Building an Off-Center Fixture for Turning Pendants

Turning a pendant off-center with most available metal pendant chucks means that you will have a significant amount of mass off center, which will limit the RPM you can run. You are also limited to degrees of offset and pendant rotation by the fixed hole positions.

In the design below, all of the mass except the pendant blank and part of the pendant mount is always balanced, enabling safer turning, higher RPM and cleaner cuts. It also provides both a continuously variable pendant rotation and offset up to the maximum while keeping the whole fixture balanced. The dimensions below are for a fixture that has a maximum 1" offset. Larger offsets are possible, but it will require a larger diameter fixture. The fixture consists of three main assemblies – offset assembly, inset circle and pendant mount.

Cutting the Parts

1. There are five main pieces required – three from ¾" plywood and two from ¾" thick hardwood (Figure 1).
    a. 7" square plywood
    b. 6" square plywood
    c. 4" square plywood
    d. Glue block hardwood square
    e. Pendant mount (not shown)

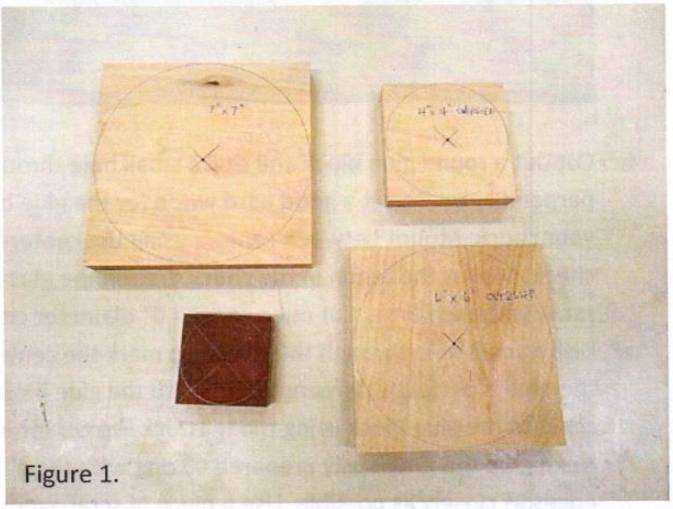
Figure 1.

2. Draw a 7" diameter circle centered on the 7" plywood square. Draw a 4" concentric circle using the same center as the 7" circle. Drill a small hole through the center to mark the center on both sides. Use a drill press or make sure the hole is perfectly perpendicular. Mark a new center ½" off the center of the 7" diameter circle and draw a 6" circle using this offset center (Figure 2). Cut out the 7" circle using a bandsaw or jigsaw.

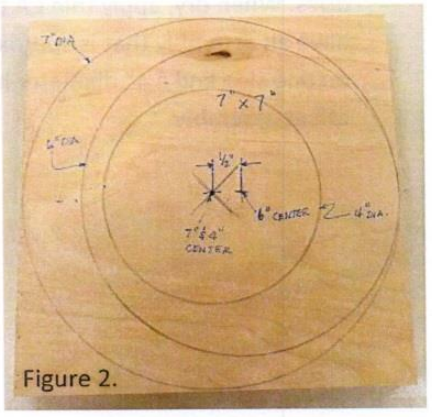

Figure 2.

3. Mount it between centers using the small hole and round the outer 7" diameter. Mount it in jumbo jaws or a Longworth chuck with a thin backer board so you do not cut into the chuck (Figure 3) and carefully cut out the 4" circle with a parting tool, being careful to keep waste inside the 4" diameter. Cleanup to the edge of the 4" line with a scraper. Make sure that the cut is perpendicular to the face

