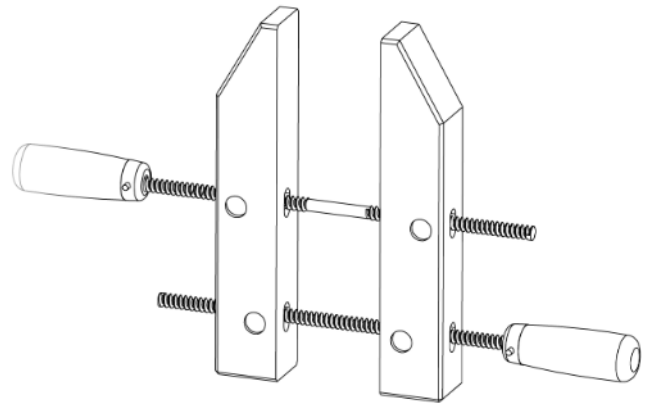


Instructions for Making 10" Hand Screw Clamps with Taytools Hardware Kit

Kit Includes:

- 2 threaded rods with right-hand threads on one end and left-hand threads on the other. One rod is longer than the other
- 4 pivot nuts, 2 with right-hand threads and 2 with left-hand threads
- 2 birch wood handles with chrome ferrules
- 2 anchor pins



Clamp specifications:

- Overall length: 10"
- Jaw depth: 5"
- Maximum opening: 6"

Wood Selection:

Select pieces of clear, straight, and closed grain hardwood for the clamp jaws. Thick stock is preferred over laminating pieces together to get the proper thickness. Oak, ash, birch, beech, maple, and hickory are all great choices. Ensure the grain runs parallel to the clamp faces to prevent splitting under pressure.

Stock preparation:

Square stock and cut two pieces to 10" long x 1-3/4" thick and 2" wide. Cut tapers on the outsides of both jaws as per diagram below.

Layout:

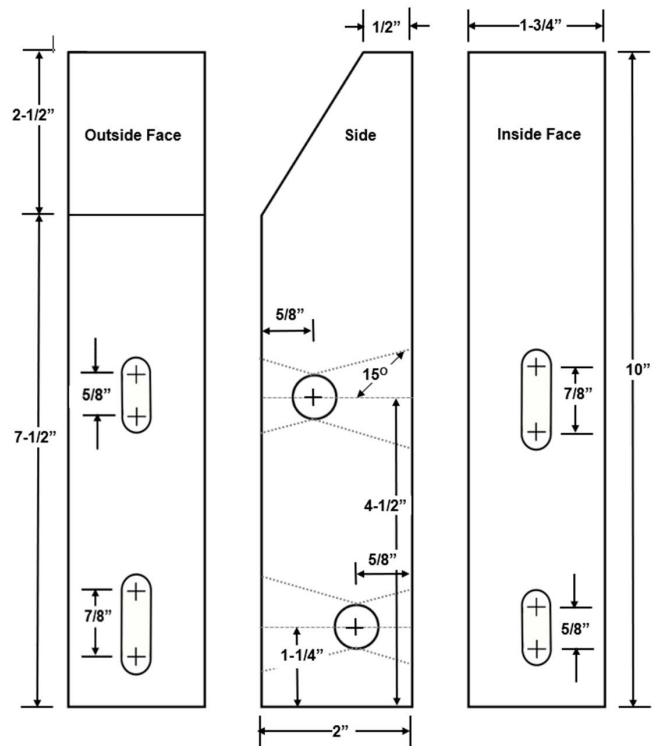
Mark locations for all pivot holes on the sides of the jaws. Next, mark location of angled holes on the inside and outside of both jaws. Make sure to mark holes on the end of each jaws opposite the taper.

Drill pivot holes:

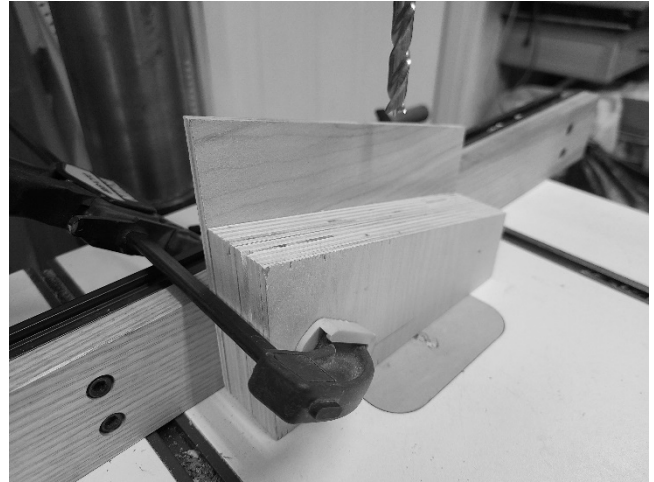
Drill the 4 holes for the pivot nuts on the sides of both jaws. Drill holes using a 19/32" (or 15mm) brad point or twist drill bit. If using a twist drill bit, drill a smaller pilot hole to minimize wandering. Use a drill press or drilling guide to ensure holes are perpendicular to the jaw sides to ensure proper pivoting of the clamp jaws. Back up the holes with a scrap to prevent blowout.

Drill angled holes:

Create the V-shaped slots on the jaw faces that will accept the threaded rods. Drill 13/32" (or 10mm) holes on the inside and outside of both jaw faces. These holes should be drilled at 15 degrees from both directions to allow proper pivoting of the jaws. These holes should angle toward and stop when you reach the center of the pivot holes drilled earlier. For the most accurate results, use a drill press with a tilting table and a fence. You could also make a 15-degree ramp as in the pictures below and clamp to your drill press fence. You could also



cut the sloped holes with a mortice chisel. Clear away the waste between the holes with a chisel, rasp, or file. Install a pivot nut and threaded rod in each angled hole to test the fit to ensure proper pivoting without binding.

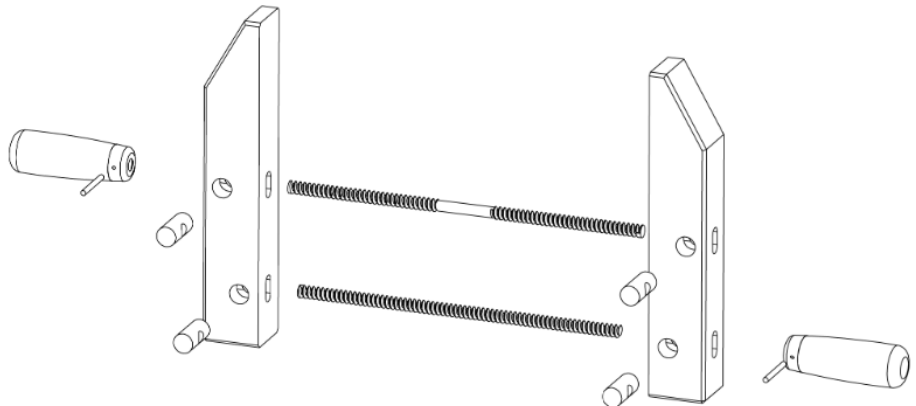


Finishing:

Create a small chamfer on the ends and outside edges of both jaws. Do not chamfer the inside edges of the jaws. Apply a wipe on finish (boiled linseed oil, tung oil, wipe on poly, etc.).

Assembly:

Lay both jaws flat on a table or bench with both inside, flat surfaces facing each other as shown in the diagram. Place both pivot units with left-hand threads in the holes in the jaw on the left. Place both right-hand thread pivot nuts in the holes in jaw to the right.



Find the longest threaded rod, the one with the short, unthreaded section in the middle. Locate the section of threads that is longer than the other and insert this end into the pivot nut that is on the upper left side of the left jaw. These are left-hand threads, so the rod must be rotated counterclockwise for the threads to engage. Thread the rod through the pivot nut until the end of the rod is even with the opposite side of the wood jaw. Locate the shorter threaded rod, locate the side with the longer threads and insert this end into the lower right pivot nut and turn until the end of the rod is flush with the opposite side of the jaw. This section of thread has right-hand threads, so it needs to be turned clockwise for the threads to engage.

Move the jaws closer until the right upper and left lower ends of the threaded rods are now in contact with their corresponding pivot nuts. The end of the upper rod has right-hand threads, and the end of the lower left has left-hand threads, so both rods will need to be turned in opposite directions for the threads to engage. Turn each threaded rod until the threads just begin to engage. Once the threads in both rods start to thread into each pivot nut turn each rod by hand until the threaded rod on the top is sticking out from the jaw on the left by 7/8" and the threaded rod on the bottom is sticking out from the jaw on the right by the same amount. Adjust the rods until both wood jaws are parallel.

Apply epoxy in the handle holes and pound the handles onto the rods in the upper left and lower right jaws until the handle ferrule bottoms out against the side of the jaw. Use a #33 wire gauge drill bit and drill a hole through the ferrules, handles and rods. Mark the drill holes with a center punch to prevent the drill from wandering.