



HAND RAIL™
INSTALLATION INSTRUCTIONS

Endurance®



USING THIS GUIDE

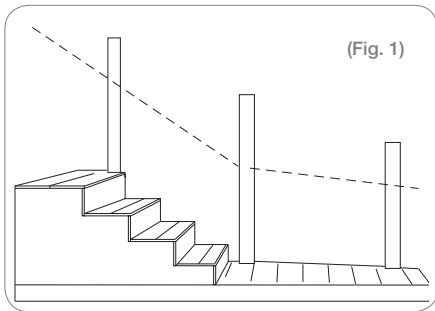
GUIDELINES

1. This guide will be used to show how to install each of the parts in the Hand Rail system. For your convenience, the installation of each part is explained individually.
2. This guide lists part numbers for white Hand Rail components. For black components, simply replace the "W" at the end of each part number with a "B."
3. Various TIPS are included within most sections to help simplify the installation process.
4. Start all Hand Rail installations by laying out and marking the desired height of the top of the Hand Rail on all posts and mounting surfaces (Fig. 1). This Hand Rail layout line will be used in the following steps for mounting all components.

TIPS

1. As stated in the 2009 International Building Code® "1012.2 Height. Hand Rail 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." Please check local building codes as code interpretation may vary by municipality.
2. It is recommended that each of the Hand Rail components be dry fit before final installation to eliminate cutting and gluing errors.
3. When cutting Hand Rail lineals, always cut the vinyl and aluminum together to the same length using a miter saw with a carbide tipped blade with at least 60 teeth.

**WARNING:
ALWAYS WEAR
SAFETY
GOGGLES**



(Fig. 1)

4. When using vinyl or aluminum adhesive, it is important to remove all excess adhesive from the vinyl lineals to maintain a smooth and clean joint.
5. When applying adhesives be sure to apply to inside surfaces only to avoid overflow. Adhesives may damage the PVC outer surfaces.
6. Always clamp joints in place and allow to cure as per the adhesive manufacturer's instructions.

REQUIRED TOOLS

- Drill
- Aluminum Adhesive
- Clamps
- Appropriate Fasteners
- Miter Saw
- Tape Measure
- Vinyl Adhesive

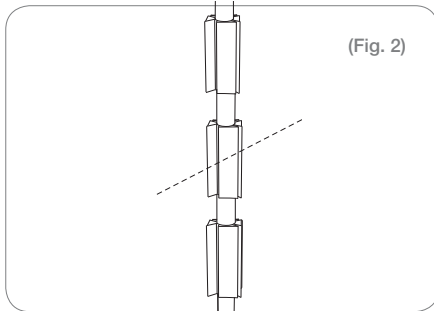
RECOMMENDED ADHESIVES

- Vinyl Bonding:
- Christy's White Hot Vinyl Cement®
- Aluminum Bonding:
- Loctite® Metal/Concrete Epoxy™
 - Gorilla™ Epoxy - Impact Tough®
 - Loctite® Quick Set Epoxy
 - Loctite® Extra Time Epoxy

TIP: Stainless steel fasteners are recommended to prevent future rust streaking.

IMPORTANT

If installing ADA Hand Rail to Endurance structural posts, sufficient blocking must be added at mounting locations to accept Hand Rail mounting hardware. An additional centering extrusion may be purchased through RDI, or the post may be packed-out with other material (Fig. 2).



(Fig. 2)

PARTS AND PIECES

HAND RAIL LINEAL- HR80W, HR104W, HR120W

1. When performing miter cuts on Hand Rail lineals, lay out and clamp all appropriate lineals in place. Make reference marks on each lineal and at each attachment point to ensure that miter cuts are made correctly.

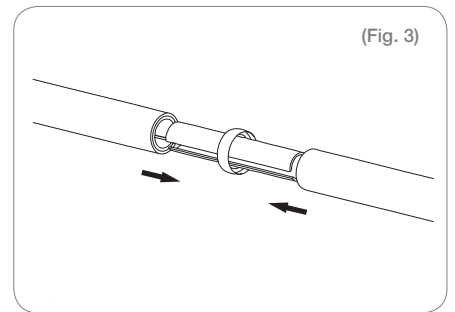
2. Once placement is confirmed, cut lineal at appropriate locations. Adjust accordingly and permanently attach.

JOINT RING- HRJRW

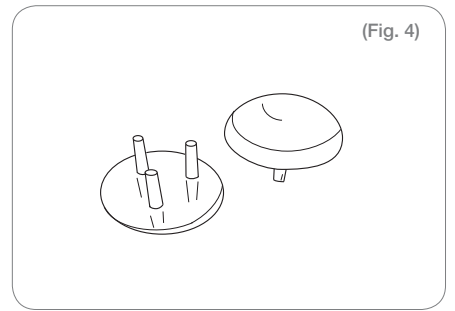
At each straight joint of a Hand Rail installation, a joint ring can be installed to conceal any uneven cuts. Simply apply a dab of vinyl adhesive and insert the joint ring during assembly (Fig. 3).

END CAP- EHECW

At each open end of a Hand Rail installation, an end cap can be installed to provide a clean, finished end. Simply apply a dab of vinyl adhesive to the cap and insert into the end of the Hand Rail (Fig. 4).



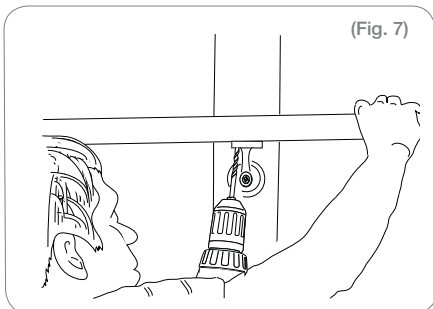
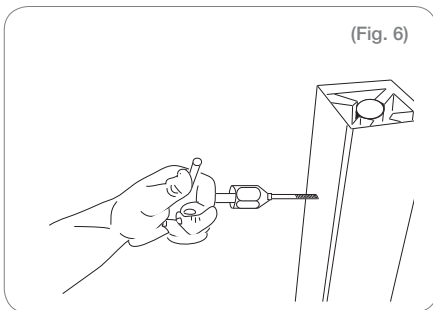
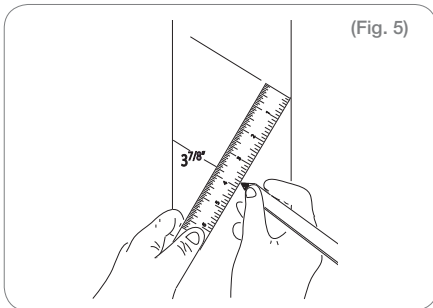
(Fig. 3)



(Fig. 4)

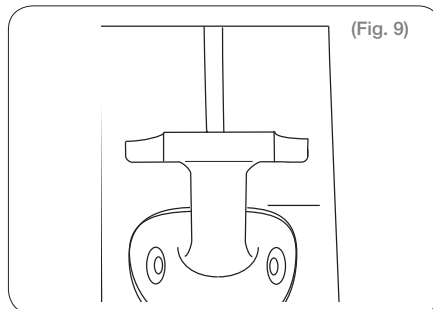
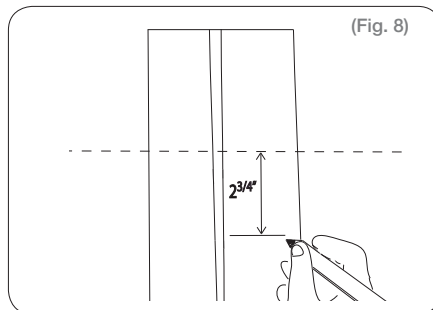
HAND RAIL BRACKET- HRBW

1. Place a mark 3-7/8" below the Hand Rail lay out line to establish placement of the Hand Rail bracket mounting fastener (Fig. 5).
2. Attach bracket to mounting surface using an appropriate fastener. If using an RDI Structural Post, a drill and tap set will be required to attach the bracket to the interior galvanized steel post (Fig. 6).
3. After Hand Rail has been dry fit pre-drill the Hand Rail lineal with a 13/64" drill bit and attach to the bracket using the provided fasteners (Fig. 7).
4. Once installation is complete, snap on the bracket fastener cover. **IMPORTANT: FASTENER COVER CAN NOT BE REMOVED AFTER IT IS INSTALLED;**



INSIDE CORNER BRACKET- HRCW

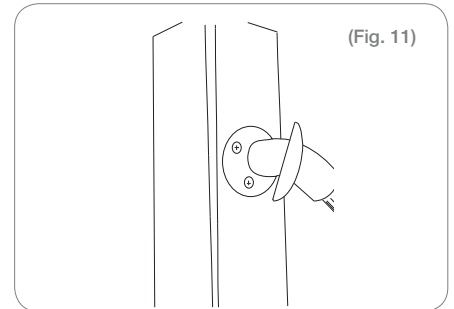
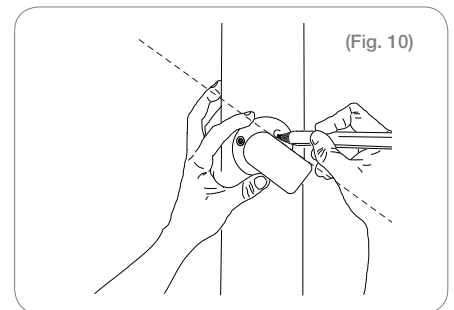
1. Place a mark 2-3/4" below the Hand Rail layout line to establish placement of the Inside Corner Bracket (Fig. 8).
2. Align the top surface of the bracket with the mark made in Step 1 and attach to the mounting surface using appropriate fasteners.
3. Clamp the Hand Rail corner assembly to the inside corner bracket. Using a 13/64" bit, pre-drill and attach the bracket using the provided screws (Fig. 9).



POST RETURN- HRPRW

1. Align the post return according to the Hand Rail layout line and mark attachment hole positions (Fig. 10).
2. Pre-drill and attach post return with 3 fasteners appropriate for the material to which the post return is being mounted.
3. Slide trim cover onto post return but do not snap into place until railing installation is complete (Fig. 11).
4. Insert the provided joiner in the post return and dry fit the lineal into place.
5. After railing installation has been dry fit, disassemble and apply aluminum adhesive and permanently mount the Hand Rail lineal.
6. Align the tabs on the trim cover with the slots on the post return base and snap in place.

TIP: If your Hand Rail is being mounted with a post return at each end, cut lineal to length and assemble before attaching post returns to mounting surface.





STRAIGHT JOINER- HRSJ

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

1. Cut Hand Rail lineals to length.
2. Apply aluminum adhesive and slide the internal joiner half way into the vinyl lineal (Fig. 12).
3. Permanently attach the first Hand Rail lineal to the nearest Hand Rail bracket.

TIP: If the joint is not supported with a bracket, allow enough time for the aluminum adhesive to cure prior to installing the second lineal.

TIP: If preferred, the Hand Rail joint ring can be installed to conceal the joint using a dab of vinyl adhesive before second lineal is installed. Refer to the first page of this guide for more information (Fig. 3).

4. Apply adhesive to the second Hand Rail lineal. Slide Hand Rail lineal onto joiner. Mount in place.

ADJUSTABLE JOINER- HRAJ

NOTE: All adjustable joiners should be supported by a Hand Rail bracket as closely as possible to each side of the joint.

1. Measure the angle of the joint and cut lineals accordingly. Dry fit both Hand Rail lineals, making sure that the miter cuts match properly (Fig. 13).

TIP: While lineals are in place, reference marks can be made on the lineals and mounting hardware, to ensure proper alignment during final installation.

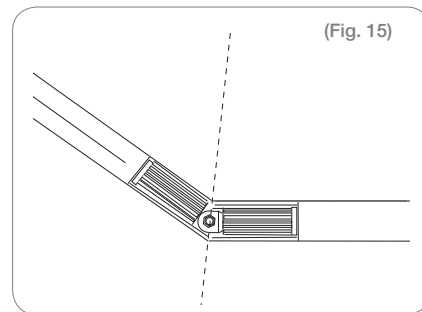
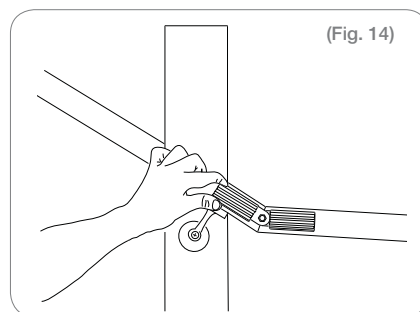
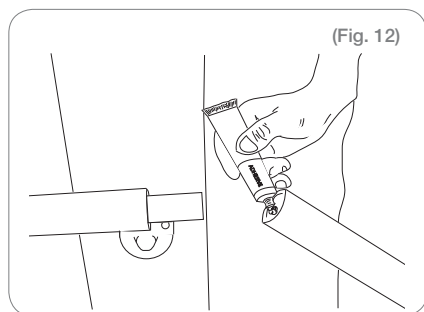
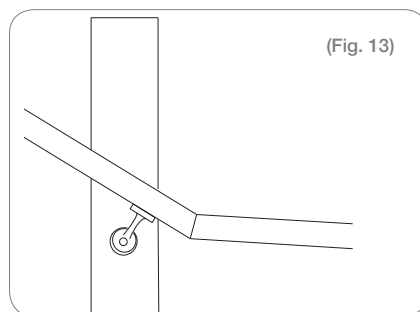
2. Position the adjustable joiner on the outside of the Hand Rail and tighten the bolt at the appropriate angle (Fig. 14).

3. Dry fit the assembly and adjust if necessary.

TIP: Use the joiner bolt as a reference to keep the miter cuts in proper alignment, aligning the center of the bolt with the miter cut (Fig. 15).

4. Apply aluminum adhesive and assemble the joint.
5. Permanently attach the Hand Rail lineals to the mounting support.

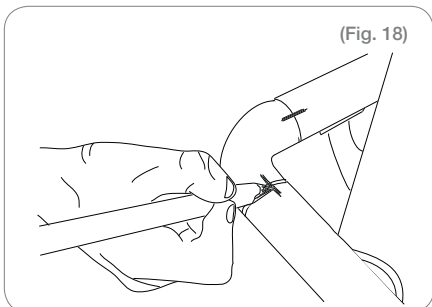
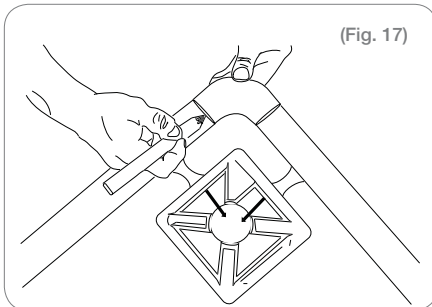
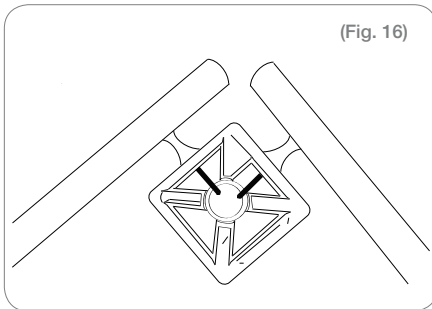
NOTE: Joint should be clamped in place until adhesive has had time to cure.





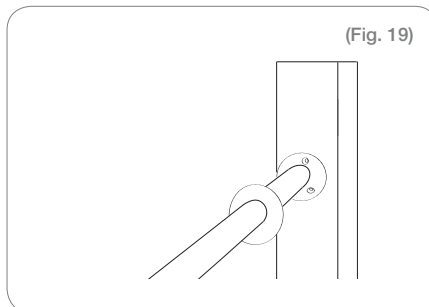
CORNER- HRCW

1. Dry fit the two Hand Rail lineals. The Hand Rail lineals to be joined should extend far enough to allow for scribing and final cutting (Fig. 16).
2. Place the corner in line with each lineal. Scribe and cut the lineals (Fig. 17).
3. Insert the joiners (included with HRCW) into the corner. Dry fit the assembled corner with the lineals. If all components are aligned properly, make reference marks (Fig. 18).
4. Disassemble the corner. Apply aluminum adhesive to the inside of the corner and the inside of the lineals. Reassemble the components using the reference marks from Step 3 as a guide. Clamp in place and allow to cure.
5. Permanently attach the lineals to the mounting brackets.



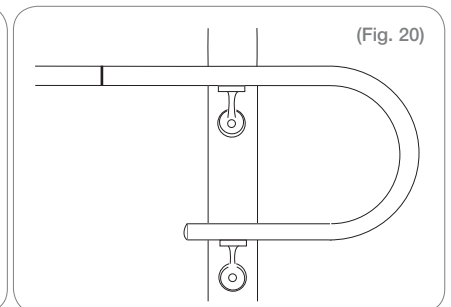
STRAIGHT RETURN- HRSRW

1. Insert the straight return into the lineal, dry fit to determine the finished length, and cut to fit.
2. Dry fit and check length.
3. Slide trim cover over lineal (Fig. 19). IT CAN NOT BE DONE AFTER INSTALLATION.
4. Apply aluminum adhesive and insert the straight return into the Hand Rail lineal.
5. Attach the assembly to the mounting surface using the appropriate fasteners and snap on the trim cover by aligning the tabs on the trim cover with the slots on the straight return base.



HAND RAIL LOOP- HRHLW

1. Position Hand Rail loop in desired location. Dry fit the loop in place to make any necessary marks for cutting.
2. Once cuts have been completed and loop is ready to install, attach to Hand Rail system using a straight or adjustable joiner following the instructions outlined in this guide (Fig. 12, 13, 14, 15).
3. Attach Hand Rail loop to the mounting surface using 2 Hand Rail brackets, Fig. 20, following the instructions in this guide (Fig. 5, 6, 7).
4. To complete the installation, mount a Hand Rail end cap to the end of the Hand Rail loop following the instructions in this guide.





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Before beginning any Continuous Hand Rail installation, please check all local building codes and requirements that may apply to your application.

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