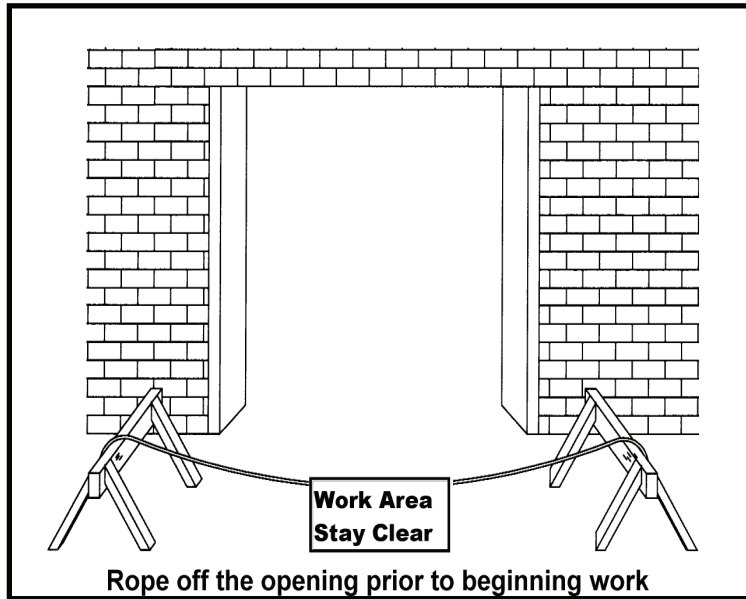


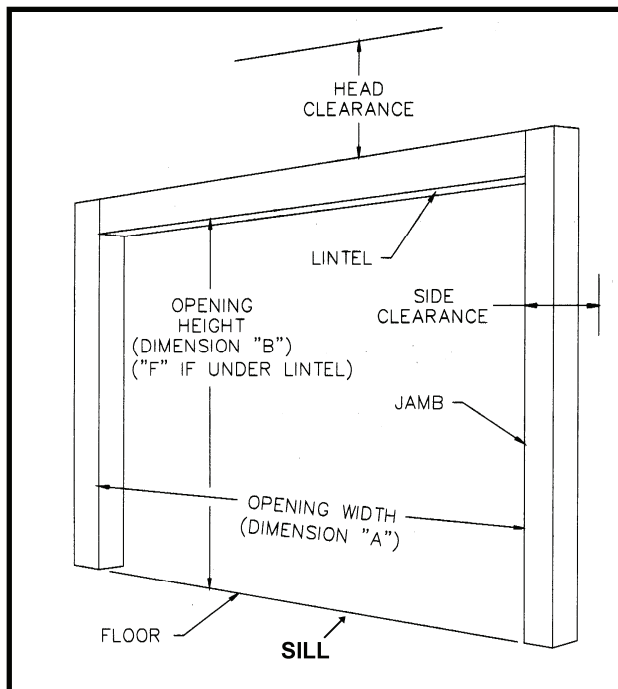
Instructions are intended for qualified door mechanics using proper tools and equipment.



INSTALLATION & MAINTENANCE INSTRUCTIONS FOR FIRE DOORS



- STEP 1** MAKE SURE ALL PARTS HAVE BEEN RECEIVED. IF PARTS ARE MISSING NOTIFY FACTORY IMMEDIATELY
- STEP 2** READ ALL OF INSTALLATION INSTRUCTIONS BEFORE YOU START.
- STEP 3** MAKE SURE THE OPENING IS THE PROPER SIZE.
- STEP 4** CHECK TO SEE THAT SILL IS LEVEL. If Sill is out of level, mark high Sill level location on low Side Jamb.



Fire doors may be installed on concrete, filled masonry, brick, steel, or drywall construction .

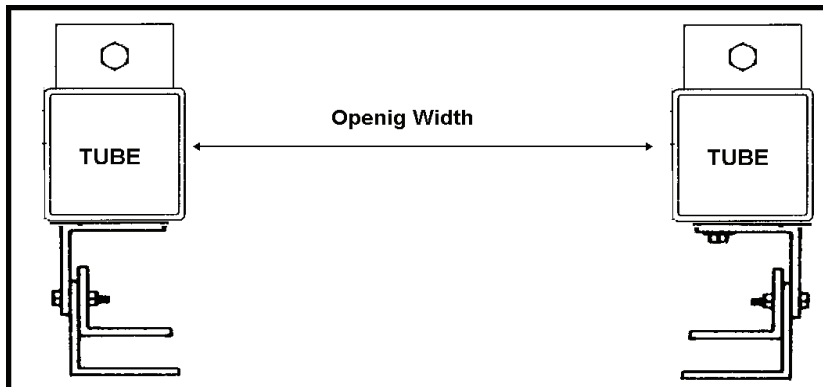
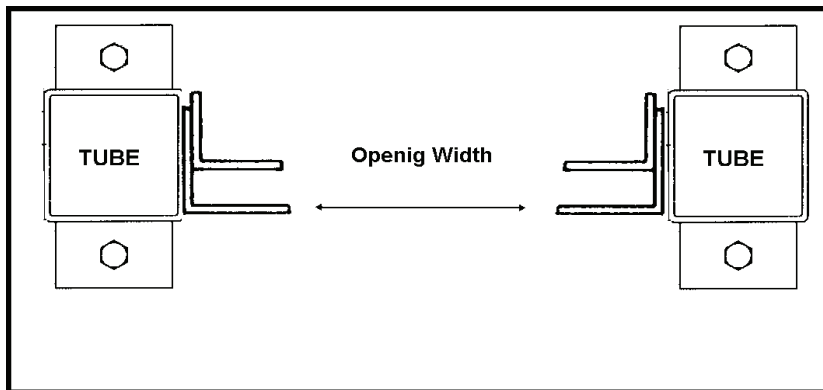
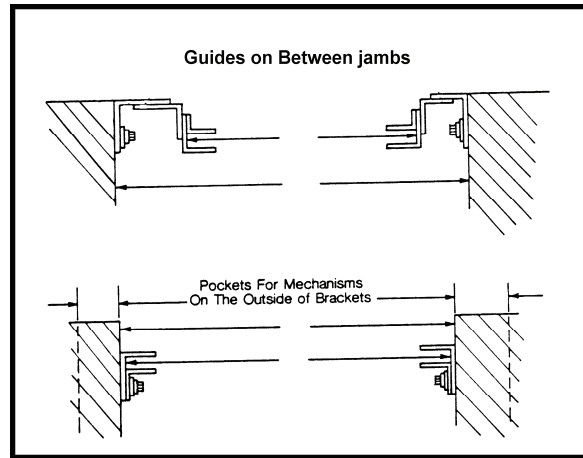
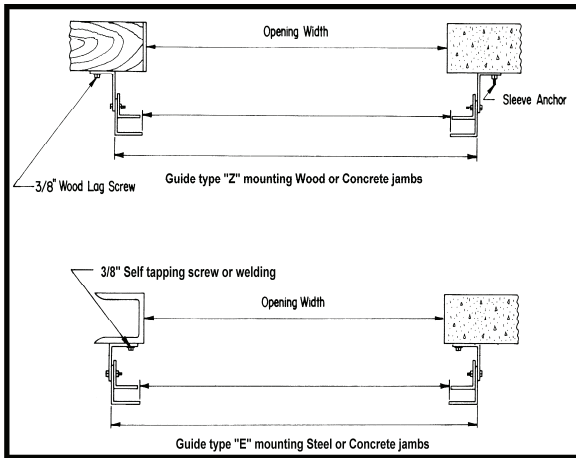
Wall bolts are provided in accordance with UL requirements for the type of wall construction indicated at the time of order. If the wall bolts provided are not correct for actual field conditions or if the wall angles are to be welded to the jambs, contact the factory for further instruction.

Ultimate acceptability of any fire door is the decision of the Authority Having Jurisdiction.



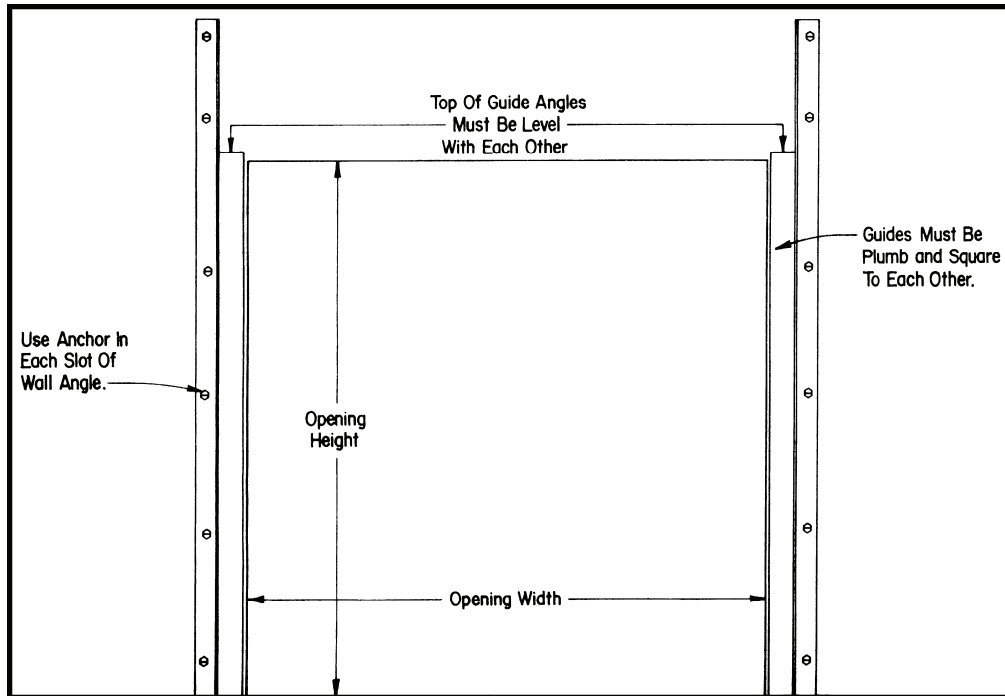
STEP 5 CHECK BOTH LEFT AND RIGHT WALL SURFACES, AND SURFACE AT THE HEAD (ABOVE OPENING) TO ASCERTAIN THAT ALL THREE SURFACES ARE IN LINE AND NO OBJECTS OBSTRUCT THE PROPER INSTALLATION OF :
A- WALL ANGLES
B- SPRING ASSEMBLY
C- THE TRAVEL OF THE CURTAIN.

STEP 6 ARE GUIDES YOU RECEIVED SUITABLE FOR THE JAMBS?

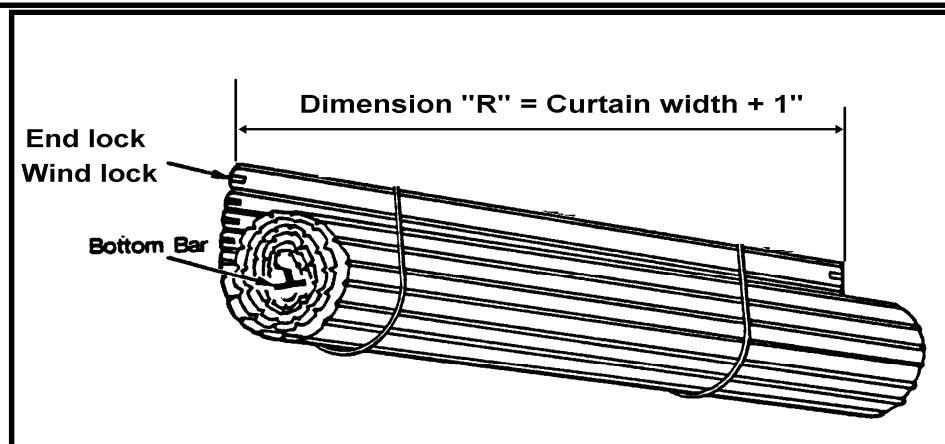
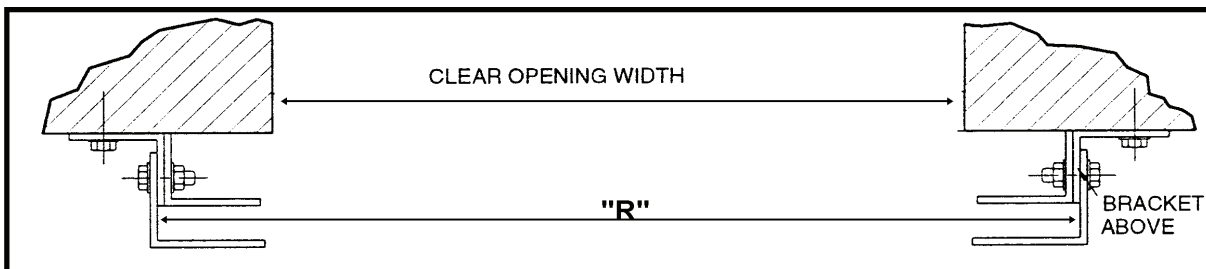




STEP 7 VERIFY THAT GUIDES CAN BE INSTALLED PLUMB.



STEP 8 LOCATING GUIDE ASSEMBLIES. Locate guide assemblies such that "R" Dimension exists between guides as shown. Bottom of guides MUST be on a level line and Guides MUST be plumb.



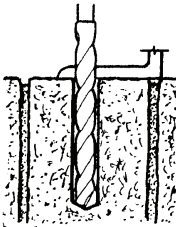


STEP 9

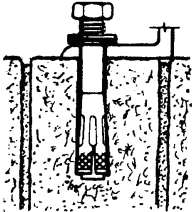
MASONRY JAMBS

Hold "Z" guide, or wall angle ("E" guide) against wall and drill mounting holes thru the slots. Recheck "R" distance before proceeding. Install wall fasteners.

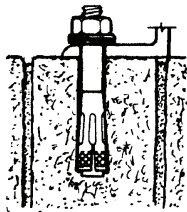
SLEEVE ANCHOR



DRILL HOLE

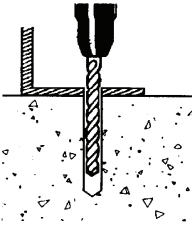


INSTALL ANCHOR

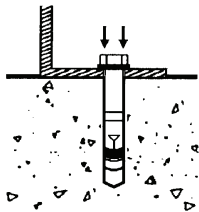


TIGHTEN NUT

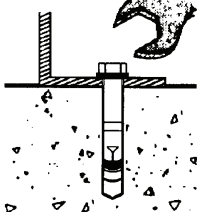
RAWL-BOLT



DRILL HOLE



INSTALL ANCHOR



TIGHTEN NUT

1. Hold angle firmly against wall.
2. Drill hole perpendicular to surface. Hole depth should be equal to full length of expansion anchor.
3. Blow dust out of hole. A clean hole insures highest holding value.
4. Position sleeve anchor nut on end of bolt threads to protect threads when tapping bolt into hole. Install washers on anchor.
Remove tag from Rawl-Bolt.
5. Tap anchor into hole until washers and angle rest against surface.
6. Recommend using hand wrench ONLY. Tighten anchor 2 to 4 turns past the hand tight position. DO NOT EXCEED installation torque shown below.

Anchor Type	Max. Torque (Ft-pounds)			
	Anchor Diameter			
	3/8	1/2	5/8	3/4
Sleeve Anchor	16	28	60	90
Rawl-Bolt	35	60	100	120

STEP 10

STEEL JAMBS. (Screw Attachment Option)

Hold "E" guide against steel jamb and mark the spot to be drilled, or hold wall angle against steel jamb and drill holes thru the slots. Recheck "R" distance before proceeding. Install jamb fasteners.

STEP 11

STEEL JAMBS. (Weld Attachment Option)

Hold "E" guide against steel jamb and tack weld wall angle in place. Recheck "R" distance before proceeding. Weld using welding electrode. All welds must be good quality 3/16" fillet welds. Weld the angle to the steel jamb along the top of the angle.

IMPORTANT: When steel jamb does not extend above the opening, use three thru-bolts to fasten each wall angle above the opening.

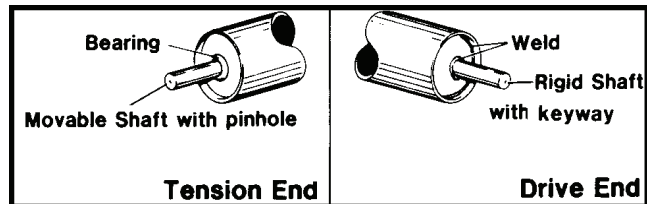
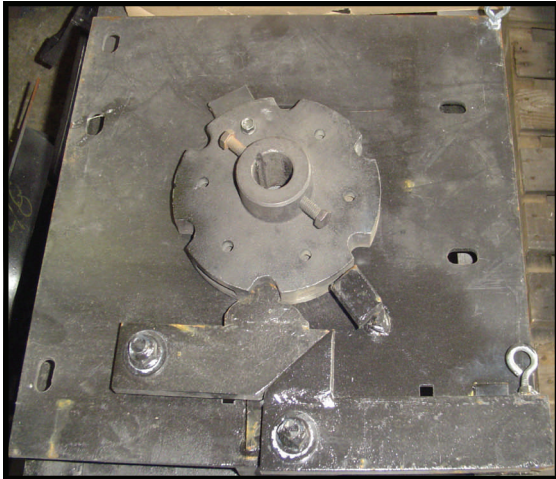


STEP 12 IDENTIFY HEADPLATE BRACKET

Right Hand Drive shown; Left Hand Drive is opposite.

STEP 13 IDENTIFY BARREL ASSEMBLY DRIVE END

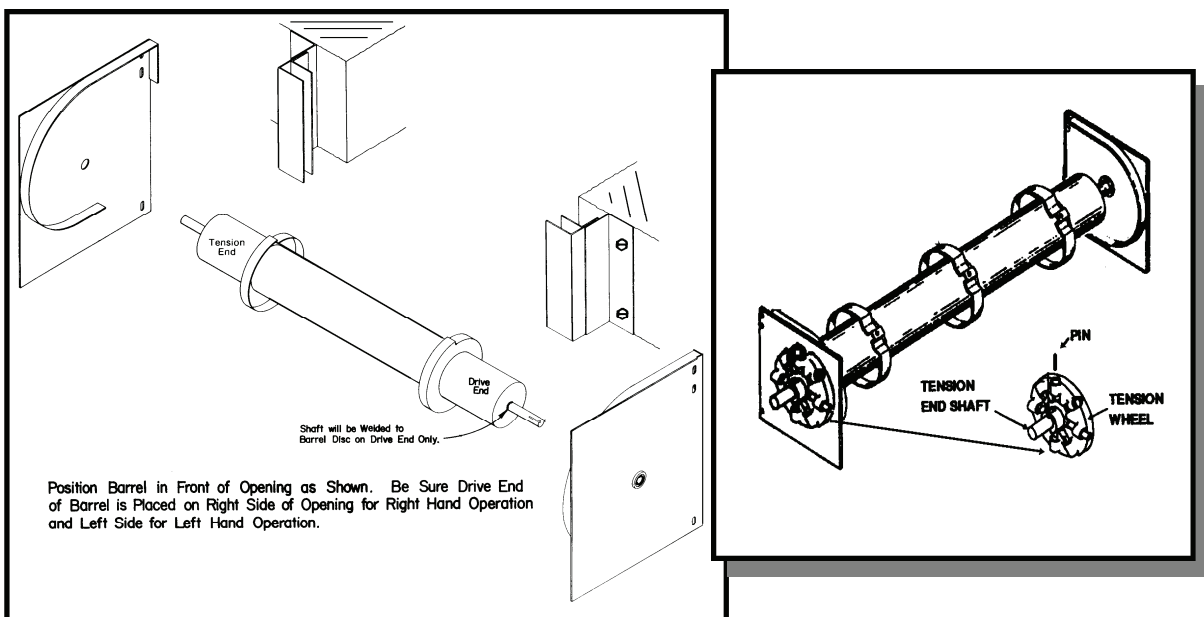
Right Hand Drive shown; Left Hand Drive opposite.



Use a Right Hand Drive Bracket with a Right Hand Drive Barrel to prevent Torsion Spring failure in barrel, which can allow Curtain to free fall causing DEATH OR SERIOUS INJURY. Left Hand Drive Bracket and Left Hand Drive Barrels MUST match also.

STEP 14 ORIENT BARREL AND HEADPLATE BRACKETS

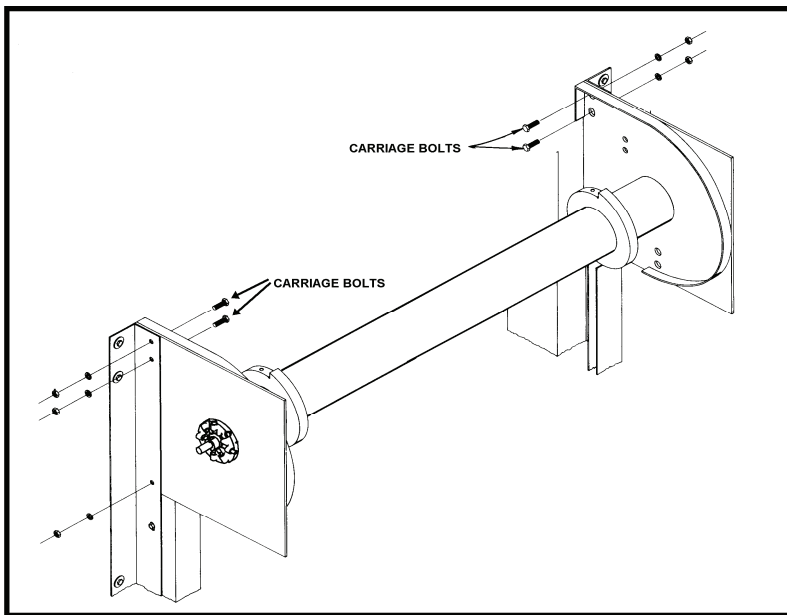
Slide Drive End of Barrel Assembly through Drive Bracket Bearing and Tension End through Tension Bracket. Secure Tension Wheel to Shaft using Pin or Key.





STEP 15 LIFT BRACKETS AND BARREL AND BOLT TO GUIDE WALL ANGLES

With Forklift or Some Type of Lifting Device Raise Barrel and Brackets to Top of Guides. Use Carriage Bolts to fasten Headplate Brackets to inside of Guide Wall Angles. Bolt heads are to be on inside of Brackets. Brackets are to be square to Wall and parallel. Center Barrel between brackets. Use a level to make sure Barrel Assembly is level.



**USE PROPER LIFTING
EQUIPMENT
AND CORRECT LIFTING
PROCEDURE TO AVOID
INJURY.**

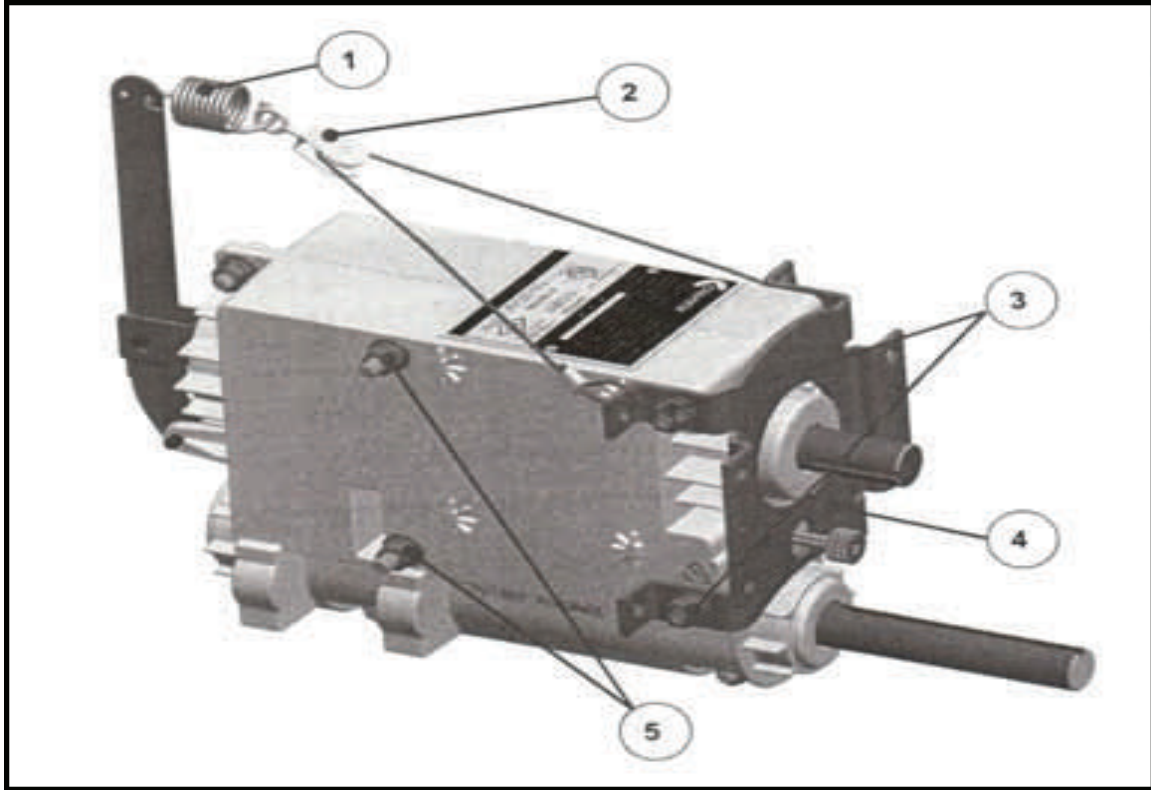
Slide the brackets onto the barrel shafts. The tension bracket (plate with tension release or tension lock) goes on the end of the barrel with the rotating shaft that is drilled or keyed to match the type of tension adjusting wheel provided.

The operating bracket (with operating/governor mechanism) goes on the opposite end of the barrel with the fixed shaft. The barrel should be tight against the bearing in the operating bracket. There should be clearance for expansion between the barrel and the tension bracket. Assemble/attach any operating bracket components now. Operating bracket components must be set tight against the outside of the bracket bearing. Use washers to shim for alignment if necessary.

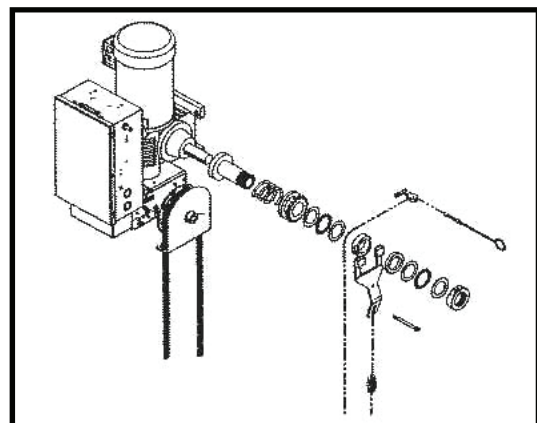
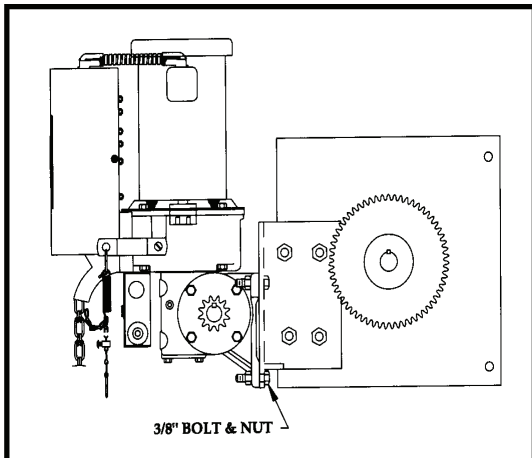


STEP 16 DRIVE ASSEMBLY

CHAIN HOIST ASSEMBLY.

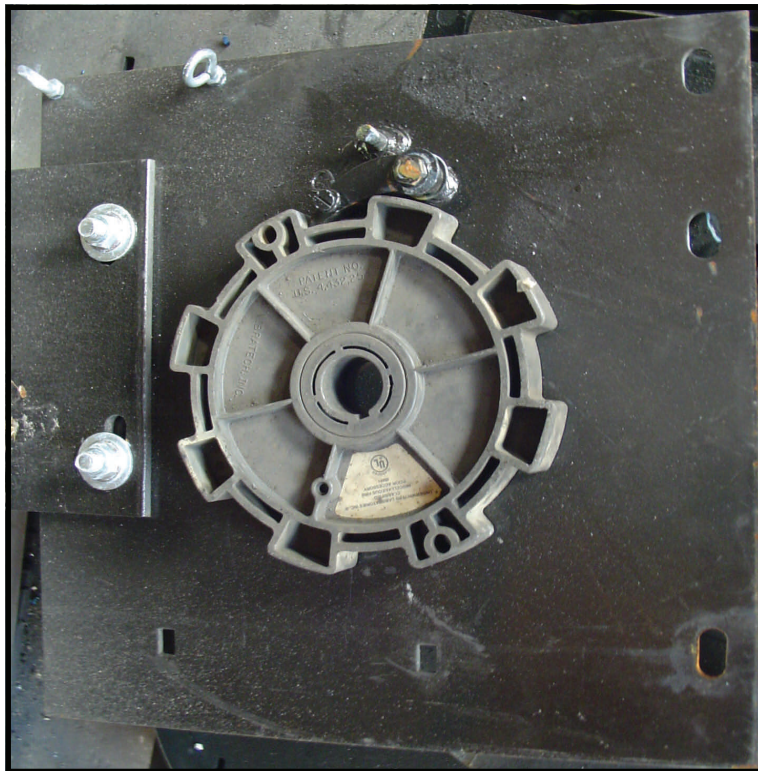


MOTOR ASSEMBLY.





VISCOUS SPEED GOVERNOR





STEP 17 INSTALLATION OF CURTAIN (SLING METHOD)

Hang the Curtain on two or more Slings or Heavy Ropes capable of suspending the curtain weight. Ropes/Slings **MUST** be able to suspend the Curtain weight. Fasten the Top Slat to the Slings or Ropes with wire. Rotate the Barrel to bring the Top Slat in place. Center the Curtain between the Headplate Brackets.

If the Barrel Assembly has Rings, pull the curtain up and hold the Top Slat against the Rings making sure Curtain is evenly centered on Barrel. Attach Top Slat to Rings with 3/8" Screws and Washers provided. **DO NOT** strip Screw Threads.

If Barrel Assembly has Studs, the Top Slat will have slots to attach to Barrel. Hook Curtain over Studs and fasten with 5/16" Round Head Screws and Washers provided.

If Slat Segments are provided at the Top of the Curtain, fasten them to Rings or Studs after Curtain is centered. Then crimp the Slat Curl adjacent to each Slat Segment.

The Sling Method causes less damage than rolling the Curtain onto the Counterbalance while it is on the floor.

COMPLETE CURTAIN INSTALLATION

Coil Curtain completely onto Barrel.

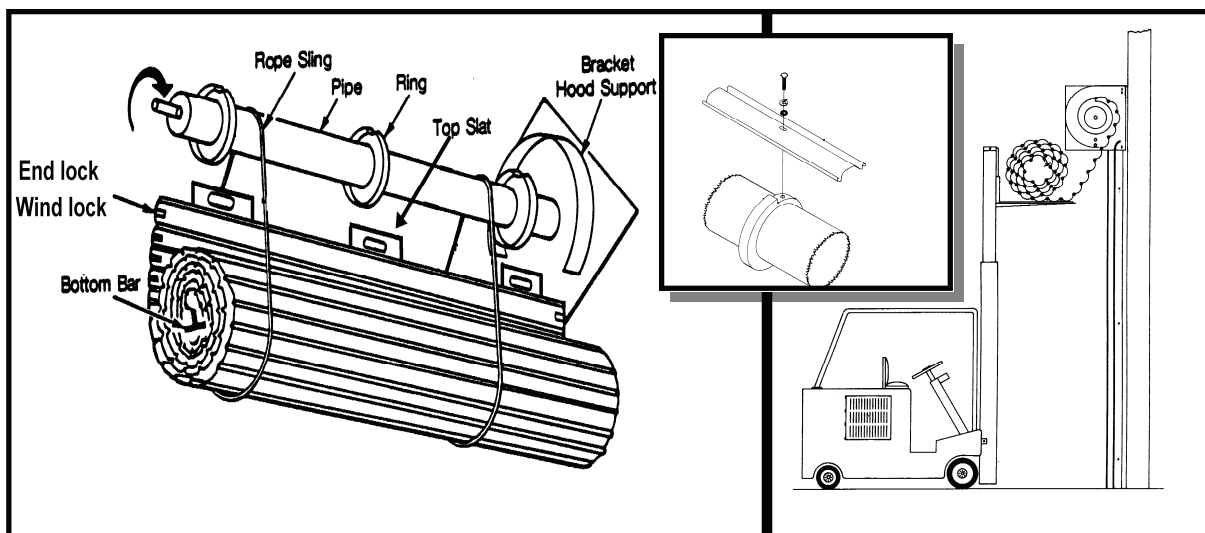
If Guides are Flared, then install the Middle Angle and Outside Guide Angles.

Place locking pliers on the Guides as shown.

Lower Curtain into Guides.

Lock the Drive to prevent the Curtain from falling.

If the Guides are not flared, install Curtain StopBellmouth on Guides. A Stud is attached to the Guides to hold the Bellmouth. Be certain the back of the Bellmouth is flush against Headplate.



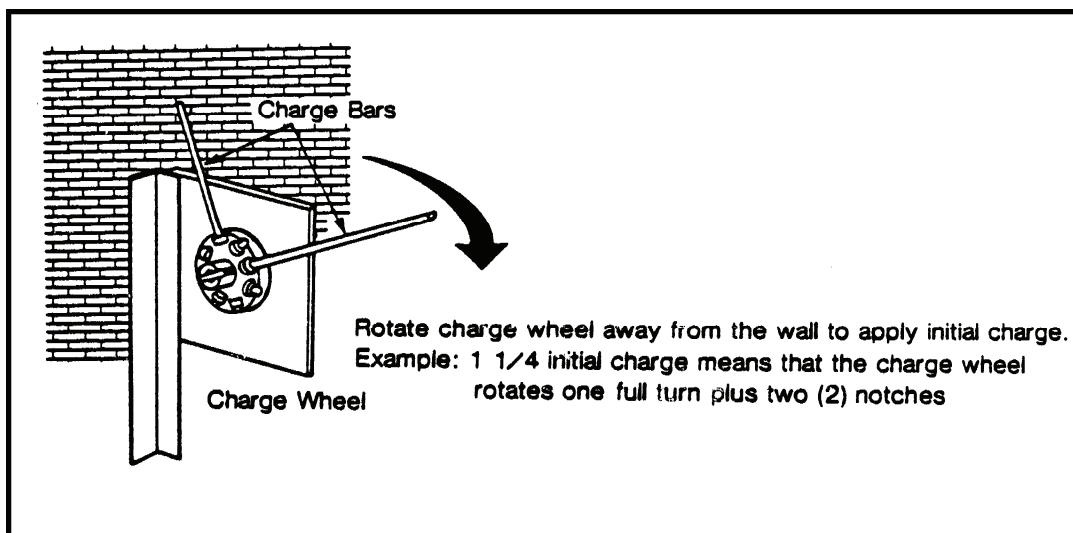


STEP 18 APPLYING SPRING TENSION.

Wind Tension Wheel in the direction shown in figure.

Warning this step can be extremely hazardous. Read and understand this section fully before proceeding. Applying spring tension requires two workers for safety. Slide the tension adjusting wheel (and any other tension bracket components) onto the shaft extending through the tension bracket. If the shaft is drilled or keyed to secure the tension adjusting wheel, install the pin or key provided (and tighten any set screws). If the door has a tension release (tension bracket with tension arm), insert a cotter pin through the hole in the end of the notched shaft. Insert a winding bar into the top of the tension adjusting wheel and pull down, away from the wall, to wind the spring assembly. Carefully continue adding tension until the curtain coils itself nearly completely around the barrel. When the curtain is hanging balanced, lock the tension wheel with the tension pin or tension arm.

**TENSION WHEEL CAN SPIN RAPIDLY IF RELEASED.
WHEEL IS UNDER EXTREME TENSION.
USE OF IMPROPER TOOLS CAN CAUSE SERIOUS IN-
JURY.
DOOR MUST BE FULLY OPEN AND CURTAIN
WRAPPED ON THE BARREL.**





STEP 19 INSTALLATION OF CURTAIN

Place a pair of vise grips about 4" down from top on both guide. Insert the ends of the bottom bar into the guide channels, and lower the curtain so that the bottom bar is approximately 4 inches below stop height until the bottom bar rest against the vise grips. Install the two stop bell mouth at front of the guides with the bolts and nuts provided.

STEP 20 ADJUST TENSION WITH DOOR IN FULLY OPEN POSITION.

Adjust tension one notch at a time to increase or decrease torque as required.

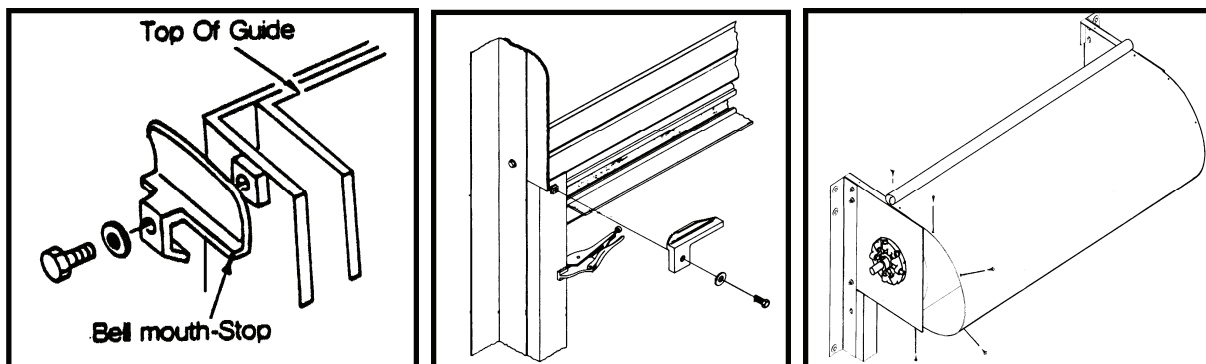
STEP 21 FINAL CHECKOUT. (TO BE 'COMPLETED BEFORE INSTALLING HOOD)

1. The Guides may be lubricated with a Paste Wax or Silicone Spray.
2. Verify thru entire travel of the door that the Endlocks or Windlocks on the end of the Curtain are not rubbing the Headplate Brackets. Operate door several times to check for problems.
3. Check that Bottom Bar is level in full down and full up position and that Curtain is not binding against back of Guide.
4. If Curtain is level at bottom and not level at top, put Shims between Curtain and Counterbalance on the low side.

STEP 22 HOOD INSTALLATION

If Hood Supports are provided, snap a line across top of Headplate Brackets on the Wall. Measure length of Hood Sections and locate Hood Support so that Hood Splice will fall on center of Support.

Attach Hood to Hood Bands on Bracket Plates (and to Supports if provided) by drilling a 7/32" hole through Hood and Band. Then secure with 1/4" dia. x 3/8" long Self-tapping Screws (five per Bracket and five per Support).





- 23- Install fusible links and cable. the release on the operator or must be located within 12" of down from the ceiling and 4" must be located on the oppo- ceiling, but not within the away from the wall. All fusi- so that the separation of any close.



One fusible link must be located at tension bracket. One fusible link the ceiling, but not within the area 4" away from the wall. One fusible link site side of the wall, within 12" of the area 4" down from the ceiling and 4" fusible links and cable must be installed fusible link will cause the door to

NOTE: If the door is to be connected to a release device with automatic closing acti- vated by an alarm system or detector(s), a fusible link must still be located at the release on the operator or tension bracket, but one is not required to be within 12" of the ceiling or on the opposite side of the wall. The release de- vice can be mounted at any convenient location that provides for proper re- lease of the door. Consult NFPA-80 or the Authority Having Jurisdiction for required location(s) of detector(s)

- 24- Drop test the door to verify proper operation and full closing. The door must close at an average rate of no faster than 24 inches per second and no slower than 6 inches per second. The bottom bar must come to rest on the floor/sill. If the door does not close as indicated, check for any obstructions, areas where binding may occur, or possible further tension adjustment. CAUTION: Adjust spring tension only when the curtain is in the open posi- tion. Reset the door and drop test until the door closes satisfactorily. After successful drop testing, reset the door. NOTE: A drop test must be done by separating fusible links from the cable, typically at the link furthest from the door on the opposite side of the wall, through the alarm system or detector (s), or as otherwise required by the Authority Having Jurisdiction.

