Premium Dry Freight - Universal Style - Door Installation

- A **Premium** door can be identified as usually having a two-spring balancer, 2” diameter (nominal) rollers, and end hinges with removable covers. If your Whiting door has any of these features, it probably is a Premium door.

Procedures:

1. Check sizes on the shipping label with your door requirements. This type of door is designed to be cut down in both width and height to fit your specific requirements. Top panel can be cut down to a minimum size of 8”.

Orders are processed using these 4 critical measurements:

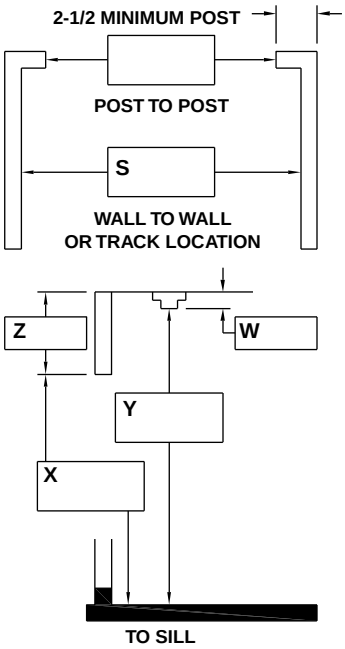


FIGURE 1

REFERENCE FIGURE 1

a.) **Sill-to-Header,** this is the vertical distance between the underside (bottom) of the header and sill (surface on which the door is resting when closed).
DIMENSION “X”

b.) **Depth of Header,** dimension from the underside (bottom of header up to the roof skin or liner.
DIMENSION “Z”

c.) **Roof Bow Depth,** measured from the bottom of the bow up to the roof skin. A bow is a channel-shaped piece that spans the body from side to side, holding the roof skin. A typical bow can range from 3/4” to 2” deep.
DIMENSION “W”

d.) **Wall-to-Wall,** this is the finished dimension between vertical track assembly mounting surfaces.
Note: the standard post width is **2-1/2”**.
DIMENSION “S”

Note: header size, minus roof bow depth, equals effective header. Generally, the minimum effective header height required is **7”**. If you have less than that, build the header down with a channel or other formed metal.

2. Gather tools
- a.) 2 Step ladders
- b.) Portable circular saw
- c.) Extension cord
- d.) 2 Pipe clamps (door height)
- e.) Pencil
- f.) Hack saw
- g.) Welder
- h.) Metal cutting saw or cutting torch
- i.) Light
- j.) Two locking pliers
- k.) Tape measure
- l.) (2) 3/8” X 12” Winding bars
- m.) 7/16” and 1/2”” Wrench

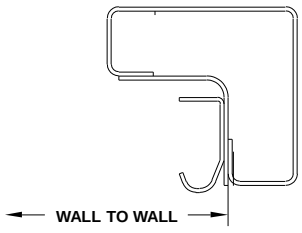
n.) Hammer
o.) Approx. 4” x 4” steel shim
p.) Drill with 3/16” and 1/4” bit
q.) Square
r.) Scribing tool
s.) 2 Saw horses
t.) Air rivet gun with rivet tip
u.) Bucking bar
v.) Punch
w.) Sealant

It is important to understand each step in the installation procedure before attempting to install the door.

3. Check Components
The component parts should be checked to make sure you have all the necessary items and are familiar with them. For a complete new installation, you should have (standard packaging):

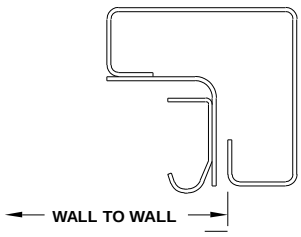
Bundle containing the door, cables, hardware box, and side seals (if ordered),
Balancer spring assembly,
Set of vertical tracks,
Set of horizontal tracks.

4. Install Vertical Track
a.) Vertical track consists of a mounting angle with straight track welded to it. Cut both the mounting angle and track (at the bottom) so the length of mounting angle equals the sill-to-header distance. (See Step 1A)
b.) Temporarily secure track so that they are square against the sidewall and post.
SEE FIGURES 2, 3 AND 4



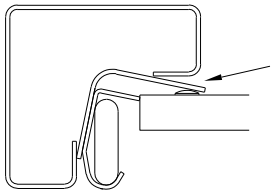
CORRECT

Figure 2



WRONG

Figure 3



WRONG

Figure 4

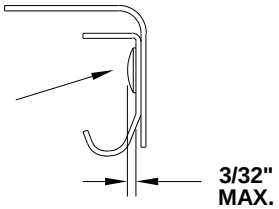


Figure 5

c.) Check that they are parallel with each other by taking measurements at top, bottom and middle. Allow no more than 1/8” difference. Shim accordingly, if necessary. Do not force. Secure in place by welding, riveting or bolting. Caution: Be very careful when putting anything into the tracks. Fasteners should be chosen that have a low head profile. They must be installed squarely - never at an angle. A protruding head will

interfere with roller travel, causing the door to work hard. Such an installation will cause a door to develop hardware and maintenance trouble later on. **SEE FIGURE 5**

d.) Secure vertical to post and sidewall by welding.

e.) Use sealant along seam between mounting angle and post.

5. Install Horizontal Track

a.) It is very important to maintain track spacing on the vertical, onto the horizontal as well. In order to do this, place a 5/16" thick shim between track and mounting angle in the vertical, and allow it to extend up into the horizontal approx. 6".

b.) Check that top of horizontal track is parallel with roof. Standard measurement is 2-3/4" (2" min) from bottom of roof bow to top of track. Cut either horizontal or vertical track as necessary. Be aware that horizontal has a short section (approx. 4") that is straight. It is easier to cut horizontal than vertical. If length to be cut is less than 4", horizontal can be cut, otherwise cut the vertical.

c.) Secure in place with rivets, bolts, or weld in a minimum of 4 places. SEE FIGURE 5 Plug weld holes are provided for attachment near the vertical. A variety of clips or shims are available to ease attachment. Make sure distance between tracks is maintained throughout, especially in the radius. This could be an area where door clearance is tight.

- Shallow header installation requires special track.

6. Install Balancer (2-spring, 2 cable type balancer)

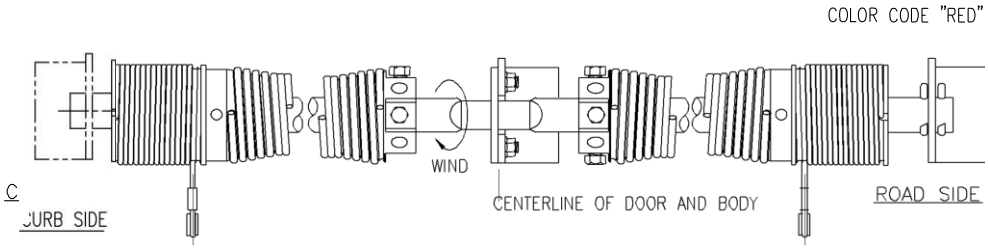


FIGURE 6

a.) 3 mounting brackets are required, center, roadside* and curbside*. It is important that mounting surface is flush (in line) to all three locations. If necessary, install mounting plates of sufficient size to serve as a base for the balancer brackets. (SEE FIGURE 6)

b.) Locate center bracket at centerline of header. Position it so pointed tab is at top, angled section at bottom. **(SEE FIGURE 6)**

c.) The location from centerline for both end brackets can be determined by subtracting 1-1/4" from shaft length and dividing by 2. For example: 93" shaft, less 1-1/4", equals 91-3/4"; divided by 2 equals 45-7/8". NOTE: shaft length can never be longer than door width. If it is necessary to cut the shaft, cable anchor locations on the bottom of the door should be moved.

d.) Brackets should be located as high as possible on header with triangle-shaped portion of bracket up to roof or liner of body.

e.) Attach brackets to header securely.

f.) Install a cotter pin in end of balancer shaft, through hole closest to the cable drum painted red.

g.) Insert the other end of shaft into curbside balancer bracket.

h.) Move balancer so that squared portion of shaft fits into center bracket.

i.) Mount the red end into **roadside** bracket and install second cotter pin to hold it from shifting sideways.

j.) Fasten center clamp on center bracket, making sure the angled edge is towards the bottom.

* When looking out from the rear of the unit, "curbside" is on your left, "roadside" is on your right.

Note: some installations have a very narrow (less than 6") header called a "shallow header". In this case, special balancer brackets are required. Also, a shallow header installation differs from the standard procedure as the end of the balancer, which is painted red, mounts on the **curbside**.

7. Cut Door

a.) Lay bottom and top halves of door on saw horses, **face down**.
b.) Clamp halves together using 2 pipe clamps.
c.) Determine door width by subtracting 2 3/4" from wall to wall (see step 1 D).
d.) Cut door to proper width.
e.) Position hinges. It is important that hinge pin be positioned directly at panel joint. Hinge is located with studs below joint. (Use opposite side end hinge as reference.) At point where halves join, insert bolts.
f.) Using hinge as template, drill for 1/4" end hinge rivets.
g.) Rivet hinges in place.
h.) Mark **steel** "U" channel for cutback, using opposite edge of door as reference. If channel is **aluminum**, do not cut back the channel. However, it is necessary to notch both front and back side of the extrusion at this time.
i.) Using a hacksaw, cut steel channel and wood at an angle, for approx. 1-1/4" long.
j.) Position bottom roller cover on bottom bracket stud plate. Place on edge of bottom panel "U" channel. Using the opposite side bracket as reference, mark location of roller cover tab on channel. Drilling a series of 3/16" holes, create a slot for the tab.
k.) Insert cover in slot and rotate over stud.
l.) Mark location of hole in bracket and drill.
m.) Remove cover, drill second hole and rivet bracket to door.
n.) Install cover, tighten nut.
o.) Locate cable anchor "U" bolts -

93" balancer shaft	42 3/4" off centerline
87" balancer shaft	39 3/4" off centerline
84" balancer shaft	38 1/4" off centerline
82" balancer shaft	37 1/4" off centerline
80" balancer shaft	36 1/4" off centerline

p.) Mark centerline of door on bottom channel.
q.) Position center of lock on centerline mark, moving it down as far as possible.
r.) Using the lock as a template, drill 3 holes across the bottom and in each upper corner (5 places).
s.) Rivet in place.
t.) With lock handle in closed position (horizontal), carefully locate lock keeper at end of handle.
u.) Drill and rivet keeper.
v.) Cut top panel to give proper door height. Door height equals sill-to-header measurement (see step Minimum top panel size is 8".
w.) Install both top closure brackets. Proper location for base is down 5/8" from top of wood, over 1/4" from edge of door.
x.) Cut top seal to door width. Using nails, locate seal on top panel and rivet to door in 3 places.

8. Paint door

a.) Door can be painted now or after installation. This depends upon several factors, such as if the frame is already painted.

9. Install Door Unit (3 people necessary)

a.) Place a locking pliers firmly in the horizontal track (both sides) just before the radius, about 16" from the header. This will keep the door from closing once it is rolled into the track.
b.) Using 2 people, carry the lower half of the door into the unit; face up, with break joint first, bottom of door nearest rear.
c.) Tip door slightly to pass by the frame.
d.) Lower one edge only, resting it on the floor, install rollers into opposite side end hinges and bottom roller bracket* (3 people).
e.) Bring door back to level and repeat with opposite side*. NOTE: keep door against sidewall and slide down wall to keep rollers from falling out.
f.) Move door section to the front of unit by sliding it along the floor on the rollers of one edge.
g.) Place 2 stepladders at end on horizontal track.
h.) Position 2 people at bottom seal (both sides) and 1 person in center of break joint.
i.) Keeping door flat, raise section and insert rollers into track.

j.) Push door down track until it is stopped by the locking pliers.
k.) Repeat procedure with top section*.
l.) Install rubber track stops, bolts and nuts.
m.) Join two halves of door together. Be careful not to over tighten nut. Doing so will pull the head of bolt into the wood.

* Special washers should be placed on roller shafts at first joint (second roller) from bottom and top of door. Depending upon the amount of side movement, 3 or 4 spacer washers (total of 16) should be installed. These washers are very important, as they accurately position the door, keeping it from binding on the track, help cables wind on the drum, provide for correct side seal and lock operation. Check door for movement (1/4" min – 3/8" max)

10. Balancer Winding (2-spring style - wind with door **open**)

Note: 1.) Cotter pins and center clamp have been installed previously.
2.) Instructions are for a standard header, NOT a shallow header.

a.) Install cables onto bottom of door using "U" bolts. Make sure that the cut end of cable is closest the face of door.
b.) Loosen set screws in winding cone.
c.) Wind cable into cable drum following grooves. It is important that end of cable is inserted fully into notch. If this is not done properly, it could interfere with drum movement. Cable should come off of the **bottom** of drum * and connect to door. **SEE FIGURE 7**

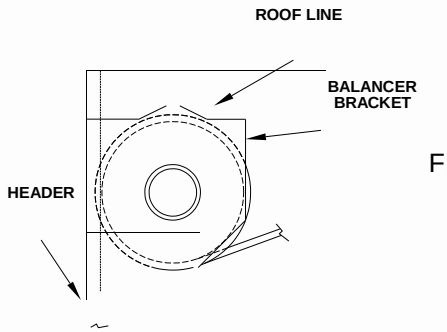


FIGURE 7

d.) When all cable has been put onto drum, continue to wind **4 full turns**. Pull **down** on winding bar for
standard header*. Make sure cable drum is positioned about 1/4" from balancer bracket and tighten
all set screws in winding cone.
e.) Repeat for opposite side.
f.) Remove both locking pliers from tracks. Be aware that door will rebound down to "normal" open
position.
g.) Check door operation. Cable should wind onto drum evenly, and not be pulled over onto spring area
or on top of cable that is already on the drum.
h.) Adjust turns if necessary by adding or subtracting 1/4 turns. A properly adjusted door should be
"balanced" and neither rise nor fall without assistance. When newly installed, the door may creep
upward slowly, but never downward. If necessary, carefully adjust spring tension in ¼ turn increments.

* Shallow Header notes:
- Cable comes off the **top** of drum.
- Wind spring by pushing **up** on winding bar.
- Use balancer with 6 hole winding cones.

11. Latch Plate

Note: Latch plate is attached to the sill, usually by welding. They vary in type, style, material size and location, depending upon the type of lock and part number of side seals. If you are not using a latch plate supplied by Whiting Door Manufacturing, make sure it is of equal thickness and strength. If track spacing is not 5/16", latch plate location must be changed. Not all are automatically placed on the centerline of the sill.

a.) Mark sill using latch plate as template.
b.) Check location by lowering door and comparing with lock. c.) Cut sill if necessary.
d.) Position flush with top of sill (very important).
e.) Weld.
f.) Allow to cool, close door.
g.) Check lock operation.

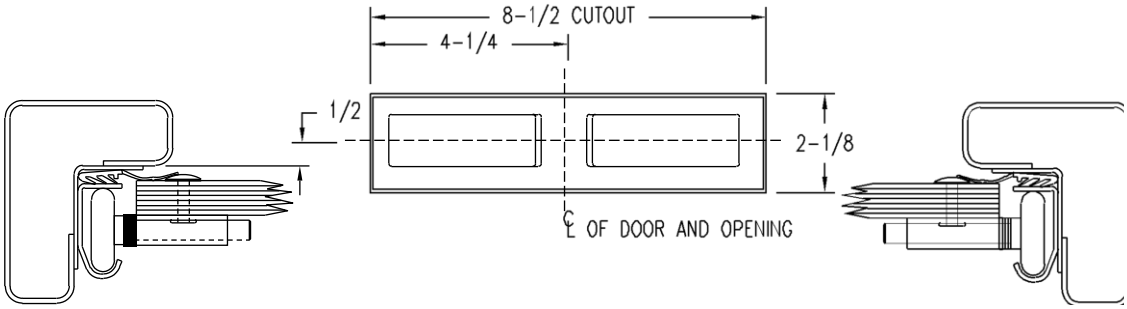


FIGURE 8

12. Top Panel Adjustment

a.) Bring a light in and close door.

b.) Using 1/2” wrench, remove the 2 nuts on top closure base.

c.) Insert roller in track and then into top closure bracket.

d.) Place bracket on base, with tapered end down.

e.) Adjust. (Moving bracket down will bring top seal closer to header. It will also seal against side seals better.

Adjusting down too far may also cause door to hit the balancer when it is opened.)

f.) Notch top seal for cables.

13. Side Seals - optional, install after door and rear frame paint are cured.

a.) Cut to length - opening height plus one inch.

b.) If friction fit type, push into gap between track and mounting angle using a piece of 4” x 4” shim stock and hammer. Start at bottom and work up. Do not try to push all of it in at one time, but make several passes.

c.) If brush type, cut to length with wire or bolt cutters. Position on post so that the brushes are slightly crushed against door. It is important that brush maintain contact as door moves in track. Use pop rivets or sheet metal screws to secure.

14. Final Check List

- ❑ Lock operation
- ❑ Balancer adjustment
- ❑ Top panel adjustment
- ❑ Cables move unobstructed
- ❑ Door centered in opening
- ❑ Door operates freely
- ❑ Side, top and bottom seals function properly
- ❑ Cosmetics