

# Benchtop Mortisers

These fast, accurate drilling machines cut square holes easily

BY ROLAND JOHNSON



The mortise-and-tenon might not be the most glamorous furniture joint (there is no denying the dovetail's beauty), but it's strong, reliable, and versatile, suitable for tables, chairs, casework, and more. Many woodworkers, however, find the mortise half of the joint to be a challenge. To cut it by hand you need only a chisel and mallet, but it takes time to learn the technique. Drilling or routing out the waste and then squaring up the walls with a chisel also works, but it, too, is time-consuming.

A better tool for the job is the hollow-chisel mortiser, which cuts square holes quickly and accurately. The machine's

head is fitted with a square, hollow chisel with a drill bit running through the center. As you plunge the chisel and bit into the wood, the bit removes most of the waste, and the chisel squares up the hole.

Although mortisers come in a variety of sizes, a benchtop model will cut just about every mortise you'd need for furniture. Benchtop mortisers have enough power to plunge a chisel up to ½ in. square into hardwoods, and they cost significantly less than larger, floor-standing machines. Plus, they are light and small enough to store out of the way when not in use.

I tested the 13 benchtop models available to find out which performs the best and which is the best value. First, though, I'll tell you what to look for.

## Power, leverage, and ease of use

It's not easy to plunge a chisel and drill bit simultaneously into wood, so a mortiser needs a strong motor,







**Make sure the fence is square.** When you mortise a part, you press it against the fence with a clamp, rollers, or your hand. If the fence leans in or out, the mortise won't be square to the edge. All of the mortisers tested—except the Baileigh Industrial MC-625—had square fences.

and a handle that creates leverage. I tested all of the machines with the same ½-in. bit from Charles Schmidt and Company (sharpened between machines). With models that have less than ¾ hp, you'll need to slow the feed rate in harder woods to keep the chisel and bit from clogging. However, most furniture mortises are between ¼ in. and ¾ in. wide, and all of the machines easily cut mortises in that range. For leverage, you want a longer handle, and it's better if it is easy to adjust.

Most important is how easy the mortiser is to use. Adjustments to the fence shouldn't require a tool. The depth stop should be simple and quick to operate without tools. And the drill chuck should be easily accessible.

## Two mortisers rise to the top

All of the machines tested, except for the one from Baileigh Industrial, are capable of cutting mortises accurately and maintaining their settings so that you can cut a series of identical mortises. However, the power and convenience of the Powermatic PM701 and General International 75-050T make them stand out. The Powermatic has a powerful ¾-hp motor, so it cuts quickly, even with a

## SQUARE FENCE THAT'S EASY TO USE

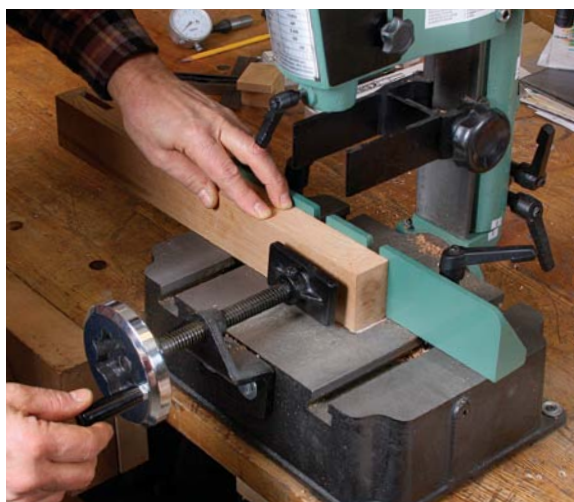
Every time you set up to cut a mortise, you have to adjust the fence, so it should be easy. Also, the fence must be square to the table to ensure accuracy. A convenient system to hold the work still is worth having, too.



**Easy adjustments, in and out.** On the Powermatic (shown), Delta, and Grizzly mortisers, the fence moves forward and back on a rack-and-pinion mechanism, making for quick and accurate adjustments.



**Helping hands.** It's nice to have help holding work against the fence. Rollers, like those on the General International 75-040 (top), work best, allowing you to move the part between plunges without loosening them. But a vise, like the one on the General International 75-050T (bottom), works, too. The downside is that you must loosen the vise to move the part between cuts.





## CONVENIENCE IS KING FOR BIT CHANGES

The chucks on all of the machines tested are behind a door, so it should be a snap to open. And there should be plenty of space to get the chuck key in.



**Wide open for business.** The door on the Powermatic is the largest and easiest to open. This makes it very easy to lock bits in the chuck.



**Thumbscrew is tedious.** Having to completely remove a thumbscrew to gain access to the chuck, like on the General International 75-040, complicates bit changes.

½-in. chisel. It's also the most user-friendly. Every adjustment (except the drill chuck) is made without a tool, and the stop, fence, and hold-down moved smoothly and easily. The fence locks down with two cam levers—simple, effective, and fast. Access to the drill chuck is easy via a door that snaps open easily; inside, there's plenty of room for the chuck key and your hand.

The General International 75-050T is a great machine, too. The only mortiser in the test with a tilting head, it's the best choice for anyone who cuts angled mortises on a regular basis, like a chair maker. The head also rotates, so you can cut mortises on parts that wouldn't fit under the chisel otherwise. (The Shop Fox has this feature, too.)

The Wood River mortiser is the Best Value among these machines. It has a big table with extensions, rollers to hold parts against the fence, and you can reposition the lever with one hand.

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## DEPTH STOP MUST BE DEAD-ON

A stop will prevent you from accidentally cutting a through-mortise. But more importantly, it guarantees that every cut is the same depth.



**Two stops in one.** The bottom stop controls the depth of cut, and the top one allows this chisel to clear the part without having to raise the lever fully—a convenience featured only on the General International 75-050T.



**Easy stop.** A ratchet handle tightens the Powermatic's stop against the dovetailed ways. It was easy to adjust and tighten.

## Online Extra

To learn how to sharpen a hollow chisel, watch the video at [FineWoodworking.com/extras](http://FineWoodworking.com/extras).



## BIGGER TABLES ARE BETTER

A big table stabilizes the workpiece, so you can use both hands to adjust the mortiser's settings, and lessen the chance that the part will move during the cut.



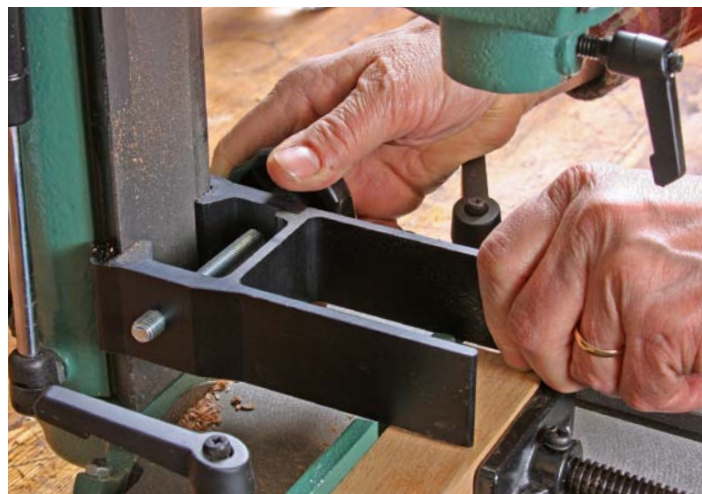
**Extensions for long parts.** The Wood River, General International 75-040, and Steel City machines have extensions that keep legs and other long parts level for setup and mortising.



**Small table, big headache.** Mortises are often near the end of a part, and on a small table like the one on the Woodtek 138224, the part will tip up. You have to keep a hand on it any time the clamp isn't tight against it, which can complicate setup.

## HOLD-DOWNS MAKE WORK EASIER

When raised out of the cut, the chisel and bit can pull the part up off the table. A good hold-down prevents that.



**Tighten in a flash.** The large knob on the General International 75-050T is easy to turn, and always there, so adjustments are fast.



**Keep the Allen wrench close by.** Four machines (Shop Fox, Steel City, Wood River, Woodtek 876775) require the use of an Allen wrench to adjust the hold-down, an unnecessary complication.

## ADJUSTABLE LEVER IS BEST

Sometimes the lever interferes with the cut. It might hit a wide or thick part before you cut to the mortise's final depth, for example. If you can reposition the lever on the fly, you can finish the cut.

**Reposition with one hand.** On the Steel City, Shop Fox, and Wood River machines, you need only tilt the lever out with your hand and then rotate it.



**Limited options, and difficult changes.** The levers on the machines from General International and Woodtek have two positions only, and require you to loosen a set screw before you can switch between them.



# Benchtop mortisers

Johnson tested the machines with the same 1/2-in. bit, sharpened between tests. All the machines were able to cut mortises adequately, but the best offer a combination of power and convenience that makes them stand out from the crowd.

**POWERMATIC  
PM701**

AUTHOR'S  
**BEST OVERALL**  
CHOICE



**GENERAL  
INTERNATIONAL  
75-050T**

AUTHOR'S  
**BEST OVERALL**  
CHOICE



**WOOD RIVER  
151223**

AUTHOR'S  
**BEST VALUE**  
CHOICE



**BAILEIGH IND.  
MC-625**



**DELTA  
14-651**



**GENERAL INTL.  
75-040**



**GRIZZLY  
G0645**



**JET  
JBM-5**



**RIKON  
34-250**



**SHOP FOX  
W1671**



**STEEL CITY  
25200**





**WOODTEK  
138224**



**WOODTEK  
876775**



	MODEL	STREET PRICE	MOTOR	HOLD-DOWN	CLAMPING	FENCE	TABLE	DEPTH STOP	COMMENTS
	<b>Baileigh Industrial MC-625</b>	\$355	½ hp	None	Good	Poor	Poor	Poor	Only mortiser with an X-Y table
	<b>Delta 14-651</b>	\$320	½ hp	Good	None	Very good	Good	Good	Includes four chisels (¼ in., ⅝ in., ⅜ in., ½ in.)
	<b>General International 75-040</b>	\$390	½ hp	Good	Excellent	Very good	Excellent	Good	Includes four chisels (¼ in., ⅝ in., ⅜ in., ½ in.)
	<b>General International 75-050T</b>	\$620	½ hp	Excellent	Very good	Very good	Fair	Very good	Includes four chisels (¼ in., ⅝ in., ⅜ in., ½ in.); tilting head makes it ideal for chairmaking.
	<b>Grizzly G0645</b>	\$255	½ hp	Good	None	Very good	Very good	Good	Includes four chisels (¼ in., ⅝ in., ⅜ in., ½ in.)
	<b>Jet JBM-5</b>	\$355	½ hp	Good	None	Fair	Very good	Good	MDF table can be replaced with shopmade jigs or larger table.
	<b>Powermatic PM701</b>	\$490	¾ hp	Excellent	Good	Very good	Very good	Very good	Every adjustment, except for drill chuck, can be made without a tool.
	<b>Rikon 34-250</b>	\$280	¾ hp	Good	None	Very good	Good	Good	Includes four chisels (¼ in., ⅝ in., ⅜ in., ½ in.)
	<b>Shop Fox W1671</b>	\$320	¾ hp	Good	None	Fair	Very good	Good	Includes three chisels (½ in., ⅝ in., ¾ in.)
	<b>Steel City 25200</b>	\$350	½ hp	Good	Good	Very good	Excellent	Good	Table extensions and rollers make mortising more convenient.
	<b>Wood River 151223</b>	\$290	½ hp	Good	Good	Very good	Excellent	Good	Includes four chisels (¼ in., ⅝ in., ⅜ in., ½ in.)
	<b>Woodtek 138224</b>	\$550	1 hp	Excellent	Very good	Good	Fair	Good	Long handle and big motor make mortising easy.
	<b>Woodtek 876775</b>	\$340	½ hp	Very good	None	Fair	Very good	Good	Includes five chisels (¼ in., ⅝ in., ⅜ in., ½ in., ¾ in.)