



DESIGNER SERIES Welded Panel System

Alumirail Designer Series Installation Instructions

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Hardware Available:

- 2" x # 14 Rail Mounting Lag Screws c/w Washers
- 3" x # 14 Rail Mounting Lag Screws c/w Washers
- 3" x # 14 Rail Mounting Lag Screws c/w Washers (Stainless Steel)
- 1" x #10 Rail/Receiver Self Drilling Fastening Screws (Stainless Steel)
- 1" x #14 Receiver/Post Self Drilling Fastening Screws
- #12 - #14 Plastic Anchors

Tools Needed:

- ✓ 3/16" Metal Drill Bit
- ✓ 3/8" Nut Driver Bit
- ✓ #2 Robertson Bit
- ✓ Drill or Cordless Drill/Screw Gun
- ✓ Tape Measure
- ✓ Level
- ✓ Grinder w/ cut-off wheel, Sawzall w/ metal blade, Miter Saw w/ Non Ferrous carbide tooth blade

Additional tools needed for mounting to concrete surface:

- ✓ Rotary Hammer/Hammer Drill
- ✓ 5/16 Masonry Drill Bit

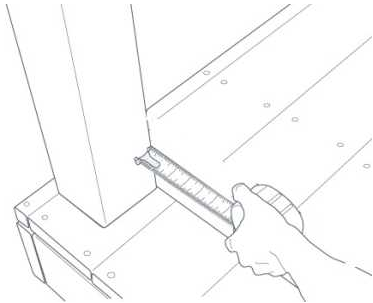
INSTALLATION USING ALUMIRAIL POSTS WITH WELDED RECEIVERS

Step 1:

Determine the location of the End Post (WP1)

Locate the End Post approximately 2" from the wall (**FIG. 1**) and line up the two outside holes of the post mounting plate so they are centered over the deck joist (**FIG. 2**). Be sure to account for decking overhang and fascia thickness when determining the location of the post from the outer edge of the deck. Depending on the type of decking, it may be necessary to pre-drill the holes in the decking to prevent cracking or splitting.

(FIG. 1)



(FIG. 2)



Securing the End Post to a wood or composite deck surface

Use four 3" x #14 Stainless Steel lag screws with washers (F3). Add blocking to the underside of the deck surface as necessary to assure proper support for the lag screw.

Securing the End Post to a concrete surface

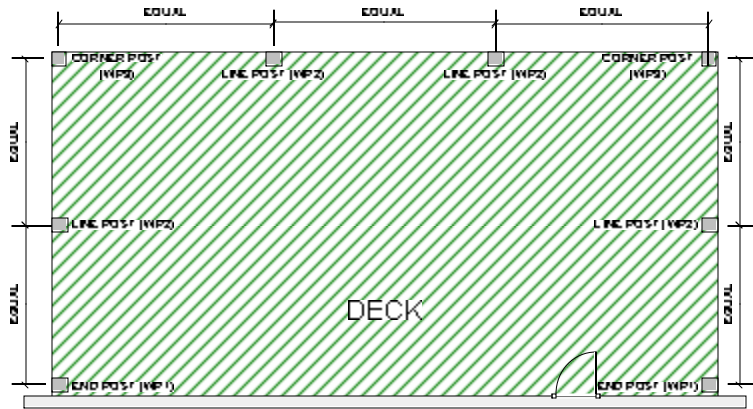
Using the post mounting plate as a template, drill four holes a minimum of 3 1/4" deep into the concrete surface using a 5/16" masonry bit. Remove the post and insert a #12 - #14 Plastic Anchor (F6) into each hole until the top of each anchor is flush with the mounting surface. Use four 3" x #14 lag screws with washers (F2) to secure the post to the surface.

Step 2:

Determine additional Post locations

Determine where Line Posts (WP2), Corner Posts (WP3), Angle Posts (WP4) and End Posts (WP1) will be located (**FIG. 3**). Wherever possible, posts should be spaced evenly and placed the same distance from the edge of the deck as the End Post in Step 1.

(FIG. 3)



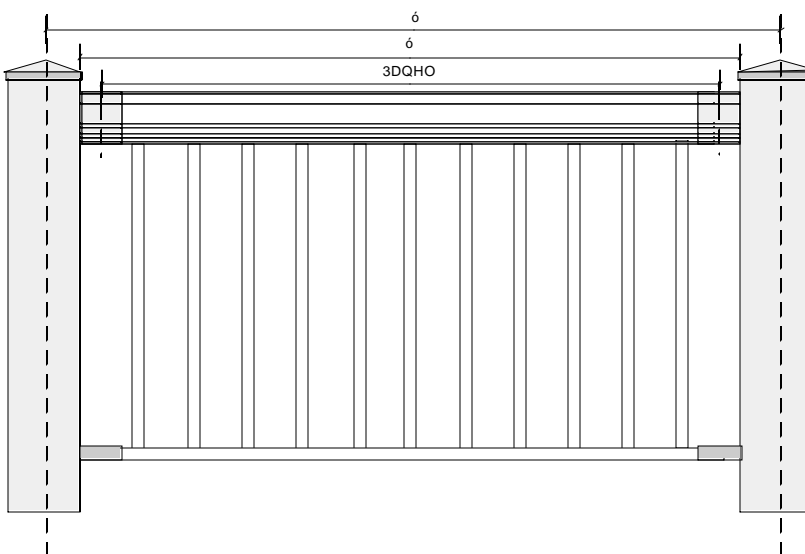
Anchor remaining posts in place using a single fastener at this time. Posts will be secured after welded panels are set in place.

Step 3:

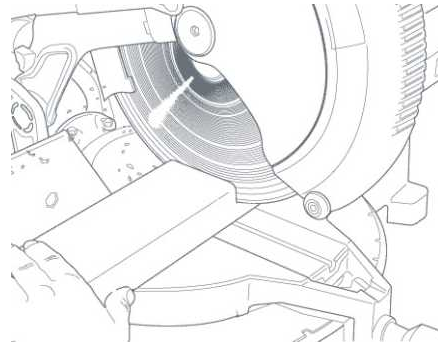
Trimming the Rail Panels (FIG. 4)

To determine if the Rail Panels need to be trimmed, measure between the Posts at the base (make sure posts are relatively plumb). If the distance between the Posts is 1"-2" greater than the length of the Rail Panel, no trimming is necessary. If the distance between the posts is less than 1" greater than the rail panel, trimming will be required. The length of a rail panel should always be at least 1" less than the distance between Posts to allow for spacing next to the welds inside the welded rail receiver, but not more than 2" less than the distance between posts. (You must have one inch minimum of top rail and bottom channel material inside of the welded receiver to ensure minimum strength and proper integrity of the rail system. When trimming Rail Panels it is recommended that an equal amount is trimmed from both ends of the Panel in order to maintain symmetry throughout the handrail.

(FIG. 4)



Example: Distance between posts is 97 1/4". No trimming of an 8' Rail Panel is required.
If the distance between the posts is 93", an 8' Rail Panel should be trimmed to 92".
Remove 2" from the Top Rail and Lower Channel of each side of the Rail Panel.



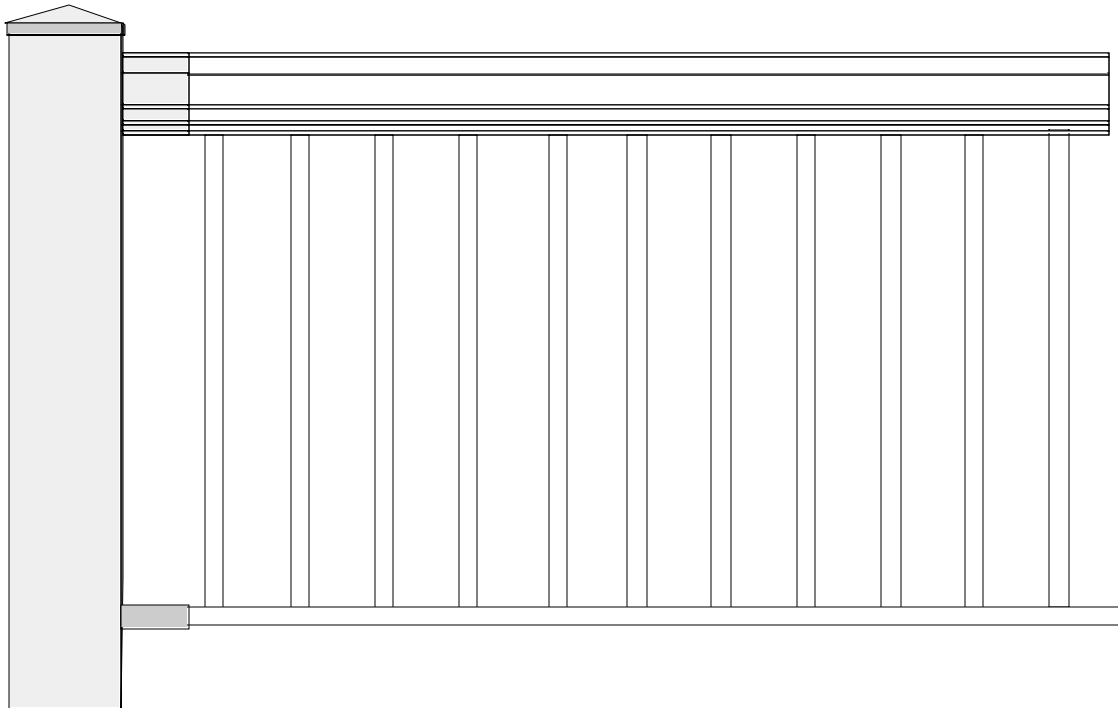
NOTE: The rail is most easily trimmed with a good, non ferrous carbide tipped blade and a miter saw. The rail may be trimmed with a grinder or any other tool capable of cutting the aluminum material. The cut does not have to be perfect as the cut edge is hidden in the welded receiver.

Step 4:

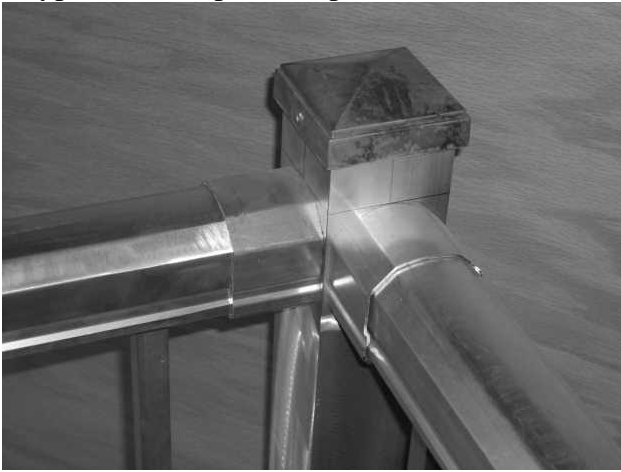
Rail Panel Installation:

Begin Rail Panel installation at the End Post (Step 1). **(FIG. 5)** Slide the Rail Panel into the receivers of the End Post. A 3 ½” block may be used to support the other end of the Rail Panel during this process. Slide the next Post over the other end of the Rail Panel and secure to the deck surface with a single lag screw. Repeat this process until all Posts and Rail Panels are set in place.

(FIG. 5)



(Typical corner post and panel installation)

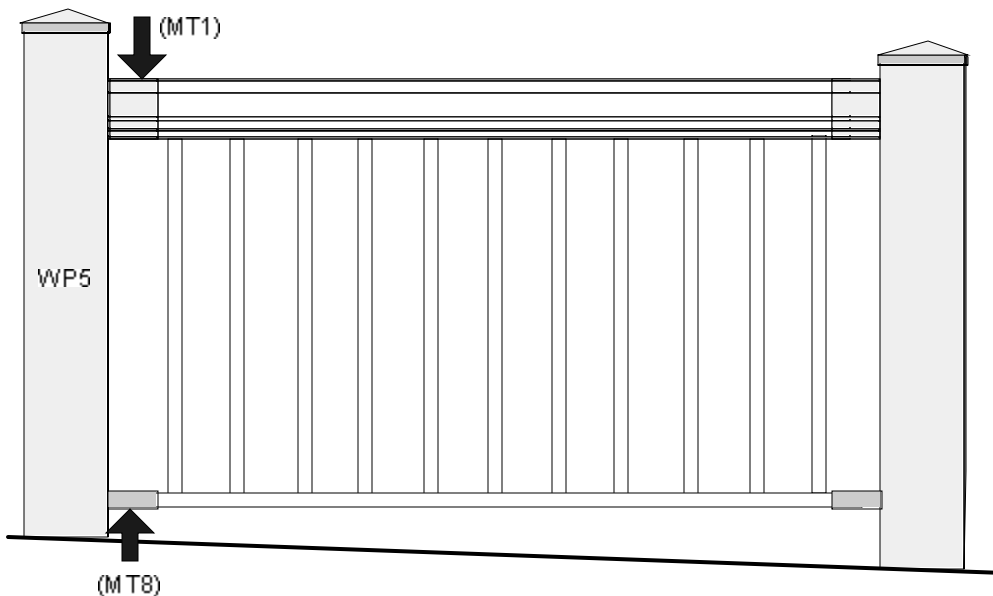


Before securing the Rail Panels to the Posts, plumb the Posts and secure to the deck surface. Although the Rail Panels can be racked slightly, extreme changes in the contour of the deck surface may require that shims be placed under the Post mounting plates.

Deck surfaces with a slope

Some decks may slope away from an exterior wall. To accommodate such applications it is recommended that a Blank Post (WP5), Wall/Post Mount Top Rail Receiver (MT1) and Wall/Post Mount Lower Channel Receiver (MT8) be used in the place of an End Post. **(FIG. 6)** This will allow the Rail Panel to absorb up to 1" of slope to maintain level while continuing to meet minimum height requirements of 36".

(FIG. 6)



Securing Rail Panels to Posts

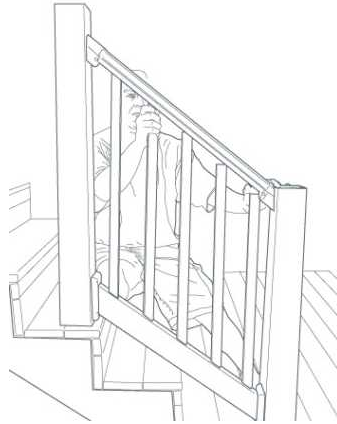
Once all Posts are secured to the deck surface, fasten the Top Rail and Lower Channel to the Post Receiver using a 1" x #10 Rail/Receiver Self Drilling Fastening Screw (F4).

Step 5:

Installing Stair Rail Panels

Place the Stair Rail Panel on the treads and check that pickets are plumb. **(FIG. 7)** If pickets are slightly out of plumb, the Stair Rail Panel may be racked up to 2 degrees either direction.

(FIG. 7)



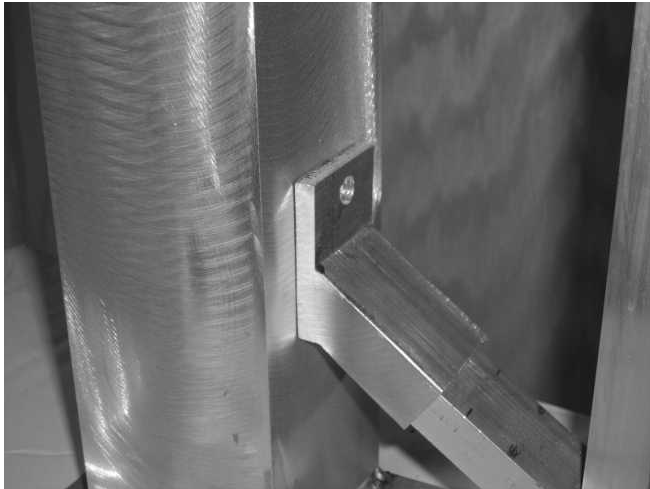
A slow constant pressure should be used when racking the Stair Rail Panel. Position the Blank Newel Post (WP6) at the top of the stairs. Slide the upper Top Rail Receiver (MT11 or MT15) over the top rail and the Lower Channel Receiver (MT13 or MT17) over the bottom rail of the Stair Rail Panel. **(FIG. 8)**. Align the Stair Rail Panel so that the height from the nose of the stair to the top of the rail is 34"-38" (Check local building codes for variations). Fasten the Top Rail Receiver using a single 1" x #14 Receiver/Post Self Drilling Screw (F5).

(FIG. 8)



Align the Lower Channel Receiver with the center of the Newel Post and fasten with a 1" x #14 Receiver/Post Self Drilling Screw (F5). **(FIG 8a)** Secure the Top Rail Receiver with a second 1" x #14 Receiver/Post Self Drilling Screw (F5). Position the lower Blank Post, slide the lower Top Rail Receiver (MT12 or MT16) over the top rail and the Lower Channel Receiver (MT14 or MT18) over the bottom rail of the Stair Rail Panel. Align the Stair Rail Panel so that the height from the nose of the stair to the top of the rail is 34"-38" (Check local building codes for variations). Fasten the Top Rail Receiver using a single 1" x #14 Receiver/Post Self Drilling Screw (F5). Secure newel posts. If necessary, the Stair Rail Panel may be trimmed as defined in Step 3

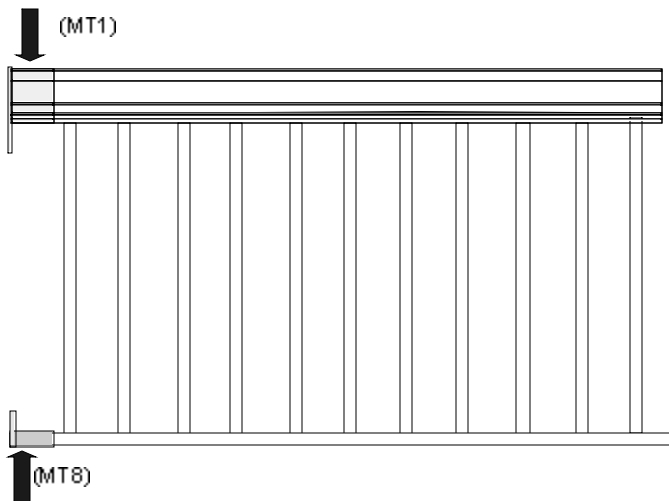
(FIG 8a)



INSTALLATION WHEN MOUNTING TO WALLS, EXISTING POSTS OR COLUMNS

The Rail Panels may be mounted to a wall, existing post or column using the Wall/Post Mount Top Rail Receiver (MT1) and Lower Channel Receiver (MT8). **(FIG. 9).**

(FIG. 9)



When mounting to a wall, slide the Top Rail Receiver over the top rail and the Lower Channel Receiver over the end of the Rail Panel. Support the Rail Panel using 3 ½" blocks and fasten the Top Rail Receiver to the wall using the appropriate fastener. Plumb the Rail Panel and secure the Lower Channel Receiver to the wall using the appropriate fastener. Secure the Top Rail Receiver with a second fastener.

When mounting between a wall and an existing post or column, or between two posts or columns, slide the Top Rail and Lower Channel Receivers over both ends of the Rail Panel. Follow the steps for wall mounting at both ends of the Rail Panel. If the deck is sloped, the Rail Panel may be supported by a block as short as 2 ½" to compensate and level the Rail Panel.

NOTE: When mounting the Rail Panel to a hollow structure, be sure adequate blocking is in place for rail fasteners and proper rail support.