INSTALLATION INSTRUCTIONS

OVERHEAD DOOR
the original since 1921

ROLLING STEEL FIRE DOOR

FACE MOUNTED SERIES 630 LFN/LFE

Installation Instructions for Face of Wall Mount on Concrete, Masonry or Non-Masonry Walls with Upward Expanding Guide Assemblies

READ COMPLETE INSTRUCTIONS BEFORE INSTALLING DOOR

⚠CAUTION

USE PROPER LIFTING EQUIPMENT AND CORRECT LIFTING PROCEDURES TO AVOID INJURY.

Order No. _____ **Job Name** _____

Distributor: Overhead Door _____ **Date:** _____

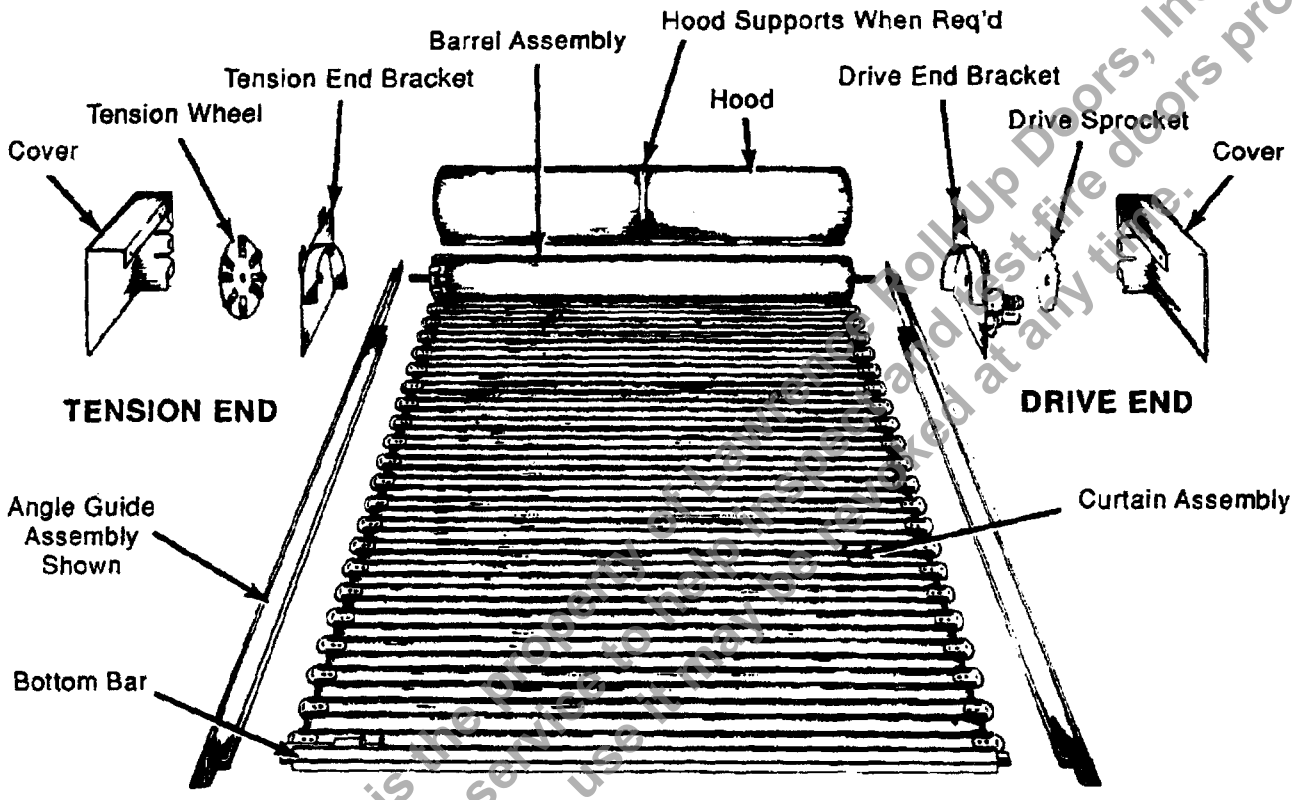
Door Specifications

Door	Wall Opening Width	Wall Opening Height	Guide Type *	"S" Dim.	Hand	Operation	Initial Turns	Guide Gap	Wall Headplate Area	Jamb Below Headplate

* This Designates "E" or "Z" Configuration and "A" Angle or "R" Rolled Guide Assembly.

INSTALLATION • ADJUSTMENT • OPERATION

DRAWN BELOW IS A PICTORIAL VIEW OF A ROLLING FIRE DOOR BROKEN DOWN TO FAMILIARIZE YOU WITH PARTS AND THEIR NAMES.



A RIGHT HAND OPERATED DOOR IS ILLUSTRATED. IN A LEFT HAND DOOR THE BARREL AND BOTH BRACKETS ARE REVERSED.

FIGURE 1

NOTICE

READ THE INSTALLATION INSTRUCTIONS AND UNDERSTAND THEM PRIOR TO INSTALLATION.

INSTALLING GUIDES

1 Verify opening size. Door has been fabricated to fit width and height listed.

2 Recheck headroom and sideroom clearances to assure that complete door assembly can be installed without interference.

3 Locate and mark center of opening (see Figure 2).

4 Check the floor for levelness. If one side is higher than the other, locate the guide for the higher side first at 1/2 of "S" distance from the center of opening, resting on the floor and plumb. Step 7E shows guide seal installation.

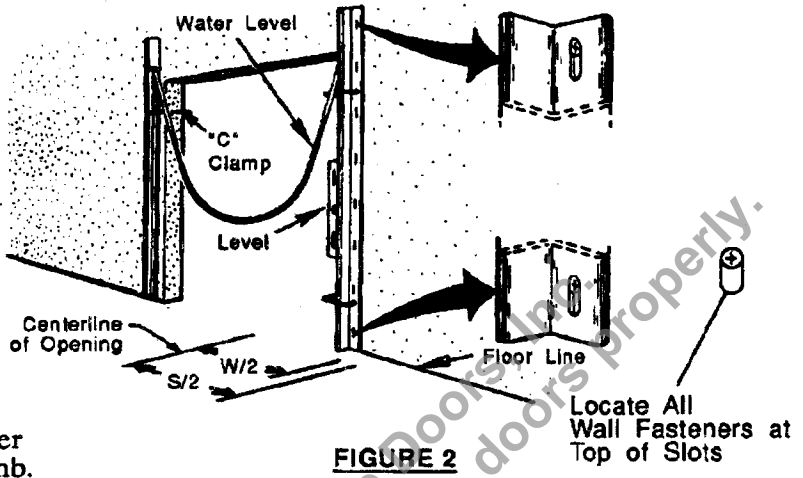


FIGURE 2

GUIDE MOUNTING

Angle Guides Shown*

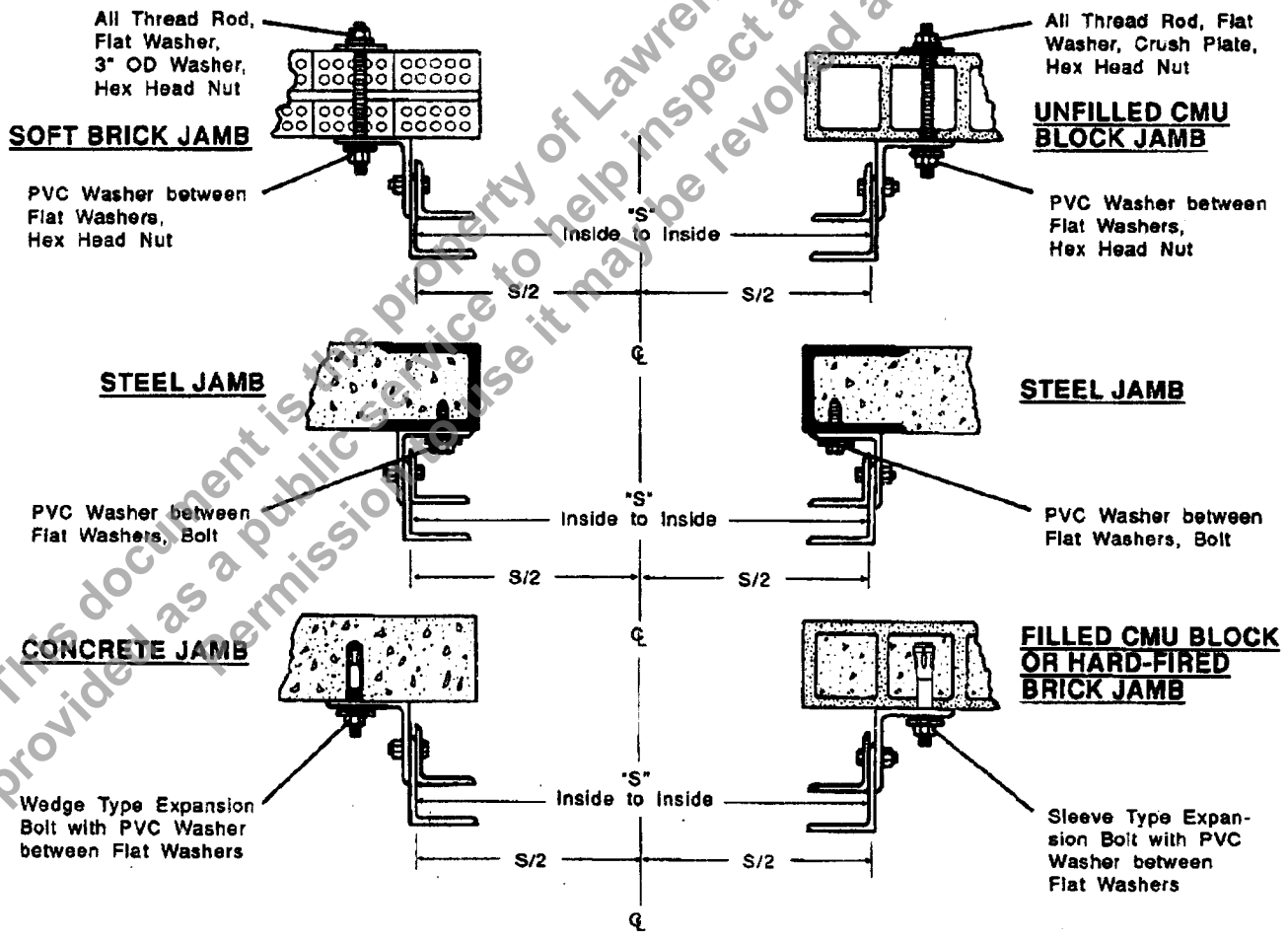
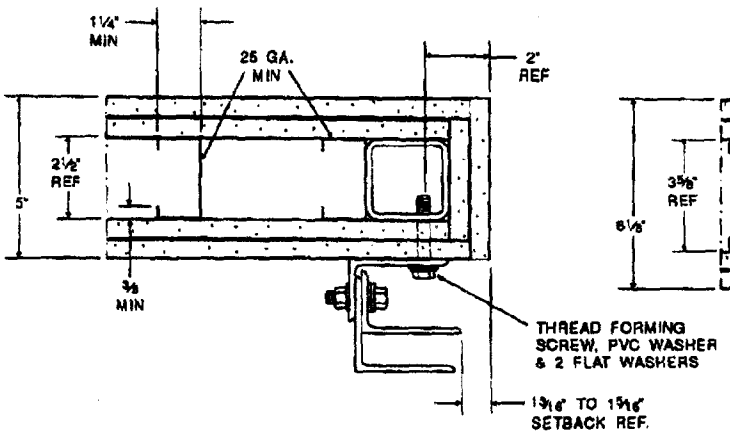


FIGURE 3

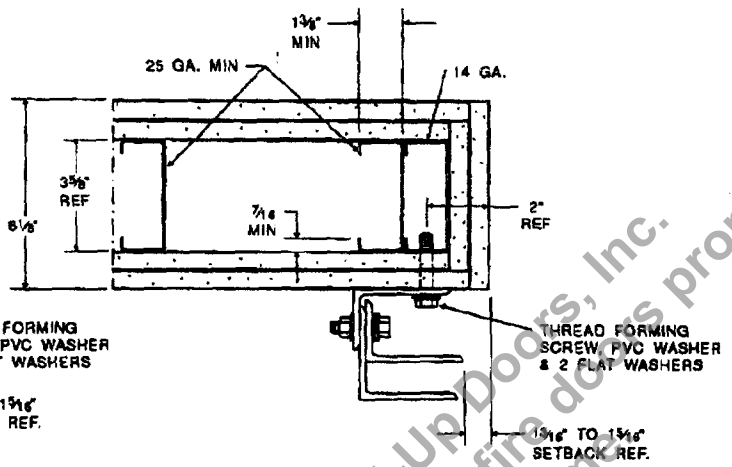
* Rolled Guide Installation similar, not shown.

GUIDE MOUNTING

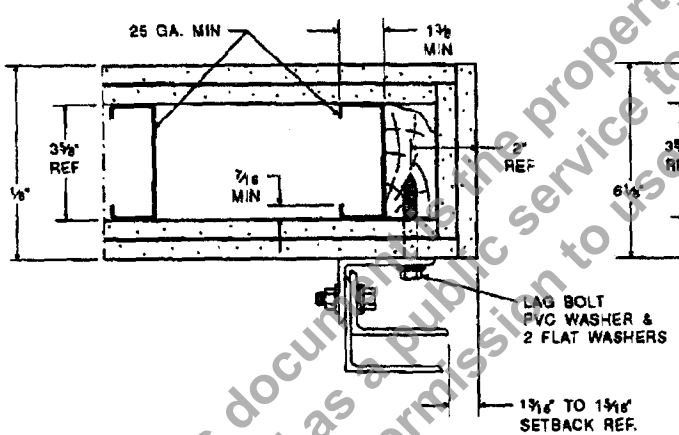
Angle Guides Shown*



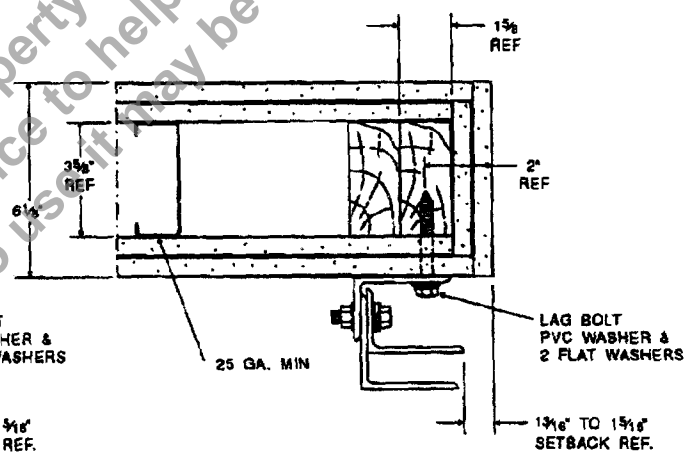
FACE OF WALL MOUNTED GUIDES
ON NON-MASONRY UL U411,
2 HOUR FIRE WALL
WITH 2½ x 2½ x 3/16"
STEEL TUBE JAMBS



FACE OF WALL MOUNTED GUIDES
ON NON-MASONRY UL U411,
2 HOUR FIRE WALL
WITH 3⅝" x 14 GA. STEEL STUDS



FACE OF WALL MOUNTED GUIDES
ON NON-MASONRY UL U411,
2 HOUR FIRE WALL
WITH 2 x 4 WOOD & STEEL STUD JAMBS



FACE OF WALL MOUNTED GUIDES
ON NON-MASONRY UL U411,
2 HOUR FIRE WALL
WITH 2 x 4 WOOD STUD JAMBS

* Rolled Guide Installation similar, not shown.

5 Determine bolt size. Drill all holes at top of slots as shown in Figure 4, 5, 7 or 8.

For Soft Brick or Unfilled CMU Block Jambs:
(See Figure 4.)

Drill 7/16" diameter holes for 3/8" thru-bolts.
Drill 9/16" diameter holes for 1/2" thru-bolts.
Drill 11/16" diameter holes for 5/8" thru-bolts.
Drill 13/16" diameter holes for 3/4" thru-bolts.

For Steel Jambs:
(See Figure 5.)

Drill 11/32" dia. holes for 3/8" Self-Taps.
Drill 27/64" dia. holes and tap 1/2"-13 for 1/2" bolt.
Drill 17/32" dia. holes and tap 5/8"-11 for 5/8" bolt.
Drill 21/32" dia. holes and tap 3/4"-10 for 3/4" bolt.

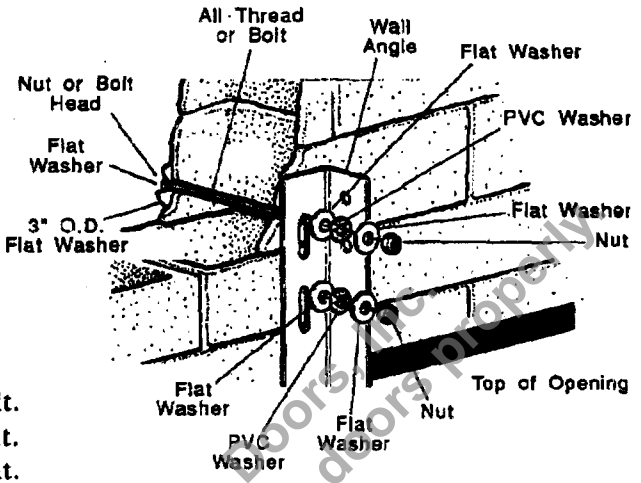


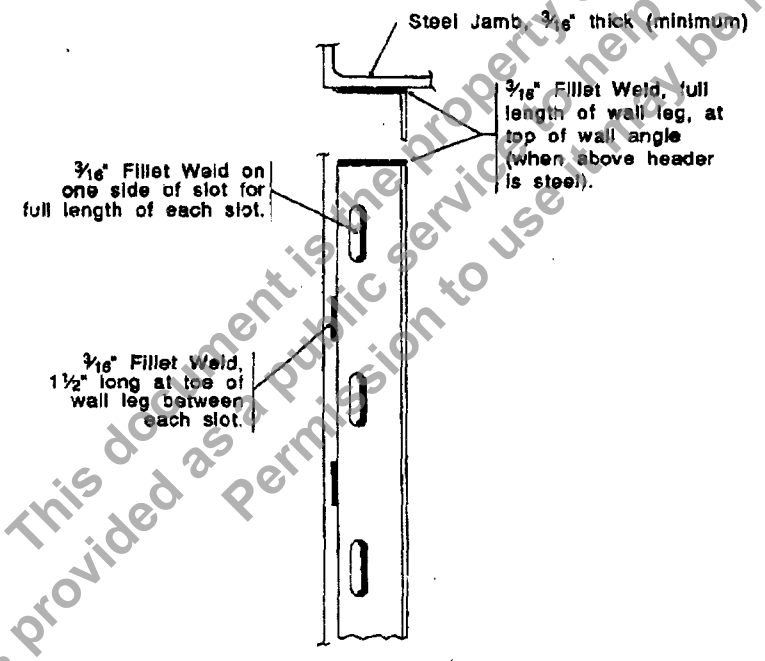
FIGURE 4

CUTAWAY OF SOFT BRICK SECTION (UNFILLED CMU BLOCK SIMILAR BUT USES CRUSH PLATE IN PLACE OF 3" O.D. FLAT WASHER)

Optional welding of Angle Guides to steel jambs.

(Only Angle Guides may be welded to jambs.)
(Rolled Guides must be bolted.)

1. Use E7014 welding electrode.
2. All welds must be good quality minimum 3/16" fillet welds.
3. See Figure 6 for weld placements.
4. Welding approved by U.L. but not by F.M.



View of "E" Guide Wall Angle with Guide Angles not shown. It is not necessary to disassemble the Guide Assembly before welding.

FIGURE 6

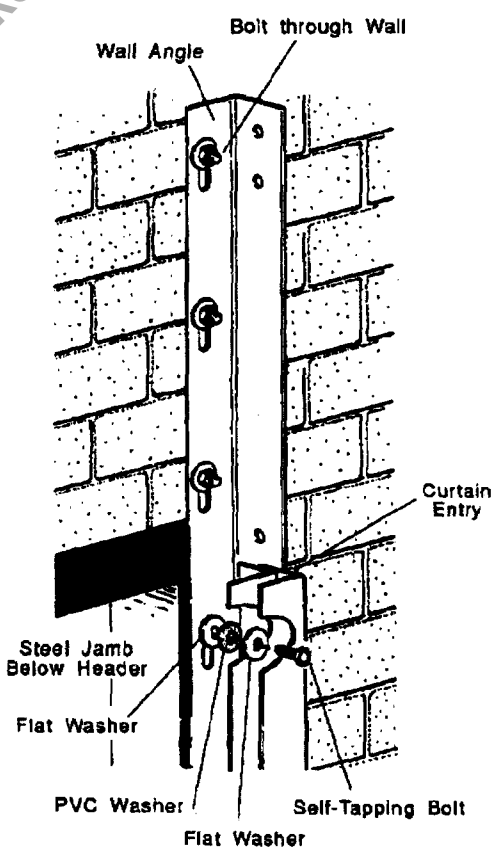


FIGURE 5

5 Continued.

For Concrete Jambs:
(See Figure 7.)
Drill Hole and Depth per Wedge-Type Expansion Anchor requirements - INS P/N 307390-0001 and Wedge Expansion Anchor Schedule below.

Wedge Expansion Anchor Schedule				
Fasteners Below Header				
Opening Width		Anchor/Hole Diameter	Min. Length	Min. Embedment
thru 12'-0"		3/8"	3 3/4"	3"
>12'-0" thru 14'-0"		1/2"	5 1/2"	4"
>14'-0" thru 24'-0"		1/2"	7"	6"
Fasteners Above Header				
Max. Area Sq.Ft.	Max. Width or Height	Anchor/Hole Diameter	Min. Length	Min. Embedment
144	12'	1/2"	7"	6"
120	15'	1/2"	7"	6"
150	18'	5/8"	6"	5"
576	24'	3/4"	7"	6"

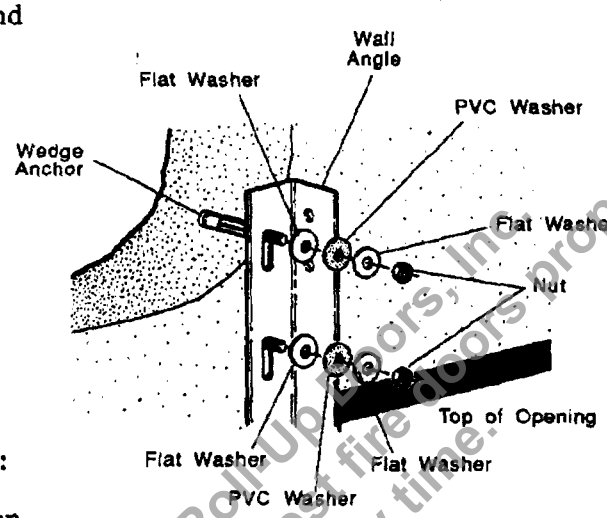


FIGURE 7

CUTAWAY OF CONCRETE SECTION (FILLED CMU BLOCK OR HARD-FIRED BRICK IS SIMILAR BUT USE SLEEVE ANCHOR)

For Filled CMU Block or Hard-Fired Brick Jambs:
(See Figure 7., similar)
Drill Hole and Depth per Sleeve-Type Expansion Anchor requirements - INS P/N 307392-0001 and Sleeve Expansion Anchor Schedule below.

Sleeve Expansion Anchor Schedule				
Fasteners Below Header				
Opening Width		Anchor/Hole Diameter	Min. Length	Min. Embedment
thru 14'-0"		1/2"	4"	3 3/4"
>14'-0" thru 18'-0"		5/8"	4 1/4"	3 3/4"
>18'-0" thru 24'-0"		5/8"	6"	5"
Fasteners Above Header				
Max. Area Sq.Ft.	Max. Width or Height	Anchor/Hole Diameter	Min. Length	Min. Embedment
144	12'	5/8"	6"	5"
120	15'	5/8"	6"	5"
150	18'	5/8"	6"	5"
576	24'	3/4"	6 1/4"	5"

For U411 Wall with Steel Tube or Steel Stud Jambs:
(See Figure 5., similar)
Drill $^{11}/_{32}$" diameter holes for $^{3}/_{8}$" self-taps.

For U411 Wall with Wood Stud Jambs:
(See Figure 5., similar)
Drill $^{1}/_{4}$" diameter holes for $^{3}/_{8}$" lag screws.

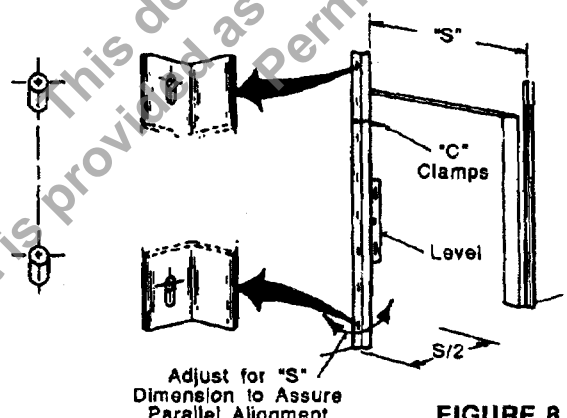


FIGURE 8

6 Bolt guide to wall as shown in Figure 4, 5 or 7.

7 Locate opposite guide, level with and at "S" dimension from guide installed in Step 6. See Figure 8.

STEP 7A
Locate guide at "S" dimension as shown in Figure 3.

STEP 7B
Clamp guide to jamb at same elevation as first guide. Check "S" dimension.

STEP 7C
Adjust bottom of guide until guides are parallel and at proper "S" dimension.

STEP 7D
Mark bolt hole centers, drill, and secure guides as in Figure 4, 5 or 7.

7 Continued.

STEP 7E Guide Seal Installation.

IMPORTANT

A guide Bottom Seal is a UL requirement for each fire door with an unlevel floor to keep fire from passing thru the gap under the guide mounted off the floor. It is not optional and must be installed when required to fill the gap.

Guide Angle Assemblies normally rest on the floor, but if one guide angle assembly is installed above the floor because the floor is not level, then the gap under the guide must be closed by a piece of sheet metal as shown in Figure 9. The sheet metal must be at least 24 gauge steel. It must be sandwiched between the Guide Angles and bent as shown below.

NOTE: If door is equipped with slide bolts, notch Bottom Seal as required for slide bolt to project through.

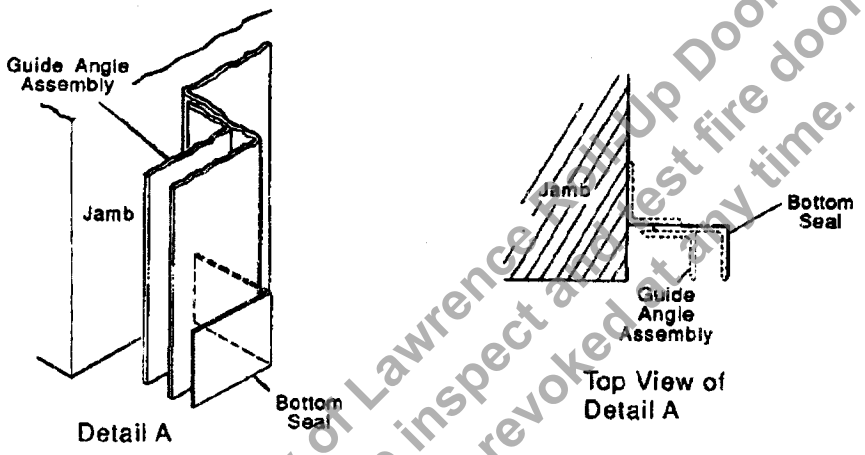
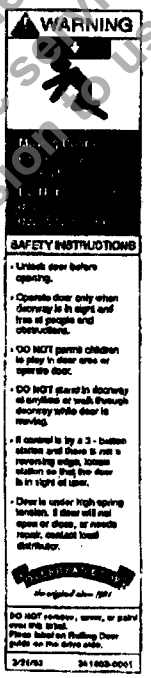


FIGURE 9

DECALS SHOWN BELOW MUST BE ATTACHED TO THE GUIDES ON THE COIL SIDE



PREPARING BARREL

8 Identify hand of barrel assembly. An "L" for left hand drive or an "R" for right hand drive will be clearly stamped on the flat end of each drive shaft. See Figure 10.

> **NOTE**
>
> Right Hand Drive Shown for this Instruction.

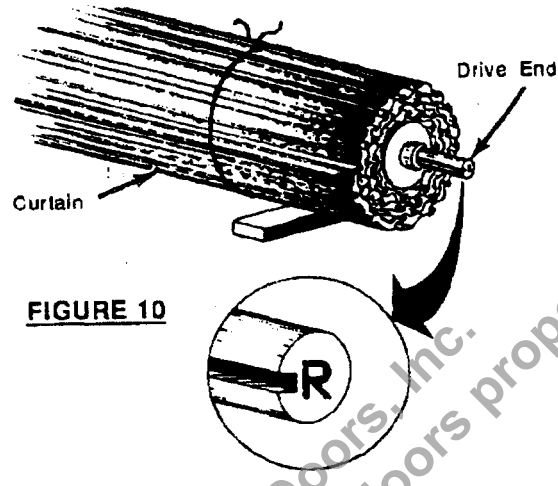


FIGURE 10

9 Place barrel in front of opening. Right hand drive "R" marked shaft to the right or left hand "L" marked shaft to the left.

10 Unroll curtain with top slat near barrel and outside of curtain down.

> **NOTE**
>
> Measures should be taken to protect the curtain's face from marring.

11 Mark curtain and barrel centerlines as shown in Figure 11.

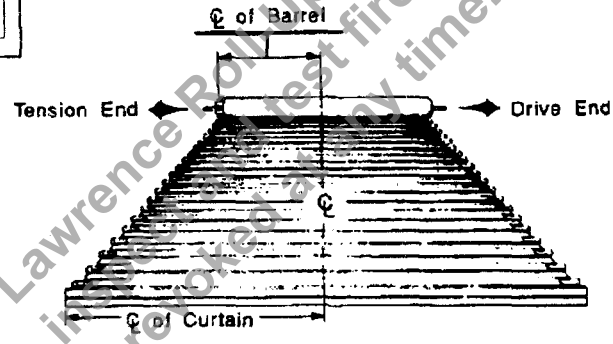


FIGURE 11

12 Determine method used to attach curtain to barrel. See Figure 12 and Step 13.

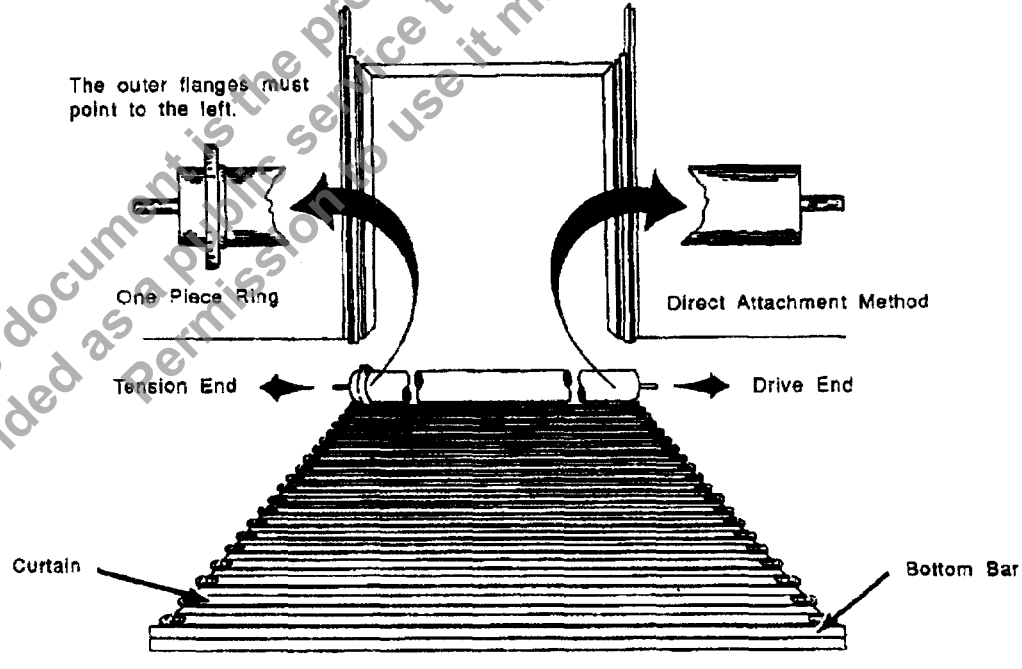


FIGURE 12

ATTACHING CURTAIN TO BARREL

13 There are two methods used to attach curtain to barrel.

METHOD 1:

Attach top slat to rings as shown in Figure 13.

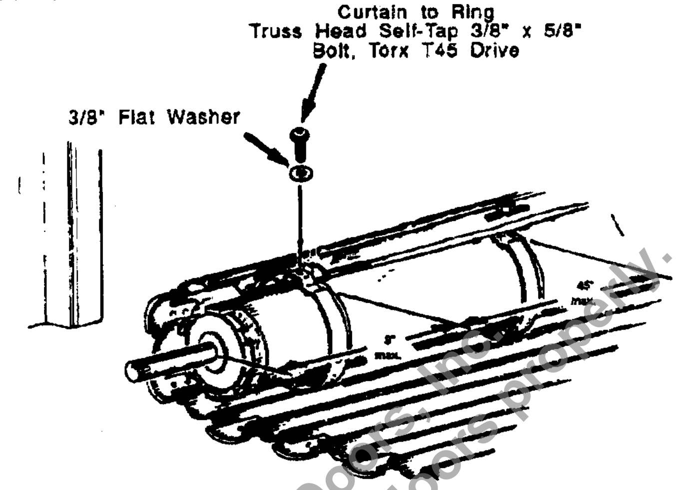


FIGURE 13

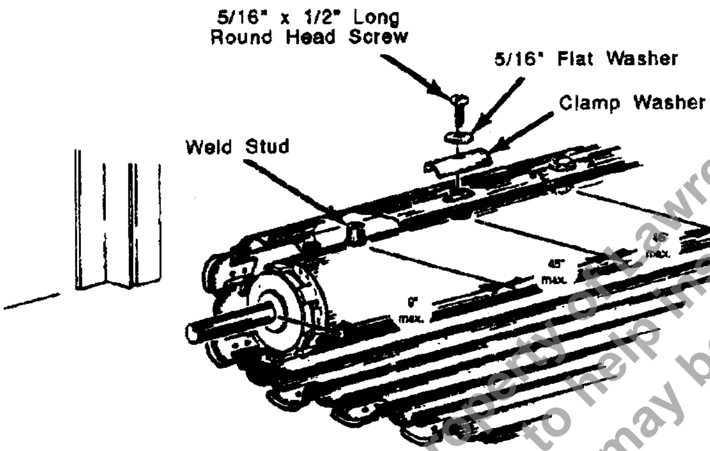


FIGURE 14

METHOD 2:

Curtain attached to female studs welded to outside surface of barrel. See Figure 14.

PREPARING CURTAIN

14 Roll up the curtain tightly on the barrel assembly while keeping the ends straight as possible and then secure with ropes as shown in Figure 15.
IMPORTANT: If curtain ends are not rolled up straight, it will be difficult to secure brackets to wall angles during Step 19.

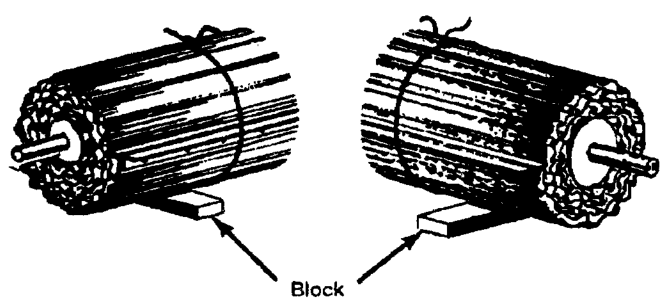


FIGURE 15

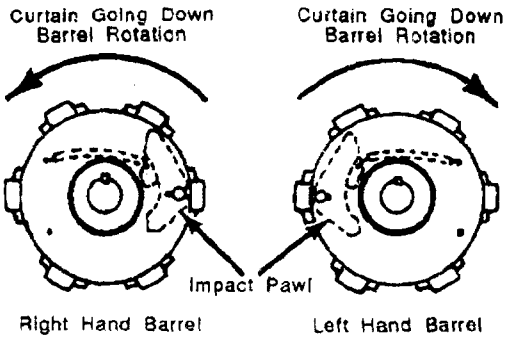


FIGURE 16

16 Place curtain and barrel as shown in Figure 17. Blocking under curtain should be a minimum of 4" high to allow clearance for bracket installation and a minimum of 4" wide to avoid crushing slats.

INSPECT POSITION OF IMPACT PAWL

15 Inspect position of impact pawl assembly. The L.H. or R.H. tension end assemblies MUST be as shown in Figure 16.

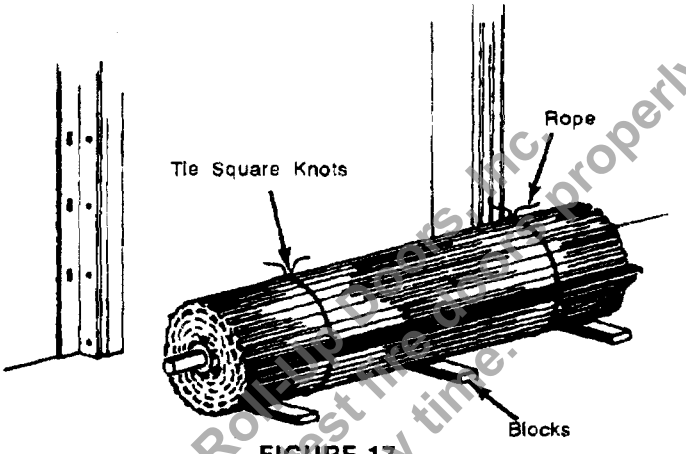


FIGURE 17

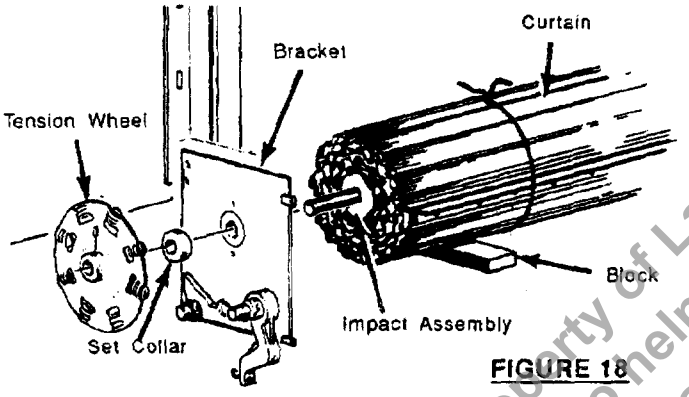
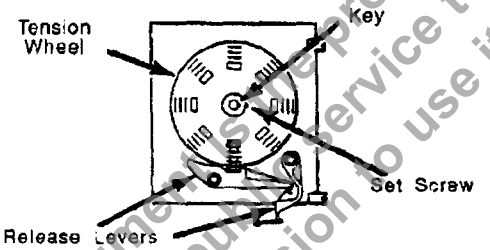


FIGURE 18

MOUNTING BRACKET ASSEMBLIES

17 Slide the tension bracket assembly onto the shaft as shown in Figure18. Position the bracket assembly as follows: Measure curtain length over the endlocks. Subtract this measurement from the "S" dimension. Divide this difference by two, and position the bracket this distance from the endlock on the curtain. Slide the set collar onto the shaft and up against the bearing in the bracket. Tighten the set screws in the set collar.

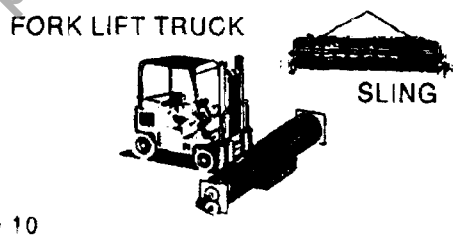
Position tension wheel in vertical alignment with release levers. Insert key and tighten set screw. NOTE: Right Hand Drive shown in Figure 18; L.H. opposite.

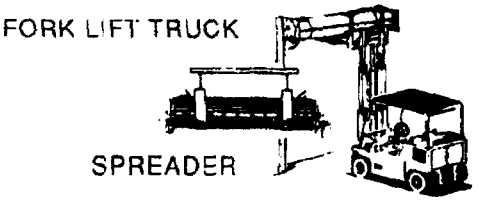


SUGGESTED METHODS OF LIFTING CURTAIN DOOR ASSEMBLY

IMPORTANT

Care should be exercised when lifting curtain and barrel. Devices such as spreader bars, slings, hoists, fork lift trucks, should be used when possible. Due to weight of curtain and barrel, deformation of slats will occur unless load is properly distributed and cushioned on lifting devices.





IDENTIFYING DRIVE ASSEMBLIES

18 Identify drive assembly with assembly in Figures 19 through 23. Slide the drive end assembly on the shaft. Install set collar and then drive sprocket.

18A For hand chain operation, complete installation by threading hand chain through pocket wheel and closing the link. DO NOT ALLOW TWIST IN CHAIN.

18B Install shaft spreader on all No. 5 drive headplates. Tighten set screw. Adjust length before door is operated. Adjust nut to maintain distance between shafts. Tighten lock nut.

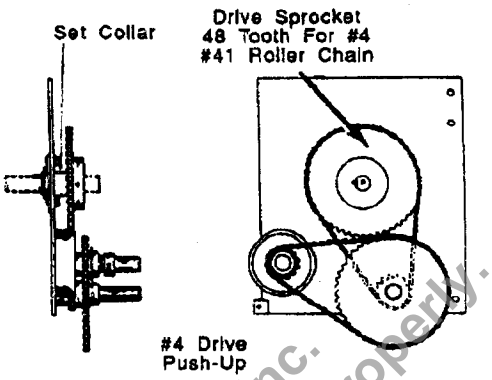


FIGURE 19

NOTE

DO NOT LUBRICATE CLUTCH

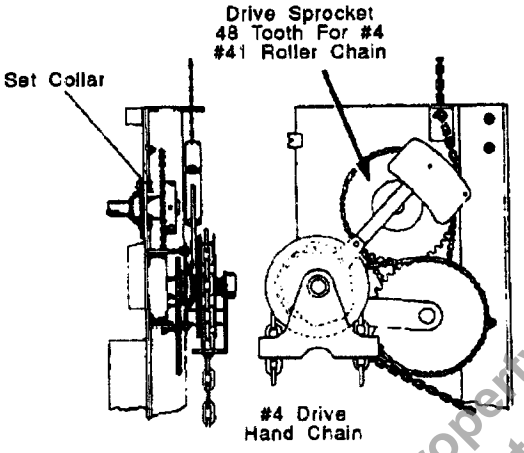


FIGURE 20

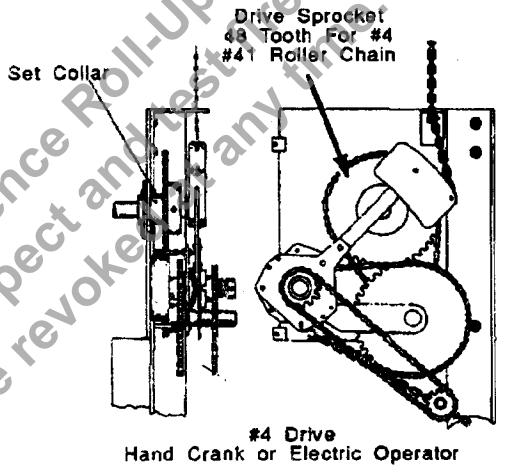


FIGURE 21

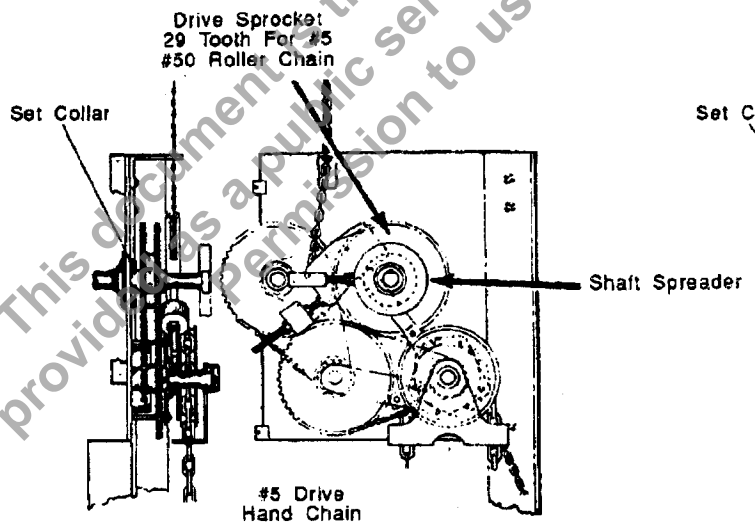


FIGURE 22

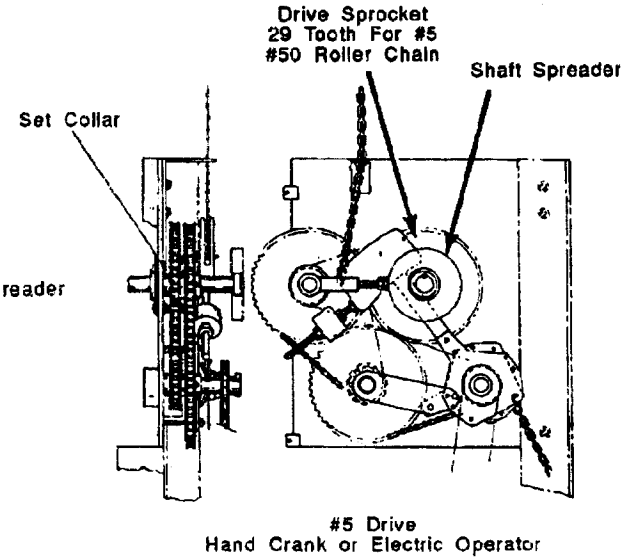


FIGURE 23

INSTALLING FIRE DOOR IN OPENING

19 Lift assembly to opening following either of the suggested methods shown on Page 9. Secure brackets to wall angle with proper fasteners as shown in Figure 24A or 24B. Center curtain between brackets. Reset set collars at both tension and drive end as required. Recheck tension wheel alignment (refer to Step 17).

20 Install "Inside Stop" on L.H. and R.H. guides as shown in Figure 24A or 24B. Locate locking pliers 4" below top of L.H. and R.H. guides.

If the door has flared guides;
Slide stop into inside channel holder and secure with 3/8-16 x 1/2" capscrew and washer. Locate locking pliers approximately 4" below the top of channel holder on both L.H. and R.H. guides as shown in Figure 24A.

If the door uses bellmouths;
Install inside bellmouths and locate locking pliers approximately 4" below entrance to both L.H. and R.H. guides as shown in Figure 24B.

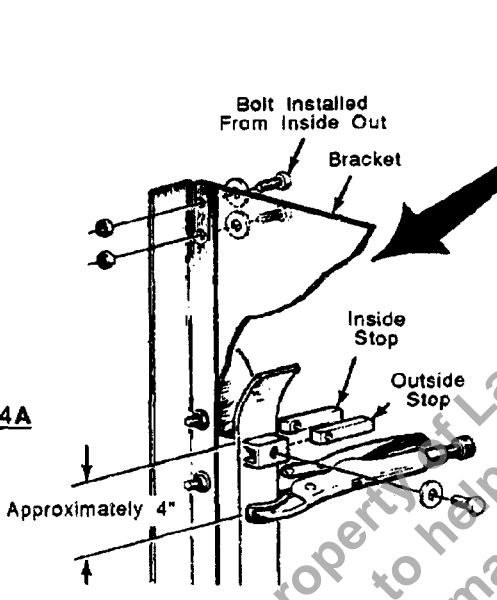


FIGURE 24A

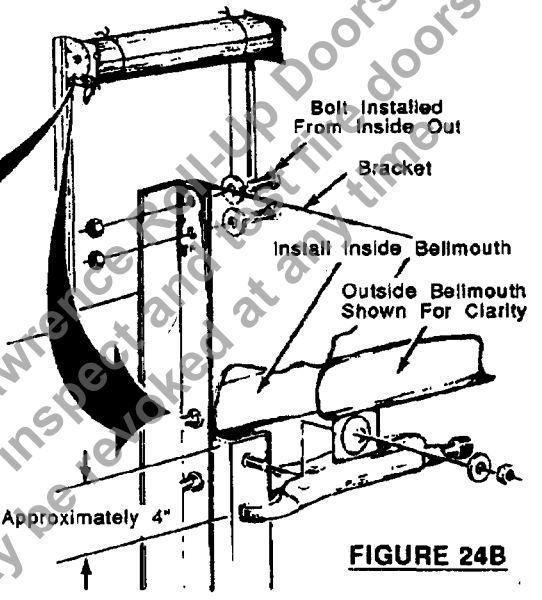


FIGURE 24B

21A The next step is to lower curtain into guides. Before loosening the ropes which hold the coiled curtain, enough initial spring tension must be applied to cause the bottom bar to rotate about 45 degrees; then leave one winding bar in the tension wheel with the bar resting against the wall.

21B Loosen ropes and lower curtain into guides. Bottom bar angles will pass by inside stops by twisting angle and come to rest against locking pliers.

22 Install outside stops. See Figure 25A for flared guides and Figure 25B for guides with bellmouths.

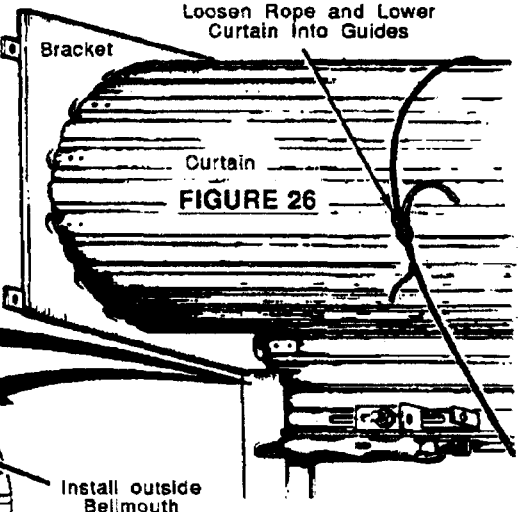


FIGURE 26

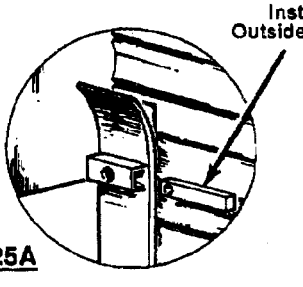


FIGURE 25A

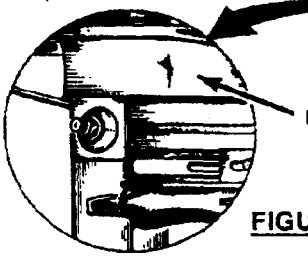


FIGURE 25B

23 ADJUSTMENT : Read the following instructions thoroughly before performing procedure.

• CURTAIN ADJUSTMENT

⚠WARNING

Curtain MUST be centered between Headplates and in fully raised position before making any adjustments.

After centering Curtain, make sure that shaft Set Collars are positioned toward Headplates, all Set Screws are tightened and that Sprockets and Chains are aligned.

• COUNTERBALANCE ADJUSTMENT

SET INITIAL TURNS TO THE VALUE SHOWN ON PAGE 1.

⚠WARNING

Door MUST be in full open position when making tension adjustments.

IMPORTANT

WINDING BARS SHOULD BE 3/4" DIAMETER STEEL ROD, 2 TO 3 FEET LONG. DO NOT USE PIPE OR CONDUIT.

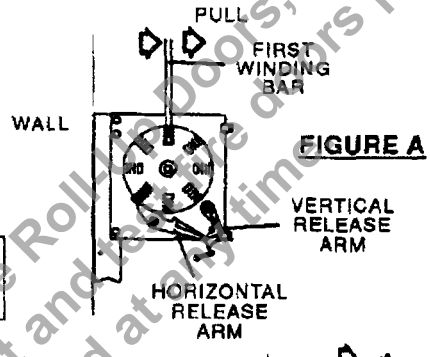


FIGURE A

A. Insert a winding bar in hole at top of tension wheel and pull down as shown in Figure A.

B. Rotate tension wheel 1/8 to 1/4 turn and stop.

C. While holding first bar, insert second winding bar in top of tension wheel as shown in Figure B.

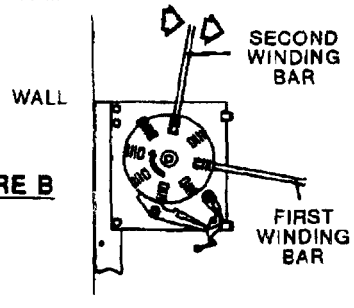


FIGURE B

D. Pull down on second bar while removing the first bar.

E. Repeat procedure until the bottom bar moves up against the curtain stops, or you set the initial turns shown in "Door Specifications" on page 1 and written on Tension Headplate. Insert winding bar to rest against wall as shown in Figure C.

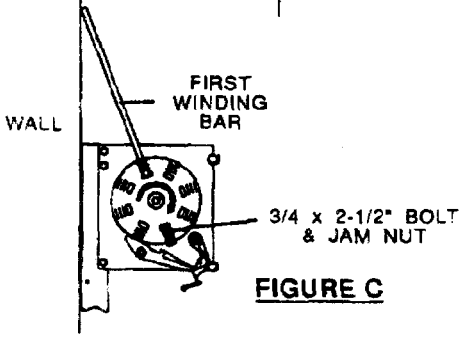


FIGURE C

F. Install 3/4 x 2-1/2" bolt and jam nut in tension wheel as shown in Figure C.

G. Using winding bars, slowly rotate tension wheel until tension wheel bolt rests in the offset in horizontal release arm as shown in Figure D.

H. Set release arms as shown in Figure D.

I. Temporarily secure the Vertical Release Arm in position at this time. Locking pliers may be clamped onto the bottom of the headplate; a short piece of angle will be needed on large headplates.

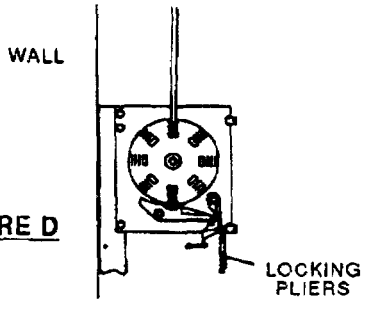


FIGURE D

J. Remove Winding Bar.

DRIVE BRACKET ASSEMBLY

24A Position main drive sprocket on counterbalance in correct alignment with the smaller sprocket to which it is connected. Tighten set screw firmly.

24B On hand chain, hand crank, or electrically operated doors, the sprocket drive end is disconnected from the input device by means of a dentil and cam release mechanism. On these assemblies, the face of the stationary dentil release assembly must not press against the governor assembly. Therefore, adjust stationary cam per note beneath Figure 27.

25 Install Sash Chain as shown in Figure 30 or 31, and Pages 10 and 14. Install Sash Spring by hooking one end of spring on carriage bolt and the other end in sash chain link (Figures 28 and 28A). Spring should be stretched approximately 3". Remove locking pliers from tension headplate. IMPORTANT: During a fire or a drop test, spring must pull slack in chain to allow rotation of Vertical Release Arm which allows the Horizontal Release Arm to drop.

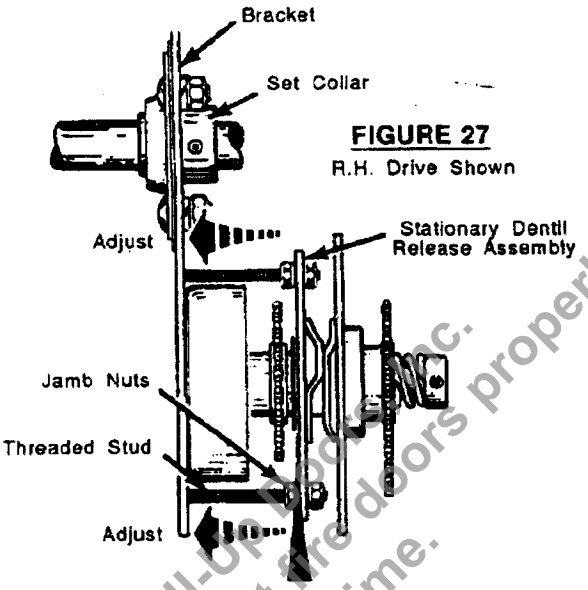


FIGURE 27
R.H. Drive Shown

NOTE

Set gap of 1/32" to 1/16" between face of Stationary Dentil Release Assy. and washer on Governor Drive Hub Assy. by adjusting jamb nuts on threaded studs. Tighten jamb nuts after gap is set.

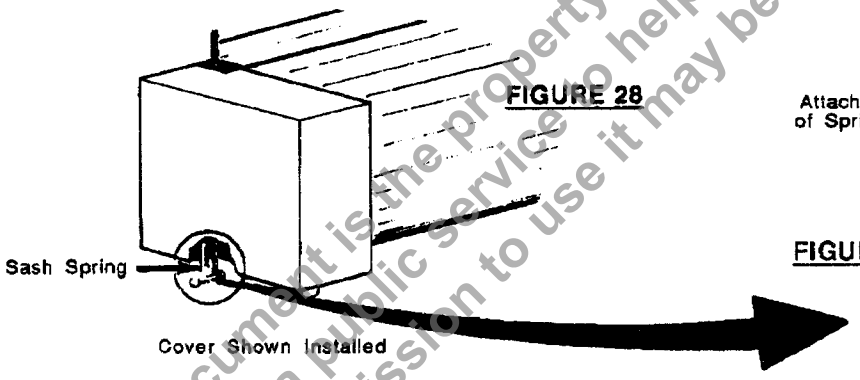


FIGURE 28

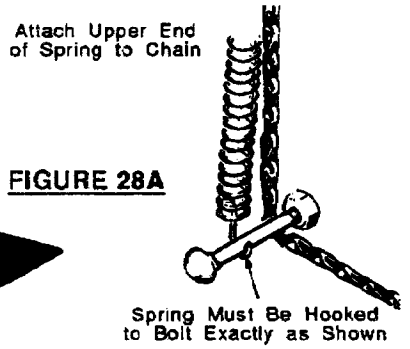


FIGURE 28A

26 Check door operation:

A. Lower and raise the curtain at least twice to test for proper operation. The bottom bar should rest against floor and not show a tendency to rise off floor.

B. If door is difficult to open, RAISE CURTAIN TO FULLY OPEN POSITION, then increase initial tension until operation is satisfactory. Move 3/4" bolt accordingly.

C. If door has a tendency to raise off the floor, RAISE CURTAIN TO UP POSITION, then decrease the initial tension until operation is satisfactory. Move 3/4" bolt accordingly.

⚠WARNING

Tension Wheel is under high spring tension and can cause severe injury. Adjust tension ONLY with door in FULLY OPEN position.

INSTALLING HOOD & RELEASE CHAIN

27 Prior to making drop test, install hood as shown in Figure 29. Secure hood to wall and brackets with appropriate fasteners. Drill ¼" dia. holes for ¼" expansion anchors for concrete, masonry filled or unfilled block. Drill 15/64" dia. holes for ¼" self-taps for steel tube or steel stud in U411 wall. Drill ⅛" dia. holes for ¼" lag screws for wood stud in U411 wall. Install hood supports if required. See Figure 29 for attaching hardware.

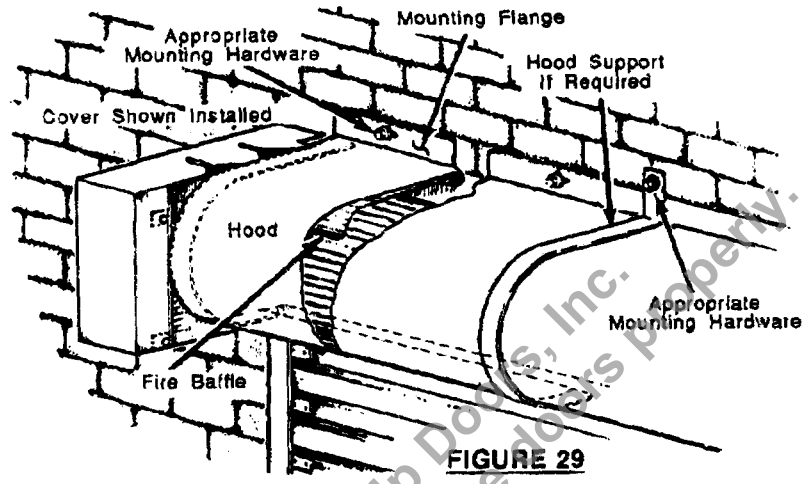


FIGURE 29

28 Check fire baffle operation to insure free movement of fire baffle and drop onto curtain.

29 Reconnect release chain for Fire Baffle as shown in Figure 31 (Pushup Doors) or Figure 30 (Non-Pushup Doors).

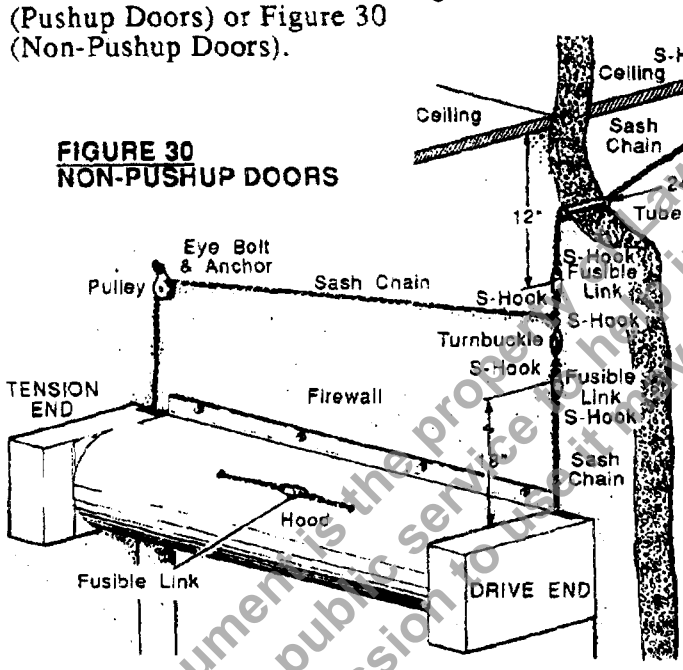


FIGURE 30
NON-PUSHUP DOORS

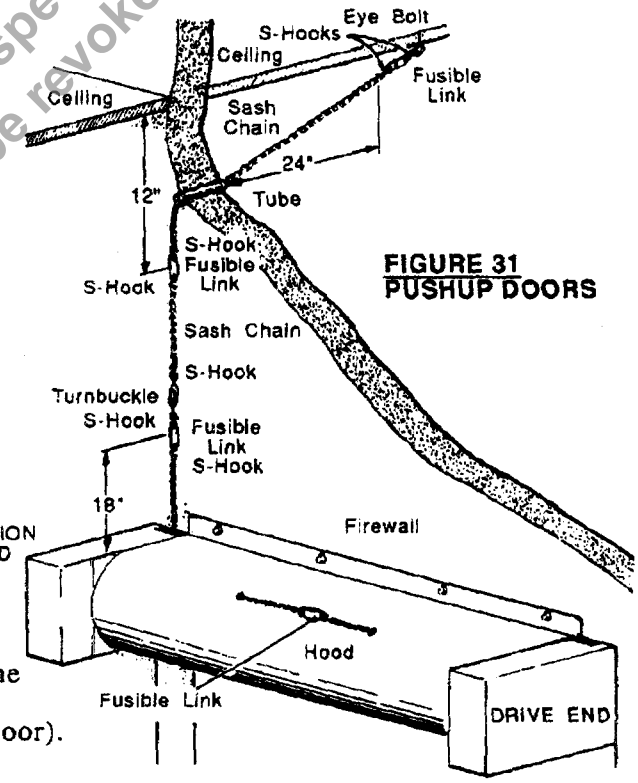


FIGURE 31
PUSHUP DOORS

30 Each rolling steel fire door must be test dropped and reset according to Overhead Door Corporation drop test instructions, provided with door inside tension end cover. If the door closed too quickly during the drop test (according to the instructions inside the tension end cover), move the 3/4" x 2-1/2" bolt assembly one (1) location clockwise (L.H. Drive Door) or counterclockwise (R.H. Drive Door).

⚠WARNING

Tension Wheel is under high spring tension and can cause severe injury. Adjust tension ONLY with door in FULLY OPEN position.

31 Install Bracket Covers using 1/4" diameter tapping or thread cutting screws that are no more than 3/8" long. **A screw longer than 3/8" can prevent the door from dropping during a fire.**

DOORS WITH SENSING EDGE ON BOTTOM BAR MUST HAVE WARNING DECALS SHOWN BELOW MOUNTED ON THE BOTTOM BAR AND ON CURTAIN SLAT 5 FEET ABOVE BOTTOM BAR. MOUNT ON INTERIOR SIDE OF DOOR.