

Ball-Bearing Yo-Yo Kit

For this project, you will need two turnings that are as close to identical as possible — one for each half of the yo-yo. If the turnings are not alike, the yo-yo's balance will be affected.

Each wood blank should be a minimum 2 1/2" square by 3/4" thick. Close-grained hardwoods are most suited.

Steel bushings are not required for this project.

Mark the center of the inside face of each blank. Drill a 1 3/8" (35 mm) dia. hole, 1 1/32" or 3/8" (10 mm) deep using a Forstner bit to ensure a flat-bottomed hole.

Press the brass hubs into the holes using a bench vise. If the fit is loose, glue the hub into the hole with quick-setting epoxy or cyanoacrylate, and allow to dry.

Screw the hub/blank assembly onto the threaded end of the yo-yo mandrel (88K81.62, available separately). Grip the mandrel in a three-jaw or drill chuck mounted on the headstock. Advance the live center until it touches the outer face of the blank to stabilize the blank during turning. Turn the project wood to the approximate diameter with any tool and at any speed you are comfortable with. Round over the edges of the project wood to a shape of your choosing. Retract the live center after rough turning, then turn the outer face to final shape. Add decorative chatter details as desired. Sand and finish the wood on the lathe. Unscrew the yo-yo half from the mandrel and thread the second hub/blank assembly onto the mandrel. Repeat the turning procedure, making sure the final diameter and shape of the second piece is the same as the first.

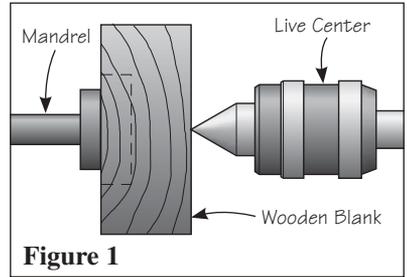


Figure 1

Assemble the yo-yo parts as shown in **Figure 2**. Place the bearing onto the smooth part of the axle, then add the thin washer to the axle, butting it against the face of the bearing. Thread the axle/bearing/washer assembly into the hub with the deep recess. Open the loop at one end of the yo-yo string and slip it onto the bearing. Attach the other hub (with the shallow recess) onto the end of the axle.

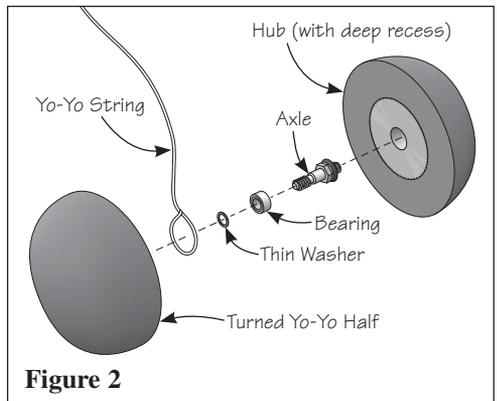


Figure 2

The gap between the hubs is adjustable for performing specific tricks. A wide gap works best for “sleeping” tricks and longer spins, while a narrower gap allows greater response (return). To adjust the gap, loosen or tighten the axle.