

Exotics,[™] Bermuda,[™]
Chameleon[™]

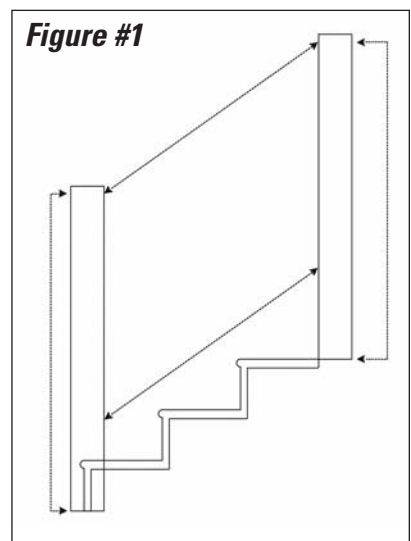
Stair Railing Prior to Installation



1 Preparation

First check the rise and run of the stairs to determine the proper stair angle. Check the rail opening to ensure the sleeves, newels or wall where the stair rail is to be installed are square and plumb. Measure between the sleeves to obtain the rail length. **Please note:** You will want to leave 1/16" gap on each side of the ends between the rails and the post to allow for expansion and contraction. The overall measurement of the rails will be 1/8" (1/16" on each end) shorter than the distance between the posts. Be sure to measure between the rails at both the top and bottom (Figure #1).

Note: Ensure the proper fit by cutting a test piece of wood to the previously determined length and angle and fit it into the opening. Once the proper measurements have been confirmed, measure the handrail and retainer from the center of each side to obtain the top length measured between the sleeves.



2 Bermuda,[™] Exotics,[™] Chameleon,[™] railing kits by Monarch[™]

Review all contents of your railing kit prior to starting your railing project – if missing any pieces—please contact Monarch[™] at 1-877-666-2742

- 1 Hand rail
- 1 Bottom rail
- 1 Pre-drilled retainer
- 1 Support block
- 1 Support block retainer
- 2 Pre-drilled balusters (Exotics only)
- 13 Balusters (6' kit)
- 18 Balusters (8' kit)
- 1 Hardware kit (see below)

Hardware kit contents:

(18) 1 1/2" - #8 wood screws for attaching balusters; (18) 3" - #8 wood screws for attaching balusters to bottom rail; (8) 1/4" X 1 1/2" lag bolts for attaching bracket to posts; (8) 1 1/8" - #8 stainless wood screws for attaching brackets to retainer and brackets to bottom rail; (8) washers for use with the 1 1/8" - #8 stainless wood screws; (3) 3/4" - #8 stainless wood screws for fastening/ securing the top rail /retainer assembly; (3) 1" - #8 stainless wood screws for fastening center support to 4" flat center support bracket and 4" flat bracket to bottom rail; (4) 'L' brackets; (1) 4" flat bracket; (8) plastic lag bolt head caps.



Exotics™ Bermuda™
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Stair Railing Installation Guide

Note: If stairs do not include 4" X 4" posts, use Monarch™ metal post supports, sold separately. See installation guide #10, 10A and 10B.



1 Preparing rails and balusters

When two parallel stair rails are used, cut the bottom rail as a left- and right-hand pair, keeping the lip of the bottom rail to the inside of the stairs. (Figure #1) Repeat this procedure for the bottom rail using the bottom rail measurement. Cut both ends of the balusters at the same angle in the same direction as the bottom rail and retainer (Figure #2). Be sure to make clean square cuts during this operation, using a carbide tipped saw blade will assist with this process.

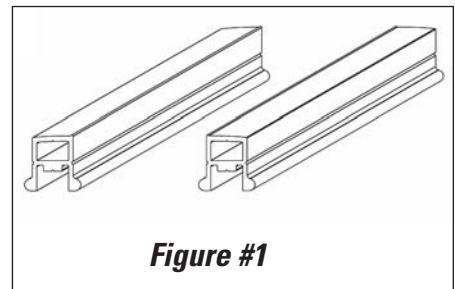


Figure #1

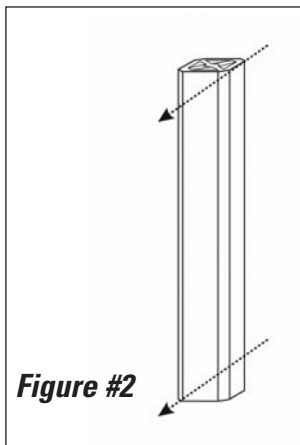


Figure #2

2 Stair rail installation

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, draw a line the proper angle down the side of the bottom rail to be used as a guide (Figure #3). Using the 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 center line as possible.

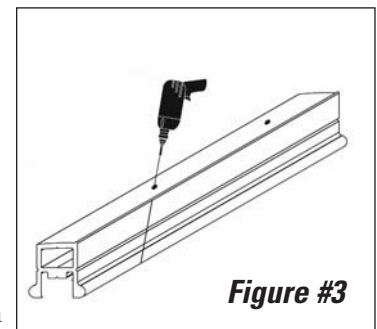


Figure #3

Tip: Use a drill guide to ensure accuracy.

3 Bending the installation brackets

Bend the bracket supplied in the stair bracket kit to the desired angle (Figure #4).

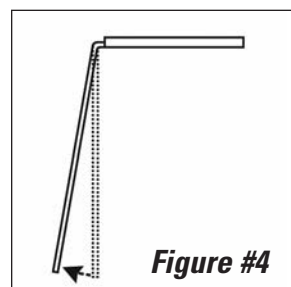


Figure #4

Note: The retainer and the bottom rail have been factory drilled for horizontal rail installations to assist with the assembly.

4 Placing the bent brackets

Place the bent bracket into position close to or 1/16" from the edge of the bottom rail and retainer and mark the center of the hole. Drill the two mounting holes with a 3/8" carbide tipped drill bit (Figure #5).

Note: Clamp the flat side of the bracket to the edge of a strong flat surface making sure to protect the painted surface, then use vise grips or pliers to bend the bracket at the desired angle.

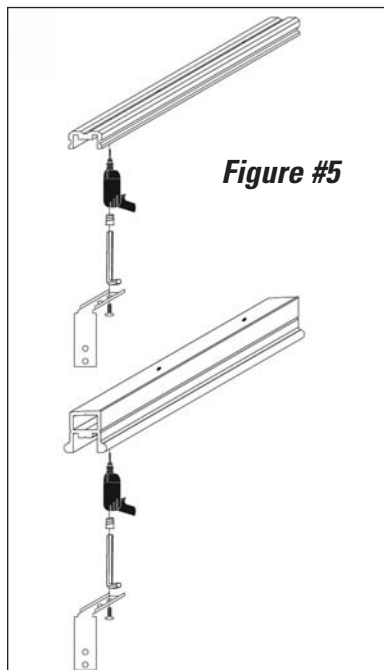


Figure #5

Note:

Exotics™ railing system installs without brackets. The Exotics™ railing system uses pre-drilled end-balusters to attach to the posts for securing the railing section in place. Trim these end balusters as you do with all balusters with angle cuts and attach as shown in the Exotics™ railing installation guide.

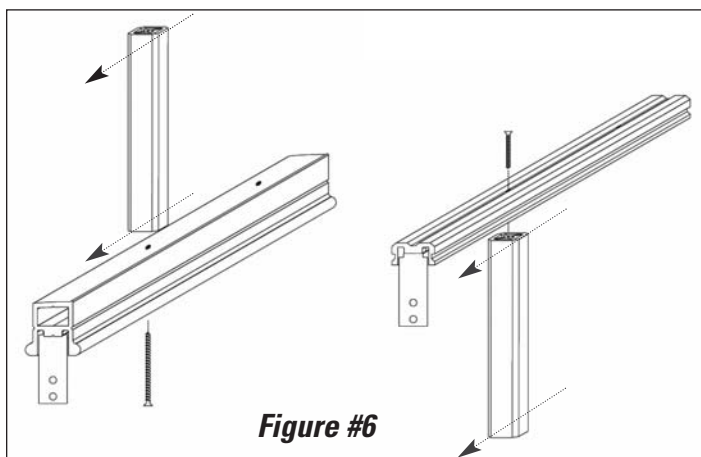


Figure #6

5 Pre-drilling the angle pilot holes for the balusters

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, draw a line the proper angle down the side of the bottom rail to be used as a guide (Figure #6). 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 center line as possible.

Tip: Use a drill guide to ensure accuracy.

6 Stair rail section 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 #8 - 1 1/2" stainless wood screws (provided), fasten the balusters to the retainer and bottom rail through the pre-drilled holes. Slide the top rail over the retainer. Once the top rail is in place, fasten the top rail to the retainer through the pre-drilled holes in the retainer using the #8 - 3/4" stainless wood screws. This should result in a secure fit between the top rail and the retainer (Figure #7).

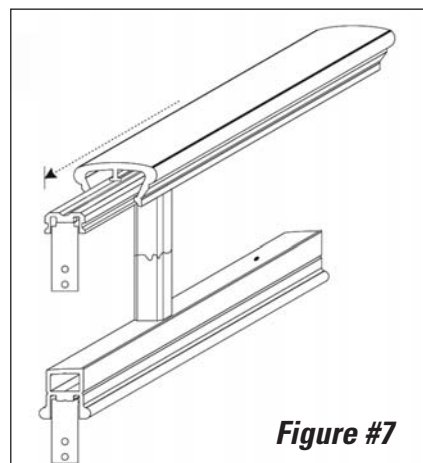


Figure #7

7 Support block assembly

Fasten the 4" flat stainless steel bracket to the 6" support block using one of the 1" - #8 stainless wood screws (provided). Once the support block is mounted to the center hole of the flat bracket, trim the support block the correct length (Figure #8).

Next 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" - #8 stainless wood screws.

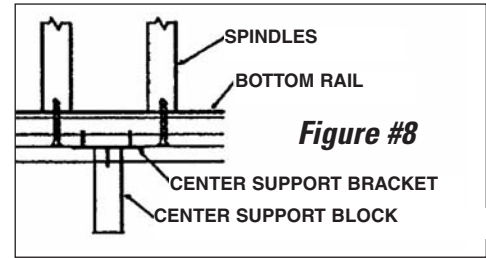


Figure #8

Note: To ensure your desired rail height, measure the distance at the centerpoint of the rail section, from the inside bottom rail to the deck for the support block installation.

Note: If the mounting brackets cover any of the pre-drilled baluster holes in the retainer or bottom rail, or are too close not to allow the installation of a baluster, do not use the end balusters. Seal any exposed holes with a white, silicone exterior-grade caulking. Carefully slide the handrail over the retainer (Figure #7).

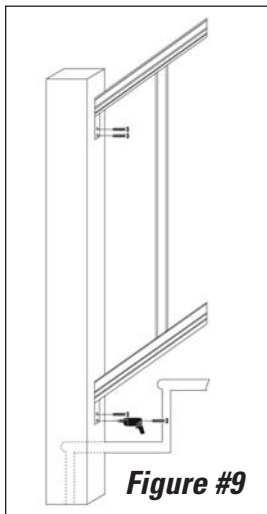


Figure #9

8 Attach the assembled railing

Take the assembled stair rail and place it into the opening. Make sure the minimum spacing allowed by local code (4" from the nose of the stair tread to the bottom of the rail) is maintained. Make sure the railing is plumb and square, or matches the width dimensions previously taken, and mark the bracket holes on the post sleeves (Figure #9).

Remove the railing and drill pilot holes in the POST SLEEVE ONLY with a 1/4" carbide drill bit and then drill a pilot hole into the 4" X 4" with a 3/16" drill bit. Place the railing back into the opening and attach the railing to the sleeves with the 1/2" X 1 1/2" lag bolts supplied in the hardware kit with a 7/16" X 1/4" drive socket or 7/16" ratchet wrench, which works the best.

9 Top cap installation

Once the rail has been completely installed, apply the desired ball cap, traditional cap, colonial cap or solar cap as follows (Figure #10). Place a generous bead of exterior-grade 100% silicone caulking on the end of the sleeve and across the 4" X 4". Place the cap firmly onto the caulking centering it over the sleeve. Allow caulk to set for 24 hours. For added strength, drive two long finishing nails or screws through the outer edge of the caps into the 4" X 4", and touch up with paint or fill the holes with matching color exterior-grade caulk.

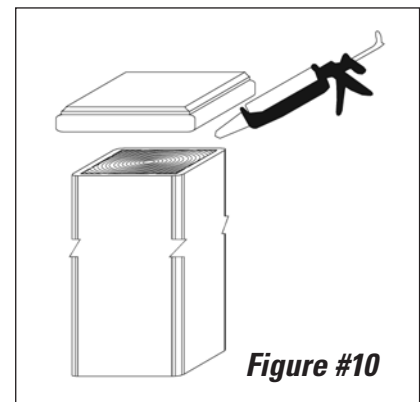


Figure #10

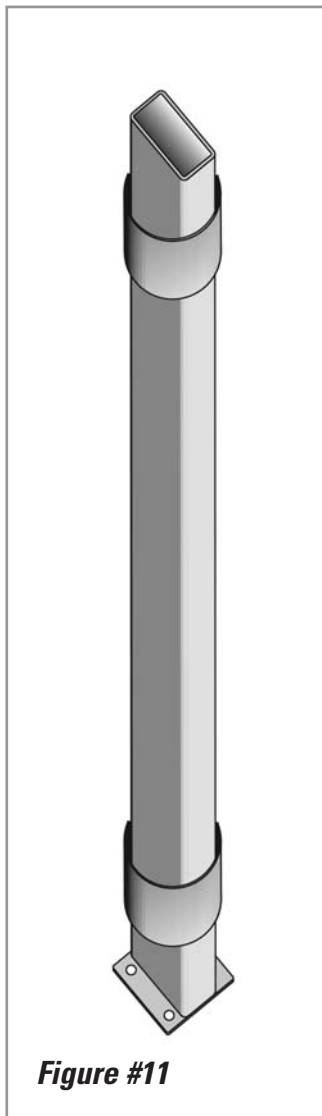


Figure #11

10 Monarch™ post supports available for existing decks, porches and/or stairs

Monarch™ offers metal post supports (sold separately) that can be used for wood or concrete decks, patios or docks. 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. (Figure #11)



10 A 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 Monarch post sleeve to proper length and install over the Monarch post support.

Note: Make sure Monarch™ post supports are facing the same way for all applications. Double check your layouts before drilling holes.

10 B 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 a 5/16" lag, screw or carriage bolts (see your local supplier 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.

Note: Reinforce from joist to joist on the under side of the existing structure to insure sufficient strength to support railing system.

Note: Some applications may require metal lag screws to install the Monarch™ metal post support. See your local supplier for proper hardware.

