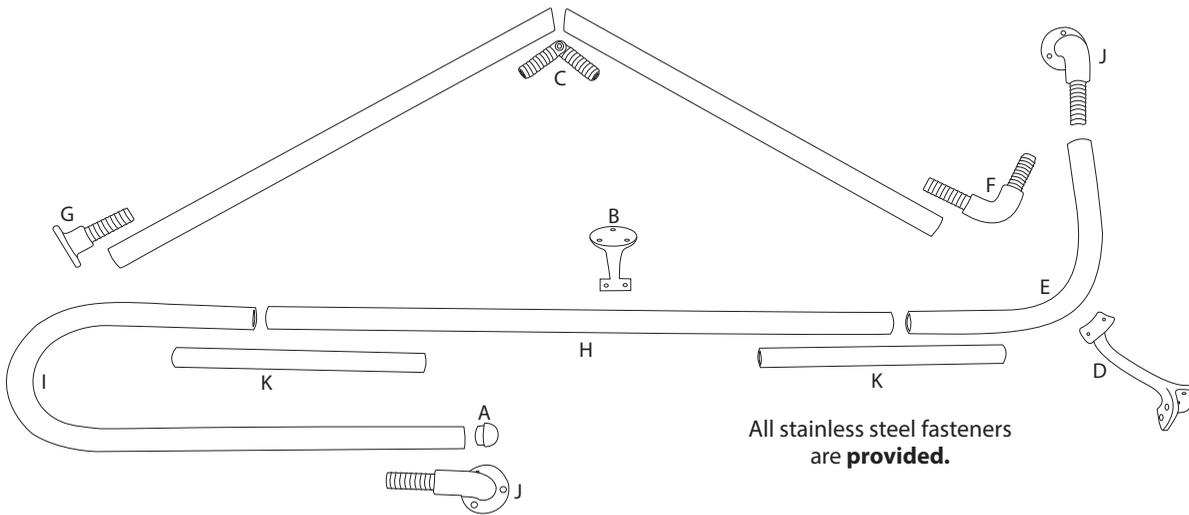


Instructions for Secondary Handrail component installations



- Component List:**
- A) End Cap
 - B) In-line Bracket
 - C) Multi-Angle & Straight Coupler
 - D) Inside Corner Bracket
 - E) 90° Inside Elbow
 - F) 90° Outside Elbow
 - G) Wall Bracket
 - H) 1½" x 8'-8" Straight Handrail
 - I) P-Loop Return
 - J) Return Bracket
 - K) Straight Connector

- Tools Required:**
- Drill
 - Miter Saw
 - Tape Measure
 - 11/64" Drill Bit**

All stainless steel fasteners are **provided**.

Installer is responsible for quality workmanship and meeting all building codes. Always wear safety goggles.

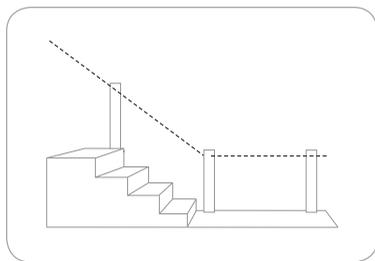
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1 Before You Start

Color Guard Secondary Handrail Overview:

It is the responsibility of the installer to meet or exceed all code and safety requirements, and to obtain all required building permits. These instructions are only a guide and may not address every circumstance. The deck and railing installer should determine and implement appropriate installation techniques for each situation.

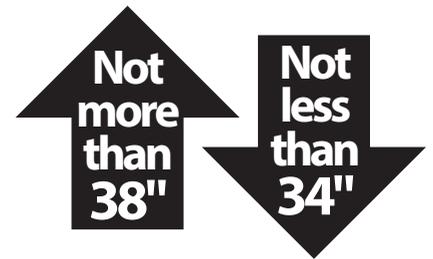
Secondary Handrail height, measured above stair tread nosings, or finish surface of ramp slope shall be uniform, **not less than 34 inches and not more than 38 inches**, as stated in the 2009 International Building Code *



1012.2 Height. **Please check local building codes as code interpretation may vary by municipality.**

Start all Secondary Handrail installations by laying out and marking the desired height of the top of the Secondary Handrail on all posts and mounting surfaces. This Secondary Handrail layout line will be used in the following steps for mounting all components. When cutting Secondary Handrail, use a miter saw with a fine-toothed carbide tipped blade with at least 80 teeth.

Handrail height:

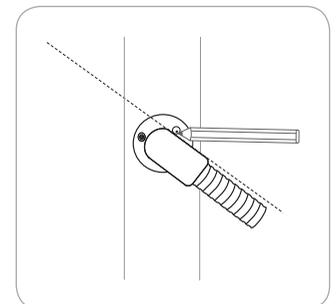


2 Install the Return Bracket

Align the post return according to the Secondary Handrail layout line and mark attachment hole positions.

Pre-drill and attach post returns with 3 fasteners supplied for the material to which the post return is being mounted. Measure the distance between the Return Brackets. Cut Straight Rail. Remove one of the Return Brackets and insert one end of the Straight Rail into attached Return Bracket. Place removed Return Bracket onto other end of Straight Rail and re-attach the Return Bracket to post.

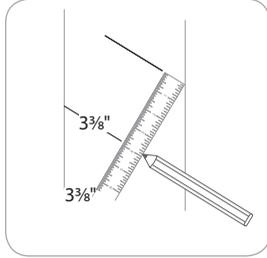
Secure handrail to bracket with the appropriate colored screw provided. This should be pre-drilled with 11/64" drill bit. Using any other smaller size will likely cause screw to break.



3 Install In-line Bracket

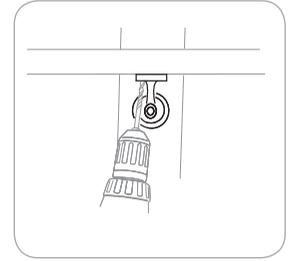
Place a mark 3-3/8" below the handrail layout line to establish placement of the In-line Bracket mounting fastener.

Draw a parallel line 3-3/8" below the handrail line to establish the placement of the top two screw holes.



Attach bracket to mounting surface using supplied screws.

Pre-drill holes in handrail with 11/64" drill bit. Using any other smaller size will likely cause screw to break.



4 Install Multi-Angle & Straight Coupler

For maximum strength, all handrail joints should be supported by a handrail bracket at the joint, or the nearest possible location.

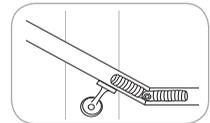
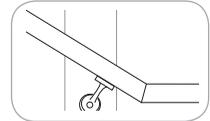
For straight couplings, assemble the coupler ensuring that the bolt and nut are secure in the straight position.

Insert coupler into ends of straight sections, pre-drill with 11/64" drill bit and secure to the handrail with fasteners supplied.

For angled couplings, measure angle of joint and cut straight sections accordingly. Pre-fit both straight sections, making sure that the miter cuts match.

Position the adjustable coupler on the outside of the handrail and tighten the bolt at the appropriate angle.

Insert coupler into ends of straight sections, pre-drill with 11/64" drill bit and secure to the handrail with fasteners supplied.

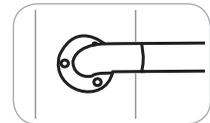
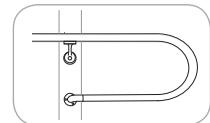


5 Install the P-Loop Return

Position handrail loop in desired location. Pre-fit the P-loop in place to make any necessary marks for cutting.

Once cuts have been completed and loop is ready to install, attach to handrail system using a Multi-angle and Strait Coupler or a 8" Straight Connector following the instructions outlined in Step #4.

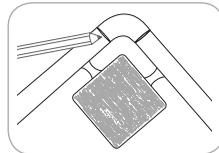
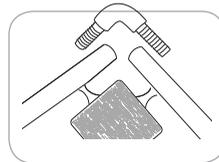
Attach P-loop to the mounting surface using an In-line Bracket and a Return Bracket as shown in Steps #2 and #3.



6 Install 90° Outside Elbow

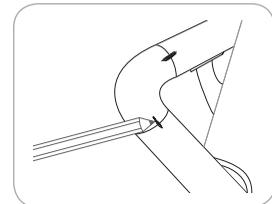
Pre-fit the two handrail straight sections together on handrail brackets. Straight rail sections should extend far enough to allow for scribing and final cutting.

Place the 90° Outside Elbow in line with each of the straight rail sections. Mark and cut straight rail sections.



Pre-fit the outside corner bracket into the straight rail sections, if all components are in line, mark reference points.

Permanently attach straight rail and outside corner bracket assembly by pre-drilling the handrail and bracket using 11/64" drill bit and fasteners supplied.



7 Install Inside Corner Bracket (if applicable)

Use 90° bend tube and 8" connector. Also install at least 1 in-line support.