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## INTRODUCTION

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### READ INSTRUCTIONS COMPLETELY BEFORE STARTING INSTALLATION

#### General Guidelines

It is the responsibility of the installer to meet all code and safety requirements, and to obtain all required building permits. The installer should determine and implement appropriate installation techniques for each installation situation. Fortress Building Products nor its distributors shall **NOT** be held liable for improper or unsafe installations.

Personal Protection Equipment (PPE) must be worn anytime you're using power tools. Eye protection, hearing protection, closed-toe shoes, gloves, long sleeves, and pants must be worn to keep yourself safe.

The installer holds primary responsibility for implementing all necessary safety measures.

At the end of a work period, all steel shavings and/or chips must be cleaned off the jobsite. Not doing so could result in the staining of surrounding surfaces.

Fortress Building Products **DOES NOT** cover all possible installation scenarios within these instructions. In some cases, it may be necessary for you to consult a professional engineer or building code official.

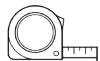
## Required Tools



Goggles



Safety  
Gloves



Tape  
Measurer



Speed  
Square



Level  
Tool



Touch-Up  
Paint



Pencil



T-25  
Driver Bit



#2 Phillips  
Head Bit



Drill Bits  
3/8 in. [10 mm],  
1/8 in. [3 mm]



Bit  
Extender



Spring  
Punch



File



Drill



Metal Cutting  
Miter Saw



Rubber  
Mallet



Hex Head Nut  
Driver Bits

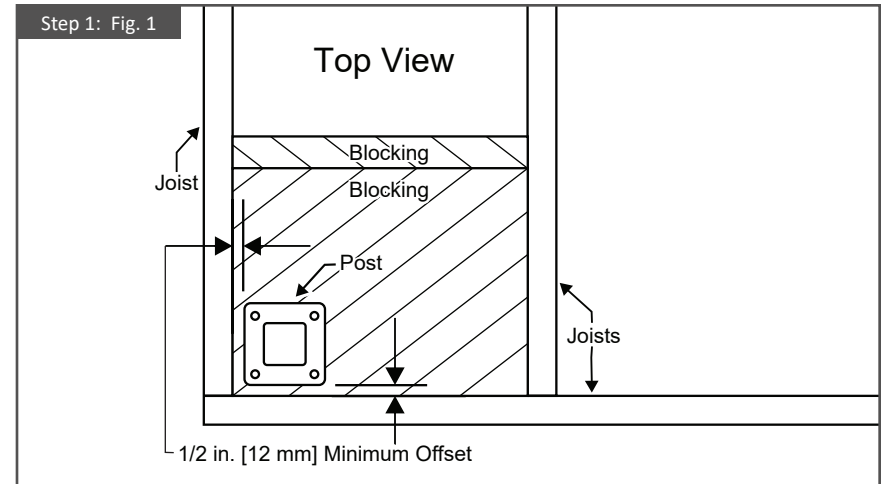


Wood Block 2" x 4"  
(actual 1-1/2" x 3-1/2"  
[38mm x 89mm])

## ASSEMBLY - LEVEL RAILING PANEL AND POSTS

### Step 1: Place the Posts:

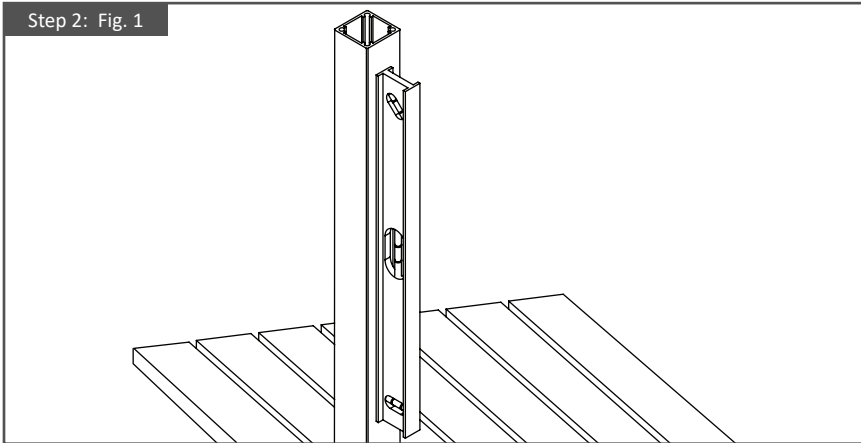
1. Refer to your deck railing plan to determine the locations for the railing posts. When placing posts, make sure there is a 1/2 in. [12 mm] minimum offset to provide enough material thickness around your post fasteners to hold them secure.
2. **Blocking:** Make sure there's enough support underneath the deck to securely mount the posts. If not, you may need to install additional blocking (support beams) before proceeding.



### Step 2: Plumb and Shim the Posts:

1. Position each post in its designated spot.
2. Use a level to ensure the post is plumb in all directions.
3. Insert post wedge shims between post and deck as needed to achieve level position.

Step 2: Fig. 1

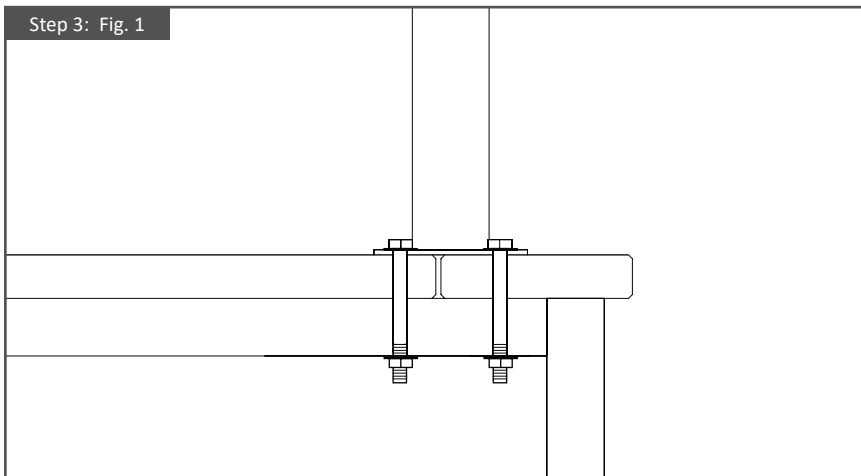


### Step 3: Secure the Posts:

1. Once the post is plumb and shimmed (if needed), secure the post to the deck surface.
2. The post base is designed to accept a 3/8 in. [10 mm] fastener. Use the appropriate fastener for your substrate.

**Tips:** Use a helper to hold the post in place while you plumb and secure it. Shims (if needed) can be easily trimmed using a utility knife for a precise fit. Check local building codes.

Step 3: Fig. 1

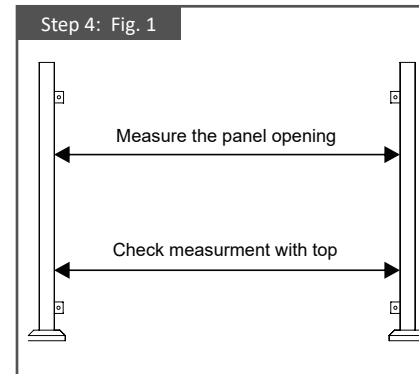


### Step 4: Measure, Mark and Cut the Panel:

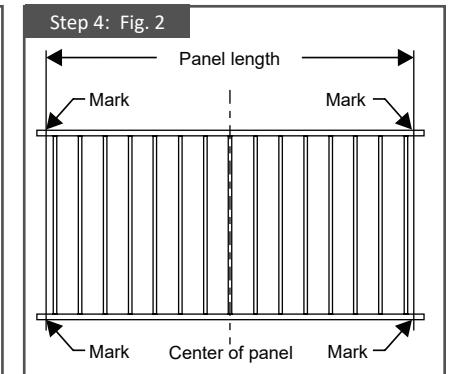
1. Measure the distance between the two top brackets and two bottom brackets. (Step 4: Fig. 1)
2. Transfer this measurement to the rail panel, centering so that there is equal space at each end. (Step 4: Fig. 2)
3. Use a metal saw to cut the panel at the marked locations.

**Important:** Do not cut the panel directly on the deck surface to avoid metal filings rusting on the deck.

Step 4: Fig. 1



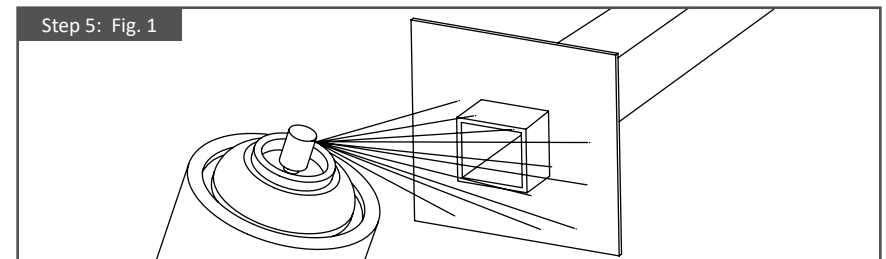
Step 4: Fig. 2



### Step 5: Apply Touch-up Paint: (Sold Separate)

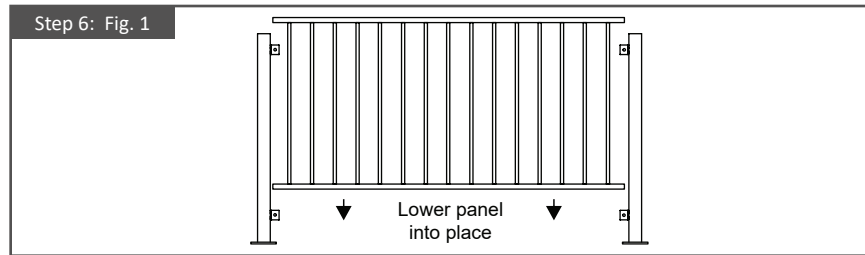
1. Apply two coats of FORTRESS touch-up paint, a zinc-based touch-up paint, to the freshly cut edges to prevent rust.
2. Allow it to dry prior to installation.

Step 5: Fig. 1



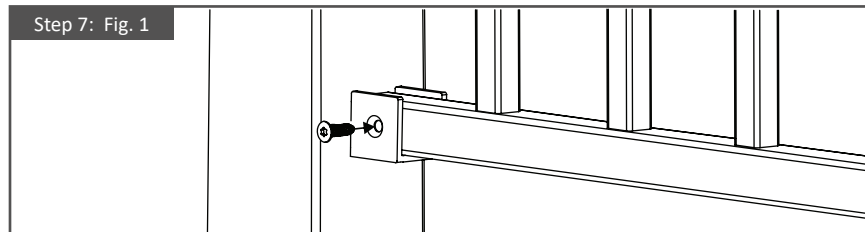
### Step 6: Set Panel:

1. Carefully position the pre-cut panel between the posts, ensuring even spacing at each end.



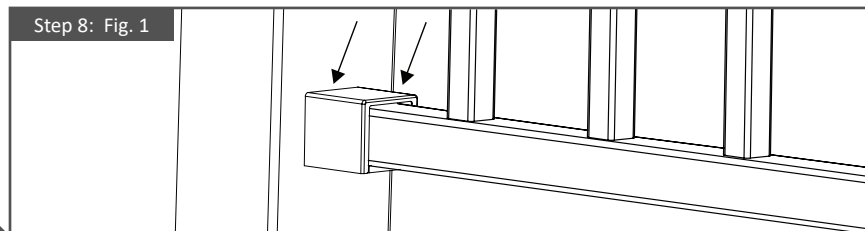
### Step 7: Attach panel and brackets:

1. Use a 1/8 in. [3 mm] metal drill bit to pre-drill screw holes through the panel, aligning them with the pre-drilled holes in the brackets on each post.
2. Secure the panel using the supplied self-tapping screws (2 per bracket) through the pre-drilled holes.



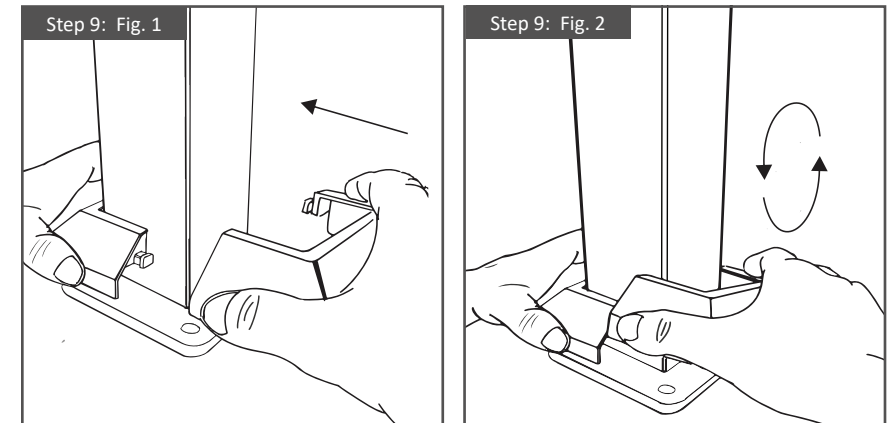
### Step 8: Snap on bracket caps & post base covers:

1. Slide the bracket cap over the rail next to the bracket.
2. Push the cap towards the post until it snaps securely into place, concealing the screws.



### Step 9: Install Post Base Covers:

1. Place one piece (you can use either) of the post base cover against the post. (Step 9: Fig. 1)
2. Bring in the second post base piece and rotate it to lock the two pieces together. This will conceal the post flange for a finished look. (Step 9: Fig. 2)

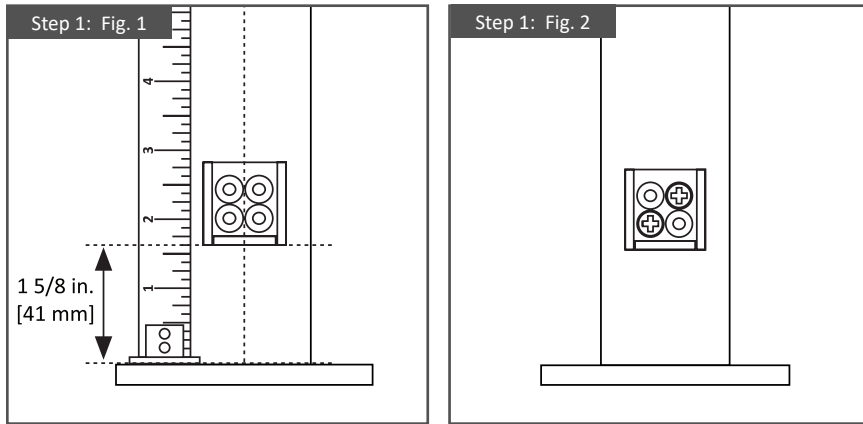


### ASSEMBLY - LEVEL BRACKETS

#### Step 1: Measure and Install Bottom Bracket:

1. From the top of the base plate on post (sold separately), mark a line at 1-5/8 in. [41 mm] This is the bottom edge of the level bracket. (see dotted lines) (Step 1: Fig. 1)
2. Mark the desired center line of the installed rail panel where it intersects the top bracket line. (see dotted lines)
3. Using the lines marked, position the bracket centered on the center line, and above the 1-5/8 in. horizontal line.

- Secure the bracket using two fasteners suitable for your mounting surface material. Install the fasteners diagonal from each other. (Step 1: Fig. 2)



#### Step 2a: Measure and install top bracket for 34 in. panel:

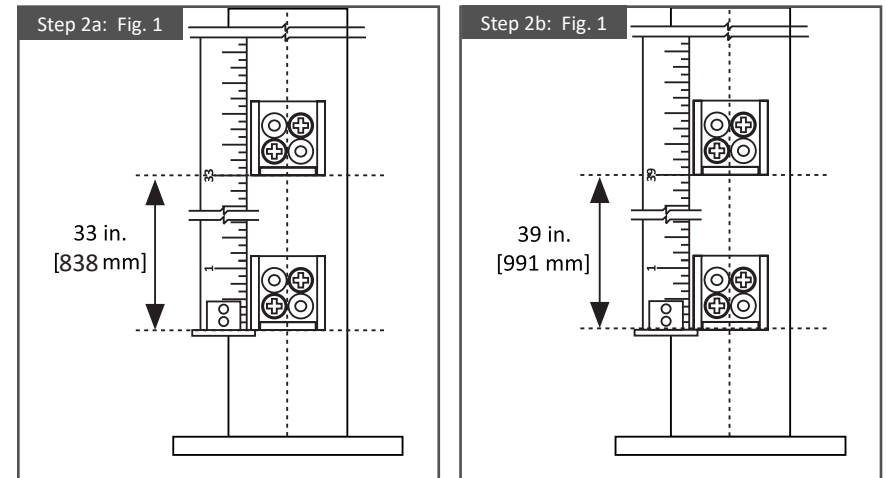
- Locate the bottom bracket you attached in step 1.
- Measure 33 in. [838 mm] up the post vertically from the bottom edge of the bottom bracket. Mark this on the post. (Step 2a Fig. 1)
- Mark the desired center line of the installed rail panel where it intersects the top bracket line. (Step 2a Fig. 1)
- Attach the top bracket using the same method as the bottom bracket in step 1.

#### Step 2b: Measure and install top bracket for 40 in. panel:

- Locate the bottom bracket you attached in step 1.
- Measure 39 in. [991 mm] up the post vertically from the bottom edge of the bottom bracket. Mark this on the post. (Step 2b Fig. 1)

- Mark the desired center line of the installed rail panel where it intersects the top bracket line. (Step 2b Fig. 1)

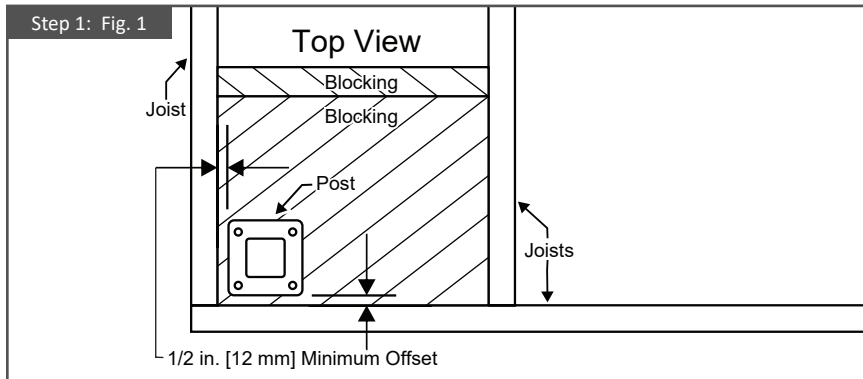
- Attach the top bracket using the same method as the bottom bracket in step 1.



## ASSEMBLY - STAIR RAILING PANEL, BRACKETS, AND POSTS

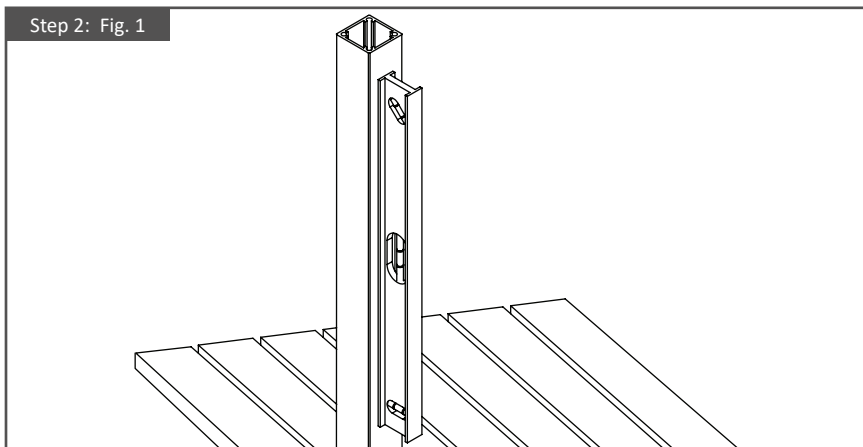
### Step 1: Place the posts (sold separate):

- Refer to your deck railing plan to determine the locations for the railing posts. When placing posts, make sure there is a 1/2 in. [12 mm] minimum offset to provide enough material thickness around your post fasteners to hold them secure.
- Blocking: Make sure there's enough support underneath the deck to securely mount the posts. If not, you may need to install additional blocking (support beams) before proceeding.



### Step 2: Plumb and Shim the Posts:

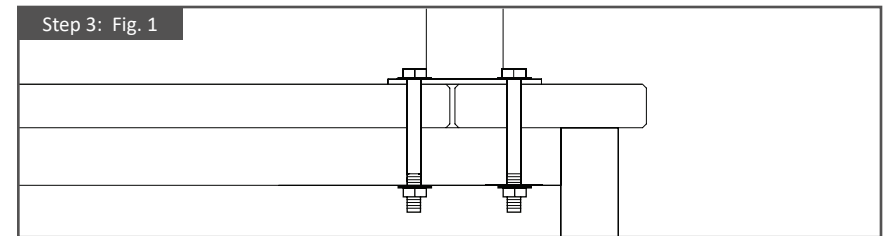
1. Position each post in its designated spot.
2. Use a level to ensure the post is plumb in all directions.
3. Insert post wedge shims between post and deck as needed to achieve level position.



### Step 3: Secure the Posts:

1. Once the post is plumb and shimmed (if needed), secure the post to the deck surface.
2. The post base is designed to accept a 3/8 in. [10 mm] fastener. Use the appropriate fastener for your substrate.

**Tips:** Use a helper to hold the post in place while you plumb and secure it. Shims (if needed) can be easily trimmed using a utility knife for a precise fit. Check local building codes.

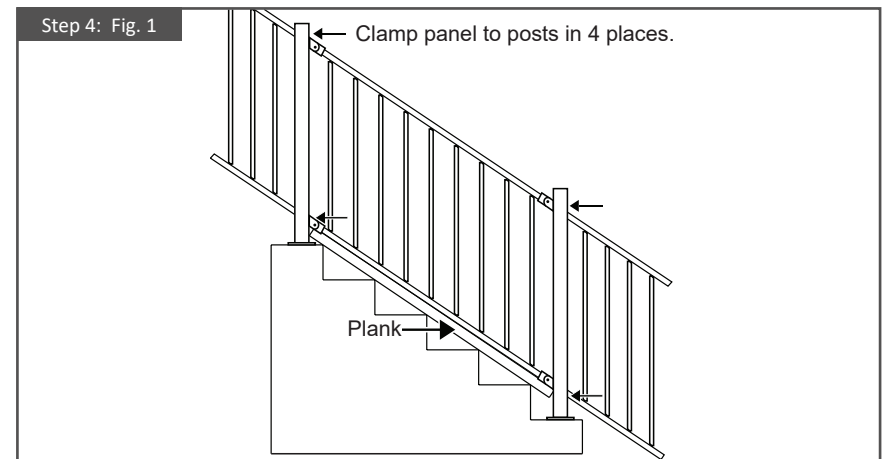


### Step 4: Position the panel (Check height):

1. Place a plank of the appropriate thickness (to achieve the final desired handrail height) on the stair noses, spanning between posts.
2. Carefully position the stair panel on top of the plank, ensuring it's level (plumb) and with equal spacing for balusters at each end.

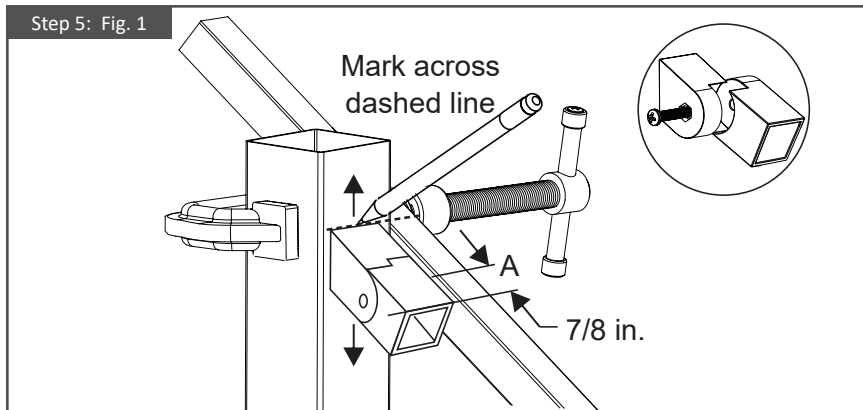
**Important:** Refer to your local building code for the required stair rail height.

3. Once satisfied with the placement, clamp the panel in place for stability.



### Step 5: Mark rails and posts (Bracket placement):

1. Assemble stair mounting bracket pieces together.
2. Hold the angled end of the bracket against the post face, aligning the top of bracket with the top of stair panel.
3. Mark a line at the top of the bracket location on the post face, then continue to mark that line across the top of the rail panel.
4. Repeat this process for all four ends of the rail.
5. Mark the top end of the top rail for reference before removing it.



### Step 6: Cut and Test Fit the Stair Railing Panel:

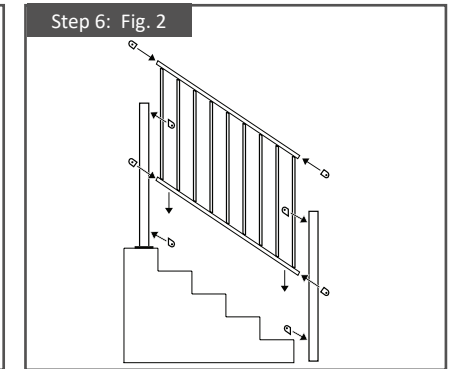
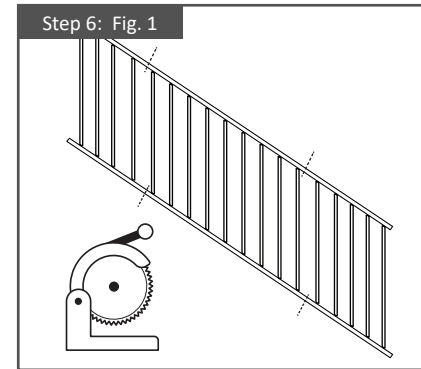
1. Use a metal saw to cut the panel at the marked locations. (Step 6: Fig. 1)

**Important:** To account for the bracket placement, add 7/8 in. [22 mm] towards the rail end or post to each mark made in step 4.

**Important:** Do not cut the panel directly on the deck surface to avoid metal filings rusting on the deck.

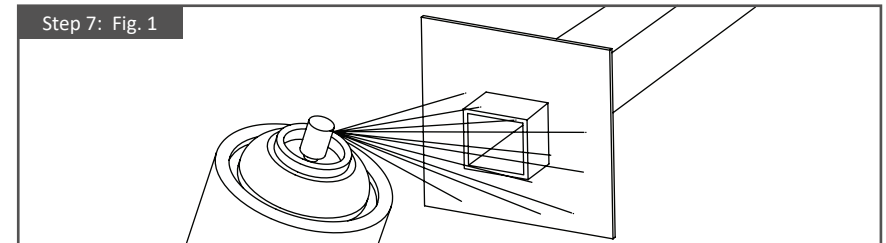
2. Test fit by inserting the cut ends of the panel into the stair brackets, ensuring proper orientation of all pieces.

3. Test the fit of the entire assembly to verify everything aligns correctly. (Step 6: Fig. 2)



### Step 7: Apply Touch-up Paint: (Sold Separate)

1. Apply two coats of zinc-based FORTRESS touch-up to the freshly cut edges to prevent rust.
2. Allow it to dry prior to installation.

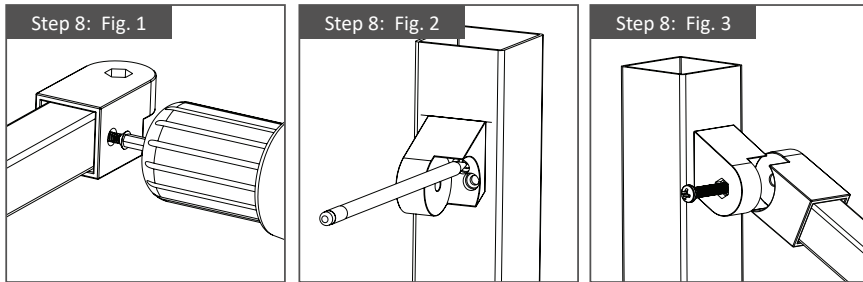


### Step 8: Install brackets and attach panel:

1. Separate the two halves of each mounting bracket.
2. Reinsert the painted panel ends into the brackets. (Step 8: Fig. 1)
3. Pre-drill screw holes through the panel using a 1/8 in. [3 mm] metal drill bit, aligning them with the holes in the brackets.

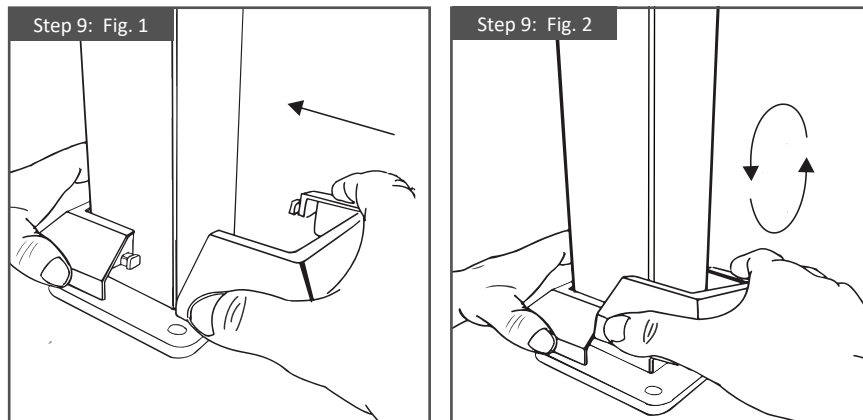


- Secure the panel using the supplied self-drilling screws (1 per bracket) through the pre-drilled holes.
- Install the stair brackets for the post onto the marks made in step 5, ensuring proper orientation for all brackets. (Step 8: Fig. 2)
- Reposition the panel back into place and reattach the bracket halves together to secure the panel to the posts. (Step 8: Fig. 3)



### Step 9: Install Post Base Covers:

- Place one piece (you can use either) of the post base cover against the post. (Step 9: Fig. 1)
- Bring in the second post base piece and rotate it to lock the two pieces together. This will conceal the post flange for a finished look. (Step 9: Fig. 2)



## CARE & MAINTENANCE

### Care And Maintenance Of Fortress Building Products Powder-Coated Products And Surfaces:

- Immediately after installation of your Fortress Building 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.
- DO NOT** allow metal shavings and/or chips to get dropped or blown into a pool, hot tub, or any other body of water. Staining could occur if this were to happen.
- 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 quarterly 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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