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About California Proposition 65:

<https://fortressbp.com/about/californiaproposition65>

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.

H-series I-Support is required for 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" [1.5mm,
4.5mm, 9.5mm, 16mm]



Drill



Bit
Extender



Metal Cutting
Miter Saw



Rubber
Mallet



2" [51mm] x 4"
[102mm] Wood



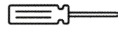
Socket
Set



Socket
Wrench



Crescent
Wrench



Phillips Head
Screw Driver



Adjustable
Angle Finder



Brush



Epoxy
Glue



Pencil



File



Tension
Gauge



Spring
Punch



Paint
Pen

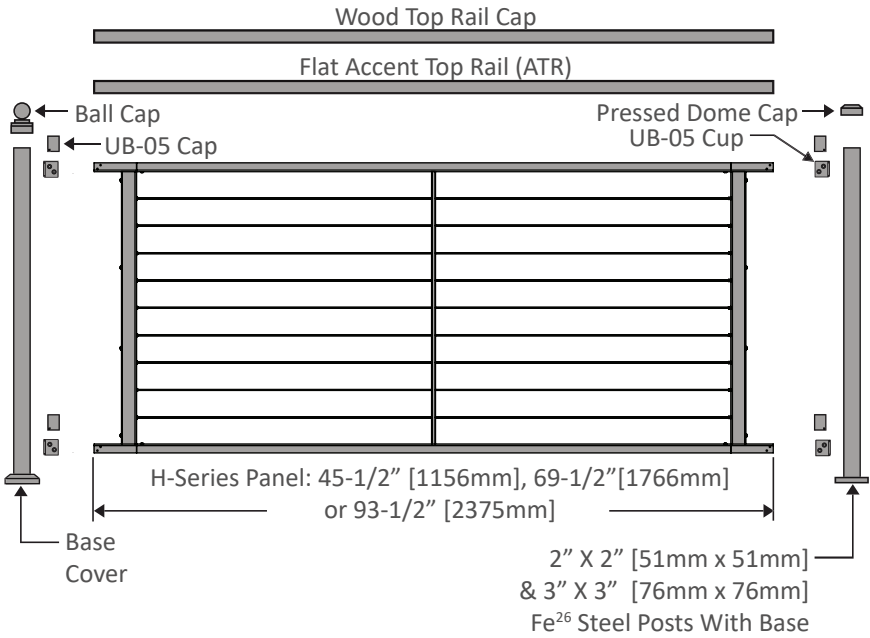


Cable
Cutter



Allen/Hex
Wrench

H-Series: Level Universal Bracket (UB) Installation Option



Universal Bracket (UB) Post Configuration		
H-Series Panel Height	Rail Panel	
	Installed Panel Height*	Required Post
34" [864mm]	37-7/16" [951mm]	39-1/2" [1003mm]
40" [1016mm]	43-7/16" [1103mm]	45-1/2" [1156mm]

*Installed heights include a 3-1/2" [90mm] space between deck surface and bottom edge of bottom rail.

POST MOUNTING

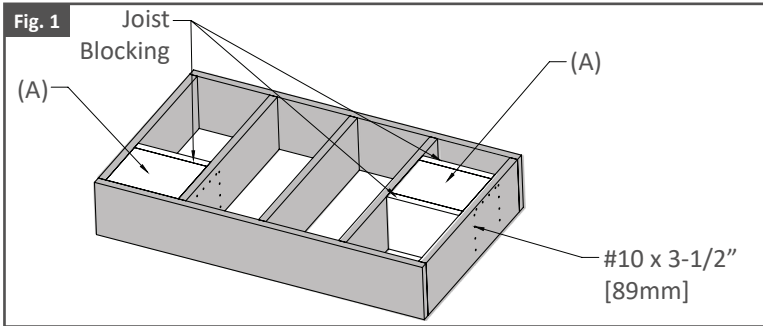
*If using Fortress Evolution Framing, contact Fortress for instructions.

Note:

It's recommended to install brackets on to post before Post Mounting. Reference page 8 for Bracket Installation steps.

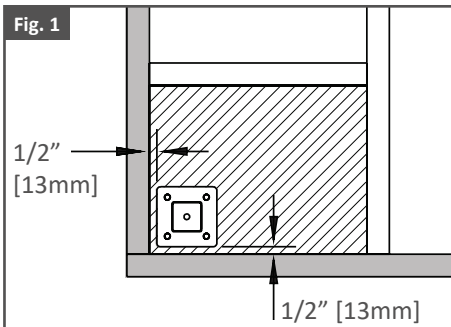
Step 1: Install Wood Blocks

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 Fe²⁶ base plate a minimum of 1/2" [13mm] from the inside edge of rim joist. As shown in Fig. 1.

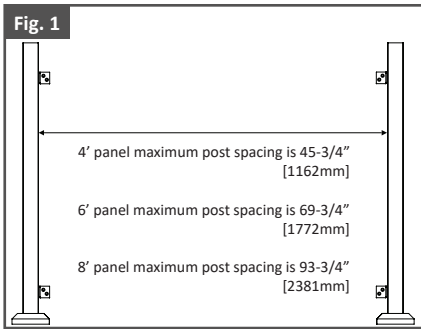


Step 3: Max Post Spacing

- 4' panel maximum post spacing is 45-3/4" [1162mm].
- 6' panel maximum post spacing is 69-3/4" [1772mm].
- 8' panel maximum post spacing is 93-3/4" [2381mm].

Note:

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

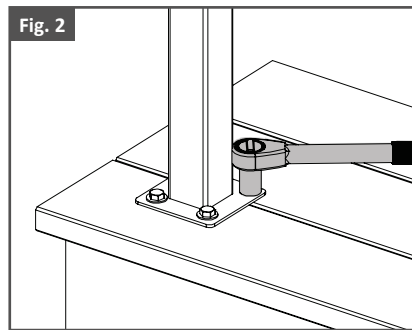
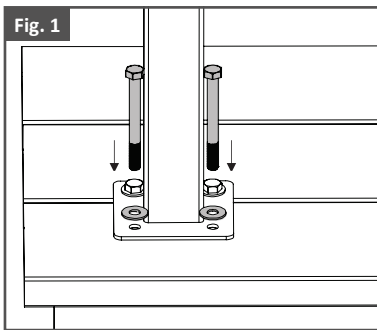


Step 4: Mount Posts

1. Mark mounting hole locations and pre-drill a 3/8" [10mm] hole.
2. Insert 3/8" [10mm] x 3-1/2" [89mm] Hex Head galvanized bolts through 3/8" [10mm] galvanized washer and post base plate.

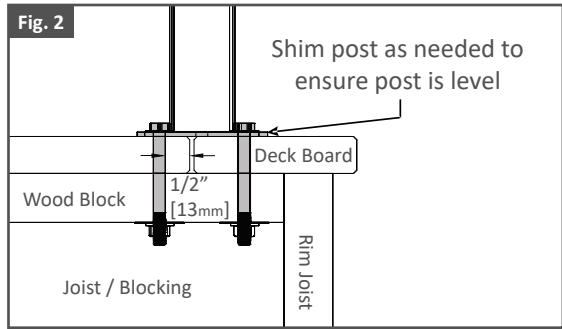
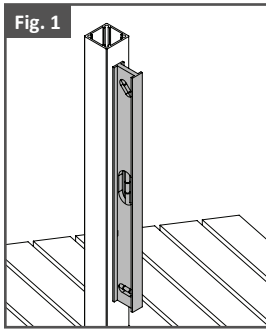
Note:

- 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

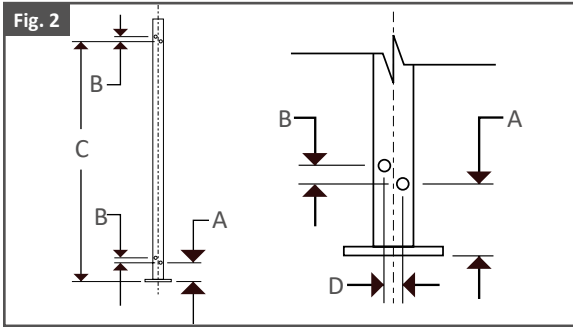
Step 1: Mark Bracket Hole Locations

1. Mark the centerline of each post with a pencil.
2. Take measurements used in Fig. 1 and 2 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. H-Series has a spacing of 3-1/2" [90mm].
- Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post to prevent rust stains.

UB-05 Bracket Hole Locations			
Pre-drill Dimensions: Pre-drilling with a 3/16" [5mm] drill bit is required			
A*	B	C	D
34" [864mm] Panel			
4" [102mm]	5/8" [16mm]	36-3/4" [933mm]	5/8" [16mm]
40" [1016mm] Panel			
4" [102mm]	5/8" [16mm]	42-1/2" [1080mm]	5/8" [16mm]
*Dimension A positions bottom edge of rail 3-1/2" [90mm] 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. 1.
 2. Pre-drill bracket holes with a 3/16" [5mm] drill bit. As shown in Fig. 2.
 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. 3.
 4. Once top and bottom brackets are installed, remeasure bracket spacing to confirm dimensions used in Fig. 2 and 3 of step 1. As shown in Fig. 4.
 5. Remove all metal shavings from deck, post base cover, post, and panel before bracket is screwed to post to prevent corrosion.

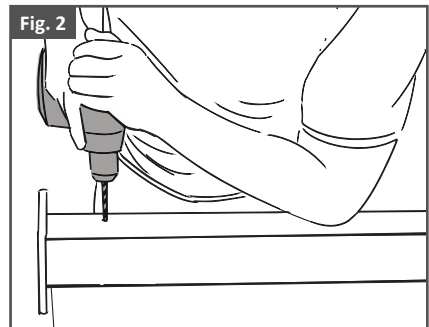
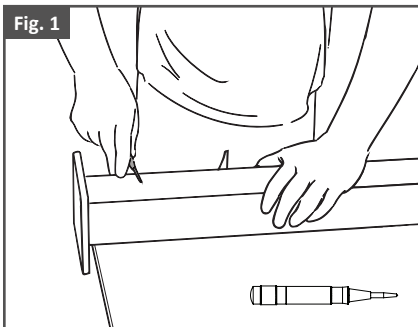


Fig. 3

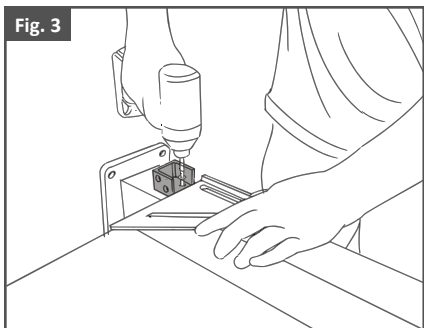
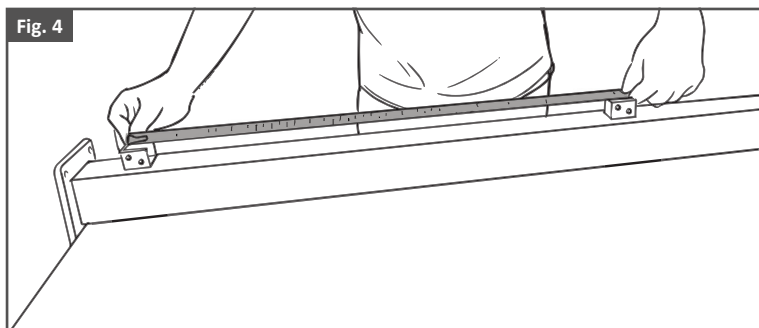


Fig. 4



Step 3: Measure The Panel Opening Length

1. Measure the distance of the panel opening. As shown in Fig. 1.
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. 2.

Fig. 1

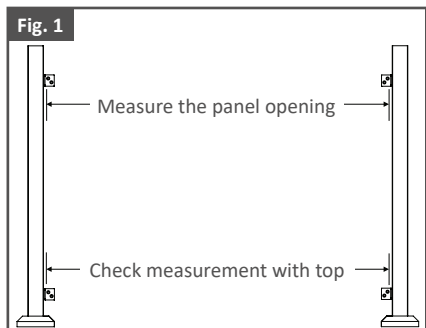
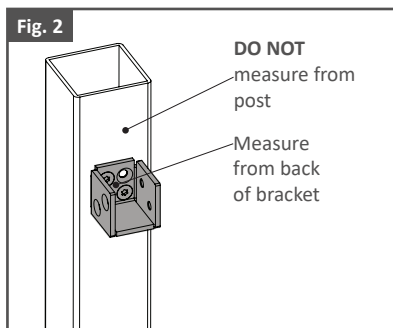


Fig. 2



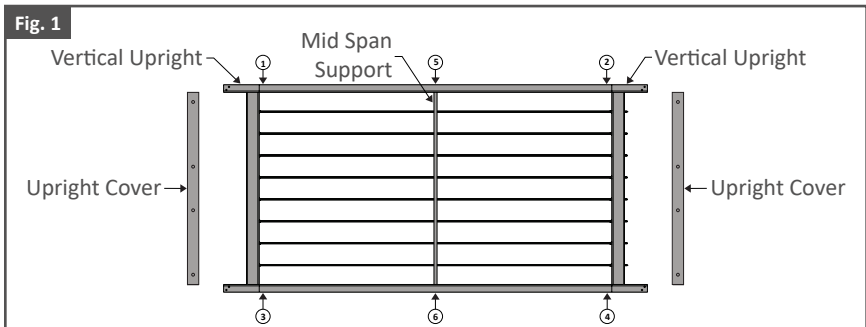
CUTTING DOWN PANELS

Step 1: Remove Vertical Upright Covers and Detach Mid-Span Supports and Vertical Uprights from Rails

1. Support the panel on a flat work surface. Protect the panel from scratching by placing cardboard on the surface.
2. Use a M4 Allen wrench to remove the 4 button head cap screws that secure each upright cover in place.
3. Place upright covers and screws to the side. (They will be reinstalled in later step.)
4. Using a M4 hex wrench, remove the fasteners (5 & 6) holding the mid-span support.
5. Using a M4 hex wrench and M10 socket, remove the fasteners (1,2,3 & 4) holding the top and bottom rails to the vertical uprights.

Note:

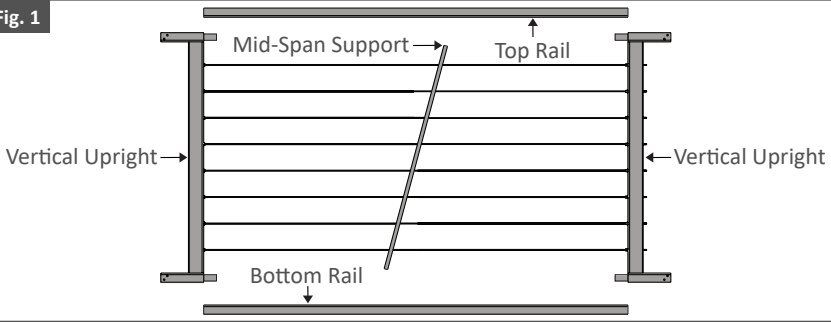
- For ease of installation, only the final panel in each run will need to be dis-assembled and cut if the post max. spacing is used (pages 6 & 7, step 3).



Step 2: Remove Top Rail and Bottom Rail

1. Use a rubber mallet to remove top rail and bottom rail from vertical uprights. As shown in Fig. 1.
2. Be careful not to scratch vertical uprights.
3. Cables and mid-span support will stay together.

Fig. 1



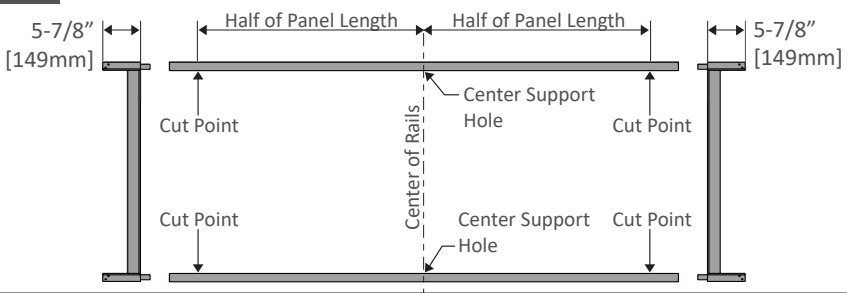
Step 3: Measure & Mark Rails Where Cuts Will Be Made

1. Take the measurement found in step 3 on page 10 (Measure Panel Opening Length), and subtract 11-3/4" [299mm] (combined length of Vertical Uprights).
2. Divide the remaining length in half.
3. Find the center of the rails and measure out the divided length in each direction.
4. Mark these locations with a pencil on the top and bottom rail. As shown in Fig. 1.

Note:

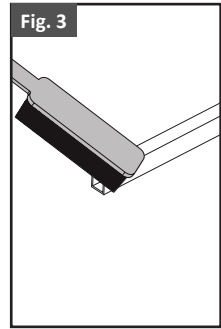
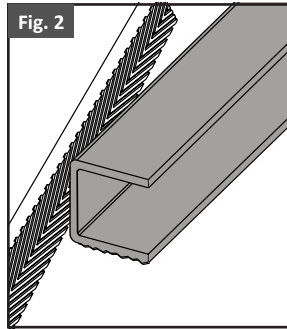
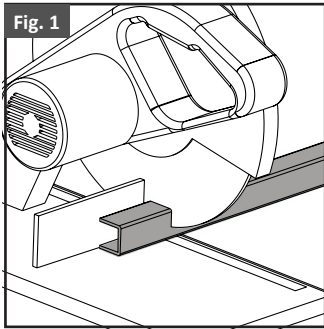
- For stair installation, take the measurement found in step 1 on page 29 (Measure Panel Opening Length).

Fig. 1



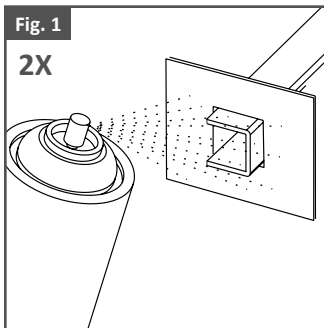
Step 4: Cut & Clean Rails

1. Cut rails using a saw with a ferrous metal cutting blade. As shown in Fig. 1.
2. Use file to smooth cut edges. As shown in Fig. 2.
3. Remove any metal shavings and dust with a brush or rag. As shown in Fig. 3.
4. Make sure surfaces to be painted are clean.



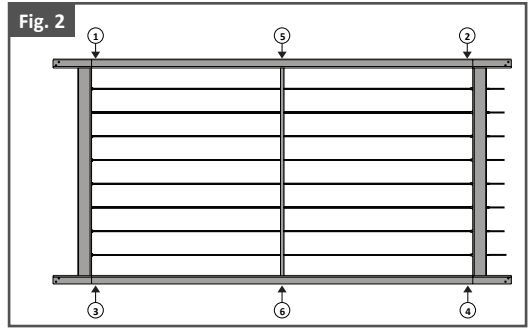
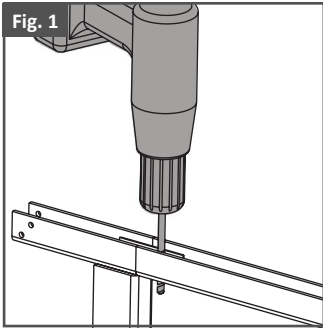
Step 5: Apply Spray Paint To Cut Areas

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.



Step 6: Reattach Rails to Vertical Uprights and Mid-Span Support

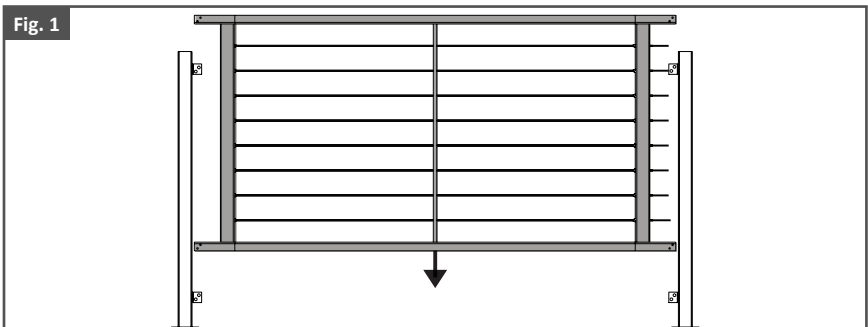
1. Position cut H-Series cable rails onto the vertical uprights. Using the holes in the vertical uprights as a guide, use a 1/4" [6mm] drill bit to drill to replace the holes that were removed when rails were cut to length. As shown in Fig. 1.
2. Remove metal shavings from drilled holes, file rough edges and apply Fortress zinc based touch-up paint.
3. Use a M4 Allen wrench and M10 socket to reinstall the 4 button head cap screws and nuts (1,2,3 & 4) that secure the top and bottom rails to the vertical uprights.
4. Use a M4 socket to reinstall the 2 hex head bolts (5&6) that secure the mid-span support to the rails. As shown in Fig. 2.



PANEL INSTALLATION

Step 1: Install Panel

1. Install cut panel to ensure proper fit. As shown in Fig. 1.

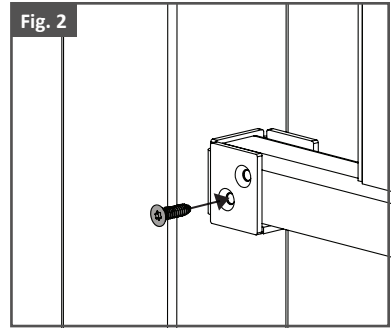
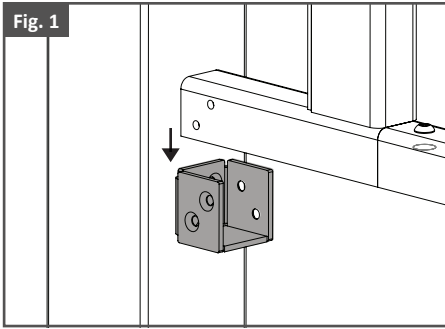


Step 2: Attach Panel To Bottom & Top Brackets

1. Align pre-drilled holes in the panel and brackets. As shown in Fig. 1.
2. Apply screws into bottom & top brackets. As shown in Fig. 2.

Note:

- Only one screw per bracket is needed to secure the bracket to the panel.
- Screws should be installed on the same side of brackets.

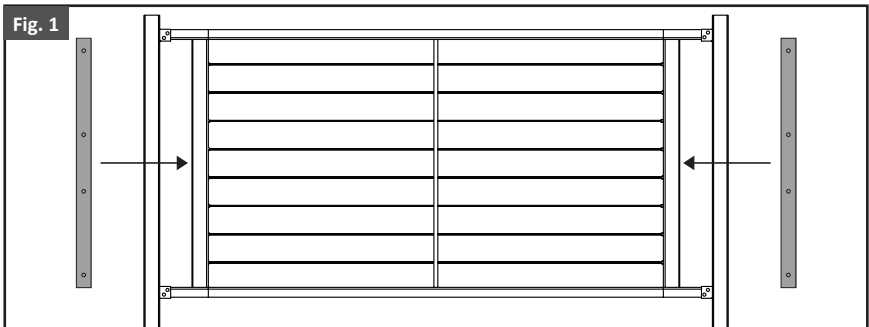


Step 3: Tension Cable

- Reference pages 34 - 38 for Cable Tensioning steps.

Step 4: Reinstall the Vertical Upright Covers

1. Use a M4 Allen wrench to install the 4 button head cap screws that secure each upright cover in place. As shown in Fig. 1.

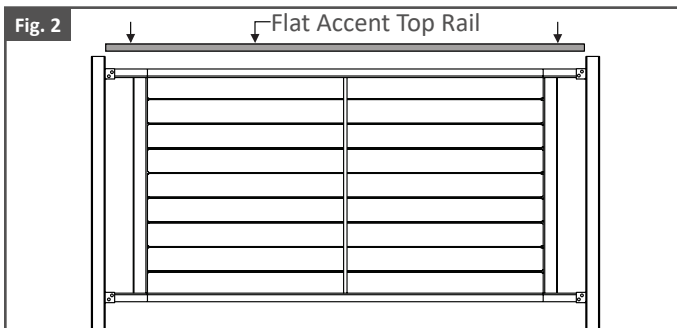
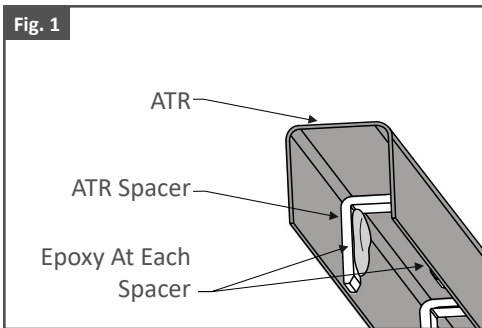


FLAT ACCENT TOP RAIL (ATR) INSTALLATION

Step 1: Install Flat Accent Top Rail (ATR)

1. Measure the distance between posts.
2. A minimum of two ATR Spacers are required in order to ensure proper fit of ATR.
3. Transfer that measurement to the ATR and cut a equal distance from each end of ATR.
4. Test fit the ATR.
5. File any rough edges from cuts and apply zinc based touch up paint.

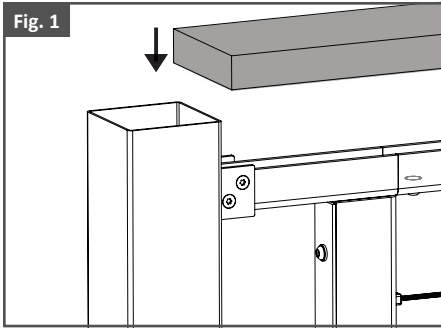
6. Apply a quarter sized drop of epoxy to the side walls of each ATR Spacer. Follow cure times specified on epoxy packaging. As shown in Fig. 1.
7. Install ATR onto rail and wipe away any excess epoxy with a clean cloth. As shown in Fig. 2.
8. Let epoxy cure. **DO NOT** apply any force to installed ATR for 2 hours.



WOOD TOP RAIL CAP INSTALLATION

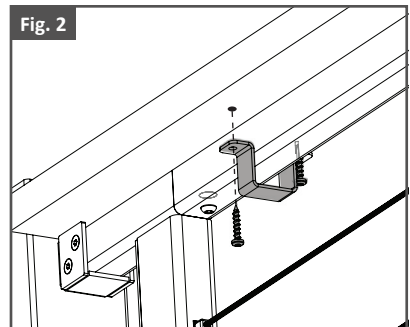
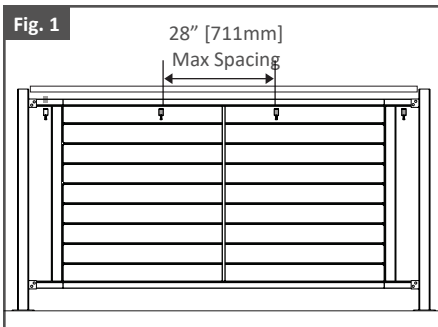
Step 1: Install Wood Top Rail Cap

1. Measure the distance from the inside edge of the 2 posts.
2. Cut the Wood Top Rail Cap to measured length.
3. Test fit & Install Wood Top Cap. Re-cut wood, if required.
As shown in Fig. 1.



Step 2: Install Cap Rail Clips

1. Cap Rail Clips should be equally spaced along the length of Wood Top Cap (Max Spacing is 28" [711mm]). As shown in Fig. 1.
2. Secure Cap Rail Clips to Wood Top Rail with provided screws. As shown in Fig. 2.

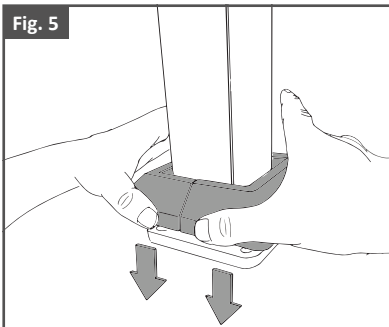
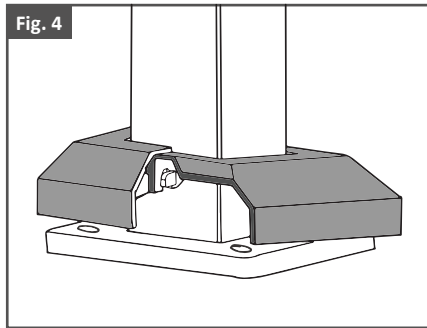
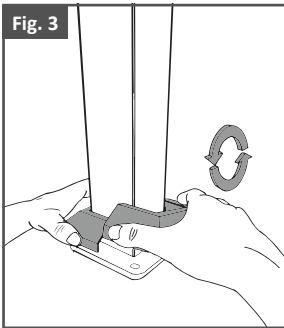
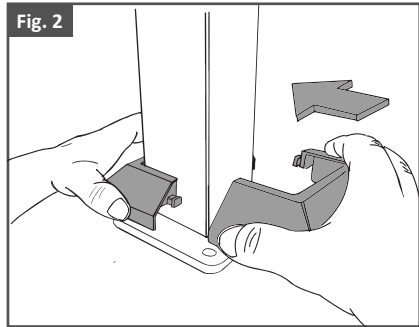
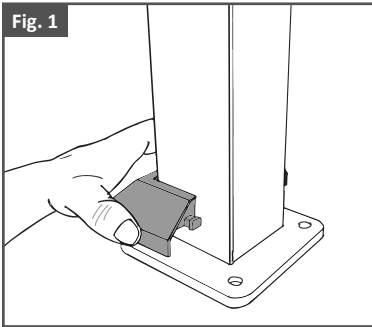


POST BASE COVER, BRACKET CAP & PRESSED DOME/BALL CAP INSTALLATION

Step 1: Install Post Base Cover

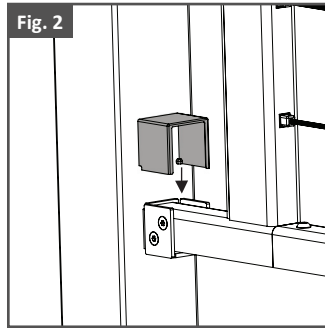
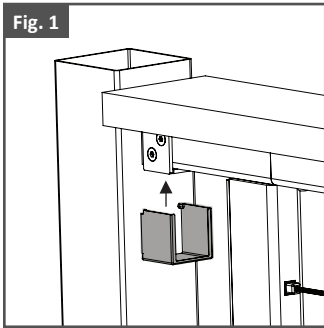
1. Separate the two-piece base plate cover. Hold one side parallel to the post base plate. As shown in Fig. 1.
2. Place 2nd half of the post base cover on the opposite side of the post. Hold 2nd piece slightly under the 1st piece. As shown in Fig. 2.
3. Twist the 2nd cover ¼ turn and move piece until both half's touch. As shown in Fig. 3.

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. 4.
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. 5.



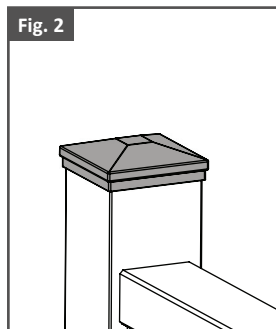
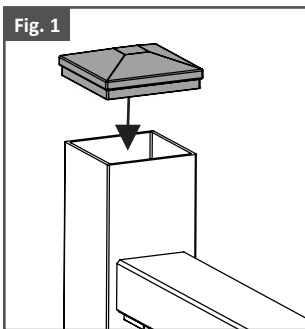
Step 2: Install Bracket Caps

1. Bracket Caps snap over Bracket Caps. As shown in Fig. 1 & 2.



Step 3: Install Pressed Dome Cap

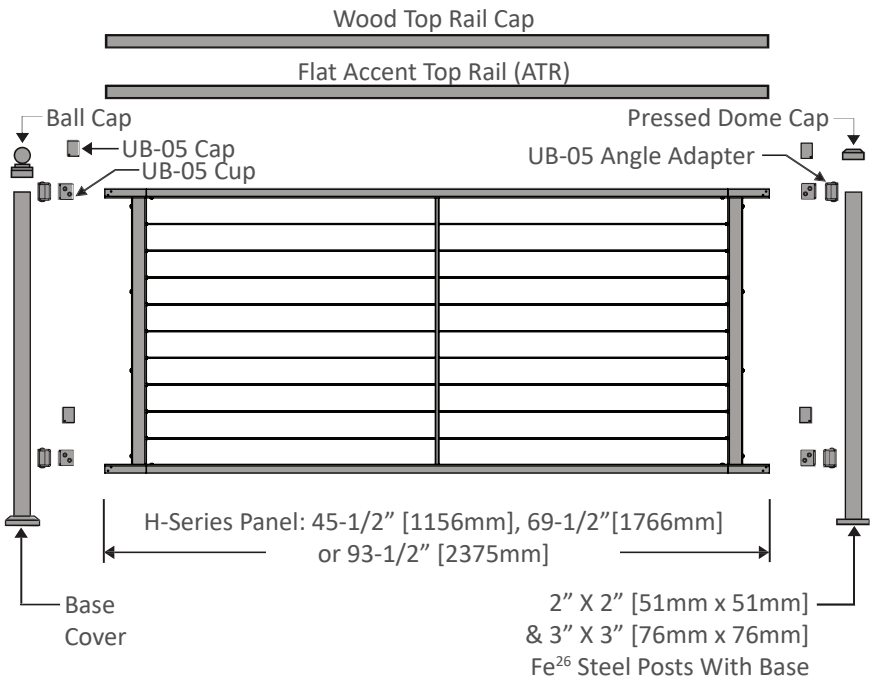
1. Pressed Dome Caps & Ball Caps are press fit into place. As shown in Fig. 1 & 2.
2. Use a broom or compressor to remove debris from railing and deck surface.



ANGLE BRACKET

H-Series: Angled Universal Bracket (UB) Installation Option

Universal Bracket (UB) Adapter



Universal Bracket (UB) Adapter Post Configuration

H-Series Panel Height	Rail Panel	
	Installed Panel Height*	Required Post
34" [864mm]	37-7/16" [951mm]	39-1/2" [1003mm]
40" [1016mm]	43-7/16" [1103mm]	45-1/2" [1156mm]

*Installed heights include a 3-1/2" [90mm] space between deck surface and bottom edge of bottom rail.

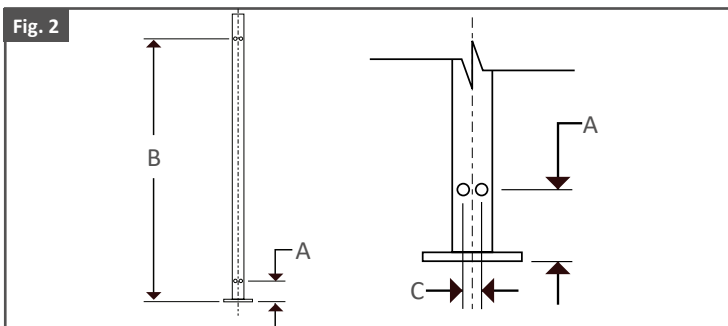
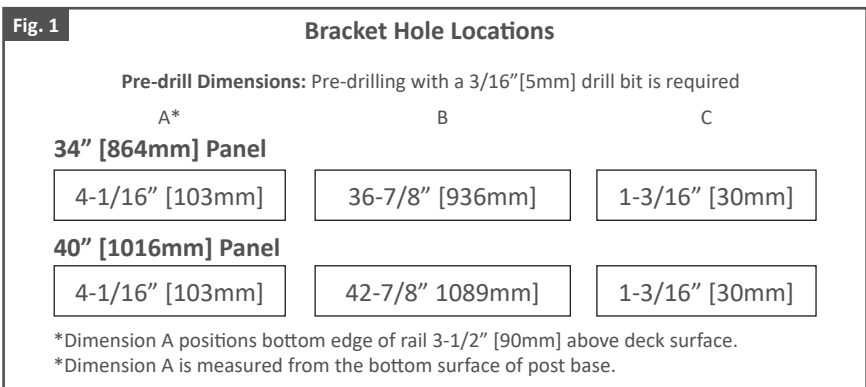
ANGLE BRACKET: BRACKET INSTALLATION

Step 1: Mark Bracket Hole Locations

1. Mark the centerline of each post with a pencil.
2. Take measurements used in Fig. 1 and 2 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. H-Series has a spacing of 3-1/2" [90mm].

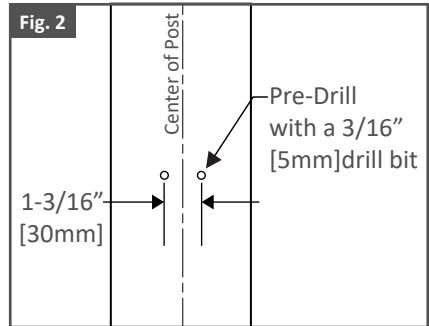
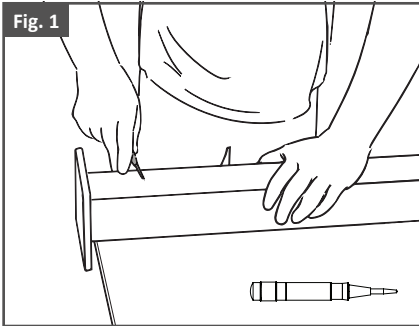


Step 2: Pre-drill Angle Bracket Holes

Tip:

- It's important to double check dimensions to confirm accuracy of bracket hole locations before drilling.
1. Use the Spring Punch to mark the holes. As shown in Fig. 1.

2. Pre-drill bracket holes with a 3/16" [5mm] drill bit.
As shown in Fig. 2.
3. Remove the bolt from the Angle Bracket Assembly.



Step 3: Install UB-05 Angle Adapter

1. Dis-assemble the UB-05 bracket Adapter & Cup.
2. Attach Angle Adapter Base piece to the posts with supplied T-25 thread-cutting screws. Use low speed setting on drill.
As shown in Fig. 1.
3. Assemble the UB-05 Adapter by tightening the Barrel & Screw. As shown in Fig. 2.
4. Attach UB-05 Cup to Angle Adapter using Phillips Head Thread-Cutting Screws. As shown in Fig. 3.

Tip:

- Use a Bit Extender.

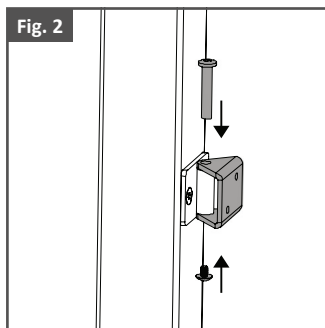
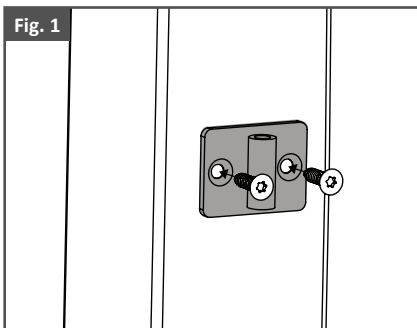
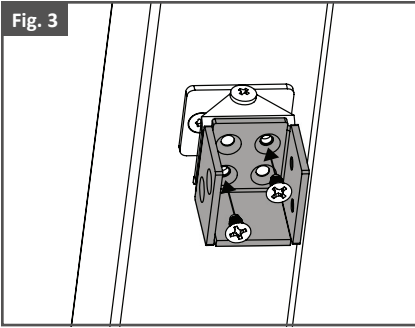


Fig. 3



Step 5: 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. 1 & 2.

Fig. 1

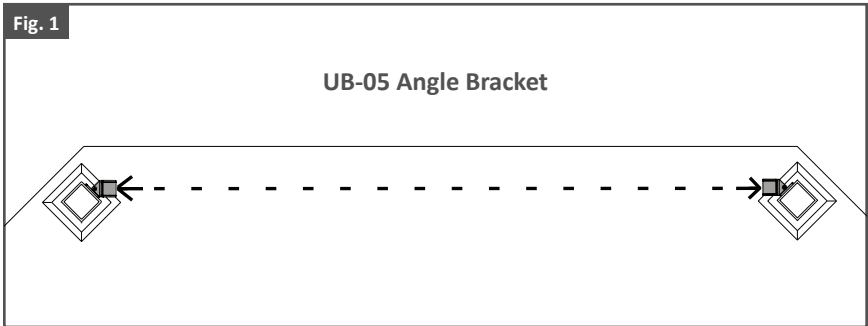
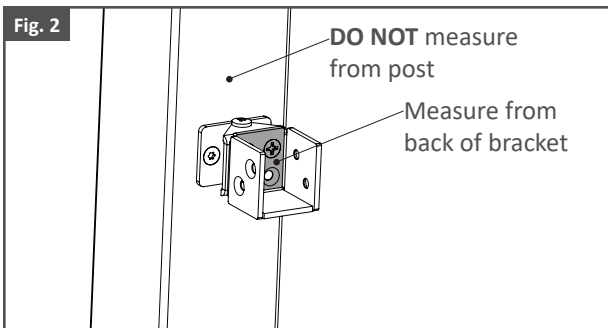


Fig. 2



ANGLE BRACKET: POST MOUNTING

- Reference Post Mounting instructions on page 5.

ANGLE BRACKET: CUTTING DOWN TOP & BOTTOM RAILS

- Reference Rail Cutting instructions on pages 11 - 14.

ANGLE BRACKET: PANEL INSTALLATION

- Reference Panel installation instructions on pages 14 & 15.

ANGLE BRACKET: FLAT ATR INSTALLATION

- Reference Flat ATR installation instructions on pages 15 & 16.

ANGLE BRACKET: WOOD TOP RAIL CAP INSTALLATION

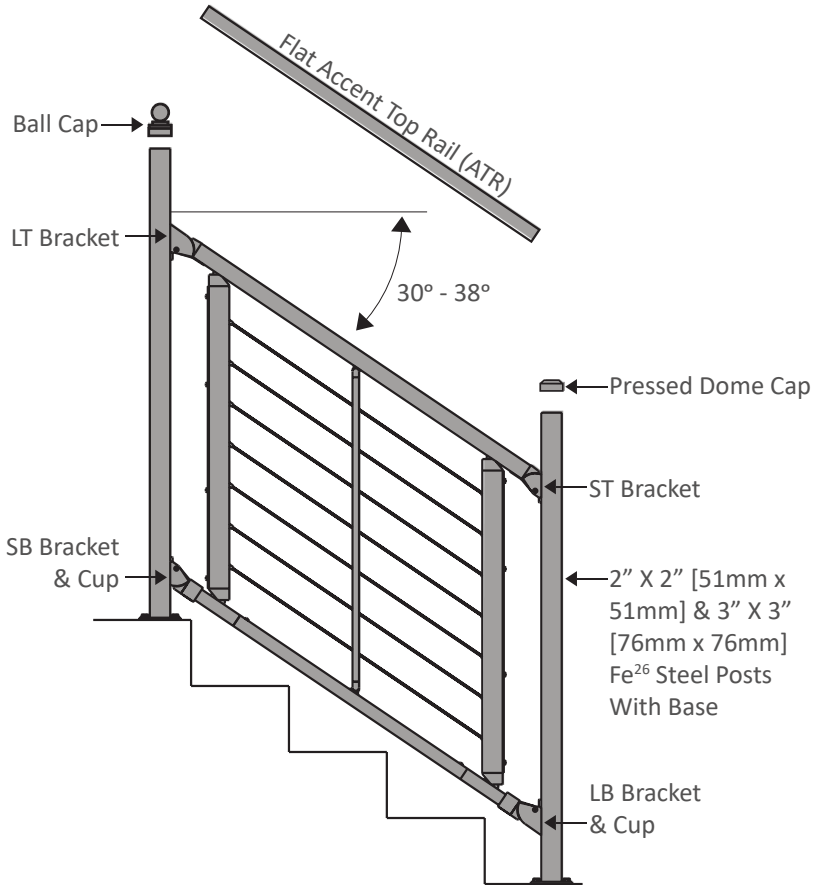
- Reference Wood Top Rail Cap installation instructions on pages 16 & 17.

ANGLE BRACKET: BRACKET CAP, POST BASE COVER & PRESSED DOME/BALL CAP INSTALLATION

- Reference Bracket Cap, Post Base Cover & Pressed Dome/Ball Cap installation instructions on pages 17 - 19.

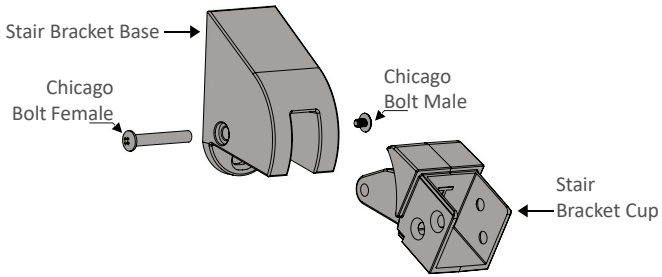
STAIR BRACKET

H-Series: Simplified Stair Bracket (SSB-05) Installation

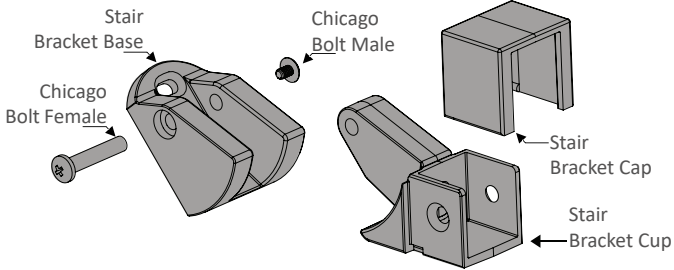


- Identify the 4 brackets LT, ST, LB and SB by the letters stamped in each part.
- The SSB-05 brackets work between the angles of 29°-40°.
- The H-Series panel works between the angles of 30° - 38°.
- It is recommended to use taller posts for stair installations. For 34" [864mm] high panels, use 45-1/2" [1156mm] posts. For 40 [1016mm] high panels, use 55" [1397mm] tall posts.

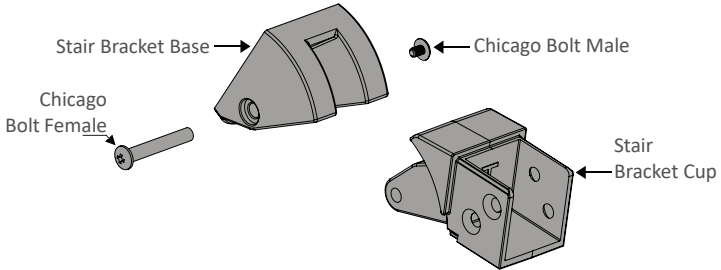
Simplified Stair Bracket (SSB-05): LT



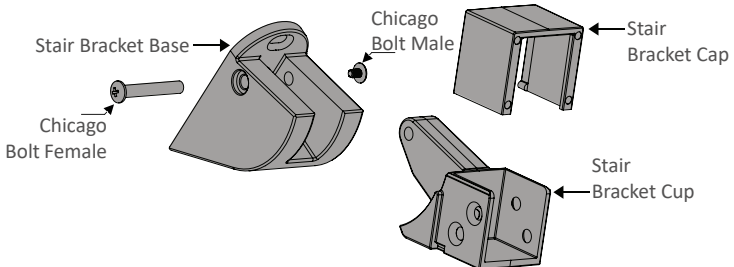
Simplified Stair Bracket (SSB-05): SB



Simplified Stair Bracket (SSB-05): ST



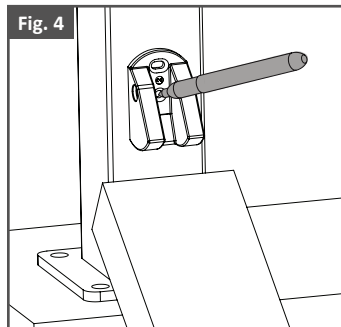
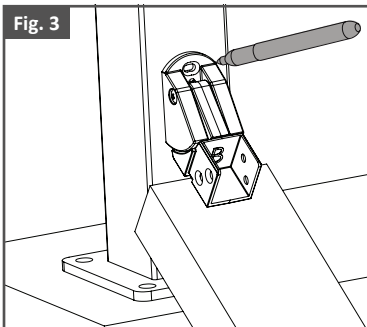
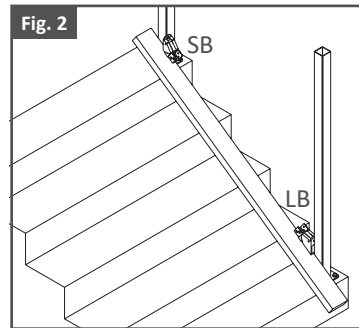
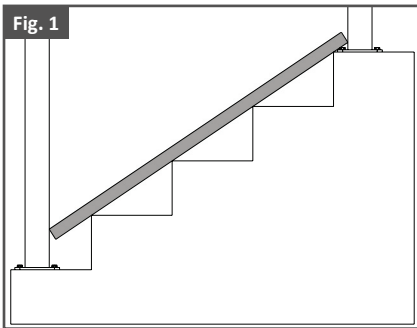
Simplified Stair Bracket (SSB-05): LB



STAIR BRACKET: BRACKET INSTALLATION

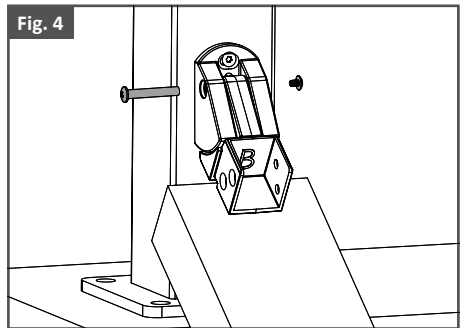
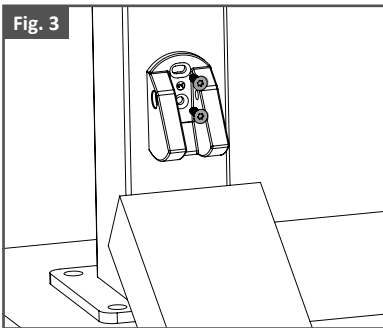
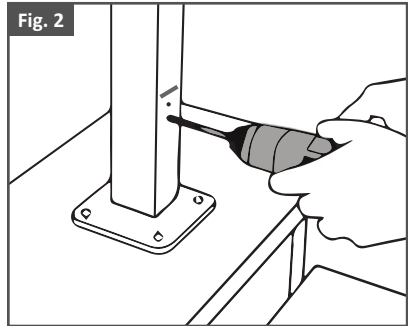
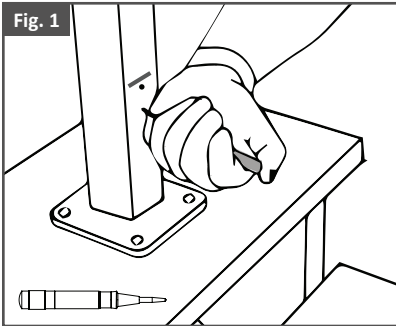
Step 1: Bottom Bracket Installation (SB & LB)

1. Position wood 2" x 4" (actual 1-1/2" [38mm] x 3-1/2" [89mm]) between posts. As shown in Fig. 1.
2. Assemble the SB & LB Brackets by tightening the Barrel & Screw. Reference the bracket options on page 25.
3. Position the Brackets centered flat on the posts & wood 2" x 4" (actual 1-1/2" [38mm] x 3-1/2" [89mm]). As shown in Fig. 2.
4. Use a pencil to mark top edge of bracket location on post. As shown in Fig. 3.
5. Dis-assemble the brackets by removing the barrel and screw.
6. Place each 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. 4.



Step 2: Bottom Bracket Installation Continued (SB & LB)

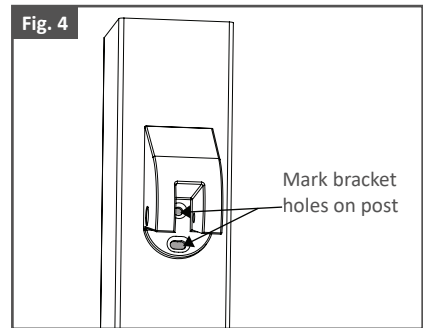
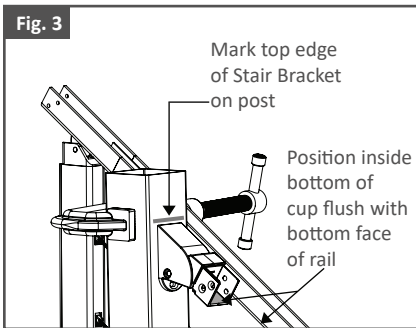
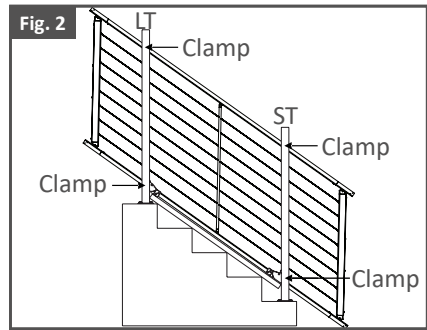
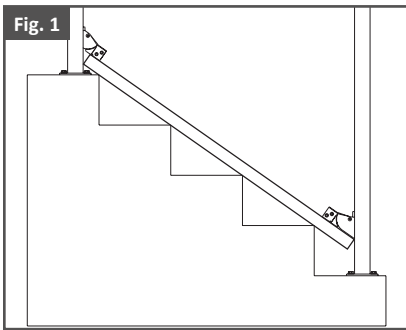
1. Use Spring Punch to mark holes. As shown in Fig. 1.
2. Drill out bracket hole with a 3/16" [5mm] drill bit. As shown in Fig. 2.
3. Use T-25 screws to attach the Bracket Bases to the post. Begin with top hole then bottom. As shown in Fig. 3.
4. Keep bracket base centered as you install second screw.
5. Insert barrel & screw to re-assemble the SB & LB Brackets.
6. Tighten barrel & screw. As shown in Fig. 4.



Step 3: Top Bracket Installation (ST & LT)

1. Position wood 2" x 4" (actual 1-1/2" [38mm] x 3-1/2" [89mm]) under bottom brackets. As shown in Fig. 1.
2. Fully rake and place panel next to posts on top of wood 2" x 4" (actual 1-1/2" [38mm] x 3-1/2" [89mm]).
3. Use a level to ensure panel and posts are both straight.
4. Clamp panel to post in 4 places. As shown in Fig. 2.
5. Assemble the ST & LT Brackets by tightening the Barrel & Screw. Reference the bracket options on page 26.

6. Position the brackets parallel with panel & flat centered on post. **Make sure inside bottom face of cup is flush with the bottom face of rail.**
7. Use pencil to mark top edge of bracket location on post. As shown in Fig. 3.
8. Dis-assemble the brackets by removing the barrel and screw.
9. Place each 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. 4.



Step 4: Top Bracket Installation Continued

- Reference Bottom bracket installation step 2 instructions on page 28. Use the same procedure to install the top brackets.

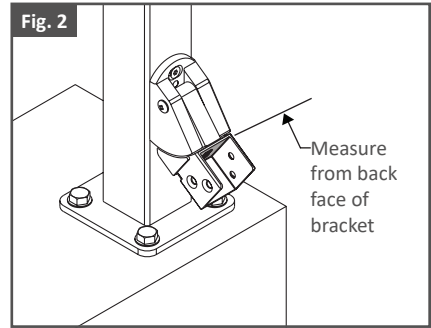
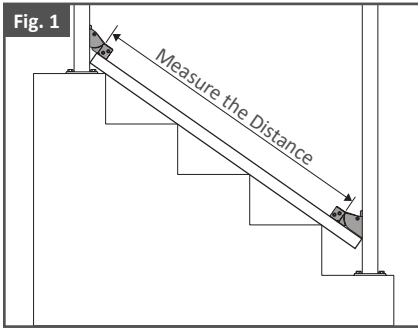
STAIR BRACKET: POST MOUNTING

- Reference Post Mounting instructions on page 5.

STAIR BRACKET: CUTTING DOWN PANELS

Step 1: Measure The Panel Opening Length

1. Position wood 2" x 4" (actual 1-1/2" [38mm] x 3-1/2" [89mm]) under bottom brackets.
2. Measure the distance from inside edge of the bottom 2 brackets. As shown in Fig. 1 & 2.
3. Check that the distance is the same on the top brackets.
4. If dimensions are different, check posts if posts are level and make the required adjustments.



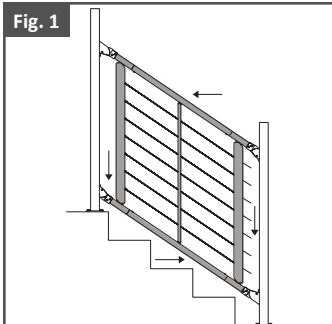
Step 2: Remaining Panel Cutting Steps

- Reference Panel Cutting steps on pages 11 - 14.

STAIR BRACKET: 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. As shown in Fig. 1.
3. Remove any metal shavings after attaching the panel.

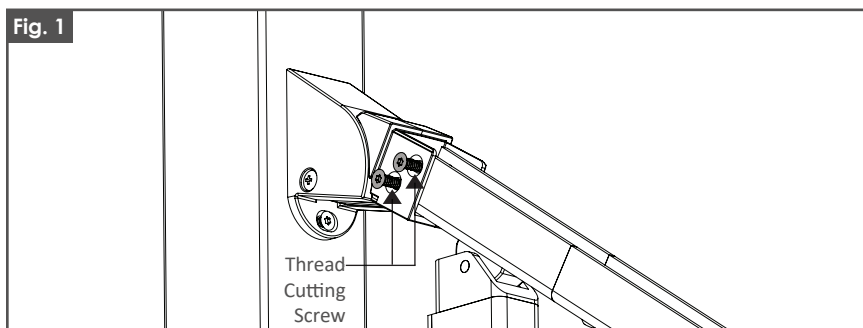


Step 2: Attach Panel to Brackets

1. Push the bracket up so that the bottom is parallel with the rail.
2. Attach the panel to brackets using the T-25 Screw that came with the brackets. Two screws are required to secure rails in each bracket. As shown in Fig. 1.
3. Remove any metal shavings after attaching the panel.

Note:

- Screws should be installed on the same side of brackets.



Step 3: Tensioning Cable

- Reference pages 34 - 38 for Cable Tensioning steps.

STAIR BRACKET: FLAT ATR INSTALLATION

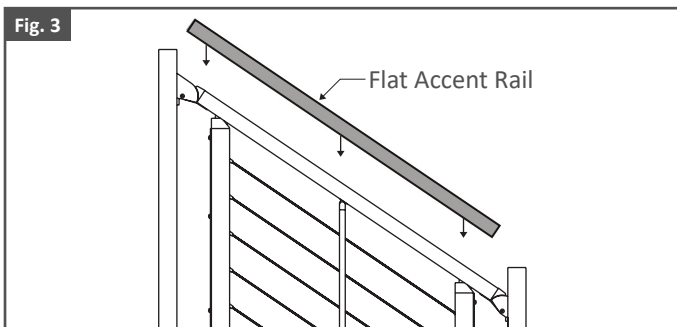
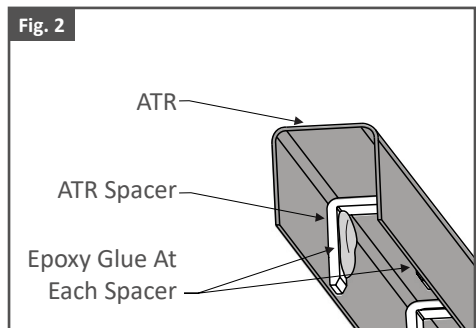
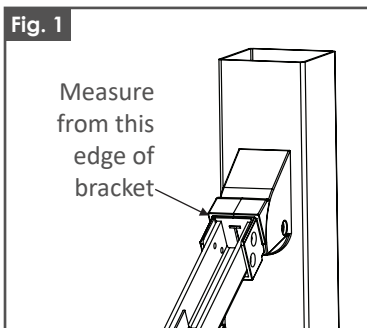
Step 1: Install Flat Accent Top Rail (ATR)

1. Measure the distance between brackets. As shown in Fig. 1.

2. Transfer that measurement to the ATR and cut a equal distance from each end of ATR.
3. Test fit the ATR. Re-cut ATR if required.
4. File any rough edges from cuts and apply zinc based touch up paint.
5. Apply a quarter sized drop of epoxy to the side walls of each ATR Spacer. Follow cure times specified on epoxy packaging. As shown in Fig. 2.
6. Install ATR onto rail and wipe away any excess epoxy with a clean cloth. As shown in Fig. 3.
7. Let epoxy cure. **DO NOT** apply any force to installed ATR for 2 hours.

Note:

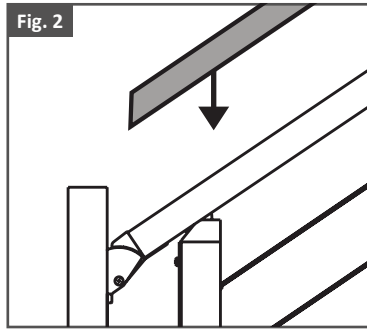
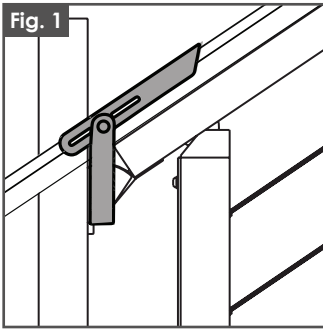
- A minimum of two ATR Spacers are required in order to ensure proper fit of ATR.



STAIR BRACKET: WOOD TOP RAIL CAP INSTALLATION

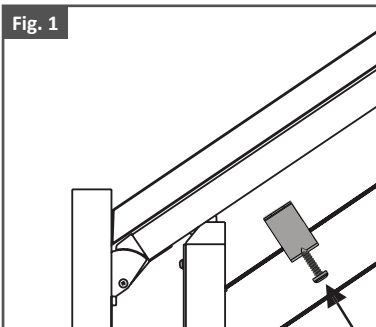
Step 1: Install Wood Top Rail Cap

1. Measure the distance from the inside edge of the 2 posts.
2. Cut the Wood Top Rail Cap to measured length.
3. Use an Adjustable Angel Finder to measure needed angle to make the Wood Top Rail Cap flush with the post. As shown in Fig. 1.
4. Test fit & Install Wood Top Rail Cap. Re-cut wood if required.



Step 2: Install Cap Rail Clips

1. Cap Rail Clips should be equally spaced along the length of Wood Top Cap (Max Spacing is 28" [711mm]).
2. Secure Cap Rail Clips to Wood Top Rail Caps with



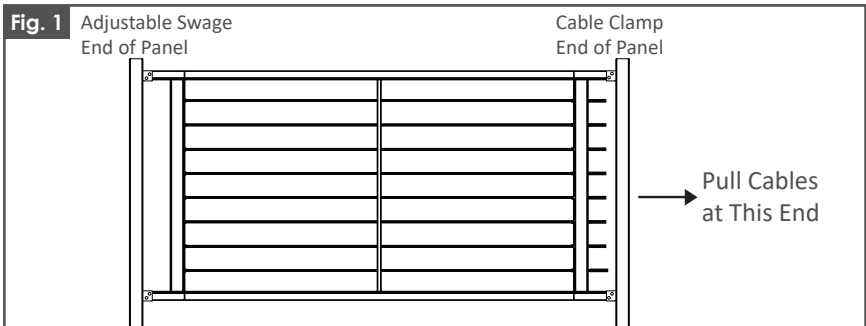
STAIR BRACKET: BRACKET CAP, POST BASE COVER & PRESSED DOME/BALL CAP INSTALLATION

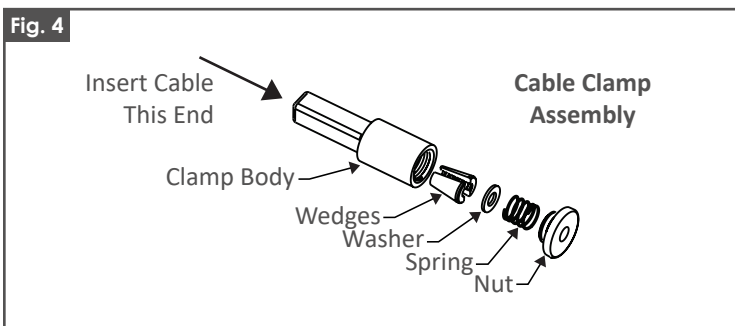
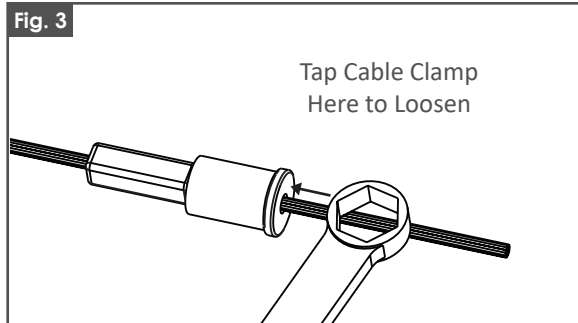
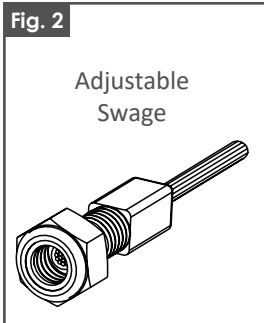
- Reference Bracket Cap, Post Base Cover & Pressed Dome/Ball Cap installation instructions on pages 17 - 19.

CABLE TENSIONING

Step 1: Pull Cables Tight

1. Back hex nut offs until they are almost removed from adjustable swage. You will need the full length of threads to properly tension the cable in the next step.
2. Apply inward pressure to cable clamp as excess cable is removed.
3. Pull exposed cable through the cable clamp to remove excess cable.
4. If cable jams, tap the cable clamp nut with a wrench to loosen. As shown in Fig. 3.
5. Cable clamp can also be disassembled to remove jam. Clamp components must be reassembled in the order shown in Fig. 4.





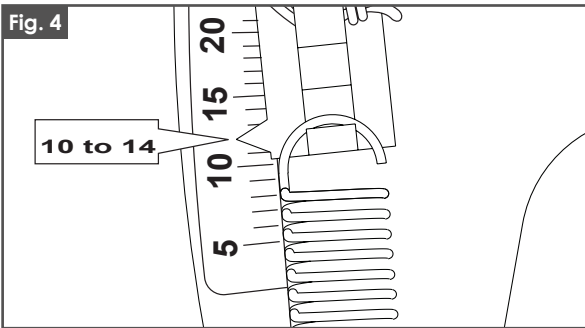
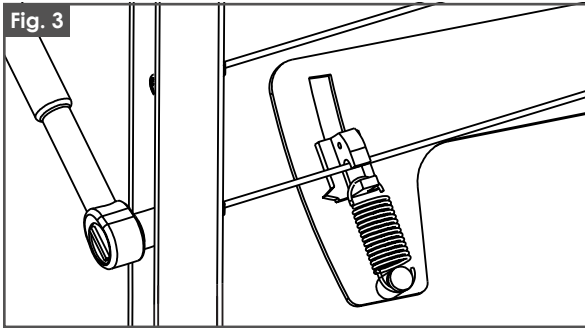
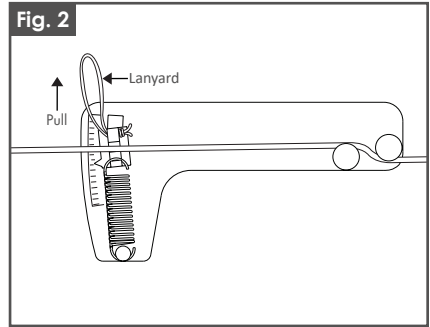
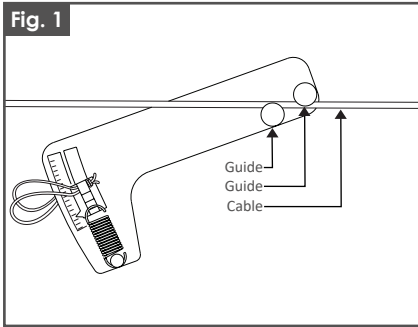
Step 1: Tensioning the H-Series Cable Panel

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 H-Series Vertical Cable System uses 1/8" [3mm] diameter cable.
4. 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.
5. See images below for information on how to load cable into the tension gauge:
 - Position cable between lower guides. As shown in Fig. 1.
 - Pull the lanyard and extend the spring until the cable is engaged with the hook in the indicator slide. As shown in Fig. 2.
 - Use a 1/2" [13mm] Socket Wrench to tighten the

cable. As shown in Fig. 3. **DO NOT** use power tools to tighten cables.

- Tighten cable until the indicator arrow is between 10 and 14 on the tension gauge. As shown in Fig. 4.



Step 2: Cable Tensioning Sequence

1. Once cables are tensioned to the proper range on the tension gauge, you may now move onto the next steps.
2. Follow the sequence shown in Fig. 1 - 4 for the panel you are working with.

Fig. 1

34" [864mm] High
Rail Sequence Level

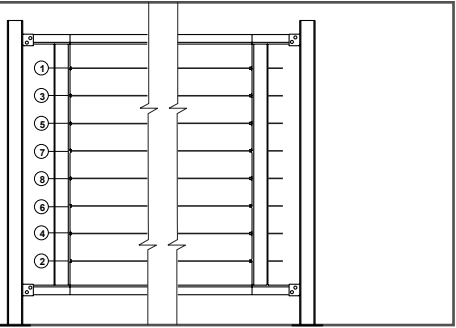


Fig. 2

40" [1016mm] High
Rail Sequence Level

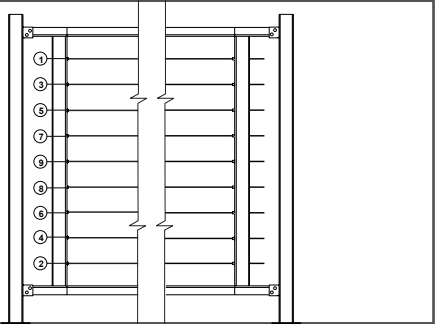


Fig. 3

34" [864mm] High
Rail Sequence Stair

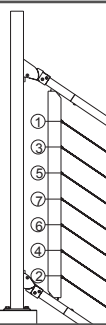
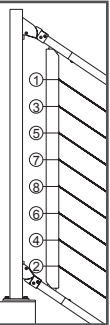


Fig. 4

40" [1016mm] High
Rail Sequence Stair



Step 3: Cut Excess Cable Length

1. After all cables have been tensioned, use Fortress wire cutters to cut excess cable at the cable clamp end of panel. As shown in Fig. 1 & 2.
2. Cables must not extend more that $3/8$ " [10mm] from Cable Clamp after cutting. As shown in Fig. 3.

Fig. 1

Remove Excess Cables

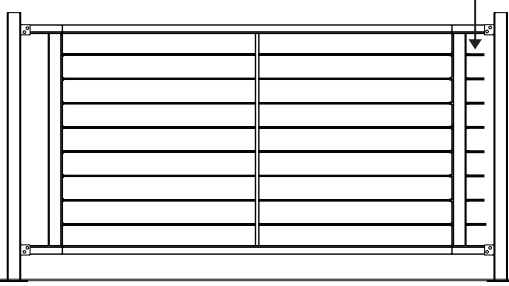


Fig. 2

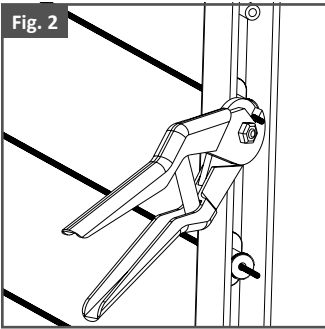
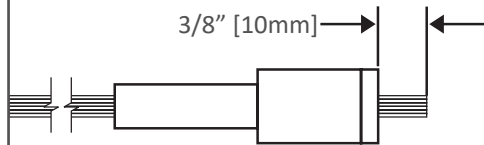


Fig. 3



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.
- 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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07/2021