

Automotive Gizmo Makes Low Cost Chuck

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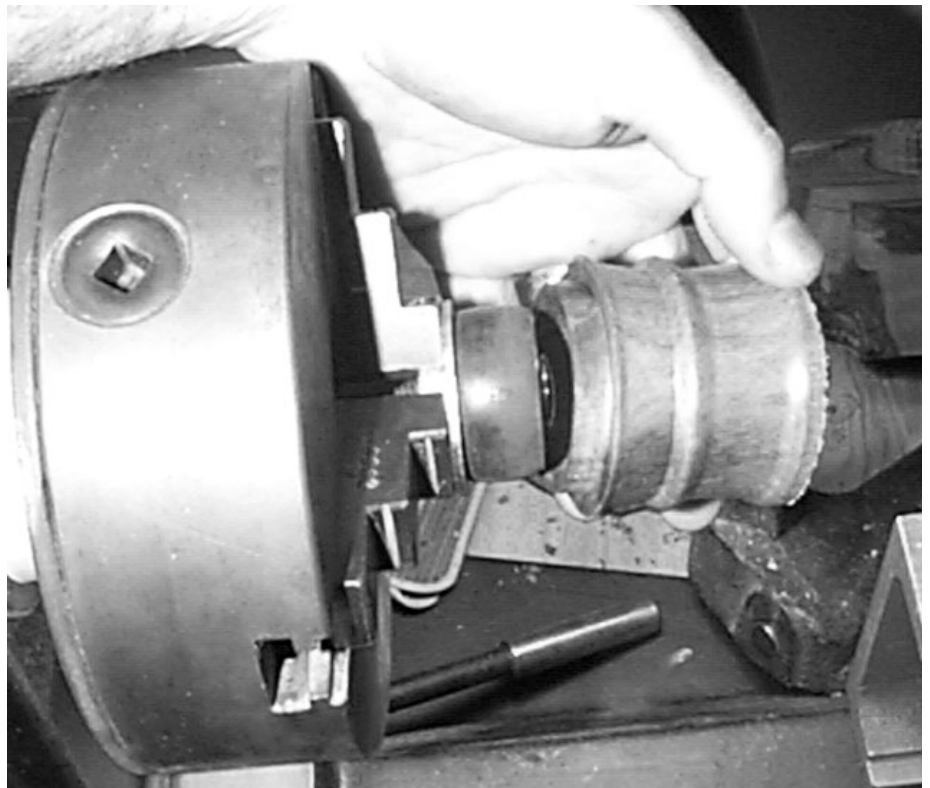
Foot finishing small hollow forms, cups and boxes is a challenge.

Expensive scroll chucks bite and compress the wood. Jam chucks which secure the turning by squeezing it between custom-built fixtures on the headstock and the tailstock work, but once you finally become proficient at making them, you find the following disadvantages:

1. Jam chucks also compress the wood, as well as mar a finish.
2. A piece with a fragile thin base, such as a goblet, can break when the turner inserts it onto the chuck.
3. The turner has to take the time to carefully turn the chuck to the correct diameter.
4. If the nearly completed piece comes off the jam chuck while the foot is being worked, the piece can be ruined.

To avoid these problems, I've found an inexpensive, yet incredibly effective solution — Freeze plugs!

A freeze plug is a 1-in.-thick disk of



The rubber section of an automotive freeze plug, held in a scroll chuck, can be expanded to create a secure soft gripping device for small boxes and other similar items. Photos by author.

rubber sandwiched between two washers with a bolt running through the center of all three components. They are used to block an opened freeze plug area on a car's engine block and they are sold at most auto parts stores. They come in a large range of sizes from 1/2-to-2-in. and are priced from around \$1 to \$4, depending upon size.

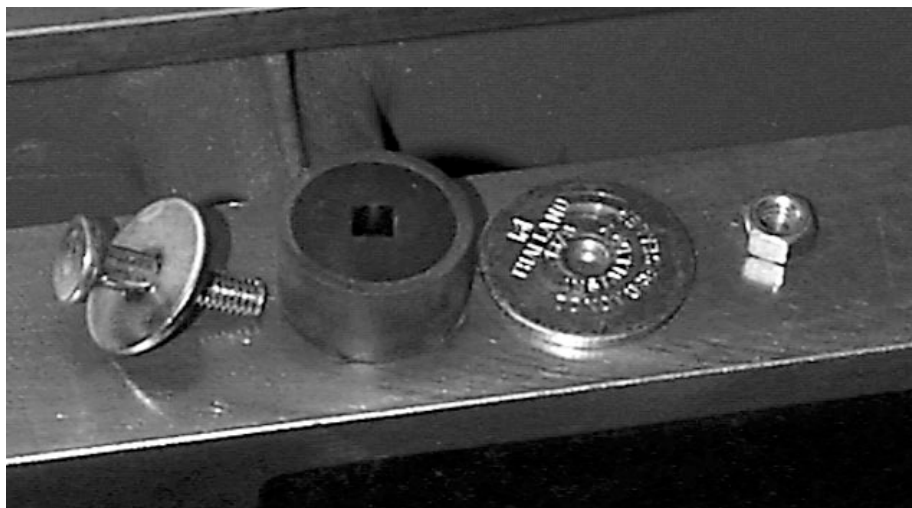
The top area of the bolt is squared off like a carriage bolt, so the bolt doesn't slip during tightening. When the nut is tightened, the washers compress the rubber disk, forcing its sides outward enough to friction fit inside a small box or similar item. A perfect, soft chucking mechanism.

Use a three-jaw scroll chuck or drill chuck to grab the freeze plug nut. Select the best size plug for the piece. Place the outer washer flush against the scroll chuck jaws and insert the piece onto the plug. Twist the plug to bulge the rubber just enough to get it to grab the turned piece.

Put the rim of the piece flush on the inner side of the outer washer and the piece can get pretty close to center. Then just twist a little, but be careful — you can crack or break the piece.

If you get the right compression, the rubber will not mar or damage the work. It takes seconds to mount and I've never had the work fly off.

Andy Cohen turns wood in Santa Rosa, CA



Freeze plugs, available in diameters from 1/2-to-2-in., are composed of a rubber unit compressed between two washers by a nut and bolt.