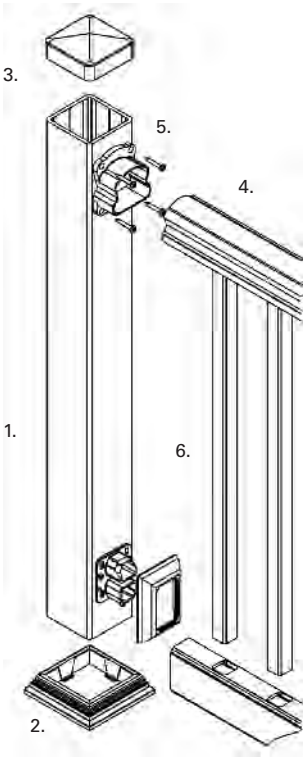
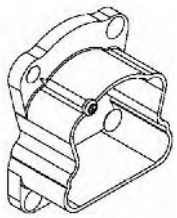
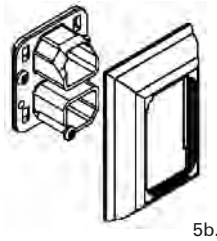
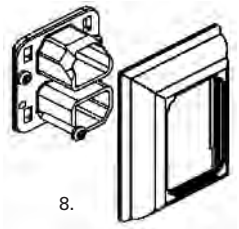
REGAL RAIL LITCHFIELD & GLENCOE COMPOSITE RAIL

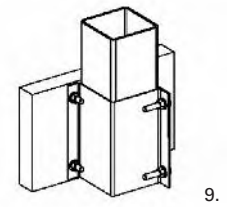
COMPONENTS











1. 4″ x 4″ Composite Post
2. 4″ x 4″ Classic Trim
3. 4″ x 4″ Decorative External Cap
4. 2-3/4″ x 3-1/4″ Composite Glencoe Rail
5a. 2-3/4″ x 3-1/4″ Composite Glencoe Bracket Kit
5b. 2″ x 3-1/2″ Litchfield Bracket Kit
6. 1-1/4″ x 1-1/4″ Composite Pickets
7. 2″ x 3-1/2″ Composite Rail
8. 2″ x 3-1/2″ Bracket Kit
9. Composite Post Bracket Kit

(Kit Contains Top Rail, Bottom Rail, Pickets, Brackets, Screws, and Foot Block)

LAYOUT

Crown's Glencoe Railing System is designed for posts set at a maximum of 72″ (Litchfield Railing at maximum of 96″) between posts and for residential applications where the rail height must be 36″ above the deck/porch surface. Remember to check local building codes for rail height requirements in your area. The top and bottom rail run in between the posts and are set in brackets. The bottom of the railing section is designed to be 2-1/2″ above the surface. This can be lowered, but the base trim must be notched to accommodate the rail trim. The foot block is a 1-1/4″ x 1-1/4″ picket inserted into a pre-cut hole that is on the bottom of the bottom rail.

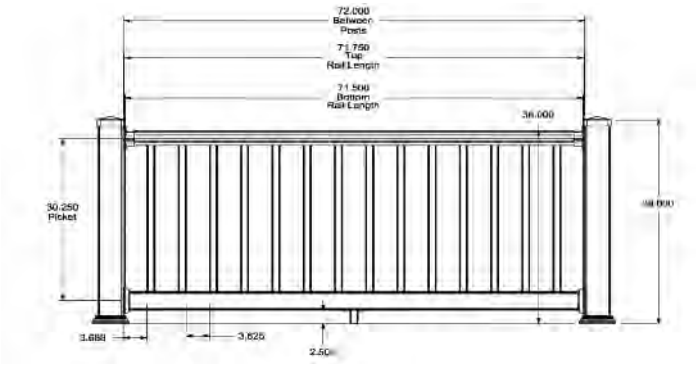


Figure 1. Glencoe Regal Rail System

Measure each side of the deck so that line posts are spaced as evenly as possible between the corner posts. Remember that the outside dimensions of the PVC post sleeves (if sleeving existing wood posts) and the Regal Rail posts are 4″, unlike wood, which could be 3-1/2″ to 3-5/8″. Also check the structural members below the deck to be sure there is no interference with the mounting brackets. If necessary, adjust the post locations. After determining the location of the posts, install the corner posts first.

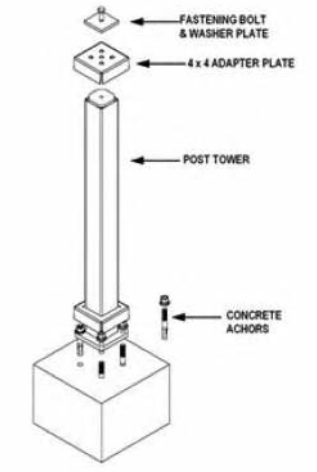
REGAL RAIL LITCHFIELD & GLENCOE COMPOSITE RAIL (CONTINUED)

NEW DECK POST INSTALLATION

Post Tower on Concrete

1) Lay out your post positions according to your railing design. You can use a chalk snap line to mark the railing line and centers of the post l ocations. Make sure to mark all post positions at least 5" from the edge of the concrete to reduce the chances of cracking the concrete when drilling holes for the concrete anchors.
2) Remove the tower assembly and bolt the top adapter plate to the top of the tower in the configuration shown in the assembly drawing.
3) Using an adjustable wrench or vice grips, bend the flanges of the top and bottom adapter plates in on all sides so that the post will slide over the tower without damaging the post. Don't bend the tabs in too far as the post should not be able to slide off the tower.
4) Place the tower in the designated area on the concrete surface and mark the location of the four bolt holes. Make sure tower is centered over your post location marks.
5) Remove the tower. Using a masonry bit, drill four holes deep enough and large enough to accommodate the fasteners that you have chosen. Install concrete anchors.
6) Place the tower back into the desired position. Make sure the tower is plumb using a level. If required, shim the tower base with stainless steel washers. Once level, secure to the concrete anchors.
7) Slide your posts over the tower and install the railing sections. (Note: If using a post trim, cut the plastic tabs at the 90 degree bend and slide the trim pieces over the post tower. Next slide the post over the tower and into the trim piece.)

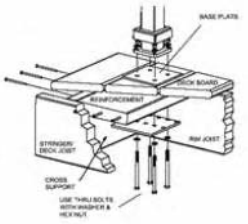
Post Trim



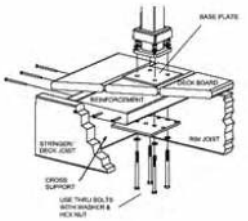
Post Tower on Concrete Decks

Post Tower on Wooden Decks

1) Lay out your post positions according to your railing design. You can use a chalk snap line to mark the r ailing line and centers of the post locations. Make sure to mark the post center line position at least 3-1/2" from the edge of the rim joist. The top plate must be a minimum of 1" from the rim joist so the bolts will clear the rim joist on the underside of the deck.
2) Install a piece of 2" x 8" treated lumber between the joists, under the deck boards where the tower is to be installed. Attach this reinforcement board to the rim joist and stringers. (Three screws should be used on each end.)
3) Thickness of the deck board and reinforcement board underneath should be a minimum of 2-1/2" actual thickness.
4) Take surface plate and use as a template. Mark the four corner holes for the four 5 /16" x 4-1/2" threaded bolts.
5) Pre-drill four 5/16" holes through the marked holes, drilling through the deck board and the reinforcement board.
6) Align the surface plate over the holes.
7) Take the second plate for underneath and drive the bolts up through the bottom plate, reinforcement board, deck board, surface plate, and tower mount. 8) Apply the washers and nuts. Tighten the bolts.
9) Bolt the top adapter plate to the top of the tower in the configuration shown in the Post Tower on Wooden Decks - assembly drawing. For Corner Post
10) Using an adjustable wrench or vice grips, bend the flanges of the top and bottom adapter plates in on all sides so that the post will slide over the tower without damaging the post. Don't bend the tabs in too far as the post should not be able to slide off the tower.
11) Slide your posts over the tower and install the railing sections. (Note: If using a post trim, cut the plastic tabs at the 90 degree bend and slide the trim pieces over the post tower.) Next slide the post over the tower and into the trim piece.)



Post Tower on Wooden Decks for Line Post



Post Tower on Wooden Decks for Corner Post

POST INSTALLATION

The Regal Rail metal mounting bracket is designed for both the corner post and line post installations. The line post mounting bracket requires both the LEFT and RIGHT parts. For the corner posts, use the LEFT part only.

1. To install a corner post, attach the metal mounting bracket with the tab stop at the bottom to the rim joist at the corner of the deck. Pre-drill using a 1/2-inch drill bit. Use 1/2" carriage bolts and a socket wrench to attach the brackets to the inside of the rim joist. Do not tighten bolts completely at this point. Note: Use large washers against the wood for a secure installation. The bracket should be flush with the top of rim joist.

2. Insert the corner posts into the brackets and make sure they are level, plumb, and square. Verify that all the corner posts are the same height from the top of the deck surface and at least 34-3/4" for the top-of-rail installation or 38" for the butted-to-post installation. Tighten all bolts and check again to be sure posts are level.

3. Once the corner posts are in place, string a line from the top of one corner post to the next. Install the line post bracket, using the entire mounting bracket as provided, but do not tighten. Next, set the line posts in place and mark where the string line crosses the post. Remove the posts and cut along the line you just marked. Replace the cut line posts and tighten the brackets using the same method.

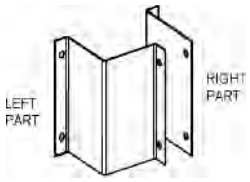


Figure 2. Post Bracket

REGAL RAIL LITCHFIELD & GLENCOE COMPOSITE RAIL (CONTINUED)

RAIL INSTALLATION

1. Cut 2" x 3 ½" Rails and Inserts to Length. Measure distance between posts and subtract 1/2" to allow room for the brackets (1/4" each end). Mark the rails to the calculated length using a square. ***Important: Make sure that there is equal spacing between the picket hole and end of rail to maintain uniform picket spacing. Do not leave an open picket insert hole at the bracket.*** Using a table saw, trim both ends of the rails. Trim the inserts to a length that is 2 ½" shorter than the rails.

2. Install Trim Base: Be sure you install the trim base section over the posts before you start attaching the stair rail sections to the posts.

3. Attach Foot-Block and Drill Weep Holes. Cut foot-block picket to the length required for your installation. Attach the foot block to the bottom of the bottom rail using glue. Drill two or three evenly spaced 1/4" weep holes through the bottom of the bottom rail and middle rib. These holes will allow for proper water drainage.

4. Install Bottom Rail: Slide trim pieces onto the bottom rail facing the finished trim towards the center of the rail. Install the aluminum insert into the bottom cavity (if required) and insert the 2" x 3-1/2" brackets at both ends the bottom rail. Lower bottom rail (the rail with your drain holes) into position between posts. Make sure the holes for the pickets are facing up. Ensure the rail is level and the bracket is centered on the post. Pre-drill 3/32" holes into the post through the bracket holes and attach bracket to the post using screws provided (Figure 3.). Drive one of the screws provided through the top of the rail 3/8" of an inch from the post down into the bracket. This will provide the mechanical attachment of the rail to the bracket. Snap trim in place.

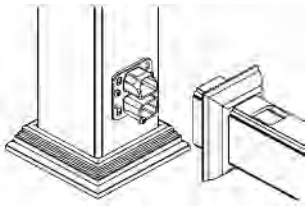


Figure 3. Installation of Bottom Bracket

5. Install Top Brackets and Rail. Insert all the pickets into the bottom rail. Place a bracket at the end of each rail and feed top rail onto the pickets. Once the top of the rail has been seated onto all the pickets and the rail is level install the brackets using four #10 x 3/4 Philips head screws. Drive a #8 x ¾" screw through the bottom of bracket 3/8" of an inch from the post into the rail. This will provide the mechanical attachment of the rail to the bracket. Finish off the bracket by gluing the screw hole covers in place.

6. Install Post Cap. Place a 1" x 1/4" wide bead of glue on inside of cap along the center of all four sides. Slide cap onto top of post. The tabs will smear the glue as the cap is slid on the post and a permanent bond will take effect after a few minutes. Be careful not to drip glue on the outside of a post or cap or it will cause a "scar" in the PVC.