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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 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



Goggles



Safety
Gloves



Tape
Measurer



Speed
Square



Level
Tool



Touch-Up
Paint



T-25
Driver Bit



5/16" [8mm]
Nut Driver Bit



#2 Phillips
Head Bit



Drill Bits: 1/16", 3/16",
3/8", 5/8" [2mm, 5mm,
10mm, 16mm]



File



Socket
Set



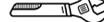
Hex
Wrench



Bit
Extender



Socket
Wrench



Crescent
Wrench



C-Clamp



Drill



Miter Saw



Rubber
Mallet



Spring
Punch



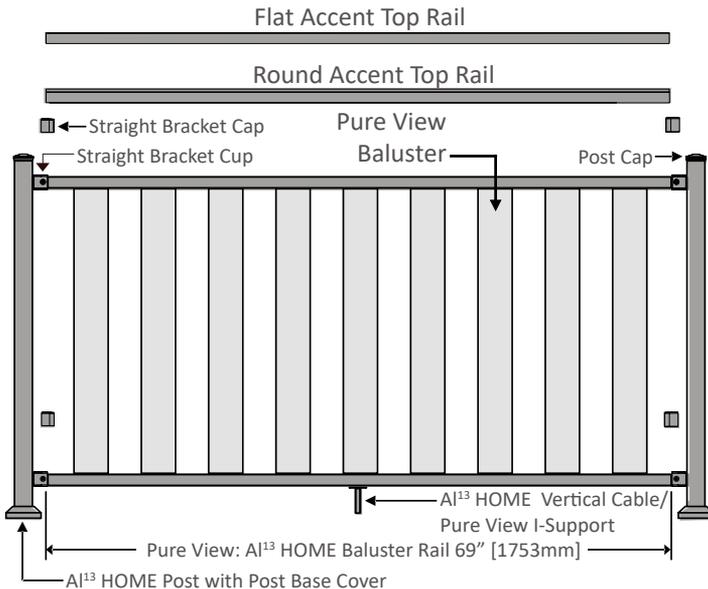
Pencil



Support
Blocks

Pure View: AI¹³ HOME Glass Baluster Installation Options

2" [51mm] or 3" [76mm] Proud Post



2" [51mm] or 3" [76mm] Proud Post Configurations

AI¹³ HOME Panel Height

32-1/2" [826mm]

40" [1016mm]

Rail Panel

Installed Panel Height

36" [914mm]

42" [1067mm]

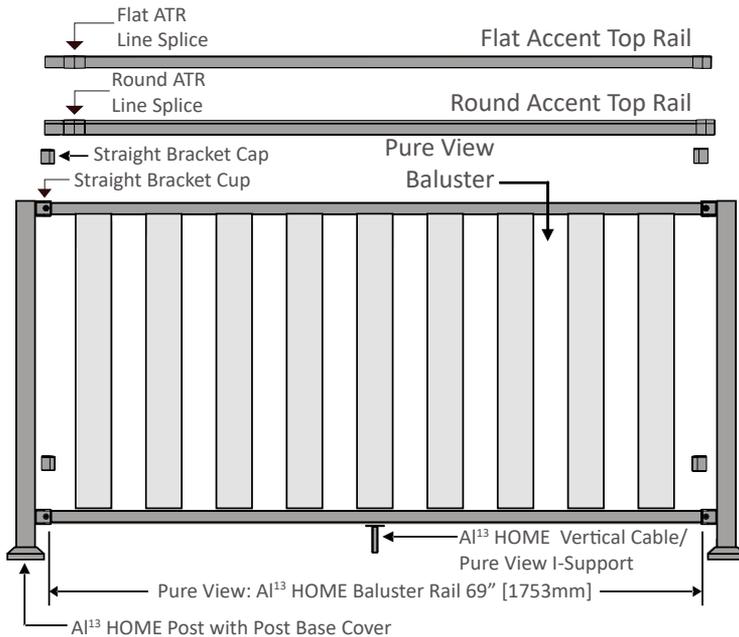
Required Post

39-1/2" [1003mm]

45-1/2" [1156mm]

*Installed heights include a 3-1/2" [89mm] for the 32-1/2" [826mm] panel & 2" [51mm] for the 40" [1016mm] panel space between deck surface and bottom edge of bottom rail.

2" [51mm] Over The Post (OTP)



2" [51mm] Over The Post (OTP) Configurations

AI¹³ HOME Panel Height

32-1/2" [826mm]

40" [1016mm]

Rail Panel

Installed Panel Height

36" [914mm]

42" [1067mm]

Required Post

36" [914mm]

42" [1067mm]

*Installed heights include a 3-1/2" [89mm] for the 32-1/2" [826mm] panel & 2" [51mm] for the 40" [1016mm] panel space between deck surface and bottom edge of bottom rail.

POST MOUNTING

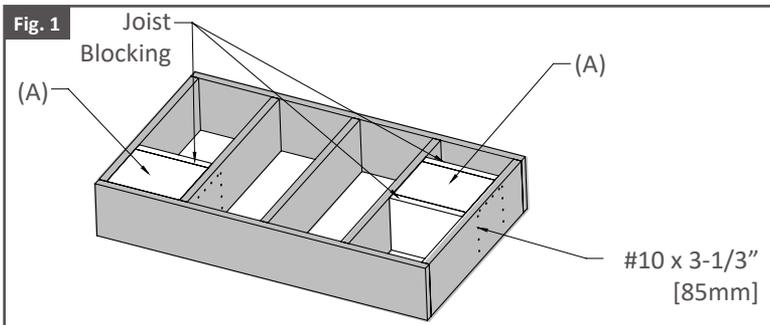
*If using Fortress Evolution Framing, contact Fortress for instructions.

Note:

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

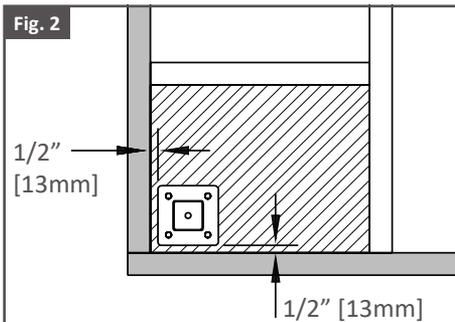
Step 1: Install Wood Blocks

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.

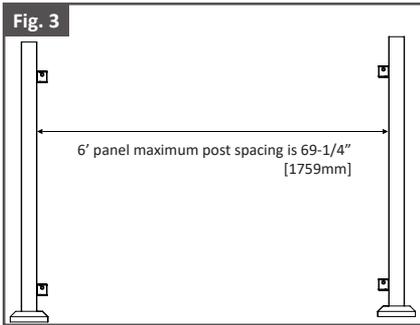


Step 3: Max Post Spacing

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

Note:

- **Do not exceed the maximum post spacing.**

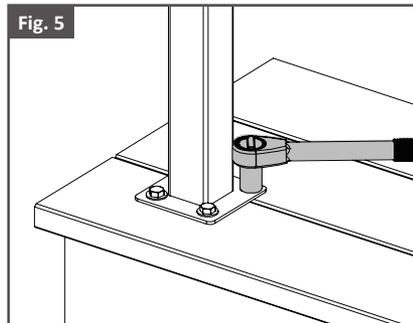
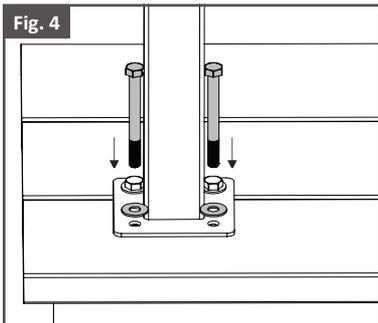


Step 4: Mount Posts

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.

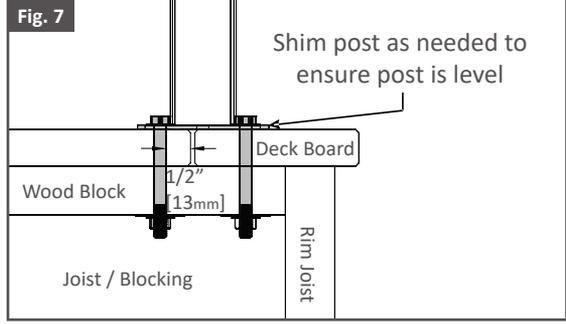
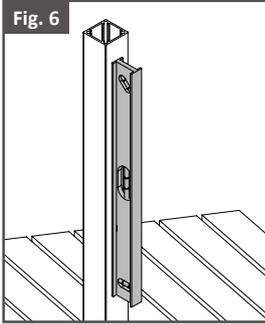
Note:

- 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.

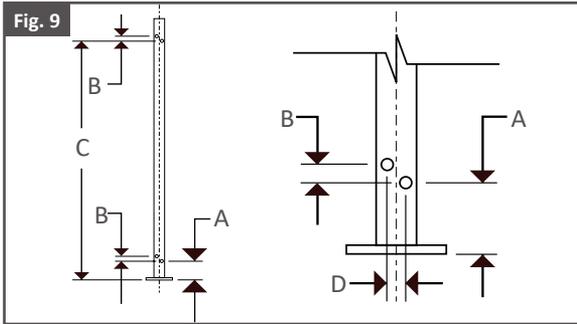


BRACKET INSTALLATION

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.

Bracket Hole Locations				
Pre-drill Dimensions: Pre-drilling with a 3/16" [5mm] drill bit is required				
A*	B	C	D	
(1) 32-1/2" [826mm] Panel				
3-13/16" [97mm]	3/8" [10mm]	35-1/16" [891mm]	3/4" [19mm]	
(2) 40" [1016mm] Panel				
2-1/2" [64mm]	3/8" [10mm]	41-3/16" [1047mm]	3/4" [19mm]	
*Dimension A positions bottom edge of rail (1) 3-1/2" [89mm] and (2) 2" [51mm] 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. 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. 12.
 4. 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. 13.
 5. Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post to prevent corrosion.

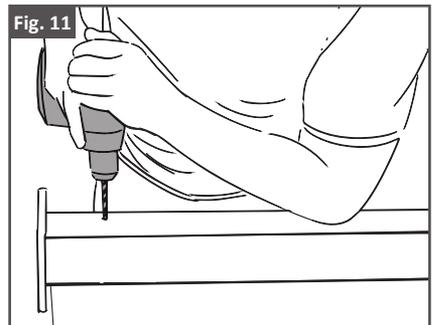
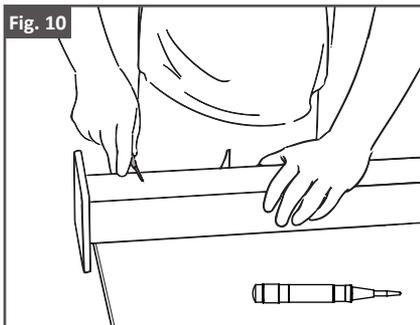


Fig. 12

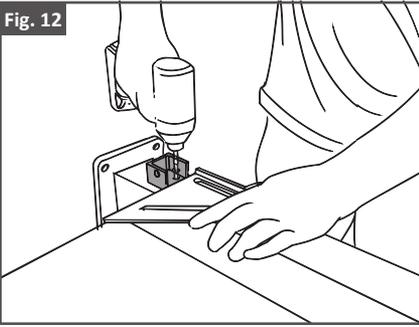
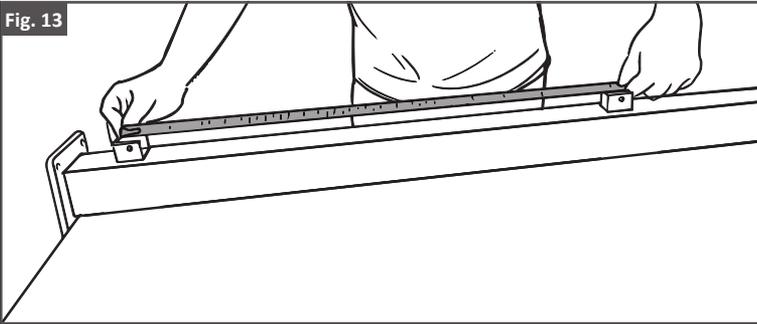


Fig. 13

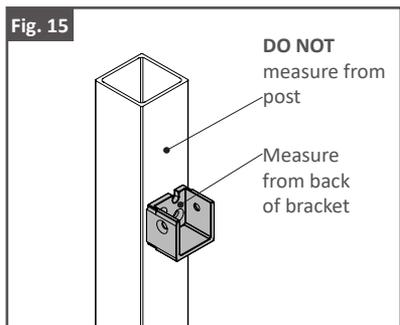
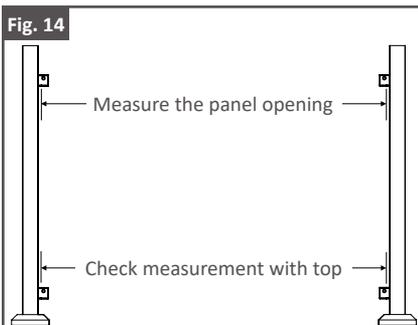


Step 3: Measure The Panel Opening Length

1. Measure the distance of the panel opening.
As shown in Fig. 14.
2. Confirm that the measurements for the top brackets are the same as the bottom brackets.

Note:

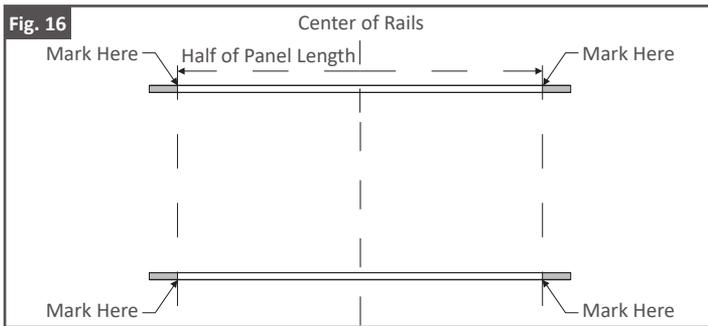
- **Measure from the back wall of the bracket to the back wall of the bracket on other post. As shown in Fig. 15.**



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 10, 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. 16.
3. Mark these locations with a pencil on the top and bottom rail.

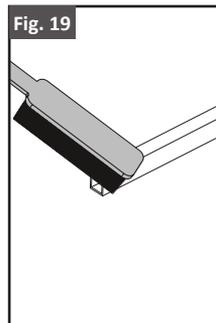
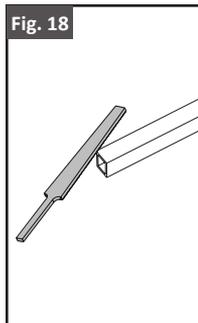
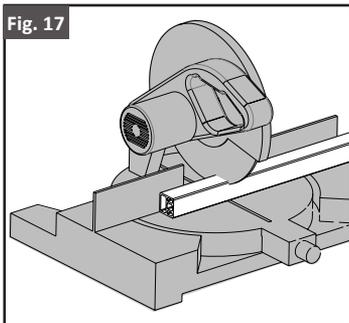


Step 2: Cut & Clean Rails

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.

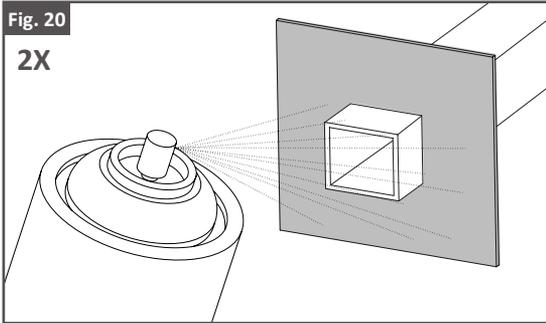
Note:

- **DO NOT** 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.



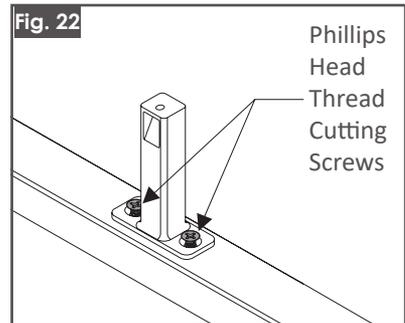
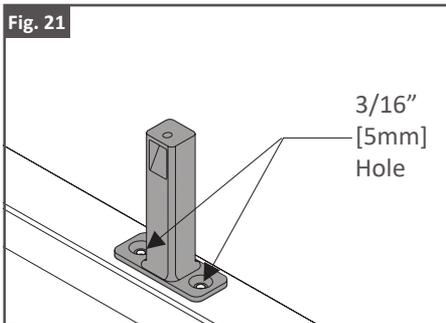
BALUSTER INSTALLATION

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. 21.
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. 22.

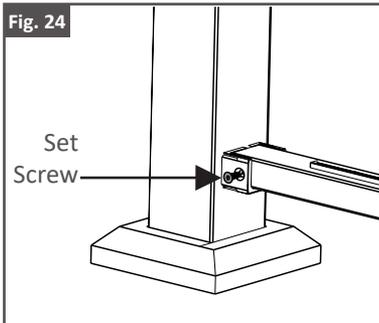
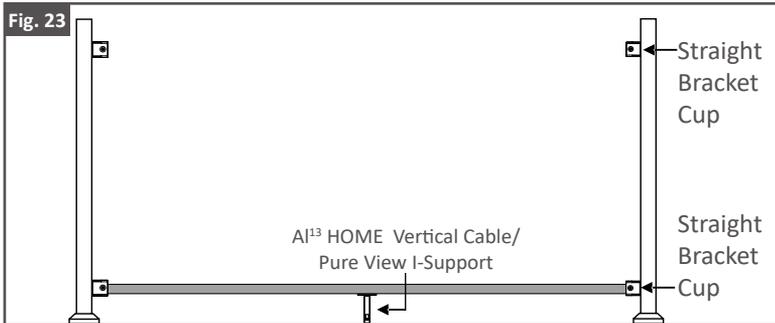
Note:

- 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.

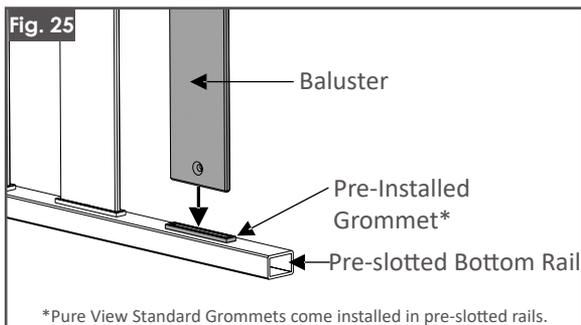


Step 3: Install Balusters Into Bottom Rail

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. 25.

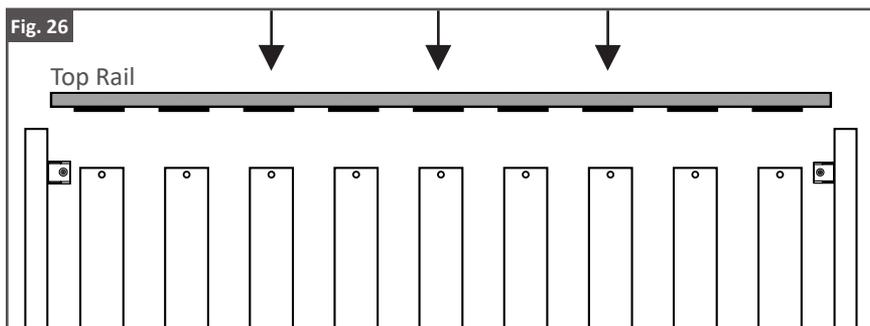
Tip:

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



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.



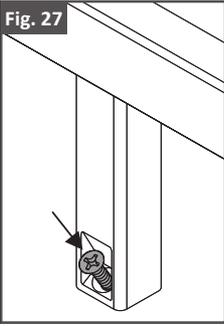
Step 5: Attach I-Support To Deck

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. 27



PROUD POST: ROUND ACCENT TOP RAIL (ATR)

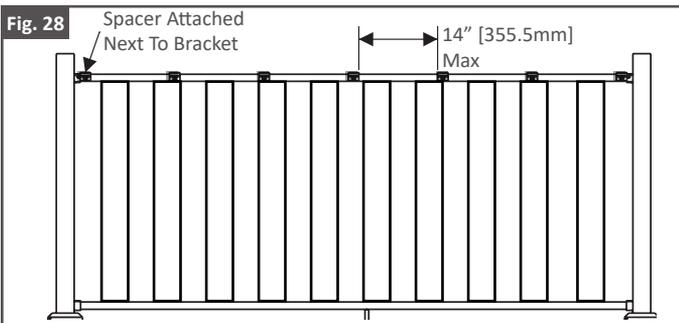
Step 1: Round ATR Spacers

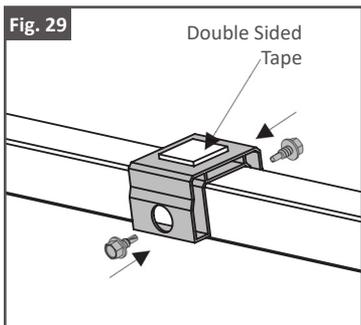
1. Attach Spacers using provided self-drilling screws with a 5/16" [8mm] nut driver, two screws per spacer. As shown in Fig. 29.
 - The Accent Top Rail Kit comes with 6 spacers in the 69.89" [1775mm] kit.
 - The spacers should be equally spaced along the length of the rail, with no more than 14" [356mm] spacing between them. As shown in Fig. 28.
 - The end spacers should be placed as close to the end brackets as possible.

Note:

- **DO NOT REMOVE BACKING OF DOUBLE SIDED TAPE UNTIL YOU ARE READY TO PERMANENTLY ATTACH THE ATR.**

Fig. 28





Step 2: Round ATR Line & End

1. Measure the distance from the inside edge of the 2 posts.
2. Cut the ATR to measured length.
3. When test fitting the ATR, place it on top of the spacers. **DO NOT** press the ATR down over the spacers. Removing the ATR from the spacers can damage the ATR and spacers. As shown in Fig. 31.
4. Remove the backing of all of the double-sided tape on the ATR spacers.
5. A Rubber Mallet might need to be used to install. If using a Rubber Mallet, use a cloth to protect the ATR from damage.

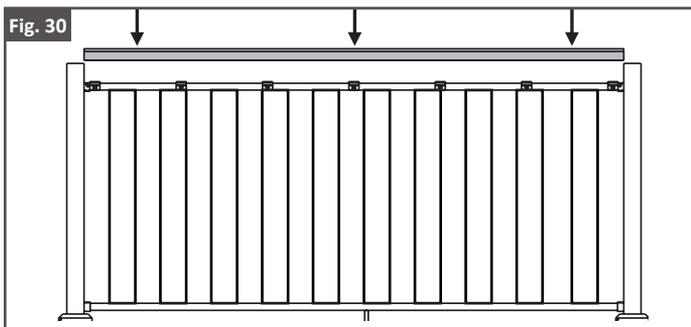
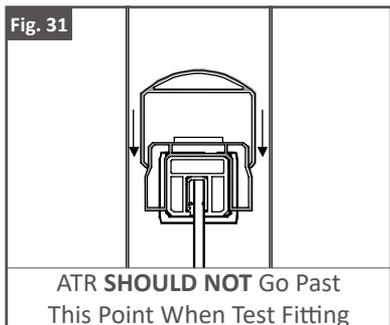


Fig. 31



PROUD POST: FLAT ACCENT TOP RAIL (ATR)

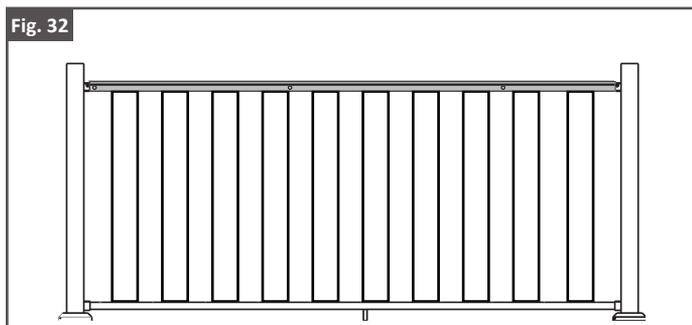
Step 1: Flat ATR Spacers

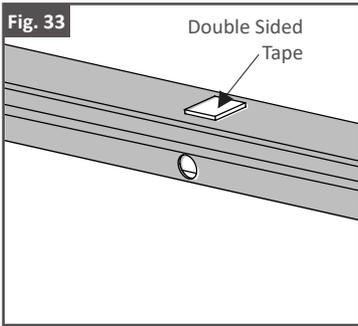
1. Measure distance between brackets and cut ATR Spacer to length. The Spacer can be 1/4" [6mm] shorter than the distance between brackets.
2. If one of the screw holes was cut off during the sizing of the ATR Spacer, use a 5/8" [16mm] drill bit to add another hole 1" [25mm] from the end of the ATR Spacer.
3. Attach the ATR Spacer using the provided self-drilling screws with a 5/16" [8mm] nut driver.
4. All screw holes must have a screw installed.

Note:

- Flat ATR uses a full length ATR spacer.
- DO NOT REMOVE BACKING OF DOUBLE SIDED TAPE UNTIL YOU ARE READY TO PERMANENTLY ATTACH THE ATR.

Fig. 32





Step 2: Flat ATR Line And End

- Reference Proud Post Round ATR Line & End instructions on page 16.

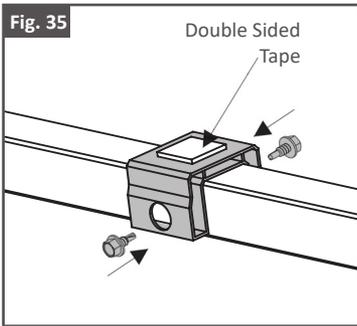
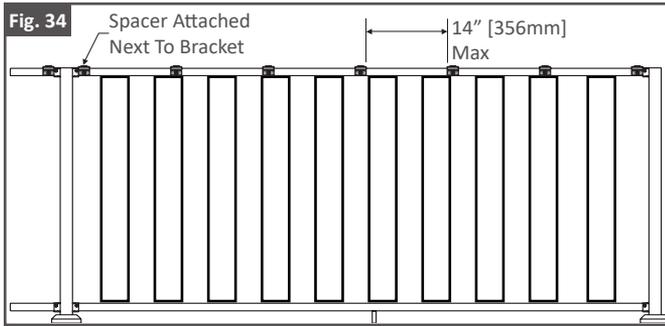
OVER THE POST: ROUND ACCENT TOP RAIL (ATR)

Step 1: Round ATR Spacers

1. Attach spacers using provided self-drilling screws with a 5/16" [8mm] nut driver, two screws per spacer. As shown in Fig. 35.
- The Accent Top Rail Kit comes with 6 spacers in the 69.89" [1775mm] kit.
 - The spacers should be equally spaced along the length of the rail, with no more than 14" [356mm] spacing between them. As shown in Fig. 34.
 - The end spacers should be placed as close to the end brackets as possible.

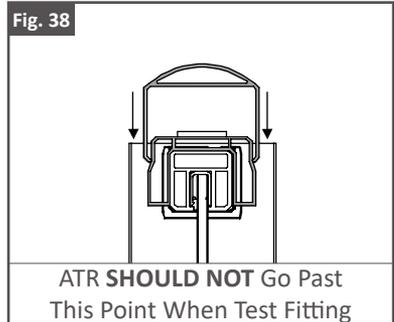
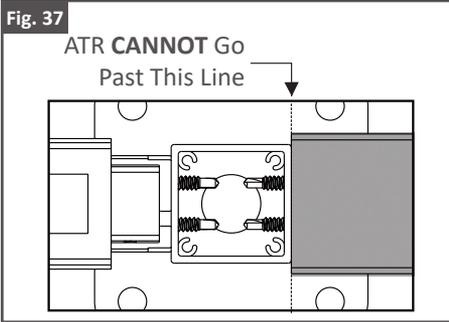
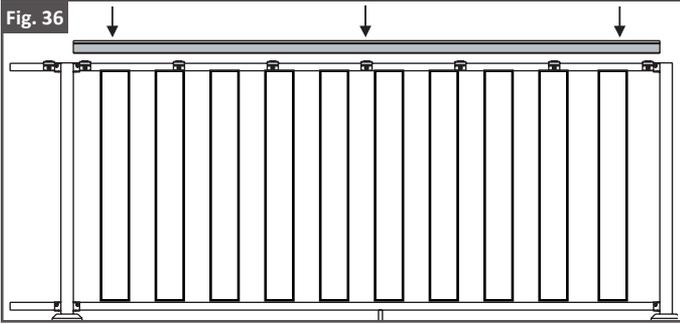
Note:

- **DO NOT REMOVE BACKING OF DOUBLE SIDED TAPE UNTIL YOU ARE READY TO PERMANENTLY ATTACH THE ATR.**



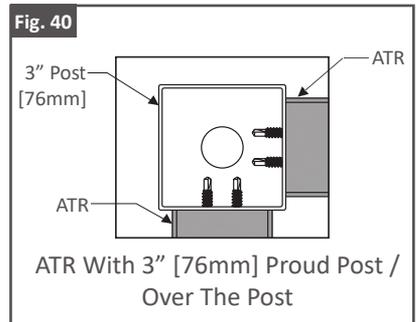
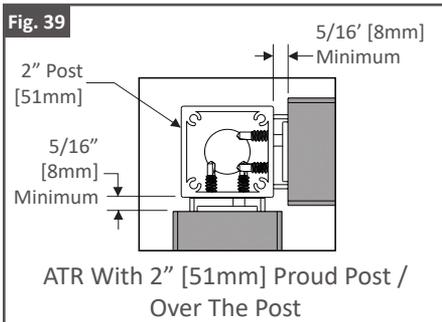
Step 2. Round ATR Line & End

1. Measure the distance from the inside edge of the 2 posts.
2. Cut the ATR to measured length.
3. The ATR cannot block the inside edge of the post. As shown in Fig. 38.
4. When test fitting the ATR, place on top of the spacers. **DO NOT** press the ATR down over the spacers. Removing the ATR from the spacers can damage the ATR and spacers. As shown in Fig. 37.
5. Remove the backing of all of the double-sided tape on the ATR spacers.
6. A Rubber Mallet might need to be used to install. If using a rubber mallet, use a cloth to protect the ATR from damage.



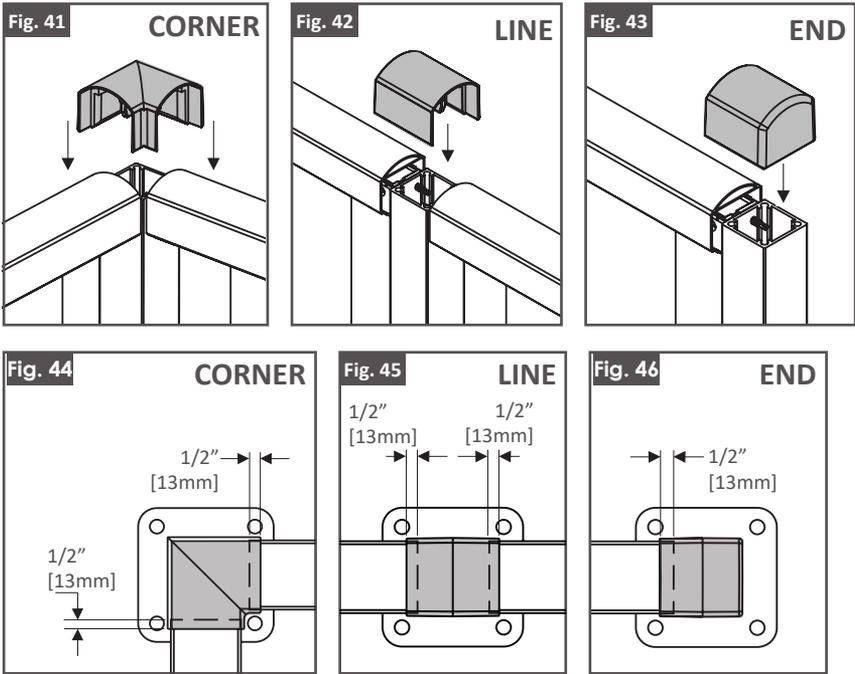
Step 3: Round ATR Corner

1. When installing ATR on corners with a 2" [51mm] post, the ATR must be 5/16" [8mm] away from the post. As shown in Fig. 39.
2. If installing a corner with a 3" [76mm] proud post, install the ATR at full length from the inside edge of the post to the inside edge of the post.



Step 4: Round ATR Splice

1. To install an ATR splice: Center the splice over the post and with force press down over the ATR. As shown in Fig. 41, 42 & 43.
 2. A Rubber Mallet might need to be used to install. If using a Rubber Mallet, use a cloth to protect the splice from damage.
- ATR splices reference the inside of the post and snap down around the ATR.
 - ATR splices allow up to 1/2" [13mm] of length variation from the edge of the post. As shown in Fig. 44, 45 & 46.



OVER THE POST: FLAT ACCENT TOP RAIL (ATR)

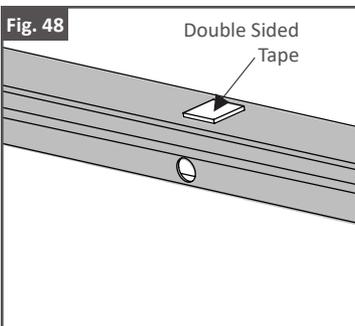
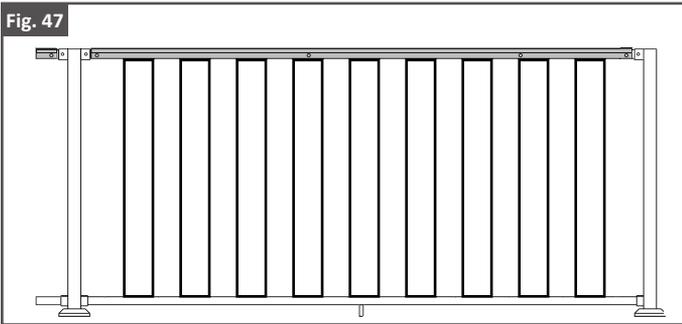
Step 1: Flat ATR Spacers

1. Measure distance between brackets and cut ATR spacer to length. The spacer can be 1/4" [6mm] shorter than the distance between brackets.

2. If one of the screw holes was cut off during the sizing of the ATR spacer, use a 5/8" [16mm] drill bit to add another hole 1" from the end of the ATR spacer.
3. Attach the ATR spacer using the provided self-drilling screws with a 5/16" [8mm] nut driver.
4. All screw holes must have a screw installed.

Note:

- Flat ATR uses a full length ATR spacer.
- **DO NOT REMOVE BACKING OF DOUBLE SIDED TAPE UNTIL YOU ARE READY TO PERMANENTLY ATTACH THE ATR.**



Step 2: Flat ATR Line & End

- Reference OTP Round ATR Line & End instructions on page 19.

Step 3: Flat ATR Corner

- Reference OTP Round ATR Corner instructions on page 20.

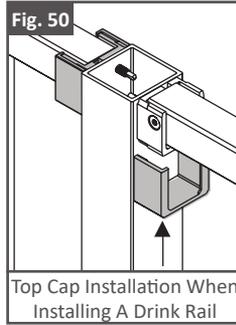
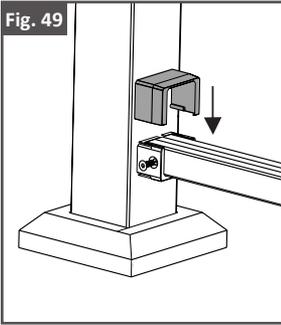
Step 4: Flat ATR Splice

- Reference OTP Round ATR Splice instructions on page 21.

PROUD POST & OTP: BRACKET CAP, POST CAP & POST BASE COVER INSTALLATION

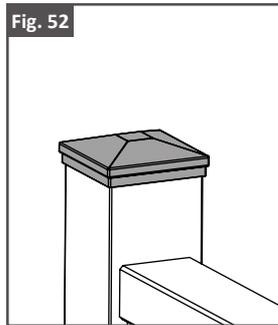
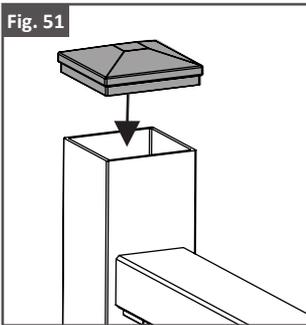
Step 1: Install Bracket Caps

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

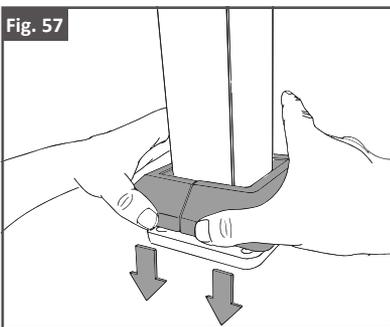
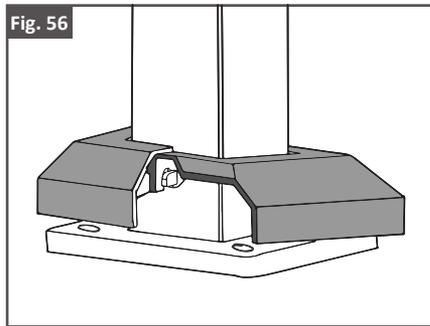
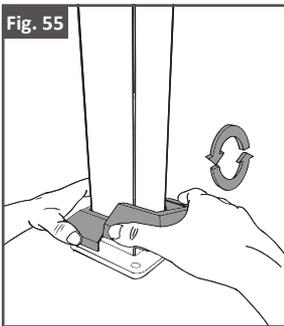
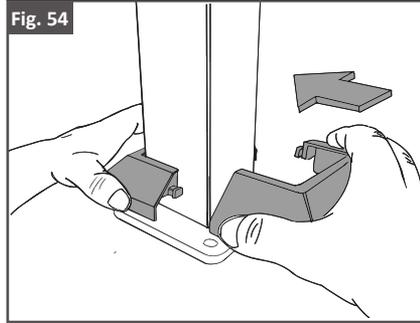
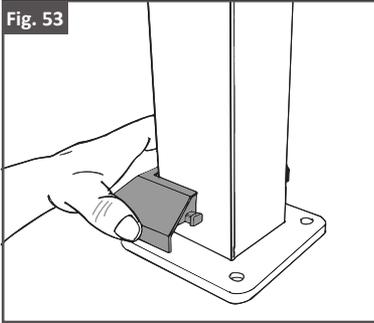
1. AI¹³ HOME Posts Caps are press fit into place.
2. Use a Rubber Mallet to snap the caps in place.



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. 53.
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. 54.
3. Twist the 2nd cover ¼ turn and move piece until both half's touch. As shown in Fig. 55.
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. 56.

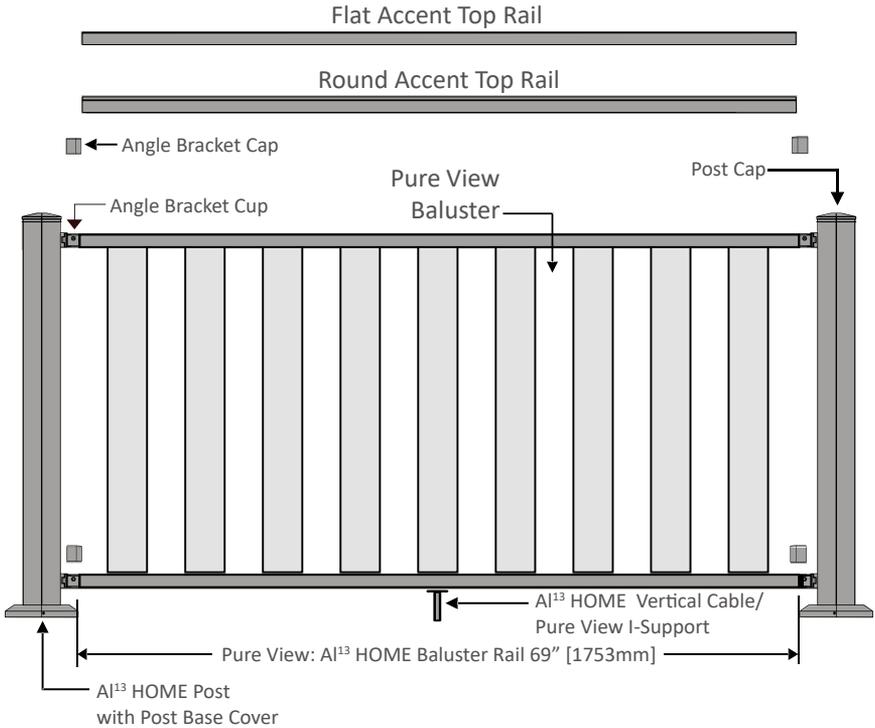
5. Once the first locking pin is started, turn the 2nd cover piece back parallel to the post base plate. Once you have confirmed both locking pins have engaged with the opposing slots lower both half's over the post base plate. As shown in Fig. 57.



ANGLE BRACKET

Pure View: AI¹³ HOME Glass Baluster Angle Bracket Installation Options

2" [51mm] or 3" [76mm] Proud Post



2" [51mm] or 3" [76mm] Proud Post Configurations

AI¹³ HOME Panel Height

32-1/2" [826mm]

40" [1016mm]

Rail Panel

Installed Panel Height

36" [914mm]

42" [1067mm]

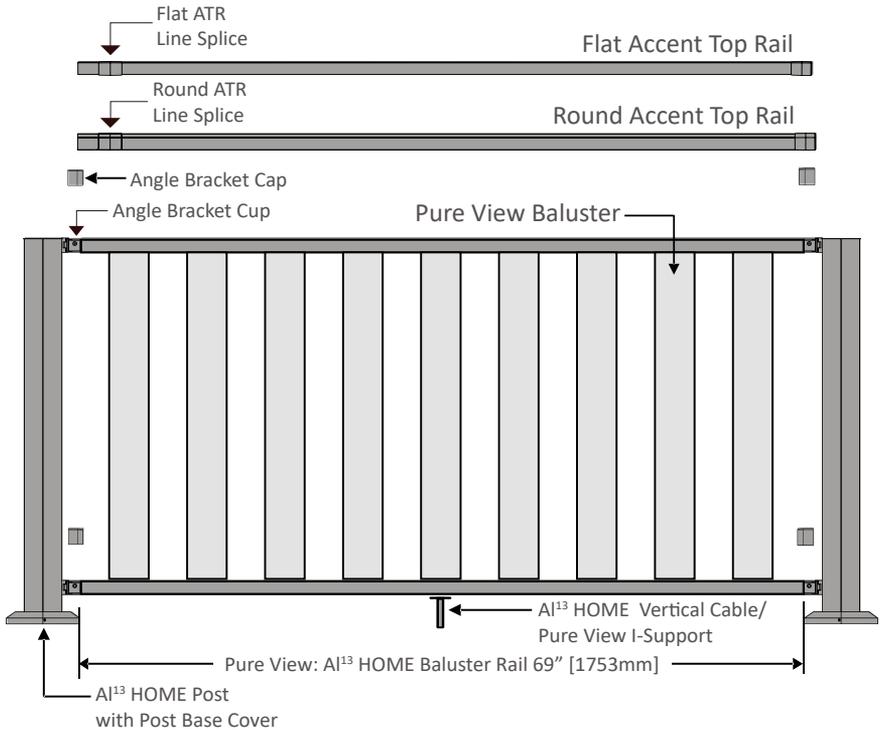
Required Post

39-1/2" [1003mm]

45-1/2" [1156mm]

*Installed heights include a 3-1/2" [89mm] for the 32-1/2" [826mm] panel & 2" [51mm] for the 40" [1016mm] panel space between deck surface and bottom edge of bottom rail.

2" [51mm] Over The Post (OTP)



2" [51mm] Over The Post (OTP) Configurations

Al ¹³ HOME Panel Height	Rail Panel	
	Installed Panel Height	Required Post
32-1/2" [826mm]	36" [914mm]	36" [914mm]
40" [1016mm]	42" [1067mm]	42" [1067mm]

*Installed heights include a 3-1/2" [89mm] for the 32-1/2" [826mm] panel & 2" [51mm] for the 40" [1016mm] panel 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. 58 and 59 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. AL¹³ HOME 32-1/2" [826mm] panels have a 3-1/2" [89mm] space. AL¹³ HOME 40" [1,016mm] panels have a 2" [51mm] space.

Fig. 58

Bracket Hole Locations

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

A*

B

C

(1) 32-1/2" [826mm] Panel

4-3/16" [106.5mm]

35-3/8" [898.5mm]

1" [25.5mm]

(2) 40" [1016mm] Panel

2-5/8" [66.5mm]

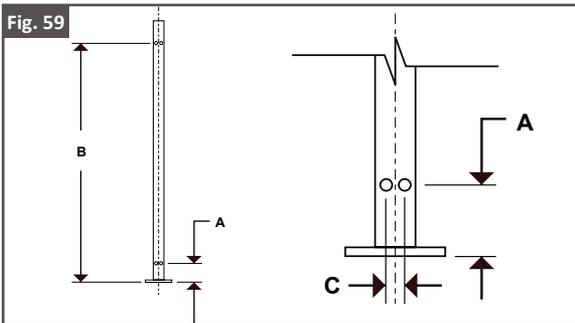
41-1/2" [1053mm]

1" [25.5mm]

*Dimension A positions bottom edge of rail (1) 3-1/2" [89mm] and (2) 2" [51mm] above deck surface.

*Dimension A is measured from the bottom surface of post base.

Fig. 59

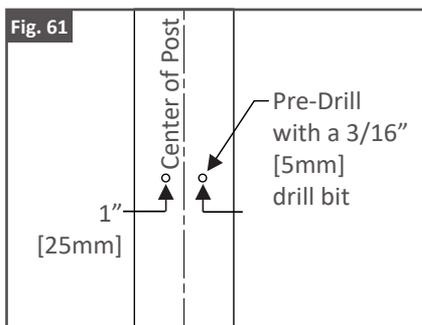
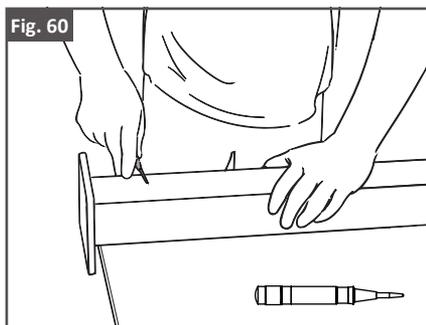


Step 2: Pre-drill Angle Brackets

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. 60.
2. Pre-drill bracket holes with a 3/16" [4.5mm] drill bit. As shown in Fig. 61.
3. Remove the bolt from the Angle Bracket Assembly.

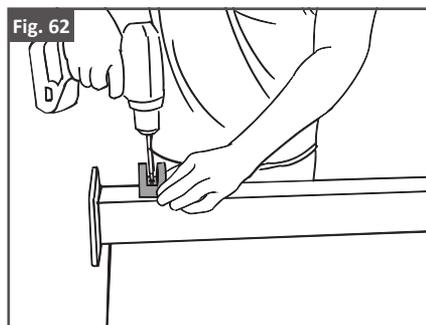


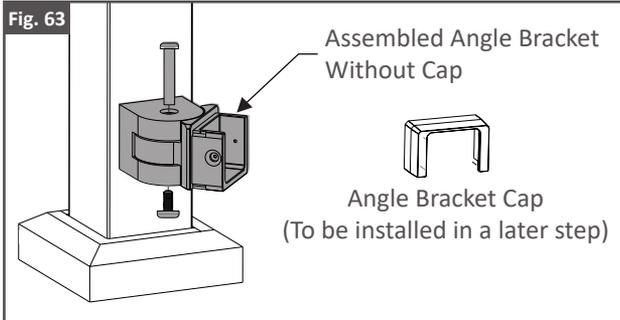
Step 3: Install Angle Brackets

1. Attach 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. 62.
2. Reassemble the Angle Brackets, but **DO NOT** install the Angle Bracket Cap at this time. As shown in Fig. 63.
3. Once top and bottom brackets are installed, remeasure bracket spacing to confirm dimensions used in Fig. 58 and 59 of step 1.
4. Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post.

Tip:

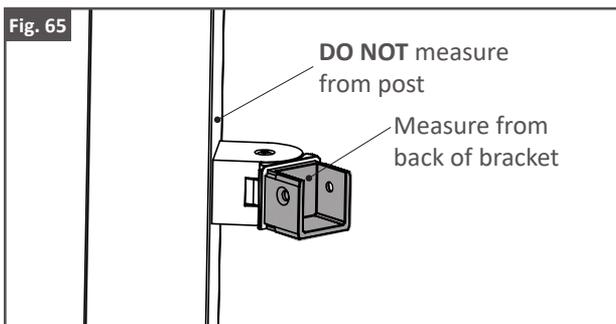
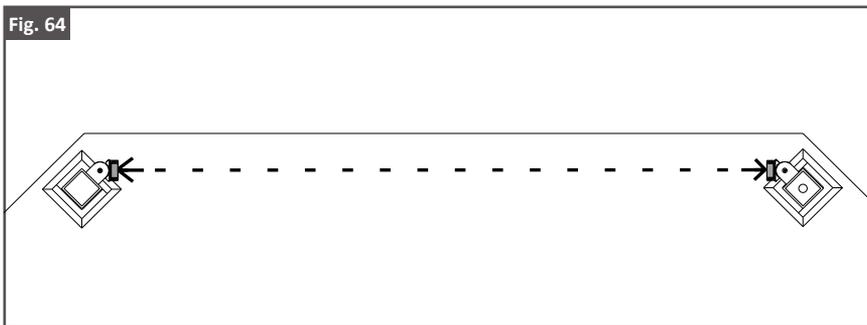
- Use a Bit Extender for an easier drilling process.





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. 65.



ANGLE BRACKET: CUTTING DOWN TOP & BOTTOM RAILS

- Reference pages 11 & 12 for rail cutting steps.

ANGLE BRACKET: BALUSTER INSTALLATION

- Reference Baluster installation instructions on pages 13 - 15.

ANGLE BRACKET: ROUND & FLAT ACCENT TOP RAIL (ATR)

- Reference page 15-18 for Proud Post ATR steps.
- Reference page 18-22 for OTP ATR steps.

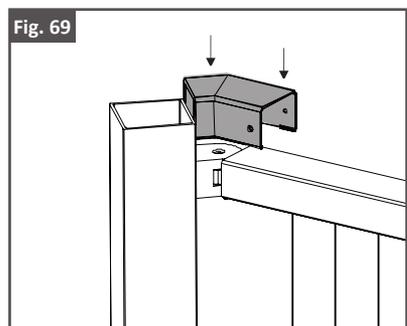
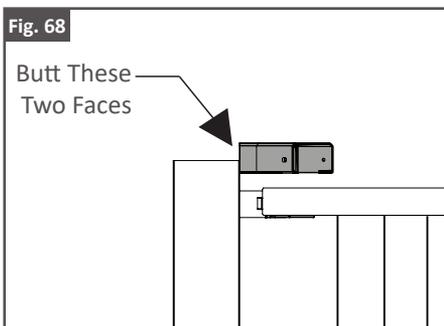
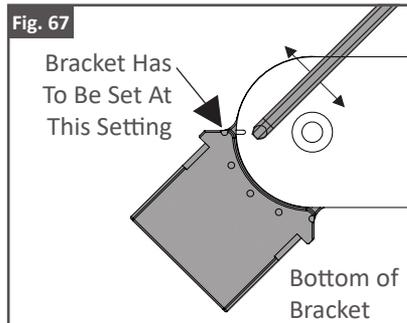
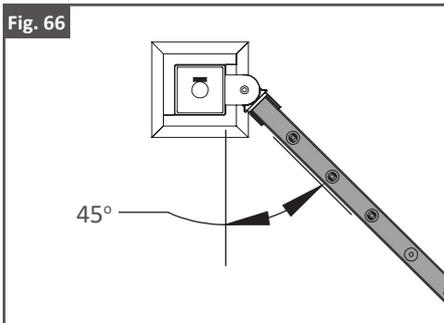
ANGLE BRACKET: ROUND & FLAT ATR MITER SPLICE

Step 1: ATR Angle Splice (Proud Post)

1. Use 3/32" [2.5mm] hex wrench to tighten set screw and lock Angle Bracket at 45° degree position.
As shown in Fig. 66 & 67.
2. Place Angle Splice on top of ATR butting up the end face of the splice to the face of the 3" [76mm] post.
As shown in Fig 68 & 69.
3. A Rubber Mallet might need to be used to install. If using a Rubber Mallet, use a cloth to protect the ATR from damage.
4. Secure Angle Splice with two #6-20 x 1/2" [13mm] self-drilling screws.

Note:

- **Angle Splice only works if brackets are angled at the 45° degree setting.**

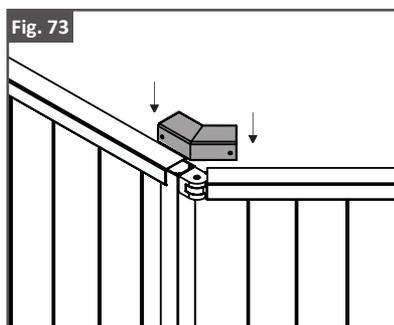
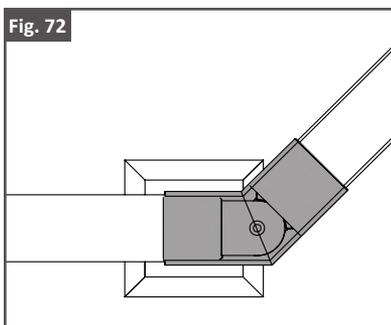
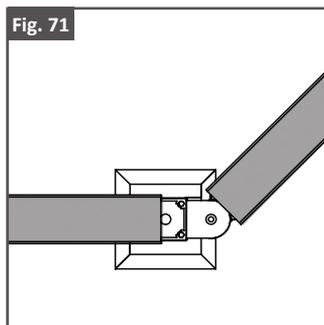
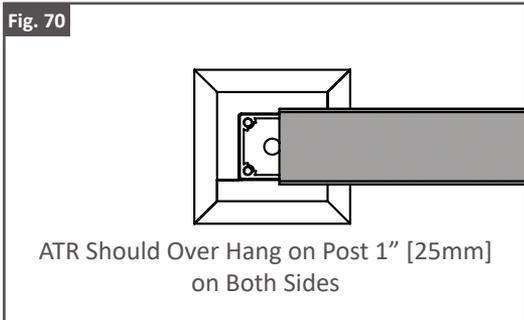


Step 2: ATR Angle Splice (OTP)

1. Install ATRs and Spacers opposite of the Angle Bracket first.
2. Measure from the inside of the post and add 2" [51mm] to the over all length.
3. Install ATRs and Spacers on the Angle side measuring from the end of the Bracket Cup adding 2-1/2" [64mm] to the overall length.
4. Once both ATRs are installed center Angle Splice over Angle Bracket.
5. Secure Angle Splice on ATRs with a Rubber Mallet.

Note:

- ATR should overhang Post 1" [25mm] in each side.



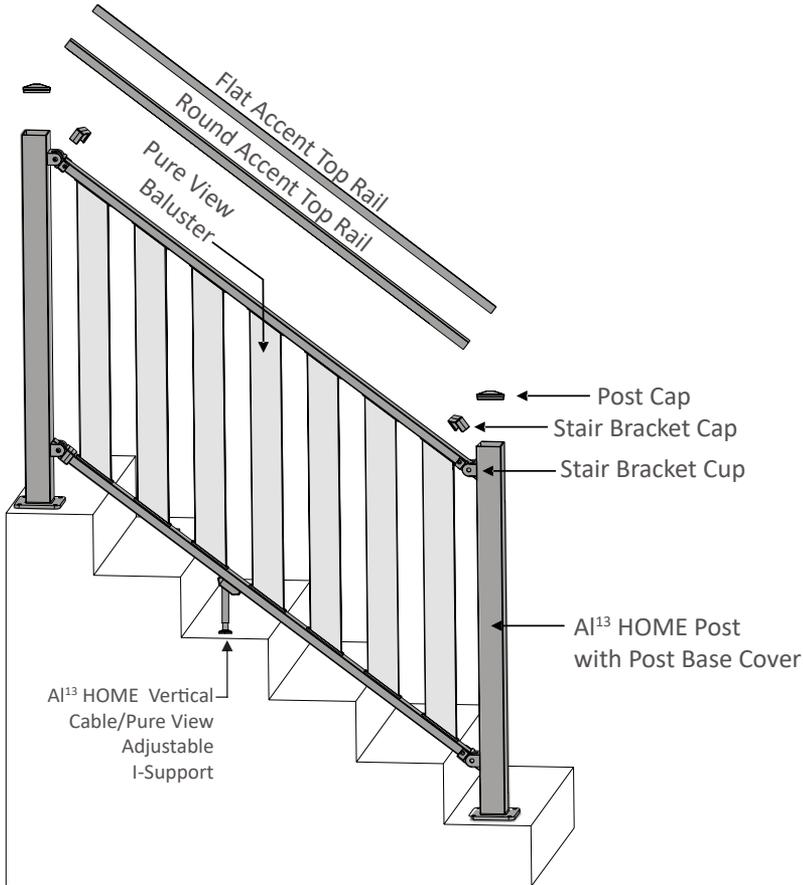
ANGLE BRACKET: BRACKET CAP, POST CAP & POST BASE COVER INSTALLATION

- Reference Bracket Cap, Post Cap & Post Base Cover installation instructions on pages 23 & 24.

STAIR BRACKET

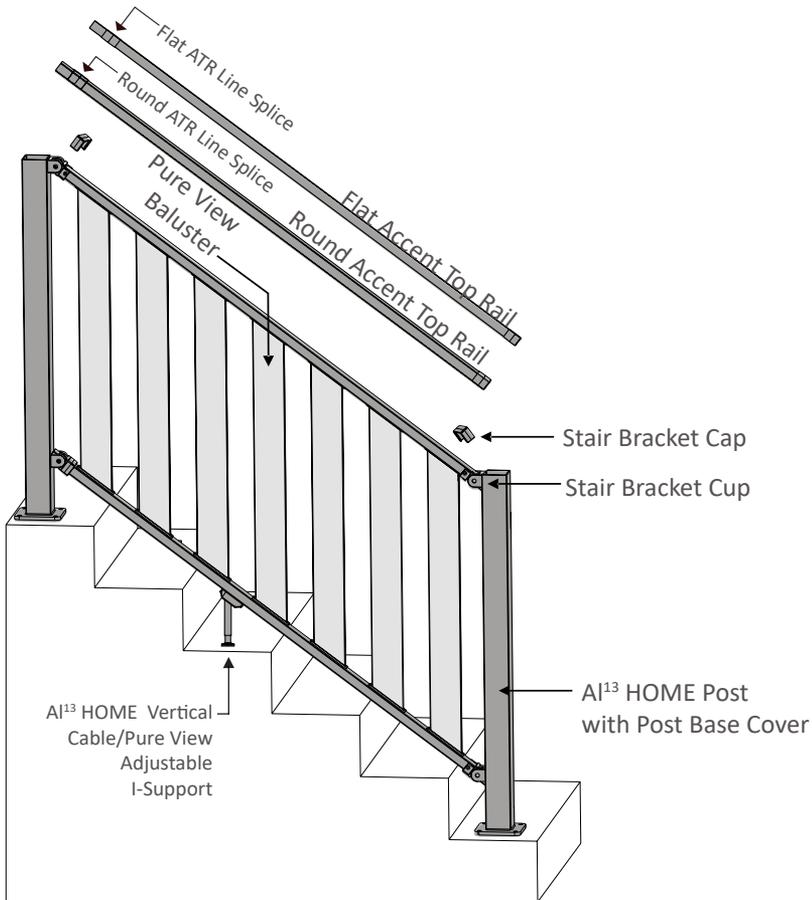
Pure View: AI¹³ HOME Glass Baluster Stair Bracket Installation Options

3" [76mm] Proud Post



- 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°

2" [51mm] Over The Post (OTP)



- 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 6.

Note:

IT'S RECOMMENDED TO INSTALL BRACKETS ON TO POST BEFORE POST MOUNTING.

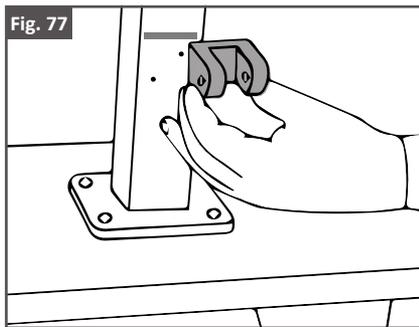
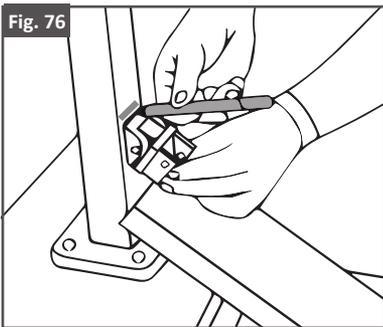
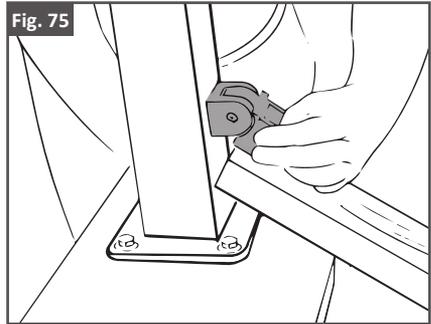
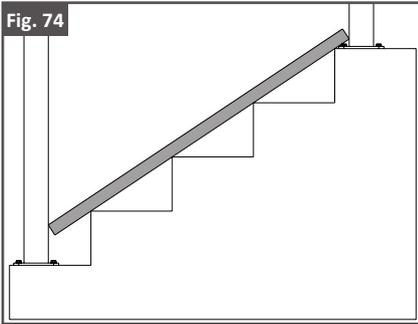
STAIR BRACKET: BRACKET INSTALLATION

Step 1: Bottom Bracket Installation

1. Position wood 2" x 4" between posts. As shown in Fig. 74.
2. Position bottom rail brackets centered flat on post & wood 2" x 4". As shown in Fig. 75.
3. Use pencil to mark top edge of bracket location on post. As shown in Fig. 76.
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. 77.

Note:

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

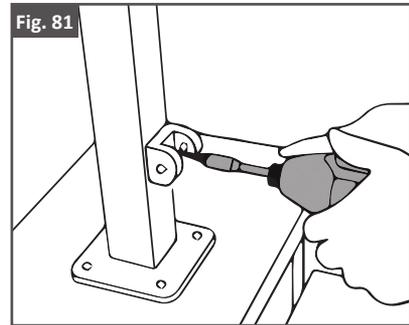
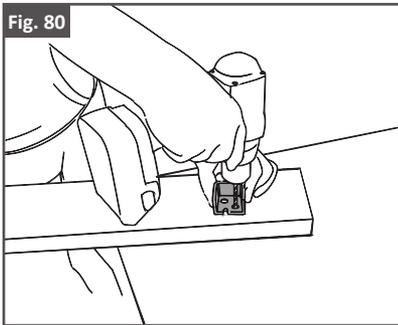
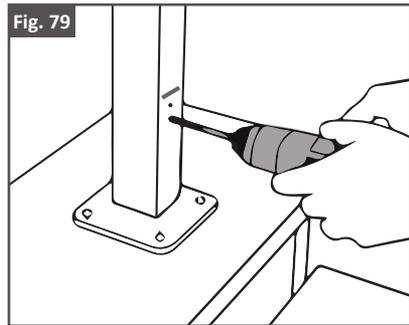
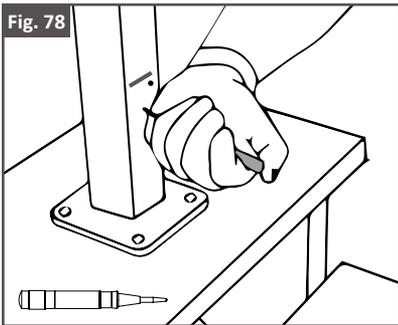


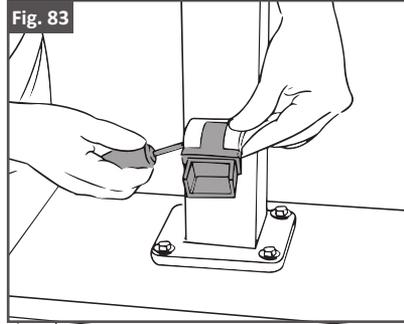
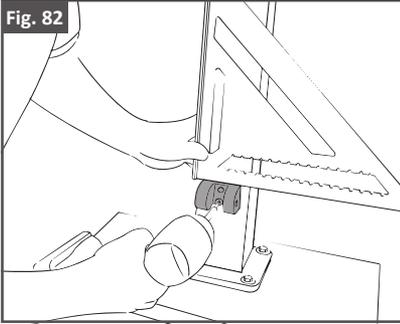
Step 2: Bottom Bracket Installation Continued

1. Use Spring Punch to mark the holes. As shown in Fig. 78.
2. Drill out bracket holes with a 3/16" drill bit.
As shown in Fig. 79.
3. Use scrap wood as support and drill through center holes in bracket base. As shown in Fig. 80.
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. 81.
5. Keep bracket base centered as you install second screw. As shown in Fig. 82.
6. Insert barrel & screw to re-assemble bracket.
7. Tighten barrel & screw. As shown in Fig. 83.

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. 84.
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. 85.
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. 86.
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. 87.

Note:

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

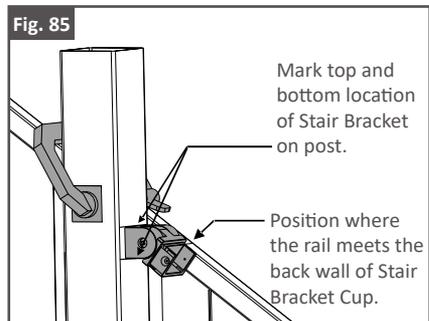
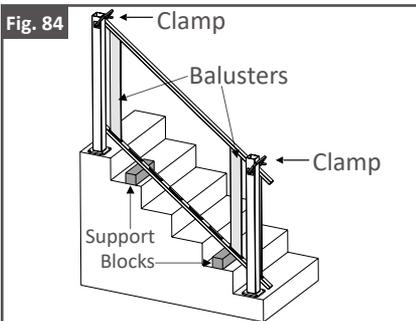


Fig. 86 AL13 HOME LOW PROFILE STAIR BRACKET

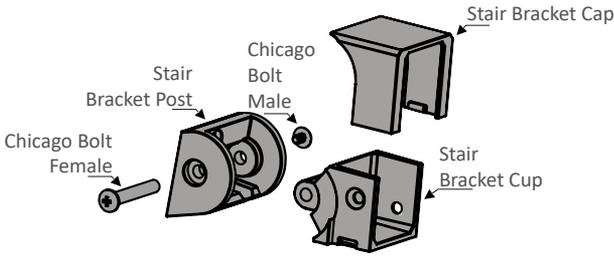


Fig. 87



Step 4: Top Bracket Installation Continued

1. Use Spring Punch to mark the holes. As shown in Fig. 88.
2. Drill out holes with a 3/16" drill bit. As shown in Fig. 89.
3. Use scrap wood as support and drill through center holes in bracket base. As shown in Step 2 Fig. 80.
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. 90.

Fig. 88

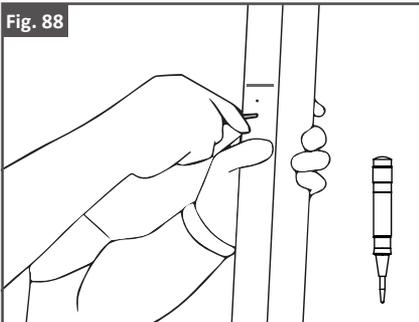


Fig. 89

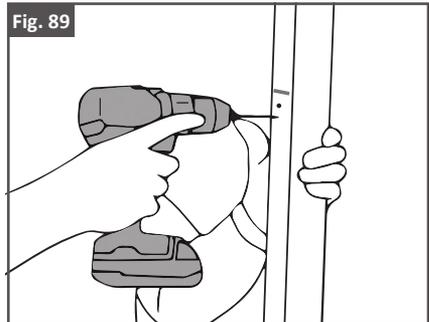
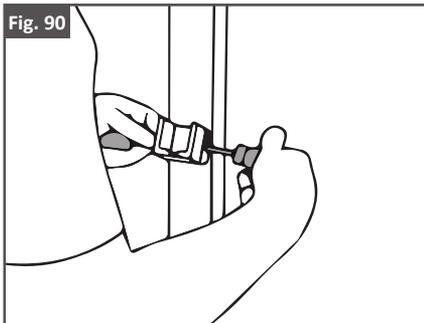


Fig. 90



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. 91.
4. Measure spacing from inside edge of post to the baluster space. Spacing **CANNOT** exceed 4" [102mm] on each end. As shown in Fig. 92.
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. 92.
6. Use speed square to ensure markings are perpendicular to panel.

Fig. 91

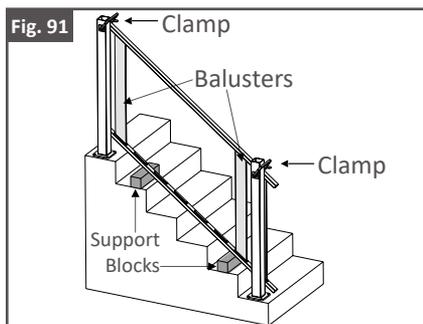
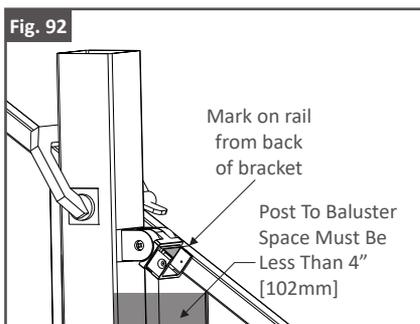
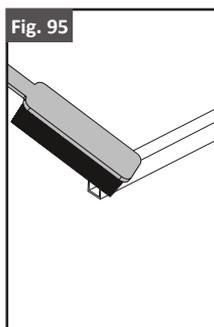
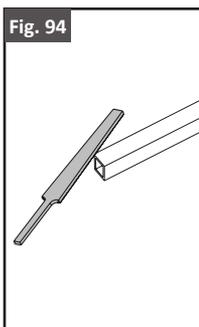
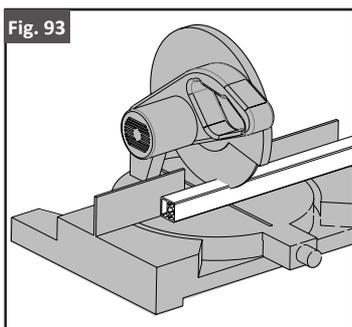


Fig. 92



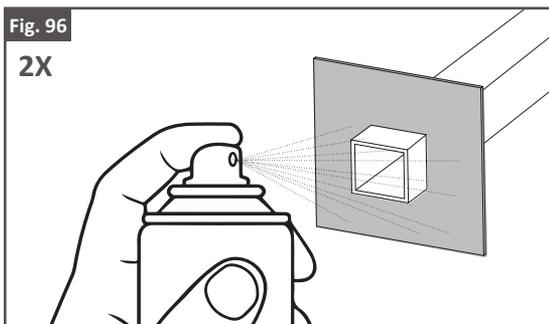
Step 2: Cut & Clean Rails

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.



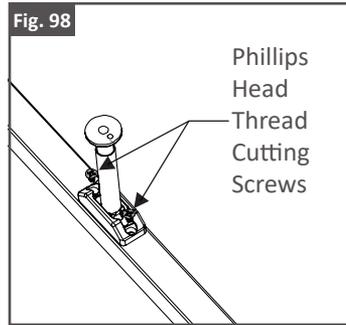
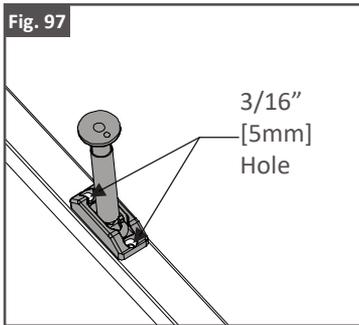
STAIR BRACKET: BALUSTER INSTALLATION

Step 1: Install Adjustable 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. 97.
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. 98.

Note:

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

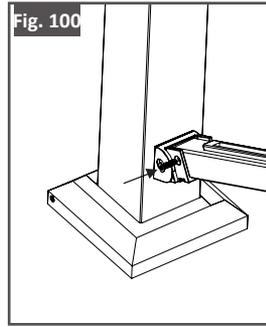
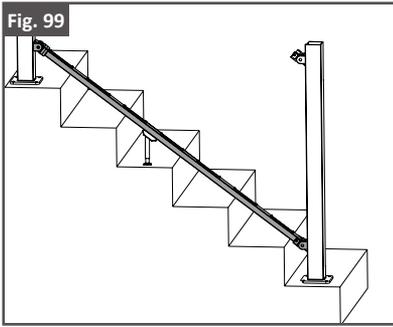


Step 2: Install Bottom Rail

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. As shown in Fig. 100.

Note:

- Only one screw is needed to attached each bracket to the rail.

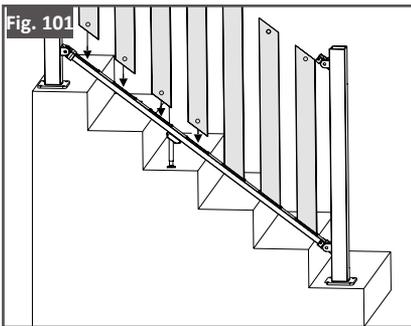


Step 3: Install Balusters Into Bottom Rail

1. Carefully slip Baluster sheet vertically into each slot of the bottom rail. As shown in Fig. 101.

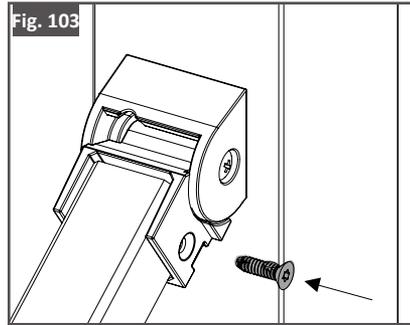
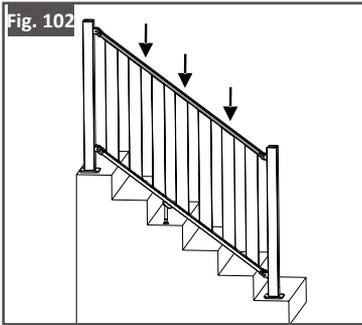
Tip:

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



Step 4: Install Top Rail

1. Carefully slip Top Rail over the top of the Balusters into the top Bracket Cups.
2. A Rubber Mallet might be needed to complete installation. If using a Rubber Mallet, use a cloth to protect the Top Rail Cap and Top Rail Cap Spacer from damage.
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.

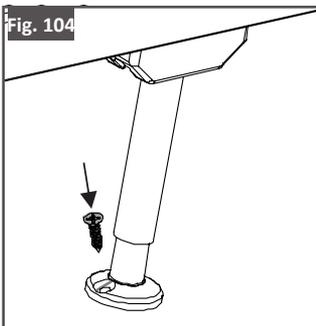


Step 5: Attach Adjustable I-Support To Deck

1. Adjust then fasten I-Support to deck surface with the supplied Phillips Head Wood Screw.

Tip:

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



OTP & PROUD POST: ROUND ATR INSTALLATION

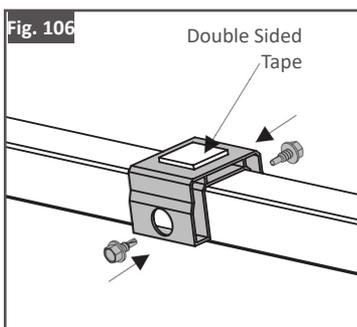
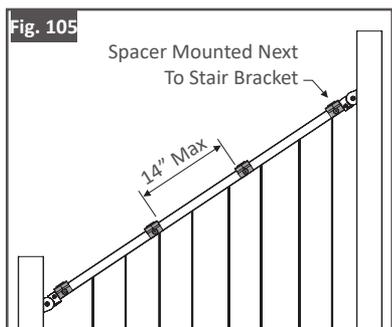
Step 1: Round ATR Spacers

1. Attach spacers using provided self-drilling screws with a 5/16" [8mm] Nut Driver. Two screws per spacer.
2. **DO NOT** remove backing of double sided tape until you are ready to permanently attach the ATR.

Note:

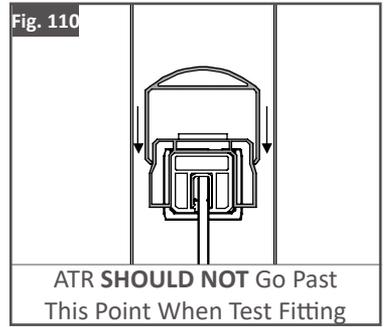
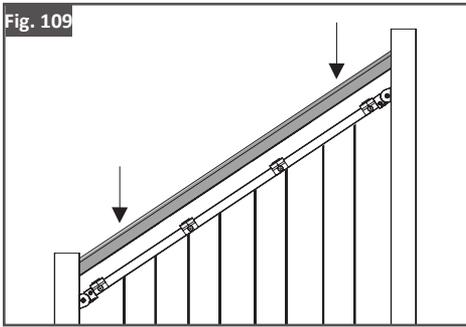
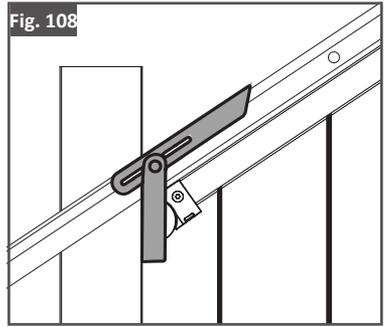
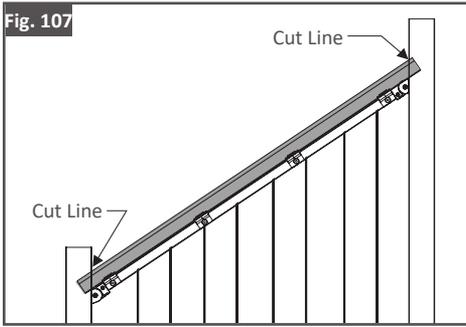
- The Accent Top Rail Kit comes with 7 spacers in the 93.89" [2385mm] kit, 6 spacers in the 69.89" [1775mm] kit and 14 spacers in the 190" [4826mm] kit.

- The spacers should be equally spaced along the length of the rail, with no more than 14" [356mm] spacing between them.
- The end spacers should be placed as close to the end brackets as possible.



Step 2: Cutting the Round ATR to length

1. Measure the distance from the inside edge of the 2 posts.
2. Use an Adjustable Angle Finder to measure the angle needed to make the ATR flush with the post. As shown in Fig. 107.
3. Use angle found with Angel Finder to mark the cut lines on the ATR, and cut the ATR to length, file the edges, and paint using the same steps as used for cutting down a panel.
4. When test fitting the ATR, place it on top of the spacers. Do not press the ATR down over the spacers. Removing the ATR from the spacers can damage the ATR and spacers.
5. Make sure the inside of the ATR is clean before remove the backing of all of the double-sided tape on the ATR spacers.
6. A Rubber Mallet might be needed to complete installation. If using a Rubber Mallet, use a cloth to protect the ATR from damage. The ATR snaps down around the ATR spacer.
7. **If you are installing a OTP Line Post, see the next page before permanently installing the ATR.**

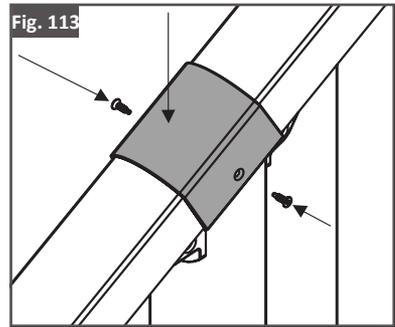
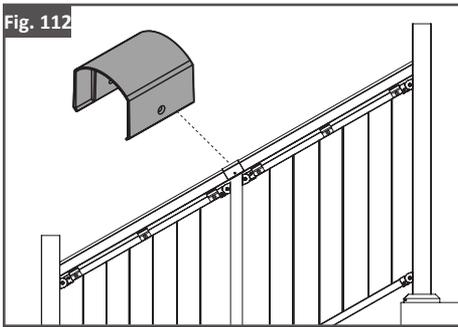
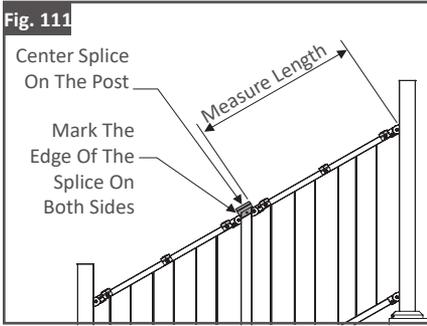


Step 3: Install Stair Post Splice (OTP)

1. Test fit the Stair Line Post Splice by locating its position above the 2" [51mm] post and mark the edge locations. Measure the length of the mark to the next post and add 5/8" [16mm] to the number. This will be your ATR length.
2. Cut the ATR as mentioned in the previous step.
3. Attach the ATRs to the panels first.
4. Snap the Splice over the ATRs. Once in position, use the supplied self drilling screws (2) to attached the splice to the post.
5. Use a broom or air compressor to remove debris from railing and deck surface.

Note:

- ATRs must be at least 1-1/2" [38mm] apart but cannot exceed 2-3/4" [70mm].
- It is recommended that the ATR and post splice are test fitted together above the rail before installing.



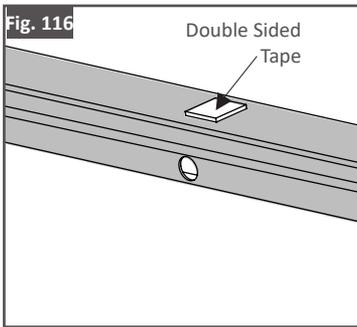
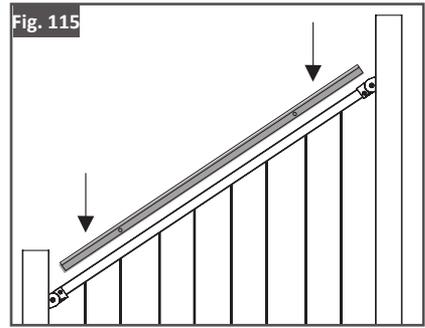
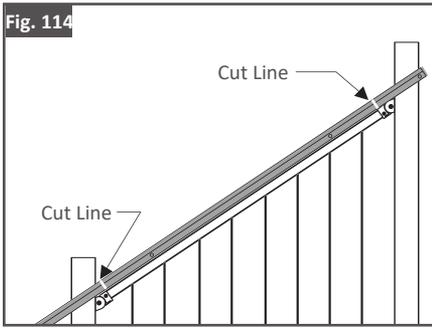
OTP & PROUD POST: FLAT ATR INSTALLATION

Step 1: Cutting the Flat ATR Spacer

1. Measure distance between brackets and cut ATR spacer to length.
2. The spacer can be 1/4" [6mm] shorter than the distance between brackets.
3. If one of the screw holes was cut off during the sizing of the ATR spacer, use a 5/8" [16mm] drill bit to add another hole 1" [25mm] from the end of the ATR spacer.
4. Attach the ATR Spacer using the provided self-drilling screws with a 5/16" [8mm] Nut Driver.
5. All screw holes must have a screw installed.

Note:

- Flat ATR uses a full length ATR Spacer.
- Flat ATR Spacer fits between the brackets.
- **DO NOT REMOVE BACKING OF DOUBLE SIDED TAPE UNTIL YOU ARE READY TO PERMANENTLY ATTACH THE ATR.**



Step 2: Cutting the Flat ATR to length

- Reference Proud Post & OTP Round ATR cutting instructions on page 44.

Step 3: Install Stair Post Splice (OTP)

- Reference Proud Post & OTP Round ATR Stair Post Splice instructions on page 45.

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

- Reference Bracket Cap, Post Cap & Post Base Cover installation instructions on pages 23 & 24.

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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