The art of inlaying decorative wooden details into a piece of furniture has been a hallmark of fine craftsmanship for centuries. Traditionally, those inlays were painstakingly crafted to fit into hand-carved and chiseled recesses. But today, all you need is a plunge router and a simple inlay kit.

**THE INLAY KIT.** The secret to getting great results is in the design of the inlay kit, shown in the margin below. It’s just a brass guide bushing that screws into the base of your router (like the ones you’d use with a dovetail jig) and a removable sleeve. The offset created by the sleeve matches the diameter of the spiral router bit. The removable sleeve allows you rout the inlay and the matching recess with only one template. This ensures a perfect-fitting inlay every time.

You can buy acrylic templates like the “bowtie” shown above (see page 49 for sources) or you can make your own from ¼” MDF.

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**Step-By-Step: Making Inlays**

**Rout the Shape.** Begin by attaching the template to the piece with carpet tape. With the bushing installed on the router, and the bit set to a depth of ¼”, rout the outline. Keep the bushing tight against the template as you change directions.

**Clean out the Recess.** Carefully move the router around the recess to remove all the wood and leave a flat bottom.

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The inlay kit consists of a brass bushing with locking ring, a removable sleeve, a centering post, and a down-cut spiral bit.

![Image of tools and inlay kit components]
GETTING STARTED. As you can see in the box at the bottom of the page, the template and bushing kit make inlay work pretty straightforward. The downcut spiral bit leaves a smooth edge on both pieces.

But before you begin, you’ll need to set up your router. You can use the centering post to install the bushing and secure it in the router base. This way, you’ll be assured that the bit is centered in the bushing. If it isn’t, you’ll probably get some small deviations as you move the router around the inside of the template. Those deviations will show up as visible gaps in your finished inlay.

ROUT THE RECESS. To keep the inlay oriented properly and in position on the workpiece, you’ll need to use layout marks. I usually just mark center lines vertically and horizontally on the workpiece and on the template itself. You can see an example in the photos at right. Then it’s just a matter of aligning the marks and attaching the template to the workpiece with some carpet tape. Finally, with the spiral bit installed and the sleeve on the bushing, rout out the recess.

CUT OUT THE INLAY. To make a matching inlay piece, use the template as a “window” to find the right grain orientation. Then, using carpet tape, fasten the template securely to the inlay blank. To keep the template from moving and ruining the inlay, make sure to use fresh tape for each piece you cut.

Now you can remove the sleeve from the bushing and carefully rout around the template to outline the inlay. The next step is to move to the band saw and cut the inlay free from the blank.

ASSEMBLY. Since the router bit cuts the outside of the inlay and the inside of the recess, the inlay pieces have sharp corners and the corners of the recess are rounded. You can either lightly sand the inlay to round the corners or use a chisel to square the corners in the recess. Either way, be careful to remove only small amounts of wood to ensure a tight fit. Check your fit as you go.

When you have the fit you want, apply glue in the recess, especially around the sides, so it will seal tightly. Then cover the inlay with a waxed block of wood, tap the pieces in place, and clamp the assembly until the glue dries. You can finish the inlay by scraping or sanding the pieces flush.

With a little patience and this simple technique, you’ll be surprised at how quickly you can add a creative detail to an otherwise ordinary woodworking project.

Cut the Inlay. With the template attached to the inlay material, remove the sleeve and rout counterclockwise around the template. Make sure to keep the router flat, or it will gouge the inlay. Raise the bit before removing the router.

Free the Inlay Piece. At the band saw, resaw the stock to free the inlay. The piece should be a hair thicker than \(\frac{1}{8}\)".

Refine the Fit. For a perfect fit, either round the edges of the inlay, or square the corners of the recess with a chisel.

Make Your Own Template & Pattern

With a shop-built template, you can create a larger pattern by using layout marks to maintain proper orientation of the design.

First, lay out and rout the recesses that are square to the edges. Then, glue inlay pieces into place and sand them flush.

Next, repeat the layout process with lines oriented 45° from the original marks. Finally, fit the inlay pieces to complete the pattern.
I owned my first rotary tool for over 15 years. (And it was 10 years old when a neighbor gave it to me.) But it lacked a few features I needed — like variable speed — so I thought it was about time to upgrade to a new one. The timing couldn’t have been better.

That’s because Dremel recently introduced a new tool to their line, the 400 XPR, that I’m pretty excited about. Thanks to a more powerful motor and some new attachments and accessories (like a mini-planer, a multisaw and a plunge base), this compact, ergonomically-designed rotary tool now handles all kinds of “woodworking” jobs that it couldn’t handle before.

**Fast and Powerful.** It’s speed, not brute force, that make these tools work so well. The Dremel 400 XPR has variable speeds ranging from 5,000 to 35,000 RPM. At those speeds, the tool does all the work. All you need to do is guide it.

But unlike older rotary tools, the 400 XPR has a new permanent magnet motor. Permanent magnets allow the motor to better sustain performance at all speed settings, especially in the lower speed ranges around 5000 RPM. This means the tool won’t stall under load as easily as a wound motor will.

**New Innovations.** In case you’re wondering, the 400 XPR is still compatible with all the old attachments and accessories that have been around for years. But as I mentioned, it can also be used with a couple of interesting brand new attachments (as well as a few others that have come out in the last few years) that could very well change the way you work in your shop and around the home.

**XPR Planer.** One of these new attachments is the XPR Planer, which is included with the 400 XPR along with a molded plastic carrying case. This mini-planer features a high-speed steel (HSS) spiral-style bit that takes off only $\frac{1}{64}$" per pass. You can use it to plane down sticky doors up to $2\frac{1}{4}$" wide (see the photo at left). Or close...
up a loose miter with the planer by taking off a super-thin shaving.

The planer can also be used to cut chamfers. To do this, just tilt the tool 45°. A bevel at the end of the planer’s edge guide supports the cutter for perfect chamfers.

**XPR Multisaw.** The XPR Multisaw (available separately or as part of a kit) turns a rotary tool into a handy jig saw capable of cutting through 1½”-thick stock. The Multisaw uses standard size “U” and “T” shank jig saw blades and its pivoting base makes the saw work a lot like a miniature reciprocating saw (see photo below).

**Router Bits.** To go along with the plunge base, a variety of HSS router bits with ⅛” shanks are available. They include a V-groove, core box, and three different sized straight bits for freehand routing. Bearing-guided bits for routing beads, round-overs, and chamfers are also available. I even have a small keyhole router bit for cutting slots.

**Flex Shaft.** One old attachment, the flex shaft extension, has also been improved (photo above right). The new flex shaft has a metal core wrapped in durable plastic that bends to a 5” radius. It connects a small handpiece to the rotary tool. The handpiece is about the size of a pen allowing for fingertip control and increased comfort.

A wide variety of accessories can be used with the flexible shaft for rough shaping, smoothing, and cutting in a wide range of materials from wood to plastic to rubber.

**Alternate Uses.** Rotary tools are also great for a lot of handy applications around the home. (For more on one of these applications, see the box below.)

So as you can see, even though rotary tools are small in size, they can be a powerful addition to your shop arsenal. And now that you know a little bit more about their many uses, it’s easy to understand the benefits to owning one.

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**Outside the Shop:**

**Razor Sharp Blades**

Sharpening the blade on my lawn mower is one of those tasks that I always seem to put off. But mower blades (and most garden tools) need to be sharp to work at top efficiency. *Dremel* has a simple attachment for rotary tools that makes getting these blades in tip-top shape a real snap.

**Sharpening.** When used with an aluminum oxide sharpening stone, this comfortable, two-handed attachment works with any of *Dremel’s* rotary tools. The attachment provides the optimum angle to sharpen most lawn mower blades, as well as shovels, shears, and hoes.