General Purpose Universal Door Installation

- A General Purpose door can usually be identified as having a single spring balancer, 1" diameter (nominal) rollers and end hinges that do not have removable roller covers. If your Whiting door has all of these items, it probably is a General Purpose door.

Procedures:

1. Check sizes on the shipping label with your ordering information.

Orders are processed using these 4 critical measurements:

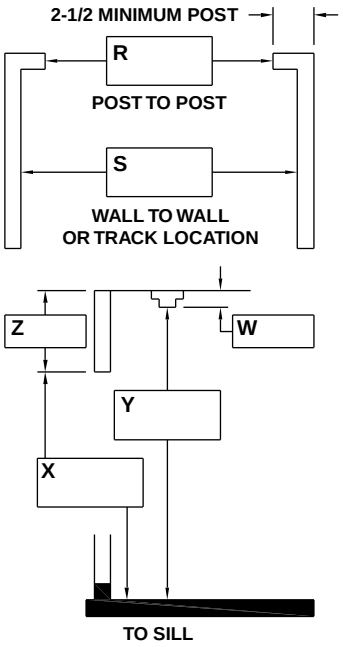


FIGURE 1

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"

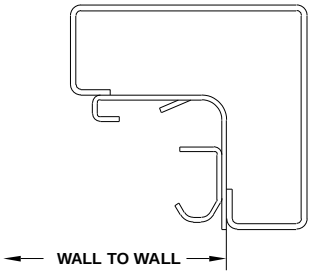
Note: header size, minus roof bow depth, equals effective header. Generally, the minimum effective header height required is **7"**. If you have less than that, build the header down with a channel or other formed metal.

2. Gather tools
a.) 2 Step ladders
b.) Welder
c.) Saw or cutting torch
d.) Light
e.) Portable circular saw
f.) Drill with 1/4" bit
g.) Hack saw
h.) Pencil
i.) 2 Locking pliers
j.) Tape measure
k.) (2) 3/8" X 12" Winding bars
l.) 7/16" and 1/2"" Wrench
m.) Square
n.) Scribing tool
o.) Sealant

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

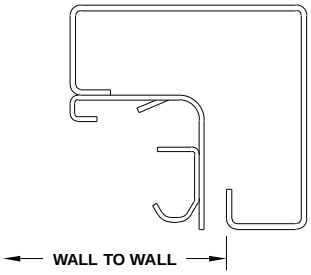
3. Check Components
The component parts should be checked to make sure you have all the necessary items and are familiar with them. For a complete new installation, you should have (standard packaging):
Bundle containing the door, cables, hardware box, and side seals (if ordered),
Balancer spring assembly,
Set of vertical tracks,
Set of horizontal tracks.

4. Install Vertical Track
a.) Temporarily secure track, so that they are square against the side wall and post.
SEE FIGURES 2, 3 AND 4



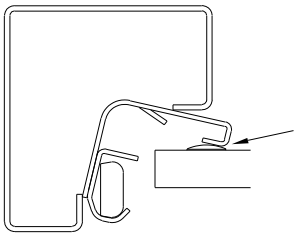
CORRECT

Figure 2



~~WRONG~~

Figure 3



WRONG

Figure 4

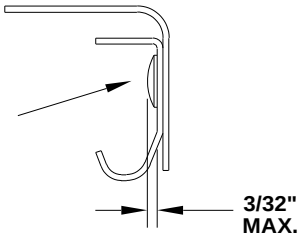


Figure 5

b.) 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)
NOTE: Some tracks are supplied with balancer brackets already attached. Make sure the bracket is positioned close to the roof and welded securely near the top.
c.) Secure vertical to post and sidewall by welding.
d.) Use sealant along seam between mounting angle and post.

5. Install Horizontal Track
a.) It is very important to maintain whatever track spacing on the vertical is, onto the horizontal as well. In order to do this, place a shim of proper thickness (7/8" is standard) between track and mounting angle in the vertical, and allow it to extend into the horizontal approx. 10".
b.) Align horizontal tracks with vertical. Make sure they do not overlap. This provides a smooth transition for rollers.

c.) Check that the top of the track is parallel with roof. Standard measurement is 2-3/4" from bottom of roof bow to top of track. Secure in place with rivets, bolts, or weld in a minimum of 4 places. 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.

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

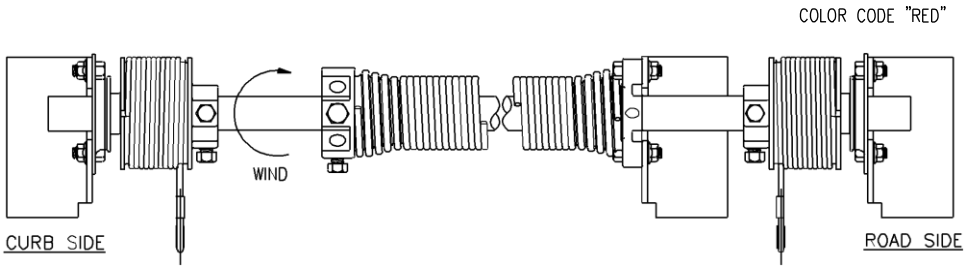


FIGURE 6

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.) When mounting "center bracket", make sure it is square with bottom of header and in line with end brackets.
c.) Attach brackets to header securely.
d.) Loosen set screws on both cable drums and install balancer shaft in bearings on balancer brackets.
e.) Mount the red end of balancer into **roadside** bracket.
f.) Shaft must extend completely through bearings, an equal amount on each side.

* 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 header called a "shallow header". In this case, a special balancer and 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 end hinges. It is important that hinge pin be positioned directly at panel joint. 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 length of bottom panel steel "L" angle, using opposite edge of door as reference.
i.) Using a hacksaw, cut steel angle.
j.) Position bottom bracket in bottom seal groove and drill for rivets.
k.) Rivet bottom bracket in place.
l.) Locate cable anchor and rivet in place, using opposite side as reference.
m.) Mark centerline of door on front of bottom panel.
n.) Position pivot point of lock on centerline mark, moving it down so there is approx 5/16" between bottom of lock base and top of seal.
o.) Using the lock as a template, drill 3 holes across the bottom and in each upper corner (5 places).
p.) Rivet in place.
q.) With lock handle in closed position (horizontal), carefully locate lock keeper at end of handle.
r.) Drill and rivet keeper.
s.) Cut top panel to give proper door height. Door height equals sill to header measurement (see step 1 A). Minimum top panel size is 8".

t.) Install both top closure brackets. Proper location for base is down 13/16" from top of wood, and even with the edge of door. Position so that offset edge of base is at the bottom, and rivet.
u.) Cut top seal to door width. Using nails, locate seal on top panel and rivet to door in 3 places.

8. Paint door
Door can be painted now or after installation. This depends on several factors, such as if the frame is already painted.

9. 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.
b.) Tip door slightly to pass by the frame.
c.) Lower one edge only, resting it on the floor, install rollers into opposite side end hinges and bottom roller bracket* (3 people).
d.) 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.
e.) Move door section to the front of unit, by sliding it along the floor on the rollers of one edge.
f.) Repeat procedure with top section*.
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 bottom section and insert rollers into track.
j.) Push door down track until the locking pliers stops it.
k.) Place 2 wood blocks on sill, near post, both sides.
l.) Remove locking pliers and, using 3 people, carefully lower bottom section down to sill.
m.) Replace locking pliers in track and repeat procedure with top section.
n.) Install rubber track stops, bolts and nuts.
o.) 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.

10. Balancer Winding (single-spring style - wind with door **closed**)
Note: 1.) Balancer has been installed previously.
2.) Instructions are for a standard header, NOT a shallow header.
a.) Loosen set screws in winding cone.
b.) Loosen set screws in cable drum.
c.) Wind cable into cable drum following grooves. It is important that the end of the cable is inserted fully into the notch. If this is not done properly, it could interfere with drum movement. Cable should run between door and header, and then straight up onto cable drum. **(SEE FIGURE 7)**

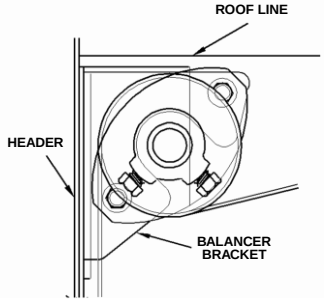


FIGURE 7

d.) When all cable has been put onto drum, place locking pliers onto shaft to keep cable tight.
e.) Repeat for opposite side.
f.) Insert winding rod into spring winding cone and **push up**. Repeat this procedure until all turns have been applied to spring, using the following formula: number of turns = door height divided by 10 + 3 (example: 90" divided by 10 + 3 = 12 turns).
g.) Tighten setscrews on winding cone.
h.) Remove winding bar and locking pliers from shaft.
i.) 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.
j.) Adjust turns if necessary, by adding or subtracting 1/4" turns. A properly balanced 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.

* Shallow Header notes:
- Cable comes off the **top** of drum.
- Wind spring by **pulling down** on winding bar.

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 7/8", latch plate location must be moved. 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.

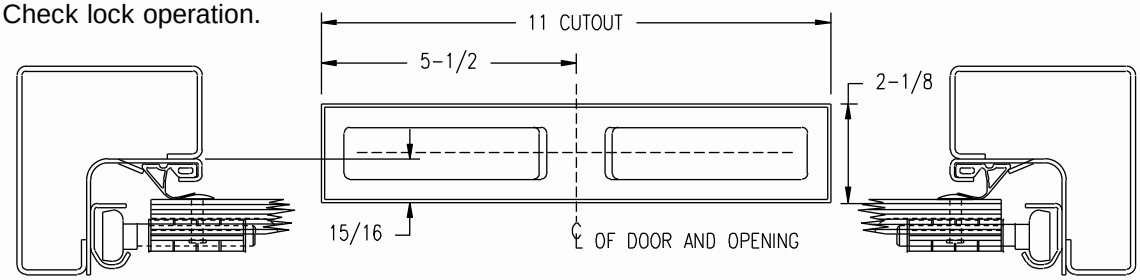


FIGURE 8

12. Top Panel Adjustment

a.) Bring a light in and close door.
b.) Insert roller in track and then into top closure bracket.
c.) Place bracket on base, with tapered end down.
d.) Using 1/2" wrench, tighten bolt into top closure base.
e.) Adjust. Moving bracket down will bring top seal closer to header. It will also seal against side seals better. Adjusting it 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.) Standard rubber type seals are installed, starting at the floor. Place squared edge into mounting angle first.

The pointed edge then goes under the tab of the mounting angle.

c.) Place either a sheet metal screw or drive rivet near the bottom to secure in place. Another method would be to crimp the mounting angle onto seal.

d.) Work up towards the top, stretching the seal slightly to avoid wrinkles. e.) Finish the top in the same method as at bottom.

f.) If brush-type seal, cut to length with wire or bolt cutters. Position on post so that the brushes are slightly crushed against the door. It is important that the brush maintains contact as the door moves in the 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

MAINTENANCE:

1. KEEP DOOR CLEAN – WASH IT PERIODICALLY
2. LUBRICATION
    a. Lubricate with Whiting Easy Up (Item #: P/N 7427) all roller shafts, springs, hinge pins and locking mechanisms as required.
    b. Frequency of maintenance will differ with climate conditions.
3. MAKE A DAILY VISUAL INSPECTION
    a. Check lifting mechanism cables for fraying
    b. Replace damaged cables, check strap for fraying or replace damaged strap.
4. Doors should be painted periodically to protect them from deterioration.
5. MAKE A MONTHY VISUAL INSPECTION
    a. Check door panels and hardware (inside & out) for gouges or paint chips. Repaint as needed.
    b. Check for damaged parts and replace immediately to prevent one problem leading to another.
    c. If you repaint, be certain to readjust tension on lifting mechanism to restore ease of opening and closing.