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perfect bits for

Precision Drilling



When it comes to drilling smooth, precise holes, these Forstner-style bits are the most versatile ones you can own.

I have a drawer full of drill bits in my shop. But when I want to bore precise, flat-bottomed holes, there's only one bit I reach for — a Forstner bit. Actually, there are four types of Forstner bit. And all of them will drill precise holes. While each has a few unique features and uses, they all cut with the same principle.

As the bit is lowered into the workpiece, an outer rim scores the edges of the hole. Then, a set of horizontal lifters

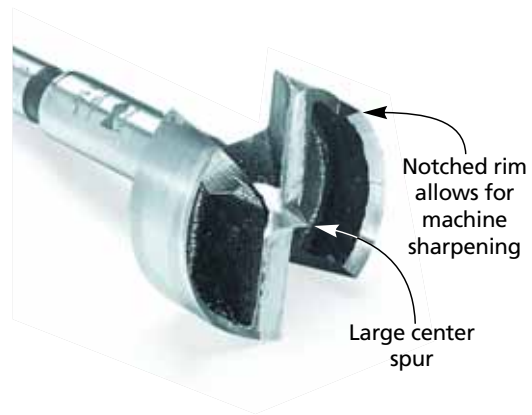
slice through the wood like the blade of a hand plane to remove the waste in long, curly shavings (photo above).

Since Forstner bits are guided by the rim and not the centerpoint, they can do things other bits can't. For example, drilling overlapping holes. A few other uses are shown in the box on the opposite page. Knowing a little about each style will help you choose which bits you need in your shop.

True Forstner



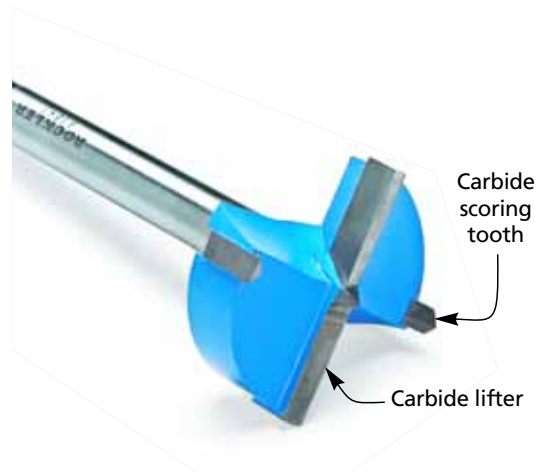
Machined Forstner-style



Multi-Spur Forstner-style



Carbide "Forstner"



TRUE FORSTNER. True Forstner bits are descended from the original bit first designed in 1886. And there's only one company that still makes them, CONVALCO. To find out where to get them, turn to page 4.

What makes them special is how they're made. True Forstners are milled from a solid blank and sharpened by hand. This attention to detail results in a perfectly balanced and razor-sharp bit. In fact, these bits cut with no chatter and seem to melt the wood.

Another interesting feature of this type of bit is the centerpoint. If you look closely at this bit you'll notice that it has a small nub for a centerpoint.

This means true Forstners bore the flattest bottom holes, as you can see in the photo on the top of the opposite page.

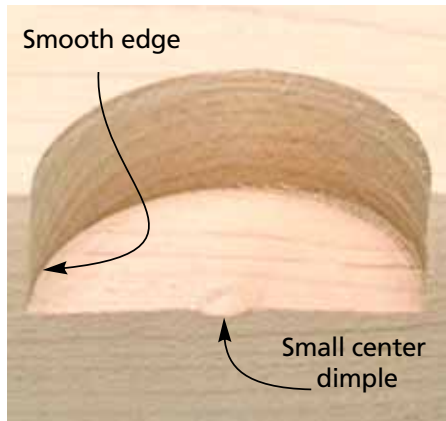
It sounds like these are the perfect bits, right? Well, yes and no. All this precision comes at a price. True Forstners can cost several times more than the other types. For example, the 1⁵/₈"-dia. bit shown at left costs about \$47 (plus shipping). But if you're looking for dead-on accuracy and the cleanest holes, these are the perfect bits for you.

MACHINED FORSTNER. At first glance, a machined Forstner-style bit doesn't look much different than a true Forstner. But if you take a look at the

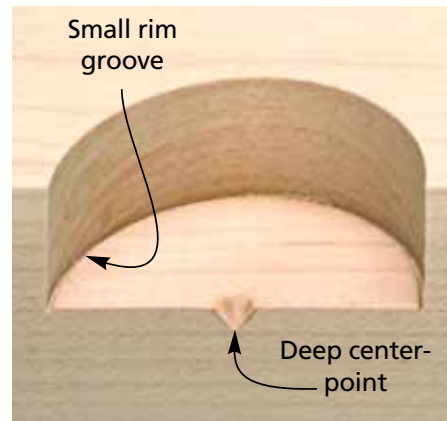
lower photo at left, you can see a few differences. First, they have a larger centerpoint and a notch in the rim. Another noticeable difference is the roughgrinding around the rim of the bit.

The big advantage of this type of bit is cost. These bits are cast and then sharpened by machine. This automation and simpler manufacturing reduces the cost, but still makes for a fairly smooth-cutting bit.

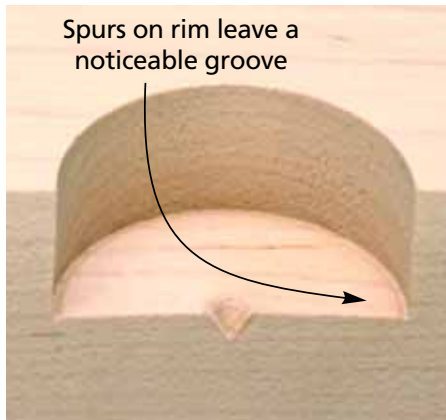
You'll find the quality of these bits can vary between manufacturers. But overall, they make pretty good all-purpose bits.



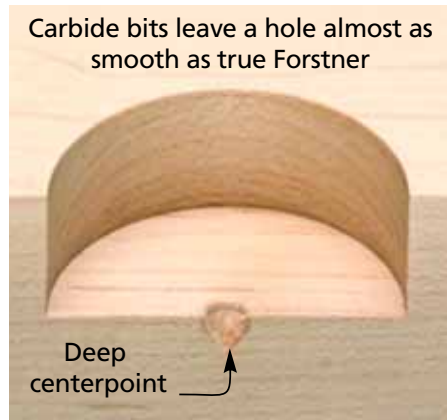
▲ **True Forstner.** A small center “nub” and sharp lifters make a smooth, flat-bottomed hole with minimal centerpoint.



▲ **Machined Forstner.** The large centerpoint of the bit leaves a noticeable depression in the center of the hole.



▲ **Multi-Spur.** Saw tooth-like spurs along the rim leave a groove along the bottom edge of the hole.



▲ **Carbide.** Carbide’s durability makes it good for use on hard materials. But it leaves a deep centerpoint depression.

HYBRID BITS

The next two bits in my inventory look quite a bit different from the other Forstner bits. And while I may not use them every day, these bits come in handy for some tasks.

MULTI-SPUR FORSTNER. The first thing you’ll notice about these bits is the rim. Instead of a single cutting edge, multi-spur bits have a serrated rim. These spurs work a lot like the teeth on a saw blade to cut fast and quickly remove chips.

I’ve found these bits to be relatively inexpensive. I use the larger sizes for drilling big holes, like those for clock movements.

CARBIDE. The newest bit in my collection isn’t really a Forstner at all. What sets this bit apart are the carbide cutting edges. The bit shown in the photo at left doesn’t have a scoring rim. Instead, it uses a pair of carbide teeth to do the job.

So why have a carbide-tipped drill bit? First of all, these bits will hold their edge much longer and than similar steel bits. This makes them perfect for high-volume, production-type drilling. The downside is they’re not quite as sharp as the other bits. So it takes a little more effort to drill the hole.

But the reason I have a few of these bits around is for boring holes in man-

ufactured materials like MDF and particleboard. These abrasive materials can wear down regular steel bits relatively quickly.

WATCH YOUR SPEED. Regardless of the type of Forstner bits, I’ve found there’s really only one thing to keep in mind when using them — speed. All Forstner-style bits cut best at slow speeds. And the bigger the bit, the slower the speed. The chart below gives you some recommended drill press speeds. **W**

Forstner-Style Bits: How to Use Them



▲ Forstner-style bits are guided by the rim and not the centerpoint. This means you can use them to drill angled holes without worrying about the bit wandering.



▲ Sometimes you need just one half of the hole. To do this, simply locate the bit at the desired position. Hold the workpiece firmly and then you can drill the hole.

Recommended Speeds Forstner-Style Bits

Hardwoods

Bit Diameter	Maximum RPM
1/4" – 3/8"	700
1/2" – 1"	500
1 1/8" – 2"	250
Softwoods	
1/4" – 5/8"	2400
3/4" – 1"	1500
1 1/8" – 1 1/4"	1500
1 3/8" – 2"	500

SOURCES

FORSTNER-STYLE BITS

You can find Forstner-style bits at most hardware stores and home centers, and we've also listed a few sources in the margin at right. When it comes to true Forstner bits, however, there's only one source — *Connecticut Valley Manufacturing Company*. You can contact the company by calling 860-827-0823 or visit the website: www.convalco.com.