



Installing your Turncraft® Poly-Classic® Composite Railing System

Prior to installation, please review this entire document until you are completely familiar with all steps before beginning. A “dry run” of these procedures may be helpful to assist you in familiarizing yourself thoroughly, and avoiding costly errors in cutting materials incorrectly.

Tip: Composite components are hard to mark. It may be helpful to place a piece of masking tape at the approximate cut locations, then mark the exact cut points on the tape. The tape is easily removed after cutting, preventing marring the surface of the parts.

Several rail kits are available — be sure to choose the correct kit for your application:

<u>First floor application</u>	<u>Second floor application</u>
36" high x 6 foot	42" high x 6 foot
36" high x 8 foot	42" high x 8 foot

Post Sleeve Kits, Trim Kits, and Caps are sold separately. See your dealer for available selections. If your application does not make use of wood posts, use Turncraft metal post supports, also sold separately. See steps 10, 10A and 10B.

Tips for Cutting Rails to Length: TAKE YOUR TIME, and plan your cuts. Use a pencil to mark the cuts on the horizontal railing parts. (Make marks on masking tape if you prefer, because composite doesn't mark easily.) Set the end balusters in place and test to be sure the mounting brackets will fit in the remaining space.

For example: suppose you needed to cut 7" from a section of handrail. You could just cut 3 1/2" from each end of the retainer and the bottom rail. But that would leave only a half inch of rail between the last baluster and the end of the rails. That does not leave enough room to attach the mounting bracket. The solution is to shorten the handrail by a full baluster interval, (or just a bit less) and then trim an equal amount from each end.

The right way to shorten a section of railing by 7" would be to first cut one full baluster interval from the retainer and bottom rail (5 1/4"), and then remove the remaining amount (1 3/4") by cutting half that length (7/8") from each end. That would leave 3 1/8" of open space at each end of the railing section, well within the code-required maximum of 4" and still big enough to look similar to spacing between the balusters.

To be sure there is enough room to attach the brackets, leave at least two inches from the end of the rail to the side of the baluster. Since each baluster is about 1 1/4" wide, that's a minimum of 2 5/8" from the end of the rail to the center of the baluster screw hole. Be careful and check your measurements and calculations several times if necessary. With handrails it's easy to make costly mistakes.

Before beginning, review all contents of your Composite Railing Kit prior to starting your railing project. If the kit is missing any pieces, please contact your Turncraft distributor for assistance.

(1) Hand rail	(1) Pre-drilled retainer	(1) Bottom rail
(1) Support block	(1) Support block retainer	(1) Hardware kit
(13) Balusters (6' kit) <u>or</u>	(18) Balusters (8' kit)	

Hardware kit contents:

- (18) 1 1/2" x #8 wood screws for attaching balusters
- (18) 3" x #8 wood screws for attaching balusters to bottom rail
- (8) 1 1/8" x #8 stainless wood screws for attaching brackets to retainer and to bottom rail
- (3) 3/4" x #8 stainless wood screws for fastening/securing the top rail/retainer assembly
- (4) 'L' brackets
- (8) 1 1/2" x 1/4" lag bolts for attaching above brackets to posts
- (8) plastic caps for lag bolt heads
- (1) 4" flat bracket for center support block
- (3) 1" x #8 stainless wood screws for 4" flat bracket—attaches center support block to bottom rail

Installation Steps



1) Installing the Post Sleeves

First, determine correct Post Sleeve height for your project (For example: a 40" post sleeve is customary for 36" rail installations). Then cut the sleeve to length using a 12" miter saw. Once cut to length, slide the Post Sleeve over pressure treated 4"x4" post attached to deck joist system. (It is important to make sure each post is plumb prior to Post Sleeve installation). Finally, for projects utilizing a Post Skirt (Figure #1), slide the skirt over the sleeve at this time.

If your deck doesn't have existing 4"x4" posts, use Turncraft's metal post supports, sold separately. See step 10 for details.

2) Railing Measurements

(If you are installing stair assemblies, step 2 is replaced by the Stair Assemblies instructions on page 4. Please follow those instructions, then return to step 3 of this document.)

Measure the distance between the post sleeves to determine the length of the railing. Be sure to measure both the top rail and the bottom rail distance as they may not be equal. Measure the top rail/retainer from its **center point**. (This is necessary to ensure that the balusters will be properly centered between the posts.) *Review of the tips on page one may be helpful at this time.* Trim each end of the top rail/retainer equally while maintaining the correct overall length. Repeat these steps for the bottom rail using the bottom rail measurement determined previously. Measuring from the exact center is very important to ensure that the balusters will be plumb when installed.

Note: Due to manufacturing variations in length of the top rail, retainer and bottom rail, it may be necessary to cut differing amounts from each rail to have all three rails evenly fit between the posts.

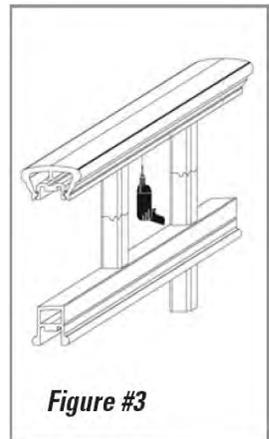
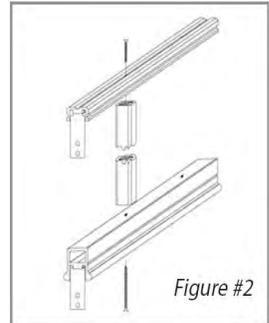
3) Bracket Attachment

Place the bracket on the underside of each end of the retainer and bottom rail. Align the edge of the bracket 1/16" outside of each profile to allow for expansion. Fasten the mounting brackets to the underside of the retainer and bottom rail using the 1 1/8" x #8 stainless steel screws. Make sure the brackets are aligned correctly and extend 1/16" outside the end of each profile.

4) Baluster Assembly

Place the retainer on a clean flat surface. Align the end of each baluster with the pre-drilled holes in the retainer and bottom rail. Using the 1 1/2" x #8 stainless steel wood screws (provided), fasten the balusters to the retainer and bottom rail through the pre-drilled holes. (Figure #2)

Tip: If you take the time to set up a proper working surface as shown to the left (two saw horses and a sheet of plywood), it will make setup of the Composite Railing systems more manageable and save installation time.



5) Top Rail Assembly

Slide the handrail over the retainer (Figure #4). Once the handrail is in place, fasten the handrail to the retainer through the pre-drilled holes in the retainer, using the 3/4" x #8 stainless steel wood screws. This should result in a secure fit between the top rail and the retainer. (Figure #3)

6) Rail System Post Sleeve Alignment

Tip: make two 3 1/2" tall supports from scrap 2" x 4" wood to make installation easy, using one (on edge) near each end of the rail assembly to support the entire rail during placement for measuring and installation.

To establish the proper height of the railing from the surface of the deck, place the railing assembly into the opening between the post sleeves, resting it on the 2" x 4" spacers on edge (3 1/2" high). Be certain the lip on the bottom rail is to the outside of the deck, porch and/or stair project. Make sure the assembled railing is plumb and square, then mark the bracket holes on the post sleeves.

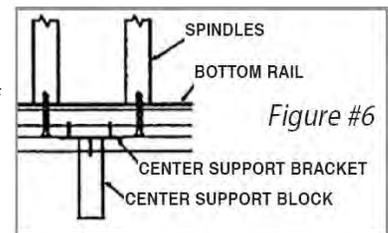
Tip: this is the best time to measure the distance (at the center point of the rail section) from the inside bottom rail to the deck for the support block installation.

Remove the railing and drill pilot holes in the post sleeves using a 5/16" carbide tipped drill bit (Figure #5). You may also want to drill 3/16" pilot holes for the bracket lag bolts.



7) Support Block Installation

Fasten the 4" flat stainless steel bracket to the 6" support block using a 1" x #8 stainless wood screw (provided). Once the support block is mounted to the center hole of the flat bracket, trim the support block to the correct length to make the overall height match the measurement made in step 6. Now, mount the support block flat bracket assembly to the underside of the bottom rail. Determine the center point of the bottom rail and pre-drill holes using the two outside holes on the flat bracket as a guide. Fasten flat bracket using two remaining 1" x #8 stainless wood screws. (Figure #6) Remember: if you are using post trim kits, be sure they are installed before proceeding to next step.

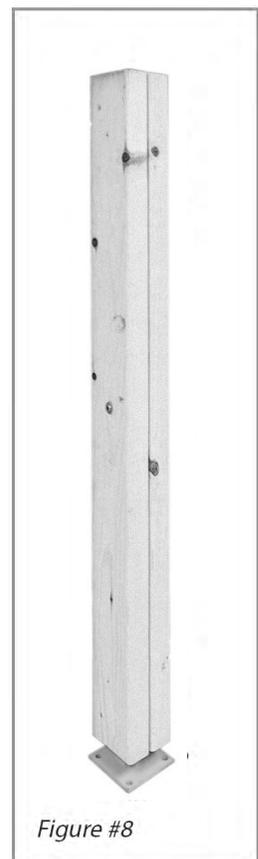


8) Attaching Rail to Post Sleeve

Place the railing section back into the opening and attach the railing to the posts with the 1/4" x 1 1/2" lag bolts supplied. Use a 7/16" x 1/4" drive socket or 7/16" ratchet wrench (which works best). When completed, install the eight (8) plastic caps on the heads of exposed lag bolts.

9) Fastening Post Cap to Post Sleeve (Figure #7)

Once the rail has been completely installed, apply the desired post cap. Place a generous bead of 100% silicone exterior-grade caulking on the end of the sleeve. Place the cap firmly onto the caulking, centering it over the sleeve. Allow caulking to set for 24 hours.



10) Using the Steel Post Support

Turncraft offers metal post supports (sold separately) that can be used for wood or concrete decks, porches, patios, docks and/or stairs where wood posts do not already exist. They are installed easily – simply bolt to an existing surface using 5/16" concrete anchors, or 5/16" lag bolts or carriage bolts, depending on application. Made with pressure treated wood around a steel post, they allow our composite post sleeves and railing to be installed using the same hardware and instructions as above. (Figure #8)

10a) Concrete Application (Surface mount)

Layout post supports for proper alignment. With all supports facing the same direction, mark the 4 holes for drilling. Drill the 4 holes in the concrete for a 5/16" concrete anchor bolt (see your local supplier for proper hardware). Cut the post sleeve to proper length and install over the post support.

10b) Wood Application (Surface mount)

Layout post supports for proper alignment, trace the 4 holes from the bottom support plate prior to drilling the 4 holes in the deck. Use 5/16" lag screws or carriage bolts (see your local building supply dealer for proper hardware). Depending on application, some reinforcement of the deck may be necessary*. Cut the post sleeve to proper length and install over the post support.

*Reinforce from joist to joist on the underside of the existing structure to ensure sufficient strength to support railing system.

Warranty Information

Your Poly-Classic® Composite Railing system comes with Turncraft's limited lifetime warranty*. Please contact your distributor for a copy of the full warranty. Purchaser is solely responsible for determining the suitability of use or application of any Composite Railing System by Turncraft, or whether products meet the requirements of applicable building codes for specific applications.

*During the first ten years after installation, Turncraft warrants that the degree of yellowing will not change more than 10 delta.

Installing your Turncraft® Poly-Classic® Composite Railing System (Stair Assemblies)

These instructions are supplemental to the standard installation information for level railing systems. Please review all instructions in both documents before beginning. A “dry run” of these procedures may be helpful to assist you in familiarizing yourself thoroughly, and avoiding costly errors in cutting materials incorrectly.

Several rail kits are available — be sure to choose the correct kit for your application. Due to the angle of railing on stair installations, you should double-check the length required.

1) Installing the Post Sleeves

Please review the level railing instructions (page 2). Adjustments may be necessary for trimming posts around steps if the post is installed flush against the face of the lower step. This should be done cautiously so as not to cut incorrectly. Optionally, if the post can be removed, have the sleeve installed, and then reattached, this would avoid cutting the sleeve to fit around the step.

Note: check your local building codes to determine the proper distance of the bottom rail from the leading edge of the steps. Also, baluster heights may need to be adjusted for correct top railing height.

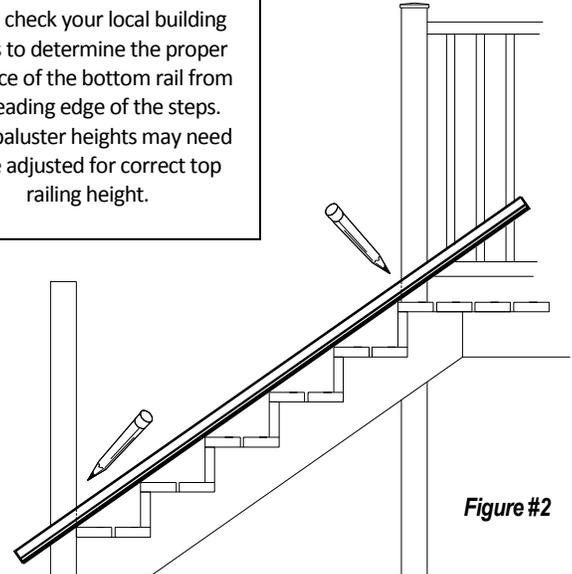


Figure #2

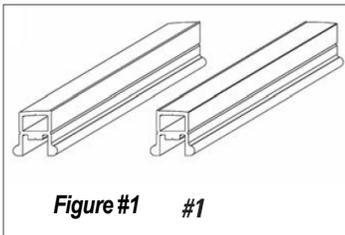


Figure #1 #1

2) Preparing Rails and Balusters

A) Lay the rail on the steps, flush against the posts. For the bottom rails, observe the “lip” on the rails (Figure #1) and be sure that the lip is to the inside of the steps – this will allow water to drain away from the steps more efficiently.

B) Before marking the rail, be certain that the baluster spacing will be correct on BOTH ends of the rail – move the rail up or down the steps as needed to get an equal amount of distance from post to baluster on both ends. Note: it is necessary to have at least 2 5/8” from the post to the center of the first baluster hole in order to attach the brackets. See measuring tips on level railing instructions for further information. Using the posts, mark the rail where it will need to be cut (Figure #2).

C) While the rail is still on the steps, set an adjustable “T” square to the angle needed to trim the balusters correctly. Alternatively, a pitch block could be cut and used to mark balusters. (This angle will also be needed to drill new holes in the bottom rail that will be used to attach the balusters.) Cut both ends of the balusters at the same angle in the same direction as the bottom rail and retainer (Figure #3). The top end of the support block should also be cut at this time. The other end will be trimmed after rail position is determined.

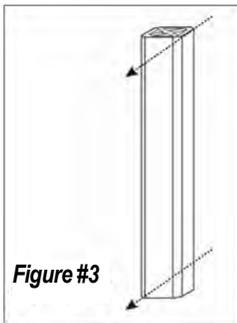


Figure #3

3) Preparing the Bottom Rail

For a stair rail installation, the bottom rail holes will need to be re-drilled to match the required stair angle. From the center of the top holes, using the “T” square (or pitch block), draw a line the proper angle down the side of the bottom rail to be used as a guide (Figure #4). Using a 3/16” carbide tipped bit, drill through the top hole, following the angled guideline, and through the bottom

of the rail, making sure to drill through as close to the rail centerline as possible. (Since there is only one hole in the top retainer, no re-drilling of that part is needed.)



Figure #4

4) Bending the Installation Brackets

Clamp the flat side of the brackets to the edge of a strong flat surface (be sure to protect the painted surface), then use vise grips or pliers to bend the bracket to the correct angle required for attaching rails to post (Figure #5). Two will bend outwards, and for the opposite end of the rail, two will bend inwards (the opposite of the angle shown in Figure #5). Now, proceed with the assembly of railing system starting from step 3 of the standard (level rail) installation instructions (page 2).

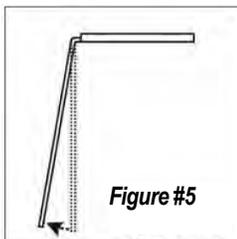


Figure #5