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## **INTRODUCTION**

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### **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 AL<sup>13</sup> HOME posts must always be secured to the deck framing and should never be attached to only the deck boards.

#### **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



Tape  
Measurer



Speed  
Square



Level  
Tool



Adjustable Angle  
Finder



T-25  
Driver Bit



Nut Driver Bit:  
5/16" [8mm]



#2 Phillips  
Head Bit



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



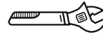
Socket  
Set



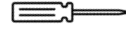
Bit  
Extender



Socket  
Wrench



Crescent  
Wrench



Phillips Head  
Screw Driver



Rubber  
Mallet



Tension  
Gauge



Miter  
Saw



Wood Block 2" x 4" (actual  
1-1/2" x 3-1/2" [38mm x 89mm])



Drill



Pencil



Paint  
Pen



Touch-Up  
Paint

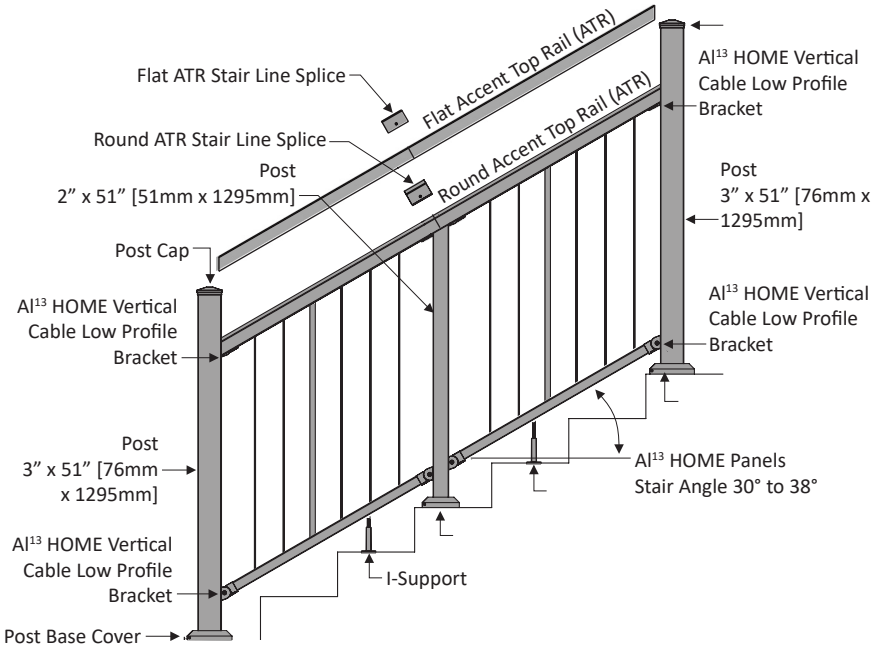


Spring  
Punch

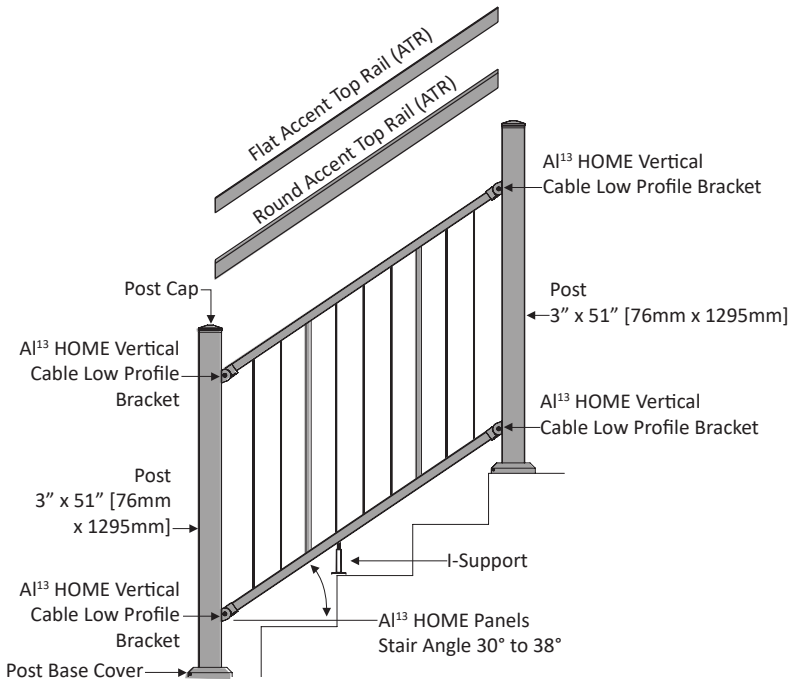
## Post Options

- It is recommended that a 2" x 51" [51mm x 1295mm] or 3" x 51" [76mm x 1295mm] post is used for all stair posts.
- If an Accent Top Rail (ATR) options is installed, the 3" [76mm] posts must be used on all corners and end posts.
- The 2" [51mm] post must be used for a line post if you are installing an Over The Post System.

## Over The Post (OTP) With Accent Top Rail (ATR)



## Proud Post With Accent Top Rail (ATR)



## OTP & PROUD POST: POST MOUNTING

\*If using Fortress Evolution Framing, reference Evolution Post to Frame connection instructions in the link below:

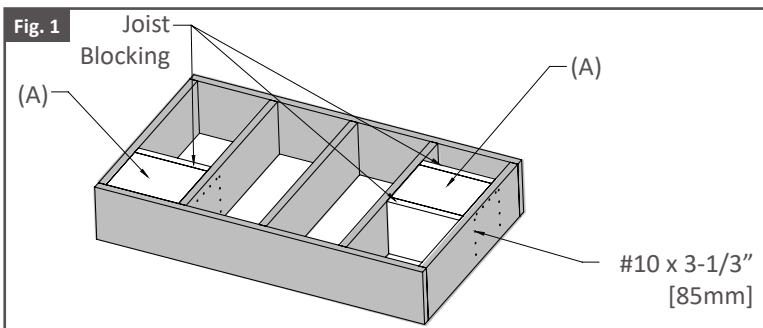
<https://fortressbp.com/Documents/Framing-Installation-Guide.pdf>

### Note:

**It's recommended to install brackets onto post before post mounting. Reference page 8 for Bracket Installation steps.**

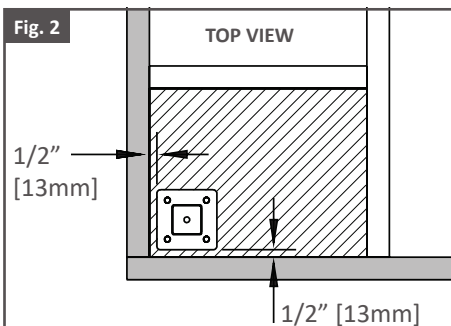
### Step 1: Install Wood Blocks

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.

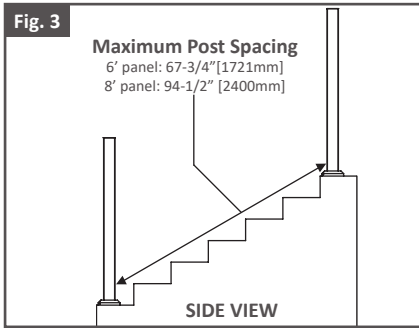


### Step 3: Max Post Spacing

- 6' panel maximum post spacing is 67-3/4" [1721mm].
- 8' panel maximum post spacing is 94-1/2" [2400mm].

#### Note:

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

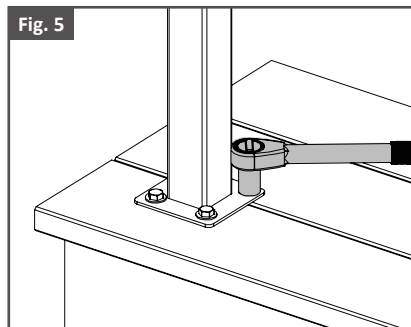
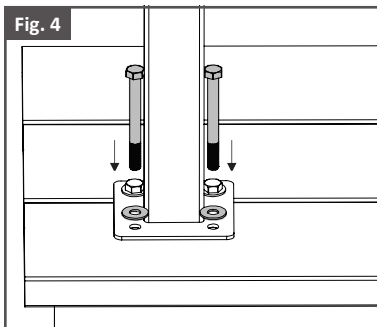


### Step 4: Mount Posts

1. Mark 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.

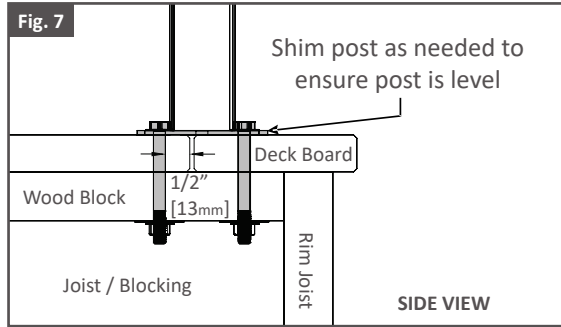
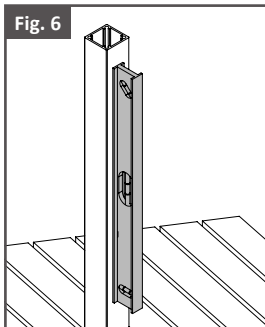
#### Note:

- **DO NOT** mount the posts until the bracket locations are confirmed in the Bracket Installation steps (pages 8 - 13).
- Post Base Plate holes **MUST** be positioned a minimum 1/2" [13mm] from edge of deck board.



## Step 5: Check Mounted Posts

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



## OTP & PROUD POST: BRACKET INSTALLATION

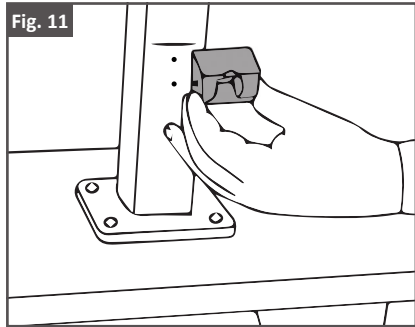
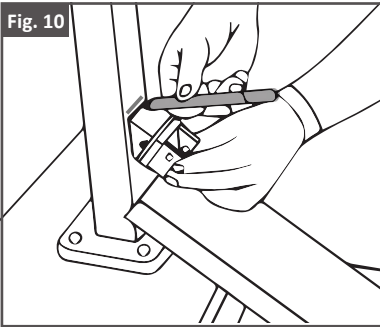
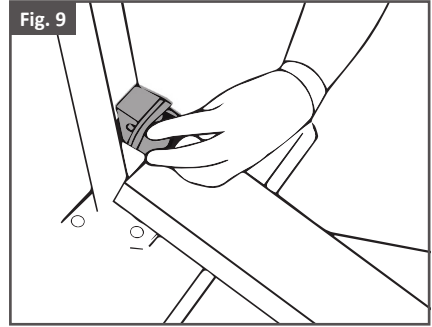
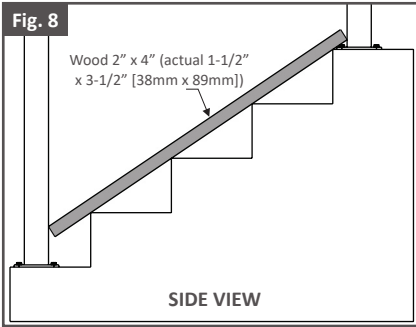
### Step 1: Bottom Bracket Installation

1. Position wood 2" X 4" (actual 1-1/2" X 3-1/2" [38mm x 89mm]) between posts. As shown in Fig. 8.
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. 9.
3. Use pencil to mark top edge of bracket location on post. As shown in Fig. 10.
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. 11.
6. After confirming the hole spacing, posts can be attached to the deck surface.

### Note:

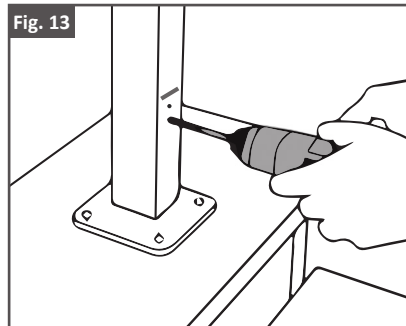
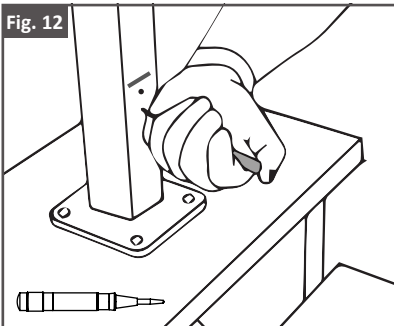
- For best results, be sure bracket bases are centered on posts when making marks.
- Bracket holes are molded with a center point location.

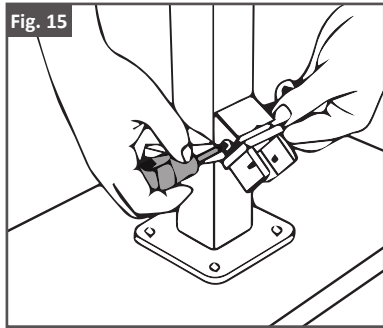
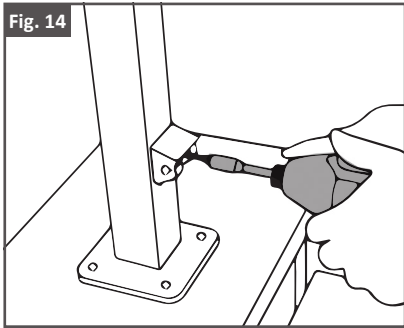




## Step 2: Bottom Bracket Installation Continued

1. Use a Spring Punch to mark the holes. As shown in Fig. 12.
2. Drill out bracket holes with a 3/16" [5mm] drill bit. As shown in Fig. 13.
3. Use T-25 screws to attach the base of the bracket to the post. Begin with top hole then bottom. As shown in Fig. 14.
4. Insert barrel & screw to re-assemble bracket.
5. Tighten barrel & screw. As shown in Fig. 15.



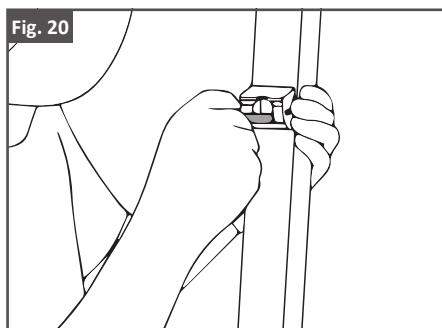
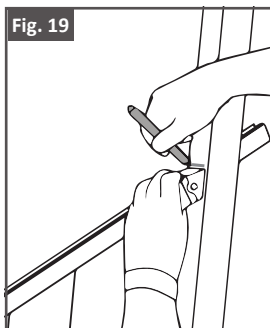
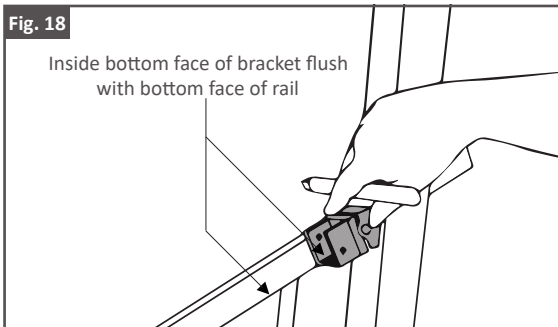
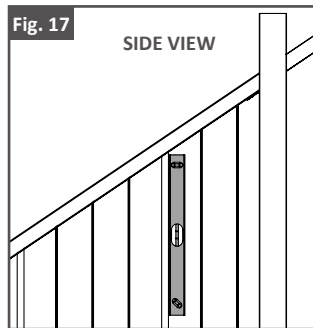
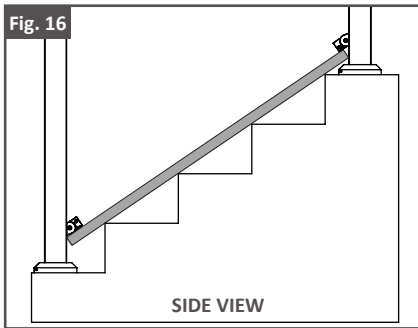


### Step 3: Top Bracket Installation

1. Position wood 2" x 4" (actual 1-1/2" x 3-1/2" [38mm x 89mm]) under bottom brackets. As shown in Fig. 16.
2. Fully rake and place panel next to posts on top of wood 2" x 4" (actual 1-1/2" x 3-1/2" [38mm x 89mm]).
3. Use a level to ensure panel and posts are both straight. As shown in Fig. 17.
4. Clamp panel to post in 4 places.
5. Position top rail brackets parallel with panel & flat centered on post. Make sure inside bottom face of bracket is flush with bottom face of rail. As shown in Fig. 18.
6. Use pencil to mark top edge of bracket location on post. As shown in Fig. 19.
7. Dis-assemble the brackets by removing the barrel and screw.
8. 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. 20.

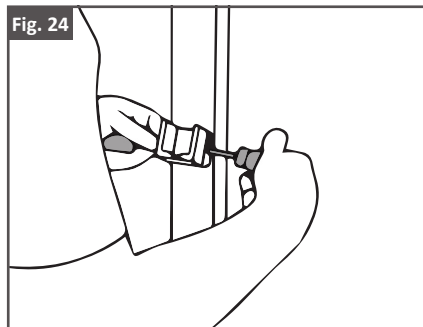
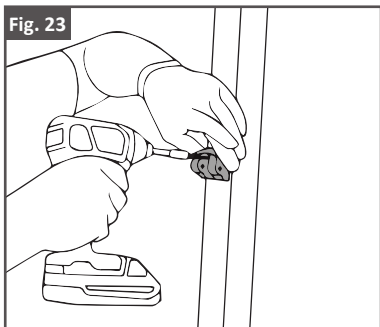
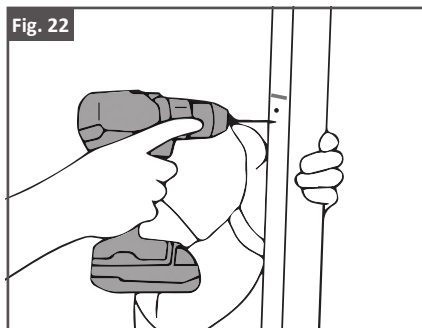
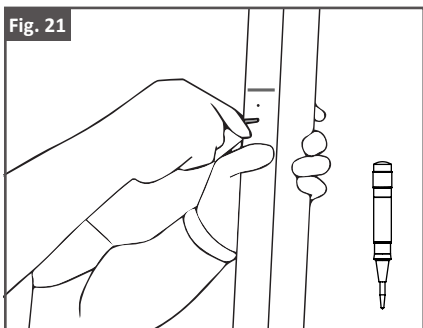
#### Note:

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



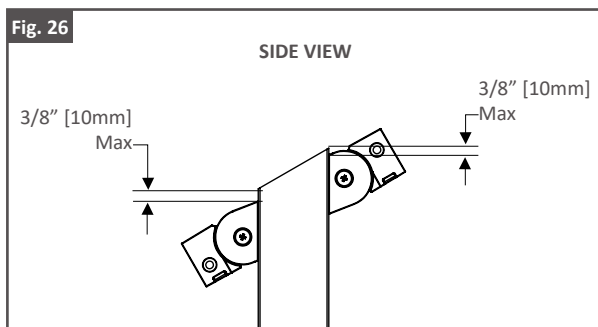
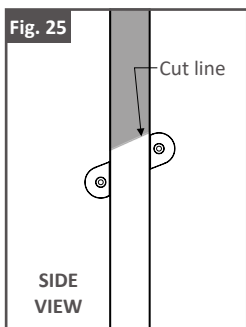
**Step 4: Top Bracket Installation Continued**

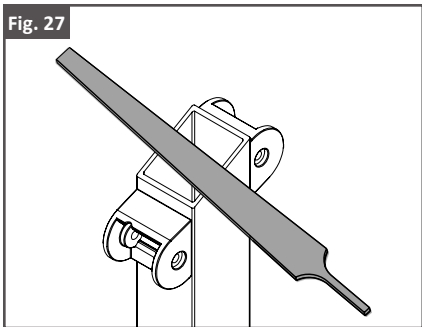
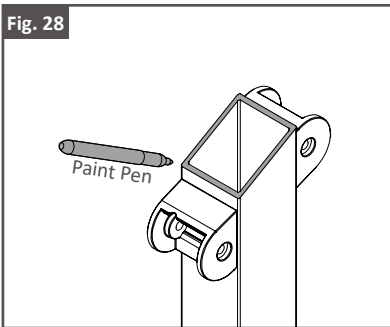
1. Use a Spring Punch to mark the holes. As shown in Fig. 21.
2. Drill out holes with a 3/16" [5mm] drill bit. As shown in Fig. 22.
3. Use T-25 Screws to reattach the base of the top rail brackets to the post. Begin with top hole then bottom. As shown in Fig. 23.
4. Insert barrel & screw to re-assemble bracket.
5. Tighten barrel & screw. As shown in Fig. 24.



### Step 5: Cut 2" [51mm] Line Post (OTP Installation Only)

1. After the top brackets have been mounted, the 2" [51mm] line post will need to be cut down.
2. Draw a line above the top brackets. This will be your cut line. This line can be up to 3/8" [10mm] above the brackets. As shown in Fig. 25.
3. Use a reciprocating saw or portable band saw to cut the post along this line.
4. After cutting the post, file the rough edges and paint the exposed surface using Fortress touch-up paint pen. As shown in Fig. 27 and 28.



**Fig. 27****Fig. 28**

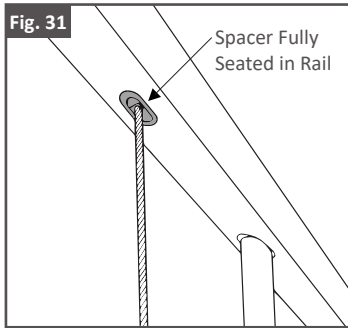
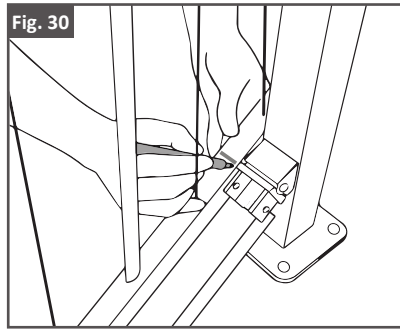
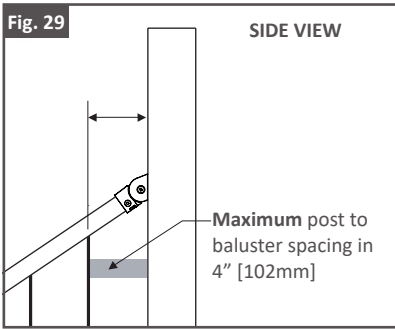
## OTP & PROUD POST: CUTTING DOWN PANELS

### Step 1: Measure & Mark Panels Where Cuts Will Be Made

1. Position wood 2" x 4" (actual 1-1/2" x 3-1/2" [38mm x 89mm]) under bottom brackets.
2. Rake and place panel next to posts on top of wood 2" x 4" (actual 1-1/2" x 3-1/2" [38mm x 89mm]).
3. Measure spacing from inside edge of post to the baluster space. Spacing **CANNOT** exceed 4" [102mm] on each end. As shown in Fig. 29.
4. Use a level to ensure panel cables and posts are both straight.
5. If needed, use shims to level the posts.
6. Clamp panel to post in 4 places.
7. Place marking for panel cuts at the back of bracket opening. As shown in fig. 30.
8. Use speed square to ensure markings are perpendicular to panel.

### Note:

- Be sure Top Rail Spacers are fully seated in the Top Rail Cable openings. As shown in Fig. 31.
- Place panel Midspan Supports as close to inside of post as possible.
- Be sure panel is fully raked when marking panel cuts.
- Use a narrow screw driver to help position spacers.

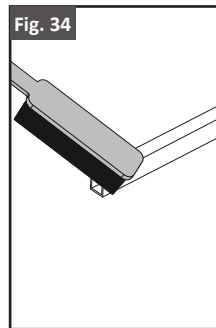
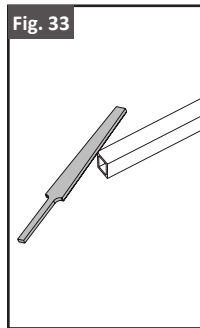
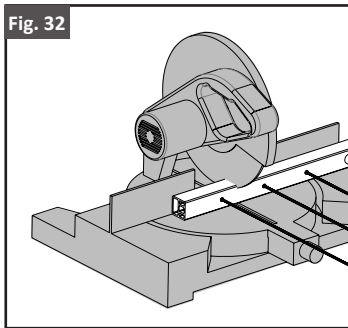


## Step 2: Cut & Clean Panel

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.

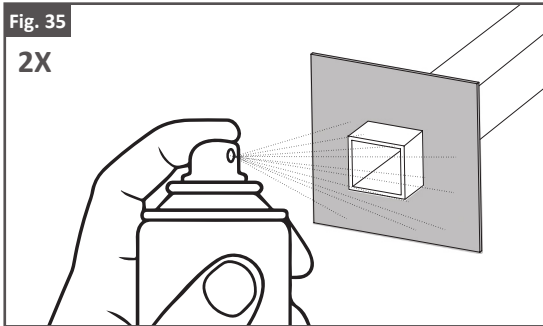
### Note:

- **DO NOT** cut cable spacers.



### Step 3: Apply Spray Paint To Cut Areas

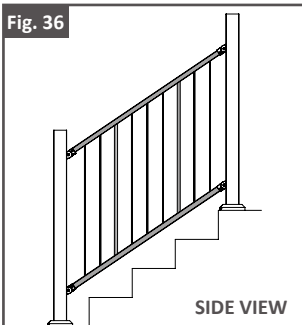
1. Using a piece of cardboard as a mask, apply the 1<sup>st</sup> coat of Fortress zinc based touch-up paint.
2. Allow to dry before applying second coat.
3. Apply the 2<sup>nd</sup> coat of Fortress zinc based touch-up paint.
4. Allow to dry and install.



## OTP & PROUD POST: PANEL INSTALLATION

### Step 1: Test Fit Panel

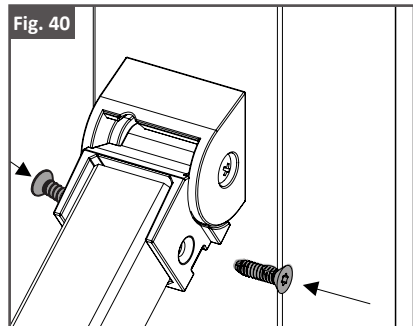
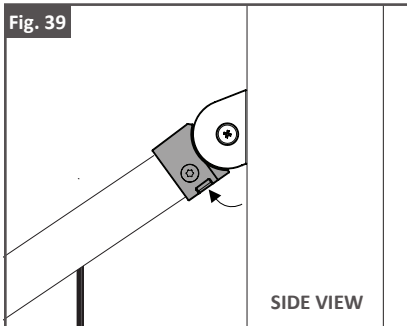
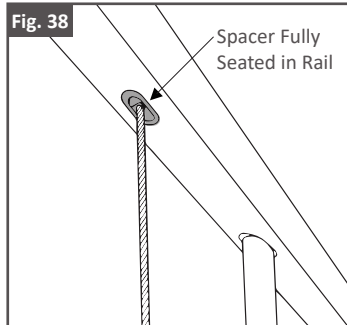
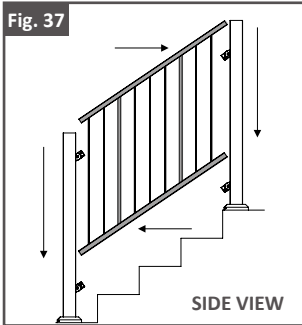
1. Insert cut panel to ensure proper fit.



### Step 2: Install Panel

1. Rake the panel to the required angle. As shown in Fig. 37.
2. Drop the panel down into the brackets.
3. Make sure Top Rail Spacers are fully seated in the Top Rail Cable openings. As shown in Fig. 38.
4. Push the bracket up so that the bottom is parallel with the rail. As shown in Fig. 39.

- Attach the panel using the T-25 Screws that came with the brackets. Two screws are required in all brackets. As shown in Fig. 40.
- Remove any metal shavings after attaching the panel.



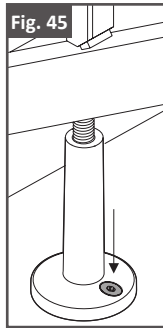
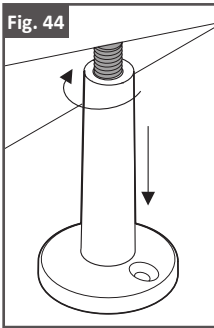
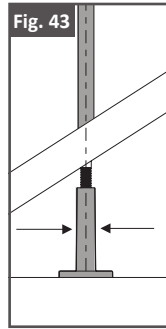
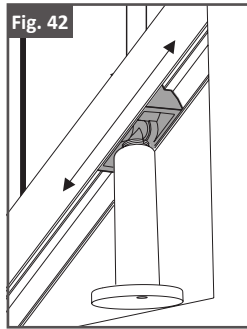
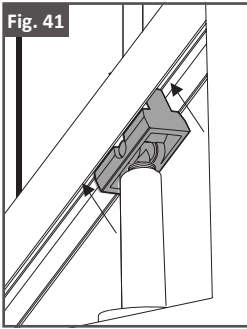
### Step 3: Install I-Support On Panel

- Install the I-Support by snapping the rail insert up into the bottom rail. As shown in Fig. 41 & 42.
- Position the I-Support directly under a Midspan Support. As shown in Fig. 43.
- Unscrew the base until it reaches the stair surface. As shown in Fig. 44.
- Attach the I-Support using the provided T-25 wood screw. As shown in Fig. 45.

#### Note:

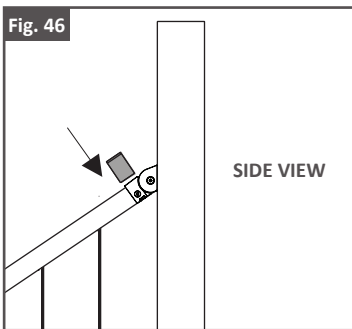
- The I-Support can rotate to any angle 0° to 40°. The height of the I-Support can change from 3-5/16" [84mm] up to 5-11/16" [145mm].





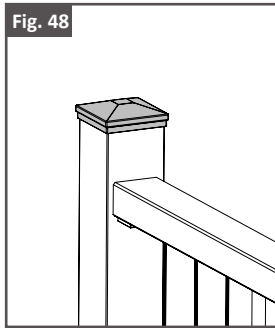
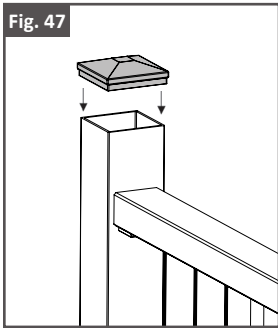
#### Step 4: Install Bracket Caps

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



### Step 5: Install Post Caps

1. AL<sup>13</sup> HOME Posts Caps are press fit into place.
2. Use a Rubber Mallet to snap the caps in place.



### Step 6: 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. 49.
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. 50.
3. Twist the 2nd cover ¼ turn and move piece until both half's touch. As shown in Fig. 51.
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. 52.
5. Once the first locking pin is started, turn the 2nd cover piece back parallel to the post base plate. One you have confirmed both locking pins have engaged with the opposing slots lower both half's over the post base plate. As shown in Fig. 53.

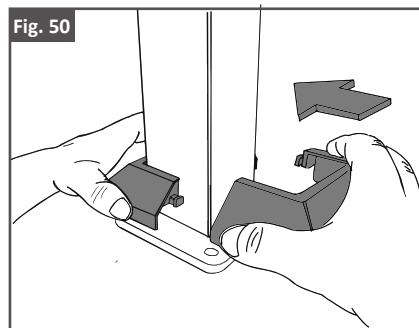
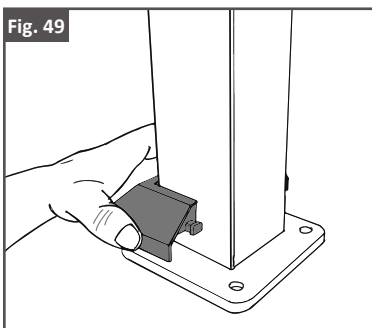


Fig. 51

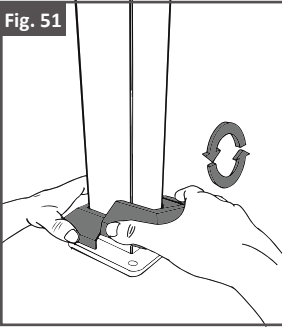


Fig. 52

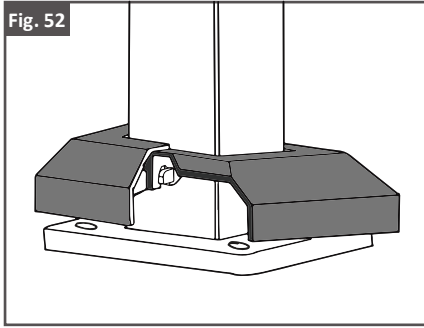
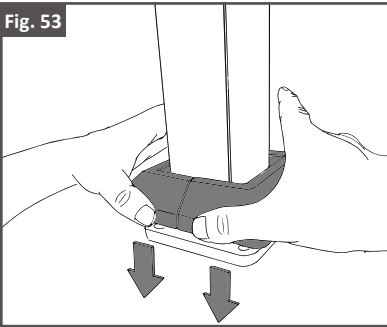


Fig. 53



## OTP & PROUD POST: TENSIONING CABLE

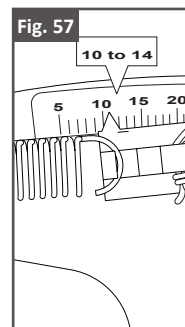
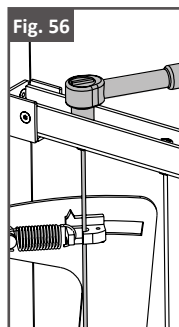
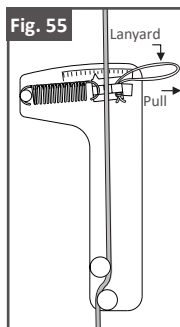
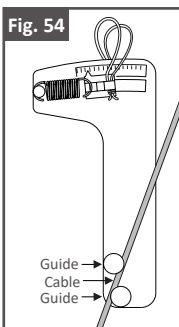
### Step 1: Tensioning the AL<sup>13</sup> HOME Vertical Cable Panel

#### DO NOT OVER TIGHTEN CABLES

1. Use a Fortress Cable Tension Gauge to accurately tension the cables.
2. A properly tensioned cable should be tensioned until the indicator reads between 10 and 14.
3. The AL<sup>13</sup> HOME Vertical Cable System uses 1/8" [3mm] diameter cable.
4. See images below for information on how to load cable into the tension gauge:
  - Position cable between lower guides. As shown in Fig. 54.
  - Pull the lanyard and extend the spring until the cable is engaged with the hook in the indicator slide. As shown in Fig. 55.
  - Use a 1/2" [13mm] Socket Wrench to tighten the cable. As shown in Fig. 56.
  - Tighten cable until the indicator arrow is between 10 and 14 on the tension gauge. As shown in Fig. 57.

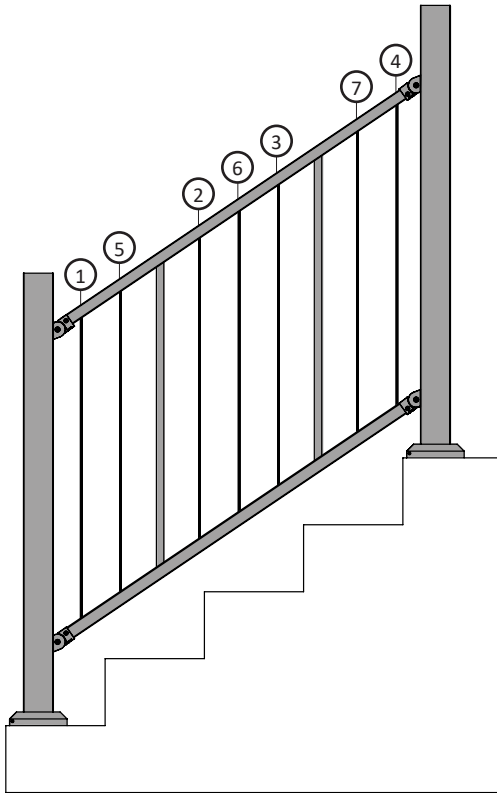
#### Note:

- Make sure Top Rail Spacers are fully seated in the top rail cable openings.
- Use a narrow screw driver to help position spacers.



## Step 2: Cable Tensioning Sequence

1. Remove the slack from the cables using the socket wrench. Once the slack is removed, only tension the cables one turn at a time in the sequence shown to maintain even tensioning across the panel.
2. Once cables are tensioned to the proper range on the tension gauge, you may now move onto the next steps.



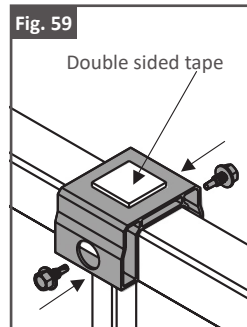
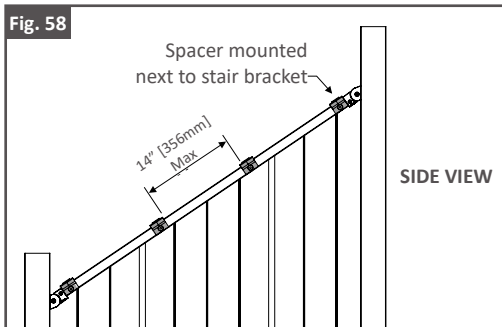
## OTP & PROUD POST: ROUND ATR INSTALLATION

### Step 1: Install 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:

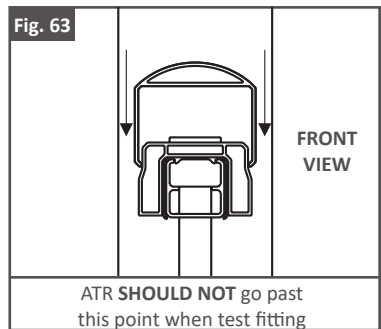
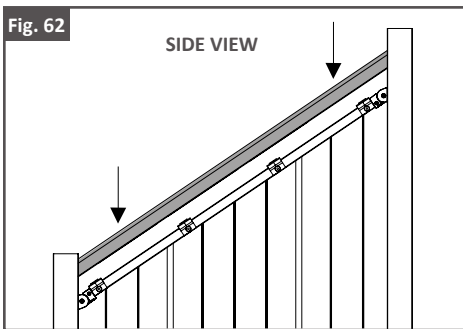
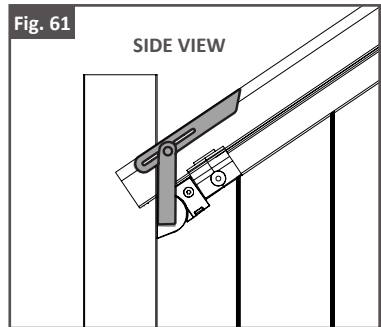
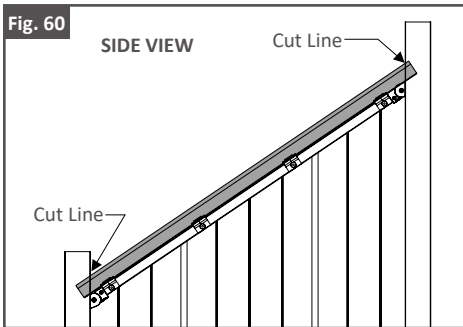
- The Accent Top Rail Kit comes with 7 spacers in the 93-7/8" [2384mm] kit, 6 spacers in the 69-7/8" [1775mm] kit and 14 spacers in the 190" [4826mm] kit.
- The spacers should be equally spaced along the length of the rail, with no more than 14" [356mm] spacing between them.
- The end spacers should be placed as close to the end brackets as possible.



### Step 2: Install the Round ATR

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. 61.
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 (Pages 14 & 15, steps 2 & 3).
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, reference step 3 below before permanently installing the ATR.

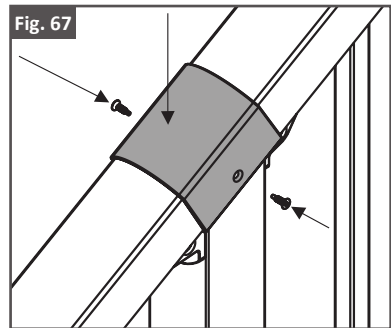
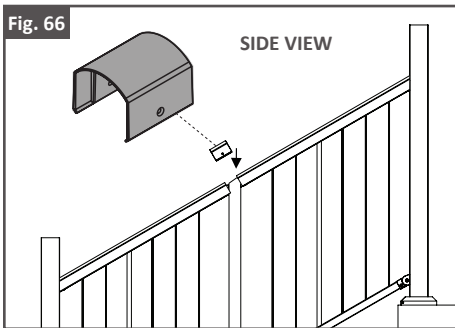
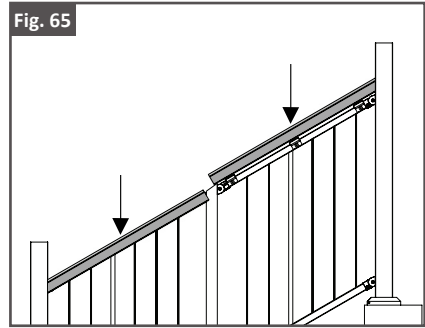
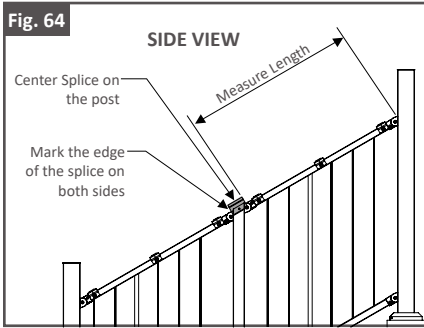


### Step 3: Install Stair Post Splice (OTP Installation Only)

1. Test fit the Stair Line Post Splice by locating its position above the 2" [51mm] post and mark the edge locations.
2. Measure the length of the mark to the next post and add 5/8" [16mm] to the number. This will be your ATR length.
3. Cut the ATR as mentioned in the previous step.
4. Attach the ATRs to the panels first. As shown in Fig. 65.
5. Snap the Splice over the ATRs. Once in position, use the supplied self drilling screws (2) to attach the splice to the post. As shown in Fig. 66 & 67.
6. 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

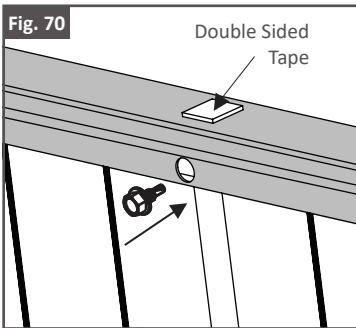
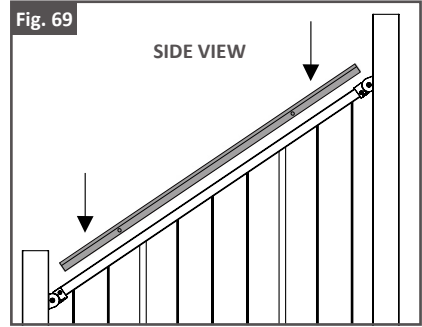
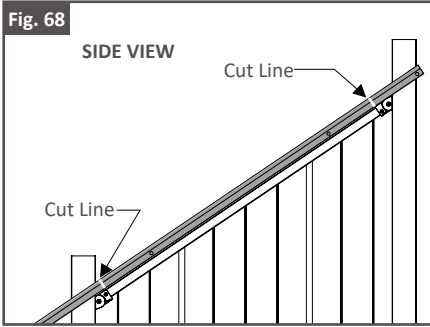
### Step 1: Install the Flat ATR Spacer

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. Attach the ATR Spacer using the provided self-drilling screws with a 5/16" [8mm] Nut Driver. As shown in Fig. 70. All screw holes must have a screw installed.
4. 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.



**Note:**

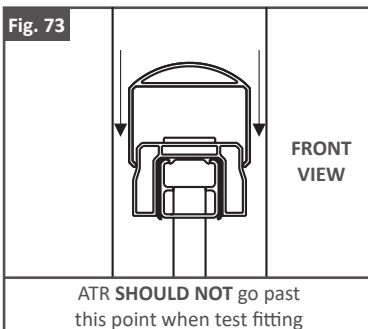
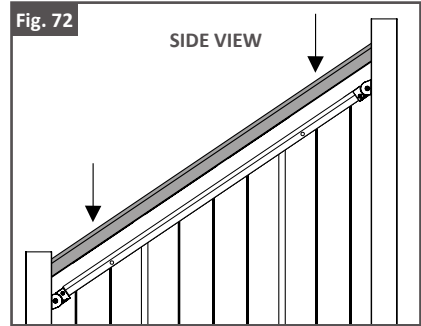
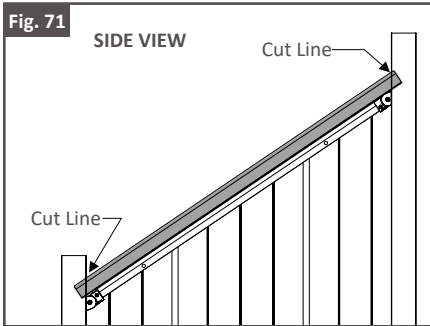
- Flat ATR uses a full length ATR Spacer.
- Flat ATR Spacer fits between the brackets.
- **DO NOT** remove backing of double sided tape until you are ready to permanently attach the ATR.



**Step 2: Install the Flat ATR**

1. Measure the distance from the inside edge of the 2 posts.
2. Use an Adjustable Angel Finder to measure the angle needed to make the ATR flush with the post. As shown in Fig. 61 on page 23.
3. Use angle found with Angle 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 spacer. 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.

- 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.
- If you are installing a OTP Line Post, reference step 3 below before permanently installing the ATR.

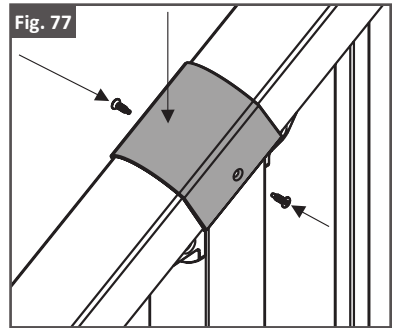
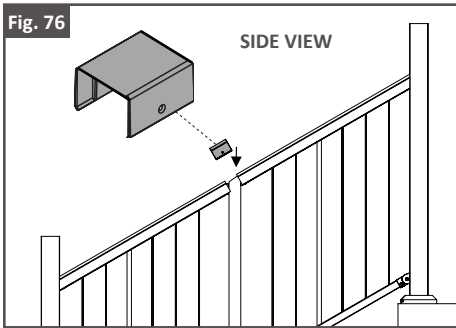
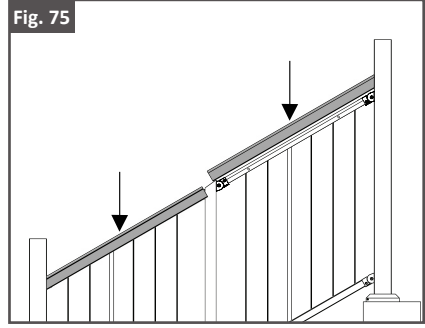
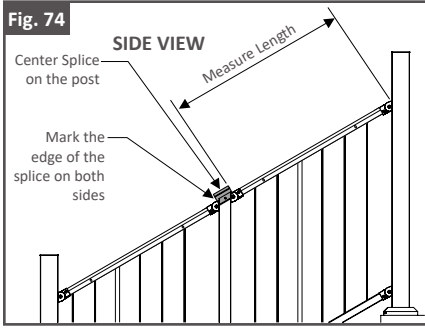


### Step 3: Install Stair Post Splice (OTP Installation Only)

- 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.
- Cut the ATR as mentioned in the previous step.
- Attach the ATRs to the panels first.
- Snap the Splice over the ATRs. Once in position, use the supplied self drilling screws (2) to attach the splice to the post.
- 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.



## CARE & MAINTENANCE

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### 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

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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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03/2022