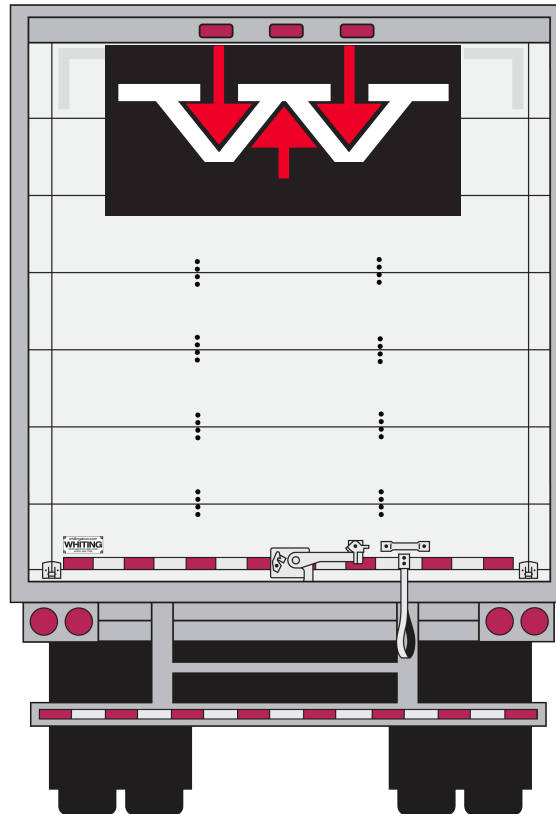




Roll-Up Door Installation Guide



- PREMIUM DRY FREIGHT
- INSULATED
- PREMIUM UNIVERSAL STYLE
- GENERAL PURPOSE DRY FREIGHT
- GENERAL PURPOSE UNIVERSAL STYLE
- MAINTENANCE INSTRUCTIONS
- DOOR INSTALLATION CHECKLIST

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Premium Dry Freight (Plywood) 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 ordering information.

Orders are processed using these 4 critical measurements:

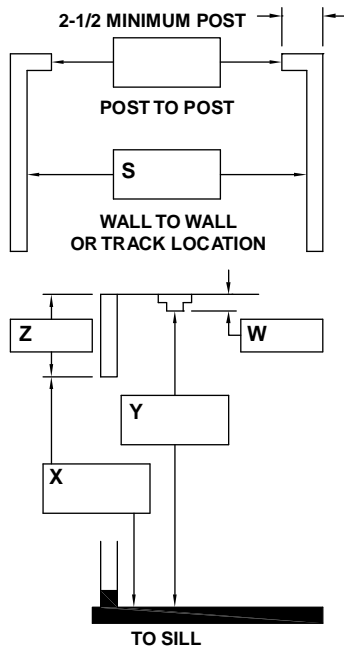


FIGURE 1

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.) Several locking pliers
- f.) Tape measure
- g.) (2) 3/8" X 12" Winding bars
- h.) 7/16" and 1/2" Wrench
- i.) Hammer
- j.) Approx. 4" x 4" steel shim
- k.) Square
- l.) Scribing tool
- m.) Sealant

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

3. Check Components

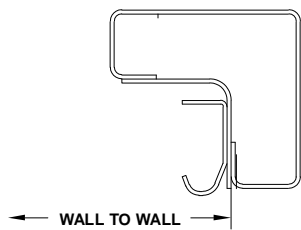
The component parts should be checked to make sure you have all the necessary items and are familiar with them.

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

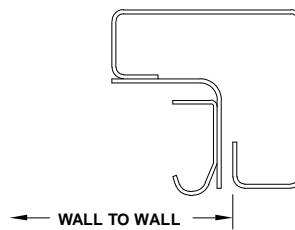
a.) Temporarily secure track so that they are square against the sidewall and post.

SEE FIGURES 2, 3 AND 4



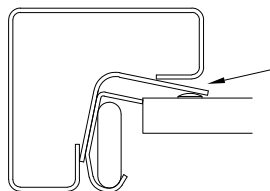
CORRECT

Figure 2



WRONG

Figure 3



WRONG

Figure 4

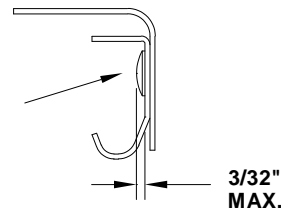


Figure 5

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 track 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 (5/16" 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, using the tongue and groove notches provided. Make sure they do not overlap. This provides a smooth transition for rollers.

c.) Check that top of track is parallel with roof. Standard measurement is 2-3/4" (2" min) from bottom of

roof bow to top of track. 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.

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

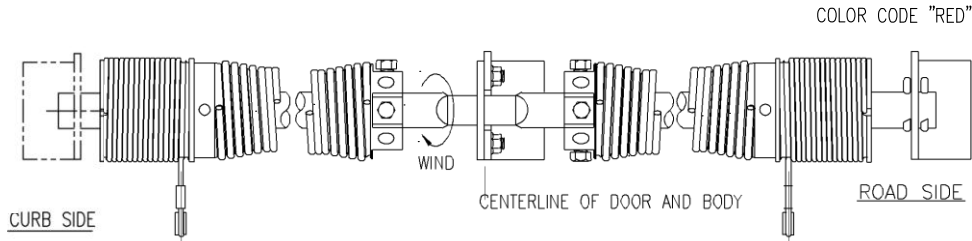


FIGURE 6

- 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".
- 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 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 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. 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 the locking pliers stop it.
- 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.

8. 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.) Loosen set screws in winding cone.
- b.) Wind cable onto 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. **SEE FIGURE 7**



FIGURE 7

- c.) 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 setscrews in winding cone.
- d.) Repeat for opposite side.
- e.) Remove both locking pliers from tracks. Be aware that door will rebound down to "normal" open position.
- f.) 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.
- g.) 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 1/4 turn increments

* Shallow Header notes:

- Cable comes off **top** of drum.
- Wind spring by pushing **up** on winding bar.

9. 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, thickness of door, 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 evenly with top of sill (very important).
- e.) Weld
- f.) Allow sill to cool, close door.
- g.) Check lock operation.

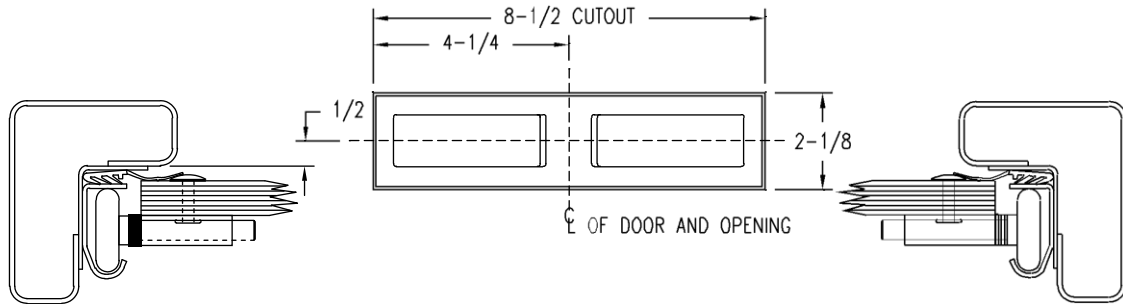


FIGURE 8

10. 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 it down too far may also cause it to hit the balancer when door is opened).
- f.) Tighten nuts.
- g.) Notch top seal for cables.

11. 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. 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 brushes are slightly crushed against door. It is important that brushes maintain contact, as door moves in track. Use blind rivets or sheet metal screws to secure.

12. 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

Please see following pages for further information:

Page 28: Maintenance Instructions

Page 29: Installation Checklist

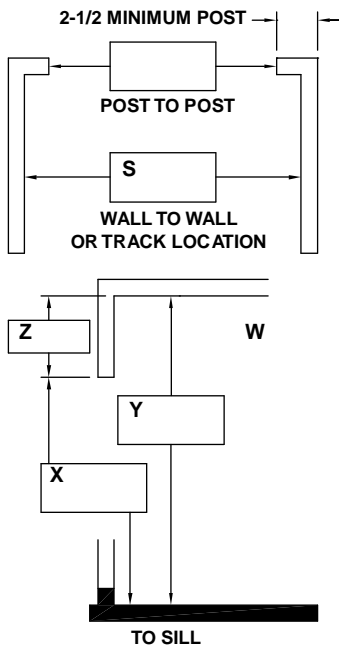
Insulated Door (TempGuard and ColdSaver) Installation

- A **TempGuard** door can be identified as usually having a two-spring balancer, 2" diameter (nominal) rollers, and end hinges with removable covers. Also, a TempGuard door has baked-on white aluminum outside, bare fiberglass inside, and hinges that are **not** painted. **It is approximately 1-5/8" thick.**
- A **ColdSaver** door can be identified as usually having a two-spring balancer, 2" diameter (nominal) rollers, and end hinges with removable covers. Also, it is fabricated with aluminum extrusions and painted inside and outside. **It is approximately 2-1/8" thick.**

Procedures:

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

Orders are processed using these 3 critical measurements:



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.) **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: Generally, the minimum header height required is 8". If you have less than that, build the header down with a channel or other formed metal. Any header less than 10" will cause a portion of the bottom panel to hang down into the opening.

FIGURE 1

2. Gather tools
 - a.) 2 Step ladders
 - b.) Welder
 - c.) Saw or cutting torch
 - d.) Light
 - e.) Several locking pliers
 - f.) Tape measure
 - g.) (2) 3/8" X 12" Winding bars
 - h.) 7/16" and 1/2" Wrench
 - i.) Hammer
 - j.) Approx. 4" x 4" steel shim
 - k.) Square
 - l.) Scribing tool
 - m.) 1/4" Pop rivet tool
 - n.) Sealant

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

3. Check Components

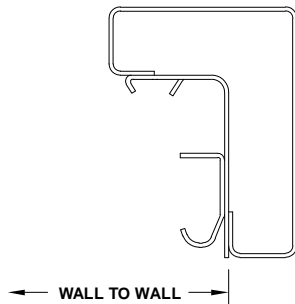
The component parts should be checked to make sure you have all the necessary items and are familiar with them.

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.

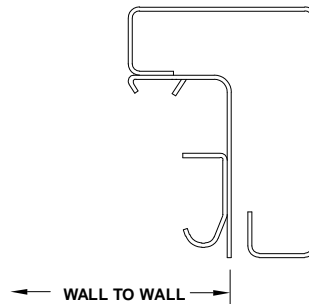
4. Install Vertical Track

- a.) Temporarily secure track so that they are square against the sidewall and post.

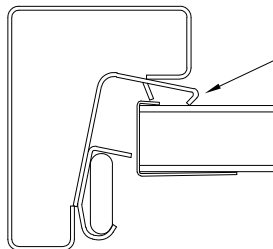
SEE FIGURES 2, 3 AND 4



CORRECT
Figure 2



WRONG
Figure 3



WRONG
Figure 4

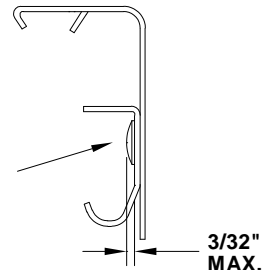


Figure 5

- 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: use care 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)**.
- c.) Secure vertical track 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 track spacing on the vertical, and transfer onto horizontal as well. In order to do this, place a shim of proper thickness (1-5/8" for TempGuard, 2-1/8" for ColdSaver) between track and mounting angle in the vertical, and allow it to extend into horizontal approx. 10".
- b.) Align horizontal tracks with vertical, using the tongue and groove notches provided. Make sure they do not overlap. This provides a smooth transition for rollers.
- c.) Check that top of track is parallel with roof. (Standard measurement is 3", 2-1/4" minimum for

TempGuard, 3-1/2", 2-3/4" minimum for ColdSaver) from ceiling to top of track. Secure in place with rivets, bolts 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.

6. Install Balancer (2-spring, 2 cable type balancer. Plastic cable drums are used on #2376 balancer; metal cable drums are use on #7176 balancer).

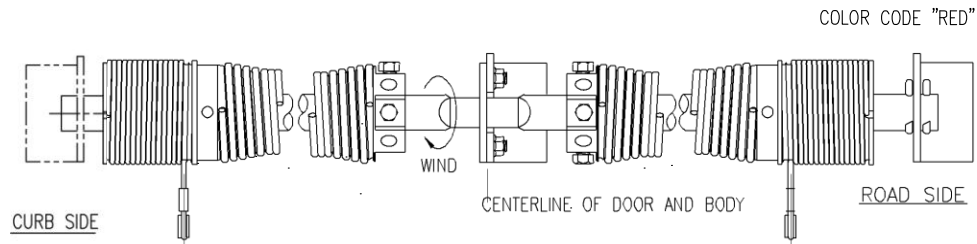


FIGURE 6

- 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 on the header 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".
- 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 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.) Place 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.

7. 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 section of 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 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 of 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 the locking pliers stops it.
- k.) Repeat procedure with other sections*.
- l.) Install rubber track stops, bolts and nuts.
- m.) Join sections together with 1/4" blind rivets.

* Special washers should be placed on roller shafts at first joint (second roller) from bottom, and first joint from top of door. Depending on 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 properly, provide for correct side seal and lock operation.

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

Note: cotter pins and center clamp have been installed on balancer previously.

- a.) Loosen set screws in winding cone.
- b.) Wind cable into cable drum following grooves. It is important that the 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 **bottom** of drum and connect to door. **SEE FIGURE 7**

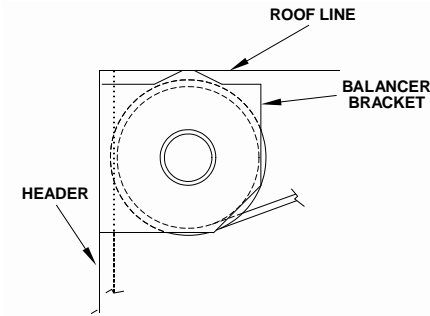


FIGURE 7

- c.) When all cable has been put onto drum, continue to wind **4 full turns**, by pulling **down** on winding bar. Make sure cable drum is positioned about 1/4" from balancer bracket and tighten all set screws in winding cone.
- d.) Repeat for opposite side.
- e.) Remove both locking pliers from tracks. Be aware that door will rebound down to "normal" open position.
- f.) 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.
- g.) 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 1/4 turn increments.

9. Latch Plate

Note: Latch plate is usually attached to the sill by welding. They vary in type, style, material, size and location, depending upon the type of lock. If you are not using a latch plate supplied by Whiting Door Manufacturing, make sure it is of equal thickness and strength. 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 latch plate even with top of sill (very important).
- e.) Weld.
- f.) Allow sill to cool, close door.
- g.) Check lock operation.

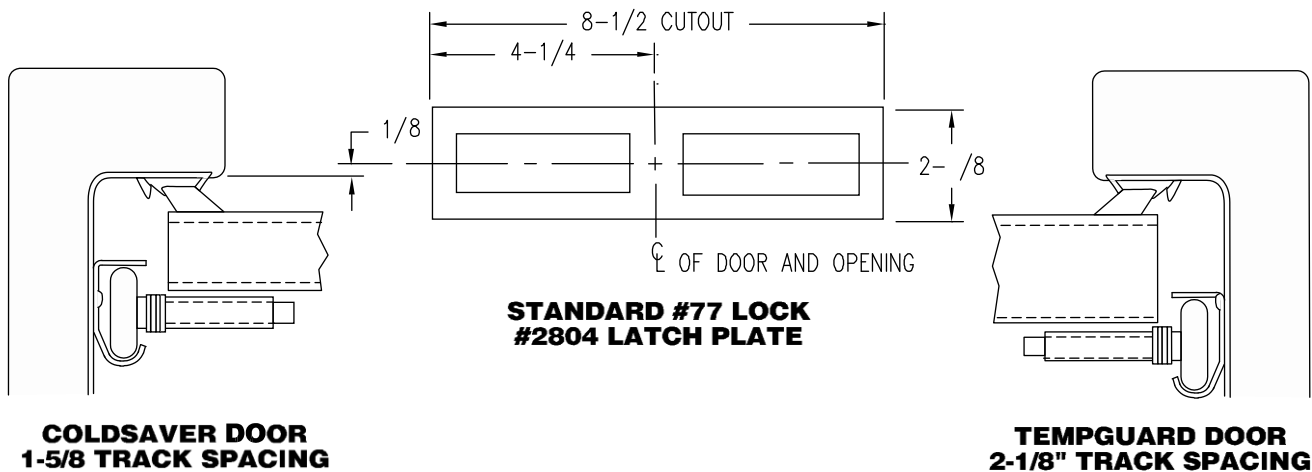


FIGURE 8

10. Top Panel Adjustment

- a.) Bring a light in and close door.
- b.) Using 7/16" wrench, remove the 4 nuts on top closure base.
- c.) Insert 2 rollers in track and then into top closure bracket.
- d.) Place bracket on base studs.
- 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 it to hit the balancer when door is opened.)
- f.) Tighten nuts.
- g.) Notch top seal for cables.

11. Side Seals -install after rear frame paint has cured.

- a.) Standard vinyl type - cut to length - opening height plus one inch.
- b.) Notice that the two edges are different, one is hard plastic, the other edge is soft. Insert the soft edge under the tab of mounting angle.
- c.) Using a piece of 4" x 4" shim stock, strike hard edge of seal with a hammer, causing it to snap into the edge of mounting angle. Start at bottom and work up.
- d.) If brush type, cut to length with wire or bolt cutters. Install using the same procedure as steps b & c above.

12. 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

Please see following pages for further information:

Page 28: Maintenance Instructions

Page 29: Installation Checklist

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:

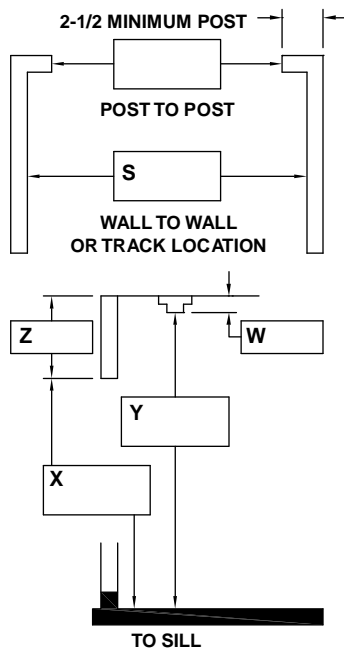


FIGURE 1

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

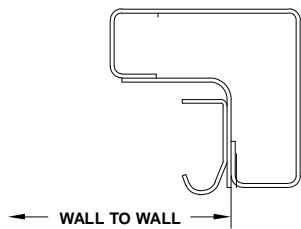
The component parts should be checked to make sure you have all the necessary items and are familiar with them. For a complete new installation, you should have (standard packaging):

- 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

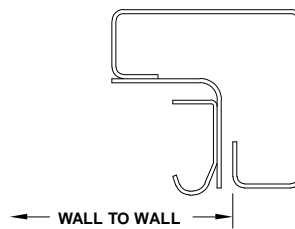
- a.) Vertical track consists of a mounting angle with straight track welded to it. Cut both the mounting angle and track (at the bottom) so the length of mounting angle equals the sill-to-header distance. (See Step 1A)
- b.) Temporarily secure track so that they are square against the sidewall and post.

SEE FIGURES 2, 3 AND 4



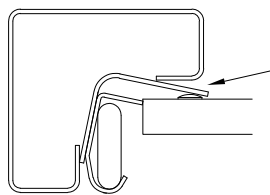
CORRECT

Figure 2



WRONG

Figure 3



WRONG

Figure 4

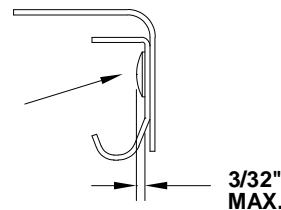


Figure 5

- 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)

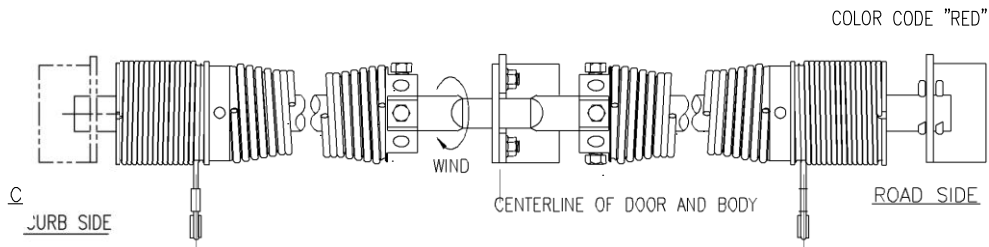


FIGURE 6

- 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**

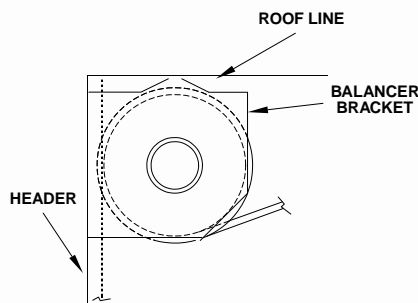


FIGURE 7

- 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 1/4 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.

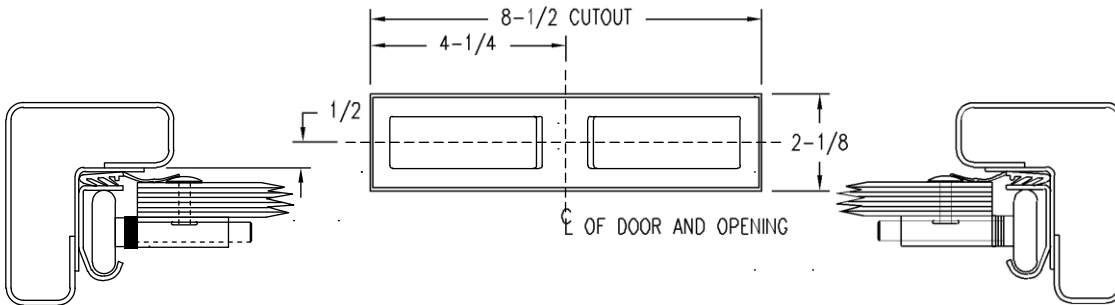


FIGURE 8

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

Please see following pages for further information:

Page 28: Maintenance Instructions

Page 29: Installation Checklist

General Purpose 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:

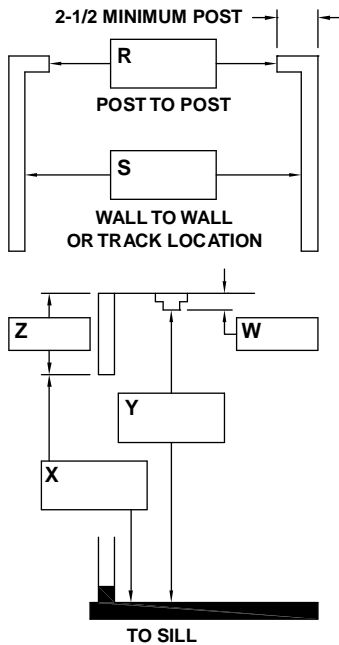


FIGURE 1

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.) 2 Locking pliers
 - f.) Tape measure
 - g.) (2) 3/8" X 12" Winding bars
 - h.) 7/16" and 1/2" Wrench
 - i.) Square
 - j.) Scribing tool
 - k.) 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,

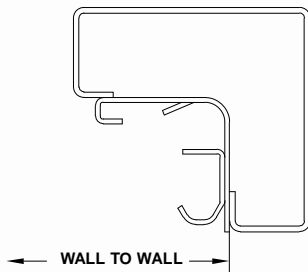
Set of vertical tracks,

Set of horizontal tracks.

4. Install Vertical Track

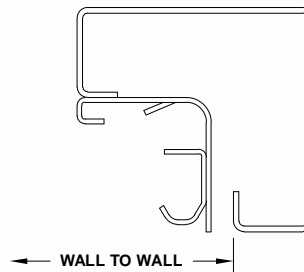
a.) Temporarily secure track so that they are square against the side wall and post.

SEE FIGURES 2, 3 AND 4



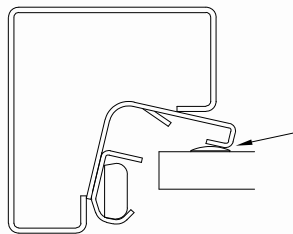
CORRECT

Figure 2



WRONG

Figure 3



WRONG

Figure 4

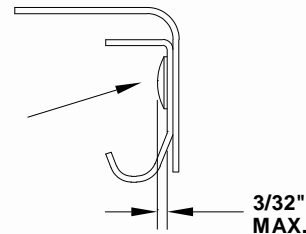


Figure 5

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)

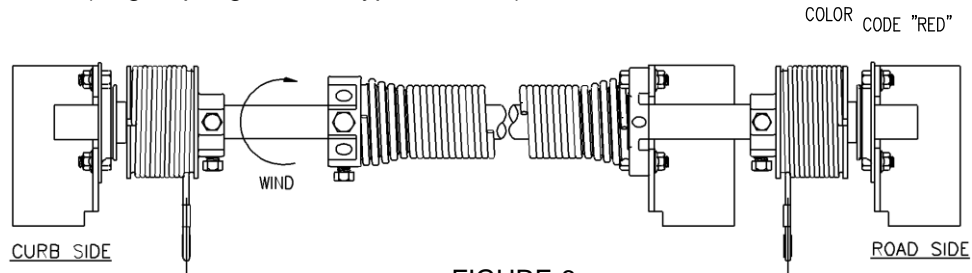


FIGURE 6

- 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 setscrews 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. 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.
 - c.) 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).
 - 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.
 - f.) Move door section to the front of unit by sliding it along the floor, on the rollers of one edge.
 - g.) Repeat procedure with top section*.
 - h.) Place 2 step ladders at end on horizontal track
 - i.) Position 2 people at bottom seal (both sides) and 1 person in center of break joint. j.) Keeping door flat, raise bottom section and insert rollers into track.
 - k.) Push door down track until the locking pliers stop it. l.) Place 2 wood blocks on sill, near post, both sides.
 - m.) Remove locking pliers and, using 3 people, carefully lower bottom section down to sill. n.) Replace locking pliers in track and repeat procedure with top section.
 - o.) Install rubber track stops, bolts and nuts.
 - p.) 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, and provide for correct side seal and lock operation.

8. 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 setscrews 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)

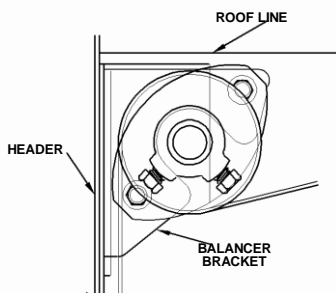


FIGURE 7

- d.) When all cable has been put onto drum, place locking pliers on 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 has 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 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 1/4 turn.

* Shallow Header notes:

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

9. 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 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.

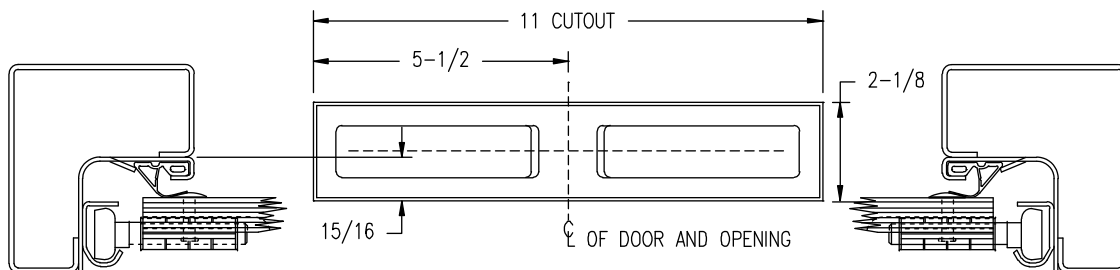


FIGURE 8

10. 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 on 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.

11. 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, 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 maintain contact as the door moves in the track. Use pop rivets or sheet metal screws to secure.

13. 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

Please see following pages for further information:

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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:

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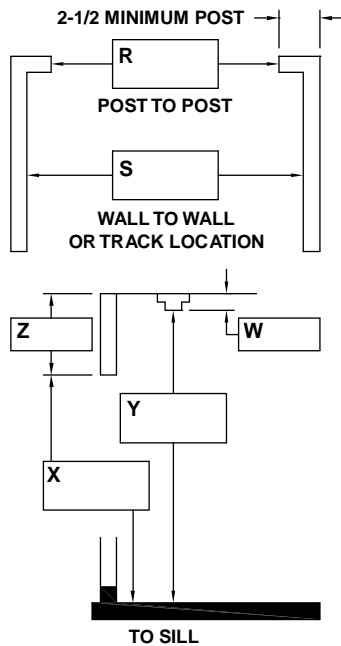


FIGURE 1

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,

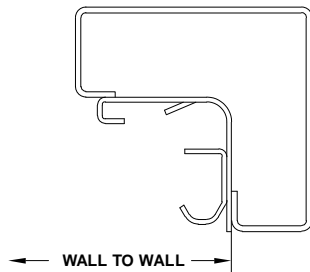
Set of vertical tracks,

Set of horizontal tracks.

4. Install Vertical Track

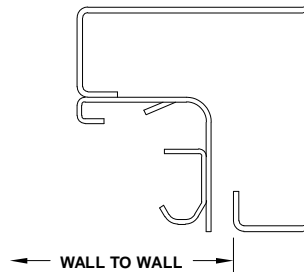
a.) Temporarily secure track, so that they are square against the side wall and post.

SEE FIGURES 2, 3 AND 4



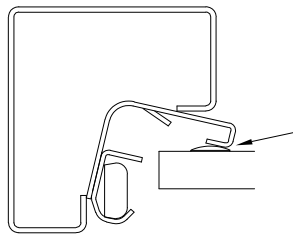
CORRECT

Figure 2



WRONG

Figure 3



WRONG

Figure 4

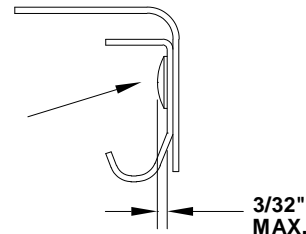


Figure 5

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)

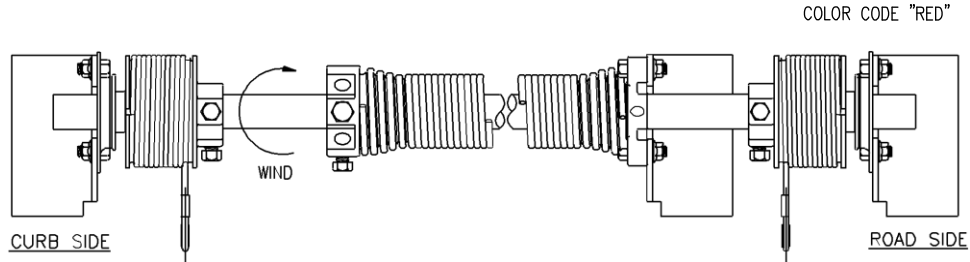


FIGURE 6

- 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)**

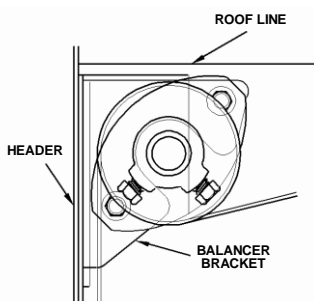


FIGURE 7

- 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 1/4 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.

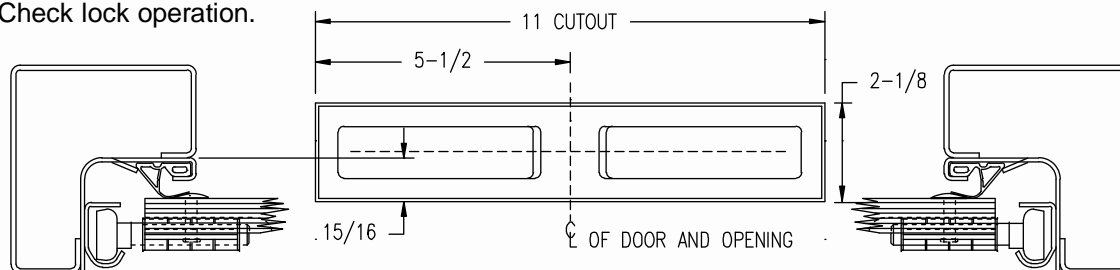


FIGURE 8

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 MONTHLY 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.

Please see following pages for further information.

Page 29: Installation Checklist



Whiting Roll-Up Door Installation Checklist

DOOR SERIAL #

TRAILER/UNIT #

DOOR UNIT:

- Lock must be easily latched, as well as opened. Cam must be aligned with lock plate so that lock falls into cutout easily when closed. Handle is easily held closed by keeper.
- Side plate between track and door should be approximately 1/4" – 3/8"
- Spacer washers limit side travel, keeps panels from contracting track and help cables wind properly. They are placed at top joint, and bottom joint roller shafts only. Each of these 4 points should have 3 or 4 (or as needed) spacer washers.
- Top panels have adjustable roller brackets. Panel position should be nearly vertical, sealing at the sides as well as across the entire top.
- Top seal should be cut or slit perpendicular to the door face at the cable location while the door is in the closed position.
- The outer ends of bottom seal should be cut back so as not to damage side seals. This applies to all insulated doors and to dry-freight doors where specified.

Notes:

BALANCER:

- 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 1/4 turn increments.
- Check cables with door in fully open position. Looking up and with the door open, the cables should be nearly vertical from the cable anchor to the cable drum. Both cables should be wound onto their cable drum in a uniform pattern. No grooves are to be skipped. The cable must not cross over itself or be interfered with by header, etc. If so, reposition cables and/or drums to eliminate condition.
- Two cotter pins at one end of shaft prevent side movement. Investigate that these 2 pins are properly installed. (2 spring balancer)

Notes:

TRACK:

- Horizontal and vertical tracks have alignment tabs where the horizontal and vertical tracks connect. This prevents any misalignment between tracks. Make sure that the notch and tab are engaged properly to provide a smooth roller transition between horizontal and vertical track. The leg of horizontal track must also be flat against the mount angle.
- The wall-to-wall mounting dimension should be per the OEM specification and consistent (+/-1/8") when measured at:

	Dimensions:
Floor	_____
Midpoint of the opening	_____
Radius	_____
Midpoint of the horizontal track (final resting point of door when open)	_____
- Fasteners (and weld) secures the track to side wall, as well as frame, without interfering with roller travel.
- Rubber stop, nut and bolt are installed at the end of each horizontal track. The nuts and bolts should be a snug fit without crushing the track.

Notes:

