



IRONPRO KNEEWALL KIT INSTALLATION INSTRUCTIONS

The following instructions are used for installing **IronPro Kneewall Kits**. All steps are to be performed in sequence following the steps below. Please read these entire instructions before beginning. For interior use only.

Tools Required (all may not be needed depending on whether it is new construction and/or the type of wooden balusters being removed):

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|---|------------------------------------|
| Power Drill | Tape Measure |
| #2 Square Driver Bit and Extension | 2' Level |
| "L-shaped" 2.5mm Allen Wrench | Adjustable Wrench |
| Construction Adhesive and Dispenser | Hand Saw or Hand-Held Circular Saw |
| Hammer | Pliers |
| 8d Nail or Punch | Masking Tape |
| Hack Saw, Miter Saw w/metal cutting blade, or Portable Band Saw | Pencil |
| w/metal cutting blade | 1/8" Drill Bit |
| Box-cutter Knife | 5/32" Hex Driver |
| Sandpaper | Light Oil |

Building Codes and other building requirements vary by location. Accordingly, L.J. Smith, Inc. makes no warranty, express or implied that this product nor any of its installation suggestions shall comply with your local building codes or requirements and, therefore, bears no liability for any such compliance. Therefore, it is vitally important for you to ensure compliance prior to the installation. See Warranty Exclusions and Limitation of Liability at www.LJSmith.com.

Before beginning, check local building codes to be certain that your newly designed stair balustrade will pass your local building code, especially as it relates to baluster spacing.

Note: For ease of installation, it might be simpler to begin with the 1st Baluster (which is the one at the bottom of the stairway) and work towards the top of the stairway. A low handrail height may require trimming the round top pin off of the iron balusters, making installation more difficult using IronPro.

Additional Note: Coating each Attachment Screw and/or Hanger Bolt with Paraffin Wax or Candle Wax will allow it to drive into the wood more easily. It is highly recommended to drill a pilot hole for the hanger bolt using a 1/8" drill bit. Use of a drill with a level is recommended, as this hole must be perfectly plumb.

Very Important Note: Measure the vertical thickness of the handrail, in place; to be certain that the 2 1/2" Attachment Screw will not penetrate the top of the handrail. Purchase (shorter) replacement screws if the screw is long enough to protrude through the top surface of the handrail.



A If replacing square top balusters, mark the center of each on a strip of masking tape along the edge of the shoerail/plate and handrail. Also mark the center within the plowed portion of the handrail (not necessary if replacing pin top balusters) and shoerail/plate. (Skip step **A** for new stairway construction)



B Gently "punch" a divot at each baluster centerpoint on the handrail (not necessary if replacing pin top balusters) and shoerail/plate. If replacing pin top balusters, move to step **D** next.



C For plowed handrail, or if replacing square top balusters, coat the round end of the Ball Adaptor with a light oil to prevent marring the finish during installation. Assemble the Ball Adaptor, Rectangular Socket and 2 1/2" Attachment Screw, and install into the plowed portion of the handrail at the divot mark. See "Very Important Note" above. Wipe oil from finish.



D If replacing pin top balusters, place the centering plug into the hole (not necessary for new stairway construction).

Coat the round end of the Ball Adaptor with a light oil to prevent marring the finish during installation. Assemble the Ball Adaptor, Round Socket or Rectangular Socket, and the 2 1/2" Attachment Screw, and attach it to the underside of the handrail. See "Very Important Note" above. Wipe oil from finish.





E Liberally coat the threads of the pointed end of the Hanger Bolt with wax. Using a drill with a built in level and a 5/32" hex driver on the hex end of the Hanger Bolt (or chuck the hex end of the Hanger Bolt directly into the drill), install the bolt into the shoerail/plate at the point marked with the divot. The bolt must be inserted plumb to a depth allowing approximately 3/4" of machine threads exposed on the long side of the bolt.



F Measure from the bottom of the Ball Adaptor (under the handrail) to the top of the Hanger Bolt in the shoerail/plate. After subtracting 1" from that measurement, measure down from the pin shoulder, mark and cut to length.



G Tilt the Ball Adaptor to the side and insert the pin top end of the baluster.



H If desired, a small amount of construction adhesive can be applied to the cavity of the Threaded Ball Adaptor. Coat the round end of the Ball Adaptor with a light oil to prevent marring the finish during installation. Slide the Threaded Ball Adaptor for the shoerail/plate onto the bottom of the baluster and swing the assembly over the Hanger Bolt. Tighten the baluster with Threaded Ball Adaptor assembly onto the Hanger Bolt, being sure the Round/Rectangular Socket seats properly with the Threaded Ball Adaptor during tightening. Wipe oil from finish.



I Lift the baluster into the Ball Adaptor under the handrail and tighten the set screw. Tighten the set screw on the Threaded Ball Adaptor on the shoerail/plate.



J After the balusters are installed into the shoerail/plate and/or plowed handrail (if applicable), measure the distance between each. Mark and cut the wooden fillet. Install the fillet using construction adhesive.



For more detailed IronPro installation instructions, visit www.LJSmith.com



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