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INTRODUCTION

READ INSTRUCTIONS COMPLETELY BEFORE STARTING INSTALLATION

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The deck and railing installer should determine and implement appropriate installation techniques for each installation situation. Fortress Railing Products and its distributors shall not be held liable for improper or unsafe installations.

Fortress Posts must always be secured to the deck framing and should never be attached to only the deck boards.

Pure View Full Glass Panel I-Support is required for Canadian Code Compliance.

Note

When cutting Fortress railing, it is very important to complete the following at cut points:

- Remove all metal shavings from the cut area.
- File any sharp edges left by cutting. Thoroughly wipe and remove any filings, grime, or dirt from the railing.
- Apply two coats of Fortress zinc based touch-up paint to the cut area. If touch up is at rail ends, allow paint to dry before connecting bracket to post.
- Be sure to remove any metal shavings from the surface of deck, patio, or balcony to prevent stains on the deck surface.

Torx Safety Tips

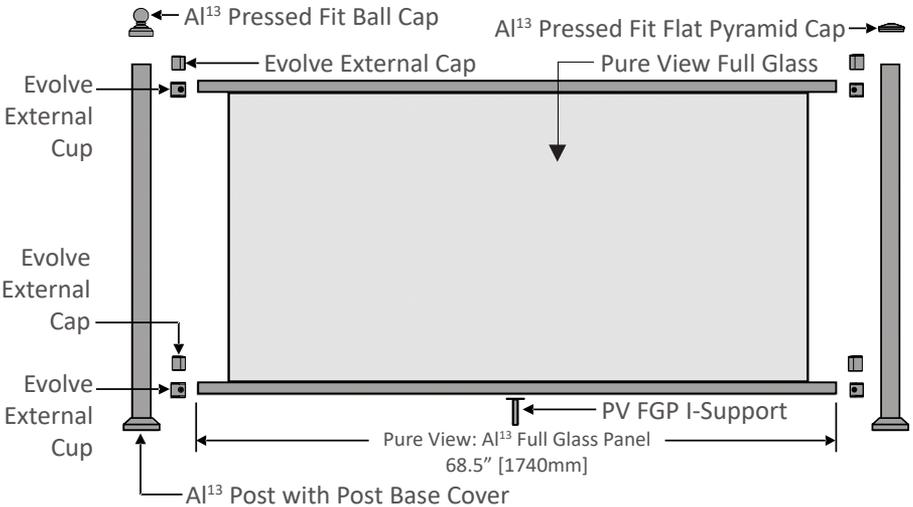
- Always use the lowest speed setting on drill.
- To reduce chance of bit breakage, start tightening with drill on low torque setting and work up until screw is secured.

Tip: Pre-drill holes with 3/16" [5mm] drill bit.

Required Tools



Pure View: Al¹³ Full Glass Panel Installation Option



Post Configurations

AI ¹³ Panel Height	Rail Panel	
	Installed Panel Height	Required Post
34" [864mm]	37-1/2" [953mm]	39-1/2" [1003mm]
40" [1016mm]	43-1/2" [1105mm]	45-1/2" [1156mm]

*Installed heights include a 3-1/2" [89mm] space between deck surface and bottom edge of bottom rail.

Full Glass Panel Size Chart

34" [864mm] & 40" [1016mm] Panels

Glass Widths	(3" [76mm] Post) O.C. Spacing	Between Post Spacing (Face-to-Face)
12.25" [311mm]	18" to 23" [457mm x 584mm]	15" to 20" [381mm x 508mm]
18.25" [464mm]	24" to 29" [610mm x 584mm]	21" to 26" [533mm x 660mm]
24.25" [616mm]	30" to 35" [762mm x 889mm]	27" to 32" [686mm x 813mm]
31.25" [794mm]	37" to 42" [940mm x 1067mm]	34" to 39" [868mm x 991mm]
36.25" [921mm]	42" to 47" [1067mm x 1194mm]	39" to 44" [991mm x 1118mm]
41.25" [1048mm]	47" to 52" [1194mm x 1321mm]	44" to 49" [1118mm x 1245mm]
46.25" [1175mm]	52" to 57" [1321mm x 1448mm]	49" to 54" [1245mm x 1372mm]
51.25" [1302mm]	57" to 62" [1448mm x 1575mm]	54" to 59" [1372mm x 1499mm]
56.25" [1429mm]	62" to 67" [1575mm x 1702mm]	59" to 64" [1499mm x 1626mm]
61.25" [1556mm]	67" to 72" [1702mm x 1829mm]	64" to 69" [1626mm x 1753mm]

Note:

34" [864mm] panel uses a 33" [838mm] tall piece of glass and a 40" [1016mm] panel uses a 39" [991mm] tall piece of glass.

POST MOUNTING

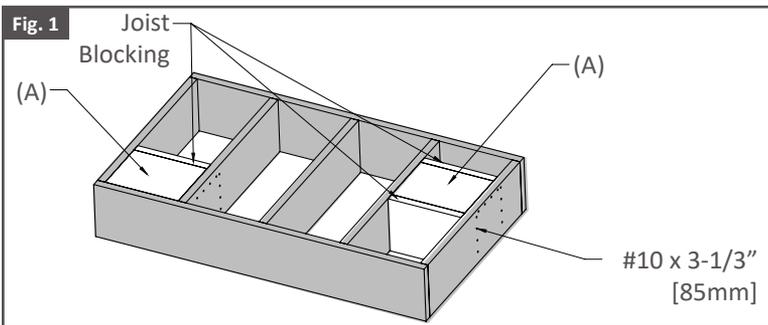
*If using Fortress Evolution Framing, contact Fortress for instructions.

Note:

It's recommended to install brackets into post before post mounting.
Reference page 8 for Bracket installation steps.

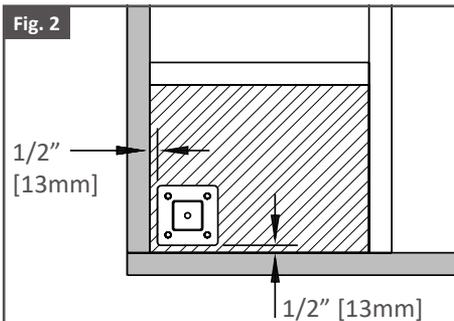
Step 1: Install Wood Blocks

1. Install Wood Block level with top of joist. As shown in Fig. 1.
2. Secure Wood Block to blocking on all four sides with #10 X 3-1/2" [89mm] deck screws.
 - Wood Block must be constructed with treated dimensional lumber with a minimum thickness of 1-1/2" [38mm].



Step 2: Position Base Plate

1. Position the edge of base plate a minimum of 1/2" [13mm] from the inside edge of rim joist. As shown in Fig. 2.

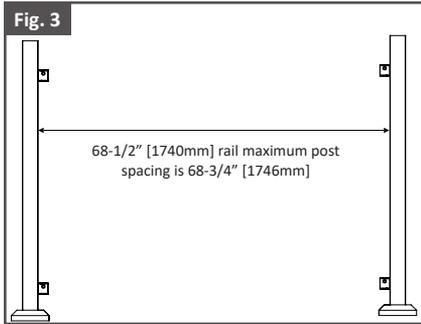


Step 3: Max Post Spacing

1. 68-1/2" [1740mm] Pure View Full Glass Rails maximum post spacing is 68-3/4" [1746mm].

Note:

- **DO NOT** exceed the maximum post spacing.

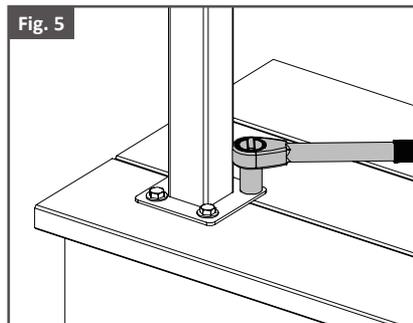
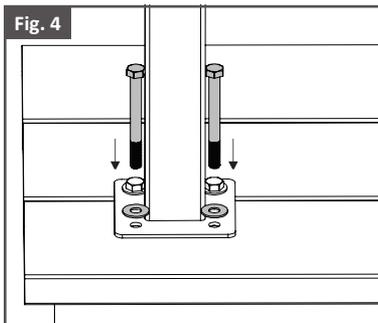


Step 4: Mount Posts

1. Mark mounting hole locations and pre-drill a 3/8" [10mm] hole.
2. Insert 3/8" x 3-1/2" [10mm x 89mm] Hex Head galvanized bolts through 3/8" [10mm] galvanized washer and post base plate.

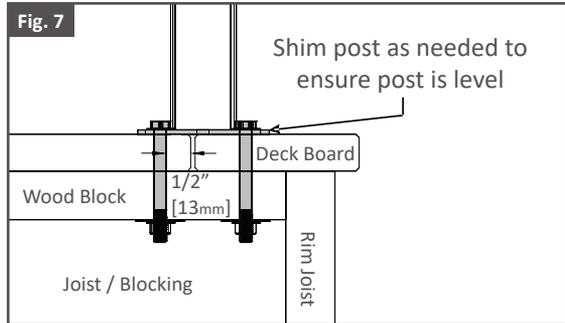
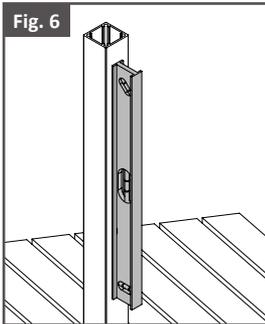
Note:

- Post Base Plate holes **MUST** be positioned a minimum 1/2" [13mm] from edge of deck board.
- Use only 3/8" [10mm] Hex Head Galvanized Bolts. Lag Screws should **NOT** be used. Secure each post with four bolts.



Step 5: Check Mounted Posts

1. Shim post as needed to ensure post is level.

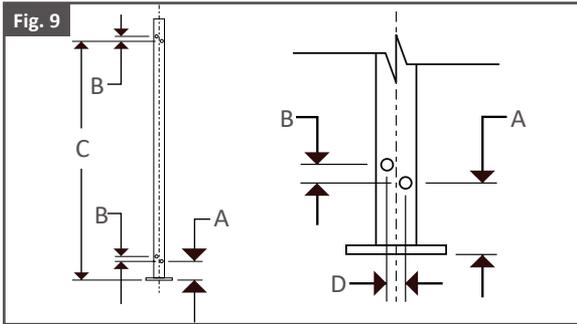


BRACKET INSTALLATION

Step 1: Mark Bracket Hole Locations

1. Mark the centerline of each post with a pencil.
2. Take measurements used in Fig. 8 and 9 to mark bottom and top bracket hole locations onto posts.

Fig. 8		Bracket Hole Locations			
Pre-drill Dimensions: Pre-drilling with a 3/16" [5mm] drill bit is required					
A*	B	C	D		
34" [864mm] Panel					
3-13/16" [97mm]	1/2" [12.5mm]	36-11/16" [932mm]	13/16" [20mm]		
40" [1016mm] Panel					
3-13/16" [97mm]	1/2" [12.5mm]	42-11/16" [1084mm]	13/16" [20mm]		
*Dimension A positions bottom edge of rail 3-1/2" [89mm] above deck surface.					
*Dimension A is measured from the bottom surface of post base.					



Step 2: Pre-Drill and Install Brackets

Tip:

- **It's important to double check dimensions to confirm accuracy of bracket hole locations before drilling.**
 1. Use Spring Punch to mark the holes. As shown in Fig. 10.
 2. Pre-drill bracket holes with a 3/16" [5mm] drill bit. As shown in Fig. 11.
 3. Use scrap wood as support and drill through center holes in bracket base. As shown in Fig. 12.
 4. Attach Bracket to the posts with supplied T-25 Thread-Cutting Screws. Use two screws per bracket. Use low speed setting on drill. As shown in Fig. 13.
 5. Once top and bottom brackets are installed, remeasure bracket spacing to confirm dimensions used in Fig. 8 and 9 of step 1. As shown in Fig. 14.
 6. Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post to prevent corrosion.

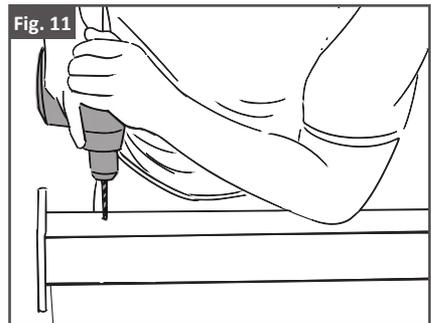
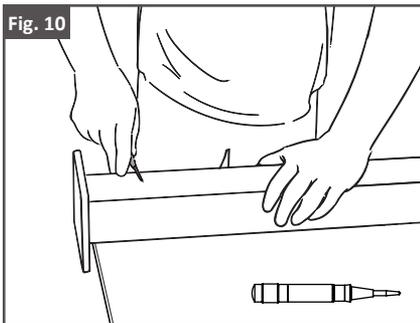


Fig. 12

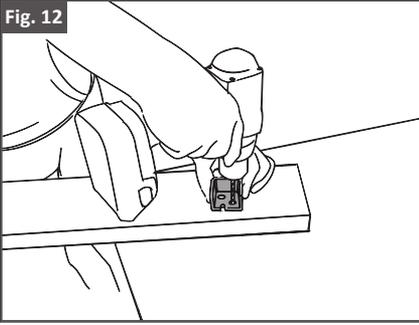


Fig. 13

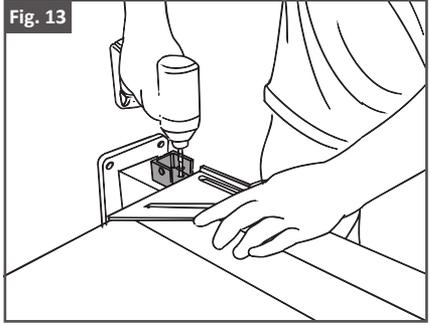
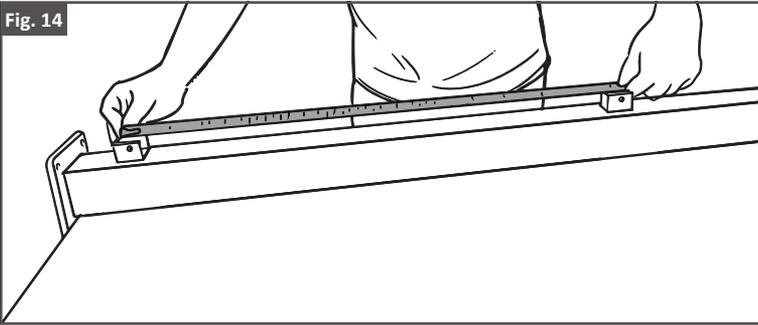


Fig. 14



Step 3: Measure The Panel Opening Length

1. Measure the distance of the panel opening. As shown in Fig. 15.
2. Confirm that the measurements for the top brackets are the same as the bottom brackets.

Note:

- **Measure from the back wall of the bracket to the back wall of the bracket on other post. As shown in Fig. 16.**

Fig. 15

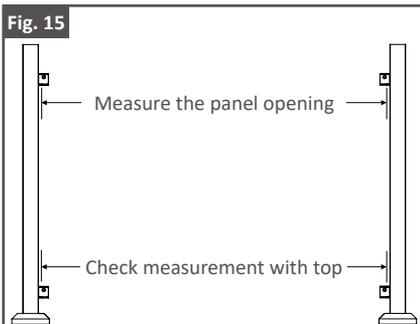
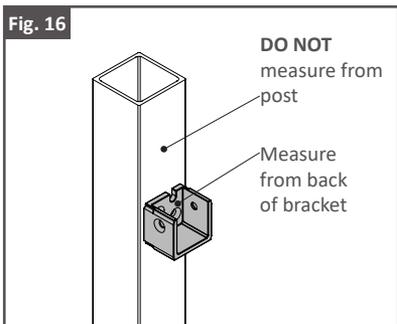


Fig. 16



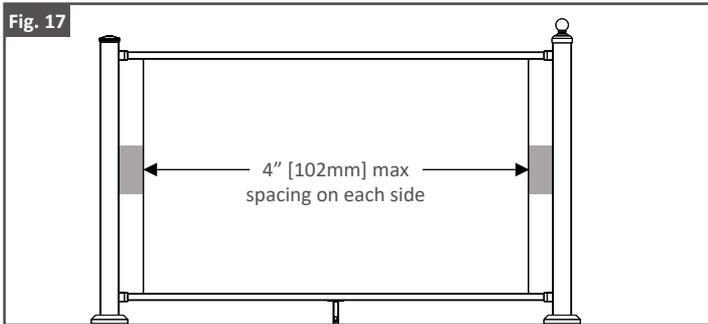
CUTTING DOWN BOTTOM AND TOP RAILS

Step 1: Measure & Mark Rails Where Cuts Will Be Made

1. Take measurements found on page 10, step 3 of Bracket Installation and mark these locations with a pencil on the top and bottom rail.

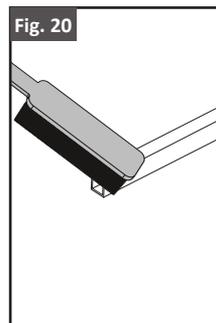
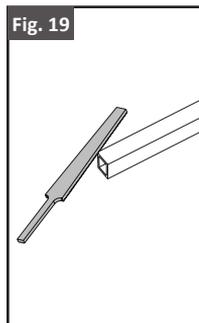
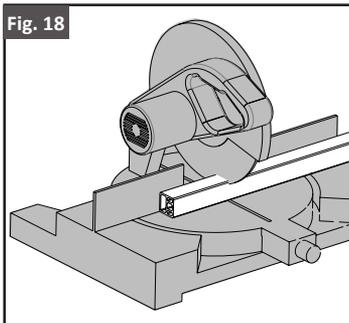
Tip:

- Before cutting rails, confirm Full Glass Panel spacing. The space between glass and post should not exceed 4" [102mm] on each side. As shown in Fig. 17.
- Total panel opening length should be glass width plus 8" [203mm] max.



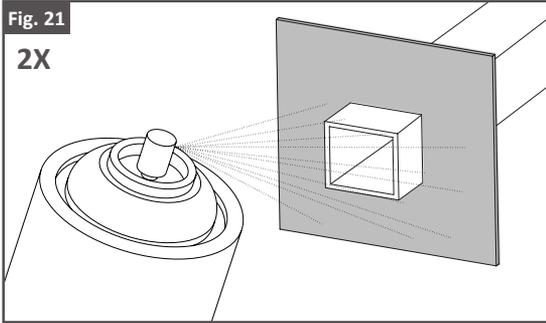
Step 2: Cut & Clean Rails

1. Cut rails using a saw with a fine tooth carbide cutting blade.
2. Use file to smooth cut edges.
3. Remove any metal shavings and dust with a brush or rag.
4. Make sure surfaces to be painted are clean.



Step 3: Apply Spray Paint To Cut Areas

1. Using a piece of cardboard as a mask, apply the 1st coat of Fortress zinc based touch-up paint.
2. Allow to dry before applying second coat.
3. Apply the 2nd coat of Fortress zinc based touch-up paint.
4. Allow to dry and install.



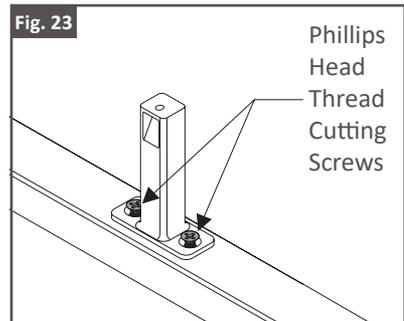
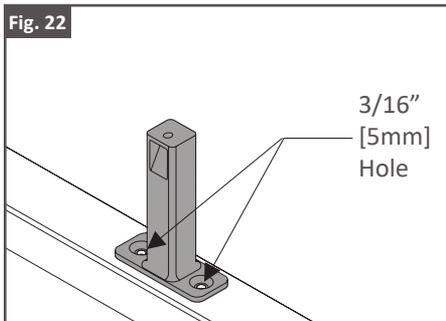
FULL GLASS PANEL INSTALLATION

Step 1: Install I-Support On Bottom Rail

1. Measure and locate the center of the bottom rail. Using the I-Support as a guide, mark the center of the 2 screw holes. As shown in Fig. 1.
2. Using a 3/16" [5mm] drill bit, drill though the outside wall.
3. Install the I-Support with the provided Phillips Head thread cutting screws. As shown in Fig. 2.

Note:

- Be sure to install I-Support on side of rail facing deck.

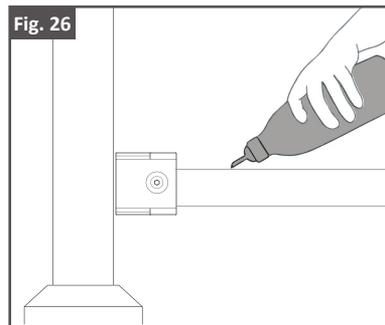
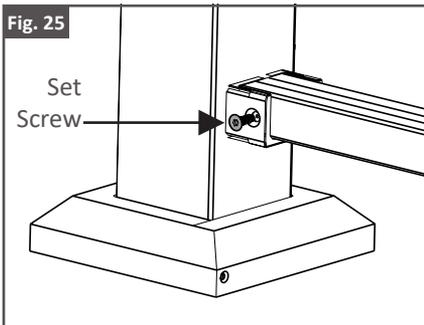


Step 2: Install Bottom Rail

1. Install cut bottom rail into the lower installed brackets.
2. Pre-drill Bracket Cup holes for screws using a 3/16" [5mm] drill bit.
3. Secure rail to Bracket Cups with provided T-25 Drive Thread-Cutting Screws. Use low speed setting on drill.

Tip:

- It is recommended to apply a small amount of liquid soap to the black gasket openings in the top and bottom rails before installing Full Glass. As shown in Fig. 26. The Liquid soap helps the glass settle in place.

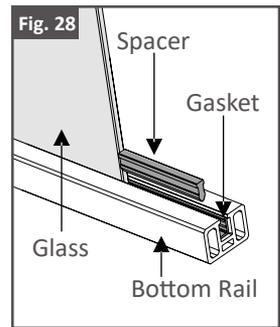
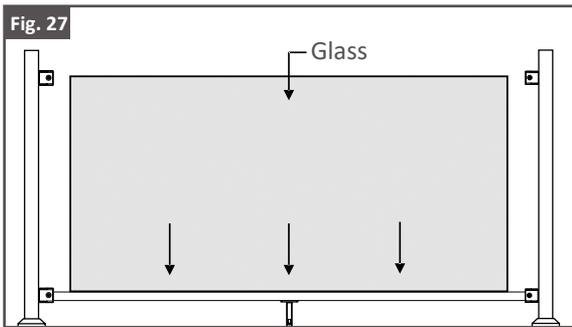


Step 3: Install Full Glass Into Bottom Rail

1. Carefully position full glass sheet into the center of the bottom rail. As shown in Fig. 27.
2. Insert spacers on either side of the glass in the bottom rail. Spacer will be flush with the side of the glass. As shown in Fig. 28.
3. Spacers might need to be cut shorter for bracket set screw clearance.

Tip:

- Be sure to wear safety gloves & glasses when handling glass.



Step 4: Install Top Rail

1. Carefully slip Top Rail over the top of the glass into the top Bracket Cups.
2. Use a rubber mallet and a wood block to drive the top rail on to the glass. As shown in Fig. 30.
3. Pre-drill Bracket Cup holes for screws using a 3/16" [5mm] drill bit.
4. Secure top rail to Bracket Cups with provided T-25 Drive Thread-Cutting Screws. Use low speed setting on drill.

Fig. 29

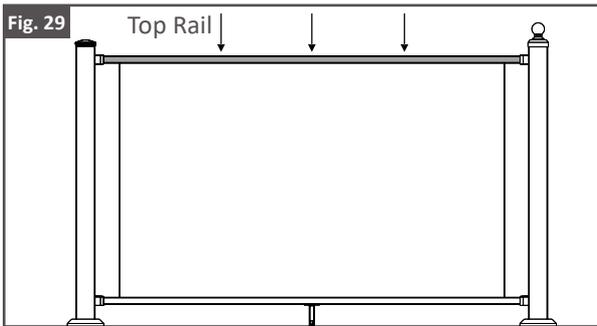
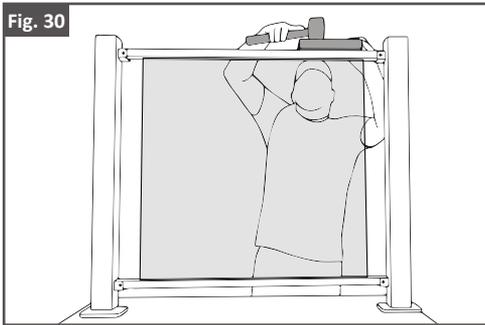


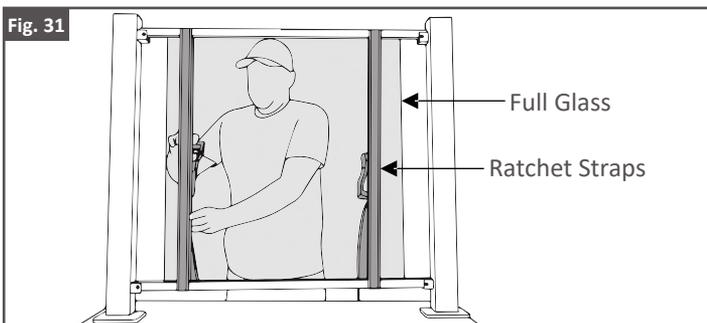
Fig. 30



Step 5: Install Top Rail (Alternative)

1. Carefully slip Top Rail over the top of the glass into the top Bracket Cups.
2. Carefully slip Ratchet Straps over top rail and underneath bottom rail.
3. Slowly clamp each Strap until glass is fully seated in top rail. As shown in Fig. 31.
4. Pre-drill Bracket Cup holes for screws using a 3/16" [5mm] drill bit.
5. Secure top rail to Bracket Cups with provided T-25 Drive Thread-Cutting Screws. Use low speed setting on drill.

Fig. 31

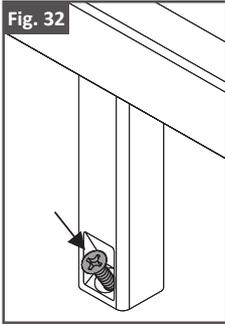


Step 6: Attach I-Support To Deck

1. Fasten I-Support to deck surface with the supplied Phillips Head Wood Screw.

Tip:

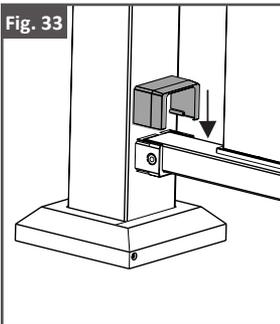
- Pre-drill with a 1/16" [2mm] drill bit.



BRACKET CAP, POST CAP & POST BASE COVER INSTALLATION

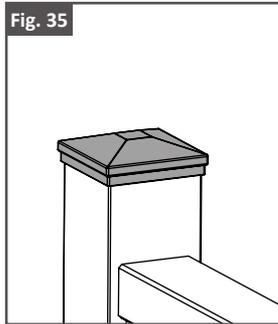
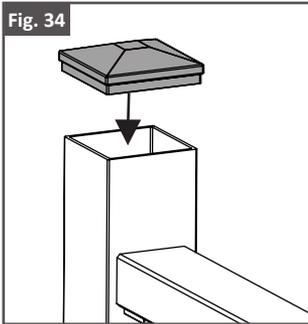
Step 1: Install Bracket Caps

1. The Bracket Covers snap down into place.
2. Use a Rubber Mallet to snap the bracket covers in place.



Step 2: Install Post Caps

1. AI¹³ HOME Posts Caps are press fit into place.
2. Use a Rubber Mallet to snap the caps in place.



Step 3: Install Post Base Covers

1. Separate the two-piece base plate cover. Hold one side parallel to the post base plate. As shown in Fig. 36.
2. Place 2nd half of the post base cover on the opposite side of the post. Hold 2nd piece slightly under the 1st piece. As shown in Fig. 37.
3. Twist the 2nd cover ¼ turn and move piece until both half's touch. As shown in Fig. 38.
4. Make sure one of the locking pins on the 2nd cover engage with the proper slot on the 1st cover piece. As shown in Fig. 39.
5. Once the first locking pin is started, turn the 2nd cover piece back parallel to the post base plate. One you have confirmed both locking pins have engaged with the opposing slots lower both half's over the post base plate. As shown in Fig. 40.

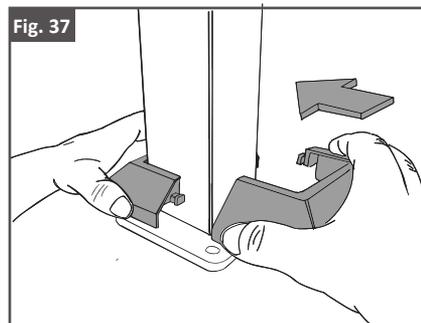
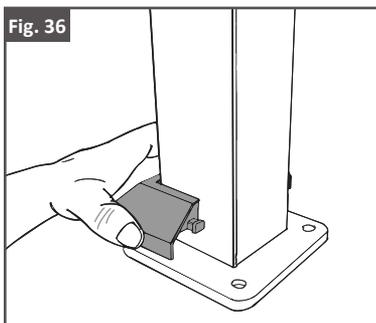


Fig. 38

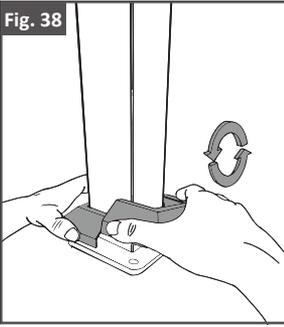


Fig. 39

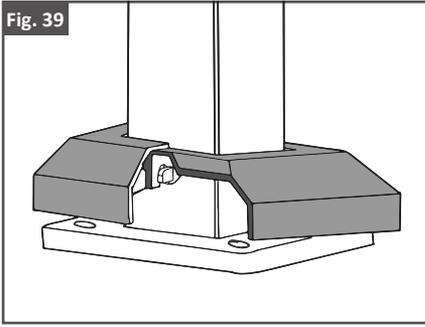
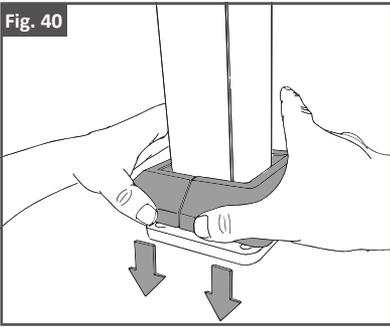
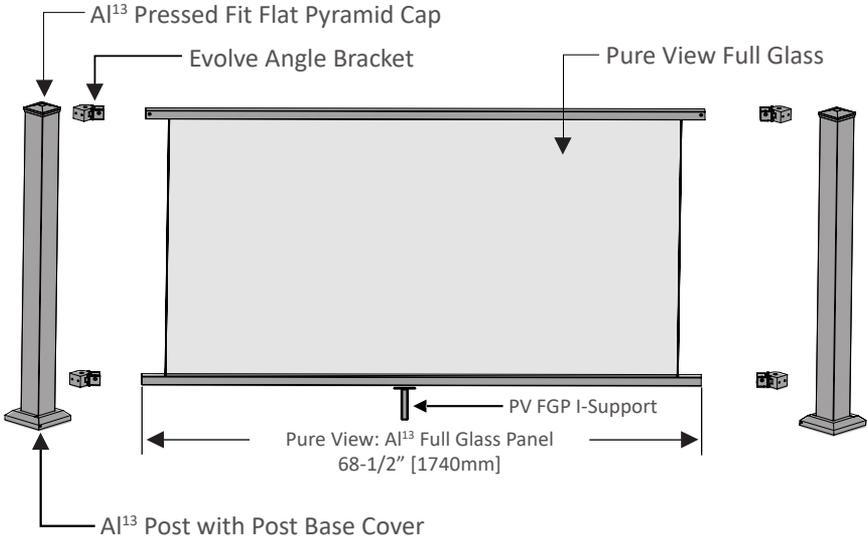


Fig. 40



ANGLE BRACKET

Pure View: Al¹³ Full Glass Panel Angle Bracket Installation Option



Post Configurations		
Al ¹³ Panel Height	Rail Panel	
	Installed Panel Height	Required Post
34" [864mm]	37-1/2" [952.5mm]	39-1/2" [1003.5mm]
40" [1016mm]	43-1/2" [1105mm]	45-1/2" [1156mm]

*Installed heights include a 3-1/2" [89mm] space between deck surface and bottom edge of bottom rail.

ANGLE BRACKET: POST MOUNTING

- Reference Post Mounting instructions on page 6.

Note:

It's Recommended To Install Brackets On To Post Before Post Mounting.

ANGLE BRACKET: BRACKET INSTALLATION

Step 1: Mark Bracket Hole Locations

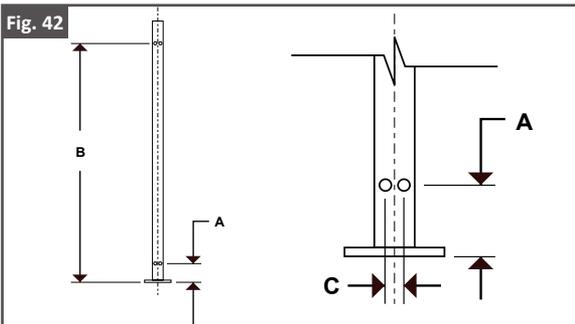
1. Mark the centerline of each post with a pencil.
2. Take measurements used in Fig. 41 and 42 to mark bottom and top bracket hole locations onto posts.

Note:

- Installed panel heights include space between the deck surface and underside of bottom rail.

Bracket Hole Locations		
Pre-drill Dimensions: Pre-drilling with a 3/16" [4.5mm] drill bit is required		
A*	B	C
34" [864mm] Panel		
4-1/16" [103mm]	36-15/16" [937mm]	1" [25mm]
40" [1016mm] Panel		
4-1/16" [103mm]	42-15/16" [1091mm]	1" [25mm]

*Dimension A positions bottom edge of rail 3-1/2" [89mm] above deck surface.
*Dimension A is measured from the bottom surface of post base.

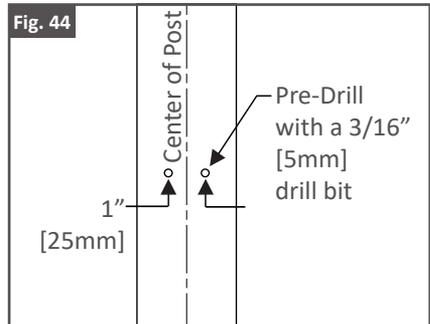
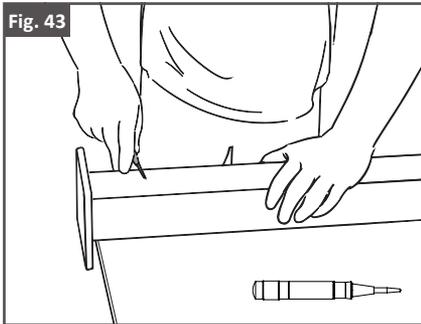


Step 2: Pre-Drill Aluminum Angle Brackets

Tip:

- **It's important to double check dimensions to confirm accuracy of bracket hole locations before drilling.**
1. Use Spring Punch to mark the holes. As shown in Fig. 43.
 2. Pre-drill bracket holes with a 3/16" [5mm] drill bit. As shown in Fig. 44.

3. Remove the bolt from the Aluminum Angle Bracket Assembly.



Step 3: Install Aluminum Angle Brackets

1. Attach Aluminum Angle Bracket Base piece to the posts with supplied T-25 thread-cutting screws. Use two screws per bracket. Use low speed setting on drill. The side of the base with two holes should be facing downwards. As shown in Fig. 45.
2. Reassemble the Aluminum Angle Brackets, but **DO NOT** install the Angle Bracket Cap at this time. As shown in Fig. 46.
3. Once top and bottom brackets are installed, remeasure bracket spacing to confirm dimensions used in Fig. 41 and 42 of step 1.
4. Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post.

Tip:

- Use a Bit Extender for an easier drilling process.

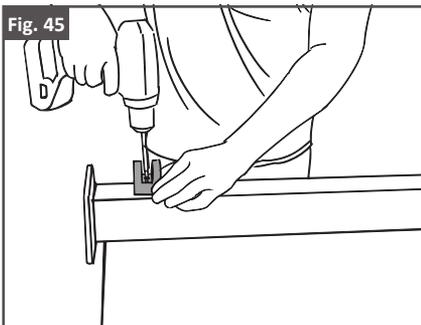
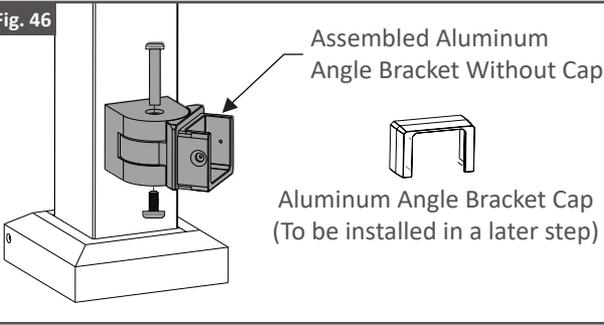


Fig. 46



Step 3: Determine Panel Length

1. Check to ensure that all posts are square and straight. Shim posts as required.
2. Ensure that the Angle Bracket Cups are approximately aligned.
3. With another person's help, measure the distance from the inside back of one cup to the inside back of the other cup. This will be the panel length. As shown in Fig. 48.

Fig. 47

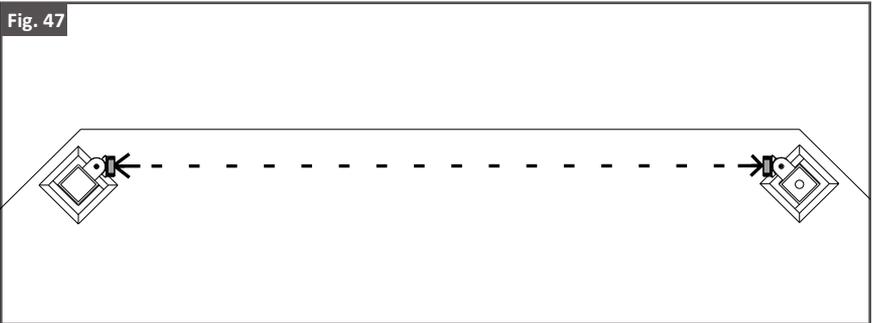
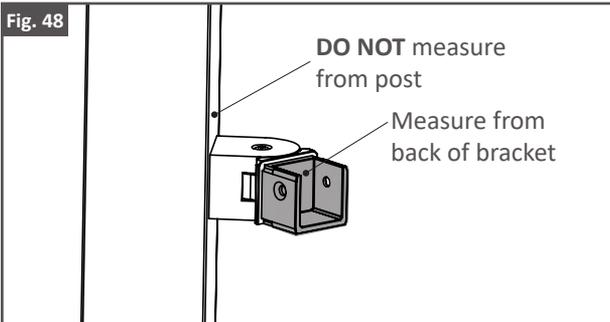


Fig. 48



ANGLE BRACKET: CUTTING DOWN RAILS

- Reference pages 11 & 12 for rail cutting steps.

ANGLE BRACKET: FULL GLASS PANEL INSTALLATION

- Reference Full Glass Panel installation instructions on pages 12 - 16.

ANGLE BRACKET: BRACKET CAP, POST CAP & POST BASE COVER INSTALLATION

- Reference Bracket Cap, Post Cap & Post Base Cover installation instructions on pages 16 - 18.

CARE & MAINTENANCE

Care And Maintenance of Fortress Railing Products Powder-Coated Products And Surfaces:

- After installation of your Fortress Building Product, clean powder-coated products and surfaces with a solution of warm water and non-abrasive, pH neutral detergent solution. Surfaces should be thoroughly rinsed after cleaning to remove all residues. All surfaces should be cleaned using a soft cloth or sponge. Examples of acceptable cleaners are Simple Green, dish soap and warm water.
- Ensure construction materials such as concrete, plaster, and paint splashes are removed immediately before they have a chance to dry. Failure to remove these materials may cause damage to the powder-coated surfaces.
- The frequency of cleaning depends in part on the standard of appearance and also the requirements to remove deposits that may cause damage to the powder coating after prolonged exposure. Fortress recommends cleaning in three to four monthly intervals all products and powder-coated surfaces. In areas where higher traffic, increased atmospheric substances, or other effects may occur, the time period between cleanings should be increased to monthly intervals.
- **WARNING: DO NOT use strong solvents such as thinners, or solutions containing chlorinated hydrocarbons, esters, or ketones. Abrasive cleaners or cutting compounds should not be used.**

WARRANTY

To obtain and review a copy of the warranty, please go to: <https://Fortressbp.com/warranties>. You can also contact: (844) 909-1999 or write to: Fortress Building Products Warranty, 1720 N 1st St, Garland, TX 75040 to obtain a copy of the warranty.



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