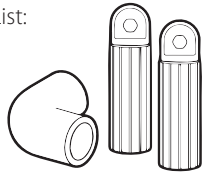
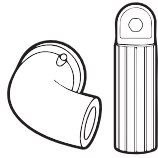


INSTALLING HAND RAIL

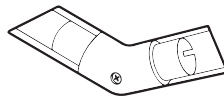
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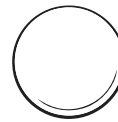
90° Corner



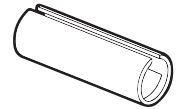
90° Post Return



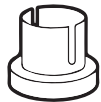
**Alum Hand Rail
Adjust Joiner**



End Cap



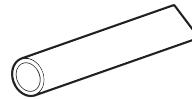
Straight Joiner



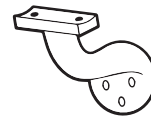
**Straight Wall
Return**



180° Return Loop



**Aluminum
Hand Rail**



**Mounting
Bracket**

This guide contains step-by-step installation instructions for each component of your ADA Hand Rail, plus tips to make the process seamless and simple. To complete the installation you will need the following tools: Drill and Drill Bits, Clamps, Mitre Saw, Tape Measure, Aluminum Adhesive

Recommended Adhesives For Aluminum Bonding: Loctite[®] Metal/Concrete Epoxy[™], Gorilla[™] Epoxy-Impact Tough[®], Loctite[®] Quick Set Epoxy[™], Loctite[®] Extra Time Epoxy[™]. Aluminum Adhesive (not provided).

In addition you will use Appropriate Fasteners (fasteners to attach lineals to hand rail brackets are provided. Fasteners to attach to post are not, since materials will vary. Stainless steel fasteners should be used to avoid rust stains.) and Touch-up Paint (not provided).

General Recommendations

1. Start by marking the desired height of the top of the hand rail on posts or other mounting surfaces (Fig. 1). According to the 2015 International Building Code, Section 1012.2, hand rail height should be uniform and "not less than 34 inches and not more than 38 inches" as measured from above stair tread nosings, or the surface of a ramp slope. Check your local municipality code.
 2. Dry fit components after cutting and before gluing to ensure proper installation and avoid waste.
 3. For clean and safe cutting with a mitre saw, use a carbide tipped blade with at least 60 teeth.
 4. Apply adhesive only to inside surfaces to prevent overflow. Should overflow occur, remove excess adhesive immediately from components to assure smooth, clean joints.
 5. After joining components with adhesive, clamp and allow curing time according to adhesive label instructions.
- Aluminum ADA hand railing components are designed to fit with Cinch Steel railing posts. If attaching to any other post, sufficient blocking must be installed at the point of attachment to accept hand rail mounting hardware.

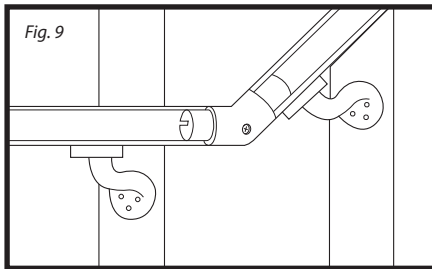
Lineal Installation Tips

1. Position and clamp all lineals before cutting. Mark to indicate lineal length and orientation to assure correct miter cuts. (Fig.1)
2. When confident that measurements and placement are correct, make cuts as marked. Make any needed adjustments and install fasteners. (6' maximum span between brackets.)

INSTALLING HAND RAIL

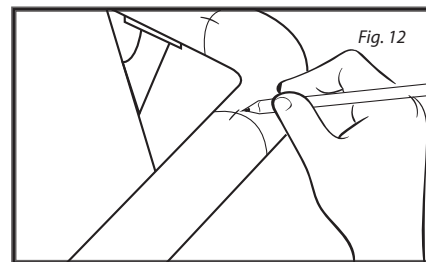
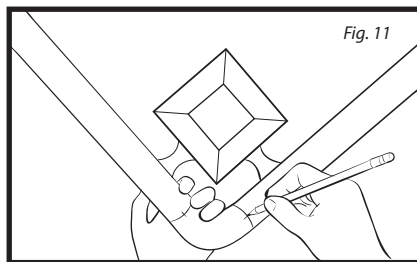
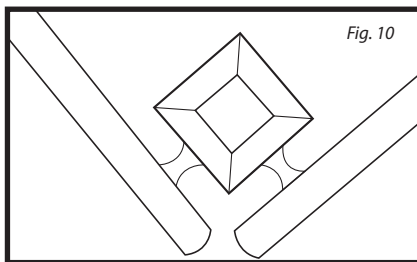
Adjustable Joiner Installation

1. Position hand rail lineals in place, clamp, and mark location of cuts to be made.
2. With lineals still clamped in position, assemble adjustable joiner and hold it up to the angled joint. Duplicate the correct angle and tighten the bolt to lock the joiner at the correct angle. (Fig. 9)
3. Remove and cut lineals, then dry fit again to ensure components fit and align properly. Adjust as necessary.
4. Apply adhesive to interior of cut ends, and join the two lineals with the joiner.
5. Secure hand rail lineals to hand rail brackets. NOTE: Hand rail brackets must be used on both sides of the joint. Clamp joint firmly in place until adhesive has cured.



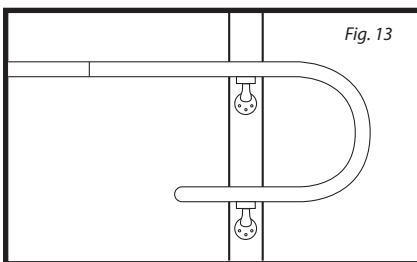
90° Corner Installation

1. Position the two lineals on hand rail brackets, allowing excess length to allow for marking and cutting. (Fig. 10)
2. Align the corner piece over the lineals, mark and make cuts. (Fig. 11)
3. Dry fit the corner assembly with supplied joiners. Reference marks (Fig. 12) will aid in proper alignment during re-assembly.
4. Take components apart, apply adhesive to insides of both corner ends and lineal ends, and reassemble, being sure to align reference marks. Clamp until adhesive has cured.
5. Complete installation by attaching hand rail lineals to hand rail brackets using provided fasteners.



180° Return Loop Installation

1. Align hand rail loop to the hand rail lineal and in proper position to the mounting post. Mark the lineal and cut as necessary. Dry fit and make any necessary adjustments.
2. Assemble components using a straight or adjustable joiner as described in previous instructions.
3. Secure hand rail loop using 2 hand rail brackets (Fig. 13) as described in previous instructions.
4. Finish the hand rail loop installation by adding a hand rail end cap as described in previous instructions.



INSTALLING HAND RAIL

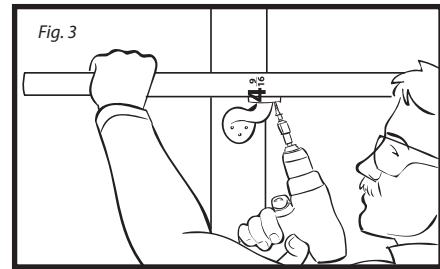
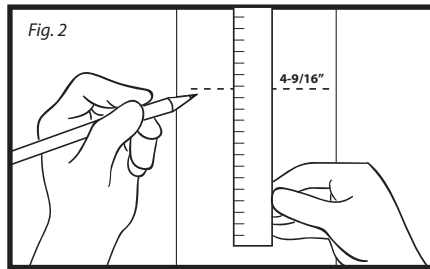
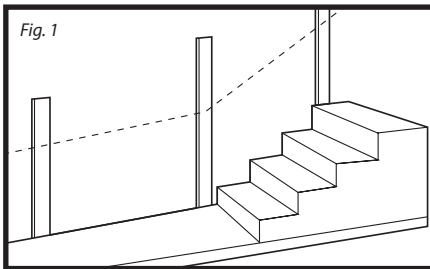
(Continued)

Install Handrail Lineals

1. Measure a distance on the post or other mounting surface $4\frac{9}{16}"$ below the hand rail lay out line and mark that spot (Fig. 2), which will be the bottom edge of the hand rail mounting bracket.
2. Position the bracket on the post or other mounting surface with the bottom edge at the mark scribed in (Fig. 2), and mark the position of the three mounting holes. Set the bracket aside and pre-drill holes (drill bit size determined by fasteners used).
3. Reposition the bracket aligned with the pre-drilled holes and attach to the post or other mounting surface using 3 fasteners as determined by the material to which the bracket is being mounted.
4. With the hand rail lineal positioned as desired on the bracket (Fig. 3), pre-drill attachment holes using a $\frac{13}{64}"$ drill bit. Use fasteners provided to attach the lineal to the bracket.

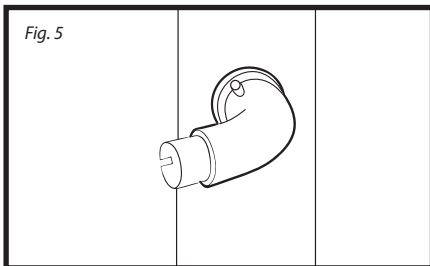
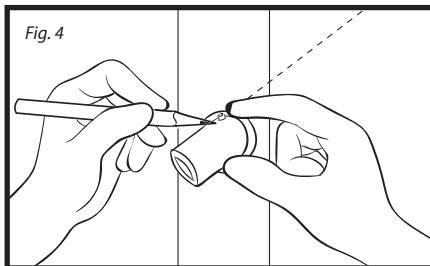
End Cap Installation

End caps are easy to install and give a finished appearance to your hand rail project. Just apply adhesive to the inside of the end cap and install cap over end of hand rail.



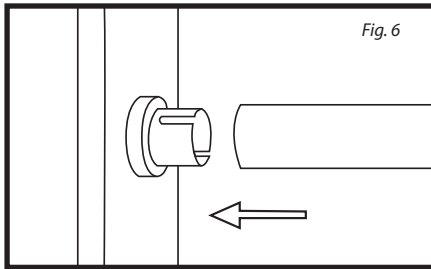
Post Return Installation

1. Position the post return oriented according to the hand rail layout line Fig. 1, and mark fastener hole positions (Fig. 4).
 2. Pre-drill post or other mounting surface and use appropriate fasteners to attach post return.
 3. Dry fit lineal and post return using provided joiner. Make any adjustments necessary (Fig. 5).
 4. Disassemble components, apply aluminum adhesive to joiner and insert into post return. Apply adhesive to other half of joiner and install lineal.
- NOTE: If post returns are used at both ends of the hand rail, complete assembly of post returns and lineal should be made prior to mounting to post.



Straight Wall Return Installation

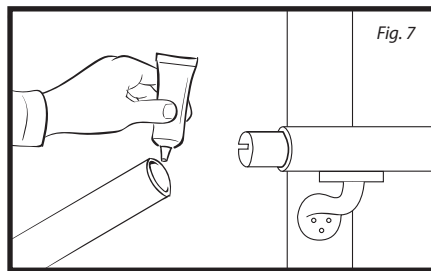
1. Dry-assemble the straight return and lineal, position to determine lineal length, and cut lineal.
2. Double check lineal length.
3. Position straight return and attach using appropriate fasteners.
4. Apply adhesive to straight wall return, and install lineal onto straight wall return. (Fig. 6)



Straight Joiner Installation

IMPORTANT: To ensure integrity of lineal joints, hand rail brackets should be installed at or near all points of connection.

1. Determine hand rail lineal lengths and cut.
2. Apply adhesive and insert joiner halfway into hand rail lineal. (Fig. 7)
3. Secure the first hand rail lineal with fasteners to nearest hand rail bracket. If no bracket is nearby, allow adhesive curing time before installing second lineal.
4. Apply adhesive to second lineal and install onto joiner. Secure second lineal to hand rail bracket or support with clamps. Allow assembly to dry.



Internal Adjustable Joiner Installation

IMPORTANT: To ensure integrity of lineal joints when using internal or adjustable joiners, hand rail brackets should be installed adjacent to connection on both sides.

1. Position hand rail lineals in place, clamp, and mark angle and location of cuts to be made. Reference marks made on both lineals will help ensure correct positioning when re-assembling.
2. With lineals still clamped in position, assemble internal adjustable joiner and hold it up to the angled joint. Duplicate the correct angle and tighten the bolt to lock the joiner at the correct angle. (Fig. 8)
3. Remove and cut lineals, then dry fit again to ensure the angled cuts fit properly. Adjust as necessary. NOTE: The joiner bolt makes a helpful reference point, by aligning cut lineal ends with the bolt's center point.
4. Apply adhesive to interior of miter cut ends, and join the two lineals.
5. Secure hand rail lineals to hand rail brackets. NOTE: Clamp joint firmly in place until adhesive has cured.

