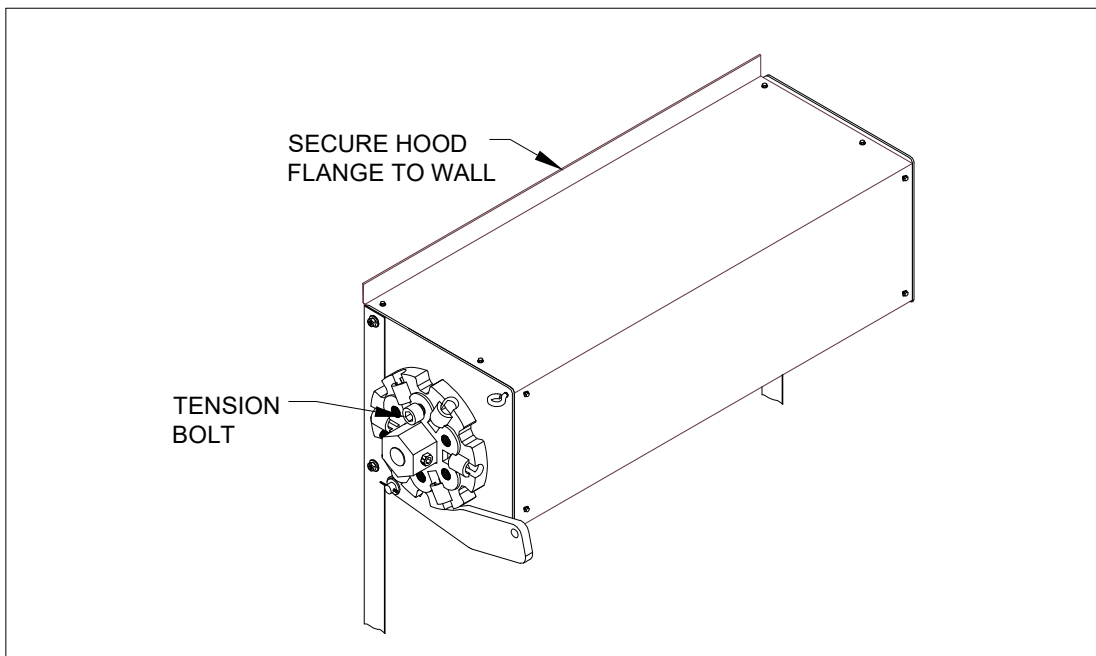


FIGURE 17

Appendix "A"

Route the cable in such a manner that the separation of any fusible link, or release by a release device, will allow the cable to completely slack and allow the fire door to close by releasing the fire door operator, as instructed in the supplemental operator instruction manual. See Figure A-1.

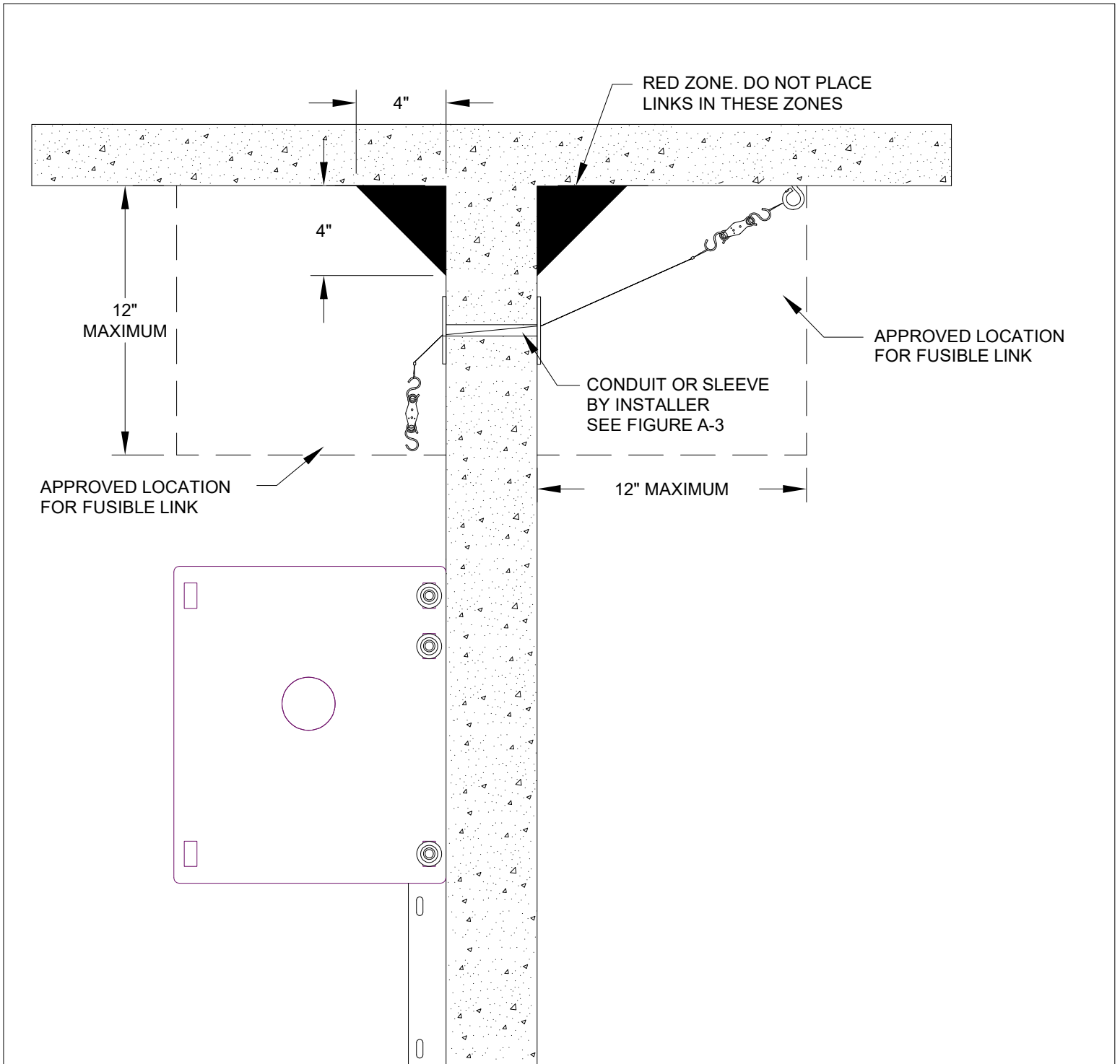


FIGURE A-1

The upper fusible link locations, per NFPA-80 are shown in Figure A-1. A third fusible link is located near the drive side headplate close to the opening height.

Three fusible links, cable, ferrules, S hooks and a test handle are provided with each ASTA door. Fusible links are attached to the cable by fashioning a loop in the cable and attaching this loop with an S hook as shown in Figure A-2.

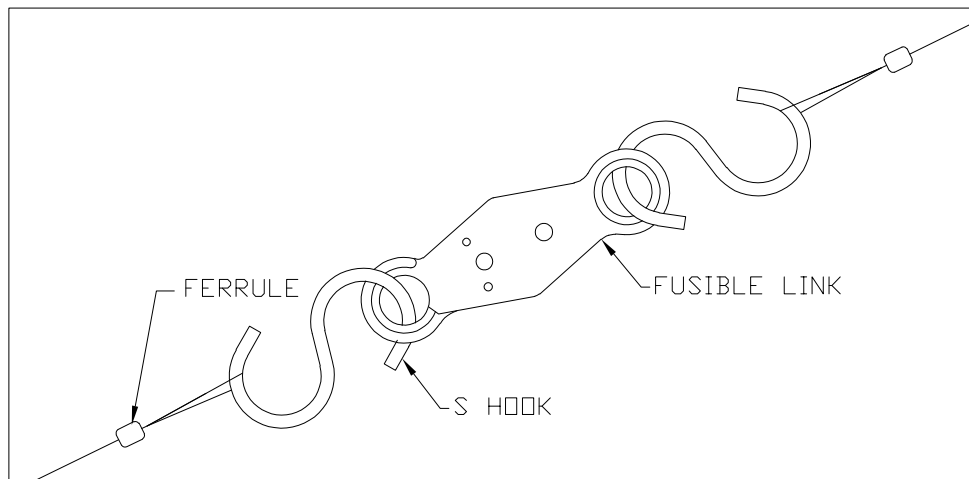


FIGURE A-2

The upper fusible link locations, per NFPA-80 are shown in Figure A-2. A third fusible link is located near the drive side headplate close to the opening height.

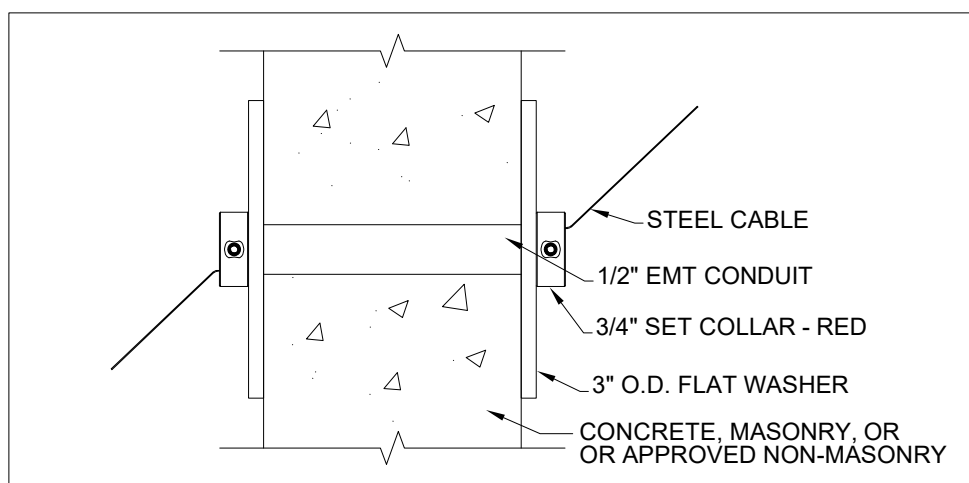


FIGURE A-3

IMPORTANT NOTE! It is important to allow the curtain to develop a predictable, and adjustable amount of momentum before the viscous governor engages to regulate the closing speed. This insures a positive curtain drop from the head without restriction for a pre-determined distance. Establishing this distance and momentum is accomplished by setting the "free run".

1. See Figure A-4: Setting Governor Free Run:

- a. There are three stops welded to the drive side headplate at approximately 12:00 o'clock, 5:00 o'clock, and 9:00 o'clock, as show in Figure A-4.
- b. There is one stop bolt with aircraft locking nut shipped with the viscous governor. Install bolt to the viscous governor, as shown in Figure 11.
- c. With the shutter fully open install the viscous governor to the door shaft with the bolt head slightly past the 9:00 o'clock position for approximately 90° of rotation before the viscous governor engages the next stop.

IMPORTANT NOTE! It is important that the governor bolt is located such that it will allow full planned free run before it engages a stop. This will correctly establish itself upon the reset for the second drop test. Always test drop at least twice to determine correct curtain drop speed.

1. If more free run is desired you may locate the bolt head slightly past the 5:00 o'clock stop for approximately 120° of governor rotation.
2. Locate the bolt head slightly past the 12:00 o'clock stop for approximately 150° of governor rotation.

Setting up "Free Run" with the Viscous Governor

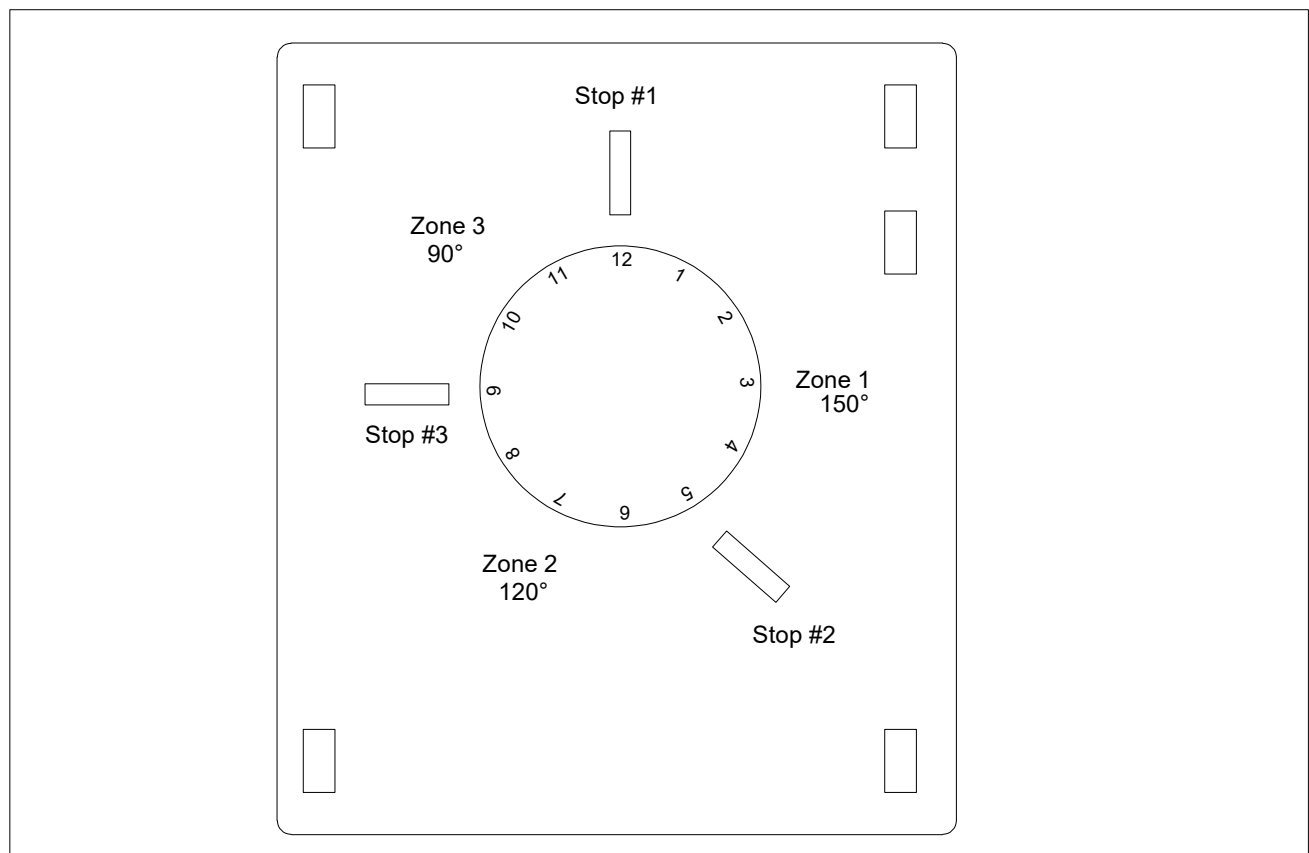


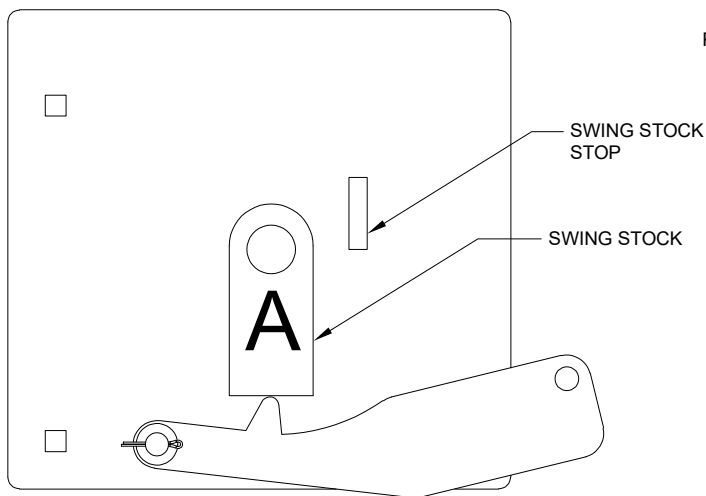
FIGURE A - 4

NOTE: Be absolutely positive that the pickup bolt - see figures A-5 and A-6 below- is installed prior to drop testing

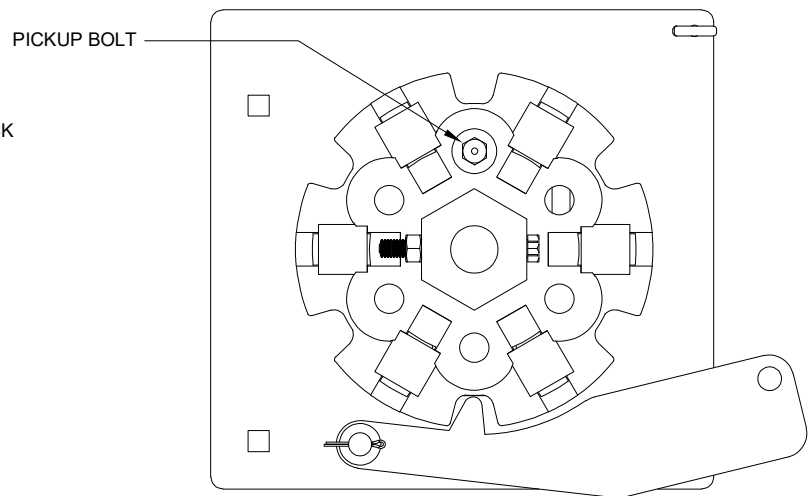
2. Please follow the following drop test procedure carefully.

- a. Clear the path of the doorway and barricade from passage of personnel or vehicular traffic.
- b. Stand clear of tension release mechanism.
- c. Drop test the shutter from the fully open position by opening a cable shook at this time.
- d. Tension will immediately release and shutter should start downward readily and close completely to the floor in a safe and controlled manner.
- e. Curtain speed shall average not less than 6" per second and not more than 24" per second from the time of release to reaching the floor.
- f. Refer to figure A-4 "setting governor free run" and "tension release setup and adjustment" to revise drop speed.
- g. Complete all instructions and documentation on drop test form and apply date.

TENSION RELEASE SETUP AND ADJUSTMENT



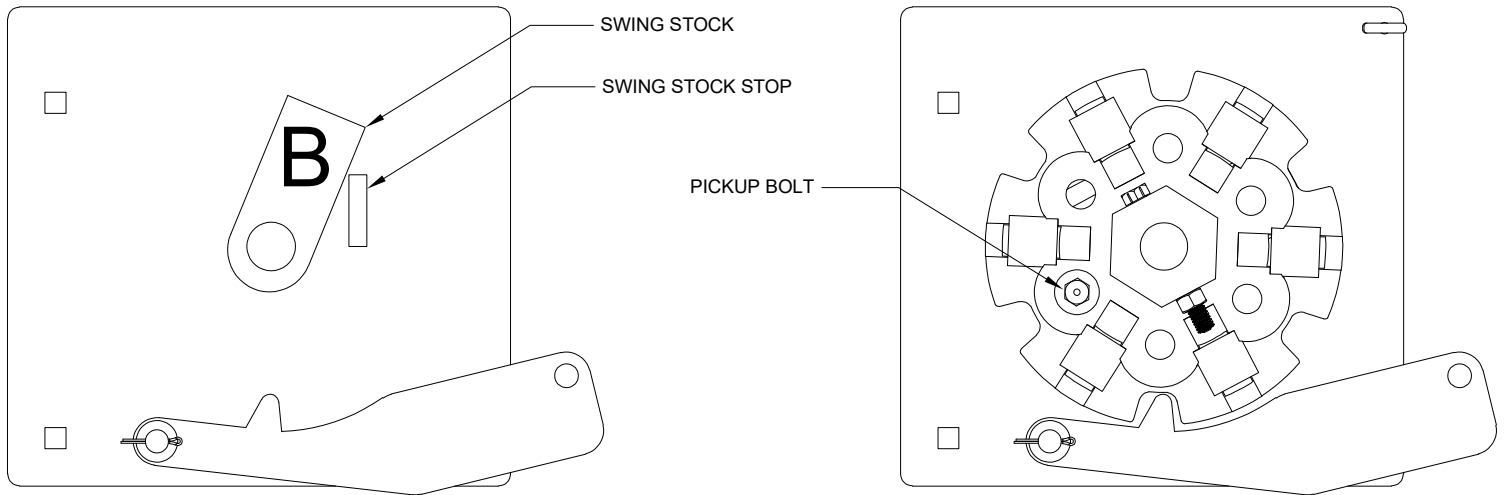
Sizes to 6'-0" x 4'-0"



Stop bolt position "A"
Sizes to 6'-0" x 4'-0"

Figure A - 5

If you place the swingstock in POSITION "A", thread the large socket head pickup bolt into the tension wheel at 11:00 to 1:00 positions and tighten. This will release less than one turn of preload tension to put the curtain out of balance at the head. For less tension and to minimize curtain drop speed, move the pickup bolt to a more counter-clockwise position until it contacts the swing arm. To increase curtain speed, move to a more clockwise position. The curtain must drop reliably out of the head and close fully when tension is released. If there is not enough bolt adjustment for this to occur, place swing arm in POSITION "B" and proceed as instructed.



Sizes larger 6'-0" x 4'-0"

Stop bolt position "B"
 Sizes larger 6'-0" x 4'-0"

Figure A - 6

If you place the swingstock in POSITION "A", thread the large socket head pickup bolt into the tension wheel at 3:00 to 7:00 positions and tighten. This will release more than one turn of preload tension to put the curtain out of balance at the head. For less tension and to minimize curtain drop speed, move the pickup bolt to a more counter-clockwise position. To increase curtain speed, move to a more clockwise position. The curtain must drop reliably out of the head and close fully when tension is released.

FINAL DROP TESTING INSTRUCTIONS ASTA AMERICA 550 SERIES FIRE SHUTTERS

1. Clear the area in the path of the closing door.
2. Use a barricade to halt traffic through the opening.
3. Raise curtain to full open position. Drop test the door using the appropriate supplemental operator installation instructions for this installation.
4. An average curtain closing speed of between 6" to 24" per second is required per manufacturers design, and per NFPA-80 2010 Edition.
 - a. Refer to the appropriate Supplemental Operator Installation Instructions to adjust closing speed.
5. Complete all instructions and required information on Drop Test Form and apply date.
6. Demonstrate complete drop test and reset procedure to the Witness a minimum of two times per NFPA-80.
7. Witness should be one of the following:
 - a. Authority Having Jurisdiction
 - b. Owner or Owners Representative
 - c. Jobsite Contractor
8. Obtain the Witness signature on enclosed Drop Test Form.
9. Leave copy of completed and signed Drop Test Form and copy of Base Fire Door Installation Manual and Supplemental Installation Manual with Owners Representative or Contractor.

**FIRE SHUTTER 550 SERIES
BASE INSTALLATION MANUAL**



**638 Cassville White Rd NW
Cartersville, GA 30121
P.O. Box 639
Cassville, GA 30123**

**Office: 770-974-2600
Fax: 770-974-1455
www.astadoor.com**