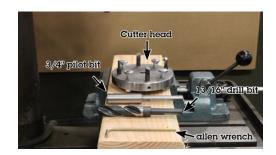
Step-by-Step Split Ring Installation Instructions

You will need:

- 4" split ring
- Grooving Tool (kit) including:
 - o Allen wrench
 - o 3/4" pilot bit
 - o Cutter head
- 13/16" drill bit (not included in the Grooving Tool kit





1. Assemble the 3/4" pilot bit into the cutter head and tighten it with an **Allen wrench**. Set the grooving tool aside.

These components are included as part of the Grooving Tool Kit supplied by Portland Bolt.

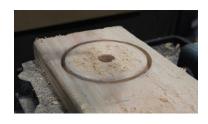


2. Drill a 13/16" bolt hole in the wood. We are demonstrating with a drill press, but a heavy duty 3/4" or larger handheld drill will work. (A drill bit is not included with your grooving tool, but should be readily available at your local hardware store).

A drill bit is not included as part of the Dapping Tool kit, but can be obtained from any local hardware store.



3. Insert the **grooving tool** into the drill or drill press. Use the **pilot bit** to align the **cutter head** with the pilot hole. The small cap screws on the face of the dapping tool can be adjusted to change the depth of the grooves.



4. If your split rings are sitting too high in the grove, you can adjust the height of the tool to correct this issue. (It is recommended to start with the shallowest possible grove to test, and adjust deeper if needed). The rings should engage half way into each wood member.



5. In this example, a split ring is installed between two wooden members. The edge of the board has been cut away for demonstration purposes to show the connection.