



Sun Windows & Doors

Bi-Fold Door Installation Instructions

Tools and Materials Needed:

Power Drill/Driver
Driver Bits - 6" #2 Philips, 6" #2 Square
8" Philips Screw Driver (hand tool)
Drill Bits - 3/4", 1/8"
Polyurethane Sealant (AAMA 808 compliant for windows and doors)
Shims
Tape Measure
Level
Putty Knife
Hammer
Prybar

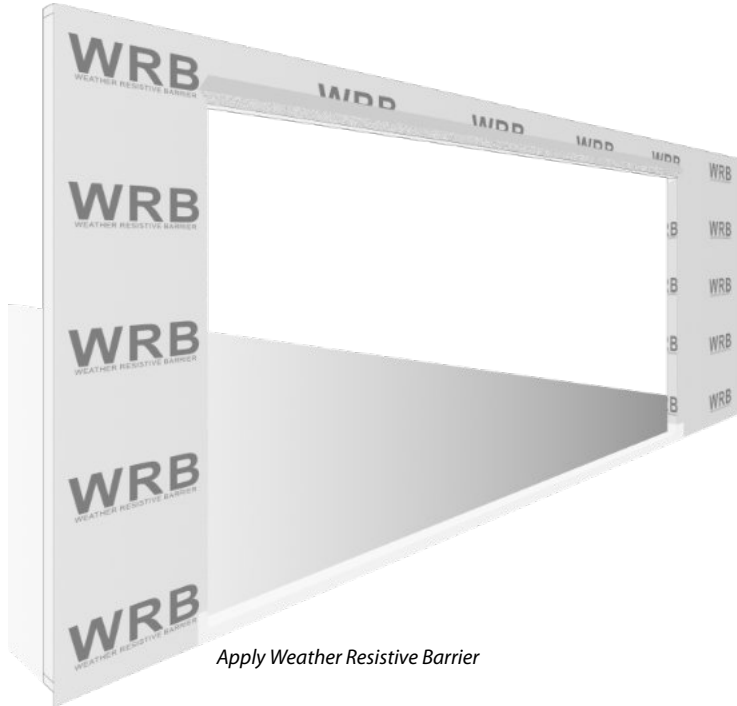
Fasteners: most fasteners are supplied. However, fasteners for sill and the exterior nail fin are not supplied
For nail fin - 1-1/2" to 2" galvanized roofing nails
For Sill - Depending on the type of floor, you will need exterior coated grade construction screws or concrete anchors (as applicable)

Bi-Fold Door Installation Instructions



Prepare Rough Opening:

- Frame the Rough Opening to the correct size for the door, 2 x 6 framing required
- Header must be sized properly to support panels (see Centor Engineering Guide at Sunwindows.com>Products>BiFold Door>link under Additional Information)
- Rough Opening must be square within 1/8" measured diagonally
- Allow a minimum of 1/4" clearance on each side and 1/2" at the head
- Wall surface must be in True Plane
- The floor surface at the sill must be absolutely level. This is critical for proper installation and operation of the door.
- Floor Channel and ADA Sill requires special recessed floor groove for installation of channel
- The sides must be plumb



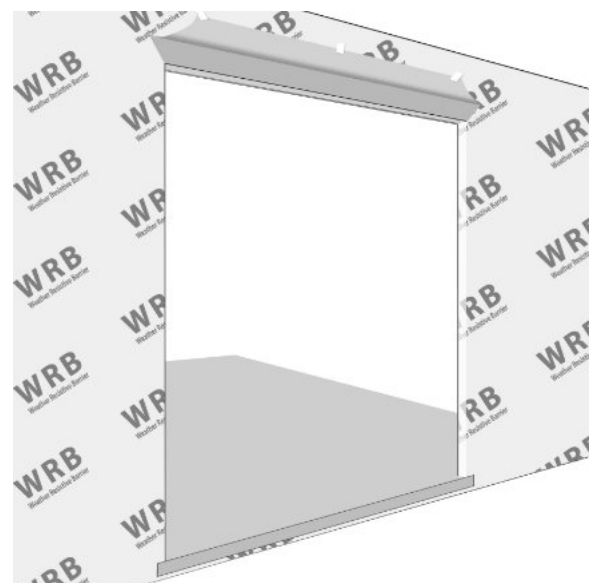
Apply Weather Resistive Barrier



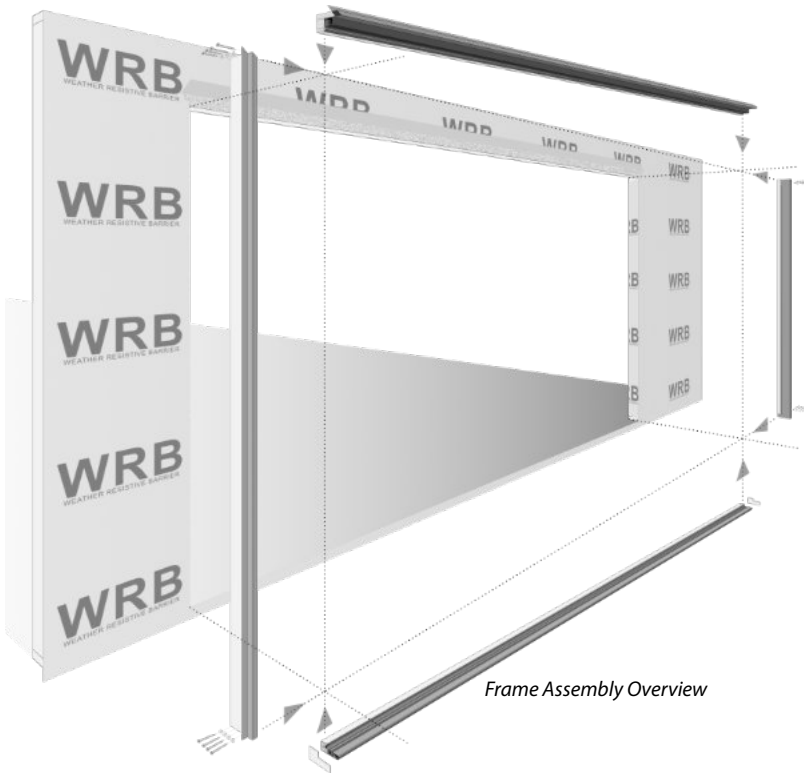
Cut WRB Over Opening

Install Weather Resistive Barrier:

- Wall Exterior should be treated with Weather Resistive Barrier
- Weather Resistive Barrier must be integrated with the Bi-fold Door frame as part of installation
- Apply Weather Resistive Barrier to the exterior wall surface per manufacturers instructions.
- Cut WRB over the opening as indicated in the illustrations.
- Cut 1" above the top of the opening to allow for taping this flap to the top flashing when integrating the door frame with the WRB (in later steps).
- On Step-Down applications, cut WRB to reveal 1" of the face of the step to accommodate sill flashing (in later steps).
- Wrap WRB sides into the opening and fasten. Trim excess.
- Temporarily fold the top flap of WRB upward and tape it out of the way in preparation for setting the door.
- Using Flexible Sill Flashing (at least 9" wide), apply flashing to cover the sill floor surface from the interior edge of wall framing, over the sill floor surface, and down the front exterior face of the step-down at least 2" down the face. Be sure it overlaps the WRB below the opening. The flashing should also turn up at side framing and apply upwards a minimum of 6".

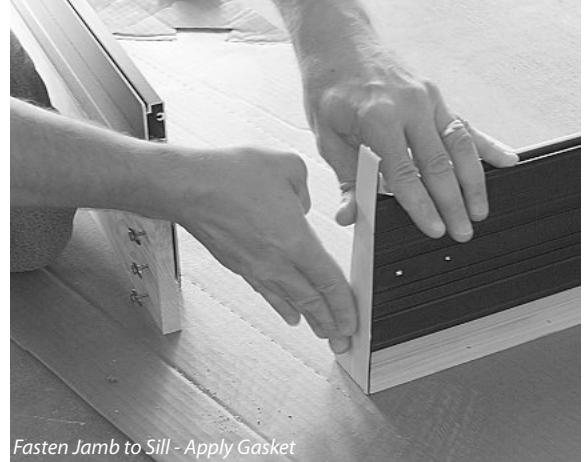


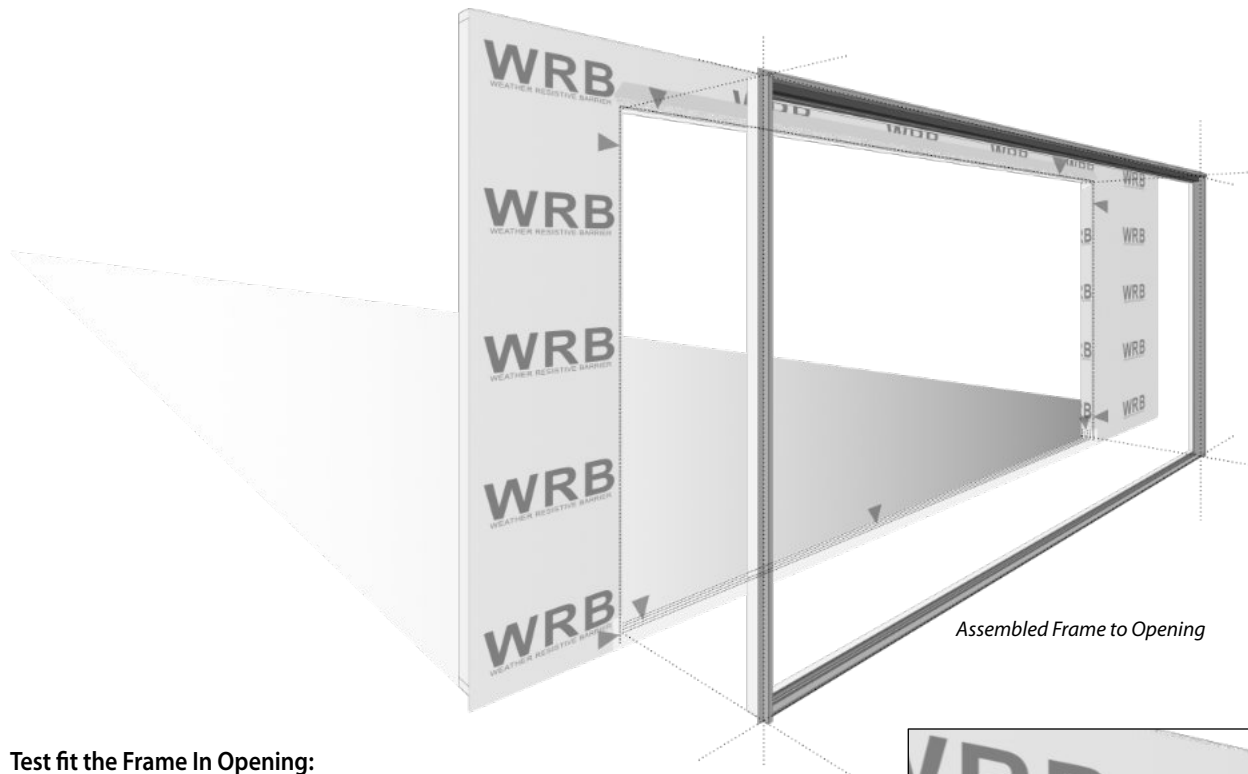
Fold WRB Into Jambs, Fold Top Flap Up and Temporarily Tape



Assemble Frame:

- Frame components consist of a sill, left and right side jambs and a head assembly
- Layout the frame components on the floor, interior wood side facing down, in the proper configuration. Use cardboard to protect the frame surfaces.
- Using the screws and washers supplied in marked bag, fasten the frame corners together as follows
 - Starting with the head, carefully align the top of one jamb with the adjoining end of the head assembly.
 - Using supplied #8 x 1-3/4" screw, fasten the frame metal together through the pre-drilled hole near the top of the side jamb. This hole should be aligned with the screw channel in the head frame metal. When driving in the screw, be sure it is threading straight into the screw channel. Tighten until snug.
 - Making sure the wood of the jamb is properly aligned with the wood of the head, fasten them together using a set of #8 x 1-3/4" screw and beveled washer through each of the pre-drilled holes. Tighten until snug. Do not over-tighten.
 - Repeat this process for the other side of the frame.
 - Moving to one of the jamb to sill corners, carefully test-align the sill to the jamb
 - Locate the appropriate Sill Gasket in the supplied parts, remove the adhesive backing and apply the gasket to end of the sill as illustrated.
 - Carefully re-align the sill to the jamb.
 - Using supplied #9 x 1-1/4" screw, fasten the frame metal together through the pre-drilled hole in the jamb. This hole should be aligned with the screw channel in the sill metal. When driving in the screw, be sure it is threading straight into the screw channel. Tighten until snug.
 - Making sure the wood of the jamb is properly aligned with the wood of the sill, fasten them together using a set of #9 x 1-1/4" screw and beveled washer through each of the pre-drilled holes. Tighten until snug. Do not over-tighten.
 - Repeat this process for the other side of the frame.





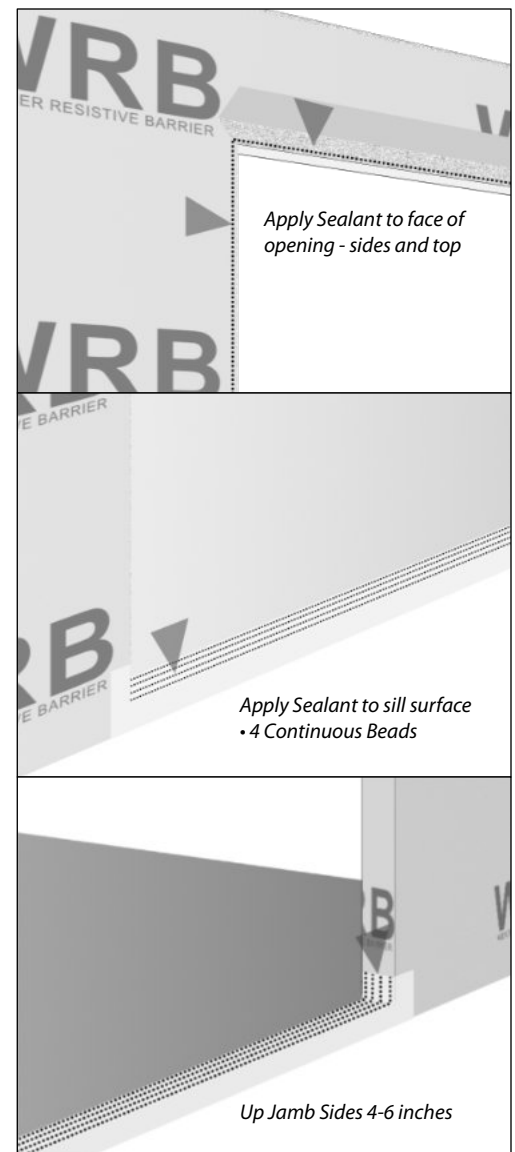
Assembled Frame to Opening

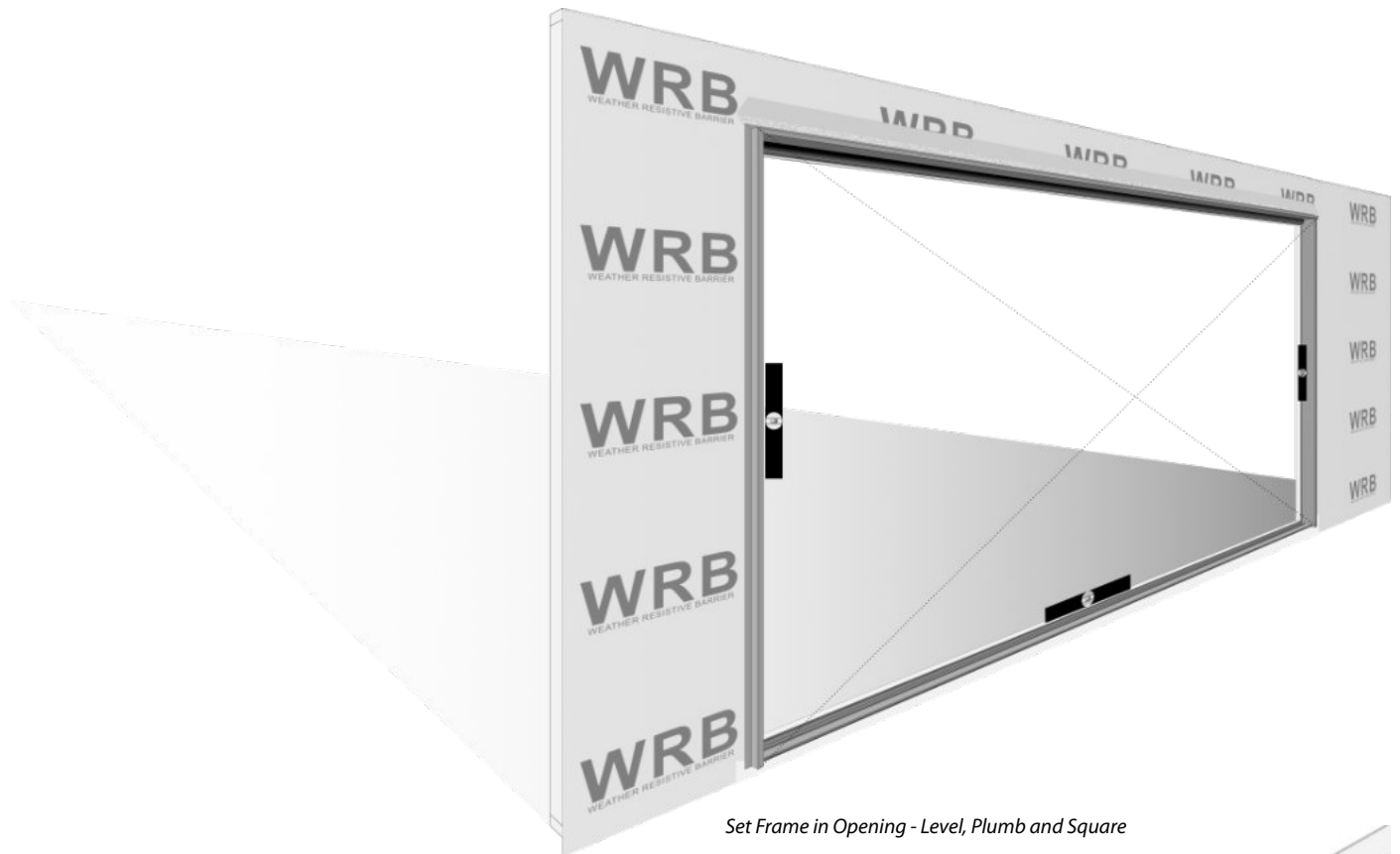
Test fit the Frame In Opening:

- The opening must be prepared according to the instructions listed in the first section "Prepare Rough Opening".
- Once the frame has been assembled, test fit it in the opening
 - Verify that it fits into the opening
 - Verify that there is a minimum of 1/4" clearance on both sides and 1/2" at the head and that the frame can be squared in the opening.
 - Verify that the sill sits level in the opening. Do not proceed until true level is achieved.
- Remove the frame from the opening

Install Frame In Opening:

- Apply a continuous 3/8" wide bead of sealant on the exterior face of the opening, set back 1/2" from the edge, at both sides and across the top of the opening. Do not apply sealant across the bottom step face of the opening.
- At the sill, apply a liberal amount of sealant at the bottom corners covering at least 3/4" inward from the edge of the framing.
- On the sill opening, on top of the **Flexible Sill Flashing Tape** applied in the **WRB Install Steps**, apply four continuous 3/8" wide beads all the way across the opening from side to side. These beads need to be set back from the exterior edge of opening as follows:
 - The 1st bead at 3/4" from the exterior edge
 - The 2nd bead at 2-3/4" from the exterior edge
 - The 3rd bead at 4-3/4" from the exterior edge
 - The 4th bead at 5-3/4" from the exterior edge
- With all the sealant applied to the opening surfaces, carefully set the door frame into the opening. Be sure the sill is set into the sealant according to the measurements listed above. (In other words, don't set frame down into the sealant until it is very close to its final position.)
- Make sure it is centered in the opening with equal space on both sides of the frame.
- Once the sill is set in position, push the top of the frame all the way into the opening, making sure that it presses into the sealant.
- Temporarily hold the frame in the opening by applying a couple of removable fasteners through the exterior nailing fin.
- Verify that the sill is fully compressed into the sealant and that it is level. Do not proceed until true level is achieved.

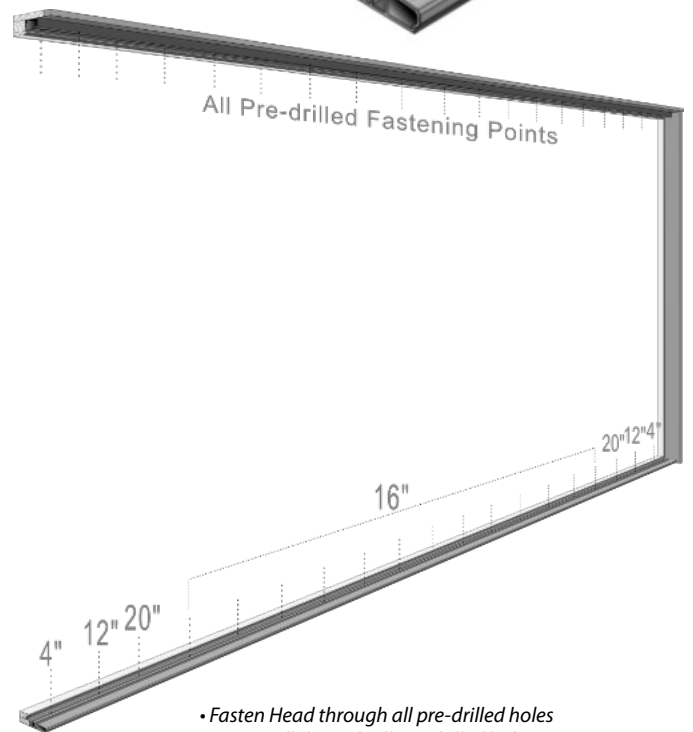
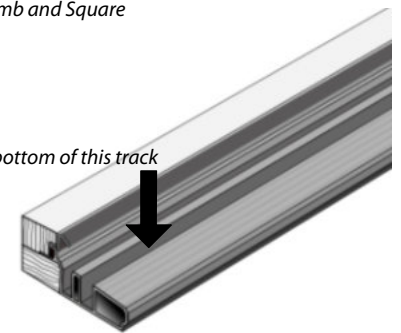




Set Frame in Opening - Level, Plumb and Square

- Check the vertical level of each side jamb.
- Square the frame in the opening. Shim and fasten both sides once the frame is square. Check squareness by measuring diagonally from top corner to the opposite side bottom corner. Measure both diagonals and compare the measurements. The measurements must be within 1/8" of each other.
- Once the frame is square, fasten the frame in place by nailing through the nail fin. Use 2" galvanized roofing nails, placed every 8 to 10 inches, down both sides.
- Fasten the interior jamb. Fasteners can be applied to the interior side jambs at the seam between the wood and the weatherstrip, where the weatherstrip will hide the head of the fastener.
- Remove the temporary fasteners.
- Fasten the sill to the floor. Use applicable fasteners (not supplied) for your floor type. Fasten through the pre-drilled holes. Inject holes with silicone caulk prior to screw application.
- Using a string level placed across the top of frame opening as your guide, shim the center point of the Frame Head so that it has an intentional upward bow of approximately 1/8 to 3/16". This will help compensate for the weight of the door panels and aid in the adjustment and operation of the unit.
- Fasten the Frame Head in place by nailing through the nail fin. Use 2" galvanized roofing nails, placed every 8 to 10 inches.
- From the interior side, apply shims to match the upward bow of the head at points equally spaced across the width of the unit.
- Fasten the Frame Head to the rough opening header using the supplied #12 x 3" pan head screws. Use the pre-drilled holes in the head track. Additionally, remove the temporary assembly screws that held the track to the Frame Head and replace them with the #12 x 3" pan head screws. The temporary screw holes will need to be pre-drilled with a 3/16" bit.

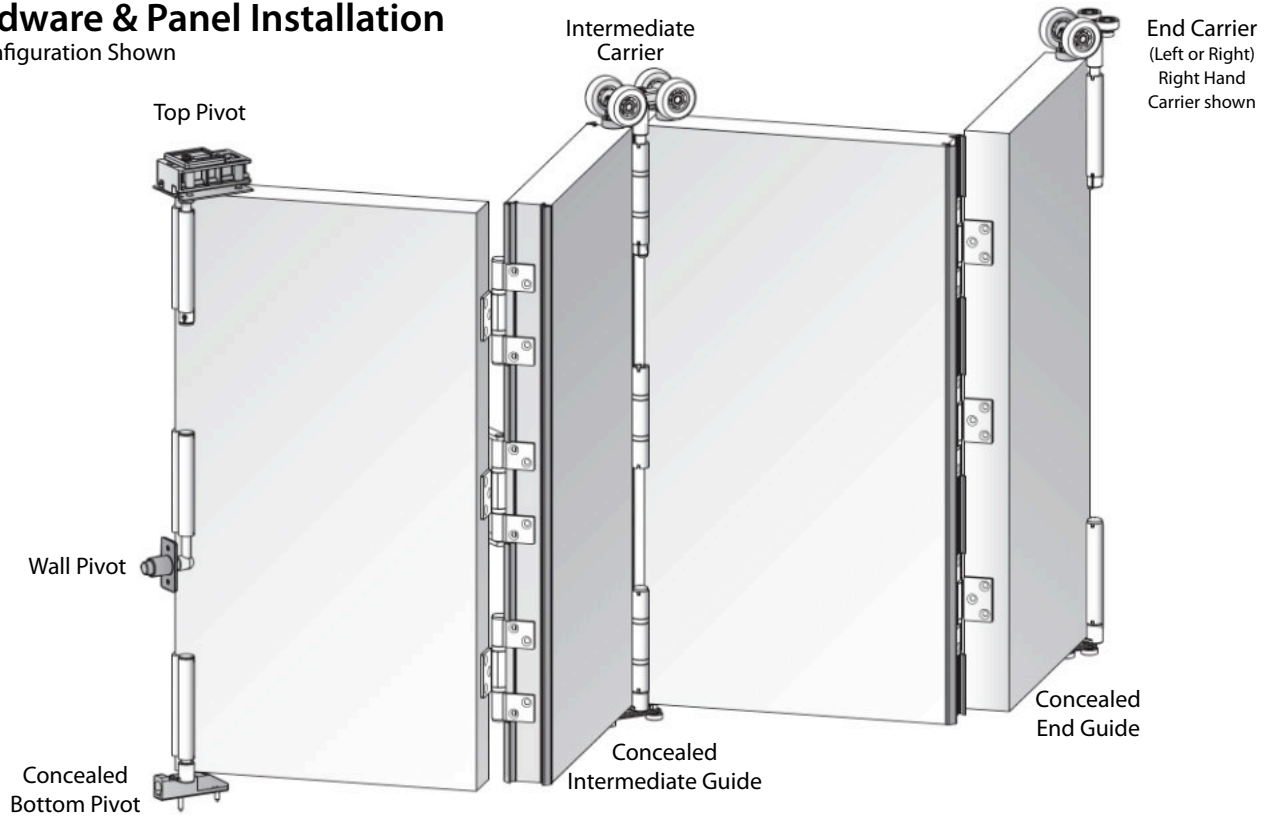
Fasten through the bottom of this track



- Fasten Head through all pre-drilled holes
- Fasten Sill through all pre-drilled holes

Hardware & Panel Installation

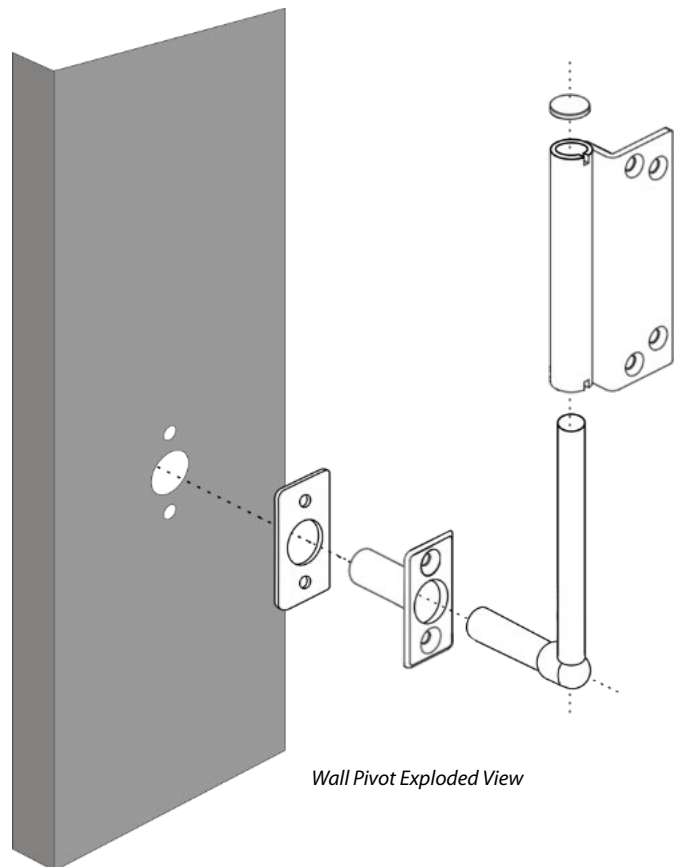
4L Configuration Shown



Basic Layout of Panels and Hardware

Install Jamb Mounted Wall Pivots

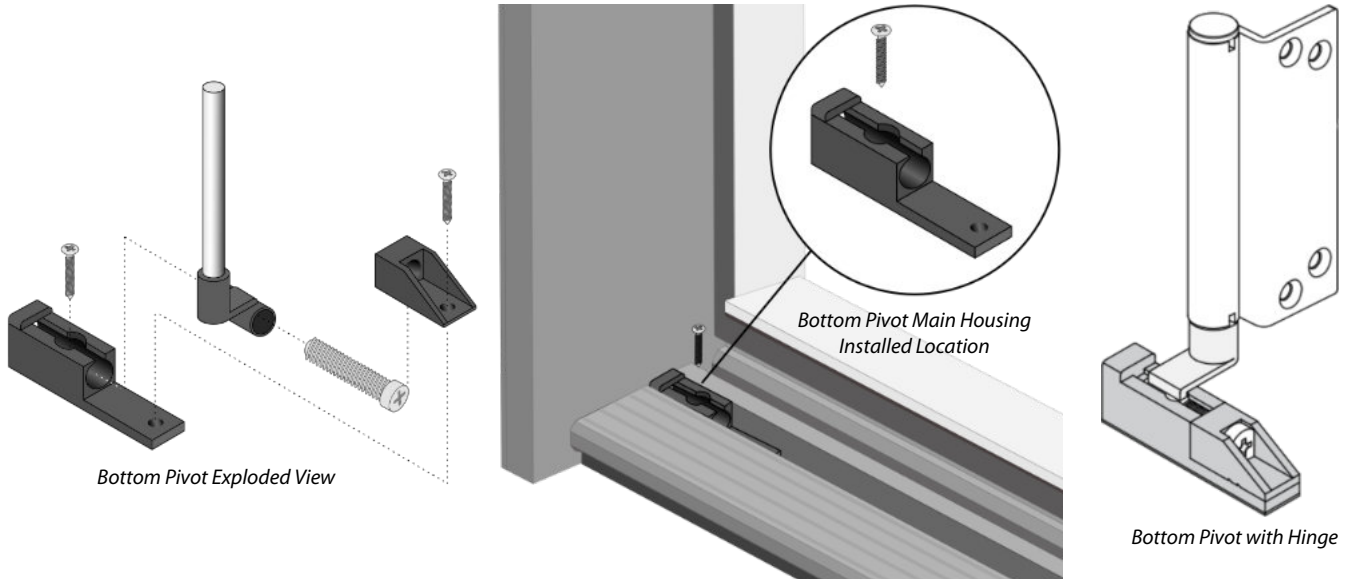
- Locate the pre-drilled 3/4" diameter holes in the side jambs where the Wall Pivots will install.
- Increase the depth of those holes to 1-5/8" by drilling into the rough opening framing with a 3/4" drill bit.
- Install the Gasket onto the backside of the Wall Pivot Cup.
- Install the Wall Pivot Cup into the hole location and fasten in place with the included #10 x 1-1/2" screws.
- Install the Wall Pivot Hinge Pins into the Wall Pivot Cups.



Wall Pivot Exploded View

Install Concealed Bottom Pivot

- Install Concealed Bottom Pivot in the end of the sill track and fasten in place with the included #8 x 1" pan head screws through the back pre-drilled hole. Install the Hinge Pin and Hinge Plate and fasten with front screw. Note: you will need to pre-drill holes into the floor surface and inject holes with silicone caulk prior to installing the fasteners. Note: the Hinge Plate will be fastened to the door panel in a later step. **Be sure the Hinge Plate is folded back toward the interior.**



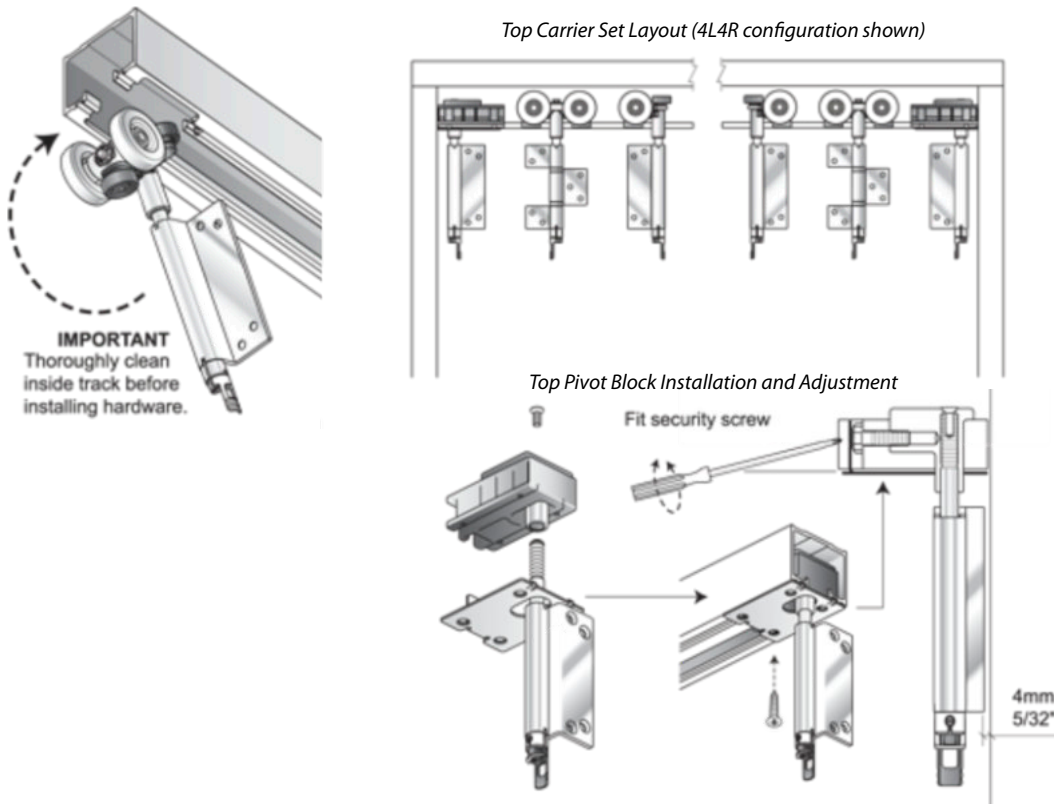
Install The Concealed Pivot Set(s) and Carrier Sets

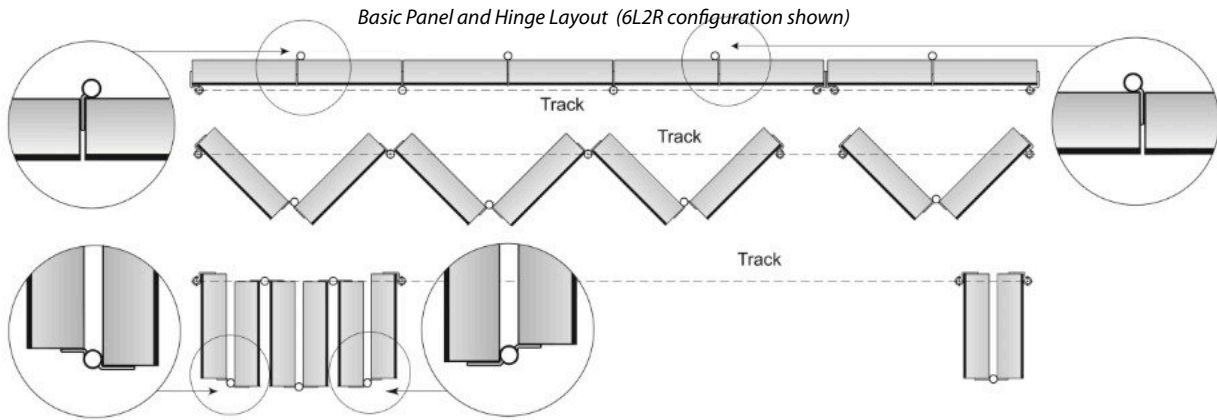
Note: See the Carrier Orientation Diagrams in the Configuration Layout Charts at the end of this document for the order and orientation needed for your door configuration

Very Important! Thoroughly clean the Head Track to remove any debris from the track prior to installing Carrier Sets.

- Install the End Carrier (where applicable) into the Head Track using the access opening at the end of the track where the door panels will stack when in the open position. Slide it toward the far end the track.
- Install all the Concealed Intermediate Carriers into the Head Track. Slide them near the center of the track.
- Install the Top Pivot Block into the track opening. There should be a 5/32" gap between the face of the pivot hinge and the face of the jamb when the panel is hung.
- On door configurations that have panels opening at the opposite end of the unit, install another Top Pivot Block at that end.

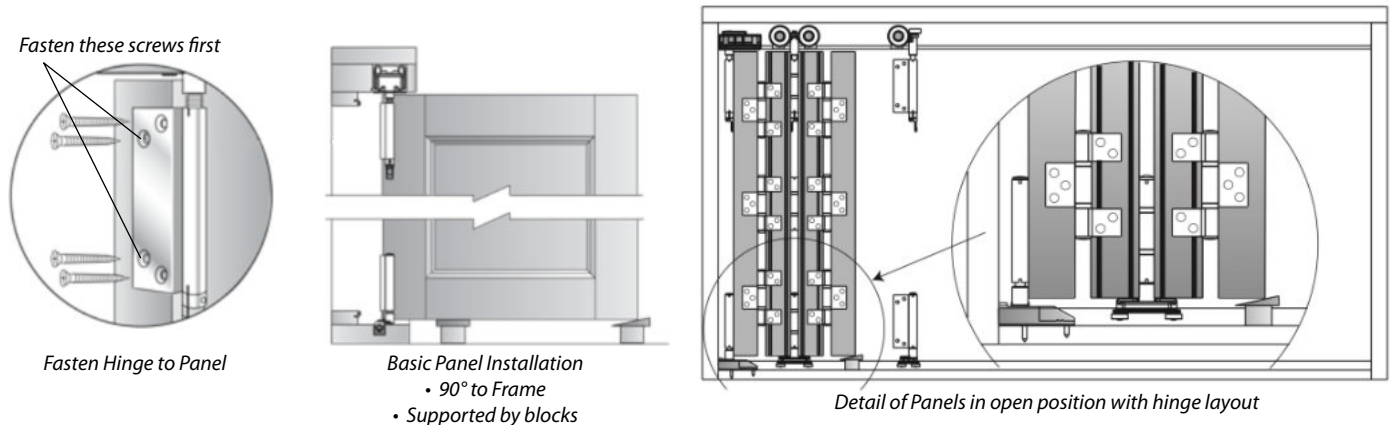
Top Carrier Set Layout (4L4R configuration shown)





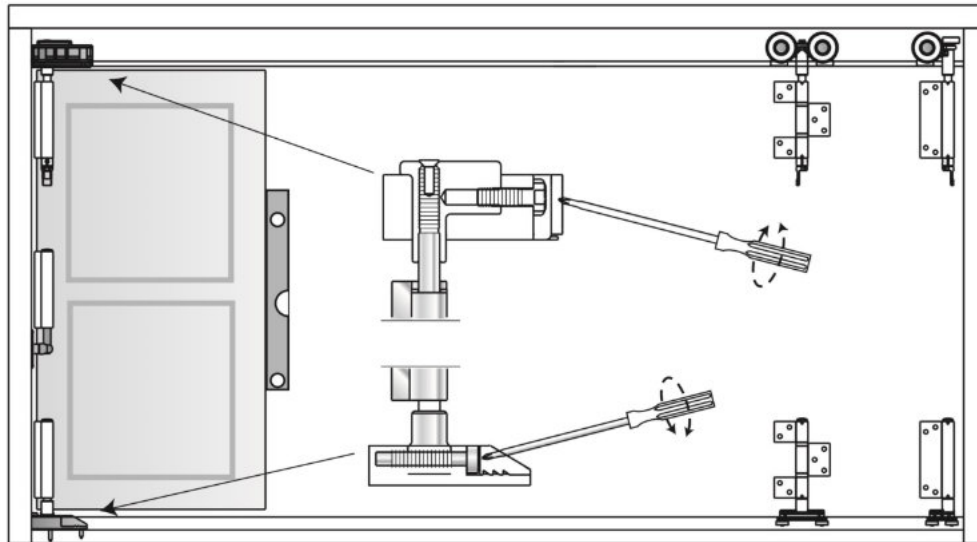
Hardware and Panel Pre-Install Information:

- Note: Door panels are labeled in the order of the configuration as viewed from the exterior (1L, 2L, 3L . . . 1R, 2R, etc.). This will assist you in placing them in the proper order.
- Also Note: hinges are pre-installed on one edge of the panels. When placed in the proper order, this will mean you only need to fasten the free side of the hinge to the adjacent panel edge. Note: the bottom hinge plate on the panel(s) that anchor to a side jamb will need to be attached during the panel installation step.
- The panels should be installed in order starting with the 1L or 1R, depending on configuration. All panels should be installed with block supports that hold them approximately 1/4" to 3/8" above the sill. Note: door panels are heavy and may require two or more people to install them into the frame system. Support blocks will assist in alignment and help prevent damage to the sill and panels. Also note that the door panel will be installed with the panels perpendicular to the frame. Be sure to coordinate the proper interior and exterior facing of the panels. Clad side faces the exterior when finished and closed. When installing the panels in their accordion configuration, clad surfaces will face each other, wood faces will face each other. The appropriate hinges are pre-installed on one panel and only need fastening to the adjoining panel.



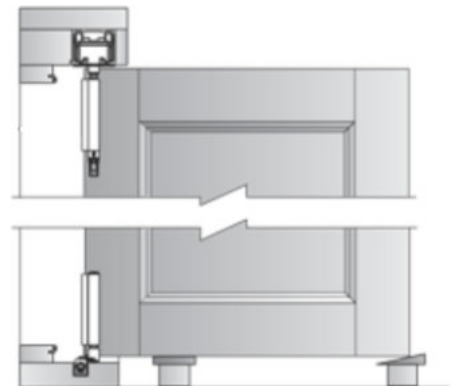
Install Door Panels:

- Install the door panel(s) #1 first. This could be 1L or 1R depending on your configuration. Some configuration will have both. All other panels will be added in order.
- Insert the Hinge Pin for the Concealed Bottom Pivot into the bottom hinge that is mounted to Door Panel #1.
- Align the Door Panel at a 90 degree (open) position to the frame and set it on the Support Blocks described in the Hardware and Panel Pre-Install Information section (see image above). Note: Panel #1 should be positioned close enough to the jamb to provide alignment with the Concealed Pivot Set components but still allow enough space to maneuver and manipulate the mounting hardware.
- Align the top of the door panel with the Top Pivot.
- Fasten the Top Pivot to the edge of the door panel using the supplied #10 x 1-1/2" flat head screws through the pre-drilled holes. Note: apply outside edge screws first to help keep hinges flat against the panel edge and prevent hinge compression.
- Now, align the the Wall Pivot Hinge Pin with the adjacent hinge assembly mounted to panel #1. Engage the pin with hinge and maneuver the door panel so that the hinge pin slides into place.
- With the bottom hinge plate (installed earlier during the Concealed Bottom Pivot installation step) folded back toward the interior, position the bottom of the door panel so that it aligns with the bottom hinge plate.
- Fold the hinge plate into position so that it lines up with the hinge holes pre-drilled into the edge of the door panel. Fasten in place with the supplied hinge screws.



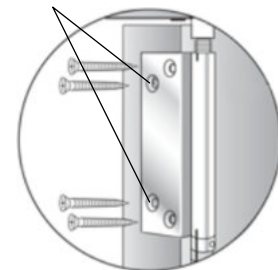
Side Panel Adjustment Details

- Close the door panel and check for a consistent 9/32" gap between the edge of the door panel and side jamb.
- If necessary, open the door panel and adjust the concealed top and bottom pivots, using the applicable adjustment screw, to achieve the required gap. Also verify that the door panel is level.
- Locate the second panel and place it in the opening, open position, facing the first installed panel. Support the bottom of the panel with the block supports.
- Slide bottom Concealed Intermediate Guide into sill track.
- Fasten the appropriate top intermediate or end carrier set (depending on door configuration) to the edge of the door panel using the supplied #10 x 1-1/2" flat head screws through the pre-drilled holes.
- Fasten the bottom carrier set to the edge of the door panel using the supplied #10 x 1-1/2" flat head screws through the pre-drilled holes.
- Fasten the remaining edge hinges, already fastened to the edge of one of the panels, to the other panel using the supplied #10 x 1-1/2" flat head screws through the pre-drilled holes. Note: when installing screws in carriers and hinges, install the outside screws (the ones furthest away from the pin side) first to keep the hinges flat to the edge of the door panel. Also use the included hinge shims to help prevent hinge compression. See illustration below.
- Install the remaining panels, in order, following the same procedures.
- Keep the panels level and plumb.
- Maintain a consistent gap of 7/32" between top door panels and head jamb.
- Maintain a consistent gap of 3/8" between bottom of door panels and sill.
- Adjustments in height are made using the top pivot blocks and carriers via the adjustment screw in the bottom of their hinge pin. Requires 8mm or 5/16" Allen Key. Note: when adjusting the height, relieve the weight from the panel by using support blocks.
- Check end panel for a consistent 9/32" gap between the edge of the door panel and side jamb.
- Check overall clearance and operation with all panels installed. Make any final adjustments necessary.
- Install Active Panel Handle Trim Kit per trim kit instructions (where applicable).
- Install Optional Magnetic Door Catches (separate instructions).



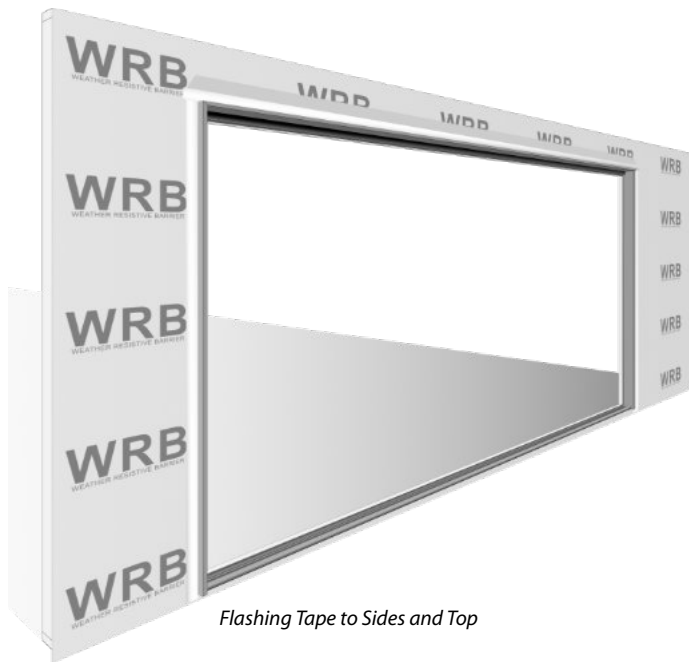
Support panels when making height adjustments

Fasten these screws first

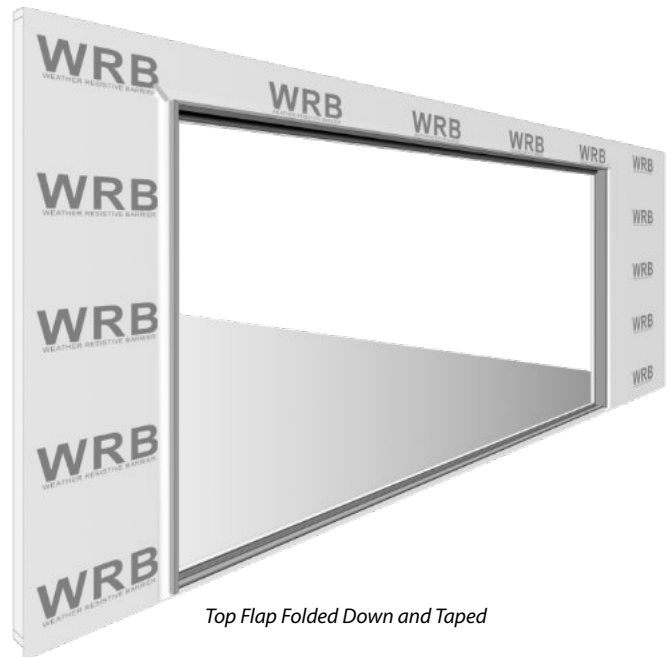


Finish WRB Integration:

- Finish integrating the WRB with the exterior of the door frame.
- Apply side flashing, using self-adhesive flashing tape. Apply flashing so that it covers nailing fin and overlaps the adjacent WRB. Be sure to cover the fastener heads on the nailing fin. The flashing should extend from at least 1" below the step-down to minimum of 1" above the top nail fin.
- Apply flashing tape across the top, covering the nail fin and fastener heads, extending beyond both side flashing by approximately 1" at each end.
- Fold down the top WRB flap over the top flashing tape and tape it in place using WRB manufacturer approved tape.



Flashing Tape to Sides and Top



Top Flap Folded Down and Taped

Interior Sealant:

- Using a low expanding foam made for windows and doors, apply sealant to the gap between the door frame and rough opening framing. Sealant should form a continuous bead down both sides and across the top of the framed opening.

Exterior Wall Treatments: Required Clearances:

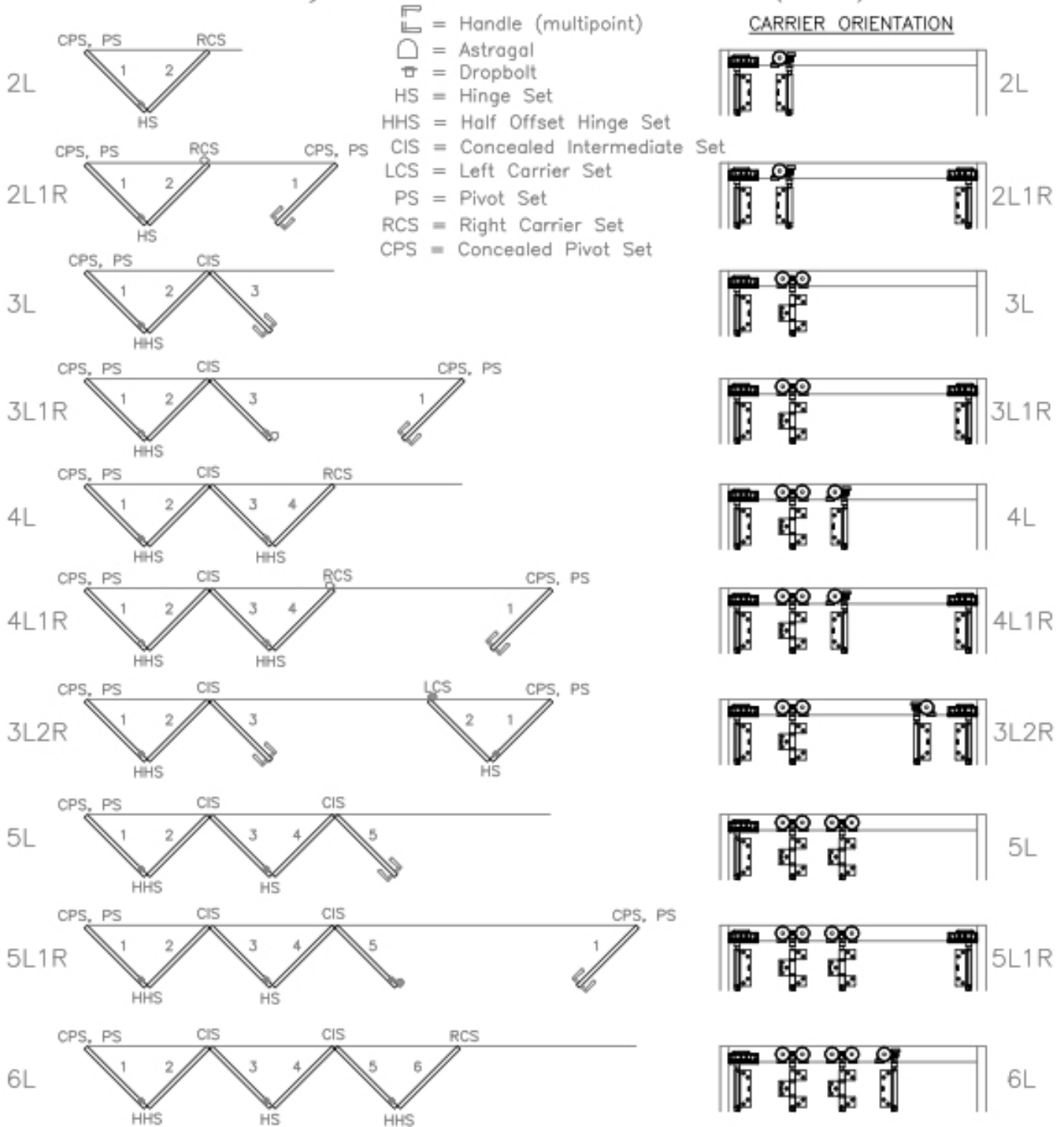
- Non-Masonry Exteriors = 1/8" sides, head and below sill (if applicable)
- Masonry Exteriors = 1/4" sides and head
= 3/8" to 1/2" below sill (if applicable)

Interior Finishing: Wood Surfaces

- Wood surfaces must be painted or stained and sealed within 90 days of installation. Follow your finish manufacturers instructions for application of the finish.

Panel Layout and Carrier Orientation Chart

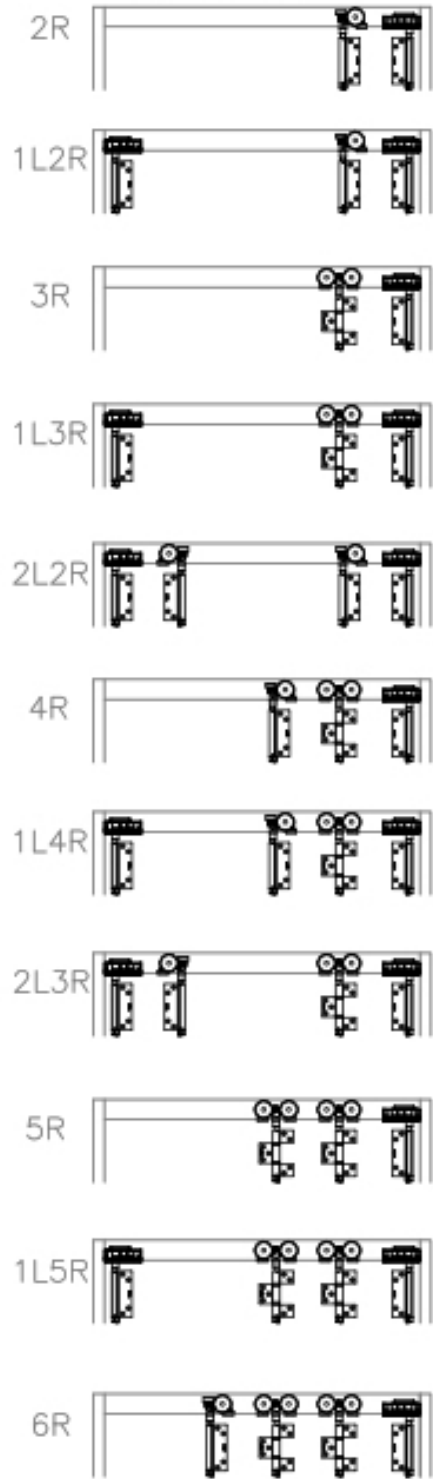
Panel layout for Bi-Fold Door (Left)



Panel Layout and Carrier Orientation Chart

Panel layout for Bi-Fold Door (Right)

CARRIER ORIENTATION



- = Handle (multipoint)
- = Astragal
- = Dropbolt
- HS = Hinge Set
- HHS = Half Offset Hinge Set
- CIS = Concealed Intermediate Set
- LCS = Left Carrier Set
- PS = Pivot Set
- RCS = Right Carrier Set
- CPS = Concealed Pivot Set

