

Rules of Thumb

The combination square: a perfect name for a near-perfect tool



You get what you pay for. A high-quality combination square costs about \$70, but it's the most versatile woodworking tool you'll own. A high-quality square has exact machined edges, graduations that are machined, rather than stamped, into the sliding blade and a solid-locking thumbscrew.

BY ANTHONY GUIDICE

The combination square is the most versatile measuring tool there is. It is so valuable that I have my beginning students use it to the exclusion of all other measuring tools—at first. The tool teaches beginners the concept of accuracy in layouts and measurements. You mark a line and look at it. It isn't automatically square. Does it look square and straight? If it's not, you're the cause, not the tool. For a beginner, using a simple tool helps develop this concept. It keeps the mind uncluttered. Later, a student can use marking gauges, cutting gauges and center markers. But far from just a great learning tool for woodworking students, the combination square is an indispensable little device for all woodworkers.

Use it as a depth gauge ...

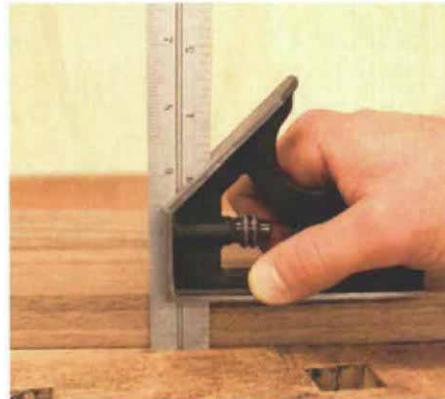
A combination square works very well as a depth gauge and a thickness gauge. I use mine as a thickness gauge when I'm using a power plane. I lay a board flat on the workbench, loosen the thumbscrew on the square and measure the distance between the top of the board and the bench. To measure the depth of a mortise, rest the square on the edge, extend the blade into the mortise and read the depth. To use it as a height indicator for a tablesaw blade, preset the depth you want and raise the tablesaw blade until a tooth at the top center contacts the square.

As a marking gauge ...

The combination square is a good substitute for a marking or cutting gauge. For hand ripping and planing, clamp the work in the bench first. Set the dimension on the square and lock it. Slide the square along the edge of the board while guiding a marking knife or pencil with the edge of the blade. This takes practice, but you can get the hang of it pretty quickly. For mortises and tenons, mark with a sharp pencil on the work, adjust the square to that and mark the whole joint with the knife. The same technique can be used to mark depth on the end of the board for hand-cutting dovetails.

As a try square and to calibrate your tablesaw ...

An accurate combination square can also be used as a try square. It can measure inside corners or outside corners. Quite often I use



Check the thickness of a board. Loosen the thumbscrew of the square and measure from the top of the workbench to the top of the board.



Use a combination square as a depth gauge. To check the depth of a mortise, rest the head of the square on the face of your wood and lower the blade into the mortise.



The square works as a marking gauge. Set the blade to the desired width, hold the head against the edge of a board and, while holding a pencil at the end of the blade, slide the square along the edge of the board.

Rules of Thumb (continued)

my combination square for marking 90° crosscuts or 45° miters when I'm making a cut with a handsaw.

I calibrate my tablesaw with the combination square. Raise the blade all the way, then lock the combination-square blade flush with the corner, and sight for 90° by holding the square tight to the sawblade, making sure the square's blade isn't resting on the edge of any of the blade's teeth. Use the square without the blade to calibrate the 45° setting.

You can also use a combination square to check the squareness of your tablesaw blade to the miter-gauge slot. First, unplug your saw and raise the blade to its full height. Mark one of the saw teeth with chalk. Rotate the marked tooth to the front of the blade insert, rest one edge of the square in the miter slot and extend the combination-square blade out to the tooth. Rotate the marked tooth to the back of the sawblade insert and check it with the square. If the blade tooth doesn't meet the square exactly as it did in front, you need to adjust the saw.

Or set your router

I have a jig for cutting mortises with a plunge router, and I use a combination square to set the edge guide. I lock in the distance from the edge of the jig to the mortise on the combination square. I use that setting to set the distance from the bit to the edge guide. To rout dados, you can set the distance from the edge of the router base to the bit, men use that to set a straightedge clamp. In a router table you can use the combination square just as you did with the tablesaw blade to measure the depth of a cut.

Quality costs and quality counts

An important consideration when buying a combination square is its quality. Good ones can cost upwards of \$70, but they are worth their weight in gold. Poor-quality combination squares are fine for rough carpentry like framing, but you really need a high-quality square for precise work. Errors accumulate very quickly in woodworking, particularly in machine work. If you start measuring inaccurately and making cuts, before you know it, one side of your work could end up being $\frac{3}{16}$ in. shorter than the other.

There are several things to look for when acquiring a combination square. The sliding blade of a good square is heavy and stiff, and the measurement graduations are machined into the blade rather than stamped. The square's head—the part that holds the blade—should have an easy-to-use locking thumbscrew that holds the blade with viselike rigidity.

There is also a difference in how a high-quality combination square works. An accurate combination square is absolute in its indications; you can very easily tell if the work is on the mark or not. By comparison, measurements from a poor-quality combination square aren't clearly defined because either the measurement graduations aren't easily read or the measurements aren't accurate.

As I've said, a good-quality combination square is versatile: Use it as a depth gauge, a marking gauge, a square and a ruler. The sliding blade can also be removed from the head and used as a short straightedge or as a handy ruler. A final note, and this is important: never, never, never use the blade of your combination square as a mini prybar or to pop open a paint can.... Although, if you want to stretch the meaning of "combination" and possibly ruin the truthness of the blade, it will work quite well for those tasks, too.



Calibrate your tablesaw. Lock the blade at the 90° end of the head and hold the square against the edge of the sawblade, making sure the square's blade rests along the edge of the sawblade, not against one of the teeth.



Check the squareness of the saw table to the sawblade. Hold the square tight to the miter slot and set the blade so that it just touches the edge of a blade tooth at the front of the blade insert. Rotate the blade, slide the square back and check the same tooth at the back of the insert. If the tooth doesn't meet the square exactly as it did in the front, your saw needs adjusting.



Use it as a router gauge. It's easy to check the base-to-bit distance on your router. You can then use the square to set up a straight-edge for routing dados.