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**NEWEL POST INSTALLATION KIT (SEE FIG. EX1)**

A	Newel Post Top (PST13X13F, PST13X13P, PST14X14P, PST14X14F)	
B	Newel Post Top Section (NP12X48)	
C	Newel Post Center Section (NP12X48)	
D	Newel Post Bottom Section (NP12X48)	
E	Baluster Top Rail (BTR12X96 or BTR12X120)	
F	Baluster Bottom Rail (BBR12X96 or BBR12X120)	
G	Baluster	

**BALUSTER RAIL INSTALLATION KIT (BRK12) (SEE FIG. EX2)**

	Bear Claw Bracket	4
	5/16" - 18 Clip Nut	4
	#12 x 3/4" Pan Head Screw	16
	5/16" - 18 x 5" Hex Head Cap Screw	4
	5/16" x 1 1/2" Fender Washer	4
	1/4" - 20 x 2" Flat Head Self Tapping Screw	4

**NEWEL POST INSTALLATION KIT (NPK12) (SEE FIG. EX3)**

	3/8" - 16 Hex Nut	2
	3/8" Lock Washer	2
	3/8" USS Flat Washer	2
	Corner Bracket	2
	3/8" - 16 x 39" Threaded Rod	2
	#10 x 3/4" Flat Head Self Tapping Screw	8
	1/4" x 7" x 7" Steel Base Plate (See Fig. EX1)	1
	Note: Fasteners to mount Steel Base Plate to floor surface not provided.	

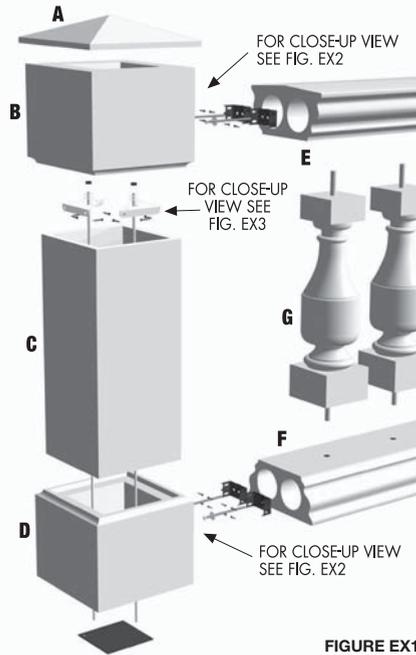


FIGURE EX1



FIGURE EX2



FIGURE EX3

**CHECK APPLICABLE BUILDING CODES** since this procedure may require alterations to meet applicable building code regulations. The manufacturer does not, under any circumstances, warrant the INSTALLATION of its products. The installation guidelines are to be used as suggestions for successful installation.

**USING CORROSION-RESISTANT FASTENERS AND PL PREMIUM ADHESIVE**

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INSTALLATION INSTRUCTIONS

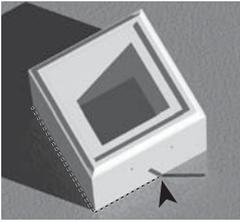


FIGURE 1A

**1. INITIAL LAYOUT**

**A)** Temporarily position NEWEL POST BOTTOM SECTIONS and mark layout lines on floor surface (FIG. 1A). This positioning is important in order to get accurate measurements between the NEWEL POST BOTTOM SECTIONS.

NOTE: This will give you the actual cut lengths of the BALUSTER TOP and BOTTOM RAILS.

**B)** Measure the distance between each of the NEWEL POST BOTTOM SECTIONS (FIG. 1B), and cut respective lengths of BALUSTER RAILING to be installed between the NEWEL POST BOTTOM SECTIONS. Add a centered saw kerf to the bottom of the newel post for water drainage.

NOTE: While measuring and cutting BALUSTER BOTTOM RAILS, cut matching length TOP RAILS to be installed in a later step.

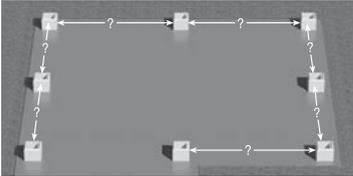


FIGURE 1B

**2. ANCHORING STEEL BASE PLATES**

Center STEEL BASE PLATES inside layout lines from Step 1A above, and anchor each STEEL BASE PLATE to an adequate mounting surface (FIG. 2A). These will anchor the NEWEL POSTS.

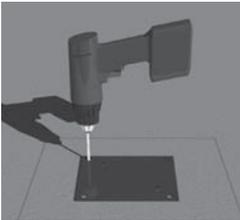


FIGURE 2A

**3. INSTALLING BEAR CLAW BRACKETS**

Select a cut-to-length BALUSTER BOTTOM RAIL.

Install 5/16" - 18 CLIP NUTS on BEAR CLAW BRACKETS. (SEE FIG. EX2 ON PAGE 38 FOR DETAILED VISUAL.) Position BEAR CLAW BRACKETS flush with the of the BALUSTER BOTTOM RAIL, and predrill 5/32" holes. Fasten BEAR CLAW BRACKETS using #12 x 3/4" PAN HEAD SCREWS provided. Position the screws as close as possible to the front of elongated slots in the BEAR CLAW BRACKETS (FIG. 3A).

NOTE: Repeat this step for corresponding BALUSTER TOP RAILS.

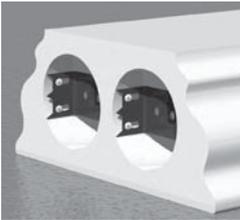


FIGURE 3A

**4. MOUNTING BOTTOM RAIL**

**A)** Temporarily thread a 5/16" - 18 x 5" HEX HEAD CAP SCREW into center of the BEAR CLAW BRACKET and record the indicated center line measurements (FIG. 4A).

**B)** Transfer the measurements onto the NEWEL POST BOTTOM SECTION that will come in contact with the BALUSTER BOTTOM RAIL (FIG. 4B), and drill 1/2" holes, which are oversize, in the NEWEL POST BOTTOM SECTION.

NOTE: The position of these holes will determine the height that the BALUSTER BOTTOM RAIL will be raised above the mounting surface.

**For installations where BALUSTER BOTTOM RAIL is raised off of mounting surface, blocking is recommended with a RAIL SUPPORT BLOCK (RSB4X4X6) every 4' or less.**

NEWEL POST components can be trimmed to achieve custom NEWEL POST heights. Note: The BALUSTRA height is not adjustable.

**C)** Apply a 1/4" bead of urethane base adhesive on each end of the BALUSTER BOTTOM RAIL (FIG. 4C).

**D)** Position the BALUSTER BOTTOM RAIL between the NEWEL POST BOTTOM SECTIONS and align the 5/16" - 18 x 5" HEX HEAD CAP SCREWS with the BEAR CLAW BRACKETS (Fig. 4D). Be sure to check that the BALUSTER BOTTOM RAIL is level. Tighten 5/16"-18 x 5" HEX HEAD CAP SCREWS to 75 in./lbs. torque. Repeat Step 4 around the entire balustrade layout.

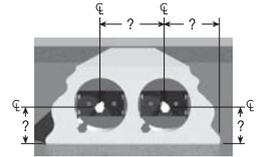


FIGURE 4A

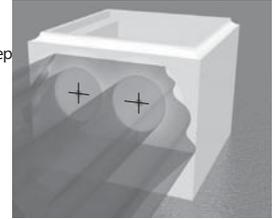


FIGURE 4B

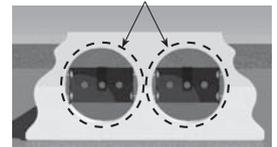


FIGURE 4C



FULL NEWEL POST HEIGHT WITH RAIL RAISED OFF MOUNTING SURFACE | TRIMMED NEWEL POST HEIGHT WITH RAIL FLUSH WITH MOUNTING SURFACE

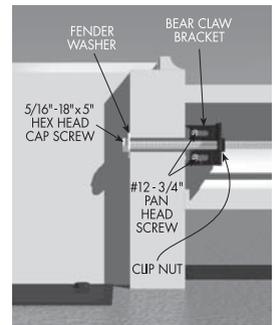


FIGURE 4D

**INSTALLATION INSTRUCTIONS CONTINUED ON FOLLOWING PAGE.**

**USING CORROSION-RESISTANT FASTENERS AND PL PREMIUM ADHESIVE**

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INSTALLATION INSTRUCTIONS



**5. PREPARING RAILS FOR BALUSTERS**

NOTE: Check applicable building codes concerning regulations on distance between BALUSTERS.

With the BALUSTER BOTTOM RAIL in place, lay out and mark center lines for the BALUSTERS. After marking BALUSTER positions, drill 1 1/8" holes to 3" deep to accept BALUSTERS (FIG 5A).

TIP: While laying out and drilling BALUSTER BOTTOM RAIL system, also lay out and drill matching BALUSTER TOP RAILS.

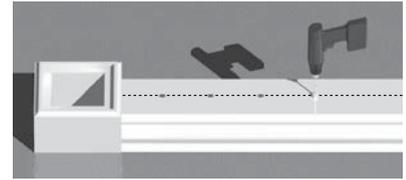


FIGURE 5A

**6. PREPARING NEWEL POST FOR BALUSTERS**

**A)** Install and tighten the two 3/8" - 16 x 39" THREADED RODS into the STEEL BASE PLATE assemblies (Fig. 6A).

**B)** Install the two STEEL CORNER BRACKETS inside the NEWEL POST TOP SECTION using the #10 x 3/4" FLAT HEAD SELF TAPPING SCREWS provided (Fig 6B). NOTE: Align diagonally to match THREADED RODS.

**C)** Temporarily position BALUSTERS on each end of BALUSTER BOTTOM RAIL. Temporarily position BALUSTER TOP RAIL and the remaining NEWEL POST components to visualize and determine height of the NEWEL POST (Fig. 6C). If the NEWEL POST is too high, the TOP SECTION, CENTER SECTION and/or BOTTOM SECTION of the NEWEL POST can be trimmed.

NOTE: The BALUSTER height is not adjustable.

**D)** Once the height of the NEWEL POST has been determined, trim (if required) all the NEWEL POST SECTIONS to the same height. Add a centered saw kerf to the bottom of the newel post for water drainage.

**E)** As in Step 4B, lay out and drill the 1/2" holes into each NEWEL POST TOP SECTION where they will contact the BALUSTER TOP RAIL.

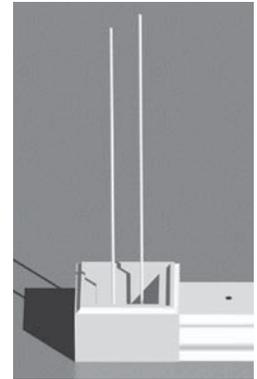


FIGURE 6A

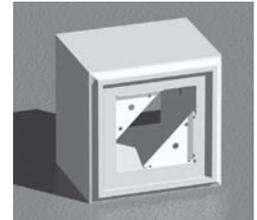


FIGURE 6B

INSTALLATION INSTRUCTIONS CONTINUED ON FOLLOWING PAGE.

**USING CORROSION-RESISTANT FASTENERS AND PL PREMIUM ADHESIVE**

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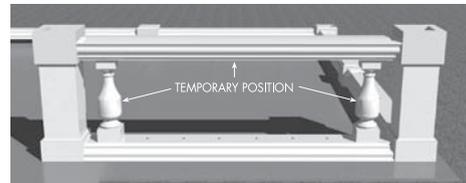


FIGURE 6C

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INSTALLATION INSTRUCTIONS



FIGURE 7A

**7. FINAL ASSEMBLY**

With all NEWEL POSTS prepared for correct height you are ready for the final assembly.

**A)** Position the NEWEL POST BOTTOM SECTION in final alignment with the floor layout lines marked in Step 1A. Apply a 1/4" bead of urethane base adhesive to the channel in NEWEL POST BOTTOM SECTION, and stack NEWEL POST CENTER SECTION onto NEWEL POST BOTTOM SECTION.

**B)** Working with one section at a time, apply a 1/4" bead of urethane base adhesive on both ends of each BALUSTER (**FIG. 7A**).

**C)** Position a BALUSTER into each predrilled hole in the BALUSTER BOTTOM RAIL assembly. Align and cap off with predrilled BALUSTER TOP RAIL assembly (**FIG. 7B**).

TIP: To keep all the BALUSTERS in alignment during assembly, clamp a temporary straight edge on one edge of the BALUSTER BOTTOM RAIL.

**D)** Apply a 1/4" bead of urethane base adhesive to BALUSTER TOP RAIL ends and to the channel in NEWEL POST TOP SECTION. Carefully stack NEWEL POST TOP SECTION onto NEWEL POST CENTER SECTION.

**E)** Fasten the 5/16" - 18 x 5" HEX HEAD CAP SCREWS into the BEAR CLAW BRACKETS in the BALUSTER TOP RAIL and tighten to 75 in./lbs. torque.

**F)** Install a 3/8" USS FLAT WASHER, a 3/8" LOCK WASHER and a 3/8" - 16 HEX NUT onto the THREADED ROD assembly. Tighten the entire assembly to 100 in./lbs. torque (**FIG. 7C**). This step may be completed after entire assembly process, or as each section is completed.

**G)** Apply caulk to seam in channels of NEWEL POST assembly to prevent moisture infiltration (**FIG. 7D**).

**H)** Apply a 1/4" bead of urethane base adhesive to NEWEL POST TOP SECTION, and then install NEWEL POST TOP (**FIG. 7D**).

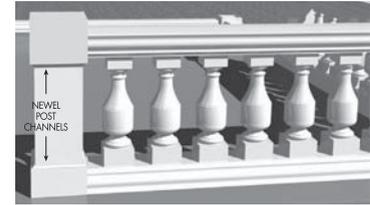


FIGURE 7B

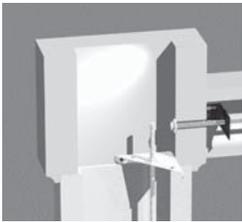


FIGURE 7C



FIGURE 7E

TIP: How to dress up that NEWEL POST. Mouldings such as MLD601, MLD602, MLD610 and MLD611 may be applied to NEWEL POST CENTER SECTION as a decorative treatment. Just miter corners and fasten with a 1/4" bead of urethane base adhesive and noncorrosive fasteners (Fig. 7E).

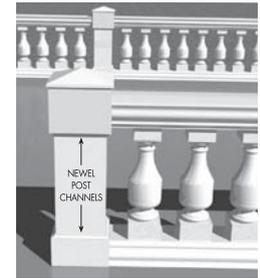


FIGURE 7D

INSTALLATION INSTRUCTIONS CONTINUED ON FOLLOWING PAGE.

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INSTALLATION INSTRUCTIONS



**WALL INSTALLATION**

NOTE: The fasteners for mounting BEAR CLAW BRACKETS to the wall are not included in the BALUSTER RAIL INSTALLATION KIT.

- A)** Determine position of BALUSTER BOTTOM RAIL and mark layout on wall. Locate position of center of BEAR CLAW BRACKETS on wall. Mount BEAR CLAW BRACKETS securely to wall (fasteners for this are not included in hardware pack). See illustration above for orientation of BEAR CLAW BRACKET.
- B)** Apply a 1/4" bead of urethane base adhesive on the end of BALUSTER BOTTOM RAIL and position BALUSTER BOTTOM RAIL over BEAR CLAW BRACKETS and flush with the wall. Drill a 7/32" pilot hole from the top of the BALUSTER BOTTOM RAIL into center of each BEAR CLAW BRACKET. Secure with 1/4" - 20 x 2" FLAT HEAD SELF TAPPING SCREWS (provided with BALUSTER RAIL INSTALLATION KIT).
- C)** Position and install BALUSTERS using the steps described previously in these guidelines. Use above procedures to attach BALUSTER TOP RAIL to wall.

NOTE: When working with wall installations, fasten the BALUSTER RAILS to the wall first, then assemble away from wall sections!



The 12" Balustrade System has been tested and meets the following BOCA National Building Code/1993 Criteria if assembled according to manufacturer's guidelines:

1615.8.2 Guard Design and Construction • 1615.8.2.1 In-Fill Areas

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