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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 Building Products and its distributors shall not be held liable for improper or unsafe installations.

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

Note

- When cutting AVANT 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



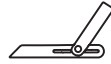
Tape Measure



Speed Square



Level Tool



Adjustable Angle Finder



T-25 Driver Bit



5/16" Nut Driver Bit



#2 Phillips Head Bit



Drill Bits: 1/16", 3/16", 3/8", 5/8"



Socket Set



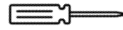
Bit Extender



Socket Wrench



Crescent Wrench



Phillips Head Screw Driver



Rubber Mallet



Tension Gauge



Drill



Miter Saw



Wood Block
2" x 4"



Touch-Up Paint



Spring Punch

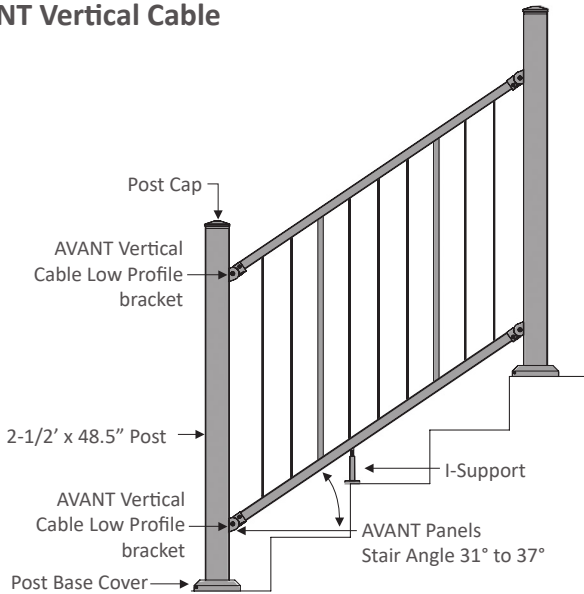


Paint Pen



Pencil

AVANT Vertical Cable



Post Option

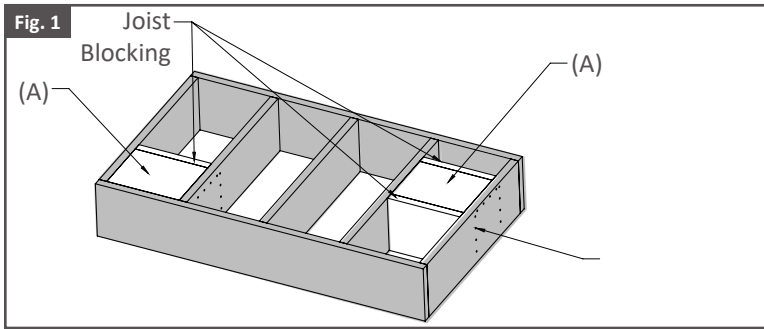
- It is recommended that a 2 -1/2" x 48 -1/2" post is used for all stair posts.

POST MOUNTING

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

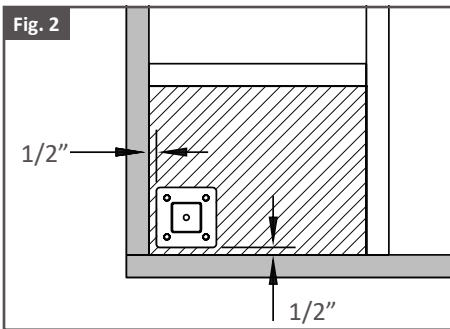
Step 1: Install Wood Blocks

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



Step 2: Position Base Plate

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

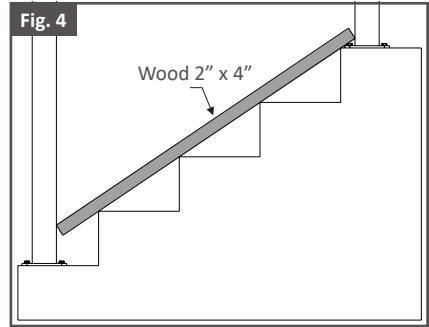
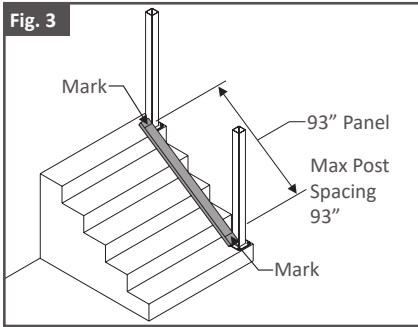


Step 3: Max Post Spacing

1. Position top and bottom posts.
2. On a straight wood 2" x 4", make 2 marks to measure the maximum distance for the inside face of the posts. Maximum post spacing is 93". As shown in Fig. 3.
3. Place the wood 2" x 4" on the nose of the stair steps next to the posts.

Note:

- Do not exceed the maximum post spacing.
- The top edge of the wood 2" x 4" will be 1/8" below the bottom rail.
- Confirm that this height will pass local building code.

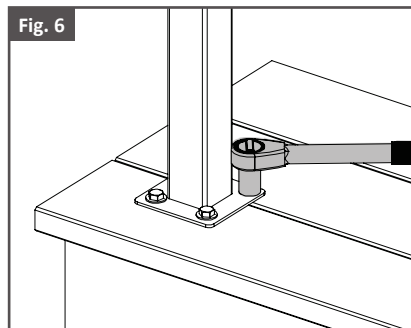
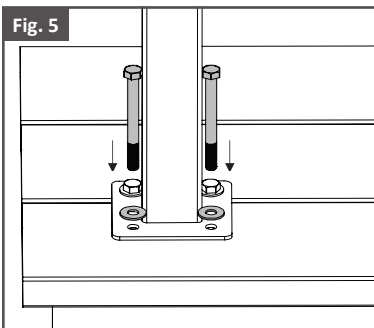


Step 4: Mount Posts

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

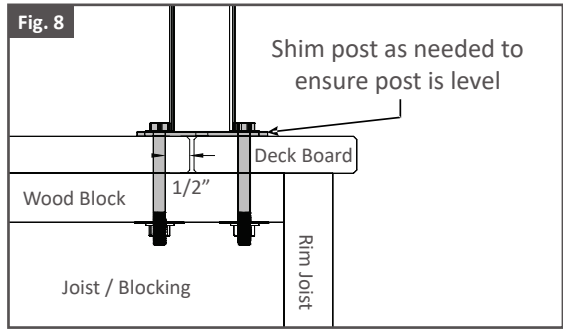
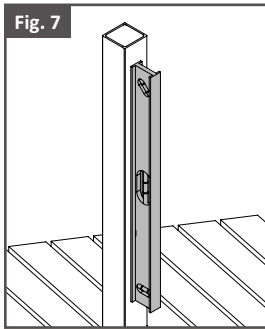
Note:

- It's recommended to cut panel before mounting posts. Reference page 12 for panel cutting steps.
- AVANT Stair post spacing must be adjusted until final panel length is determined.
- Use only $3/8$ " Hex Head Galvanized Bolts. Lag Screws should **NOT** be used. Secure each post with four bolts.
- Read all instructions before mounting posts to deck surface.



Step 5: Check Mounted Posts

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



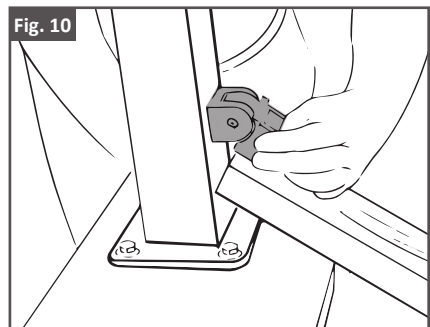
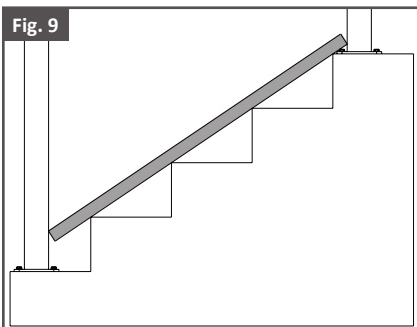
BRACKET INSTALLATION

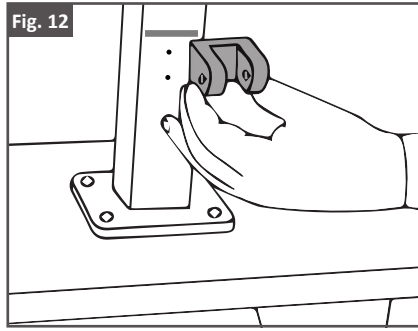
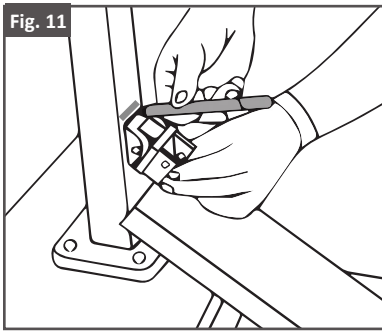
Step 1: Bottom Bracket Installation

1. Position wood 2" x 4" between posts. As shown in Fig. 9.
2. Position bottom rail brackets centered flat on post & wood 2" x 4". As shown in Fig. 10.
3. Use pencil to mark top edge of bracket location on post. As shown in Fig. 11.
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. 12.

Note:

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



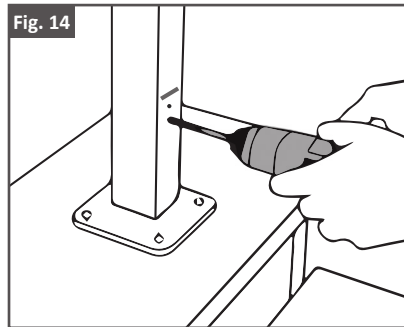
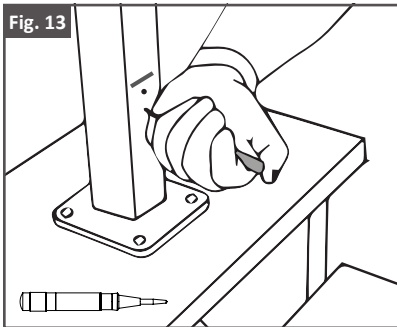


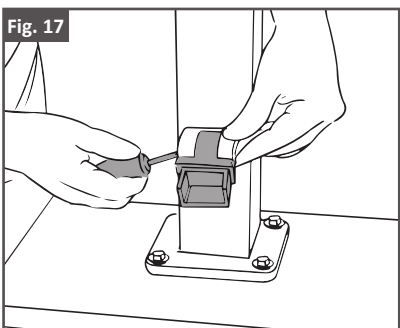
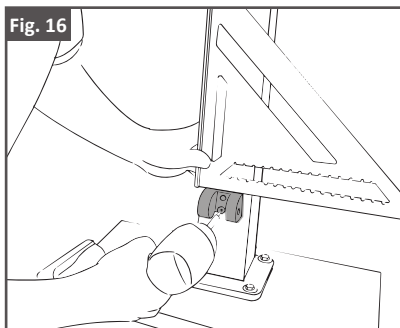
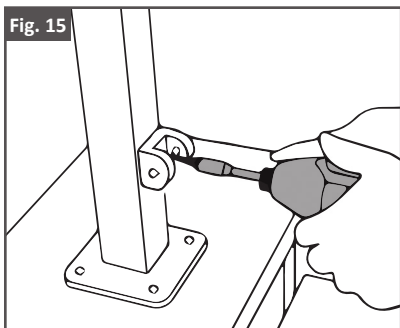
Step 2: Bottom Bracket Installation Continued

1. Use Spring Punch to mark the holes. As shown in Fig. 13.
2. Drill out bracket holes with a 3/16" drill bit. As shown in Fig. 14.
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. 15.
4. Keep bracket base centered as you install second screw. As shown in Fig. 16.
5. Insert barrel & screw to re-assemble bracket.
6. Tighten barrel & screw. As shown in Fig. 17.

Note:

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



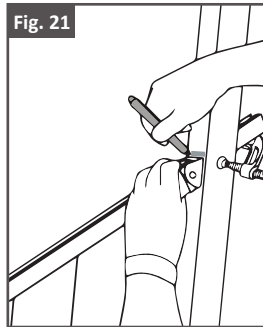
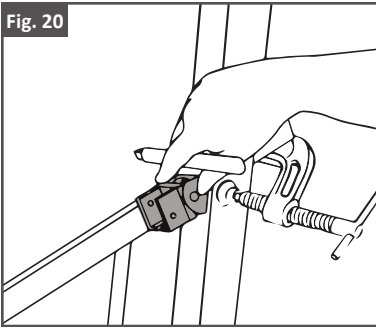
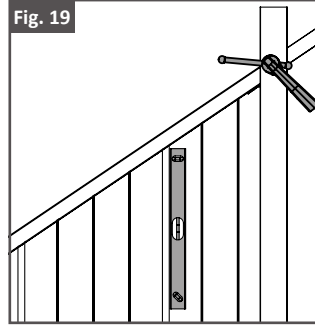
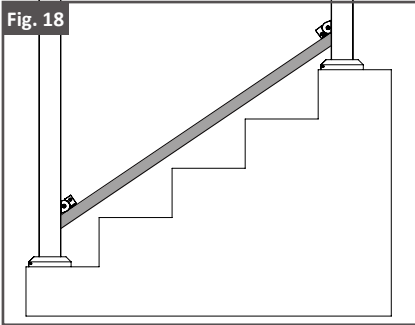


Step 3: Top Bracket Installation

1. Position wood 2" x 4" under bottom brackets.
As shown in Fig. 18.
2. Fully rake and place panel next to posts on top of wood 2" x 4" .
3. Clamp panel to post in 4 places.
4. Use a level to ensure panel and posts are both straight.
As shown in Fig. 19.
5. Position top rail brackets parallel with panel & flat centered on post. Make sure inside bottom of bracket is flush with bottom of rail. As shown in Fig. 20.
6. Use pencil to mark top edge of bracket location on post. As shown in Fig. 21.
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. 22.

Note:

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



Step 4: Top Bracket Installation Continued

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

Fig. 23

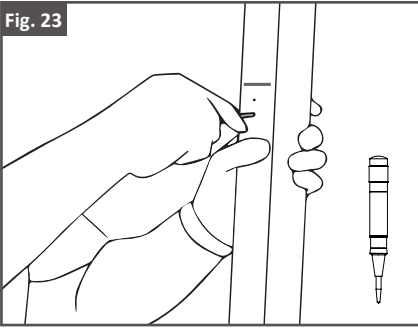


Fig. 24

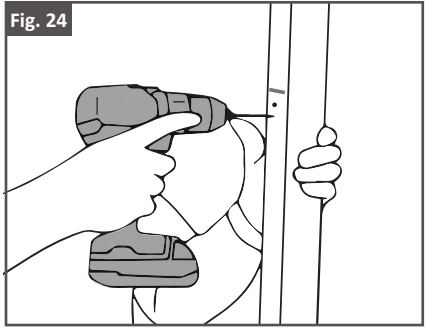
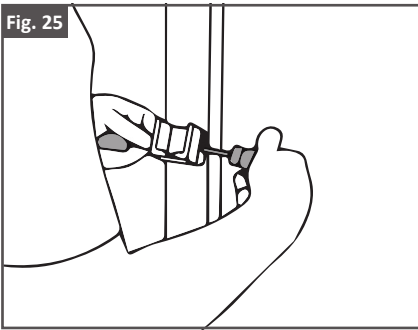


Fig. 25



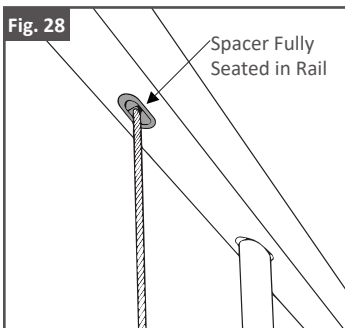
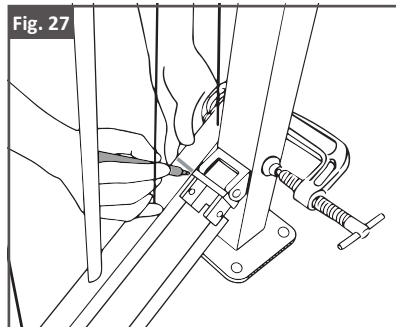
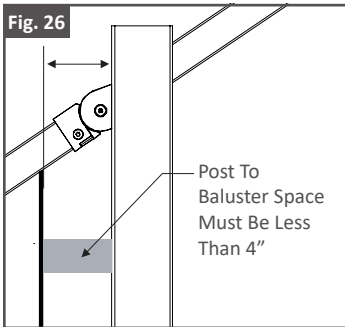
CUTTING DOWN PANELS

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

1. Position wood 2" x 4" under bottom brackets.
2. Rake and place panel next to posts on top of wood 2" x 4".
3. Measure spacing from inside edge of post to the baluster space. Spacing **CANNOT** exceed 4" on each end. As shown in Fig. 26.
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. 27.
8. Use speed square to ensure markings are perpendicular to panel.

Note:

- Place panel Midspan Supports as close to inside of post as possible.
- Be sure panel is fully raked when marking panel cuts.
- Make sure Top Rail Spacers are fully seated in the Top Rail Cable openings. As shown in Fig. 28.
- Use a narrow screw driver to help position spacers.
- Be sure cable hardware does not interfere with brackets when marking the panel.



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.**

Fig. 29

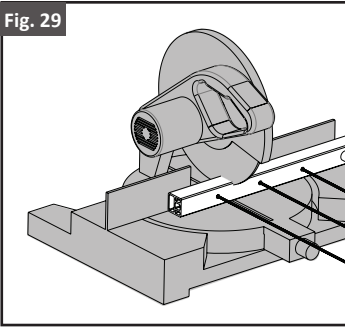


Fig. 30

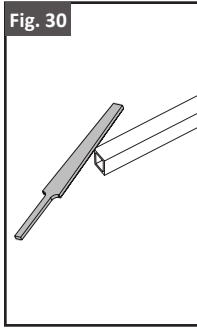
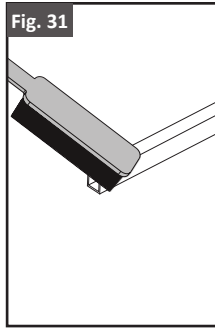


Fig. 31

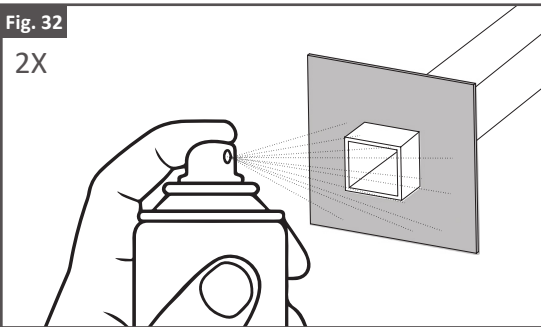


Step 3: Apply Spray Paint To Cut Areas

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.

Fig. 32

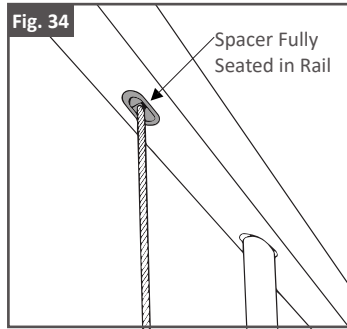
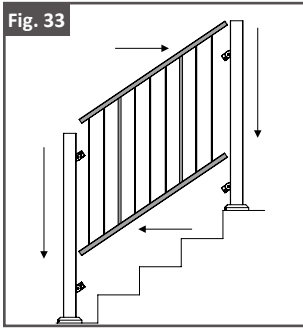
2X



PANEL INSTALLATION

Step 1: Install Panel

1. Rake the panel near to the angle needed to install.
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. 34.
4. Remove any metal shavings after attaching the panel.

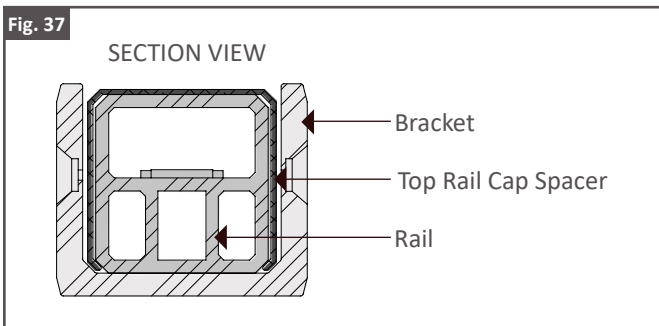
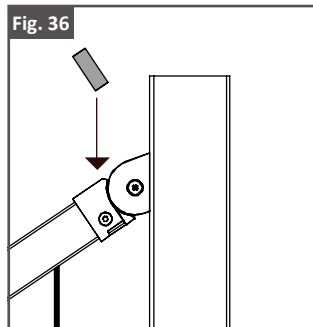
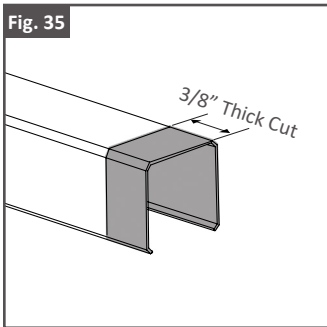


Step 2: Install Top Rail Cap Spacer

1. Remove the Top Rail Cap from panel.
2. Cut the top rail cap spacers $3/8$ " long. Fig. 35.
3. Install the spacers on both ends of Top Rail. Spacers must be installed in the back of the bracket cup Fig. 36.

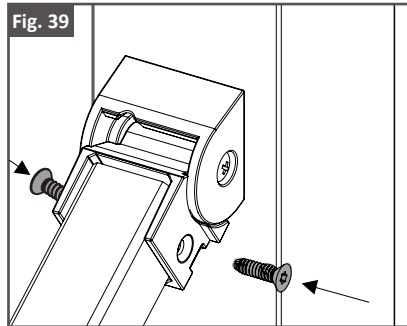
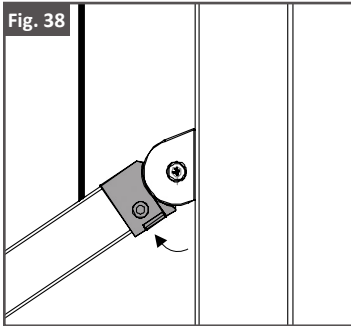
Note:

- The Top Rail Spacer snaps between the bracket and rail. As shown in Fig 37.



Step 3: Attach Panel to Brackets

1. Pre-drill holes for screws using a 3/16" drill bit.
2. Push the bracket up so that the bottom is parallel with the rail. As shown in Fig. 38.
3. Attach the panel to brackets using the T-25 Screw that came with the brackets. Two screws are required in both brackets. As shown in Fig. 39.
4. Remove any metal shavings after attaching the panel.

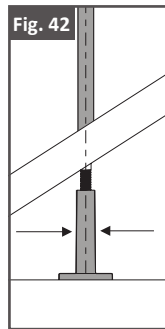
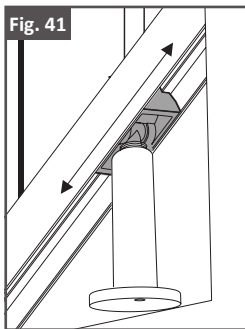
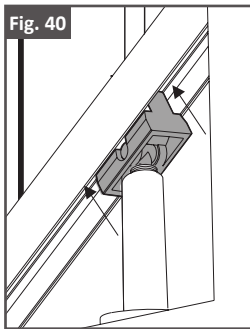


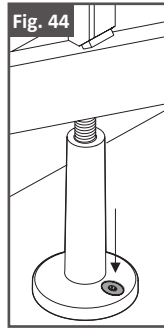
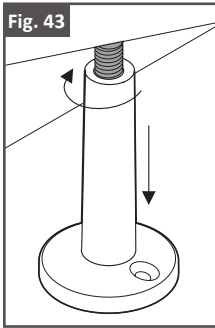
Step 4: Install I-Support On Panel

1. Install the I-Support by snapping the rail insert up into the bottom rail.
2. Position the I-Support directly under a Midspan Support.
3. Unscrew the base until it reaches the stair surface.
4. Attach the I-Support using the provided T-25 wood screw.

Note:

- The I-Support can rotate to any angle 0° to 40°. The height of the I-Support can change from 3.3" up to 5.7".





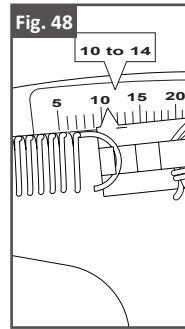
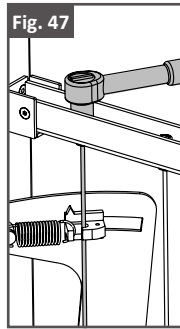
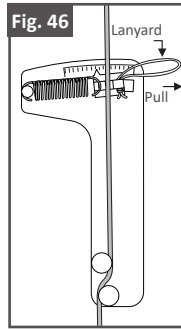
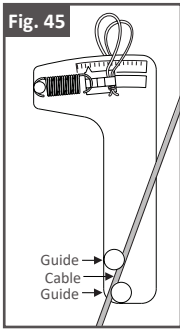
Step 5: Tensioning the AVANT Vertical Cable Panel

DO NOT OVER TIGHTEN CABLES

1. Use a 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 AVANT Vertical Cable System uses 1/8" diameter cable.
4. See images on page 18 for information on how to load cable into the tension gauge:
 - Position cable between lower guides. As shown in Fig. 45.
 - Pull the lanyard and extend the spring until the cable is engaged with the hook in the indicator slide. As shown in Fig.46.
 - Use a 1/2" Socket Wrench to tighten the cable. As shown in Fig. 47.
 - Tighten cable until the indicator arrow is between 10 and 14 on the tension gauge. As shown in Fig. 48.

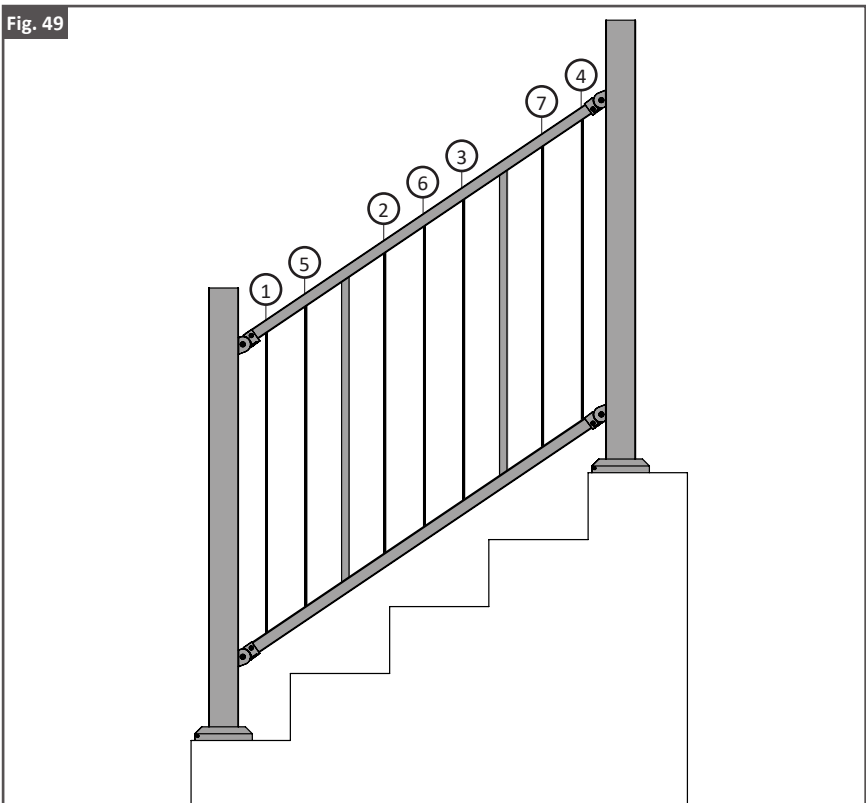
Note:

- Make sure Top Rail Spacers are fully seated in the top rail cable openings. Reference page 15, Fig. 34.
- Use a narrow screw driver to help position spacers.



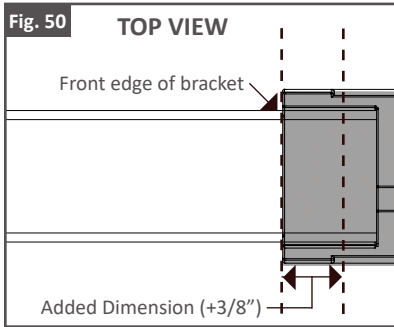
Step 6: Cable Tensioning Sequence

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.



Step 7: Cut Top Rail Cap to Length

1. Measure distance from the front edge of brackets. Add $3/8''$ to that dimension. As shown in Fig. 50.
2. Make cut marks on the Top Rail Cap, cut the Cap to length, file the edges, and paint using the same steps as used for cutting down a panel.

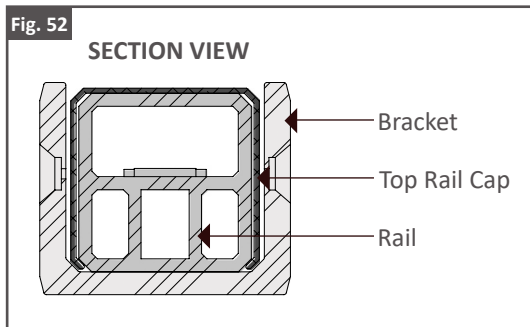
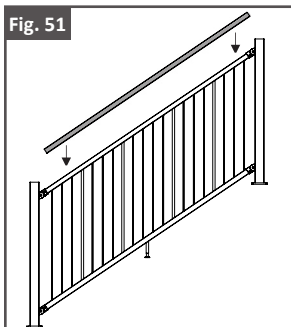


Step 8: Install Top Rail Cap

1. When test fitting the Top Rail Cap, DO NOT press the Cap down over the rail until length is confirmed.
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.

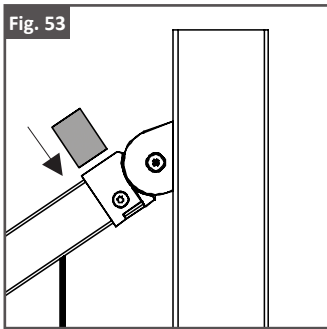
Note:

- The Top Rail Cap snaps between the bracket and rail. As shown in Fig. 52.



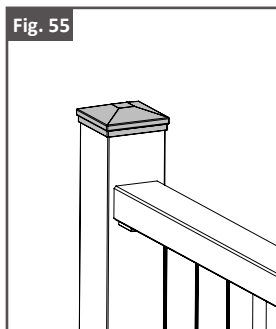
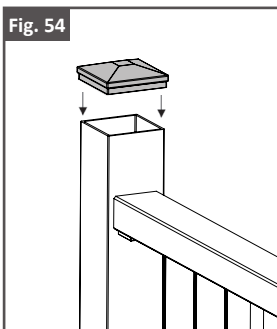
Step 9: Install Bracket Caps

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



Step 10: Install Post Caps

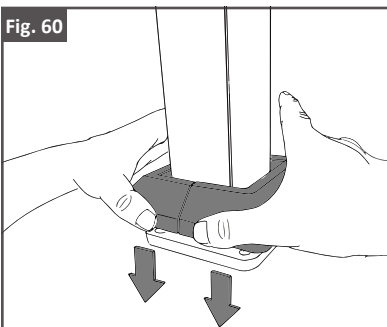
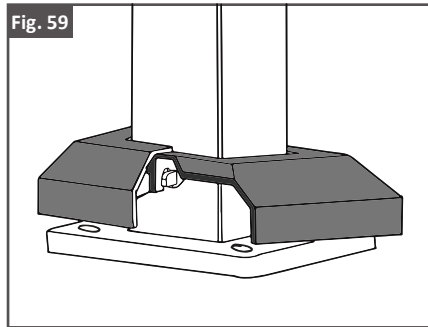
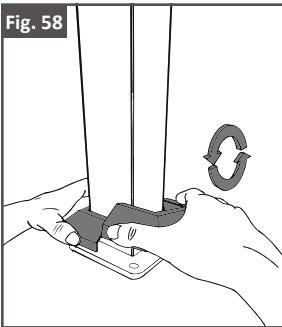
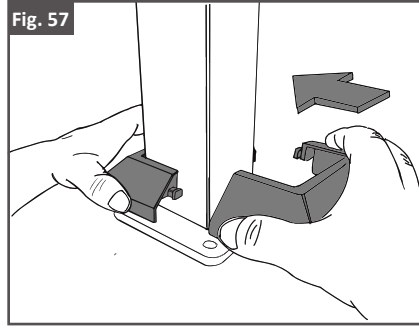
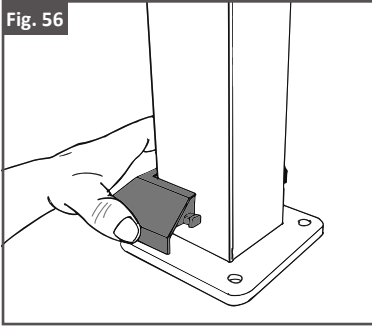
1. AVANT Posts Caps are press fit into place.



Step 11: Install Post Base Cover

1. Separate the two-piece base plate cover. Hold one side parallel to the post base plate. As shown in Fig. 56.
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. 57.
3. Twist the 2nd cover $\frac{1}{4}$ turn and move piece until both half's touch. As shown in Fig. 58.
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. 59.

- 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 halves over the post base plate. As shown in Fig. 60.



CARE & MAINTENANCE

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

- Immediately after installation of your AVANT Railing Products, 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.
- 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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