

SPRING PATENT PENDING *The Improved Wood Rail & Newel Post Fastener* **BOLT**™

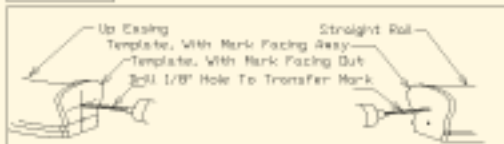


***Make the PERFECT JOINT in 2 minutes
with merely a drill bit and screwdriver!***

STANDARD SPRING BOLT™ INSTALL



Cut a 1/4" thick slice of your rail profile. Mark for one hole centered at approximately 7/8" down from the top and mark for one hole centered at approximately 3/4" up from the bottom. The mark at the bottom is used for making 90 degree joints. The top mark is for square joints.



Drill a 5/8" hole to 1 1/4" deep in both faces to be joined.



Screw a spring into the base of both holes. It is important the the spring is snug to the bottom of the hole and will not twist or move in the hole.



Insert the steel pin in either spring.



Test the two pieces together without glue. If all looks well, untwist the pieces, apply three coats of glue to both surfaces and the rails together. **Caution:** Turn the rail after the surfaces come in contact with each other. Align the profiles quickly before the glue locks up. If the glue locks up before you were able to align the profiles, untwist the joint, add more glue to both surfaces and test together.

SUPER SPRING BOLT™ INSTALL



Cut a 1/4" thick slice of your rail profile. Mark for one hole centered at approximately 1" down from the top.



Drill a 1/8" hole to 2 1/4" deep in both faces to be joined.



Screw a spring into the base of both holes. It is important the the spring is snug to the bottom of the hole and will not twist or move in the hole.

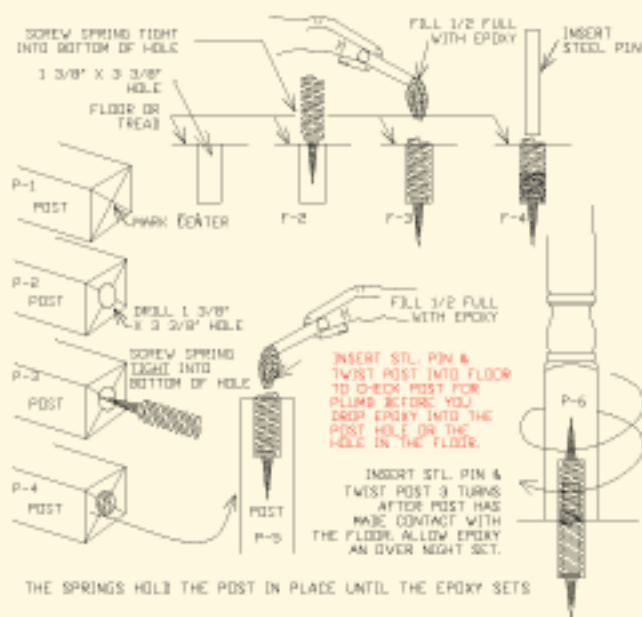


Insert the steel pin in either spring.



Test the two pieces together without glue. If all looks well untight the pieces. Fill both holes 1/2 full with epoxy. Apply epoxy to both faces of the joint and tight together 2 or 3 turns after the surfaces come in contact with each other. Align the profiles. Let excess epoxy cure before sanding.

POST SPRING BOLT™ INSTALL





SPRING
*The Improved Wood Rail &
Newel Post Fastener* **BOLT™**

LOOK BETTER & BE BETTER
*with concealed hardware that installs
quicker and easier than any other
hardware on the market today.*

*No plugs, nail holes or putty to be seen —
while spending 10 minutes less per joint. This
will place you out in front of your competitors
and make you the CUSTOMER'S CHOICE!*

Please visit our site to see video and load test files:

www.spring-bolt.com

REASONS TO QUALIFY SPRING BOLT™ AS THE BEST!

- The **Spring Bolt™** attachment is **totally concealed**. The joint is under constant clamp pressure as glue or epoxy set & cure. In contrast, if a rail bolt joint is bumped, you may need to remove the plug, retighten, and install another (extra) plug.
- Easy profile alignment reduces profile blend time.
- **Engineering** is provided for a joint that is considerably stronger than anything else out there.
- No special tools required. Paddle bit and screw driver.
- Joints can be made and profiles blended in the shop and then quickly disassembled for delivery to the job. This reduces install and punch out time in the field.
- Joints can be twisted together dry to check the angle on your cut. If the angle needs to be modified — reverse twist the dry joint, back out the spring from one side of the joint and trim same. Reinsert the spring and you are good to go. This is a big plus when working volutes, upeasings and goosenecks.

- **No plugs** to match for color & grain.



- **No plugs** to sand.

- **No nails** to set and putty.

- **No putty.**

- Installs high in the rail allowing you to drill on the joint for a baluster.

- A typical rail joint using spring bolts can be made in under 2 min. A rail bolt averages 12 minutes when all goes right and a lot longer when things don't go right. This should result in a savings of approximately 10 man min. per joint.

- Deck mounted posts once cut to length and checked for plumb can be installed complete in 4 to 5 minutes. No need to brace the post while glue and epoxy set. The internal springs hold the post in place while the epoxy sets. This is a great feature when you are working over a finished floor.

- **Works on 90° joints.**



SPRING BOLT™ LOAD TEST RESULTS



CEBNY & IVEY ENGINEERS, INC.

5952 Peachtree Parkway, Norcross, GA 30052 • TEL: 770-449-8838 • FAX: 770-449-1148 • WWW.CEBNYANDIVEY.COM

All tests were applied in the same general direction, which is outward from where the deck would exist. All handrail testing was done in accordance with ASTM D7832.

All pressures were measured using pressure gauge CHPG-85. Pressures were converted to force using the appropriate conversion table for the pneumatic cylinder.

RESULTS

Handrails passed all standardized loading tests without any visible signs of failure.

Knock Lock Handrail with Spring Bolt Connections (Tested 8/25/2008)

	2006 IBC	Passed (Y/N)	ASTM D7832 (P.S. 2.5)	Passed (Y/N)
In-Fill Load	50 psf	Y	125 psf	Y
Uniform Load	50 psf	Y	125 psf	Y
Concentrated Load	2000lb	Y	500lb	Y

CONCLUSIONS

The complete handrail assemblies are in accordance with the strength requirements of the 2006 International Building Code and ASTM D7832, when installed as detailed above.

If you have any questions please don't hesitate to contact us.

Respectfully submitted,


Charles G. Lester IV
Laboratory Manager


Christopher B. Shiver, PE
Vice President - Principal Engineer