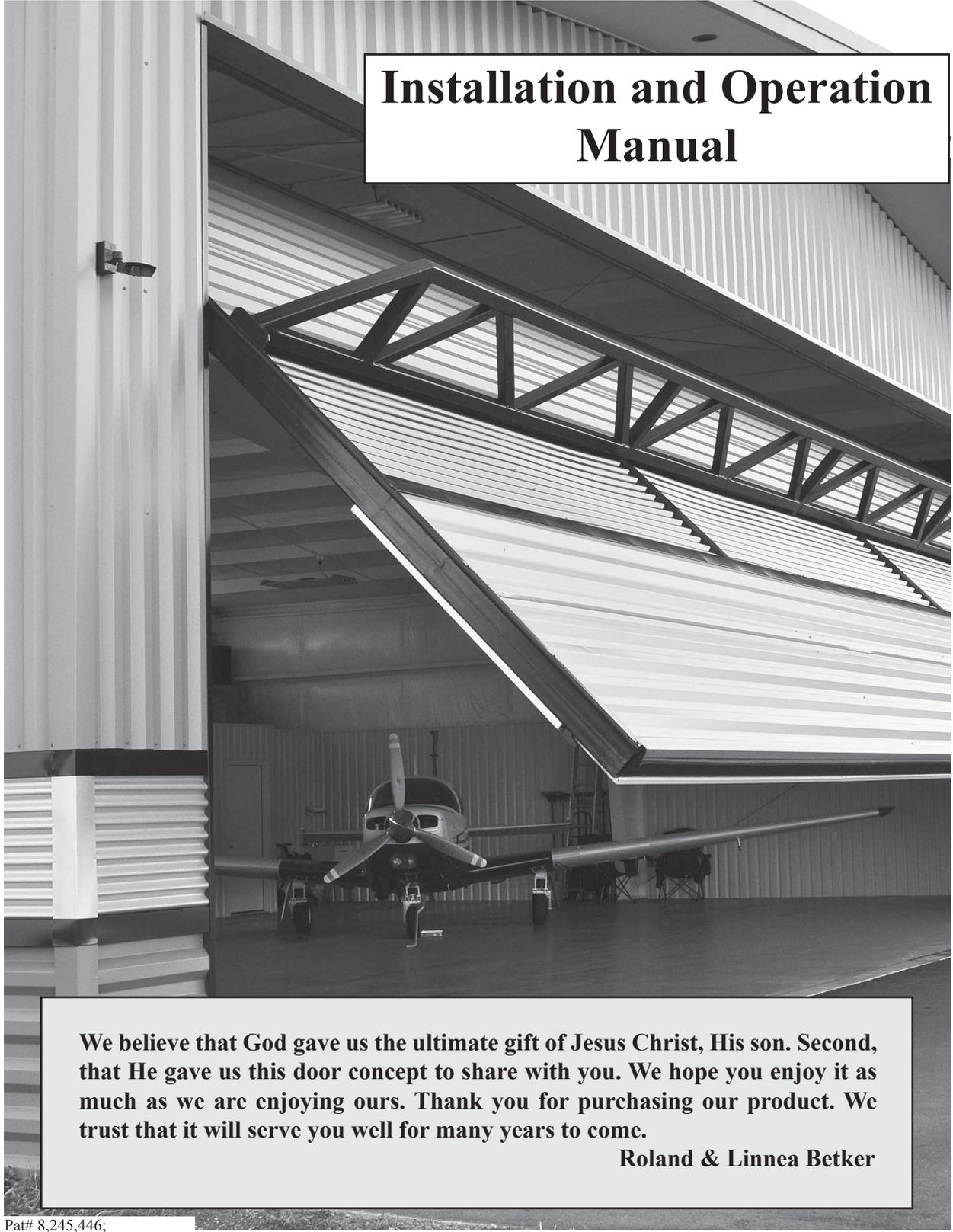


**Installation and Operation  
Manual**



**We believe that God gave us the ultimate gift of Jesus Christ, His son. Second, that He gave us this door concept to share with you. We hope you enjoy it as much as we are enjoying ours. Thank you for purchasing our product. We trust that it will serve you well for many years to come.**

**Roland & Linnea Betker**

Pat# 8,245,446;  
9,404,301 & 9,428,951

Copyright © 2011-2017  
Higher Power Hydraulic Doors  
All rights reserved

This manual has been  
especially prepared for:



Save this manual for future reference.

## Safety Information

**WARNING:** Follow the information in this document exactly. Improper installation, adjustment, alteration, service, or maintenance can cause property damage or personal injury, and will void your warranty. If you perform the installation yourself, or have it done by a non-authorized installer, then you are accepting all responsibility for the installation, use, misuse, or improper operation of the door. If you need assistance or additional information, please refer to the rear of this manual or call 269-927-8990 269-927-1400 fax

## Local Codes

When you install this product, be sure to follow all local codes.

## Unpacking

When you unpack and install your door system, use a forklift with at least a 6000 pound lifting capacity. Unpack and place the parts off to the side, and not in front of the open doorway. Plan your work so the parts and forklift are always accessible and in proper position to be operated.

## Tools Required

Forklift with fork extensions and lifting straps. Forks must extend vertically to at least 0.6% of door height, for lifting the door into place.

Electric drill with sockets for installing self-drilling screws and anchor bolts

3/8" drill bit for drilling in steel.

3/4" concrete drill bit for drilling four expansion anchor holes

Steel-cutting power saw, hack saw (to cut cam braces to length)

Tin snips (for unbanding the parts)

Two sets of open end wrenches

Socket set with ratchet

Allen wrenches

Long tape measure (to measure door diagonally, corner to corner)

Four foot level

Hammer

Large pry bar or crowbar

Funnel (for pouring oil)

Oil Dry or rags (for oil cleanup)

Six 2x4s to lay heavy parts on, and assemble the door on

Tube of black caulk

**NOTE:** Approximate minimum oil quantities for standard doors with 2" rod cylinders is:

Up to – 12' high is 6.0 gallons

– 14' high is 6.5 gallons

– 16' high is 7 gallons

– 18' high is 7.5 gallons

– 20' high is 8 gallons

## Customer Will Supply:

240 volt, 30 ampere AC electric power

Hydraulic oil as needed

Door panels (siding) and trim



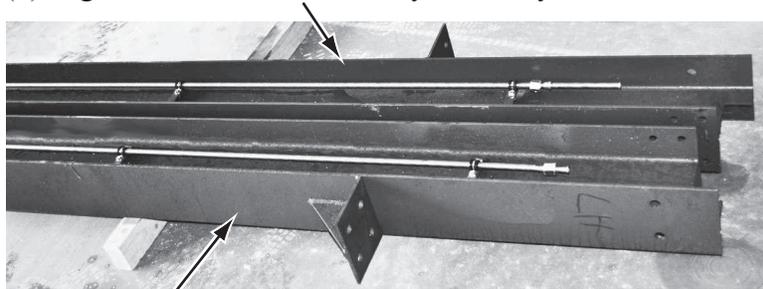
# Parts List

NOTE: Your door system has been custom engineered and manufactured to your specific needs by Higher Power Hydraulic Doors. Therefore, when you install some parts and hardware, you may have to bolt some parts together (such as trusses and long tubes for wide doors). These parts will be shown as single pieces in this manual. Also, your parts may look slightly different than those shown. Numbers in parenthesis ( ) indicate the quantity of parts supplied.

In the following pages, “left” and “right” parts are left and right as you view the doorway from inside the building.

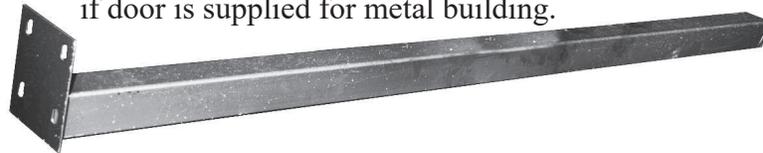


(1) Right Slide Column - with hydraulic cylinder and tubes



(1) Left Slide Column - with hydraulic cylinder and tubes

(2) Cam Brace - will not have attached plate if door is supplied for metal building.



(1) Left  
Cam

(1) Right  
Cam



(1) Truss



NOTE: This may be in two pieces and need to be bolted together.

(1) Left Side Tube

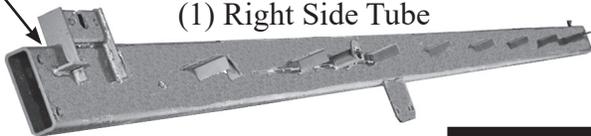


(1) Pump Assembly



Top of door

(1) Right Side Tube



NOTE: These may be in two pieces and need to be bolted together.

(1) Bottom Tube



(1) Top Tube



Vertical Intermediate Tubes

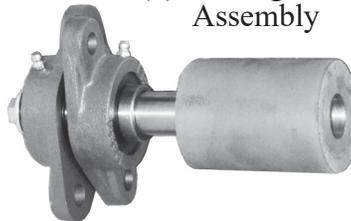


(1) Left Push Block

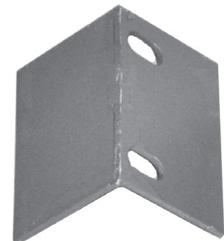


(1) Right Push Block

(2) Bearing Roller Assembly



(2) Roller Plate

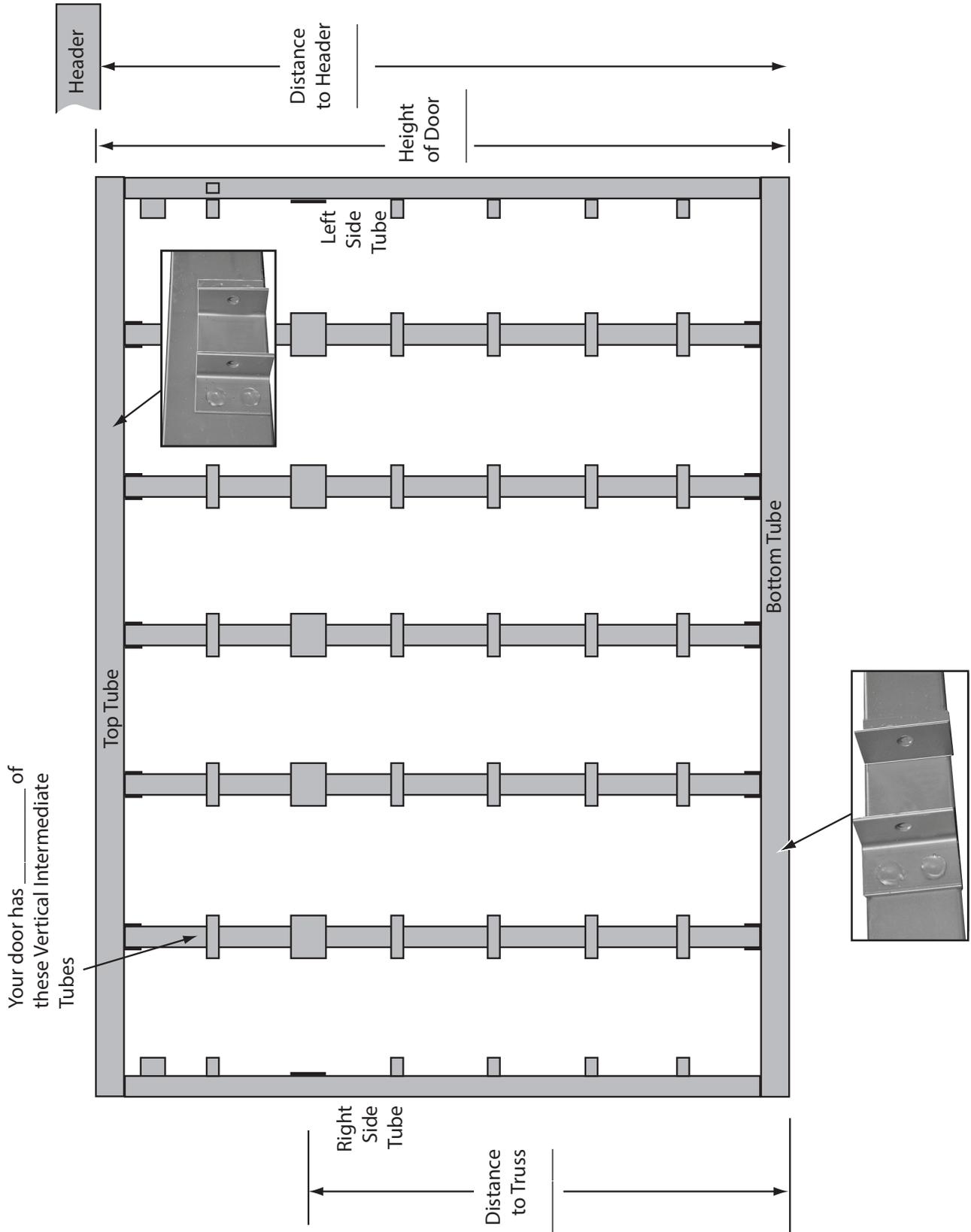


(2) Bottom Latch Plate



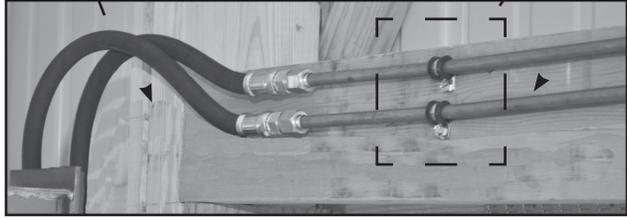
(2) Pivot Pin





(2) 1/2" hydraulic hoses

Two 1/2" hydraulic tubes  
Numerous 1/2" tube clamps



(2) Steel cable with Turnbuckle



(2) Pivot Pin Keeper



(1) 1/2" Hydraulic "T/90"



(4) U-Bolt  
Only for Wood Buildings



(2) Clevis



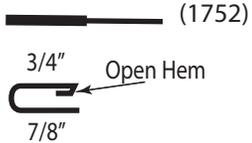
Hydraulic Union



### Door Seals & Trim

(1) Flat Weather Seal (top)

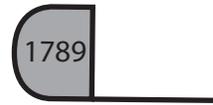
Header Trim Seal (1752)



(2) Flexible P-Seal Building Jamb (2-1/2" Keeper Needed)



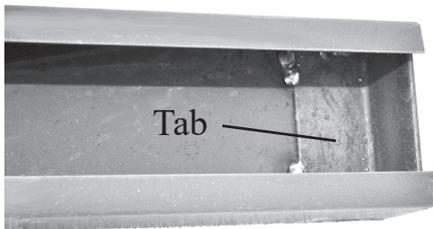
(3) P-Seal with 90° leg (bottom of door no keeper needed)



(4) P-Seal with 90° leg (Door Side Arm 1-1/2 Keeper with 90° Leg)



### Door & Window Frame Accessories



Tab

Each window frame consists of three or more lengths of 4-inch "C" channel. Each door frame consists of two lengths that will be used as door jambs. Each frame piece has tabs welded in the ends as shown.

#### HARDWARE

There is also a box(s) of screws, nuts, and bolts for your door system.

# Assembly Sequence

NOTE: This section provides detailed steps for installing your Higher Power door system. But first read the following *Installation Overview* so you will understand the sequence of assembly. Do NOT make the mistake of following only the bulleted steps. The *Detailed Step-by-Step* sequence provides you with many need-to-know details.

## Installation Overview

### Slide Columns

- Left slide column with pre-installed hydraulic cylinder
- Left cam and brace
- Left push block
- Right slide column, push block, cam and brace

### Hydraulics and Electrical

- Pump assembly to wall or on floor
- Hydraulic tubes and fittings

### Door

- Left and right side tubes to top and bottom tubes
- Vertical intermediate tubes
- Truss
- Diagonal bracing cables with turnbuckles and clevises
- Two bearing roller assemblies
- Two pivot pins
- Two pivot pin keepers
- Two bottom latch plates to slide columns
- Weather seals

### Initial Tests

- Hookup electricity
- Bleed hydraulic lines
- Refill oil reservoir
- Operate door and make final adjustments
- Install door panels and weather stripping

## WARNING

**NEVER** power wash or allow the hydraulic pump assembly to get wet. This will damage the electronics, and specifically the 12-volt transformer.

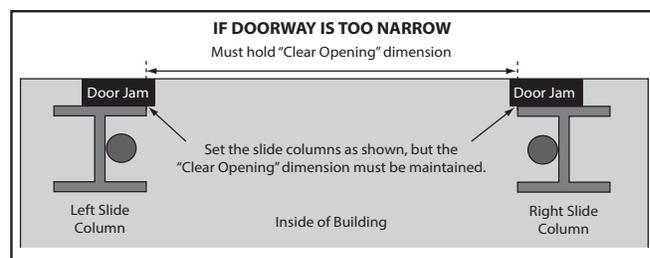
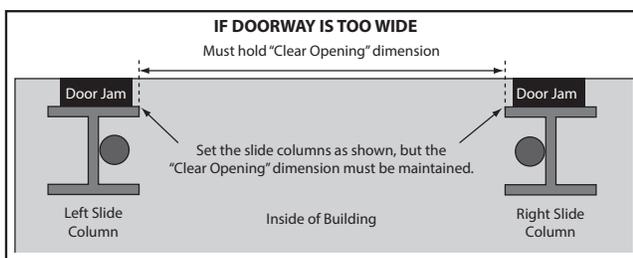
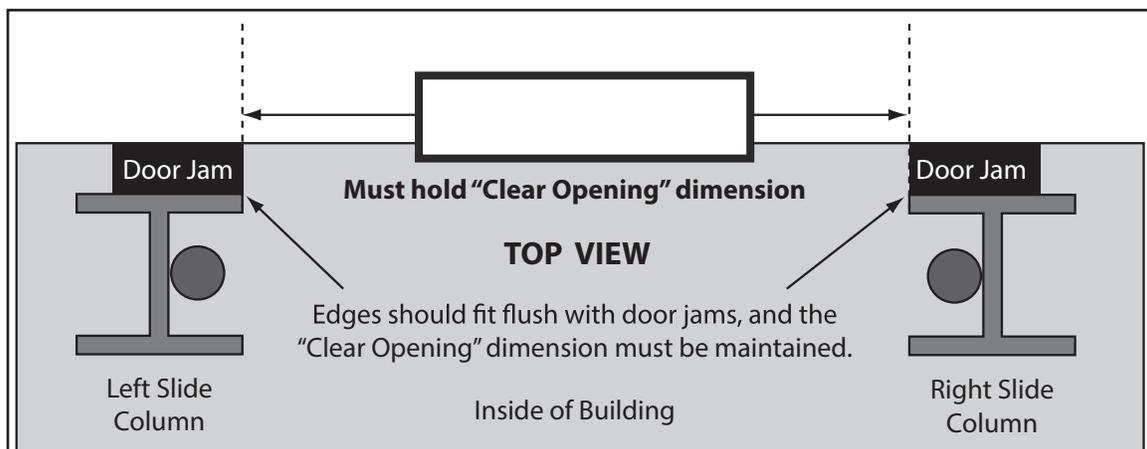
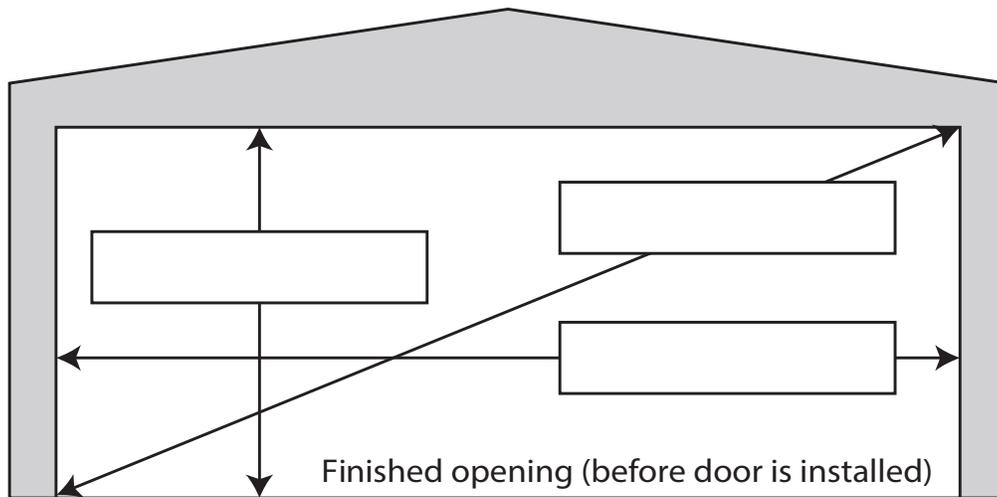
# Step-by-Step Installation

## Slide Columns

Customer Name: \_\_\_\_\_

Door Size (Clear Opening): \_\_\_\_\_

NOTE: Your door has been carefully manufactured to fit into a precise clear opening. The steps on the following pages will instruct you to install the left and right slide columns. For the door to fit properly, be sure you install the slide columns leaving the “Clear Opening” shown above, and illustrated in the following drawings.



NOTE: On the following pages, the large numbers inside the boxes show the sequence in which steps should be performed. The word “START” identifies the location of step 1. To help visualize your progress, it is also important to check off each step after you perform it; [✓].

NOTES:

1. When you install the slide columns in the following steps, be sure to set them to the dimension in the engineering drawings (example, 40 feet), and set the columns so the distance between the columns is centered in the doorway opening.
2. After installation, the columns may both tip toward the outside of the building or toward the inside slightly, but they must be otherwise vertical and not leaning to the left side or to the right side.

[ ] Measure the doorway opening and record the dimension here \_\_\_\_\_. It should be  $\pm \frac{1}{2}$ " of the doorway dimension in the engineering drawings.

[ ] Mark on the floor where the left and right slide columns should be positioned.

[ ] The column mounting locations must be at the same elevation. Check this with a transit, laser, or other level device. If the locations are not at the same elevation, use one or two shims or spacers (not supplied) to raise the lower location as necessary.

[ ] Carefully install the left slide column in the left side of the doorway as follows:

START



**1** [ ] Pick up the left slide column.



**2** [ ] Place the column into position against the door frame.



START

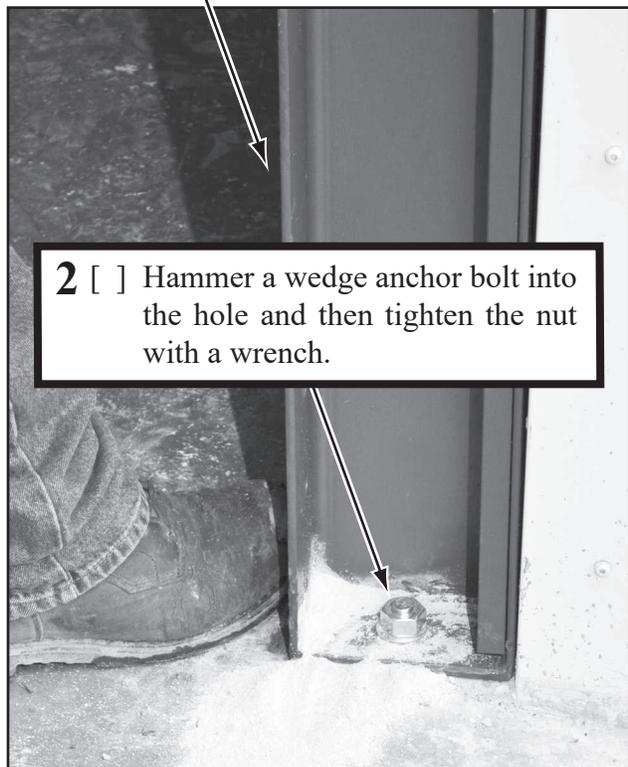


- 1** [ ] Be sure the column is vertical. Then drill a 3/4" diameter hole 5" deep in the concrete as shown.



- 3** [ ] As before, install another wedge anchor bolt into the other side of the slide column.

- 2** [ ] Hammer a wedge anchor bolt into the hole and then tighten the nut with a wrench.



3/4" x 4.25" Wedge Anchor Bolt



START

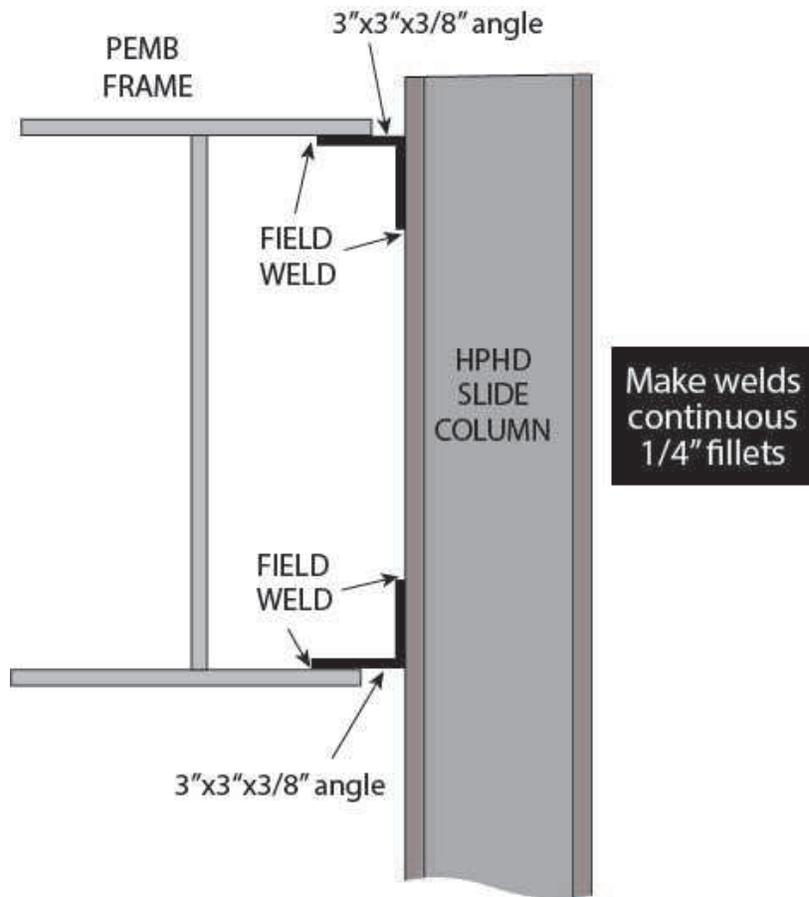


- 1 [ ] Be sure the slide column is vertical (loosen the anchor bolts if necessary), and then loosely secure the top of the column in place with four 1/2" 13 x 4" or 5" lag bolts; two on each side of the column.

NOTE: On steel buildings, refer to the following drawing and weld the metal clips to the building.



**For Metal Buildings**



## Left Cam and Cam Brace for WOOD FRAME Buildings

### NOTES:

1. If your building is a METAL building, proceed to the next page.
2. In the following steps, you will install the left cam and a cam brace in a wood frame building. The cam MUST be installed so it is at right angle to the door header. (During Initial Tests, you may have to readjust the cams slightly.)

START

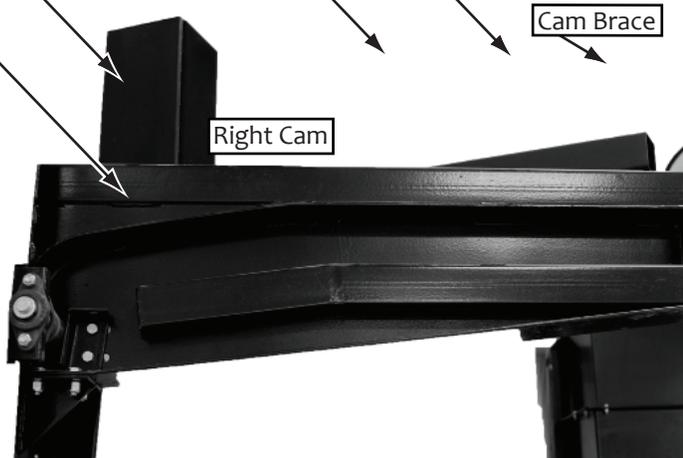
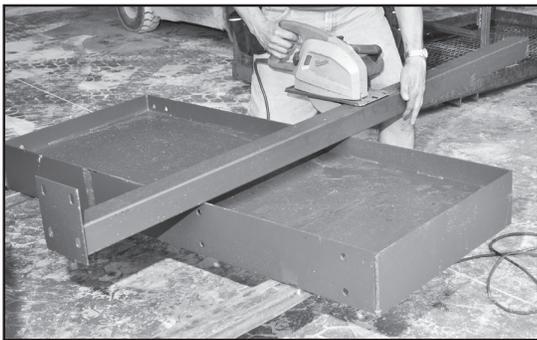


- 1** [ ] Lift the left cam into position and secure it in place with six 5/8" 11 x 1-1/2" bolts and locknuts.

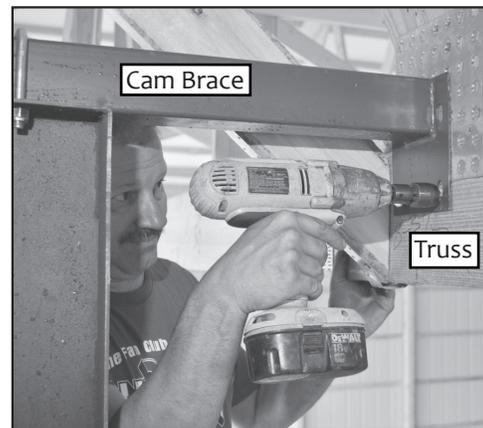
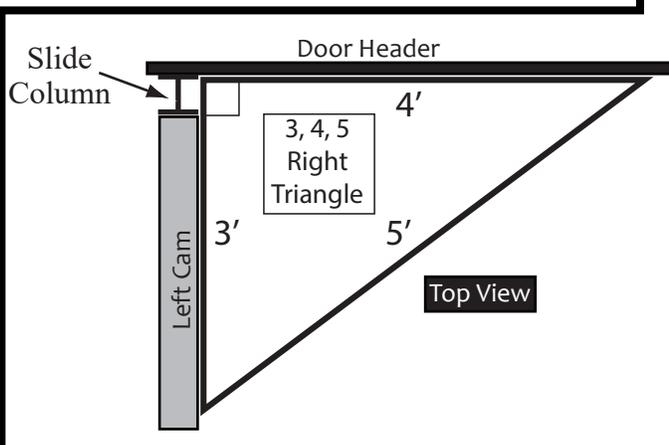
- 3** [ ] Place the cam brace into position and secure it to the left cam with two U-bolts and locknuts.



- 2** [ ] Measure the length that the cam brace must be so it can be bolted to the cam and nearest truss or other secure object. Then cut the brace to the proper length.



- 4** [ ] Move the left cam and cam brace until the cam is at right angle to the door header. You can use a tape measure and figure a 3, 4, 5 right triangle, or use a square. Then secure the cam brace in place with two 1/2" 13 x 1-1/2" lag screws.



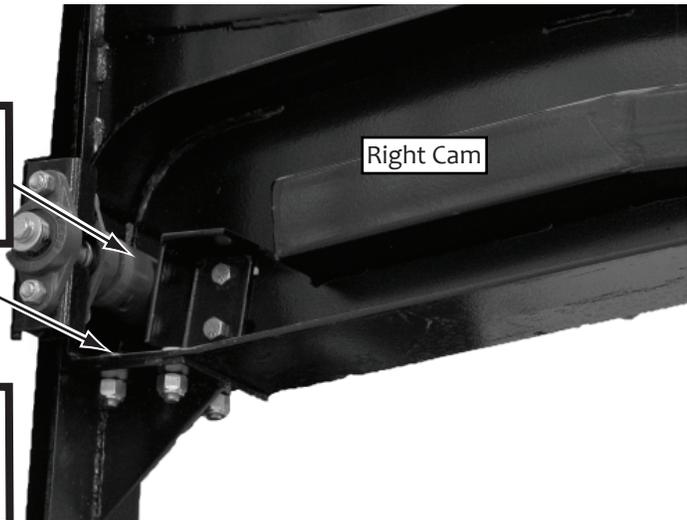
## Left Cam and Cam Brace for METAL Buildings

NOTE: In the following steps, you will install the left cam and a cam brace in a metal building. The cam MUST be installed so it is at right angle to the building header. If a truss is not nearby to secure the brace to, then tack-weld the brace to the cam and then to the building header as shown below. (During Initial Tests, you may have to readjust the cams slightly.)

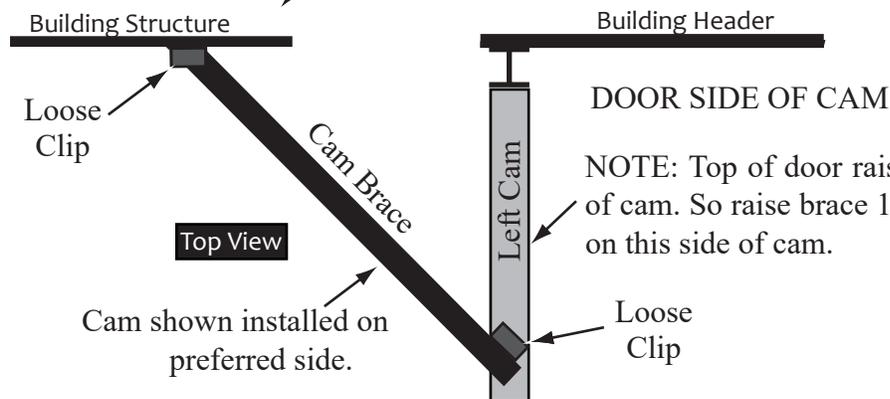
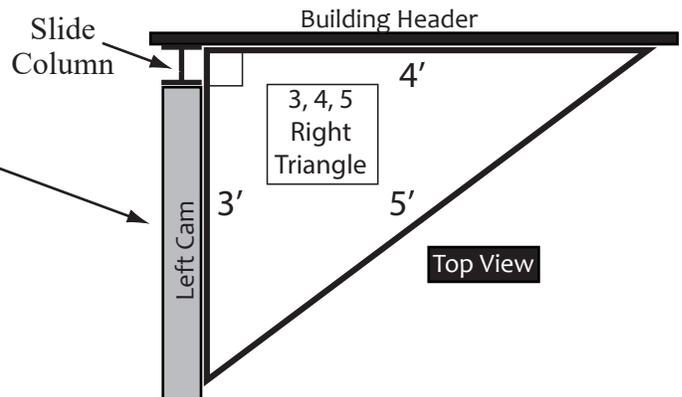
START

**1** [ ] Lift the left cam into position and secure it in place with six 5/8" 11 x 1-1/2" bolts and locknuts.

**2** [ ] Note: Gap between end roller and Cam Box should be 1/4" to 1/2".



**3** [ ] Move the left cam and cam brace until the cam is at right angle to the building header. You can use a tape measure and figure a 3, 4, 5 right triangle, or use a square. Then weld the cam brace to the top of the cam and the building structure with supplied loose clips.



NOTE: Top of door raises 13" above top of cam. So raise brace 13" if you install it on this side of cam.

## Left Push Block

START

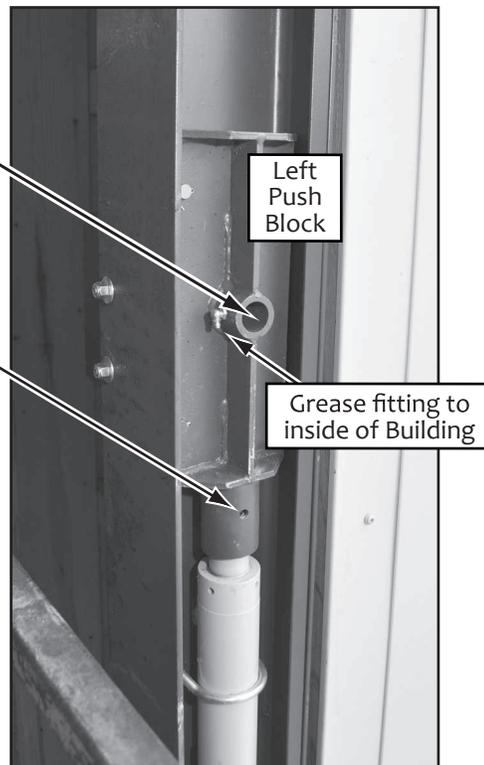


- 1** [ ] Use a bolt or screwdriver and rotate the hydraulic cylinder piston until the piston hole faces out as shown.



- 2** [ ] Apply lots of grease in this opening.

- 3** [ ] Slide the left push block down onto the hydraulic cylinder piston and be sure the holes line up. You will install a bolt here later, but then the holes might be difficult to align.



- 4** [ ] Refer to pages 9 thru 14 and, in a similar manner, install the right slide column and parts in the other side of the doorway.

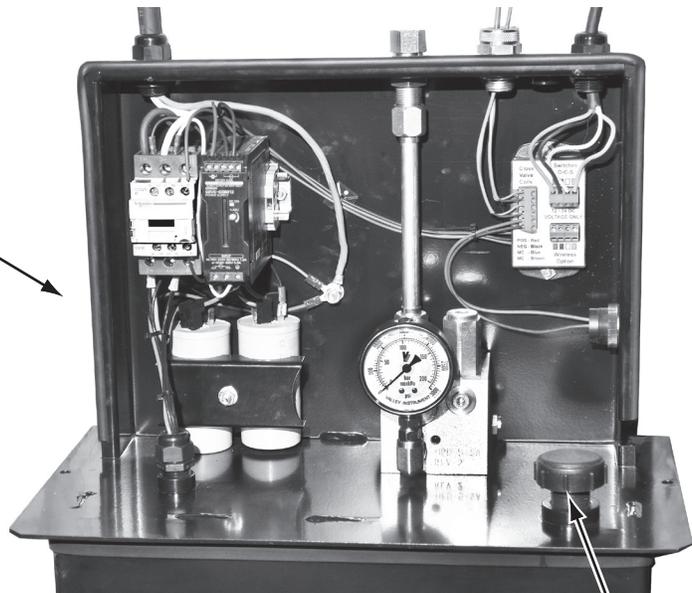
## Pump Assembly and Hose

NOTE: The following steps show the pump mounted on the left side of the doorway. If your pump is to be mounted on the right side, as determined by your product order, then adjust the steps as necessary. Mounting holes for the hydraulic unit are shown on page 37.

START



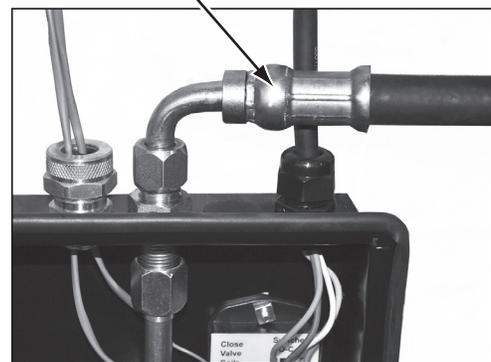
- 1** [ ] Select a mounting location for the pump assembly. Be sure the location is close enough so the hose reaches the hydraulic line mounted on the left slide column. You may mount the pump to the wall or you can set it on the floor.



Refer to Page 35 if you want to see hydraulic schematics.

- 2** [ ] Start with five gallons and fill the fluid reservoir up as necessary and replace the cap.

- 3** [ ] Connect the pump hose to the hydraulic tube on the left slide column, or the right slide column if the pump is on the right side.



- 4** [ ] Use screws (not supplied) and secure the Open/Close switch to the wall at a desired location.

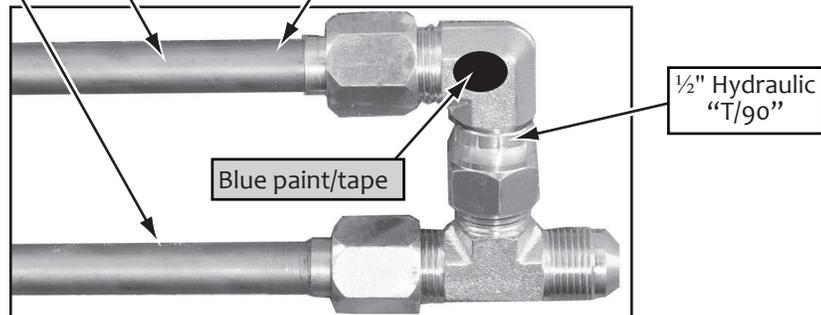
## Hydraulic Tubes and Hoses

NOTE: In the following steps, be sure to connect the blue-marked parts together.

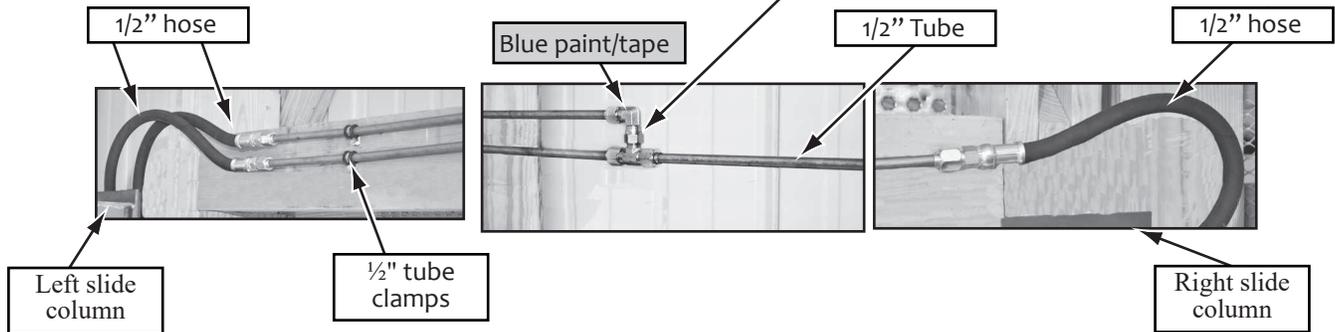
START

**1** [ ] Securely connect two 1/2" hydraulic tubes to the 1/2" hydraulic T/90 assembly as shown.

**NOTE: This line MUST be attached to the line from the pump.**



Picture is For a Left Mounted Pump. Top Tube should go to the Right For a Right Mounted Pump.

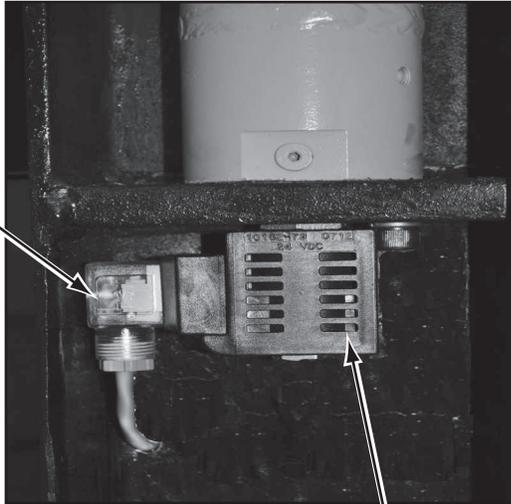


Main feed line marked with blue paint or tape

**2** [ ] Install the hydraulic tubes and hoses above the door opening as shown and secure them with tube clamps and #14 x 1" screws. Connect the free hose ends to the proper tubes inside the slide columns. (The blue-marked parts must be connected together. This ensures the parts are connected to the pump's main feed line.)

The "T/90" assembly must be centered horizontally above the doorway.

LED



START



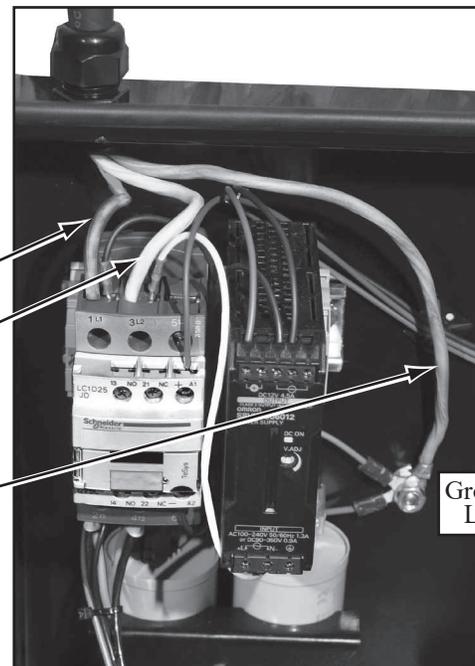
**1** [ ] At the bottom of each cylinder is a solenoid check valve. In the following steps, you will route and connect the cables coming from these valves.

**2** [ ] Route the cables over to the pump and zip tie them to the hydraulic tubes.

**4** [ ] If not already done, connect 240 volt, 30 ampere electrical service to the pump motor assembly. Connect one 120V leg (may be a black wire) to 1L1, the other 120V leg (may be a white wire) to 3L2, and the green wire to the ground lug. There may already be small wires at 1L1 and 3L2. (NOTE: Operating the door with an underpowered power source will burn up the motor and void your warranty.)



**3** [ ] Route the check valve cables through the connector parts. Then connect either cable to the top red and black marked connectors and the other cable to the remaining red and black connectors.



Ground Lug

## Pass Door and Window Frame Accessories

**NOTE: Read this page only if you ordered a window frame or pass door frame.**

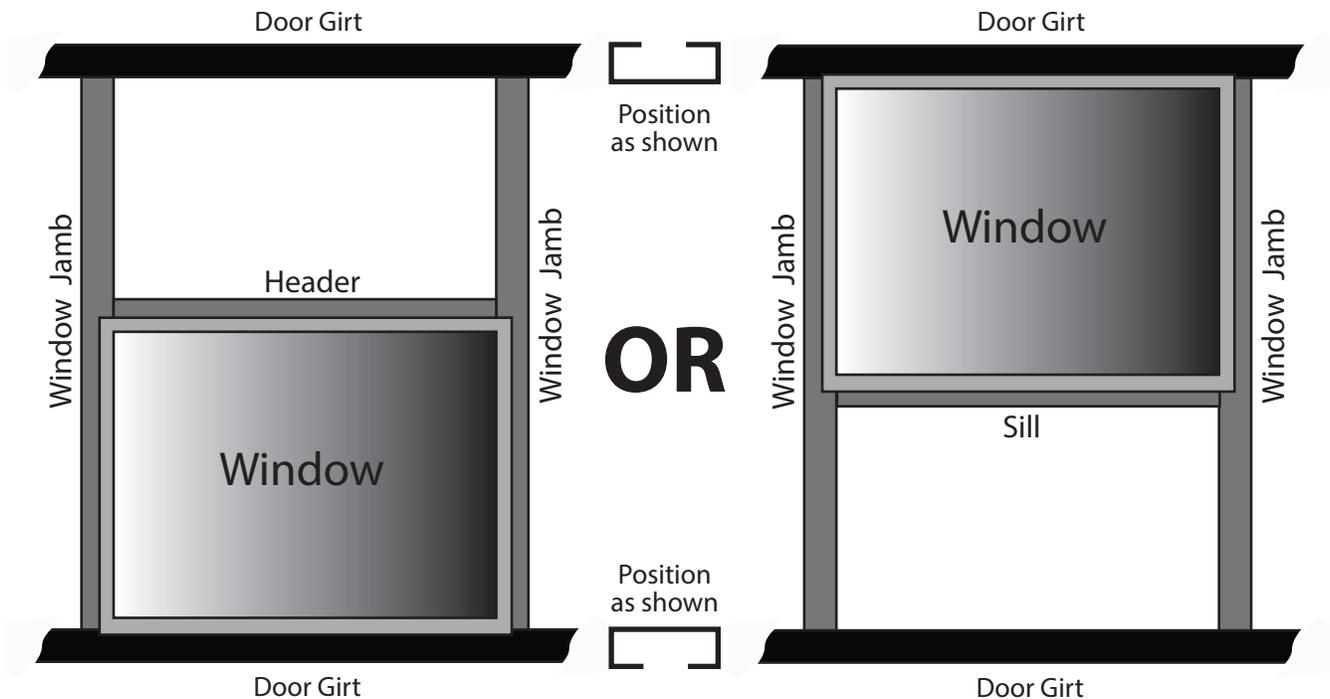
**If you did not order one of these, proceed to the next page.**

### Window Frame Installation

Position the two door girts, with the slots up or down as shown, when you install them later. Then mount the “C” channel pieces, with the slots positioned as shown, with the #14 x 3/4” self-tapping screws. Mount the vertical window jamb pieces to the door frame girts and the third piece either above or below the window. Position the pieces so the window will be where you want it. Do NOT install the actual window until the door is installed and tested.

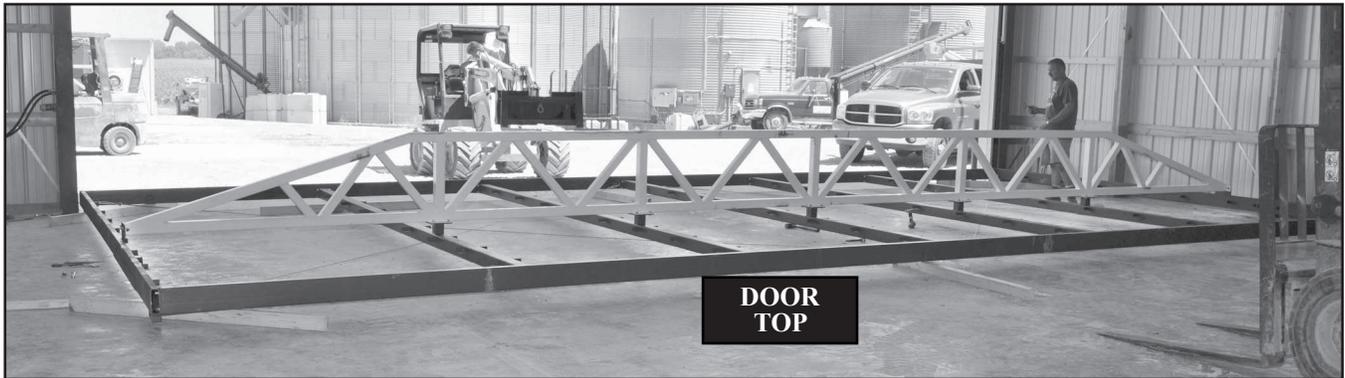
### Pass Door Frame Installation

In a similar manner, as above, install the two pass door jamb frame parts in the location of your choice. Then install the pass door later.

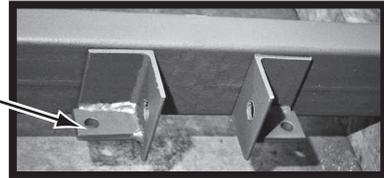


Door

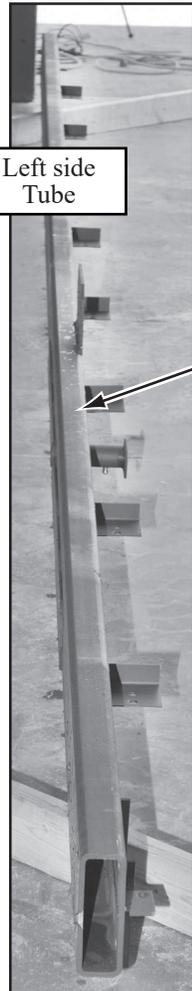
Assembled Door



**3** [ ] Connect the bottom tube to the side tubes as before. Be sure to position the tabs down toward the floor as shown.



**2** [ ] Connect the other end of the top tube to the left side tube as before.



**1** [ ] Lay the left and right side tubes on 2x4s as shown. Then connect the top tube's 5/8" bolts (supplied welded in position), to the right side tube with nuts as shown. Be sure the top tube's connect plates are positioned down, toward the floor, as shown.



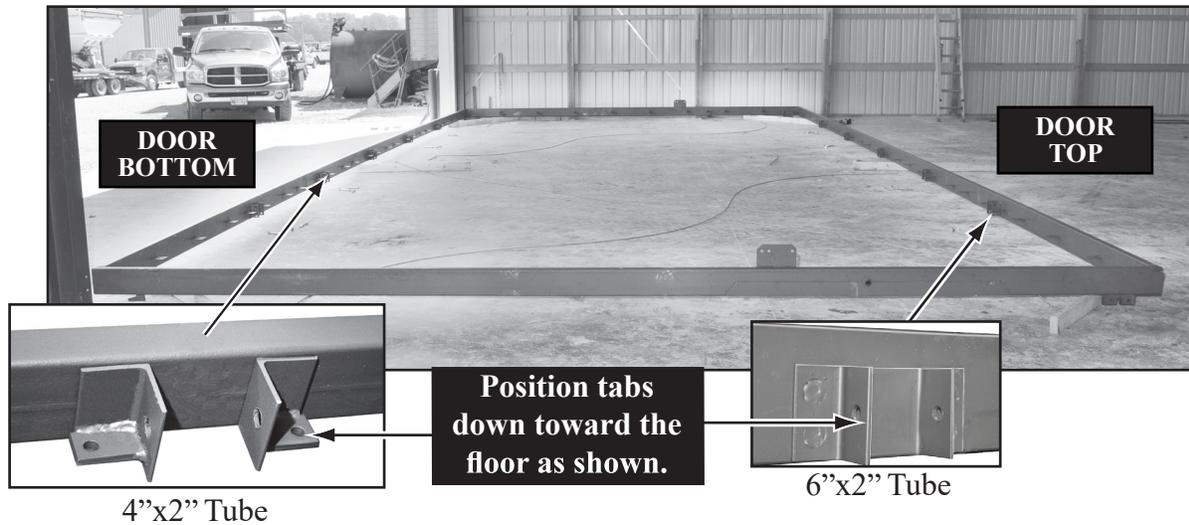
Left side Tube

Right side Tube

START

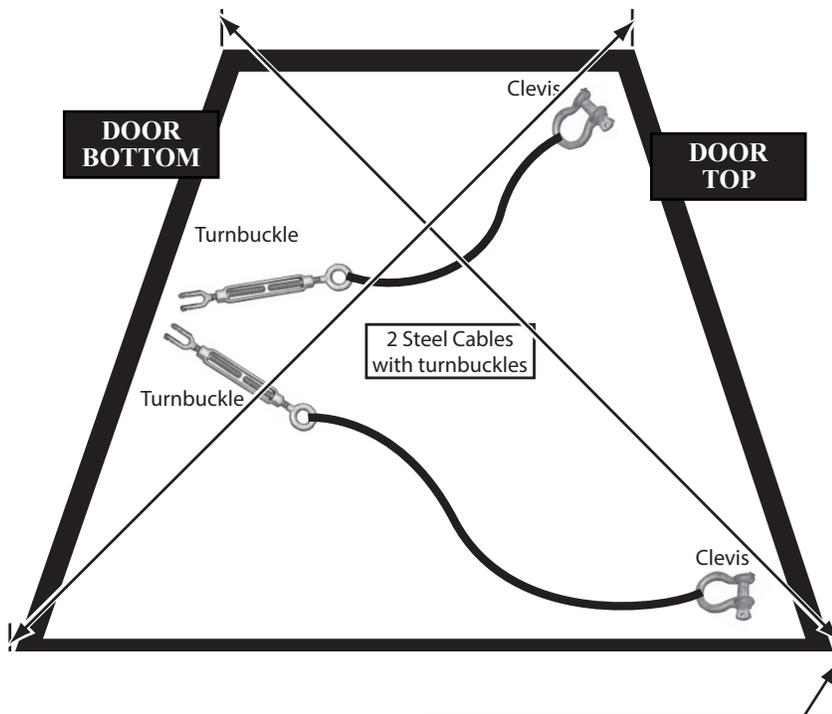
DOOR TOP

Top Tube



START

**1** [ ] Locate the two steel cables with turnbuckles and position them on the floor in the locations shown. You will connect the cables later.



**2** [ ] Use a tape measure and measure the door diagonally corner to corner. Then tighten and loosen the parts and adjust the door as necessary until the door is square; both measurements will be the same.

Assembled Door



START



- 1 [ ]** Loosely mount the vertical intermediate tubes with 5/8" 11 x 5.5" bolts and nuts. Some parts may be a snug fit and require using some force.

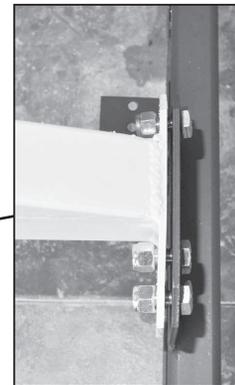
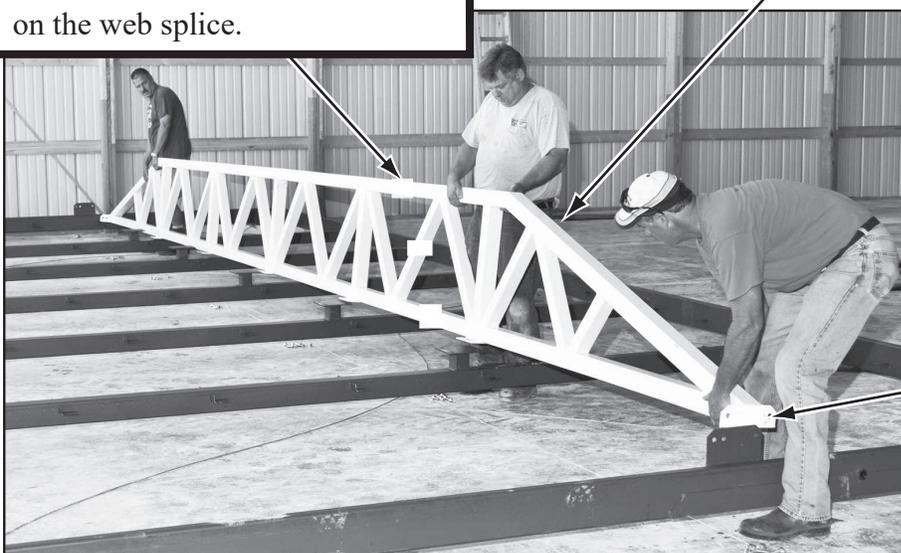


**NOTE:** In these steps, do not tighten the hardware until after you square the door on the following pages.

- 2 [ ]** If the truss is in two pieces, use four 5/8" x 2" A325 bolts for the top cord and bottom cord, and four 1/2" x 1-1/2" bolts and nuts on the web splice.

- 3 [ ]** Loosely mount the truss to each vertical intermediate tube:

- If holes are 9/16" diameter then use four 1/2" 13 x 1-1/4" bolts and nuts, and to each end with three 5/8" 11 x 1-1/2" bolts and nuts.
- If holes are 11/16" diameter then use four 5/8" 11 x 1-3/4" bolts and nuts, and to each end with six 5/8" x 2" A325 + heavy hex nut.

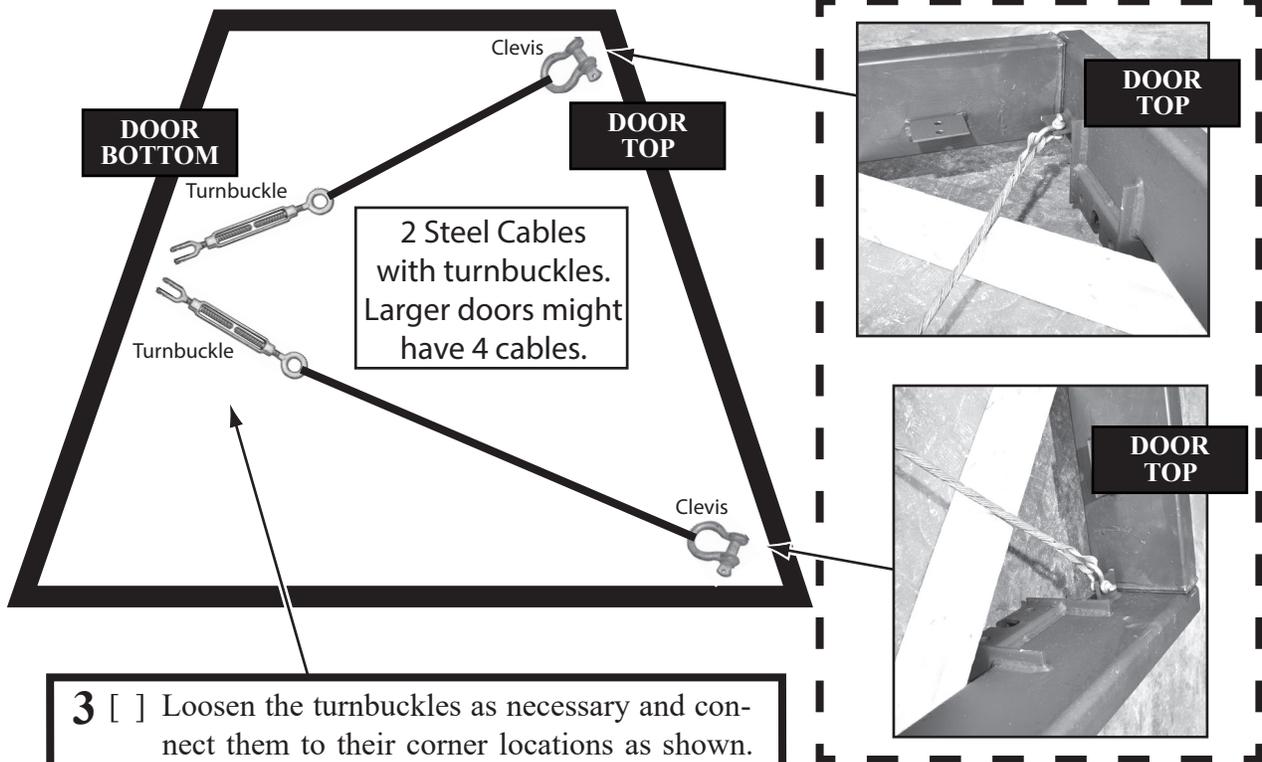


START



**1** [ ] Loosely mount the horizontal pieces to the vertical tubes. The horizontal pieces were your choice to have either steel C-channels or customer-supplied wood 2x4s.

**2** [ ] Connect the steel cable's clevises as shown.



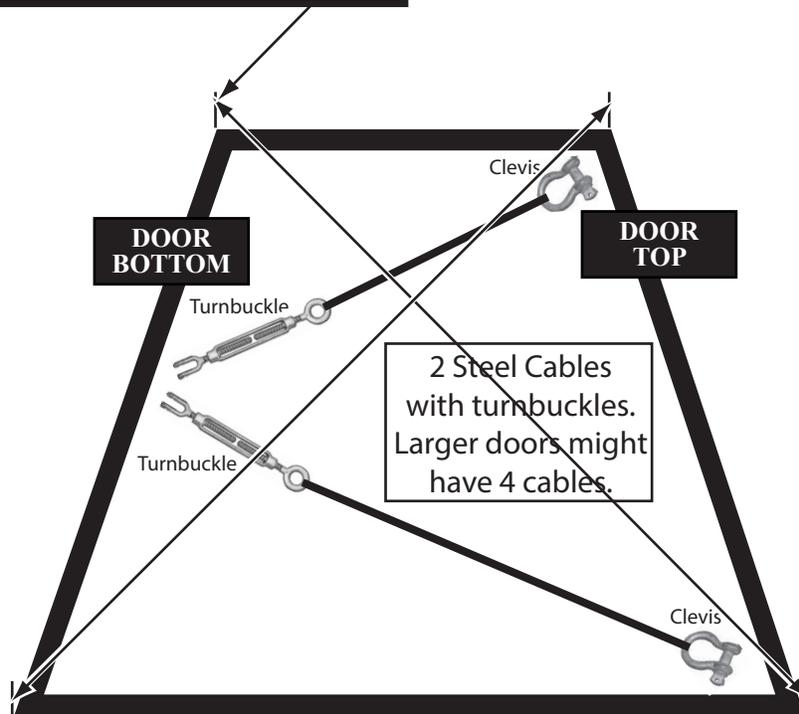
**3** [ ] Loosen the turnbuckles as necessary and connect them to their corner locations as shown. Then tighten the turnbuckles until the cables are snug.



START



**1** [ ] Use a tape measure and remeasure the door diagonally corner to corner. Then retighten and loosen the turnbuckles as necessary until the door is square again; both measurements will be the same.



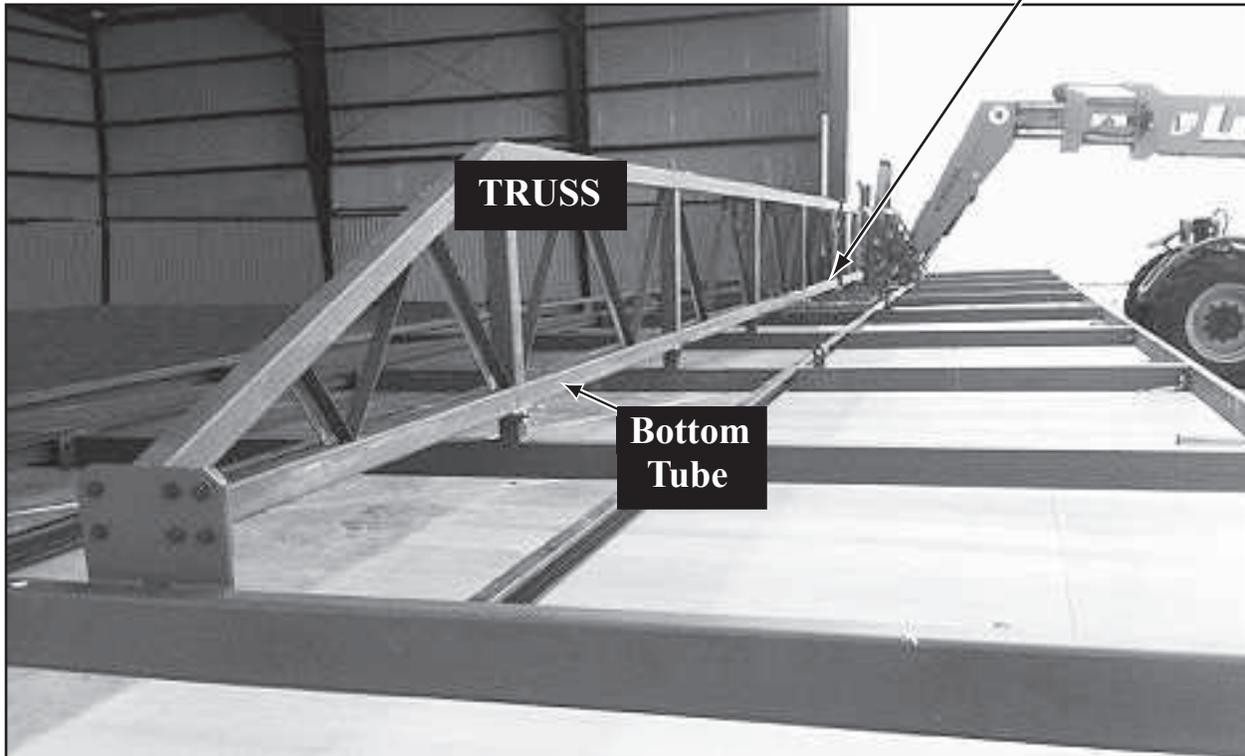
**2** [ ] Tighten all the door's other bolts and nuts.

START



**1** [ ] Make sure the door is centered in the open doorway. Use a pry bar and move the door if necessary.

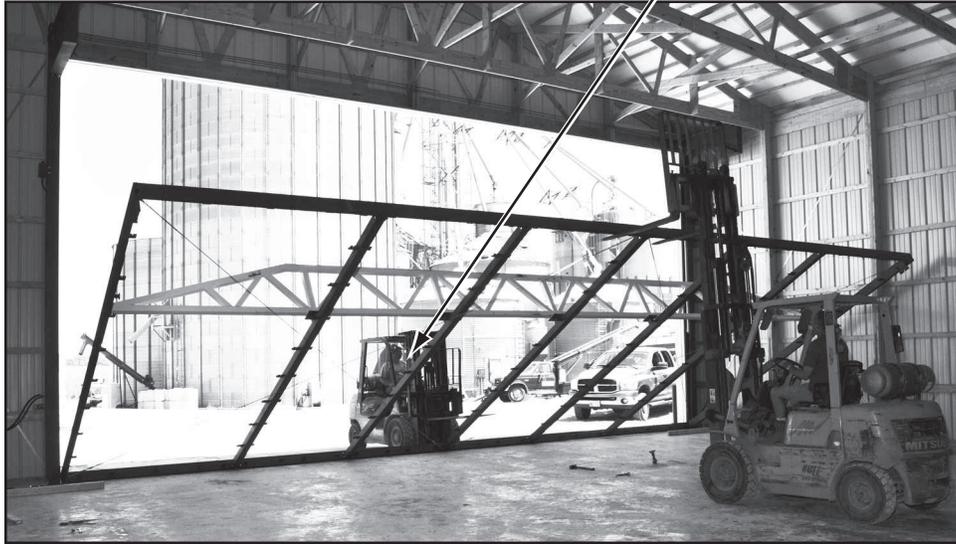
**2** [ ] Position the tines of the lifting device as far apart as possible and slide them under the bottom tube of the truss as shown.



**3** [ ] Check again to be sure the door is centered horizontally in the open doorway. Then lift the door up into position.

NOTE: Small doors, or doors without a truss may be lifted by the top tube as shown on the next page.

**1** [ ] Place a heavy object at the bottom of the door as shown so the door will not slide when you lift the top up into position.



**2** [ ] Check again to be sure the door is centered horizontally in the open doorway.



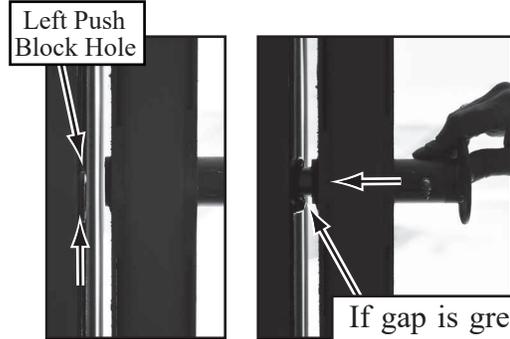
START



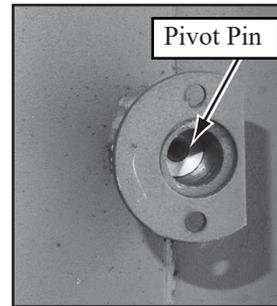
**1 [ ]** In these steps, you will install and secure a pivot pin. But first grease the pivot pin well.



**2 [ ]** Earlier you installed the left push block in the left slide column. Look between the column and door, and then raise the push block until the holes line up. Then insert a pivot pin, tapered end first, as far as it will go.



If gap is greater than 1/2", contact the factory.

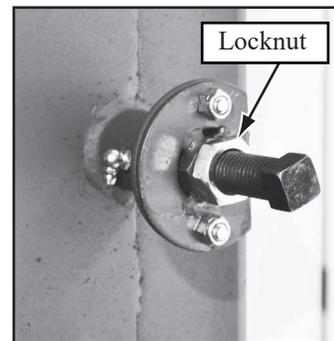
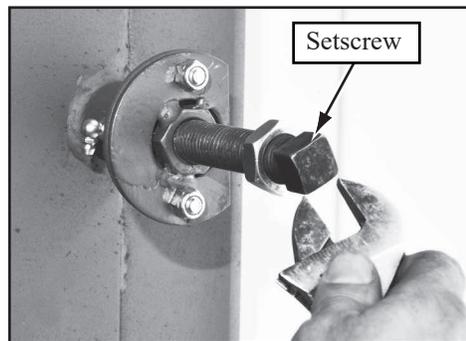
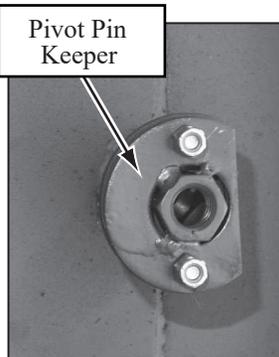


**3 [ ]** Use two 3/8" 16 x 1-1/4" bolts and nuts, and mount a pivot pin keeper in place as shown.

Install a set screw until it just starts bending the side tube, and then back it out 1/2 turn.

Lock the setscrew in place by screwing down the locknut.

**4 [ ]** In a similar manner, grease and install a pivot pin and parts in the right slide column.

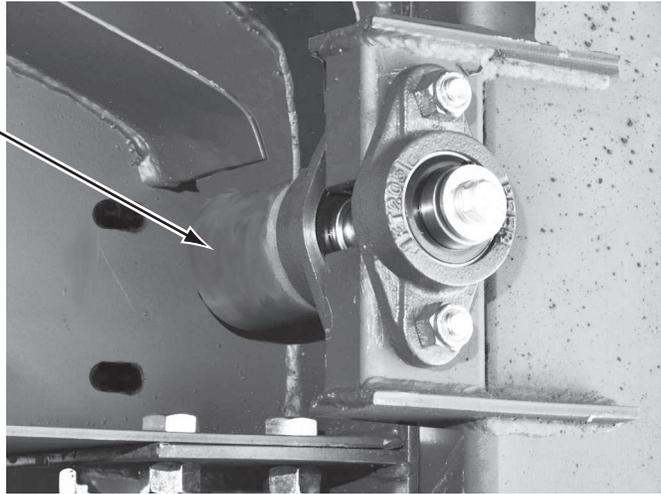


START

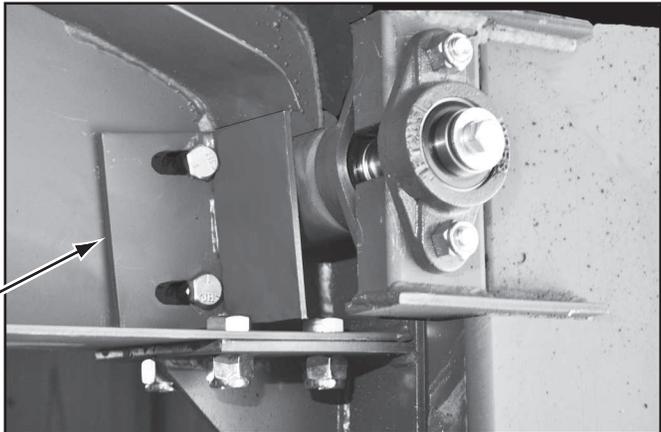


**1** [ ] If necessary, use a forklift or other lifting device and lift the left end of the door an inch or two and install a bearing roller assembly near the top of the left slide column.

- If the bearing shaft is 1" in diameter, use two 1/2" 13 x 3-1/4" bolts and nuts as shown. NOTE: The assembly should slip in easily without lifting the door if all the elevations are perfect.
- If the bearing shaft is 1-1/4" in diameter, use two 9/16" x 4-1/2" bolts and nuts.
- If the bearing shaft is 1-1/2" in diameter, use four 1/2" x 4-1/4" bolts and nuts.

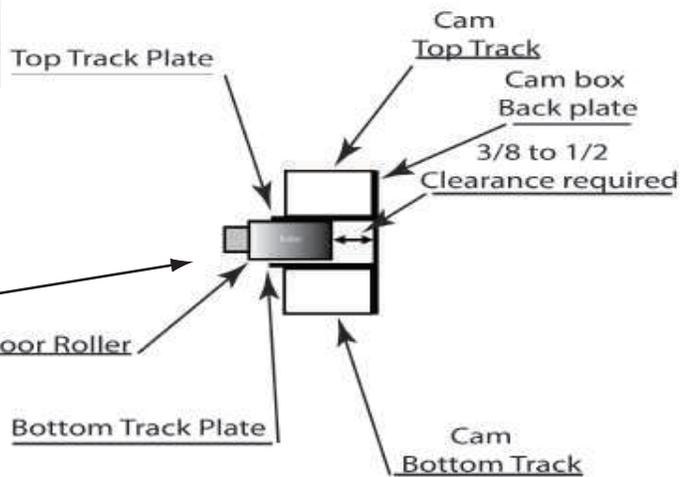


**2** [ ] Install a roller plate with two 1/2" x 1-1/2" bolts, and flatwashers on both sides, and nylon locknuts as shown.



**3** [ ] In a similar manner, install a roller plate in the right slide column.

**4** [ ] Final Cam box adjustment.

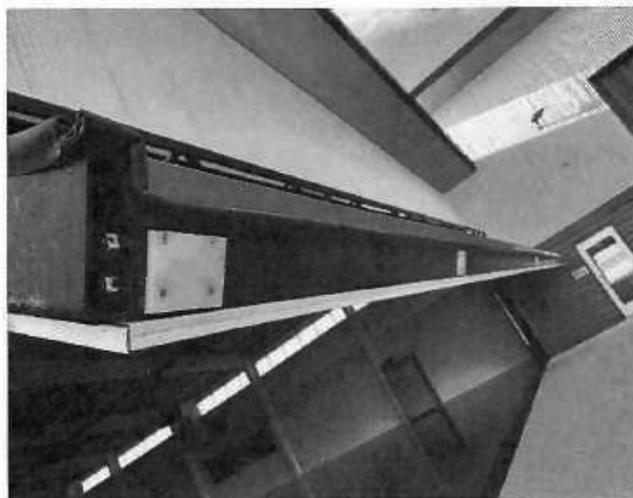
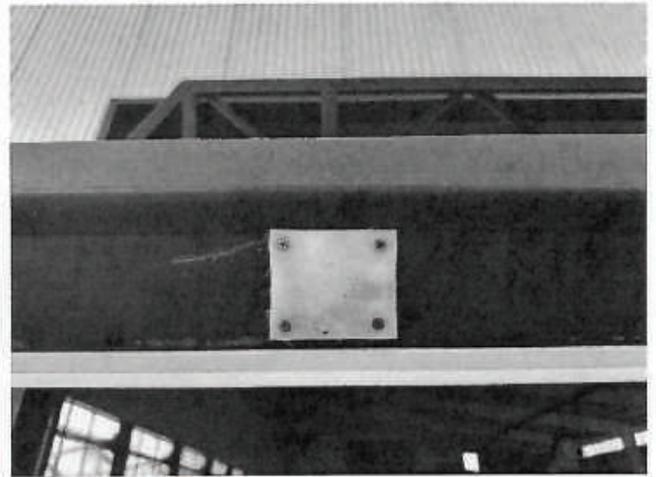
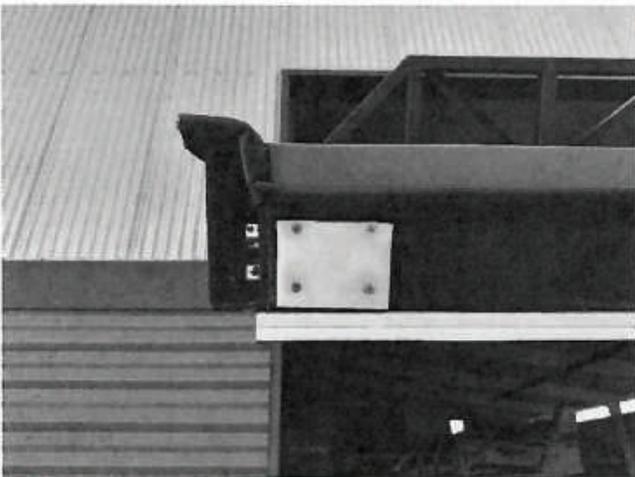


Cam box side profile view to see how roller fits into cam box.



## UHMW Pads for Bottom Tube

All UHMW Pads will be installed on bottom tube, below all vertical columns on inside edge of door. Size of the UHMW Pad will vary depending on size of door. Four screws for each pad will be supplied. You will need to make sure screws are countersunk into the Pad.



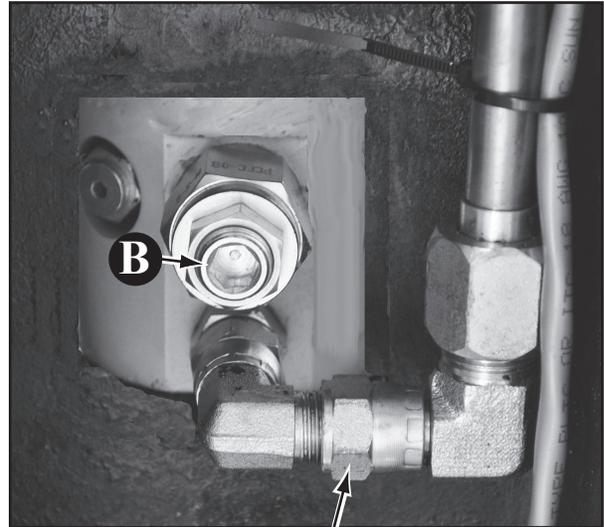
# Initial Tests and Adjustments

START



**1** [ ] Make sure all the hydraulic connections that you made are tight. However, leave connection A at the bottom of each slide column cylinder, loose for now.

**2** [ ] The next steps will tell you to bleed the lines. This will require two people; one to operate the door switch and be at one side of the door, and another person at the other side of the door. Each person needs to have an 11/16" open-end wrench to tighten and loosen connection A.

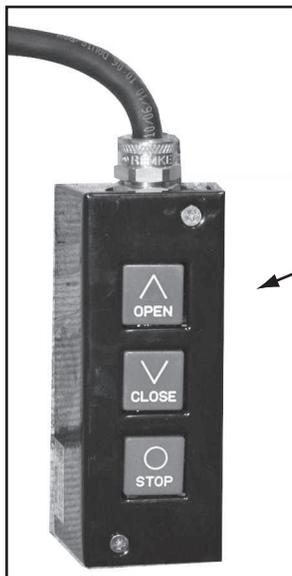


**A**

Loosen Elbow to  
Bleed for UP.

**NOTE:** In the following steps, you will raise and lower the door. When you raise the door, the hydraulic motor pump will run. When you lower the door, the motor and pump will NOT run, and the door will close silently except for the sound of the beeper. The beeper is there for safety reasons. Do not disconnect it. This will void your warranty.

Refer to Page 35 if you want to  
see hydraulic schematics.



START



**1** [ ] Push the power switch to OPEN and bleed the lines at connections A.

(NOTE: The STOP button will override the remote control if you have one of those.)

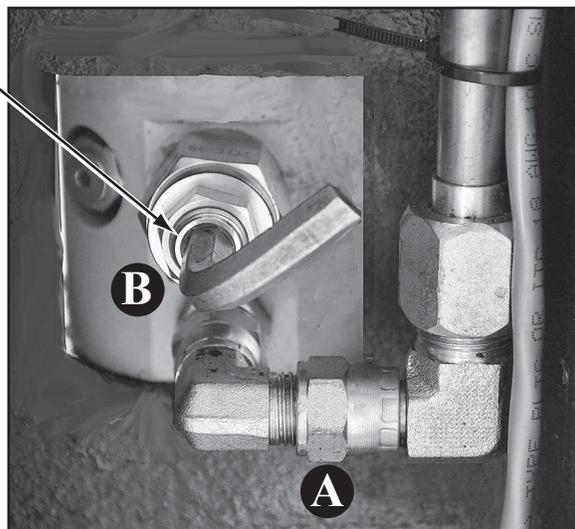
**2** [ ] Lower the door and refill the oil reservoir, but leave 1.5" of space at the top for oil expansion. Then clean any fluid from the floor. When you check the oil level, always have the door closed.

NOTE: The flow control valves (B) were adjusted at the factory. In the following steps, you will adjust them with an allen wrench for optimum performance of your door.

**3** [ ] Raise the door four feet and lower it again. If the door travels smoothly up and down, and one side does not travel down faster than the other, then proceed to the next step. However, if one side does travel down faster than the other, then slow down that side by turning out screw B at the faster lowering side until both sides of the door come down at the same speed.

NOTE: Do not add oil with the door open. Always check or add oil with the door closed.

**4** [ ] Operate the door through its full travel several times. Be sure the rollers do not bind in the cam tracks. If they do bind, loosen the cam braces and reposition the cams until the rollers do not bind. The length of the rollers inside the tracks should be constant through the entire length of door travel, and the cams might no longer be square to the door header. Then resecure the cam braces.



# Final Assembly

START



**1** [ ] Install the Top Trim #1 as shown in step 1 on the next page.

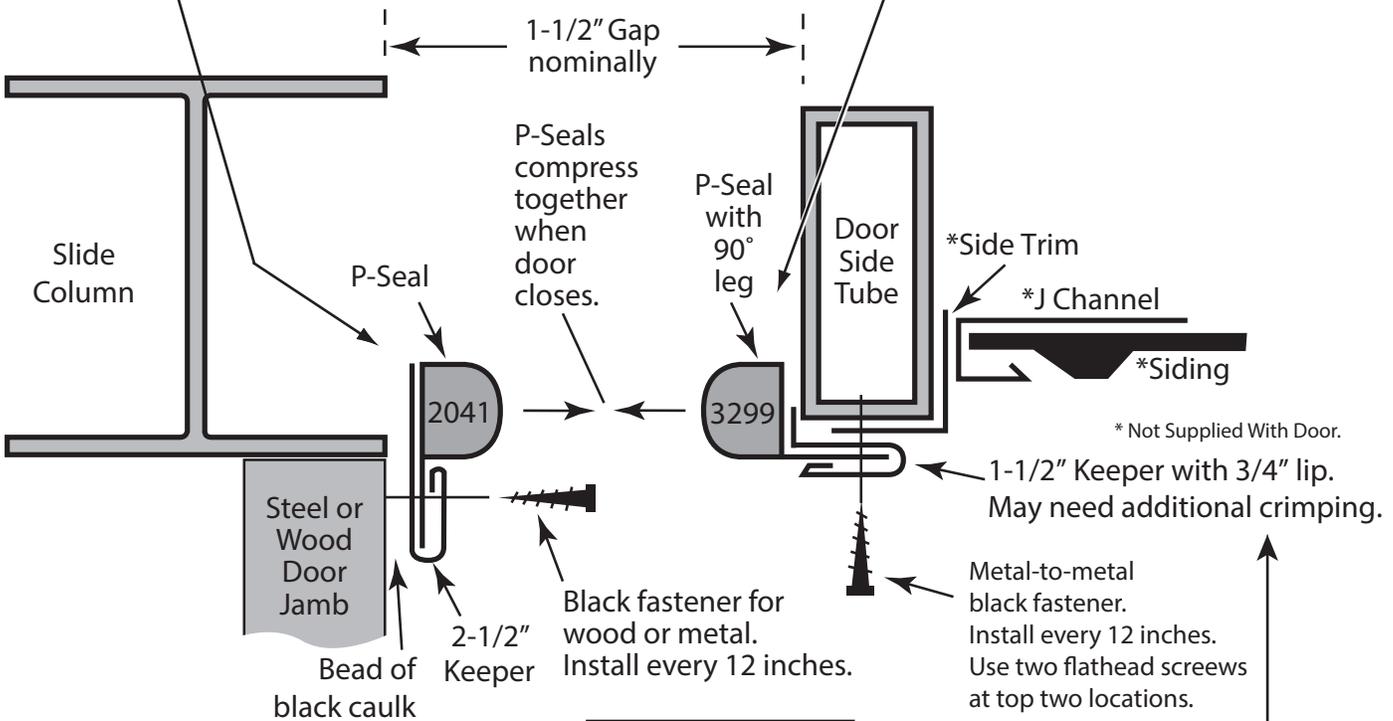
Then install the siding, trim, and insulation (not supplied) on the door. Start the siding at the center of the door and work outward to the sides.

**NOTE:** When you install seals, push the rubber to the back of the keepers. Remove plastic off keeper strips.

**3** [ ] With the door closed, install a P-Seal to the left door jamb with a 2-1/2" keeper and black fasteners as shown.

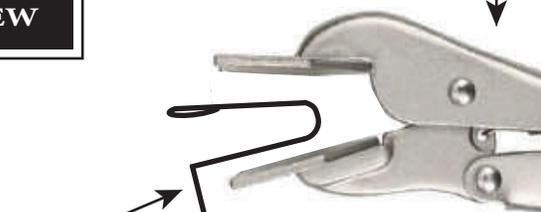
**2** [ ] Operate the door. The time for the door to open and close should still be the same. However, if the added weight now causes the door to close too fast, return to page 29 and turn out screw B, on both sides of the door. Turn out the screws and make adjustments until the door's open and close times are the same.

**4** [ ] Open the door part way and install a P-Seal with 90° leg to the left side of the door with a 1-1/2" keeper, side trim, and black fasteners as shown.



TOP VIEW

**5** [ ] As before, install trim pieces and seals onto the other side of the doorway and door.



1-1/2" Keeper with 3/4" Lip. Keeper Strip

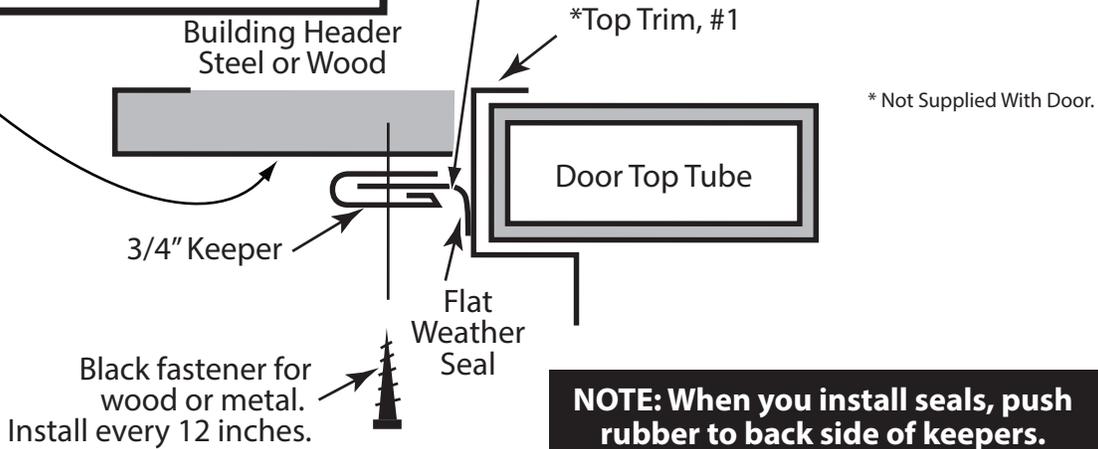
START



**1** [ ] Install the Top Trim to the door's top tube as shown.

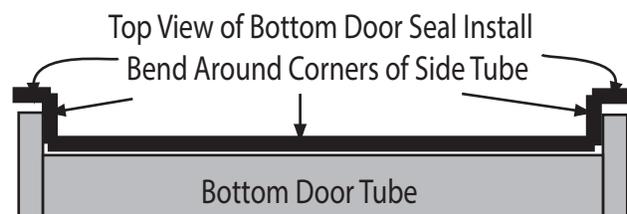
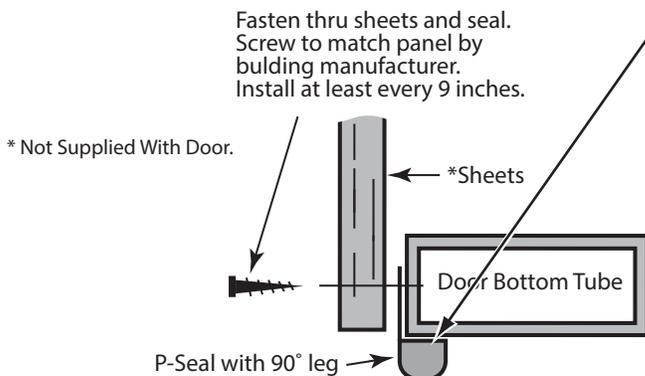
**2** [ ] Close the door. Then, slide the thicker portion of the flat weather seal into the 3/4" keeper and secure it in place with black fasteners.

**3** [ ] Building Header Wrap should Stop on Bottom of Header as Picture Shows. You should not wrap the back of the header.



**NOTE: When you install seals, push rubber to back side of keepers.**

**4** [ ] Open the door to a comfortable level. Then, mount the P-Seal with 90° leg to the door's bottom tube with screws that match your building's other hardware.



START

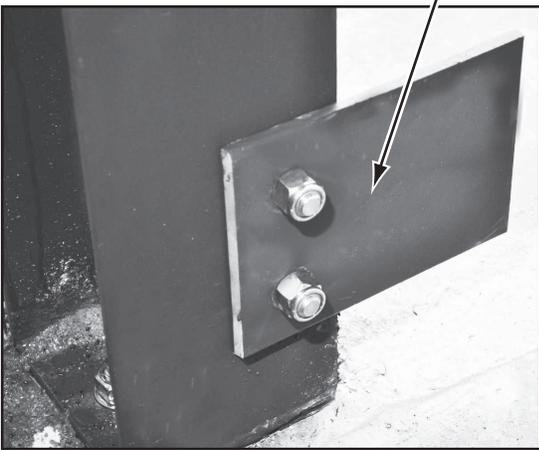


- 1** [ ] Raise the door as shown and then install a 3/8" 16 x 1-1/4" bolt in the left push block as shown.



- 2** [ ] In a similar manner, install a bolt in the right push block.

- 3** [ ] Install a bottom latch plate in the left slide column with two 5/8" 11 x 1-1/2" bolts and nuts as shown.



- 4** [ ] In a similar manner, install a bottom latch plate in the right slide column.

**5** Congratulations. This completes the assembly, installation, and operation of your Higher Power door system.

## WARNING

**NEVER** power wash or allow the hydraulic pump assembly to get wet. This will damage the electronics, and specifically the 12-volt transformer.

# Install Your Optional Remote Control



1 [ ] Turn the power off and remove the cover from the pump assembly.

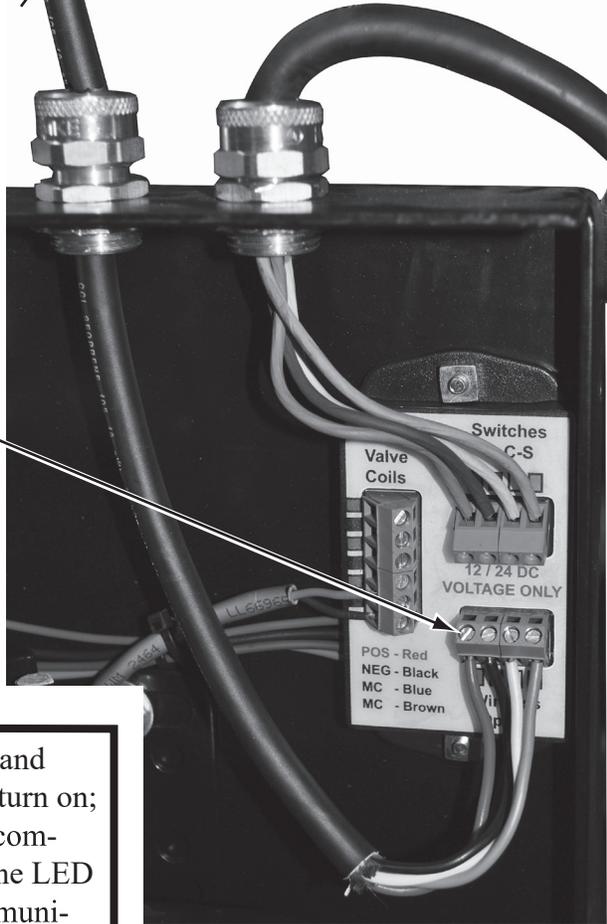
**NOTE: Your optional remote control comes to you preprogrammed. Just install it and use it.**



2 [ ] Mount the remote control receiver outside the pump assembly as shown.

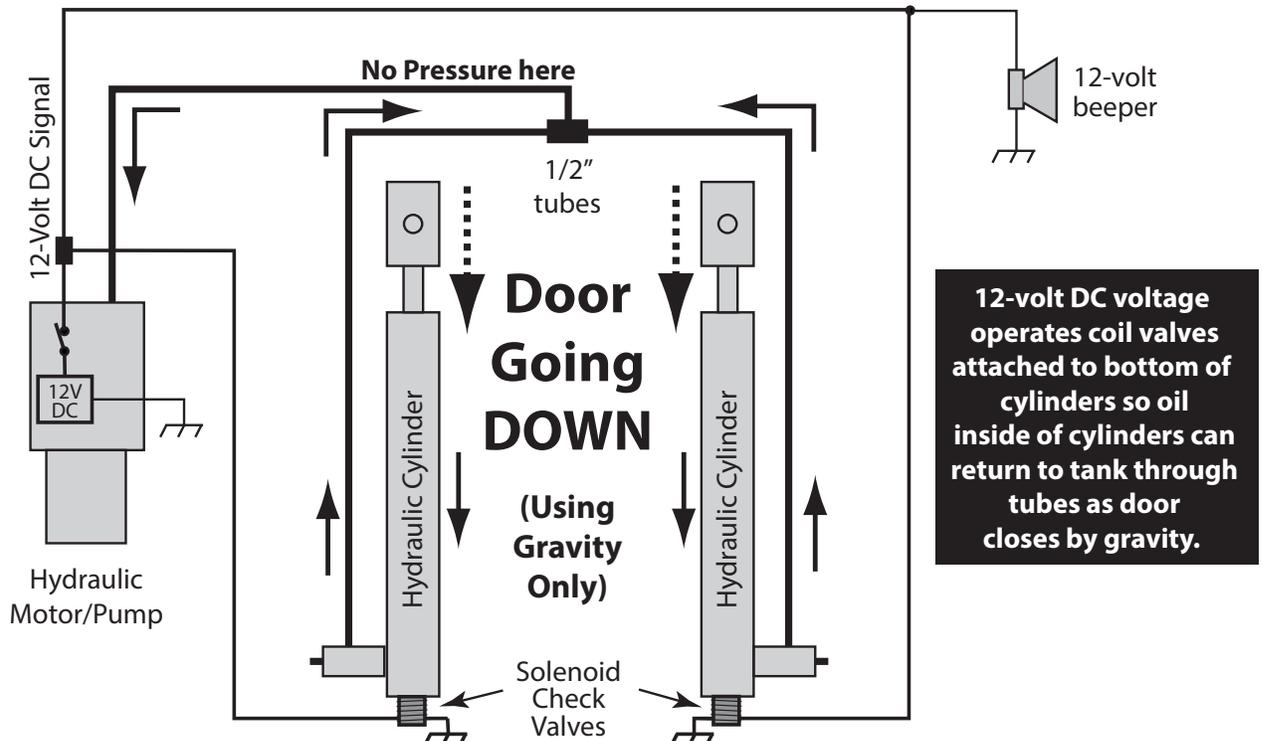
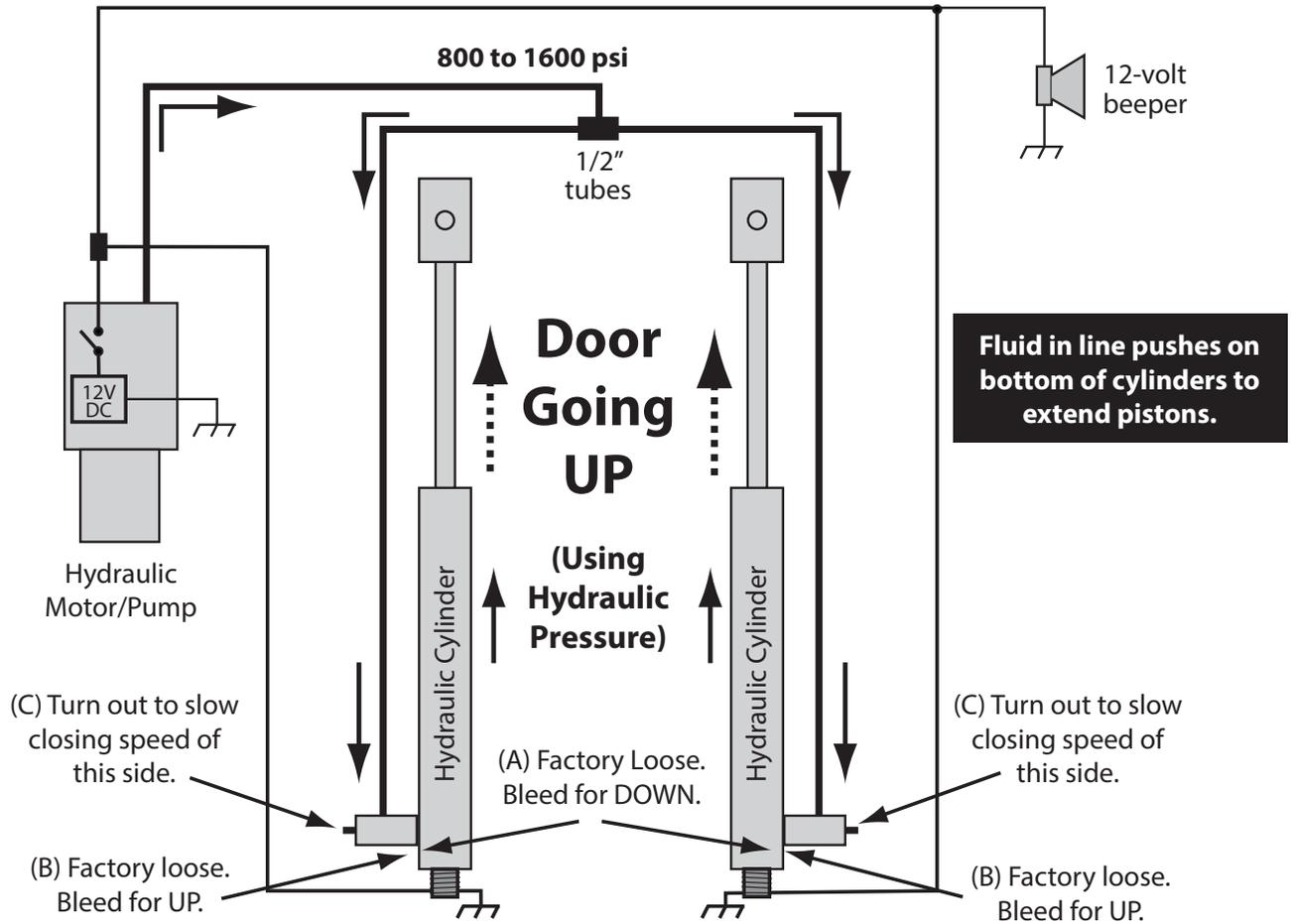
3 [ ] Connect the four remote control wires to their color-coded terminals. Red to red, black to black, white to white, and green to green.

4 [ ] Replace the cover onto the pump assembly unless you still have to mount the assembly onto the wall and connect it to electrical power.



**OPERATION:** Apply power to the door. Then press and hold the Transmitter's power button until both LEDs turn on; then release. The green LED will flash rapidly when communication has been established with the receiver. The LED flashes slowly if the receiver is off or there is no communication between the transmitter and receiver. Press the green button on the transmitter keypad to raise the door and the red button to lower the door.

# Hydraulic Schematics



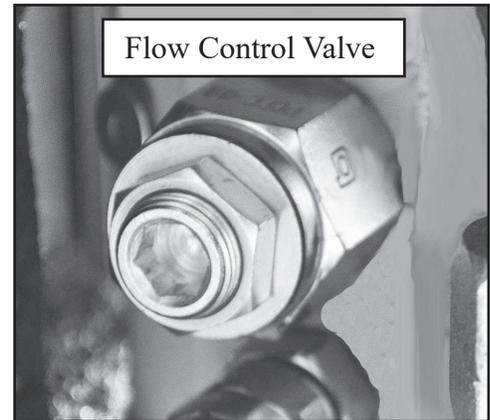
# Troubleshooting

Trouble	Possible Cause
Door goes up OK, but does not come down.	To come down, electric solenoids in the bottom of the cylinders must be supplied electrical current. An LED on the power supply circuit board in the power unit should always be lit. Also, the LEDs on the electric solenoids (see page 17) must be lit when the CLOSE door button is pushed. If they are not, look for a broken or disconnected wire.
One side of door raises or lowers slower than other side.	Foreign material is trapped in slower side <b>flow control valve</b> . (NOTE: To test a valve, interchange the two valves. The trouble should now be in the other side.) Clean or replace the slow side valve. See “Servicing Hydraulic Flow Control Valves” on the next page for how to clean a slow-acting valve.
One side of door raises or lowers slower than other side.	Hydraulic lines not installed properly. The “T” that was installed above the door <b>MUST</b> be centered horizontally so the hydraulic pressure is the same on both sides of the door.
Hydraulic pump stalls out or burns out.	Insufficient electrical power. 240 VAC must be at least 235 volts when the hydraulic pump is operating. 208 VAC must be at least 198 volts when the hydraulic pump is operating. If voltage is low, use larger diameter wire for the electrical power.

## Servicing Hydraulic Flow Control Valves

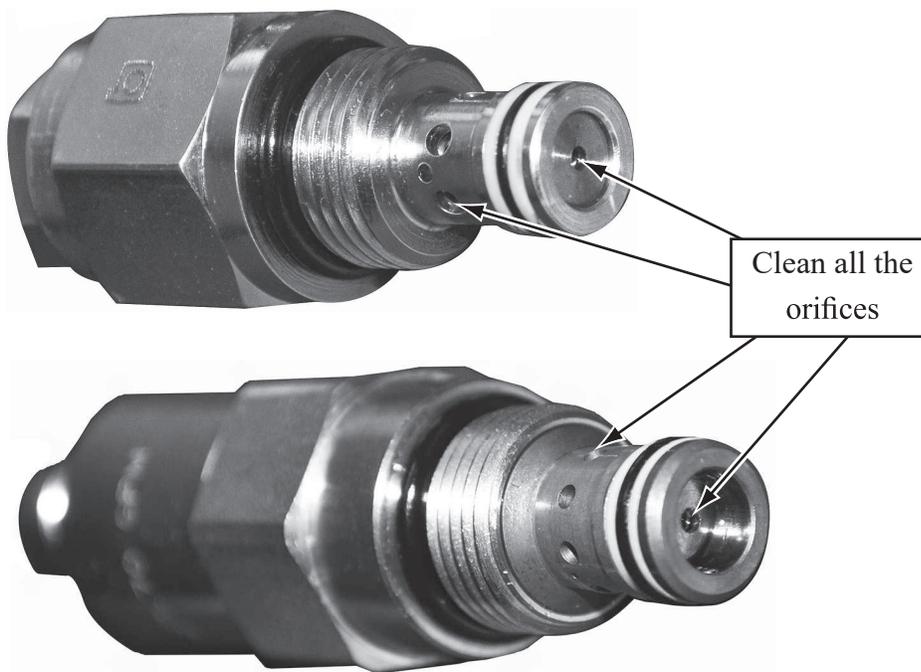
**NOTE:**

Foreign material in the hydraulic lines can sometimes become trapped inside a flow control valve. This can cause one side of the door to raise or lower slower than the other side. The trapped foreign material will keep the hydraulic liquid from flowing freely, which will cause the door to move slower than normal. To solve this problem, first remove the flow control valve from the door system and then remove the foreign material from the valve as follows:



- [ ] Thoroughly clean the orifices. Then reinstall the valve and test for proper operation. Do NOT take these valves apart.

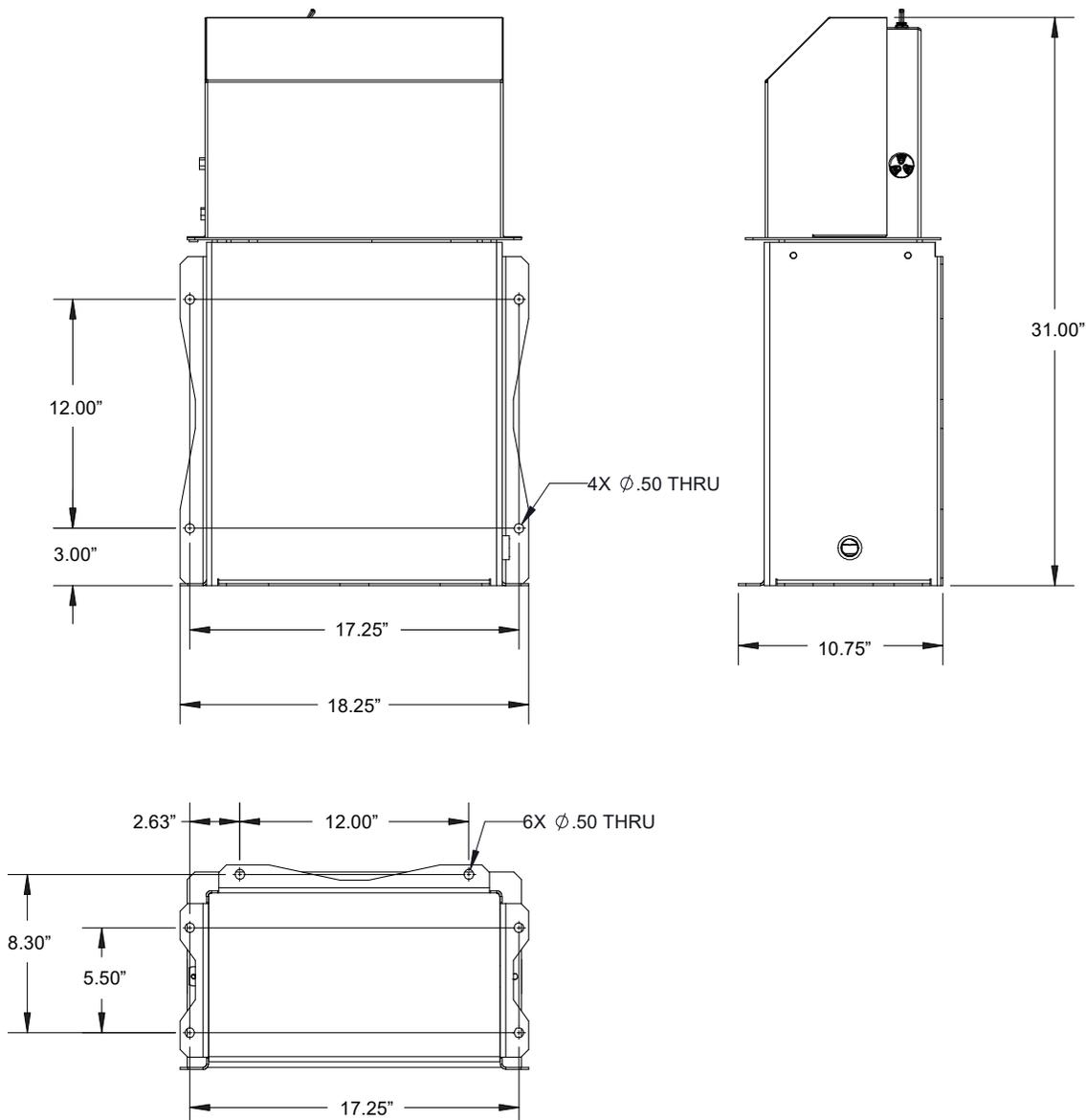
**OR**



## Sheeting the Door

NOTE: When you apply vertical outside sheeting to the door, be sure you start in the center of the door and then work both ways toward the door's edges. This will produce a pleasing and balanced look to the door, and the sheeting will be easy to install. You only need to make small notches in the edges of the sheets where the truss legs penetrate to the door frame. Then secure the panels to the door frame using common fasteners.

## Hydraulic Unit Mounting Holes



# Hydraulic Oil Recommendations

**Do NOT use:** fire retardant fluids, skydrol aircraft fluids, water-emulsion fluids or bio-vegetable-based fluids, as these fluid types can have severe or adverse effects on the hydraulic power unit's life and performance.

**You SHOULD use:** a light- to medium-weight, standard, petroleum-based hydraulic oil of good quality, or a standard grade, cold-temperature-rated tractor hydraulic fluid commonly called "Universal Tractor Fluid" (UTF).

By design, your Higher Power Hydraulic Doors hydraulic power unit has a submersible motor and pump that has good suction characteristics and a wide range of seal compatibility with all standard hydraulic oils and UTF hydraulic fluids.

The newer types of Automatic Transmission Fluids are compatible, but are not recommended because the newer additives do not have the lubricating features of regular hydraulic and UTF fluids.

**Please Note:** When you install hydraulic oil, **cleanliness is key**. Clean all funnels and watch for contamination. Look for and remove any sediment in any containers you use. The flow control valves have very tiny openings. Therefore, a very small amount of dirt or foreign object can keep your door from operating properly.

## Use one of the Following Fluids:

ISO 15 - Temp ranges of: - 40 Deg F to + 80 Deg F

ISO 22 - Temp ranges of: - 20 Deg F to + 100 Deg F

ISO 32 - Temp ranges of: + 30 Deg F to + 130 Deg F

**UTF Fluids** – Universal Tractor Fluids are designed and packed with viscosity additives and these are of the same oil blend of conventional hydraulic fluids. Therefore, they are an excellent choice to also use. DO use a "cold" specification rating, weight or grade.

**Alternate Oil** - If ISO Specific oil is not available, you can use 10-weight hydraulic oil.

**General Info** - An ISO 22 weight rating will cover the majority of door installations for intermittent use in average temperatures. If the door is used often (usually more than once per hour), then going to an ISO 32 weight rating is recommended. For extreme colder regions (and unheated buildings) where operational temperatures go down below -40 Deg F, then use an ISO 15 for faster door operation.

## Summary of Specifications:

There are many brands and manufacturers of hydraulic and UTF oils. They all compare very closely to each other in quality and performance, as they all contain similar "additive" features that make them 'hydraulic-rated oil' to begin with. In summary, purchase a reputable product of good quality that is clean and new in the above weight ratings.

**WARRANTY** - The materials and workmanship of your Higher Power Hydraulic Door system are warranted for six years if installed by a factory-authorized installer or five years if installed by non-authorized personnel. Improper installation, adjustment, alteration, service, or maintenance can cause property damage or personal injury, and will void your warranty. Also, Higher Power Hydraulic Doors reserves the right to change specifications, operation, and appearance of their products without incurring any responsibility to upgrade products already in service. **NOTE:** Operating a door with an underpowered power source will void your warranty.

## Contact Information

Higher Power Hydraulic Doors  
1400 Territorial Road  
Benton Harbor, MI 49022

Phone           269-927-8990  
Fax               269-927-1400

Web site        [www.hpdoors.com](http://www.hpdoors.com)

