

175 SERIES FIXED STAIR CABLE RAIL - INSTALLATION INSTRUCTIONS

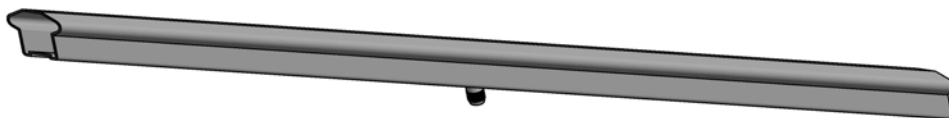


AFCO
Columns and Railings
a Division of AFCO Industries, Inc.

PARTS INCLUDED IN FIXED STAIR CABLE RAIL KIT:

FIXED STAIR TOP RAIL (1)

A



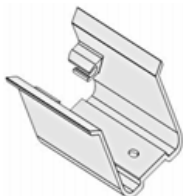
FIXED STAIR BOTTOM RAIL (1)

B



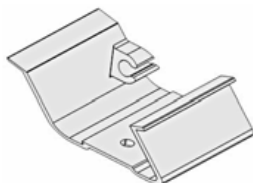
UPPER SADDLE BRACKET (1)

C



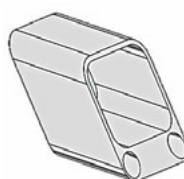
LOWER SADDLE BRACKET (1)

D



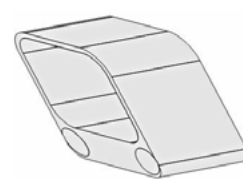
UPPER BOTTOM BRACKET (1)

E



LOWER BOTTOM BRACKET (1)

F



BRACKET COVERS (2)

G



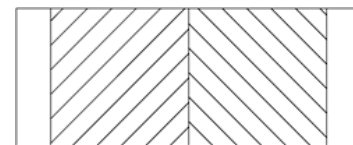
#10x1-1/2" SELF DRILLING SCREW(12)

H



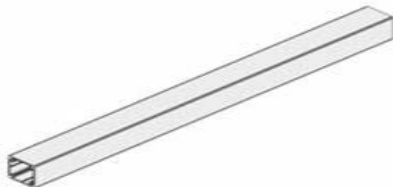
ADHESIVE TAB SHEET(1)

I



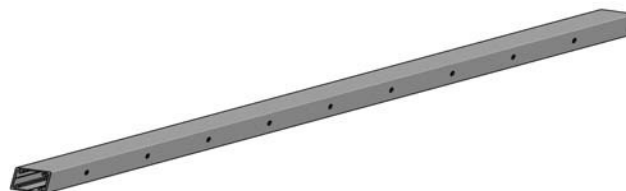
7" SUPPORT BLOCK (1)

J



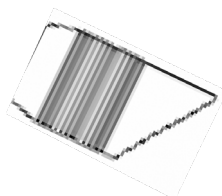
PRE-DRILLED FIXED CABLE BALUSTER (1)

K



ANGLE BALUSTER CONNECTOR (2)

L



175 SERIES AFCO-RAIL FIXED STAIR CABLE RAIL

FIXED CABLE RAIL INSTALLTION NOTES & TIPS

POST INSTALLATION:

This instruction will provide information to properly locate and position posts to be used with the 175 Series Fixed Stair Cable Rail. Additional information regarding the mounting and properly securing the post to the decking can be found in detail in the instructions that are packaged with each post.

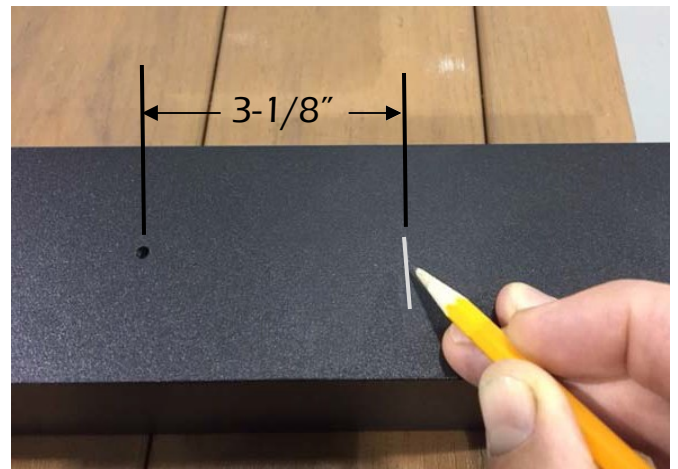
- It is recommended to review the Post Installation Instruction to ensure the decking and or mounting surface is adequate to properly install and secure posts.
- Upon review and determining the structure and mounting surface for the posts are adequate, proceed using this instruction to install the 175 Series Fixed Stair Cable Rail.

FOR A SUCCESSFUL INSTALLATION:

- Read the instructions completely before beginning the installation.
- Plan your railing project. Sketch your project with the actual measurements of your deck or balcony complete with desired post locations.
- Check local building codes to ensure compliance.
- Check carton(s) to determine part count is complete.
- After cutting rails, balusters, or posts, paint exposed metal for maximum protection against the elements.
- Installation is best accomplished with two people.
- Wear personal protection equipment, safety glasses, etc.
- Use care not to over-torque the screws. Pre-drilling is recommended.
- Provided hardware to install AFCO-Rail is for use with Aluminum AFCO-Rail posts. If installing to other surfaces the installer must acquire the appropriate hardware as needed for proper installation.

TOOLS REQUIRED: FOR INSTALLATION:	NOTES:
<ul style="list-style-type: none"> • Drill bits: 5/32" (.156) / 1/4" (.250) 9/32" (.281) / 29/64" (.453) • T25 Torx Driver (minimum 2") & Bit Holder • 1/8" hex wrench • 7/16" wrench • Drill (with adjustable clutch, recommended) • Miter Saw (with metal cutting blade) • Level • Rubber mallet • Tape measure • Cable cutters • Grinder with cutoff wheel and or hacksaw • Touch-up paint 	<ul style="list-style-type: none"> • Cables and Fittings for this rail system are sold separately. 36" height rail uses 9 cables. 42" height rail uses 11 cables • Posts are sold and packaged separately. • An AFCO-Tool is recommended to simplify the locating, pre-drilling and installation of brackets and locating of the cables.

1. Start by placing the pre-drilled line post on a flat surface. Measure from the center of the uppermost hole 3-1/8" upward towards the top of the post and make a reference mark. This will be the location of the Upper Saddle Bracket (C).



2. From that reference mark in step 1 measure down towards the base of the post 31" for 36" height rail, and measure down 37" for 42" height rail.

Place another reference mark on the same side of the post.



3. Place upper post in the desired position with reference marks facing towards the stairs. Lay the Bottom Rail (B) on the stair-nosing from top to bottom, and adjacent to the post. Align the lower reference mark from step 2 with the top edge of the bottom rail. *(Post can be mounted with reference line higher than the top of the bottom rail if desired)* Post should not be mounted with reference mark below the top side of the bottom rail.

Note: When installing posts on treated decking use the provided ACO pad that is included between the post base and the treated surface.



4. With Bottom Rail (B) still laying on the stair-nosing, position the lowest undrilled post where desired on the stairs. Measure up from the top side of the Bottom Rail (B), on the upper side of the post and ensure there is a minimum of 34" for the 36" rail height and a minimum of 40" for the 42" rail height, to the top of the post. If position of posts meets these criteria, measure up from the top side of the Bottom Rail and place a mark on the post at 31" for the 36" height rail, and 37" For the 42" height rail.

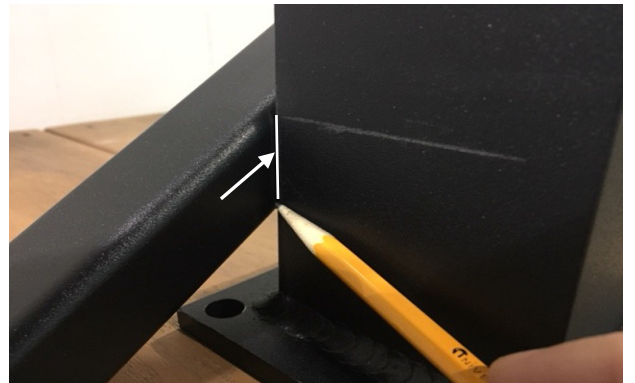


- If the criteria are met in both steps 3 & 4, secure posts in place with the appropriate fasteners. Refer to page 1 of the post installation instruction details that are included with each post, regarding the proper fastening and securing of posts to the decking.

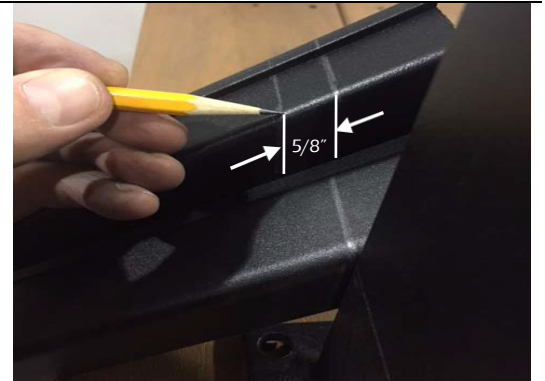
Note: Do not install base trim at this time.



- Place Bottom Rail (B), with baluster connector facing up and centered between the posts, on the stair-nosing from top to bottom, adjacent to the posts, mark a line on the rail from the inside of each post.



- Place the Top Rail (A) with the bottom side of the rail facing up next to the Bottom Rail (B), and duplicate the marks from the bottom rail cut line onto the top rail. Now mark the top rail 5/8" shorter on each end; this is the cut line for top rail.



- Install base trim over posts to cover bottom flange and mounting bolts of the installed posts.

- On the lowest undrilled post where you placed a reference mark at 31" or 37", (in step 4) measure down 3-1/8" and place mark at the center of the post. Transfer this mark also to the opposite side of the post. On both sides of the post where the reference marks were placed drill a hole using a 5/32" (.156) drill bit.

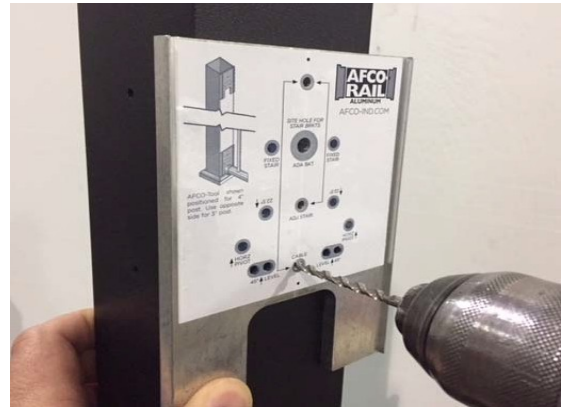
Note: Optional AFCO-Tool will aid in centering and drilling this hole.



10. Using the Installation Tool, align the holes drilled in step 9 with the top "cable hole" on the tool, locate the lower "cable hole" on the tool and drill holes down the post on opposite sides, repeating for the required amount of cables being installed using the Installation Tool for correct spacing.

Note: If not using the Installation Tool for hole spacing, drill holes for cable with 3-1/16" spacing center to center.

*Note: There are 9 holes to drill for the 36" height rail.
There are 11 holes to drill for the 42" height rail.*

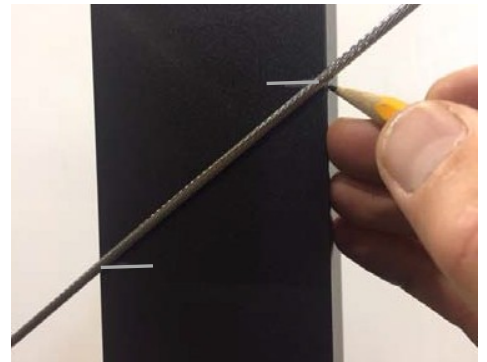


11. If installing an intermediate post on stair treads, locate post in desired position and ensure the minimum clearance to the top of the post is achieved from the top side of the Bottom Rail (B) to the top of the post the same as in step 4.

Note: Minimum of 34" to top of post for 36" rail height and 40" to top of post for 42" rail height.

12. Mark the hole locations to drill the intermediate post, by temporarily installing a cable in the top holes, from the upper post through to the lowest post in the drilled holes with cable laying adjacent to the intermediate post. Mark the upper and lower side of the post at the locations on the intermediate post where they intersect the cable.

Note: Only intermediate posts will have holes drilled at an angle for cable to pass through. Post on the top and bottom of the stairs will have holes drilled straight through both walls.



13. Transfer marks from step 12 to both the upper and lower side of the intermediate post. Drill a pilot hole using a (5/32) drill bit in the center of the post at those marks. Using the Installation Tool, align the hole drilled with the top "cable hole" on the tool, locate the lower "cable hole" on the tool and drill holes down the post on opposite sides for the required amount of cables being installed. Once pilot holes are drilled, or marked, drill out each hole to a 1/4" diameter.

Note: Optional AFCO-Tool will aid in centering and drilling these pilot holes.



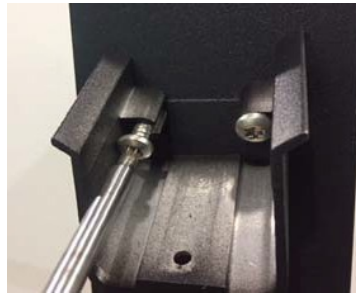
14. From the center of the top hole drilled, on both sides of the post, measure up 3-1/8" and place a mark across the post. Align Screw holes in the Upper and Lower Saddle Brackets (C&D) on the marked lines on the posts. Make sure the brackets are centered on the posts. Mark the screw hole locations with a pencil.



15. Attach saddle brackets (C&D) with 1-1/2" self-drilling screws (H) at the marked screw locations.

Note: Pre-drilling with a 5/32" drill bit is recommended

The Optional AFco-Tool will also aid in locating the screws by using the "Site Hole" centered over the reference mark and use the "Fixed Stair" holes to mark and or pre-drill holes.



16. Install support block connector(s) (L) using 1-1/2" self-drilling screw (H) to the underside of bottom rail (B) at the desired location.

Note: One support block, cut from support block material (J), is recommended for rails measuring 72" in length or less; two support blocks for longer lengths. If one support block is required, install support block connector (L) at center point of bottom rail (B). If two support blocks are required, install support block connectors (L) equal distance from each end of the bottom rail (B).



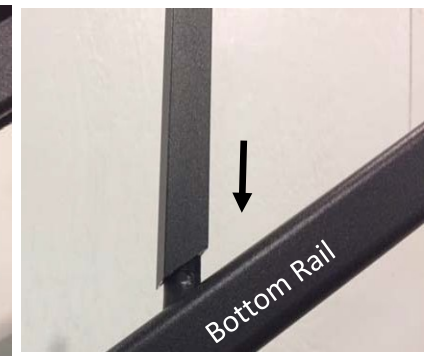
17. Slide Bracket Covers (G) onto Top Rail (A) 3" to 4" inward, as well as the Upper and Lower Bottom Brackets (E & F) with counter-bore holes down and towards the center of the rail.

Bottom Brackets may require installing with holes up for accessibility.

Note: A small piece of tape may be needed to hold covers and bottom brackets on rail while installing the rail kit.

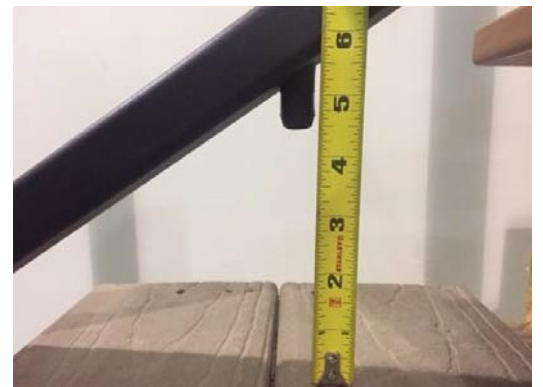


18. Assemble Top and Bottom Rail (A&B) with pre-drilled Fixed Cable Baluster (K). Place assembled rails between post with top rail resting in the Top Saddle Brackets (C&D).

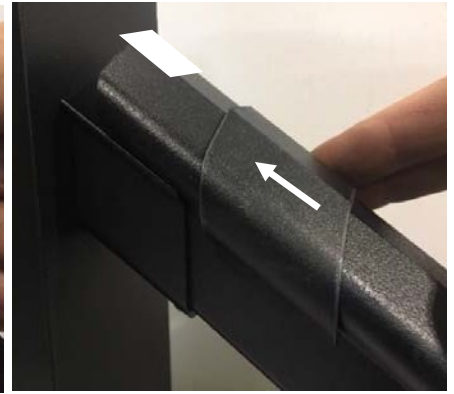


19. At the point where you installed the support block connectors (step 16), carefully measure the distance from the underside of the bottom rail (B) to the stair tread. Cut support block material (J) to fit. Slip support block over support block connectors (L). Slide the rail back into place and make certain the rail is plumb.

Note: Top cut of the support block that attaches to rail will be typically cut at 34 degrees. Cut according to plan layout for correct stair angle.



20. Apply adhesive tab (I) to flat surface of Top Rail (A) near the posts. Slide Bracket Cover (G) to interlock with the flange on the saddle Brackets (C & D).



21. Screw self-drilling screws (H) into the Top Rail (A) from the underside of each Saddle Bracket (C&D) through the provided locating hole to securely fasten the rail. Slide the Upper and Lower Bottom Brackets (E & F) against the post and secure with self-drilling screws (H).

Note: Screw holes in bottom brackets are angled to make mounting easier.

- Bottom Brackets may need to be inverted to allow for better accessibility.



CABLE INSTALLATION

1. Drill out and enlarge the holes in the outermost wall *only* of the first post of your cable run with a 9/32" drill bit through the holes already in the post for the threaded cable end.

Also drill the outermost wall *only* on the opposite end of the cable run with a 29/64" drill bit. This step is to allow the line cable fittings to be installed.



NOTE: If continuing from a Level cable run downstairs, the Upper Stair Post will not require additional drilling.

2. Remove cable and fittings from packages and install the required washer and brass nut on the threaded stud end of the cables and feed the bare ends of the cable through all posts and support balusters and drilled Intermediate Posts (if used), starting at the holes drilled out to 9/32".



3. Slide line fittings with required round black washers onto the cables while twisting in a clockwise motion until the fittings are fully seated in the end post. Pull the bare ends to remove as much slack as possible.



4. Use a small block of wood and a mallet to tap the cable at the point the cable is coming out of post to set the cable angle.

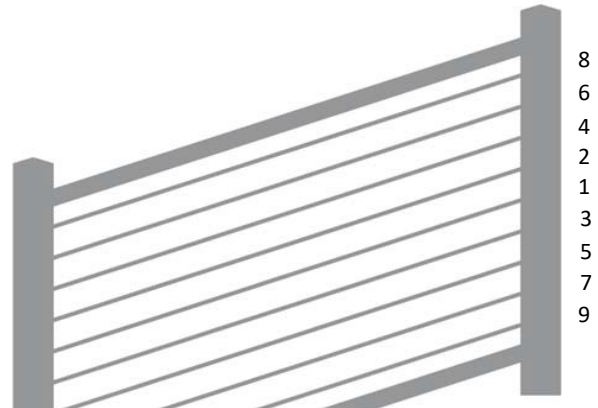


5. Return to the threaded stud end of the cables and starting with the centermost cable, insert a 1/8" hex wrench into the end of the threaded stud. Tighten the locknut with a 7/16" wrench while holding the hex wrench to prevent the cable from turning.



6. It is recommended that you follow the sequence of tensioning the cables starting at the center and alternating above and below until all cables are properly tensioned.

After cables have been tensioned follow step 6 to set the cable angle again if needed, and re-tension cables as necessary in the same sequence.



7. When all cables are tight, cut off the cable ends running through the fitting and any exposed stud threads near the locknut as close as possible using a cut-off wheel or hacksaw. Press the nut cap over the locknut. Press the cap onto the fitting.

