



Ornaments

FROM A TUBE KIT

Joshua Friend

This simple project is sure to please during the holidays: ornaments from a tube kit. There are many projects that make use of brass tubes for centering and driving the wood on the lathe, such as pens, whistles, letter openers, and perfume atomizers. If you have not yet ventured into the world of tube kits, this project is a good place to start. It's simple, quick, and fun!

There are several resources for purchasing ornament kits. I bought mine from Craft Supplies USA. When you purchase an ornament kit, it comes with a brass tube, a decorative tip (in the shape

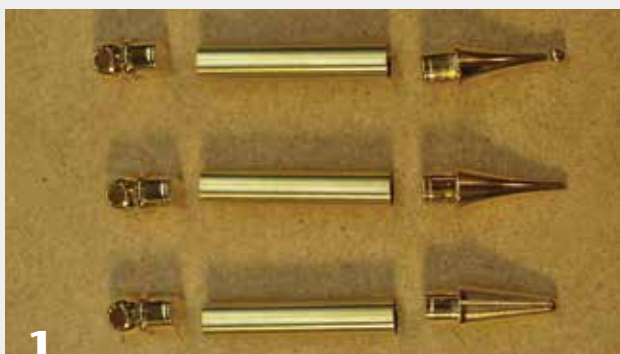
of a droplet, icicle, or spiral), and an eye cap for hanging the ornament (*Photo 1*). You will also need a pen mandrel, which is used for holding and driving the piece on the lathe, and two bushings, which make it easy to achieve a smooth transition from the wood to the metal parts (*Photo 2*). When ordering, make sure to purchase the 7 mm (.335") bushings, the appropriate size for this kit. You will also need a 7 mm drill bit.

Wood preparation

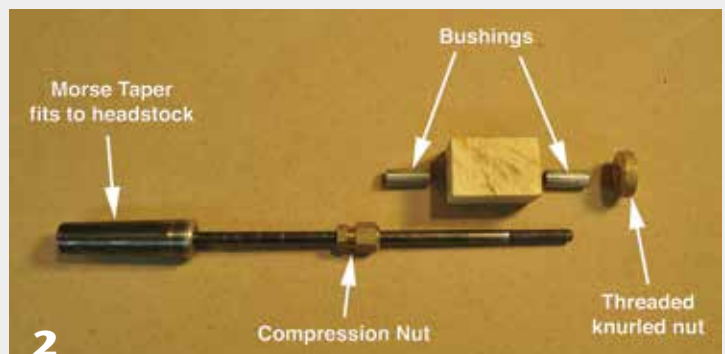
This project does not require much wood, so it is ideal for using up small

scraps or pieces of exotic wood or burl. The brass tube provided in the kit determines the length of the blank: The wood should be cut about ¼" (6mm) longer than the brass tube. Place the brass tube on the wood and make a cut mark so that about ⅛" (3mm) overhangs each end (*Photo 3*). It is not essential to cut the wood square because the blank will be squared up later using a barrel trimmer. The width of the blank depends on your design.

Drill a hole all the way through the blank using a 7-mm drill bit. Center the hole, but precision is not



1 Ornament kits can be purchased in three styles, top to bottom: droplet, icicle, spiral.



2 A typical pen mandrel can be used to turn many different tube-type kits. The bushings go on both sides of the wood and provide a target diameter for a smooth wood-to-kit transition when the kit is assembled.

absolutely necessary because the blank will become centered when it is turned (*Photo 4*).

Prior to gluing the brass tube into the wood, gently rough up surface of the tube using a fine abrasive, which will improve adhesion of metal to wood. I usually make multiples of these kits, so to make the process efficient, I insert a flap sander into my drill press and apply the tube to it, wearing gloves of course (*Photo 5*). Hand sanding with a small piece of 220-grit abrasive will also do the trick.

Glue the tube into the wood so that the tube is slightly recessed on both ends. Several types of glue can be used, but my favorite is two-part epoxy, which provides plenty of working time and a strong bond. Another type of adhesive that would give similar benefits is polyurethane glue. If you are in a hurry, use CA glue, but beware of its quick setting time: If you don't position the tube quickly, it could end up glued into the wrong place. If this happens, additional tubes can be purchased separately.

Apply glue directly to the brass tube and work the tube into the hole, twisting it in and out to spread the glue evenly (*Photo 6*). You can purchase an insertion tool designed for helping push the tube inside the wood and into the proper position, but I find it sufficient to use the end of a pencil or other pointed object such as a scratch awl.

The tube is set inside the wood because, after the glue cures, the wood will be trimmed down flush and square with the tube. This must be done prior to turning the project on the lathe so that later, when the ornament's brass fittings are pressed into the tube, the wood will be square and you will have a good union from wood to metal (no gaps).

There are various methods of trimming the wood flush with the tube, but I like to use a barrel trimmer

because it is simple, easy, and consistent. The pilot shaft of the barrel trimmer goes inside the brass tube and aligns the cutter head square to it. Make sure to cut down far enough so that the brass tube is freshly exposed. It is okay to trim a little bit off the end of the brass tube because that will ensure the wood and tube are flush and square with the length of the tube itself (*Photo 7*). Do this on both ends of the workpiece.

Mounting and turning

Now you are ready to take the project to the lathe. Mount the Morse taper of the mandrel into the lathe's headstock. Refer to *Photo 2*, which shows the order in which the pieces must go onto the mandrel. Most mandrels come with a compression nut or locking collar so you can adjust the position of your workpiece on the mandrel. It should be positioned far enough to the end so you can tighten down the knurled nut with moderate pressure. Bring up the tailstock with the point of a live center or a 60° cone and apply light pressure to the end of the mandrel. Too much pressure from the tailstock will result in bending the mandrel and it will not turn true.

This is a good opportunity to work on a variety of spindle-turning skills. Although the project is small, I like to start with a roughing gouge to round the piece to a cylinder. Do this by holding the handle of the gouge down so that you are rubbing the bevel without cutting. Then, slowly and gently lift the handle until the cutting edge is engaged. Point the cutting edge slightly in the direction of the cut and move the tool from center to end (*Photos 8, 9*).

After the piece is round, I use a spindle gouge to turn various details such as beads, coves, ridges, or tapers. In general, all details formed on the lathe fall into the broad ▶



3 Cut the wood about ¼" longer than the brass tube, allowing for ⅛" of wood beyond each end of the tube.



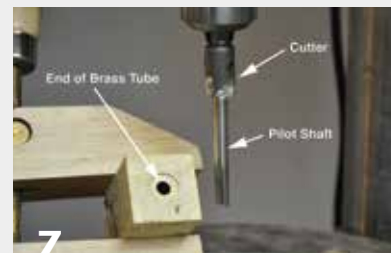
4 Drill a 7 mm hole through the wood. A wooden clamp will suffice to hold the piece, but specialized pen-drilling vises are available.



5 Lightly sand the brass tube before gluing it into the wood.



6 Lightly sand the brass tube before gluing it into the wood.



7 A barrel trimmer makes quick work of trimming the wood flush and square with the brass tube.



8



9

The fundamentals of spindle turning are: anchor the tool on the toolrest, rub the bevel, and then engage the cutting edge.



10

Cutting deep enough to expose the brass tube provides a contrast between wood and metal.



11



12

Ornaments provide an opportunity to practice the techniques of spindle turning.

categories of coves, beads, and fillets (flats). Seeing it this way, the outside of a bowl, for example, is part of a large bead, and a taper on a spindle is part of a gradual cove. It's an interesting way to think about forms and design.

These ornament kits allow you to creatively pursue shapes and designs (Photos 10, 11). You can even cut all the way down to the brass tube to achieve a contrast between wood and metal (Photo 12). But, there is one important consideration: the bushings are the same diameter as the brass fittings on the kit. So, however you make the wood transition to the

bushings while turning your design is how it will transition to the brass fittings in final assembly.

When you have achieved a design you are happy with, sand the piece (Photo 13). Fine details should be sanded with fine abrasive (320 or 400 grit) so that details remain crisp. If you rely on heavy sanding to remove torn wood grain or frayed edges, you will end up with muted details.

Finishing up

Apply your favorite finish, such as a friction polish or wax applied on the lathe. I like to use a sprayed gloss lacquer. To spray

the workpiece without having to touch it, I mount it on a dowel with a small amount of electrical tape on each end to hold it in place, and then I simply hold the dowel and spray (Photo 14). Suspend the ends of the dowel on a rack while the finish dries.

The final step is to assemble the kit parts. The decorative tip and end cap are designed for a press fit, which means no glue is needed. There are several means of applying pressure to achieve a press fit, such as a vice or a drill press—both fitted with scrap wood to protect the kit—a clamp, or a pen press designed specifically for this type of application. Press in either the decorative tip or end cap first, but not both at the same time. Apply slow, gentle pressure until the brass of the fitting seats squarely with the wood (Photo 15).

Now you are ready to surprise friends and family with a lovely ornament. Alternatively, these kits can also be used to make decorative pulls for light-fixture chains. ■

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13

Gently sand with the toolrest out of the way.



14

A dowel rod makes an easy setup for spray finishing small kit parts.



15

Scrap wood mounted in a vise will protect the brass fittings while slowly press-fitting pieces together.