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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 Baluster 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

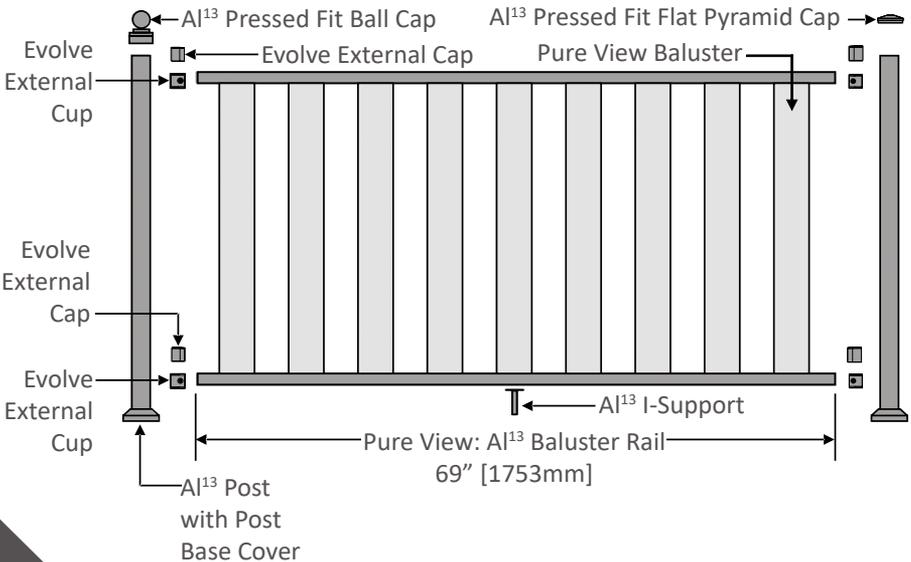
- Always use the lowest speed setting on drill.
- To reduce chance of bit breakage, start tightening with drill on low torque setting and work up until screw is secured.

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

Required Tools



Pure View: Al¹³ Glass Baluster Installation Option



Post Configurations		
AI¹³ Panel Height	Rail Panel Installed Panel Height	Required Post
	34" [864mm]	37 3/4" [962mm]
40" [1016mm]	43 5/8" [1108mm]	45-1/2" [1156mm]

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

POST MOUNTING

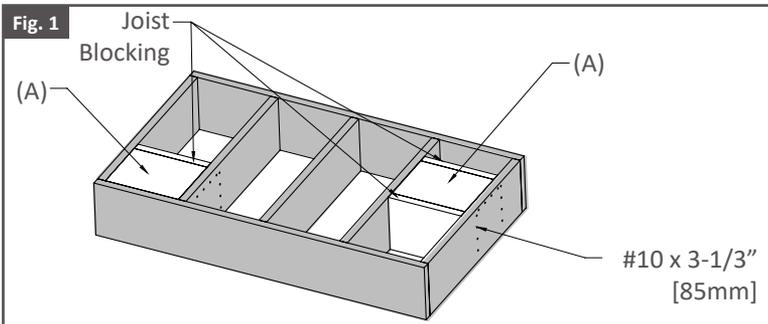
*If using Fortress Evolution Framing, contact Fortress for instructions.

Note:

It's recommended to install brackets into post before post mounting. Reference page 7 for Bracket installation steps.

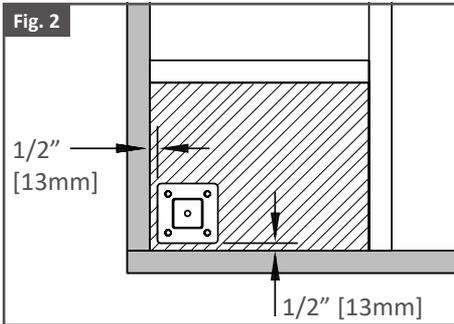
Step 1: Install Wood Blocks

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.

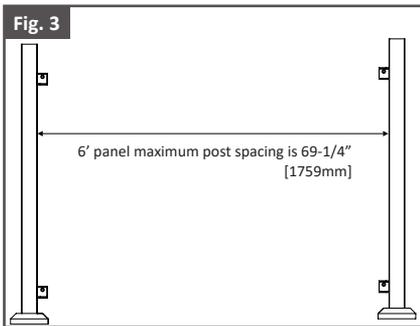


Step 3: Max Post Spacing

1. 6' [1829mm] panel maximum post spacing is 69-1/4" [1759mm].

Note:

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



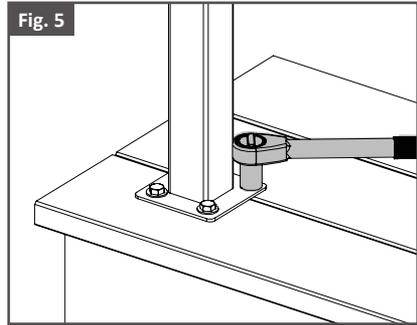
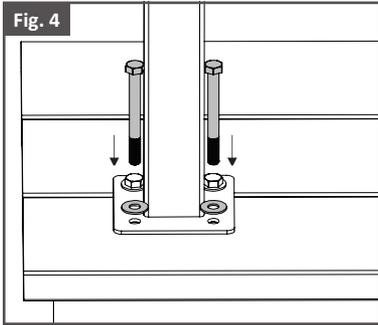
Step 4: Mount Posts

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:

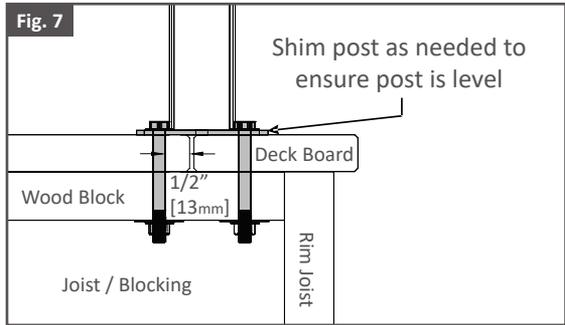
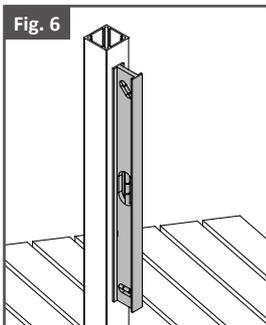
- Post Base Plate holes **MUST** be positioned a minimum 1/2" [13mm] from edge of deck board.

- 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. 10

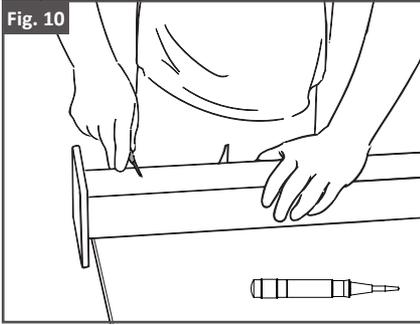


Fig. 11

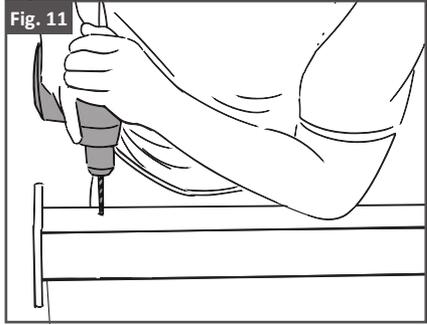


Fig. 12

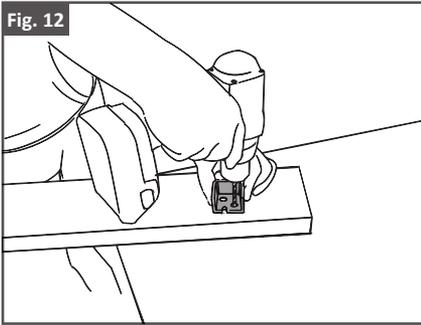


Fig. 13

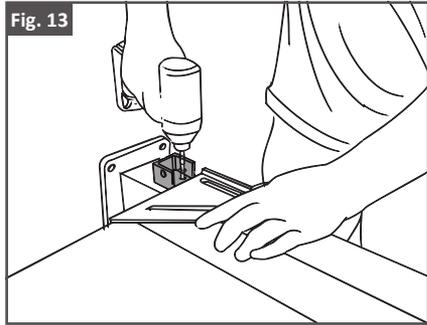
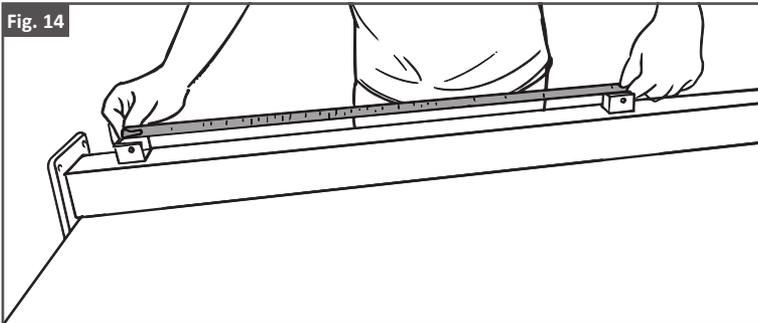


Fig. 14

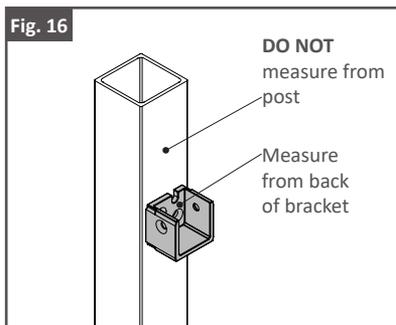
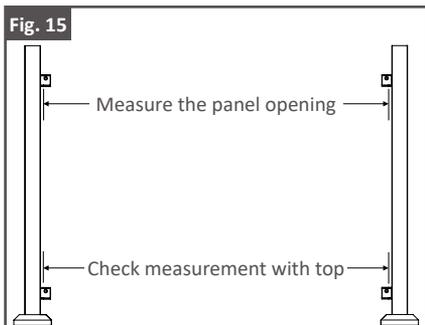


Step 3: Measure The Panel Opening Length

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:

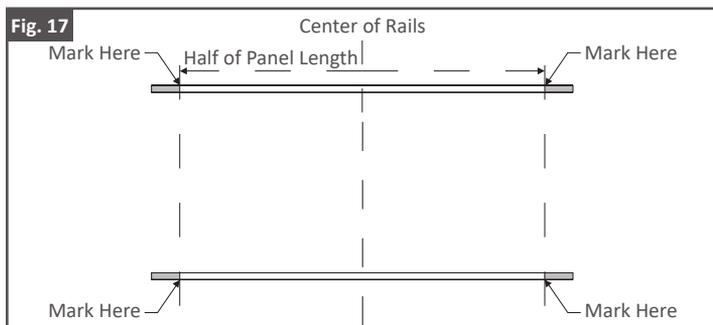
- Measure from the back wall of the bracket to the back wall of the bracket on other post. As shown in Fig. 16.



CUTTING DOWN BOTTOM AND TOP RAILS

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

1. To ensure rails are symmetrical, take the measurement found on page 9, step 3 of Bracket Installation, and divide it in half. Then cut equal lengths from both ends.
2. Find the center of the rails and measure out half of the length each direction. As shown in Fig. 17.
3. Mark these locations with a pencil on the top and bottom rail.

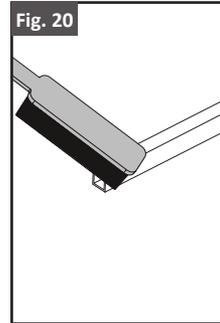
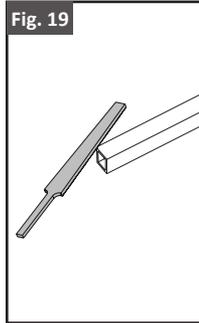
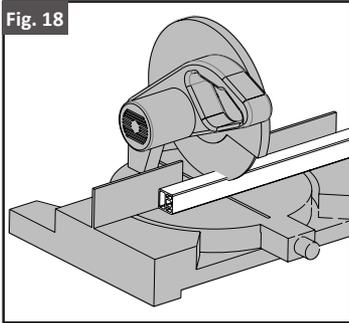


Step 2: Cut & Clean Rails

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.

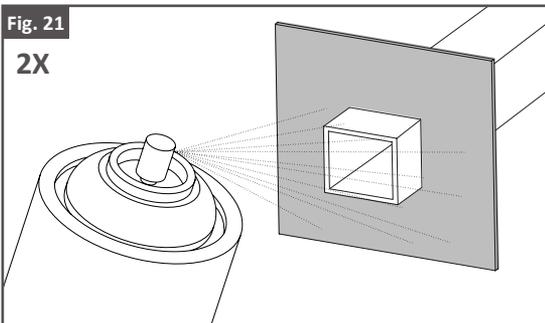
Note:

- Be sure not to cut Grommets in rails.



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.



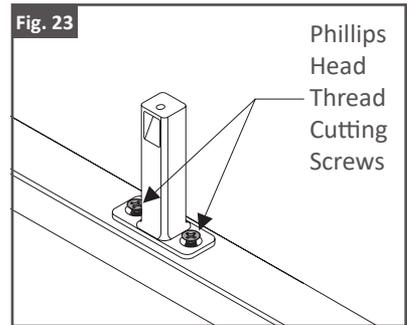
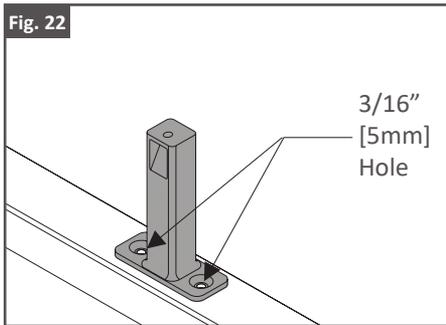
BALUSTER INSTALLATION

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. 22.
2. Using a 3/16" [5mm] drill bit, drill through the outside wall.
3. Install the I-Support with the provided Phillips Head thread cutting screws. As shown in Fig. 23.

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.

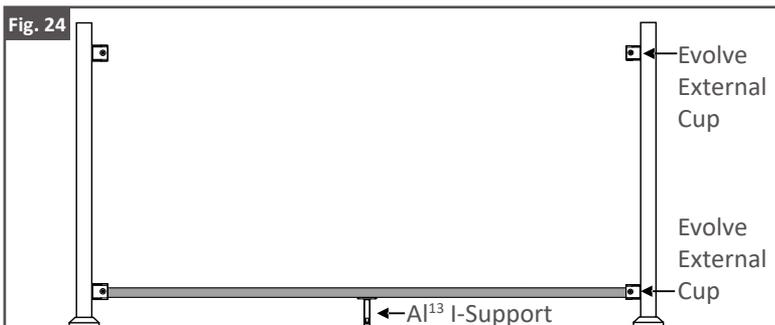
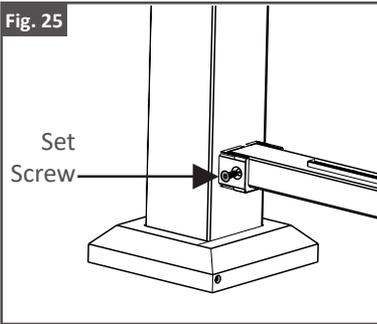


Fig. 25



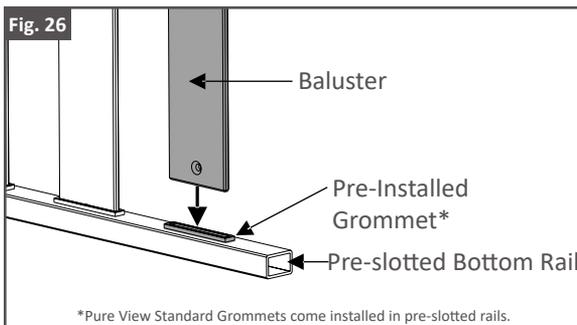
Step 3: Install Balusters Into Bottom Rail

1. Carefully slip Balusters vertically into each slot of the bottom rail. Holes in balusters should not be visible after insertion of baluster into rail. As shown in Fig. 26.

Tip:

- Be sure to wear safety gloves and goggles when handling Glass.

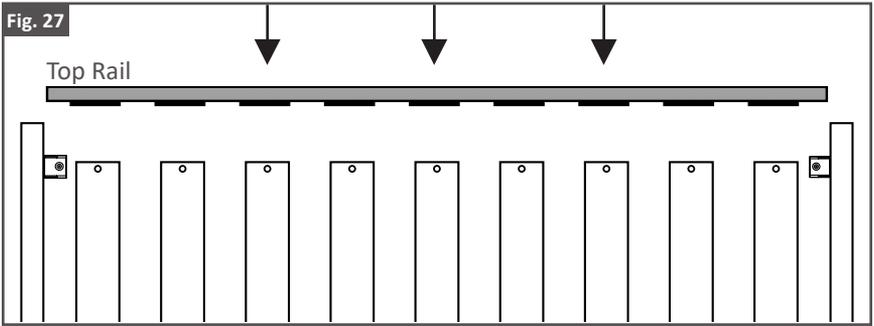
Fig. 26



Step 4: Install Top Rail

1. Carefully slip Top Rail over the top of the Balusters into the slots & top Bracket Cups.
2. Pre-drill Bracket Cup holes for screws using a 3/16" [5mm] drill bit.
3. Secure rail to Bracket Cups at this time with provided T-25 Drive Thread-Cutting Screws. Use low speed setting on drill.

Fig. 27



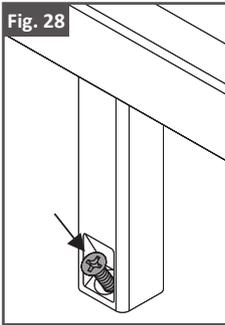
Step 5: Attach I-Support To Deck

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

Tip:

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

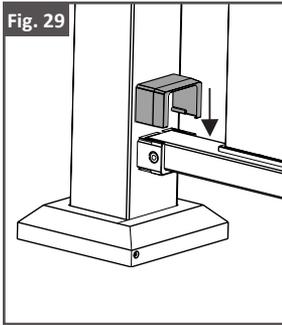
Fig. 28



BRACKET CAP, POST CAP & POST BASE COVER INSTALLATION

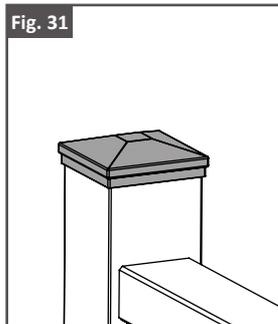
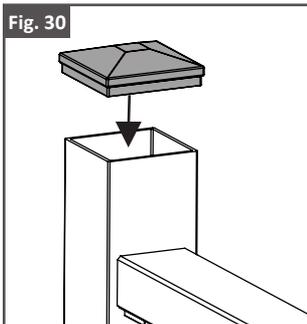
Step 1: Install Bracket Caps

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

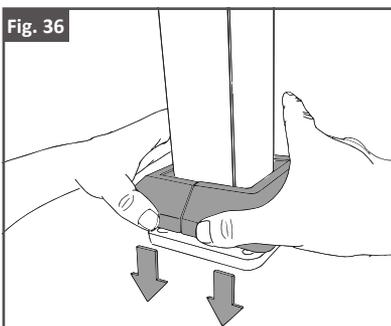
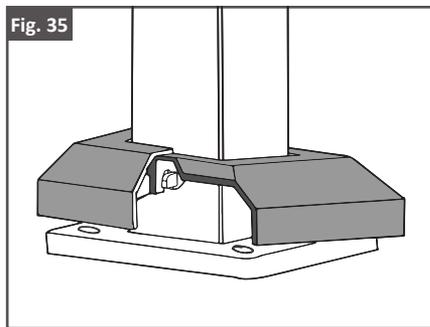
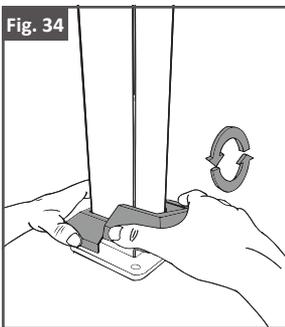
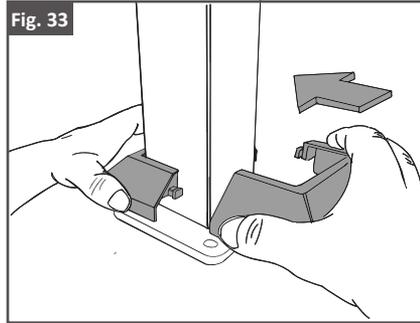
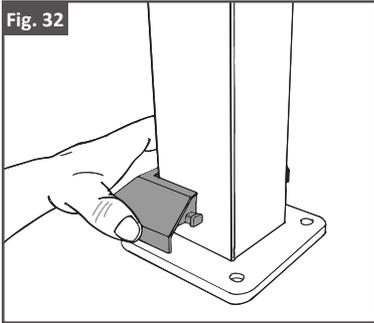
1. AI¹³ Posts Caps are press fit into place.
2. Use a Rubber Mallet to snap the caps in place.



Step 3: Install Post Base Covers

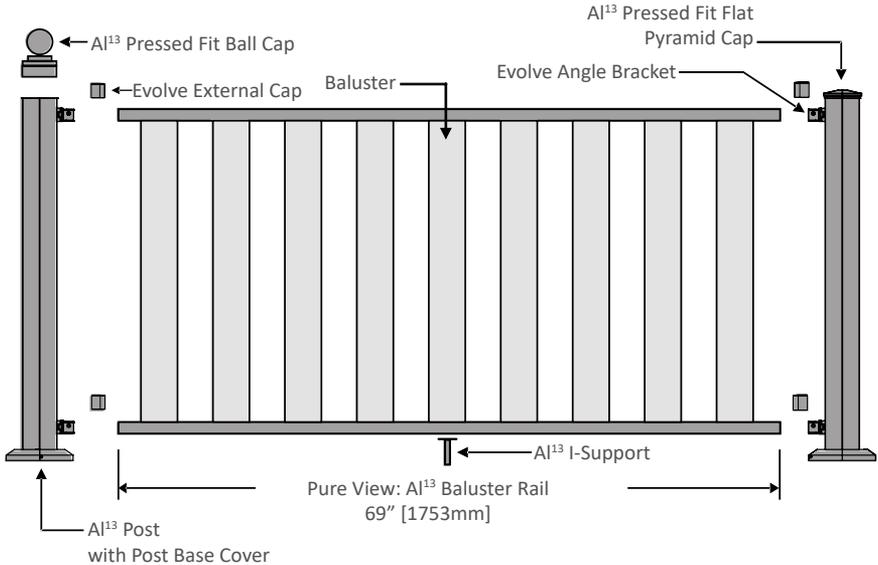
1. Separate the two-piece base plate cover. Hold one side parallel to the post base plate. As shown in Fig. 32.
2. Place 2nd half of the post base cover on the opposite side of the post. Hold 2nd piece slightly under the 1st piece. As shown in Fig. 33.
3. Twist the 2nd cover $\frac{1}{4}$ turn and move piece until both half's touch. As shown in Fig. 34.
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. 35.

- Once the first locking pin is started, turn the 2nd cover piece back parallel to the post base plate. Once 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. 36.



ANGLE BRACKET

Pure View: Al¹³ Glass Baluster Angle Bracket Installation Option



Post Configurations		
Al ¹³ Panel Height	Rail Panel	
	Installed Panel Height	Required Post
34" [864mm]	37 3/4" [962mm]	39-1/2" [1003mm]
40" [1016mm]	43 5/8" [1108mm]	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 5.

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. 37 and 38 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.

Fig. 37

Bracket Hole Locations

Pre-drill Dimensions: Pre-drilling with a 3/16" [5mm] drill bit is required

A*

B

C

34" [864mm] Panel

4-1/16" [103mm]

37 5/16" [948mm]

1" [25mm]

40" [1016mm] Panel

4-1/16" [103mm]

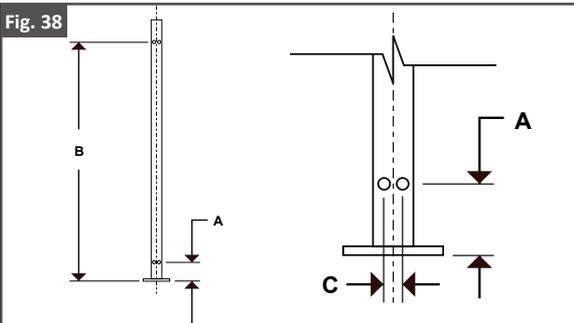
43 1/8" [1095mm]

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.

Fig. 38

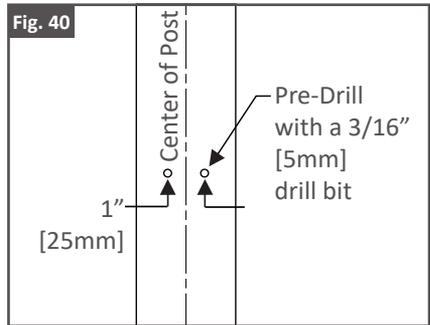
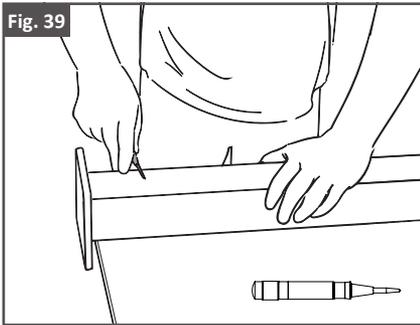


Step 2: Pre-drill Aluminum Angle Brackets

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. 39.
 2. Pre-drill bracket holes with a 3/16" [5mm] drill bit. As shown in Fig. 40.

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. 41.
2. Reassemble the Aluminum Angle Brackets, but **DO NOT** install the Angle Bracket Cap at this time. As shown in Fig. 42.
3. Once top and bottom brackets are installed, remeasure bracket spacing to confirm dimensions used in Fig. 37 and 38 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.

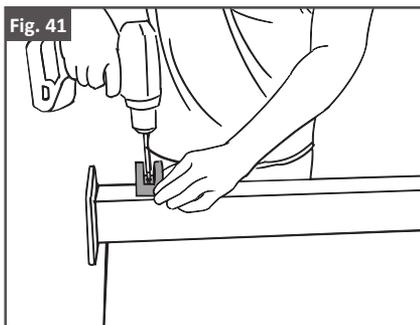
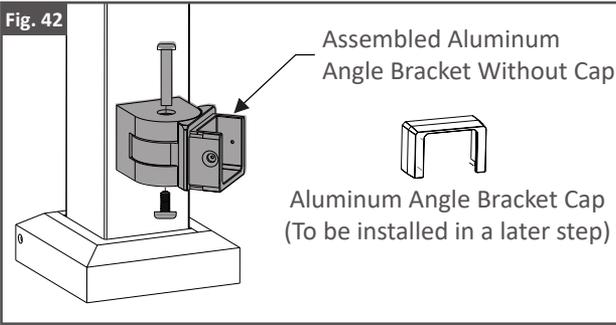


Fig. 42



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. 44.

Fig. 43

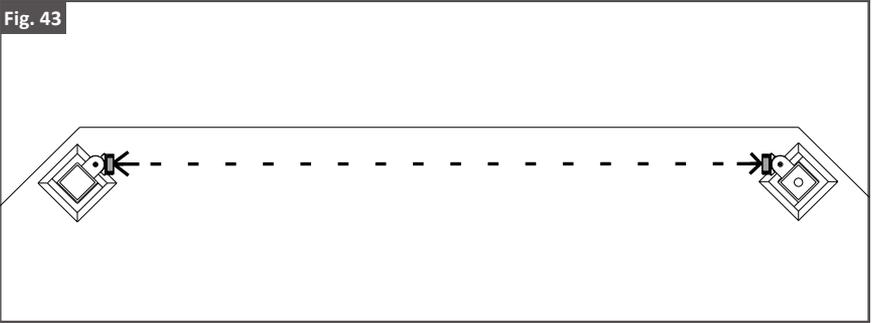
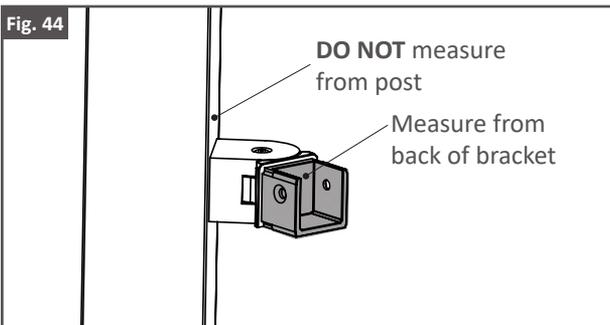


Fig. 44



ANGLE BRACKET: CUTTING DOWN TOP & BOTTOM RAILS

- Reference pages 10 & 11 for rail cutting & spray painting steps.

ANGLE BRACKET: BALUSTER INSTALLATION

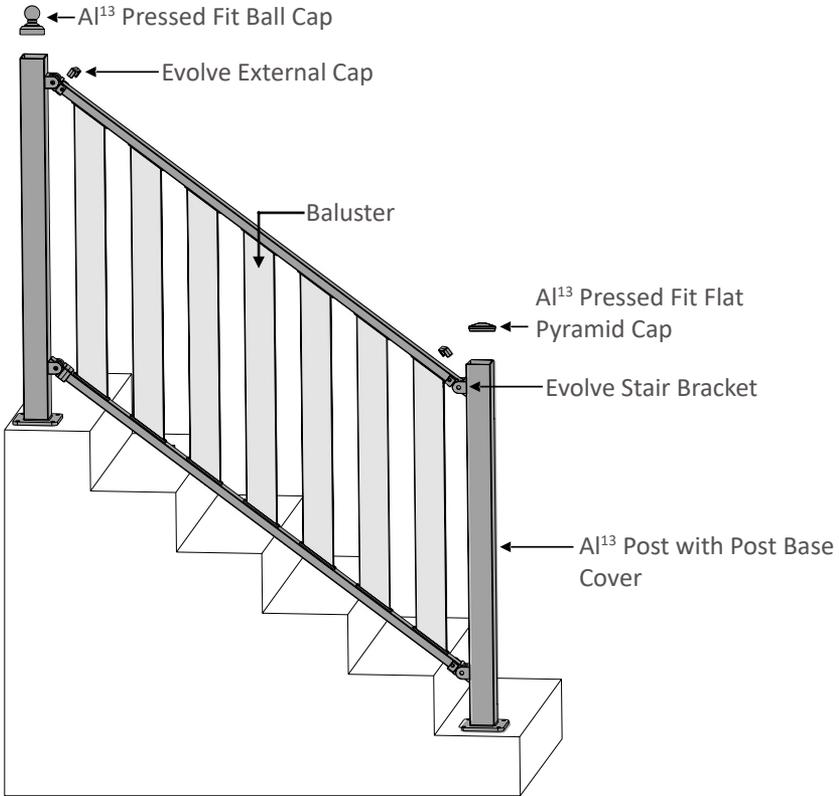
- Reference Baluster installation instructions on pages 12 - 14.

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

- Reference Bracket Cap, Post Cap & Post Base Cover installation instructions on pages 15 & 16.

STAIR BRACKET

Pure View: Al¹³ Glass Baluster Stair Bracket Installation Option



- Pure View Pre-Slotted Rails for 6' [1829mm] stair sections (actual length 73" [1854mm])
- Available Heights 34" (864mm) and 39.8" (1011mm)
- Adjustable Range from 31° to 37°

STAIR BRACKET: POST MOUNTING

- Reference Post Mounting instructions on page 5.

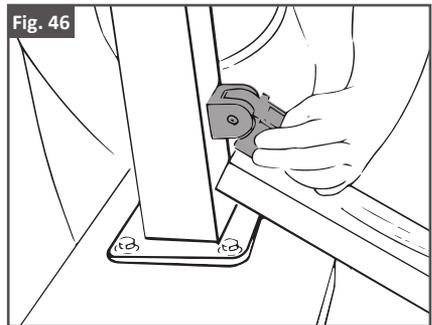
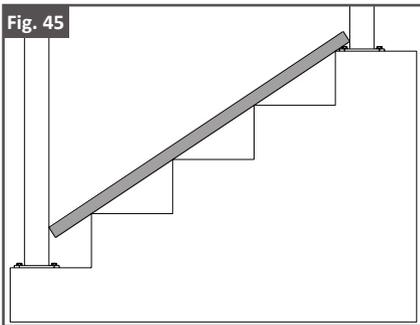
STAIR BRACKET: BRACKET INSTALLATION

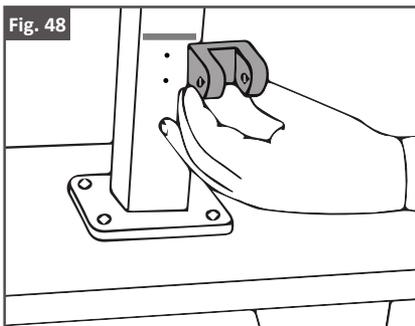
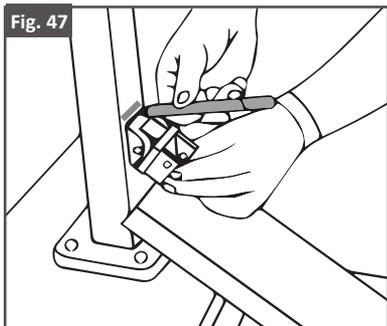
Step 1: Bottom Bracket Installation

1. Position wood 2" x 4" between posts. As shown in Fig. 45.
2. Position bottom rail brackets centered flat on post & wood 2" x 4" actual 1-1/2" X 3-1/2" [38mm x 89mm]). As shown in Fig. 46.
3. Use pencil to mark top edge of bracket location on post. As shown in Fig. 47.
4. Dis-assemble the brackets by removing the barrel and screw.
5. Place bracket base on previous top edge mark. Center the base on the post and use pencil to add marks for two screw hole locations. As shown in Fig. 48.

Note:

- For best results, be sure bracket bases are centered on posts when making marks.
- Bracket holes are molded with a center point location.



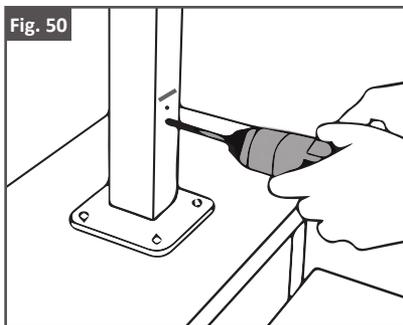
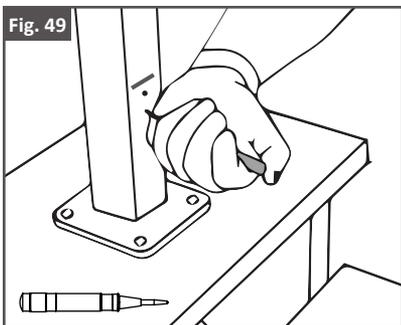


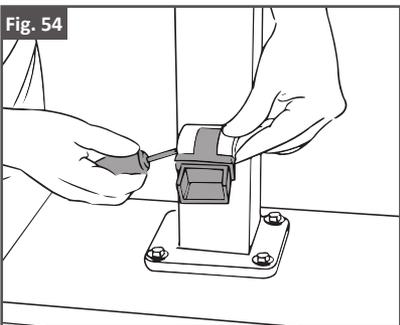
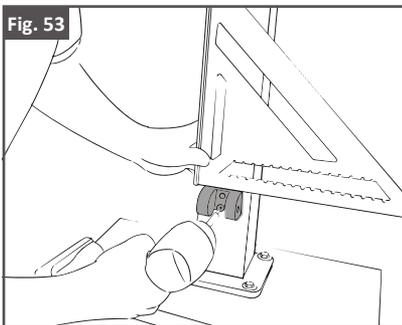
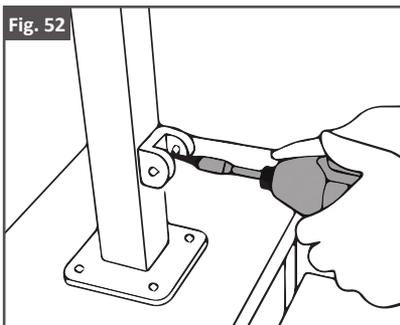
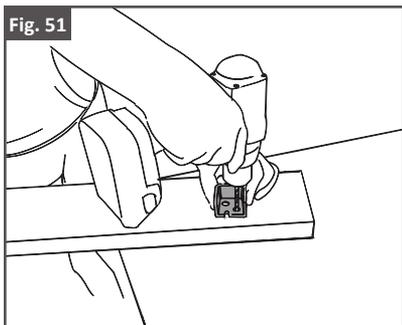
Step 2: Bottom Bracket Installation Continued

1. Use Spring Punch to mark the holes. As shown in Fig. 49.
2. Drill out bracket holes with a 3/16" [5mm] drill bit. As shown in Fig. 50.
3. Use scrap wood as support and drill through center holes in bracket base. As shown in Fig. 51.
4. Use T-25 screws to attach the base of the bracket to the post. Begin with top hole then bottom. As shown in Fig. 52.
5. Keep bracket base centered as you install second screw. As shown in Fig. 53.
6. Insert barrel & screw to re-assemble bracket.
7. Tighten barrel & screw. As shown in Fig. 54.

Note:

- **Lower Post may need to be unmounted to install bracket then remounted.**



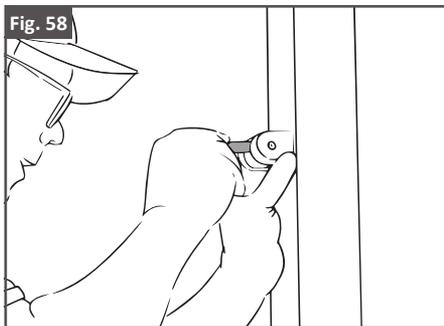
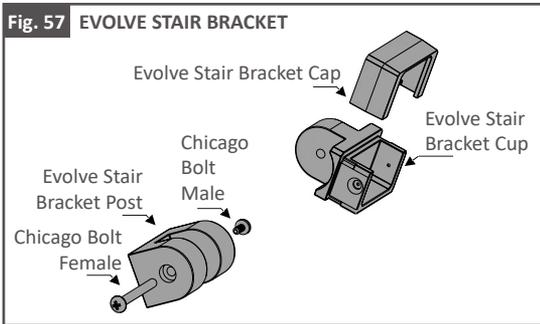
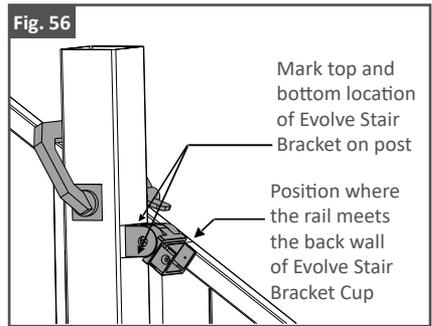
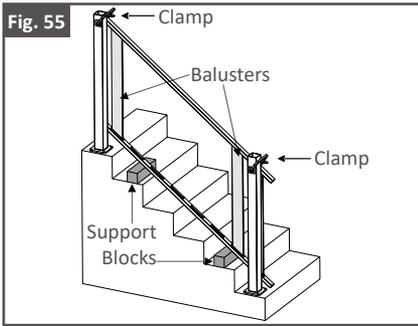


Step 3: Top Bracket Installation

1. Position support blocks on stairs in line with bottom brackets.
2. Place bottom rail on top of support blocks next to bottom brackets. Have bottom rail positioned as close to final installation position as possible.
3. Add two balusters to the bottom rail, add top rail then clamp panel to post. As shown in Fig. 55.
4. Position top rail brackets parallel with top rail & flat centered on post. **Make sure inside bottom of bracket is flush with bottom of rail. As shown in Fig. 56.**
5. Use pencil to mark top edge of bracket location on post.
6. Dis-assemble the brackets by removing the barrel and screw. As shown in Fig. 57.
7. Place top rail bracket bases on previous top edge mark. Center the base on the post and use pencil to add marks for two screw hole locations. As shown in Fig. 58.

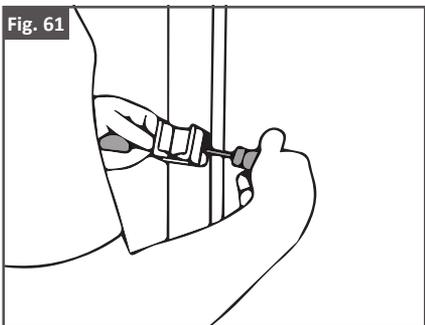
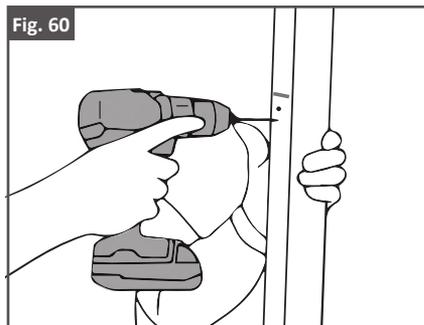
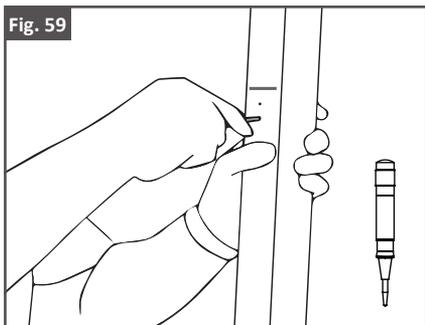
Note:

- **For best results, be sure bracket bases are centered on posts when making marks.**



Step 4: Top Bracket Installation Continued

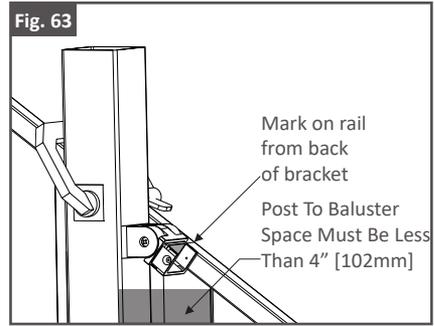
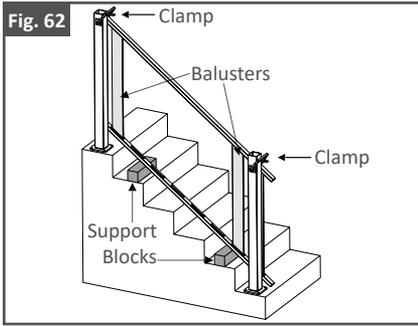
1. Use Spring Punch to mark the holes. As shown in Fig. 59.
2. Drill out holes with a 3/16" drill bit. As shown in Fig. 60.
3. Use scrap wood as support and drill through center holes in bracket base. As shown in Step 2 Fig. 51.
4. Use T-25 Screws to reattach the base of the top rail brackets to the post.
5. Insert barrel & screw to re-assemble bracket.
6. Tighten barrel & screw. As shown in Fig. 61.



STAIR BRACKET: CUTTING DOWN TOP & BOTTOM RAILS

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

1. Position support blocks on stairs in line with bottom brackets.
2. Place bottom rail on top of support blocks next to bottom brackets. Have bottom rail positioned as close to final installation position as possible.
3. Add two balusters to the bottom rail, add top rail then clamp panel to post. As shown in Fig. 62.
4. Measure spacing from inside edge of post to the baluster space. Spacing **CANNOT** exceed 4" [101.5mm] on each end. As shown in Fig. 63.
5. Place cut marking on rails in line with the back of bracket opening. Be sure bottom of bracket and bottom of rail are flush. As shown in Fig. 63.
6. Use speed square to ensure markings are perpendicular to panel.



Step 2: Cut & Clean Rails

- Reference page 10 for rail cutting steps.

Step 3: Apply Spray Paint To Cut Areas

- Reference page 11 for rail spray painting steps.

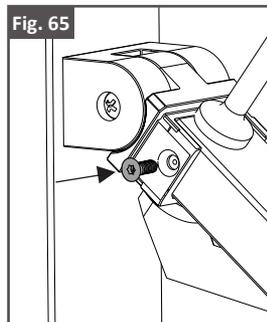
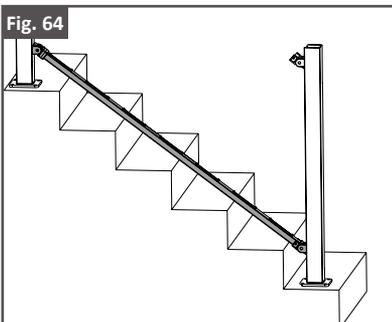
STAIR BRACKET: BALUSTER INSTALLATION

Step 1: 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. As shown in Fig. 65.

Note:

- Only one screw is needed to attached each bracket to the rail.
- A C-Clamp can be used to hold rail in bracket.

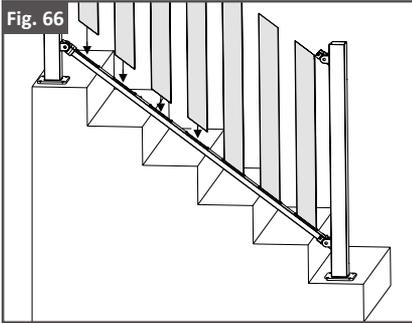


Step 2: Install Balusters Into Bottom Rail

1. Carefully slip Baluster vertically into each slot of the bottom rail. As shown in Fig. 66.

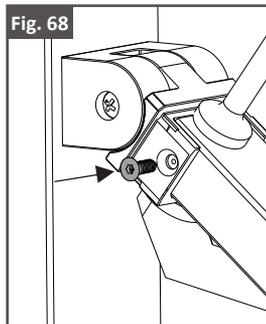
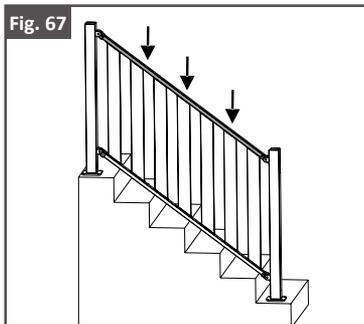
Tip:

- Be sure to wear safety gloves and goggles when handling Glass.



Step 3: Install Top Rail

1. Carefully slip Top Rail over the top of the Balusters into the top Bracket Cups.
2. Pre-drill Bracket Cup holes for screws using a 3/16" [5mm] drill bit.
3. Secure top rail to Bracket Cups with provided T-25 Drive Thread-Cutting Screws. Use low speed setting on drill.



**STAIR BRACKET: BRACKET CAP, POST CAP &
POST BASE COVER INSTALLATION**

- Reference Bracket Cap, Post Cap & Post Base Cover installation instructions on pages 15 & 16.

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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