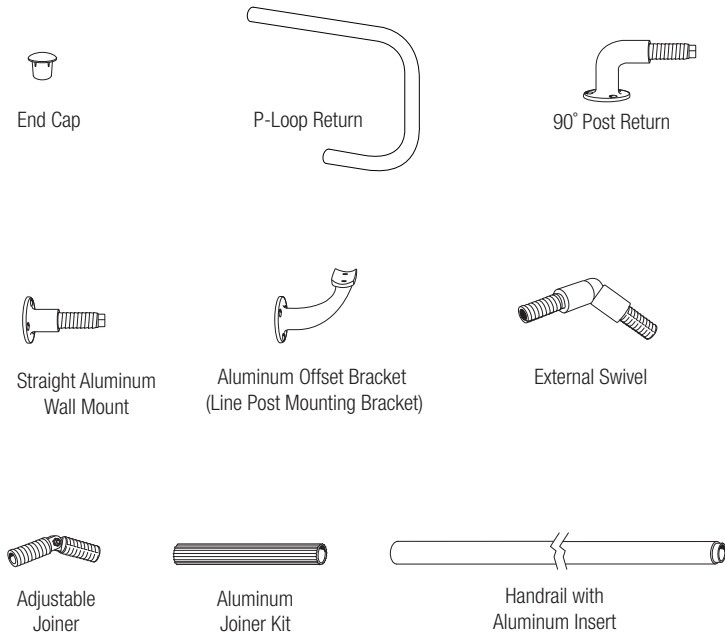


Secondary Handrail Guidelines and Installation

Items You Will Need

- Pencil
- Tape Measure
- Level
- #2 Square Drive Bit
- Drill
- Chop/Miter Saw
- Quick Clamps
- PVC Cleaner

Handrail Components



Prior to construction, check with your local regulatory agency for special code requirements in your area.

Start with an Inside Corner piece when applicable.

Guidelines:

- The height of the secondary handrail must be installed between 34" and 38" above the surface, regardless of the height of the guard.
- We recommend that handrails be dry fit prior to final installation to eliminate cutting and fastening errors.
- **IMPORTANT:** The secondary handrail must be attached to a structural support. When installing mounting brackets on post sleeves, ensure the hardware attaches to the structural support.
- For maximum strength, brackets should be used at every post and every joint, or as closely as possible to the joint.
- An adhesive may be applied to further reinforce construction.
- Handrails must be supported every 6' on-center by a mounting bracket.

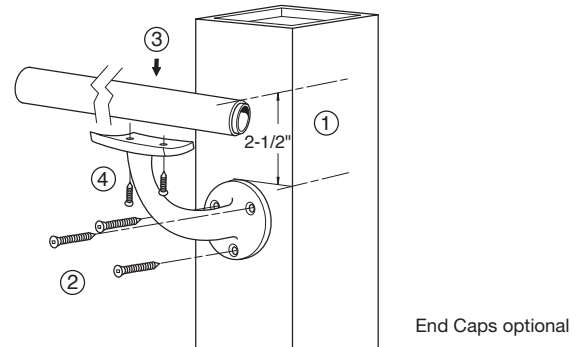
Aluminum Offset Bracket (Line Post Mounting Bracket)

Step 1: Measure 2" less than the handrail height to determine bracket position. Mark surface.

Step 2: Align the top of the bracket mounting plate with the mark made in Step 1. Drill 5/32" pilot holes and attach to the desired surface using the 2-1/4" screws provided.

Step 3: Clamp handrail to bracket at appropriate location to secure in place.

Step 4: Drill 5/32" pilot holes and attach handrail using the 1" screws provided.



Handrail with Aluminum Insert

Step 1: Dry fit handrails to determine proper lengths prior to cutting rails.

Step 2: Measure and cut rails to proper lengths for all runs.

Step 3: Install to handrail component, following instructions for the components.

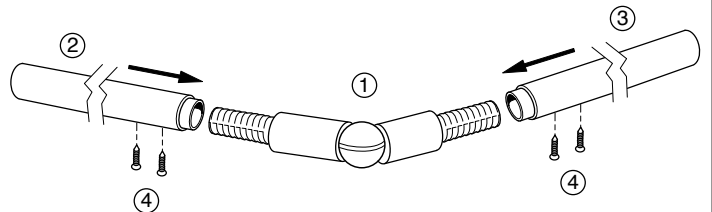
External Swivel

Step 1: Adjust external swivel to desired angle and install set screw.

Step 2: Cut handrail with aluminum insert to desired length.

Step 3: Insert external swivel bracket into the aluminum portion of the handrail.

Step 4: Pre-drill handrail and bracket with 5/32" drill bit and install 1" screw provided.

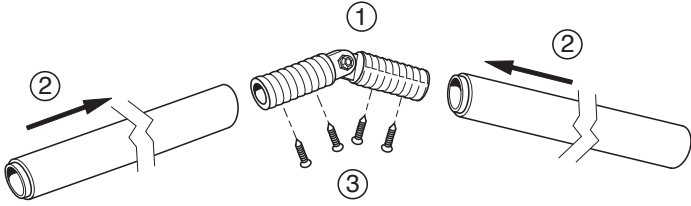


Adjustable Joiner

Step 1: Measure the angle needed. Adjoin the two joiner halves together by inserting the bolt. Place the joiner halves at the desired angle, and tighten bolt to set.

Step 2: Cut handrails at 1/2 the desired angle. Slide handrails onto adjustable joiner.

Step 3: Drill 5/32" pilot holes and fasten handrails together using 1" screws.

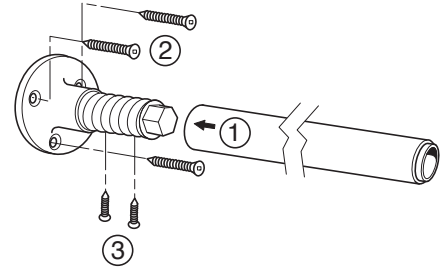


Straight Aluminum Wall Mount

Step 1: Slide aluminum wall mount into handrail.

Step 2: Drill 5/32" pilot holes into desired surface and attach wall mount using 2-1/4" screws provided.

Step 3: Drill 5/32" pilot holes into handrail and attach using 1" screws provided.

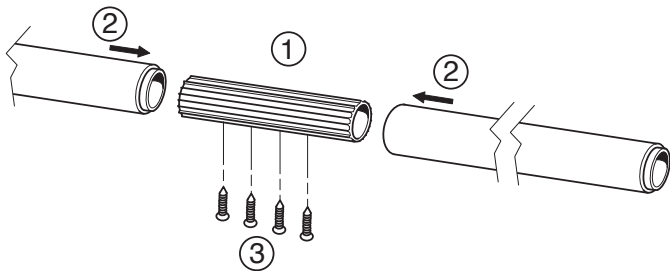


Aluminum Joiner Kit

Step 1: Use aluminum joiner to fasten handrail components at straight joints.

Step 2: Slide joiner an equal distance into both components. Drill 5/32" pilot holes and fasten using 1" screws provided.

Note: All joiners should be supported by an aluminum bracket as closely as possible to the joint.



P-Loop Return

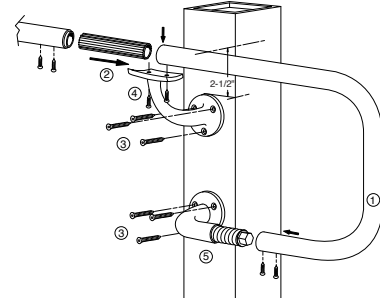
Step 1: Attach top bracket at desired location using appropriate connectors.

Step 2: Cut P-Loop to desired length.

Step 3: Connect P-Loop to secondary handrail tube using the appropriate joiners (Straight, Adjustable joiners or External swivel).

Step 4: Set P-Loop on top of bracket and pre drill with drill bit and install 1" screw provided.

Step 5: Install desired lower bracket.

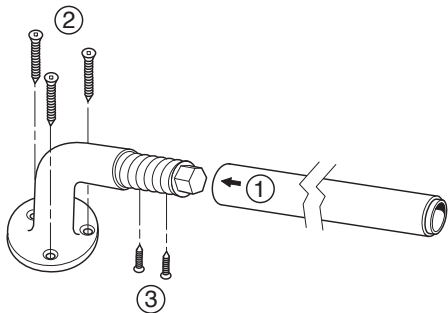


90° Post Return

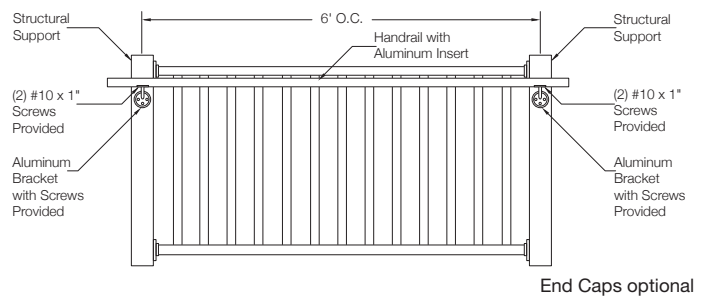
Step 1: Slide 90° post return into handrail.

Step 2: Drill 5/32" pilot holes into the desired surface and attach post return using 1-1/2" screws provided.

Step 3: Drill 5/32" pilot holes into handrail and attach using 1" screws provided.



This handrail configuration has been tested and meets the requirements of 2009 IRC.



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