

## Tools and Items Needed

- Drill/power screwdriver
- Assorted drill bits
- Hammer
- Miter or circular saw with fine-tooth carbide tip blade
- Construction adhesive
- Marked speed square
- Two clamps
- Carpenter's level
- Carpenter's pencil
- Adjustable wrench or socket wrench for bolts, etc.
- Safety glasses/goggles
- Assorted fasteners (see instructions)
- Tape measure

## For Each 6' or 8' On-center Railing Section You Will Need:

### One 6' or 8' Deckorators CXT Line or Stair Rail Kit that contains:

- 1 - Upper rail
- 1 - Lower rail
- 2 - Inner rails

### Support block kit, that contains:

- 2 - 4" Support blocks with pre-inserted connectors for 6'—3 for 8'
- 1 - In-line or stair hardware kit that contains:
  - 4 - In-line or stair brackets
  - 16 - 1" long countersunk screws
  - 4 - 1-1/2" long pan head screws
  - 8 - 2" long countersunk screws
  - 30 - 2-1/4" long countersunk screws for 6'—40 for 8'
- 1 - Drill bit
- 1 - Screw pack consisting of 30 screws (use with Deckorators Baluster Connectors)
- 1 - Post Sleeve Bracket placement template

### Baluster options: (sold separately)

### One Co-extruded Composite baluster kit that contains:

- 15 - Balusters for 6'—20 for 8'
- 30 - Balusters connectors with screws—40 for 8'

### One 40" or 52" Post Sleeve Kit that contains:

- 1 - Post sleeve
- 1 - Post base trim

### One Post Cap for each post sleeve (sold separately)

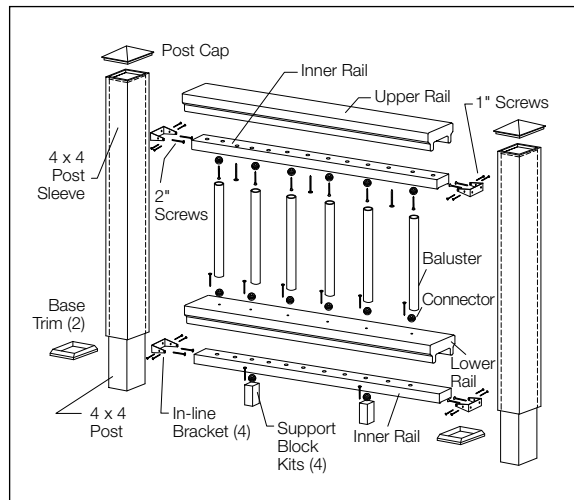
For Installations Using Co-Extruded Composite Balusters

## In-Line Railing Installation Instructions

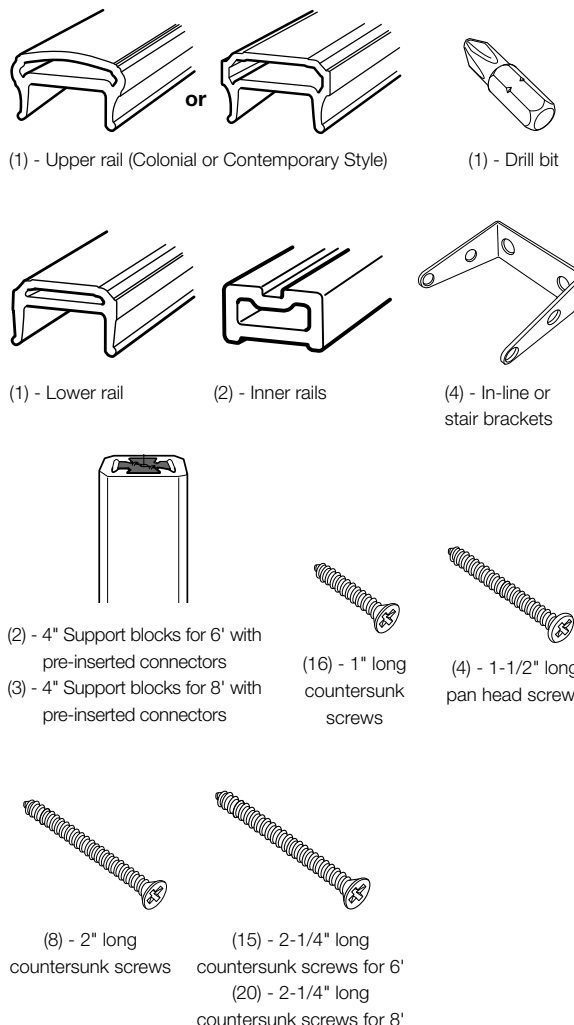
**Prior to construction, check with your local regulatory agency for special code requirements in your area.** Common railing heights are 36" and 42".

Structural support should come from the continuation of deck support posts that extend up through the deck floor or from railing posts that are bolted to the inside of the rim or outer joists. Never span more than 8' on-center between railing posts. Install railing posts before deck boards are fastened to the joists.

Pre-drilling of all railing components is essential to successful installation. Do not over-tighten screws. Read instructions completely to get an understanding of how the product goes together and how each piece affects the other.



### Each Deckorators CXT Rail Kit includes:



**Step 1** Determine the number of railing posts needed for your deck. Post spacing is 6' or 8' on-center. Example: A 12'x16' deck attached to a building with a 4' access opening on one side will require a total of eight posts (fig. 1).

**Step 2** Install rail posts prior to installing deck boards. Cedar or pressure-treated pine 4x4 railing posts provide the structural strength for the railing. The length of each post is determined by the total of the joist width (7-1/4") + decking thickness (1") + railing height (36" or 42") + spacing for post cap (1-1/4") = 45-1/2" or 51-1/2".

**Important: Do not notch the 4x4 railing posts.** Notching will reduce the strength of the post and could result in railing collapse or failure (fig. 2a).

**Step 3** Position, plumb with a level, and clamp the rail post on the interior face of the joist. Plumb again. The 4x4 railing post should be bolted to the inside of the joists using two 1/2"x6" galvanized carriage bolts. Corner posts use a third carriage bolt inserted through the adjacent joist (fig. 2b).

**Step 4** Install decking. Notch deck boards to fit around the 4x4 railing posts. Allow 1/4" space between the deck boards and any permanent structure or post. Additional blocking may be necessary on the 4x4 for fastening deck boards.

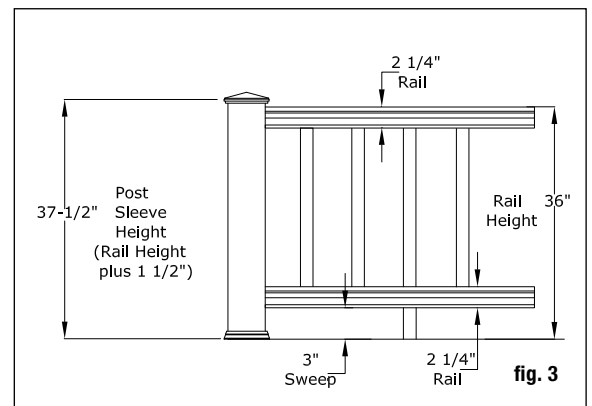
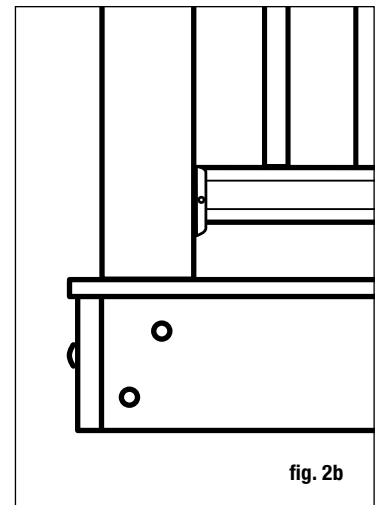
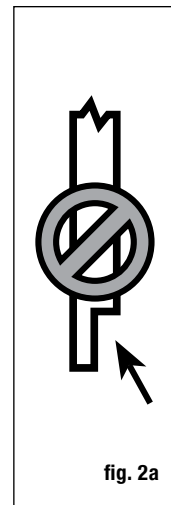
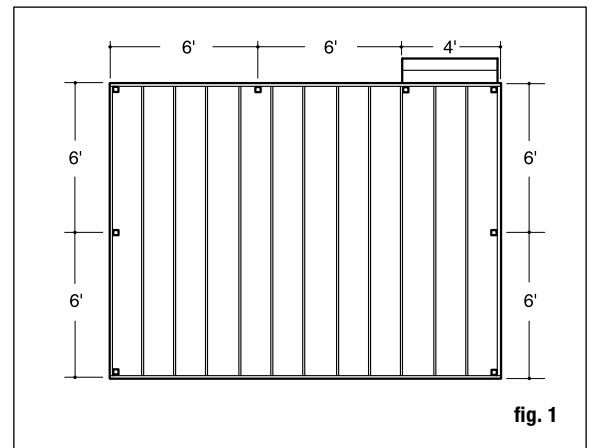
**Step 5** Trim 4x4 post sleeves to length. If you plan to use a post cap, post sleeves should be a minimum of 1-1/2" longer than the railing height. (fig. 3). Example: For a 36" high railing, trim post sleeve to a minimum of 37-1/2", or longer if desired. Slide a trimmed post sleeve over each 4x4 railing post. Use shims as needed to create a snug fit. Slide a post base trim over each post sleeve.

**Step 6 Pre-drilled rails.** Note: To ensure the outer balusters are equally spaced, the rail components require trimming at both ends. Ensure the holes are a minimum of 2-5/16" from post. Using the lower pre-drilled rail as a guide, place it adjacent to the post sleeves and center the rail so the furthest pre-drilled holes for the balusters are equal distances from the post sleeves. Mark the gap between the posts on to the lower rail and trim to fit. (fig. 4)

**Step 7** Note: To ensure the balusters are installed plumb, the holes between the rail sections must all be aligned. Tip: Use a gauge pin or a 3/32" drill bit to ensure the holes are aligned. Using the trimmed lower rail as a guide, set one inner rail on the trimmed bottom rail and align the pre-drilled holes. Mark the cut lines on the inner rail with a pencil. Note: To allow for the thickness of the brackets, the inner rails should be 1/8" shorter than the outer rails with all holes equally spaced. Remove an additional 1/16" from the pencil mark on each end and trim the inner rail to length. Repeat for the second inner rail (fig. 4).

**Step 8** Assemble the lower inner rail and support block assembly. A support block is needed every 2' on-center. Check building codes for a maximum spacing between deck surface and bottom of rail (sweep). A 3" sweep is recommended, but can be more or less if codes allow (fig. 3). Trim support blocks to desired height and pre-drill 1/8" holes in the proper locations. Holes must be centered on the inner rail for support blocks to fit properly. Using the support block connectors, fasten support blocks to the underside of the inner rail.

**Step 9** Mark the height of the brackets on the inside of the post using the bracket placement template included in the kit. Another option is to use the inner rail as a guide. The top of the bracket should be even with the top of the inner rail assembly. Drill two 1/8" holes through the bracket holes shown on the template and through the post sleeve for both the upper and lower brackets. Remove the bracket placement template from the post sleeve and fasten the upper and lower brackets to the post using two 2" countersunk screws. Tip: For best results, use a long drill bit or add an extension bit to the drill. Repeat on the adjacent post. Set the inner rail in between the lower brackets and predrill a 1/8" hole at each bracket hole and into the inner rail. Fasten the rail to the brackets using 1" countersunk screws.



**Step 10** Determine the length of the balusters. Figure 3 illustrates how a 36"-high railing might be sized. Starting with a 3" sweep + 2" for the bottom railing, 29" baluster height + 2" for the top rail = a 36" rail height. Use 29" balusters for a 36" rail height. Use 35" balusters for 42" railings. If you want to have your railing at a different height, use figure 3 as a planning tool to determine the height to cut the post sleeves and the balusters.

**Step 11** Connectors come pre-inserted in the CXT balusters. Set the balusters between the trimmed lower rail and the remaining inner rail and fasten in place by driving the 2-1/4" screws included with the baluster kit through the rails into the baluster connectors (fig. 5a). Set the baluster and rail assembly on the installed lower inner rail, placing the upper inner rail between the installed upper brackets (fig. 5b).

**Step 12** Measure the distance between the posts and trim the upper top rail to length and set on the assembly. Taking care not to drill all the way through the upper rail, use a 1/8" drill bit to pre-drill four 1-1/2"-deep holes, equally spaced, through the underside of the inner rail and into the underside of the upper rail. Tip: Place a piece of tape 1-1/2" from the end of the drill bit. Do not drill past the tape. Fasten cap rail in place using four 1-1/2" pan head screws..

**Step 13** Apply construction adhesive to the inside edges of the post caps and place over each post sleeve.

## Stair Railing Installation Instructions

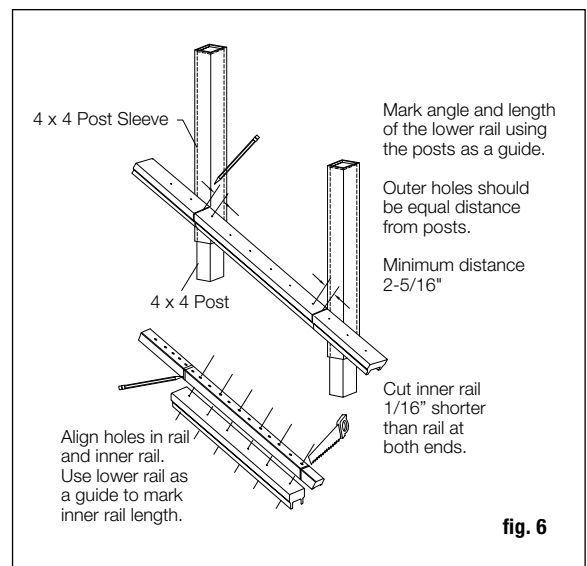
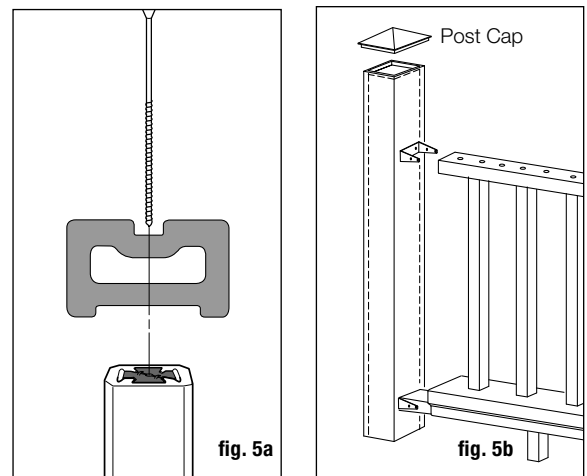
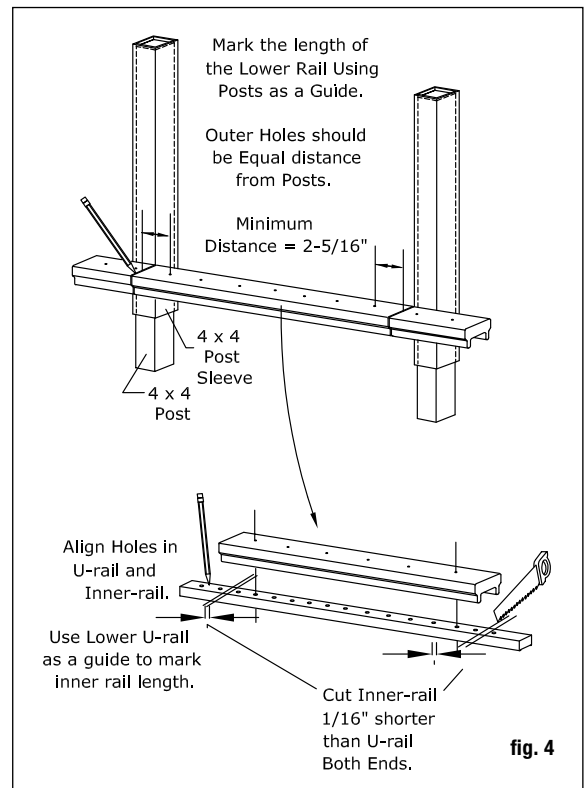
**Step 1** Cedar or pressure-treated pine 4x4 railing posts provide the structural strength for the railing. The length of each post is determined by the total of the stair stringer width (7-1/4") + tread thickness (1") + railing height (36" or 42") + spacing for post cap (1-1/4") = 45-1/2" or 51-1/2".

**Step 2** Position, plumb with a level, and clamp the rail post on the interior face of the stair stringer. Plumb again. The 4x4 railing post should be bolted to the inside of the stair stringer using two 1/2" x 6" galvanized carriage bolts. Corner posts use a third carriage bolt inserted through the adjacent joist. Ground-level posts should be set in concrete.

**Step 3** Complete stair tread installation prior to installing post sleeves. Trim 4x4 post sleeves to length. Post sleeves should be a minimum of 1-1/2" longer than the railing height to accommodate a post cap. Slide a trimmed post sleeve over each 4x4 railing post. Use shims as needed to create a snug fit. Slide a post base trim over each post sleeve.

**Step 4** Note: The rails are predrilled. To ensure the outer balusters are equally spaced, the rail components require trimming at both ends. Using the lower predrilled rail as a guide, place it adjacent to the post sleeves and center the rail so the furthest predrilled holes for the balusters are equal distances from the post sleeves. Using the posts as a guide, mark the angle for the beveled cut vertically through the rail section. Mark the gap between the posts onto the rail and trim to fit (fig. 6).

**Step 5** Note: To ensure the balusters are installed plumb, the holes between the rail sections must all be aligned. Tip: Use a gauge pin or a 3/32" drill bit to ensure the holes are aligned. Using the trimmed lower rail as a guide, set the upper inner rail on top of the trimmed lower rail and align the predrilled holes. Mark the cut lines on the inner rail with a pencil. Note: To allow for the thickness of the brackets, the inner rails should be 1/8" shorter than the lower rails with all holes equally spaced. Remove an additional 1/16" from the pencil mark on each end and trim the inner rail to length. Repeat for the second inner rail (fig. 6).



**Step 6** Assemble the lower inner rail and support block assembly. Position the bottom rail between the posts. Check building code requirements for maximum spacing on a staircase, typically less than 6". A 6" ball cannot pass through the triangle formed by the bottom rail, tread and riser (fig. 7). A support block is needed every 2' on-center. Trim support blocks to desired height and pre-drill 1/8" holes in the proper location. Holes must be centered on the inner rail for support blocks to fit properly. Using the support block connectors, fasten support blocks to the underside of the inner rail.

**Step 7** Mark the height of the brackets on the inside of the post using the bracket placement template included in the kit. Another option is to use the inner rail as a guide. The top of the bracket should be even with the top of the inner rail assembly. Drill two 1/8" holes through the bracket holes shown on the template and through the post sleeve, for both the upper and lower brackets. Remove the bracket placement template from the post sleeve and fasten the upper and lower brackets to the post using two 2" countersunk screws.

Tip: For best results, use a long drill bit or add an extension bit to the drill. Repeat on the adjacent post. Set the inner rail in place and pre-drill 1/8" holes at each bracket hole and into the inner rail. Fasten the rail to the brackets using 1" long countersunk screws.

**Step 8** Determine the length of the balusters. Figure 3 illustrates how a 36"-high railing might be sized. Use figure 3 as a planning tool to determine the height to cut the post sleeves and the balusters. The balusters will need to be miter cut to the proper stair angle. Push the preinserted connector into the baluster approximately 1/4" and trim the balusters to the required angle and length.

**Step 9** Connectors come pre-inserted in the CXT balusters. Set the balusters between the trimmed lower rail and the remaining inner rail and fasten in place by driving the 2-1/4" screws included with the baluster kit through the rails into the baluster connectors. Set the baluster and rail assembly on the installed lower inner rail, placing the upper inner rail between the installed upper brackets.

**Step 10** Measure the distance between the posts and, trim the upper outer rail to length, and set on the assembly. Important: Taking care not to drill all the way through the upper rail, use a 1/8" drill bit to pre-drill four 1/2" deep holes, equally spaced, through the underside of the inner rail and into the underside of the upper rail. Tip: Place a piece of tape 1-1/2" from the end of the drill bit. Do not drill past the tape. Fasten cap rail in place using four 1-1/2" pan head screws.

**Step 11** Apply construction adhesive to the inside edges of the post caps and place over each post sleeve.

Note: Touch-up paint is available to repair any chips or blemishes that occur during assembly and installation. Contact a Deckorators customer service agent at 800-332-5724 for availability.

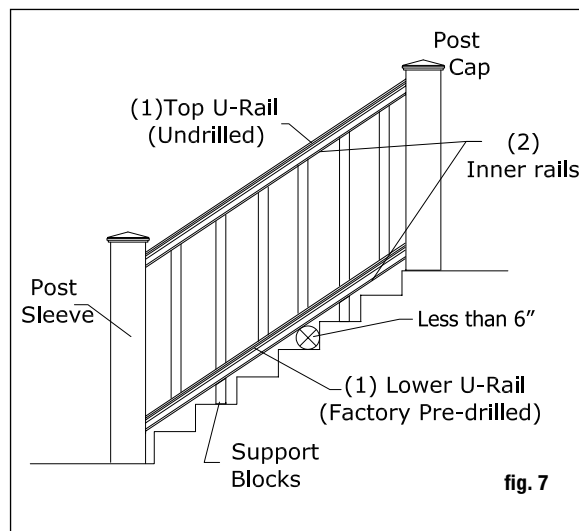
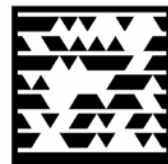


fig. 7

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