EverNew®

Panorama® Composite Railing System

This booklet describes and illustrates the steps involved in installing Panorama® Composite Railing. Its purpose is to provide detailed information and how-to tips that will simplify the installation process. CertainTeed shall not accept any liability or responsibility under its written warranty for failure caused by application that does not meet our requirements for proper installation. These requirements are outlined throughout the CertainTeed Panorama Installation Guide. Any deviations from these requirements should be addressed and approved in writing by CertainTeed Corporation.

CUTTING & DRILLING

Working with Panorama Composite Railing is as easy as working with wood. Use conventional woodworking tools to cut, drill and rout Panorama Composite Railing. Carbidetip blades provide improved tool wear and results. A fine-tooth saw will help reduce chipping and provide a cleaner cut surface. Eye protection and protective clothing should always be worn for your safety.

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IMPORTANT:

ALWAYS WEAR SAFETY GLASSES WHEN CUTTING AND DRILLING RAILING PRODUCTS.

STEP-BY-STEP

INSTALLATION INSTRUCTIONS FOR

PANORAMA® COMPOSITE RAILING SYSTEM SQUARE, COLONIAL OR STEEL BALUSTERS

Virtually maintenance free | 25-year warranty with SureStart™ protection

Before You Begin

TOOLS REQUIRED

- Miter Saw
- Power Drill and Bits
- No. 2 Square Head Driver
- 1/4-inch Drive Socket, Extension, and 7/16-inch Socket
- Level
- Square
- Tape Measure
- Pencil
- Safety Glasses and equipment as identified by tool manufacturers

OPTIONAL TOOLS

- Jigsaw/Coping Saw
- Utility Knife
- File
- Box-End Wrenches
- Chalk Line
- Silicone Caulk and Caulk Gun
- Angle Finder
- Extension Bit for Crush Block

EXPOSURE TO WEATHER

Exposure to sunlight and water will not adversely affect the appearance of Panorama Composite Railing. Normal weathering should be expected.

BUILDING CODE REQUIREMENT

Panorama is designed for 1- and 2-family residential applications. Contact your local code authority for requirements in your area.

STORAGE & HANDLING

Panorama Composite Railing components should be stored on a dry, flat surface. Do not store in an area where excessive heat buildup can occur, such as on an asphalt surface covered by a tarp. Panorama should be properly supported. Do not stack Panorama more than 4 skids high. Individual Panorama components may weigh more than wood, so take this into account before lifting or moving Panorama Composite Railing.

Panorama Composite Railing does not produce respirable dust when it is cut or fastened, but you should always wear eye protection and safety equipment when working with any wood product. For more information about the safety of Panorama Composite Railing, consult the Material Safety Data Sheet (MSDS).

CLEANING

Panorama Composite Railing resists most common household stains, but it will become dirty like any product exposed to atmospheric conditions. Periodic washing with a soft bristle brush and clean water from a garden hose may be necessary to remove surface dirt which may accumulate on the surface. For best appearance, clean your Panorama Composite Railing at least once a year, unless local conditions require additional cleaning.

INSTALLATION OVERVIEW

1. Install Post Sleeves

Be sure posts are plumb. Cut Post Sleeve to length. Slide the Post Sleeve over the post to rest on the deck surface. Slide Post Trim Ring (1a) over the Post Sleeve to also rest on the deck surface.

2. Assemble Railing Section

Measure the distance between Post Sleeves. Lay Universal Rails side-byside, aligning pre-drilled holes, not the rail ends. Calculate the center of the Universal Rails and assign the center either directly to a pre-drilled Baluster hole or the space centered between two Baluster holes. Measure and cut rails from the calculated center. Attach the Balusters to the top and bottom Universal Rails (2a). Then attach the Crush Block to bottom Universal Rail (2b). Place and secure Rail Brackets.

3. Install Railing Section

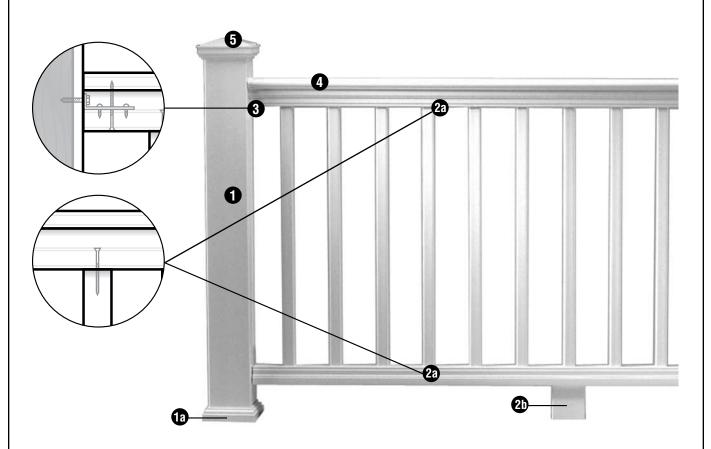
Drive Lag Bolts into posts leaving approx. 1/2" gap from Lag Bolt head to Post Sleeve surface. Place Railing Assembly over bottom Lag Bolts. Mark the position for the top Lag Bolts using the top Rail Bracket's position as a guide. Use a 1/4" drive socket with an extension to tighten Lag Bolts to the posts.

4. Install Top Rail

Measure the distance between Post Sleeves. Cut the Top Rail to length. Secure from underneath with supplied white-head screws.

5. Install Post Caps

Slide inverted Post Trim Ring over top of the Post Sleeve. Place Post Cap over top of the Post Sleeve. Screw through side holes of the Post Cap to secure. Snap inverted Post Trim Ring onto secured Post Cap.



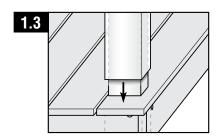
Panorama boxed kits are available in 6' and 8' lengths. Measurements are from post center to post center. Panorama 6' and 8' products are designed not to exceed 6' or 8' from center of post to center of post, respectively. Actual rail lengths are 67-1/2" (6') and 92-1/2" (8').

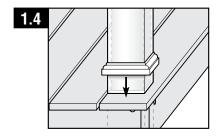
1. INSTALL POST SLEEVES

Sleeve Mount (Over existing 4x4 Posts)

- 1.1 Plumb 4x4 Posts.
- 1.2 Cut post and Post Sleeve to required length.
 - 40 inches minimum for 36-inch rail height
 - 46 inches minimum for 42-inch rail height
- 1.3 Slide Post Sleeve down over the post to the deck surface.
- 1.4 Slide Post Trim Ring over the Post Sleeve to the deck surface.

If structural post is slightly twisted or warped, shim stock can be used between the post and inside of Post Sleeve so that the Post Sleeve is oriented properly. Otherwise, replace wood post.

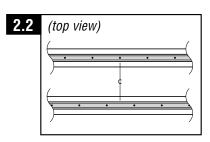




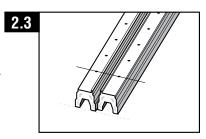
2. ASSEMBLE RAILING SECTIONS

There are three types of balusters available for the Panorama Composite Railing System: Square, Steel and Colonial. Though most of the installation steps are the same for all three, there are a couple of steps unique to the Steel and Colonial Balusters. These steps are designated by adding the letters S (for Steel) and C (for Colonial) to the numbered steps below. Steps common to both Steel and Colonial Balusters are designated by adding both letters to the numbered steps (e.g.: 2.4S, C).

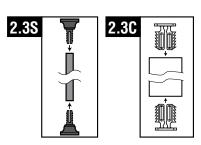
- 2.1 Measure the distance between the Post Sleeves at the top and bottom (Note: These two measurements may be slightly different.) It's important that the posts are plumb.
- 2.2 Establish the center of the Universal Rails by applying the measurement between the Post Sleeves. You may choose to base the center of the Universal Rail on a pre-drilled hole OR exactly between two pre-drilled holes. This decision will affect the spacing between the Post Sleeve and adjacent Baluster on each side of the Railing Assembly. Arrange the rail so you do not end at a post with a portion of a Baluster (Square), Steel Baluster Shoe or Colonial Baluster Shoe.



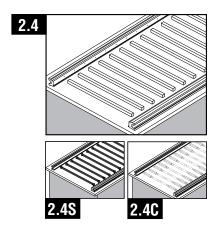
2.3 To ensure that the Balusters will be installed plumb, place the two Universal Rails side-by-side on a flat surface, baluster stops both on the inside, aligning them according to the predrilled Baluster holes, NOT the ends. Now, measure and cut each Universal Rail carefully to minimize gaps. Measure from the established center (see 2.2) of the Universal Rails, trimming the proper amounts from each end to achieve rail lengths.



- 2.3S Insert one black Baluster Shoe completely into each end of every Steel Baluster.
- 2.3C Insert one Baluster Shoe completely into each end of every Colonial Baluster.

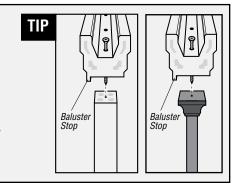


2.4 Lay out the components of the railing section on a flat work surface, roughly in the final, assembled position. Make sure the baluster stops are on the same side of the Railing Assembly. Direct a 2-1/2-inch Baluster Screw – or a 3-inch Baluster Screw for Steel and Colonial Balusters – into the channel of a Universal Rail, through the pre-drilled hole and into the center pilot hole in the end of a Baluster (Square) or into the pilot hole of the Black Baluster Shoe (Steel) or Baluster Shoe (Colonial), which were already inserted in the Steel or Colonial Baluster. Make sure Baluster, Black Baluster Shoe or Baluster Shoe is installed square and does not overlap the baluster stop on the Universal Rail. Repeat for the remaining Balusters.

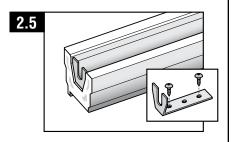


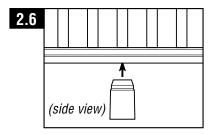
2.4S/2.4C Note: Set clutch on drill to avoid over-tightening screws.

TIP: For the opposite Universal Rail, direct a 2-1/2-inch Baluster Screw (or 3-inch Baluster Screw for Steel and Colonial Balusters) into the channel of the Universal Rail, through the pre-drilled hole and into the center pilot hole in the end of a Baluster or into the pilot hole of the Black Baluster Shoe (Steel) or Baluster Shoe (Colonial). Start the screw into the Baluster or Shoe but do not tighten. This will provide space between the Universal Rail and the Baluster end or Baluster Shoe to allow you to locate the remaining pilot holes in the Baluster, Black Baluster Shoe or Baluster Shoe. Repeat for the remaining Balusters. When all Balusters have been started, return to each Baluster and tighten.



- 2.5 Using (2) 10 x 3/4-inch screws, secure each Rail Bracket into the channels of the Universal Rails by aligning the Rail Brackets flush or slightly recessed inside each end cut. Make sure not to let the Rail Bracket face extend beyond the Universal Rail end cut. Secure the Rail Bracket through the two screw holes at each end of the Rail Bracket, leaving the center screw hole empty.
- 2.6 Fit the beveled end of the Crush Block up into the channel of the bottom Universal Rail on the Railing Assembly, centered between the two cut ends. Using (2) 10 x 3/4-inch screws, secure the Crush Block from underneath, up into the channel of the bottom Universal Rail.

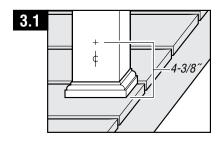


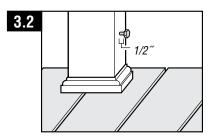


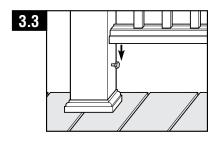
3. INSTALL RAILING SECTIONS

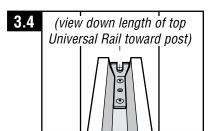
It is critical that posts are plumb. Double check posts to ensure proper fit of completed Railing Assemblies.

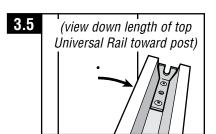
- 3.1 At 4-3/8-inches above the deck surface and centered on the Post Sleeve, drill a 1/8-inch pilot hole through the Post Sleeve and into the post. Then drill a 3/8-inch clearance hole through the Post Sleeve ONLY for the bottom Lag Bolts. Do not drill holes for the top Lag Bolts.
- 3.2 Thread bottom Lag Bolt into Post Sleeve, leaving approximately 1/2-inch of the Lag Bolt shaft exposed. Repeat for opposite post.
- 3.3 Place Railing Assembly over bottom Lag Bolts with Universal Rail baluster stop on the outward side of rail, making sure the Rail Brackets seat properly over the Lag Bolt heads.
- 3.4 Center and plumb the top of the Railing Assembly to the Post Sleeve. Mark the position for the top Lag Bolts on the Post Sleeve using the top Rail Bracket's position as a guide.
- 3.5 Rotate the top of the Railing Assembly out of the way. Drill a 1/8-inch pilot hole through the sleeve and into the post. Then drill a 3/8-inch clearance hole **through the Post Sleeve ONLY** for the top Lag Bolt. Repeat for opposite post (other side of Railing Assembly).
- 3.6 Rotate the top of the Railing Assembly back into the proper position and thread the top Lag Bolts through the Rail Brackets and into the holes in the Post Sleeves. With the Lag Bolt heads now located in the channels of the Universal Rails, a 1/4-inch drive socket with 3 inches or greater extension and a 7/16-inch socket is needed to sufficiently tighten the Lag Bolts. Repeat for opposite post.
- 3.7 Return to bottom Lag Bolts and tighten.

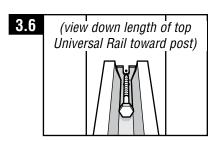












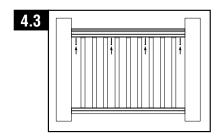
4. INSTALL TOP RAILS

4.1 Measure the distance between Post Sleeves. Cut the Top Rail to length. The Top Rail's bottom channel fits over the top edges of the top Universal Rail.

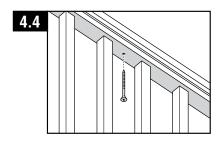
4.2 Drill a 3/16-inch clearance hole down through middle (empty) hole in top

(view down length of top Universal Rail toward post) Rail Bracket, completely through top Universal Rail. Repeat for opposite top Rail Bracket.

4.3 Roughly divide the Railing Assembly into three equal sections by counting Balusters or Baluster spaces. Drill 3/16-inch clearance holes between the Balusters at these points.



4.4 Place Top Rail over top Universal Rail and drive the 2-1/2-inch Top Rail Screws (with color matched heads) up through the four clearance holes in the bottom of the top Universal Rail, into the Top Rail to secure. Be sure not to over-tighten the screws.



5. INSTALL POST CAPS

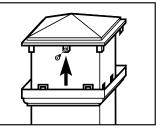
5.1 Invert Post Trim Ring and slide over the top of the Post Sleeve. Position Post Cap over the top of the Post Sleeve and secure with (2) 10 x 3/4inch screws through tabs. Slide inverted Post Trim Ring up and snap together with secured Post Cap.



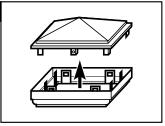
5.2 Snap together a Cap and inverted Post Trim Ring to create a complete Post Cap.

5.3 Apply a small bead of construction adhesive to the inside lower lip of the Post Cap and slide it over the top of the Post Sleeve.





5.2



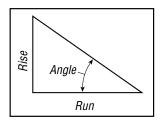
5.3



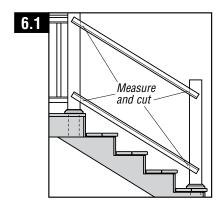
INSTALLATION INSTRUCTIONS FOR STAIR RAILING

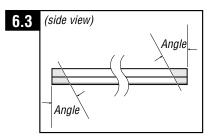
6. ASSEMBLE STAIR RAILING SECTIONS

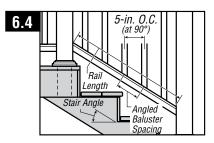
6.1 Make sure Post Sleeves are installed and plumb. Evaluate the rise and run of the stairs to determine the proper stair angle. Be as accurate evaluating the stair angle as possible—every cut you make from this point forward will depend upon this angle.



- 6.2 Measure the distance between the Post Sleeves at the top and bottom (Note: These two measurements may be slightly different.)
- 6.3 Cut each Universal Rail to the proper length and angle, making sure that the baluster stop will be on the same side (yard side) of the finished Railing Assembly.
- 6.4 Determine number of Balusters needed on Stair Railing Assembly to maintain approximately the same Baluster spacing as the deck railing. (Deck railing Baluster spacing is 5 inches, on center for Standard Balusters, and 4-3/8 inches, on center, for Steel and Colonial Balusters.) Multiply number of Balusters needed by two to determine number of Black Baluster Shoes required for Steel Balusters or Baluster Shoes required for Colonial Balusters. (Refer to Stair Railing Tables below)







Composite and Colonial Balusters

ш	RISE % RUN	STAIR ANGLE	BALUSTER Spacing O.C.
RAILING TABLE	.36	20°	5-5/16 in.
₹	.40	22°	5-3/8 in.
(5	.45	24°	5-1/2 in.
N	.49	26°	5-9/16 in.
	.53	28°	5-11/16 in.
\blacksquare	.58	30°	5-3/4 in.
	.62	32°	5-7/8 in.
=	.64	32.5°	5-15/16 in.
STAIR	.67	34°	6 in.
S	.73	36°	6-3/16 in.
	.78	38°	6-3/8 in.

Steel Balusters

ш	RISE % RUN	STAIR ANGLE	BALUSTER Spacing O.C.
_	.36	20°	4-21/32 in.
TABL	.40	22°	4-23/32 in.
	.45	24°	4-25/32 in.
RAILING	.49	26°	4-7/8 in.
	.53	28°	4-31/32 in.
\blacksquare	.58	30°	5-1/16 in.
	.62	32°	5-5/32 in.
	.64	32.5°	5-3/16 in.
STAIR	.67	34∘	5-9/32 in.
S	.73	36°	5-13/32 in.
	.78	38°	5-9/16 in.

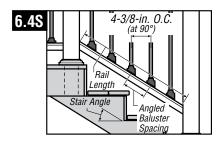
- 6.4S Cut each Stair Baluster Shoe at the proper angle. To safely cut the Stair Baluster Shoes, insert a Stair Baluster Shoe into each end of the supplied 8-inch steel tube (included in the Stair Baluster Shoe package to prevent hands from getting close to the saw blade). Rotate the Stair Baluster Shoe so that the "raised dot" is in the upward position (the raised dot is a bisecting point for the saw blade to cut through). Proceed to cut the Stair Baluster Shoe at the determined angle.
- 6.4C Cut each Stair Baluster Shoe at the proper angle. To safely cut the Stair Baluster Shoes, insert a Stair Baluster Shoe into each end of the supplied 10-inch 1-1/4" square cutting baluster (included in section components to prevent hands from getting close to the saw blade). Rotate the Stair Baluster Shoe so that the "raised dot" is in the upward position (the raised dot is a bisecting point for the saw blade to cut through). Proceed to cut the Stair Baluster Shoe at the determined angle.

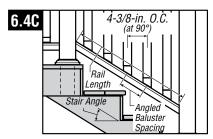
TIP: If using a chop saw with a rotating table, clamp a piece of lumber to the back fence of the saw. This will close the gap on each side of the blade. Set the saw to the correct angle and make a cut through the lumber. Lay the steel tube holder (or the Colonial Baluster) with the two Stair Baluster Shoes on the saw table and make the first cut, bisecting the raised dot. Use the cut Stair Baluster Shoe to mark another Stair Baluster Shoe across the raised dot, then insert it into the steel tube holder. For the Colonial Baluster, insert it into the supplied 10-inch 1-1/4" square cutting baluster. Set up a wood block on the lumber fence that will act as a stop and position the marked line of the uncut Stair Baluster Shoe. Cut the Stair Baluster Shoe. Repeat this procedure until all Stair Baluster Shoes are cut.

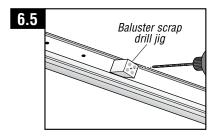
6.5 Measure and mark for the Baluster screw holes on the Universal Rails. Use the Stair Railing Table to determine angled Baluster spacing for layout. (See table on page 7.) Drill 3/16-inch holes at the proper angle. Use the Baluster-scrap drill jig (see tip below) to assist in aligning the drill to the proper angle. For Steel and Colonial Balusters, use the Stair Baluster Shoe cut to the stair angle to assist in alligning the drill to the proper angle.

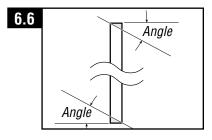
TIP: If you have an extra scrap Baluster, cut a small piece of that Baluster to be used as a drill jig for drilling the Baluster screw holes through the Universal Rails.

- 6.6 Determine required Baluster length to maintain rail height at stair nose. Cut Balusters to length with angled cuts, top and bottom. Make sure all Balusters are the same length.
- 6.6S/6.6C Insert one Black Stair Baluster Shoe (Steel) or Stair Baluster Shoe (Colonial) into each end of every Baluster, making sure the Baluster Shoes are positioned properly before inserting them completely. Now insert them completely into the Balusters.



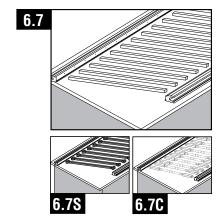


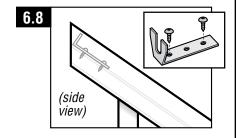




TIP: For the opposite Universal Rail, direct a 2-1/2-inch Baluster Screw into the channel of the Universal Rail, through the pre-drilled hole and into the center pilot hole in the end of a Baluster. Start the screw into the Baluster but do not tighten. This will provide space between the Universal Rail and the Baluster end to allow you to locate the remaining Balusters' pilot holes. Repeat for the remaining Balusters. When all Balusters have been started, return to each Baluster and tighten.

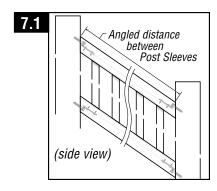
- 6.7 Lay out the components of the stair railing section on a flat work surface, roughly in the final, assembled position. Make sure the baluster stops are on the same side of the Railing Assembly. Direct a 2-1/2-inch Baluster Screw (3-inch Baluster Screw for Steel and Colonial Balusters) into the channel of a Universal Rail, through the pre-drilled hole and into the center pilot hole in the end of a Baluster, or the center pilot hole of the Stair Baluster Shoe for Steel and Colonial Balusters. Make sure the Baluster or Stair Baluster Shoe is installed square, at the proper angle, and does not overlap the baluster stop on the Universal Rail. Repeat for the remaining Balusters.
- 6.8 Using (2) 10 x 3/4-inch screws, secure each Rail Bracket into the channels of the Universal Rails by aligning the Rail Brackets just inside each end cut. Make sure that no part of the Rail Bracket extends beyond the Universal Rail end cut. Do not bend the Rail Brackets. Secure the Rail Bracket through the two screw holes at each end of the Rail Bracket, leaving the center screw hole empty.

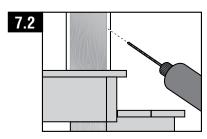


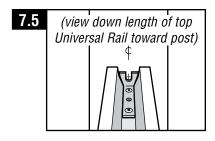


7. INSTALL STAIR RAILING SECTIONS

- 7.1 Position Stair Railing Assembly between Post Sleeves to determine bottom Lag Bolt positions. Railing Assembly's bottom rail should be positioned so that the distance to tread or gap meets your local code requirement (typically, a 6-inch sphere cannot pass through the space created between the riser, stair tread and bottom of stair railing).
- 7.2 Centered on the Post Sleeve at the proper height, drill a 1/8-inch pilot hole through the Post Sleeve and into the post, then drill a 3/8-inch clearance hole **through the Post Sleeve only** at the proper angle (in-line with the bottom Universal Rail) for both bottom Lag Bolts. Do not drill holes for the top Lag Bolts.
- 7.3 Thread bottom Lag Bolt into the post at the proper angle, leaving approximately 1/2-inch of the Lag Bolt shaft exposed. Repeat for opposite post.
- 7.4 Place Stair Railing Assembly over bottom Lag Bolts with Universal Rail baluster stops facing yard side, making sure the Rail Brackets seat properly over the Lag Bolt heads.
- 7.5 Center and plumb the top of the Stair Railing Assembly to the Post Sleeve. Mark the position for the top Lag Bolts on the Post Sleeve using the top Rail Bracket's position as a guide.
- 7.6 Lift the top of the Stair Railing Assembly out of the way. Drill a 1/8-inch pilot hole through the sleeve and into the post at the proper angle. Then drill a 3/8-inch clearance hole **through the Post Sleeve ONLY** for the top Lag Bolt at the proper angle. Repeat for opposite post.
- 7.7 Place the top of the Stair Railing Assembly back into the proper position and thread the top Lag Bolts through the Rail Brackets and into the holes in the Post Sleeves. With the Lag Bolt heads now located in the channels of the Universal Rails, a 1/4-inch drive socket with an extension and a 7/16-inch socket is needed to sufficiently tighten the Lag Bolts. Repeat for opposite post.
- 7.8 Return to bottom Lag Bolts and tighten.

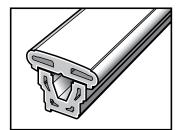


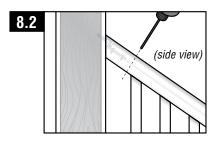


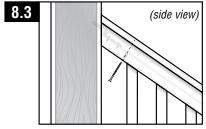


8. INSTALL STAIR TOP RAILS

- 8.1 Measure the distance between Post Sleeves. Cut the Top Rail to length and proper angle. The Top Rail's bottom channel fits over the top edges of the top Universal Rail.
- 8.2 To secure the Top Rail to the Stair Railing Assembly, the Top Rail Screws must be driven through the bottom of the Universal Rail and into the Top Rail at a 90 degree angle, NOT parallel with the Balusters. Two of the four Top Rail Screws should secure the Top Rail nearest each post, with the other two screws spaced equally over the span of the rail, dividing the Top Rail into 3 equal sections. Clearance holes should be located where there is room between Balusters to maneuver a tool. Drill 3/16-inch clearance holes down through the top Universal Rail, between the Balusters, in the 4 calculated positions.
- 8.3 Place the Top Rail over the top Universal Rail. Make sure that the Top Rail's bottom channel fits over the top edges of the Universal Rail. Attach the four 2-1/2-inch Top Rail Screws (with color matched heads) through the pilot holes in the bottom of the Universal Rail and into the Top Rail to secure. **Be sure not to over-tighten the screws.**
- 8.4 Place Top Rail over top Universal Rail and drive the 2-1/2-inch Top Rail Screws (with color matched heads) up through the four clearance holes in the bottom of the top Universal Rail, into the Top Rail to secure. Be sure not to overdrive the screws.
- 8.5 Install Post Caps. Refer to Section 5 for instructions.



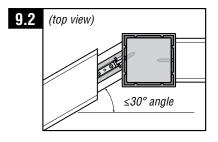


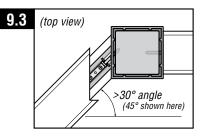


9. INSTALLATION INSTRUCTIONS FOR MITERED/ANGLED DECK AND PORCH RAILING

Refer to Section 1 for Railing Assembly and Railing Installation Instructions.

- 9.1 For angled railing, determine the angle and type of cut needed to fit the Universal Rails and Top Rail to the Post Sleeve.
- 9.2 For angles LESS THAN OR EQUAL TO 30 DEGREES, the Universal Rail and Top Rail can be cut to the required angle. Secure Rail Brackets and Railing Assembly to the post as shown.
- 9.3 For angles MORE THAN 30 DEGREES, the Universal Rail can be cut to the required angle. The Top Rail will require a "birds mouth" cut to fit properly around the corner of the Post Sleeve as shown.
- 9.4 For angles **MORE THAN 45 DEGREES**, both the Universal Rail and Top Rail will require a "birds mouth" cut to fit properly around the corner of the Post Sleeve.







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