

# Assembly of *Step* Railing

SERIES  
**6E**

## Contents of Series 6E:

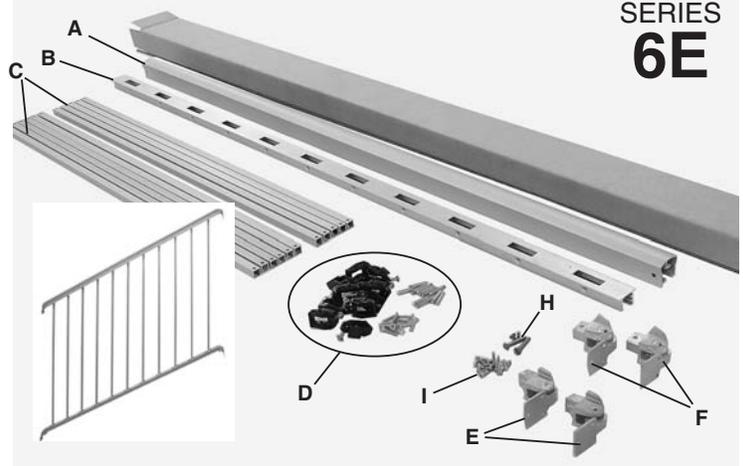
### 4 ft. Railing Package

- A-(1) Top Rail
- B-(1) Bottom Rail
- C-(11) Pickets
- D-(11) Kit - Picket Hardware
- E-(2) Bottom Rail Swivel Brkts.
- F-(2) Top Rail Swivel Brackets
- G-(11) Picket Screws, Flat.Hd.
- H-(4) Binding Bolts  
(2)1-1/4" & (2)15/16" Lg.
- I-(12) Self-Tapping Screws

## Contents of Series 6E:

### 6 ft. Railing Package

- A-(1) Top Rail
- B-(1) Bottom Rail
- C-(18) Pickets
- D-(18) Kit - Picket Hardware
- E-(2) Bottom Rail Swivel Brkts.
- F-(2) Top Rail Swivel Brackets
- G-(18) Picket Screws-Flat Hd.
- H-(4) Binding Bolts  
(2)1-1/4" & (2)15/16" Lg.
- I-(12) Self-Tapping Screws



**CAUTION** Before performing any work, be sure to refer to and follow all standard industry safety precautions. In addition, Superior Aluminum Products, Inc. recommends that all installers wear appropriate protective items, such as safety glasses, work gloves, and steel toed shoes, whenever performing work on Superior Aluminum's Products.

**Tools Required:** Tape Measure, Battery Operated Drill with adjustable torque clutch, Phillips and Flathead Screwdriver Bits, 1/8" and 13/64" twist drill Bits, (Hacksaw or Cutoff Saw-if required) Hammer, Small Square and Pencil.

## Section Assembly



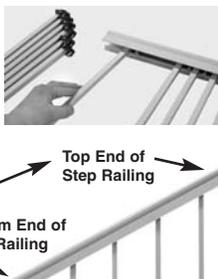
**Step 1.** Position bottom rail against top rail and align ends so they are flush with each other. With a pencil draw a line on top rail, just above each hole of the bottom rail.



Lightly drive pin in so it is centered in place. Follow same procedure on all pickets.

**Step 3.** Locate and slide all pickets into top rail.

Make sure that the factory installed #8 x 3/4" lg. stainless steel screw on the picket swivel is located towards the top end of step railing as each picket is slid in place.



**Step 4.** Center each picket to pencil mark on top rail. **Do Not** tighten picket swivel stainless steel screws at this time.



**Step 5.** Locate end picket in end rectangular hole in bottom rail. Drop in aluminum flathead phillips picket screw when picket hole aligns with bottom rail hole. Turn screw into bottom rail. **Do Not** tighten.



**Step 6.** With end picket screw in place, ease the next picket in rectangular slot (gradually one at a time) until all pickets are in place.



**Step 7.** After the last picket is in place, insert and hand tighten the end picket screw to keep assembly together.



**Step 8.** Insert, align and hand turn all picket screws in bottom rails.



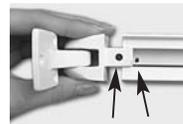
**Step 9.** With all picket screws in place, tighten all screws. **Do Not** over-tighten. Start with lowest clutch torque setting, then gradually increase for proper torque.



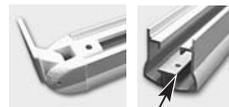
**Step 10.** With a battery operated adjustable clutch drill, turn stainless steel screw so point of screw bears against flat inside surface of top rail. The reason for this is to hold the picket in place at the pencil marked line on the top rail. Set the drill clutch at a low torque setting then gradually increase for proper torque to prevent over tightening of component parts.

**Important:** It is recommended that the required length of step rail (cut to fit, if required) be completed prior to starting Step 11. Refer to section titled "Shortening a Railing Section" and "Determining Step Railing Length". After railing is cut to required length, proceed to "Step 11" for installation of swivel brackets.

**Step 11.** Insert top rail swivel bracket into top rail.



**Step 12.** Align pre-drilled hole in swivel bracket with pre-drilled hole on the interior channel of top rail.



**NOTE:** It may be necessary to drill a new hole in (shortened) top rail. Use the pre-drilled hole in matching cut-off end as a hole location guide. Drill the new hole with an 1/8" diameter drill bit.

Top rail interior channel



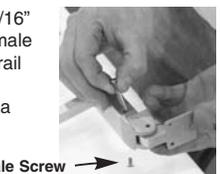
**Step 13.** Insert a 1-1/4" long, self-tapping screw and tighten with screwdriver to secure assembly together. Follow the same procedure on opposite end of top rail.



**Step 14.** Insert bottom rail swivel bracket into bottom rail. **Note:** If railing section was shortened it will be necessary to drill a new hole in the bottom rail. Use the cut off section as a guide for the new hole location.



**Step 15.** Use a 13/64" diameter drill to align holes in bottom swivel bracket to holes in bottom rail. Insert a 15/16" long, Phillips truss head #8 female binder bolt through the bottom rail and swivel bracket. Secure the assembly together by inserting a male screw into binder bolt.



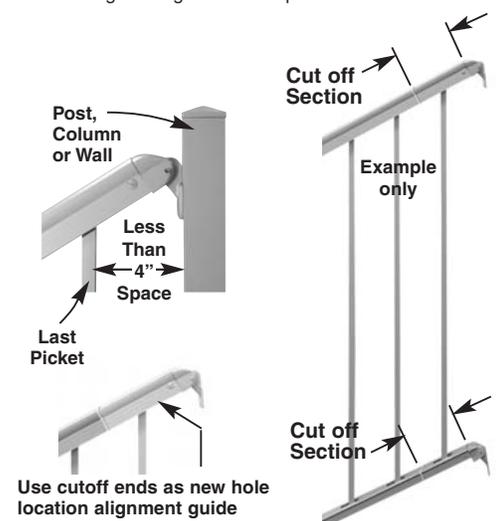
Male Screw → I

## Shortening a Railing Section (If Required)

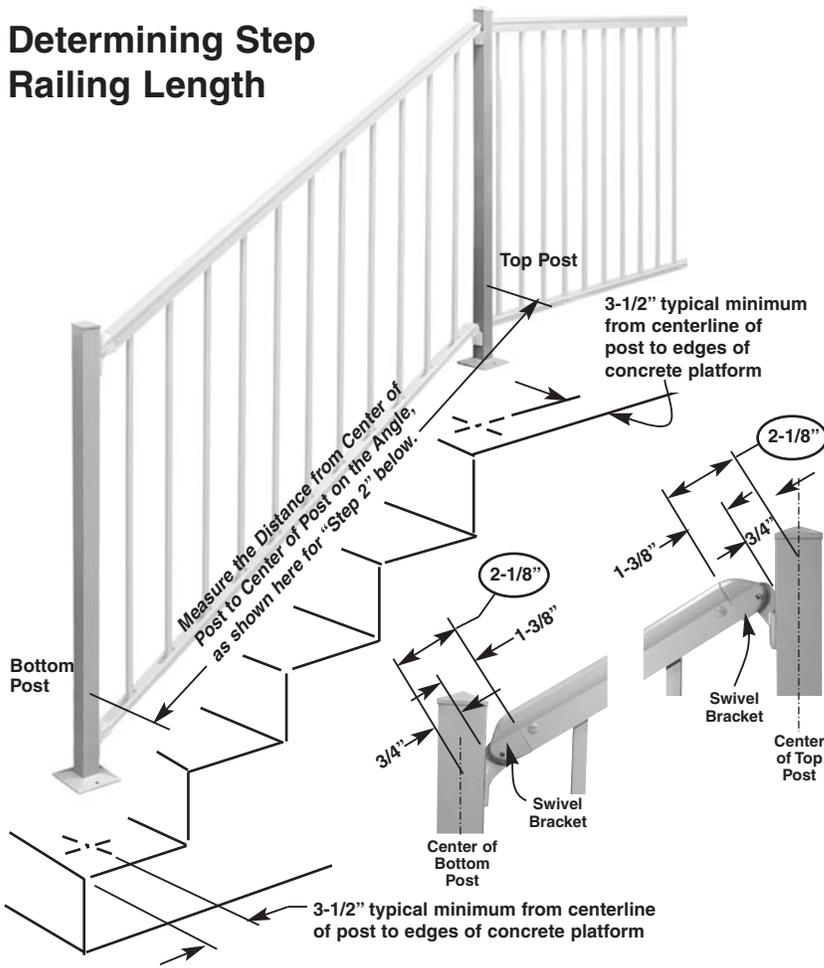
### Be sure to wear Safety Glasses

When shortening a step railing section, it is imperative that the gap between last picket and post is less than 4". Refer to section titled "Determining Step Railing Length" on opposite side of sheet, when measuring for required railing length. If railing shortening is required, avoid cutting (if possible) in rectangular slot on bottom rail. To shorten railing use a hacksaw or a cut-off saw. Remove any burrs from sawcut.

**Important:** **Do Not** discard cut-off ends, since the pre-drilled hole locations can be used as a (new hole) location alignment guide for "Step" 12 and 14.



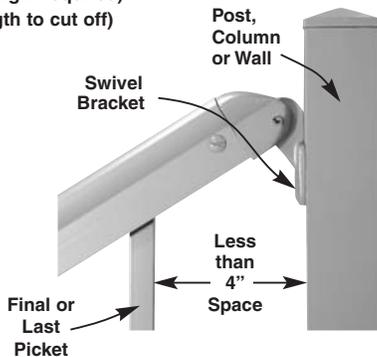
# Determining Step Railing Length



**Step 1.** As shown above, set top post and bottom post an equal distance back on steps.  
**Step 2.** Measure the distance from center of top post to center of bottom post on the angle.  
**Step 3.** Deduct (subtract) 4-1/4" from the measured distance taken at Step 2.  
**Note:** The 4-1/4" represents the 2-1/8" required at each railing end, as shown above.  
**For Example:** If measured distance from center of top post to center of bottom post is 68", deduct 4-1/4" from 68", (68" - 4-1/4" = 63-3/4").  
 The total cut length from a 6 ft. (72" lg.) step railing section should be 63-3/4".

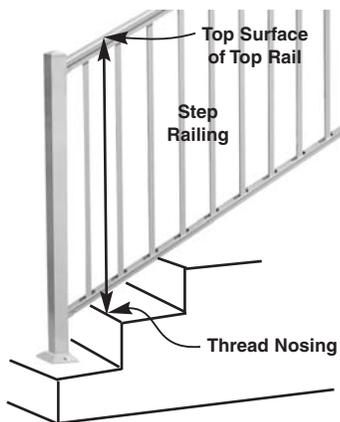
**Example:** 72" (6 foot step railing section)  
 - 63-3/4" (railing length required)  
 = 8-1/4" (total length to cut off)

**NOTE:** To meet Code Requirements, it is imperative when trimming rail between the final picket and the swivel bracket (see illustration at right), that there be less than a 4" space.



# Determining Step Railing Height

The hand step railing height measured above stair thread nosings shall not be less than 34" and not more than 38" to top of top rail surface. **CHECK APPLICABLE LOCAL, STATE AND FEDERAL BUILDING CODES FOR SPECIFIC HEIGHT REQUIREMENTS.**



# To Attach Railing To Post

**Step 1.** Locate the railing against the post (at the required railing height). Using holes in swivel bracket as a template, mark each mounting hole location. Mark the hole locations at top, bottom and on each rail section end. See "Note" below.



**Note:** Before pencil marking swivel bracket holes on post, check that post base mounting holes are facing in opposite directions to railing sections as shown in photo at left. The reason for this is that it is easier to install post base mounting bolts. Disregard this "Note" for railing corner post.



**Step 2.** Drill 1/8" holes in post for mounting location of top and bottom rails.



**Step 3.** To secure the swivel bracket to the post use (3) #8 x 1/2" stainless steel self-tapping screws (furnished) for each swivel bracket. Follow same procedure for the remaining three rail section ends.

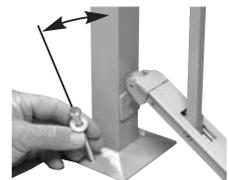
**Installation Note:** Note that a 6" shaft extension fitted to the phillips screwdriver bit aids in the job and helps to prevent scratching the paint.



**Step 4.** Position assembled posts and railing onto final mounting location. Use the 2 post base holes as a template and mark mounting holes on platform or floor surface. **Note that the centerline of the post must be a minimum of 3-1/2" from outer edges of concrete platform.**



**Step 5.** The hole to be drilled into the mounting platform should be angled, so it is approximately perpendicular to, (or 90 degrees to) the angled, sloped post base. The diameter of the fastener used must be a minimum of 5/16". The exposed fastener and washer should be stainless steel. Two drilled holes (one on opposite sides) are required for each post. **CHECK APPLICABLE STATE, LOCAL, AND FEDERAL BUILDING CODES FOR SPECIFIC REQUIREMENTS FOR POST BASE MOUNTING.**

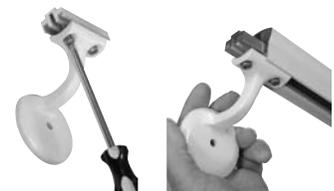


## Optional Scrolls



Snap onto picket. Secure with aluminum screws or aluminum rivets

## Hand Rail System



## Wall Bracket for Handrail

Loosely assemble the hand rail bracket parts, then slide into handrail. When it is properly positioned, tighten both screws to secure wall bracket in place.

## End Knob



Insert end knob into top hand rail, then insert screw into end knob. Tighten screw to secure end knob in place.

## L.H. and R.H. Wall Returns



To secure wall returns in place turn screw until it bottoms out against plate in handrail.