



Installation Instructions

Railing Wood Post Insert Installation

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Railing Instructions

METAL POST INSERT – BRACKETED WOOD INSTALLATION INSTRUCTIONS

Important

Local Building Codes require that railing systems meet specific performance requirements. Contact your local building official to insure your installation meets or exceeds local requirements.

Please read the entire railing installation instruction prior to actual installation. Performance of the railing system is dependent on the proper installation of the railing components. **Failure to follow the installation instructions will VOID any warranty on the product** and could result in bodily harm or even death. While our products are warranted, this warranty does not cover product installation. If your installation is different than what is shown, please contact the Engineering Services Department for assistance.

Take time and review the parts and packing list. This can save time and money when laying the job out. Check the parts against the job layout to be sure all parts will fit as planned. Job changes or job modifications may require changes to the railing system. Plan all modifications ahead of time to help eliminate any confusion during time of installation.

Any galvanized component, if cut or marred, must be regalvanized to prevent rusting.
All fasteners must meet local code requirements.

Tools Needed for Installation

- Chop Saw • Circular Saw • Power Drill • Power Screwdriver • Measuring Tape • Open End Wrench
- Hammer • Channel Locks • Level • Shim stock or washers • String • Pencil

Metal Post Insert Installation

- 1.) Layout the post locations on the wood joist. Determine the center spacing of the post and mark these locations. The angle bracket on the metal post insert must be secured on both sides. The joist may have to be boxed to provide the structural support for the bracket. Take the measurements for the wood box, cut the lengths required, and position between joist to check fit. **(Do not nail in place)**. Using either the template or the metal insert bracket as a gage, mark the location of the bolt holes.

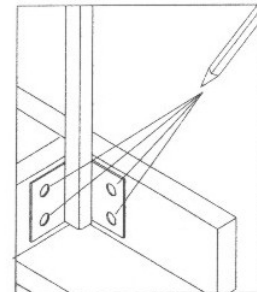


Figure 1

- 2.) Remove the pieces and drill 1/2" diameter holes at the locations.

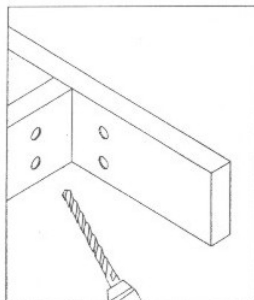


Figure 2

- 3.) Nail the box pieces securely to the wood joist. **The 3/8" bolts may have to be installed in the drilled holes before nailing in place. (Do not tighten).**

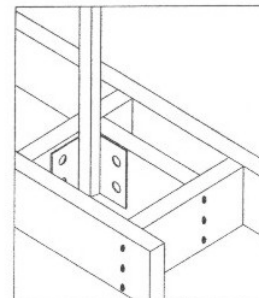


Figure 3

4.) Plumb and square each post insert before tightening the bolts. If not plumb, use washers or shims to position. Tighten all 4 bolts. Again check to see that the post inserts are plumb and square.

5.) Turn a metal spacer plate so that the opening in the center will slide over the 1-1/2" metal tube and down past the weld (one direction will stop on the weld) and rest at the bottom of the tube (Figure 4). Mount the plate 1/2" above the decking with predrilled hole through the plate bend and the post. Secure with self-tapping screw. (See Figure 12 for drill and screw sizes)

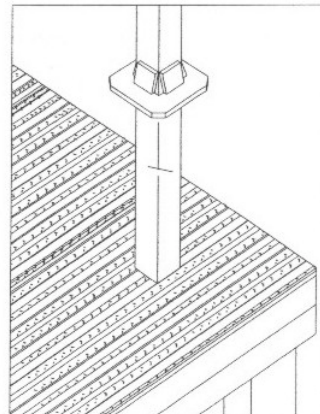


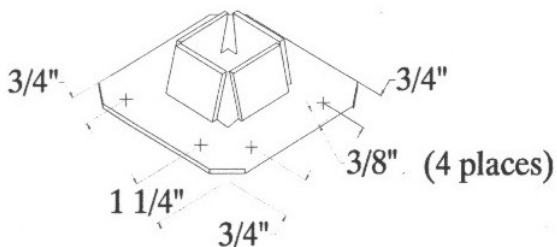
Figure 4

5A.) Take a second metal spacer and pre-drill holes with a 1/8" drill to accommodate screws to attach wood backing. **Corner posts, end posts and line posts mount differently.** See Figures 5, 6, and 7.

• Corner post

Pre-drill 2 holes on adjacent sides.
Locate holes as in figure 6.

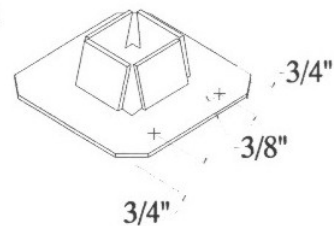
Figure 6



• End post

Pre-drill 2 holes on one side of plate. Locate holes as in figure 5.

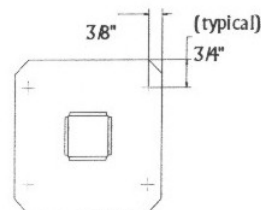
Figure 5



• Line Post

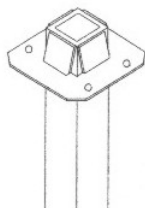
Pre-drill 2 holes on opposite sides.
Locate holes as in Figure 7.

Figure 7



6.) Place the pre-drilled metal spacer plate over the top of the 1 1/2" tube with the center bends facing upward. Slide the plate down until the edges of the plate are flush with the top edge of the tube (Figure 8).

Figure 8



7.) Measure the distance between the top of the bottom plate and the bottom of the top plate. Cut 1" x 4" (Actual 3/4" x 3-1/2") treated wood for backing. Fasten wood as in Figures 9, 10 and 11. Leave the bottom loose to accommodate sleeving the post mount after the backing is in place.

• Line Post

(2) Treated wood bracket backings.
(Figure 10)

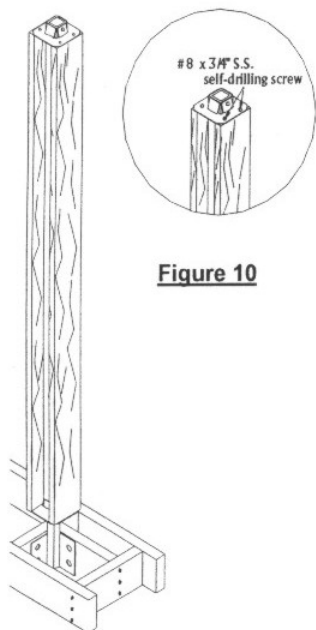


Figure 10

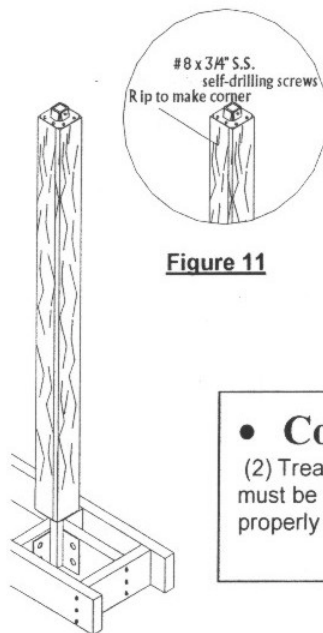


Figure 11

• End post

(1) Treated wood bracket backing.
(Figure 9)

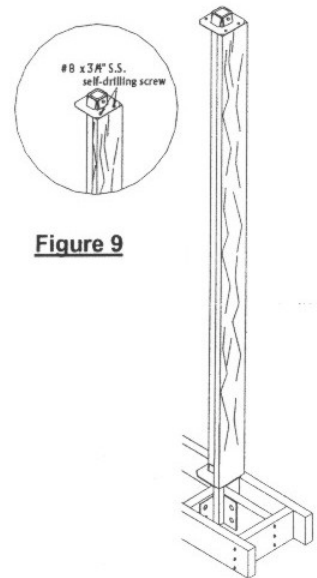


Figure 9

• Corner post

(2) Treated wood bracket backings, one (1) must be ripped to approximately 2-3/4" to mate properly at the corner. (Figure 11)

8.) Locate a position approximately 5/8" from the top of center bend. Center punch, then pre-drill (1/8" drill) through the plate and the tube. Fasten plate to the tube as in Figure 12.

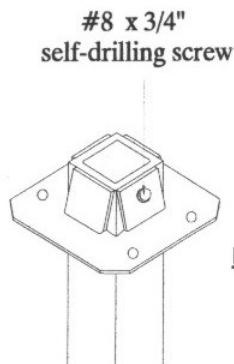
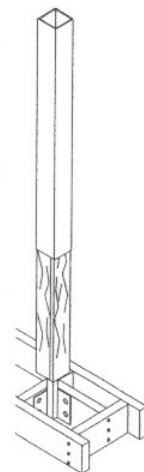


Figure 12

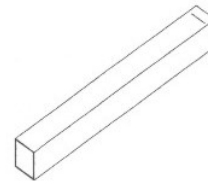
Figure 13



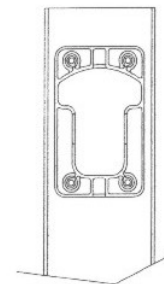
9.) After the bracket backing is in place, a 4" post profile will slide over the outside of the metal post insert and wood. See Figure 13.

Bracketed Railing System Installation

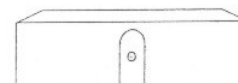
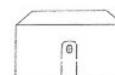
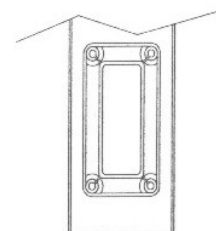
- 1.) After the deck is down, the wood mounts are in place and sleeved, start at an end post and draw a light mark at 36 $\frac{3}{4}$ " from the finished floor surface. This mark will locate the top of the top bracket.
- Check floor or finished surface for levelness. Substructure must be level for pleasing appearance. **The top rail should install at 36" above finished surface and the bottom rail should not allow a 2" sphere to pass under the bottom rail. Check with a local code official for specific requirements and adjust installation to accommodate.**
 - Remove the post sleeve and, to avoid marring, place on clean, smooth surface with locator mark, up (Figure 13). Line the bracket on the mark and center on the post. Scribe through the bracket to mark the screw holes onto the post surface.
 - Measure approximately 25 $\frac{11}{16}$ " from the bottom of the top bracket to locate the top of the bottom bracket (**Remember the 2" sphere. Check to maintain less than 2" space**).
 - Before drilling, go to the opposite end post or corner post in the run and repeat previous steps, then mark 36 $\frac{3}{4}$ " on the two end posts and pull a string the length of the run from end post to end post or corner post.
 - Check string's height at each post insert to detect any extreme variations. Repair substructure or adjust installation to minimize.
 - Drill bracket holes with $\frac{1}{4}$ " drill, re-sleeve post insert, and install trim ring. Measure $\frac{7}{16}$ " in the bottom slot of a top bracket and drill a $\frac{13}{64}$ " hole.
 - Locate the drill spots in the side slots of a bottom bracket and drill $\frac{13}{64}$ " holes. Mount the top and bottom brackets on the starter end post using 4, #10 x 2" stainless screws in each bracket. Use care not to over tighten.



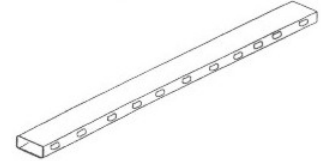
Top Bracket
Example: T-Rail



Bottom Bracket



- 2.) Check rails for metal rail inserts. Measure the distance between the end post and first line post. Using the appropriate cutting tools and safety practices, cut the rail and rail insert to fit. **Cut half the excess length from each end of the rail to maintain picket spacing plus an additional 1/4" per end to allow for expansion and contraction.**



- Turn the top rail upside down and measure 1/4" from cut end. Mark the spot lightly across the bottom of the rail.
- Measure 7/16" centered from the back of the top bracket in the bottom slot and drill 13/64" hole. Slide the top bracket over the marked end of the top rail and sight the 1/4" pencil mark through the 13/64" hole. Visually center the rail in the bracket on the marked line, and then pencil the spot through the 13/64" hole.
- Remove the bracket from the rail, and use a #25 drill to pilot through the rail and the rail insert.
- Slide the bracket back over the rail and line the pilot hole in the center of the 13/64" hole. Mount the bracket to the rail and insert with a #10 x 2" stainless screw. Set the rail aside for the moment.

- Turn the bottom rail on its side. Measure 1/4" from the cut end. Mark the spot lightly across the side of the rail.
- Drill 13/64" holes in the side slots of the bottom bracket on the spots. Place the bracket over the marked end of the bottom rail facing down the rail in the proper position and sight the 1/4" pencil mark through the 13/16" hole. Visually center the rail in the bracket on the marked line, and then pencil the spot through the 13/64" hole.



- Slide a bottom bracket over one end of the bottom rail. Place the opposite end in the mounted bottom bracket on the end post. A 1-15/16" support under the unfastened end of the rail will ease the installation.
- Slide the bottom bracket forward on the rail and against the line post. Mount the bracket to the post with #10 x 2" stainless screws. Check rail with level or align with a string to maintain straight sight line down the entire run.
- Place top rail and pickets/spindles within easy reach on clean, smooth surface. Slide top bracket over one end of the top rail and place the opposite end in the top bracket mounted on the end post.
- Starting at the end post, angle the top rail slightly upward while inserting the picket/spindles, first, into the bottom rail then each, in turn, into the top rail. Gently angle and insert the pickets down the rail until you reach the line post.
- The rail and bracket should fit snugly, without binding, against the line post. Mount the bracket with #10 x 2" stainless screws.
- Go back to the brackets on the end post and secure the rail from the bottom in the top bracket and the side in the bottom bracket with #8-3/4" screws. Continue the process until the job is complete.

