

## Poly Balustrade Installation Instructions

### STEP 1

Mark the layout line and center points of each porch post and newel post prior to installation. This is very important to ensure the accurate length for installing the top and bottom rails. Use 12' as the maximum railing length.

### STEP 2

#### WOOD DECKING INSTALLATION

1. Install blocking under where each newel's floor flange will be located.
2. Locate and center each floor flange and secure using 3/8" lag bolts.
3. Thread the 1/2" x 48" rod into the welded nut on the floor flange and tighten using vise grips.



#### CONCRETE INSTALLATION

1. Mark anchor hole in floor flange. Drill a 1/4" hole 2 1/4" deep into the cured concrete.
2. Insert anchor and using a punch, set the anchor pin.



### STEP 3

1. Measure and combine the heights of the bottom rail and baluster (Distance X). This is the distance between the bottom of the angle brackets used to fasten railings to posts.
2. Mark the location and height of the bottom rail from the concrete or wood surface (Distance B).
3. Using the measurement of the rail and baluster (Distance X), locate the bottom of the top bracket.
4. Mark the top and bottom bracket on the newel post or column. If installing on a round column, see addendum on last page.
5. Mortise the newel post so that the face of the angle brackets are inset and are flush with the surface of the newel post.
6. Drill holes and secure angle brackets with #14 x 2 pan head screws.



### STEP 4

1. Rout the top of the newel post to accept the C-channel.
2. If trim collars are being used, slide them on the bottom before placing the newel post over the floor flange.
3. Put the C-channel in place and secure loosely with the nut and lock washer.



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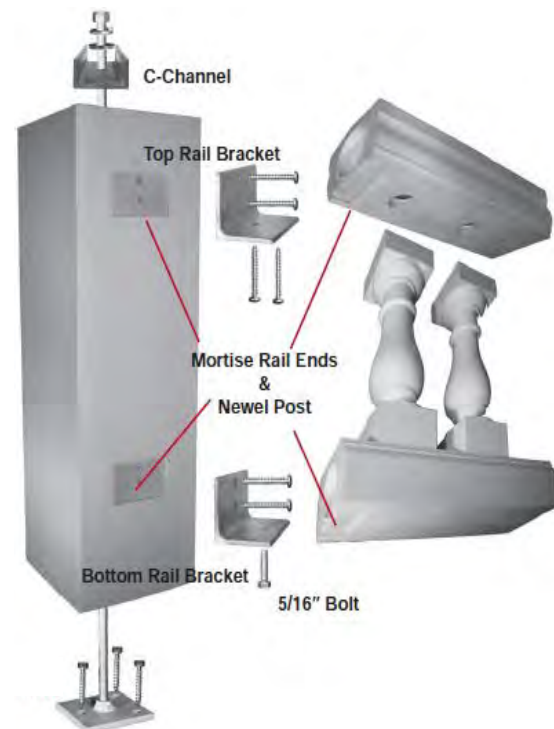
### STEP 5

1. Determine your rail length.
2. Cut top and bottom rail to proper size.
3. Mortise the bottom of each rail to accept the 2 1/2" aluminum angle.
4. Drill a single 5/16" hole in the bottom rail that corresponds with the single 5/16" threaded hole on the bottom 2 1/2" x 2 1/2" aluminum angle.
5. Mark a center line on rails. Mark the position of each baluster then drill a hole to accept the PVC pipe that extends out either end of the baluster. Standard hole saws work well for drilling these holes.
6. Apply a bead of urethane adhesive to the bottom of each baluster and place the balusters in the holes of the bottom rail. Apply a bead of urethane adhesive to the tops of each baluster and set the top rail on the balusters. Clamp together using strap clamps, making sure baluster blocks are square to the bottom and top rail. A straight strip of plywood wedged between the baluster blocks and strap clamps helps to align baluster blocks straight and parallel to the top and bottom rail.
7. Allow the adhesive to set for 12 hours.



### STEP 6

1. Remove the strap clamps from completed railing section.
2. Apply a small bead of urethane adhesive to the aluminum angles that are fastened to the newel posts, and to the ends of each top and bottom rail.
3. Leave the newel posts loose so you can slide the glued up rail section between them without smearing glue on exposed parts of the newel post.
4. Fit the mortises on the undersides of the rail onto the 2 1/2" x 2 1/2" aluminum angle that is mounted to the newel post.
5. Pre-drill 1/8" holes through the holes in the top aluminum plates into the PVC pipe. Install 2 #14 x 2" pan head screws.
6. Thread the 5/16" x 1 1/4" bolt through the bottom plate and into the 5/16" hole you drilled in the underside of the bottom rail. (\*Note: This 5/16" threaded bolt does not provide downforce. It is intended to keep the rail from moving laterally. Typical installations do not have enough room between the decking and the underside of the bottom rail for the use of screws.)
7. After securing rail section to newel posts tighten up the nut on the newel post, securing it to the deck.
8. Apply a small bead of urethane adhesive to the top of the newel post and glue the newel cap in place. Small brad nails will keep the cap aligned until the glue sets.



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### STEP 7

1. After the glue dries, clean off excess with a sharp putty knife. Caulk any cracks with a good quality latex paintable caulk.
2. Apply a finish coat of latex paint to your railing system within 30 days of installation.

## Poly Stair Spindle Installation Instructions

### Option One (Recommended)

Purchase an additional PVC pipe with slightly smaller dimensions than that of the current tenon. The new pipe can be cut and placed inside the PVC pipe of the existing spindles once they have been cut at the appropriate angle of your staircase.

American Porch recommends using PL Premium Adhesive when creating the new tenons. Once the adhesive has dried, the spindles can be installed in the stair rail using the same method noted in the instructions above.

### Option Two

If you do not wish to purchase additional material, another option is to make an angled cut around the existing PVC tenon; however, we have found this to be more time consuming as compared to cutting through the entire spindle and creating a new tenon.



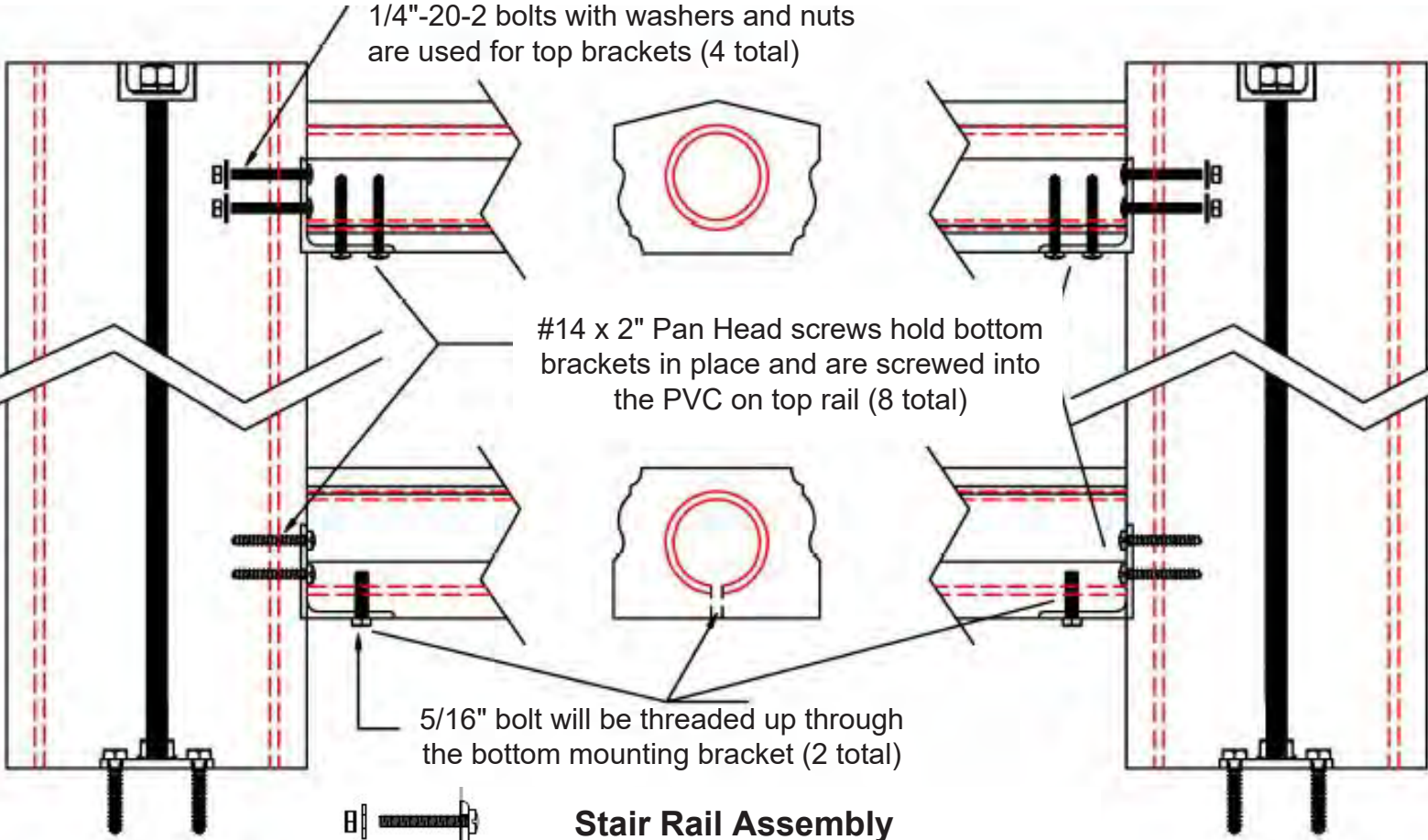
**Additional Diagrams**

**Rail Assembly**

1/4"-20-2 bolts with washers and nuts are used for top brackets (4 total)

#14 x 2" Pan Head screws hold bottom brackets in place and are screwed into the PVC on top rail (8 total)

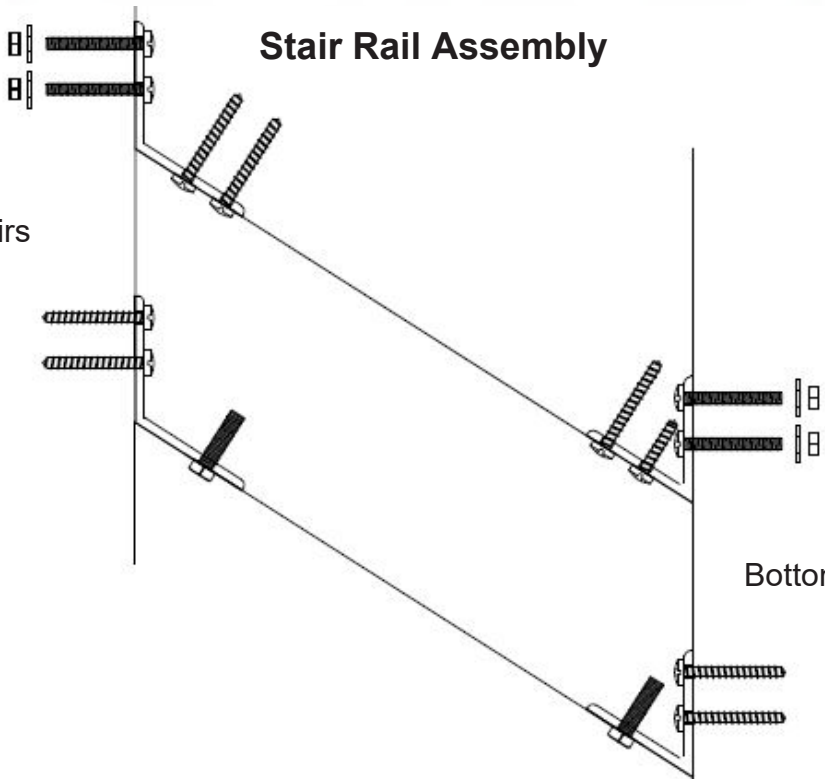
5/16" bolt will be threaded up through the bottom mounting bracket (2 total)



**Stair Rail Assembly**

Top of the stairs

Bottom of the stairs



## Poly Rail to Round Column Instructions

To attach poly railing to a round column, use our Round Column Adapter with included T bolts. This creates a flat spot on the column to which you can attach the aluminum bracket included in your Poly Rail Install Kit.

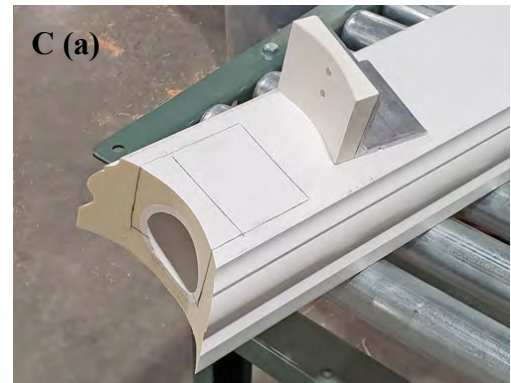
### A)

Trace the curve of the column onto the rail end at the point where the rail is to be attached. Use a transfer scribe or a contour gauge.



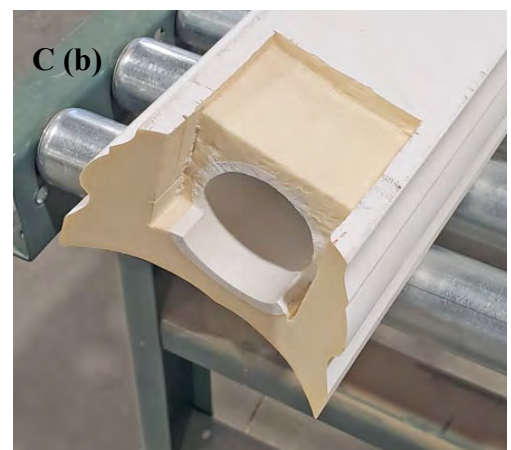
### B)

Cope the end of the rail to match the curve of the column. A reciprocating saw or similar will work for the rough cut. Keep in mind some poly rails have an internal aluminum pipe, so use an appropriate blade. Smooth the cut with a sander or similar tool, ensuring an attractive fit. When cutting the second end, be careful to leave the rail long enough to account for the coping cut. Measure twice, cut once.



### C)

Mortise the bottom and end of each rail to accept the PVC Round Column Adapter and the aluminum rail bracket. Use those items as a guide as shown. An oscillating tool works well for cutting through both the Poly material and the internal pipe.



### D)

Mark the location of the top and bottom bracket on the column as described in [Step 3](#) above. Drill 9/32" holes for the T bolts (5/16" holes will work if you don't happen to have a 9/32" drill bit) and secure the PVC Column Adapter and aluminum brackets to the column with the provided T bolts. (**TIP:** Put T bolts through adapter and bracket and start nuts on the bolts. Then, insert T bolts into the column.) Note that the rail ends will need to be notched out where the nuts protrude from the bracket. Cut the excess bolt length off to reduce the amount that needs to be notched out of the rail end. A quick spray of paint on the cut ends will prevent rust bleeding on the column.



### E)

Assemble the balustrade as described in the instructions above. Place the assembly between the columns and onto the brackets and secure with hardware described in [Step 6](#) above.