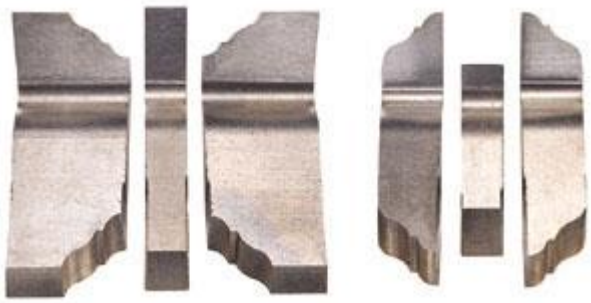
How to Set-Up and Use Your Shopsmith Complete Cabinet Set Shaper Cutters



The six cutters in the Shopsmith Complete Cabinet Set Shaper Cutter Set (# 505937) are (left to right):

A. 11/16-inch right-hand Sticking Cutter
B. Long, 1/4-inch Straight Cutter
C. 11/16-inch left-hand Sticking Cutter
D. 3/8-inch right-hand Coping Cutter
E. Short, 1/4-inch Straight Cutter
F. 3/8-inch left-hand Coping Cutter

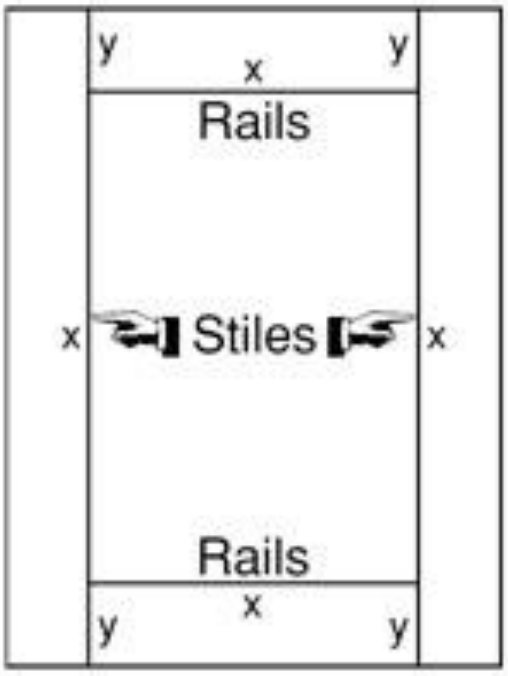


Figure 1

How The Complete Cabinet Set Works

Shopsmith's Complete Cabinet Set contains a total of six individual shaper cutters. This set is used to produce the mating coping and sticking cuts required for assembling the stiles (vertical pieces) and rails (horizontal pieces) on cabinet and exterior/interior passageway doors.

When set-up in its full configuration, the set of cutters is used to shape the inside edges found on the front and back sides of frame-and-panel doors, ranging from 1-1/8-inch to 1-3/8-inch thickness . . . while simultaneously forming the slot to hold the door panel insert.

The three largest cutters in the set (A,B,C) are called sticking cutters and are designed to cut the (male) interior edges (x) on both the stiles and the rails (SeeFigure 1).

The three smallest cutters in the set (E,F,G) are called coping cutters and are designed to cut the (female) ends (y) on the rails of your door (See Figure 1).

Similar profiles can be cut on the faces of thinner 3/4-inch door frames by using just half of the full cutter sets, consisting of a single coping cutter, followed by a single sticking cutter … each with their mating straight cutters.

How To Set-Up Your Cutters

Figure 2

Full profiles for thick interior or exterior passageway doors -- If you want both sides of the door to reveal the same bead-and-cove edge, use the cutter set-ups shown in Figures 2 & 3.

Start with the three largest of the six cutters (A,B,C) and set them in front of you in the configuration shown in Figure 2. This set-up will be used to cut the full length of the inside edges of both the stiles and rails, as indicated by "X" in Figure 1.

Figure 3

Now, take the three smallest of the six cutters (E,F,G) and set them in front of you in the configuration shown in Figure 3. This set-up will be used to cut the mirror-image profile in the ends of the rails, indicated by "Y" in Figure 1.

When set-up properly, the sticking (male) cut made in the inside edges of all stiles and rails (X) by the cutter configuration shown in Figure 3 will stick nicely into the coping (female) cut made in the ends of the rails (Y) by the cutter configuration shown in Figure 4.

Figure 4

Partial profiles for thinner cabinet doors -- If just one side of your thinner (3/4-inch or so) cabinet door is to reveal a bead-and-cove edge on the outside of the door only, you'll be making a cut with one less Coping Cutter and Sticking Cutter.

Start with two of the largest of the six cutters (A,B) and set them in front of you in a configuration similar to that shown in Figure 4. This set-up will be used to cut the full length of the inside edges of both the stiles and rails, as indicated by "X" in Figure 1.

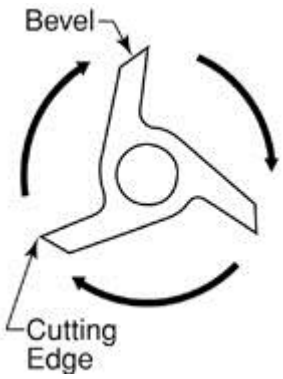
Figure 5

Now, take two of the smallest cutters (D,E) and set them in front of you in a configuration similar to that shown in Figure 4. This set-up will be used to cut the mirror-image profile in the ends of the rails, indicated by "Y" in Figure 1

Mounting Cutters And Completing Your Setup

Shaper Arbor with Rub Collars

The cutter set should always be used with one of the available 1/2-inch Shopsmith Shaper Arbors. Cutters are always mounted to the arbor using the special tongue washer and nut that comes with the arbor. Usually, the two smallest rub collars (included with the Arbor) are also used in the setup...one above your cutters and another below them.



Always mount the cutters so they rotate in a clockwise direction (when viewed from the top), with the edge bevels trailing the cutting edges (See Figure 5). Always slip the Arbor through the cutters from the RIGHT side, based on Figures 3 & 4.

For the best results, be sure the cutting edges of all cutters are staggered (mis-aligned) prior to tightening the arbor nut securely.

Shaper Fence Set-Up -- Mount the Shaper Fence to your MARK V work table. Adjust the infeed and outfeed halves of the fence (right-to-left) to leave a minimum opening for the cutter. Rotate the cutter by hand to check this clearance. (CAUTION: Be sure your machine is unplugged before doing this!)

When mounted properly, the infeed and outfeed halves of the fence should be parallel with each other . . . and the entire fence (both halves) should be parallel with your Miter Gauge slot.

Making the Coping cut -- Cover one end of a test piece with a dark pencil mark. Adjust your fences and quill to make a FULL PROFILE cut in the ends of your rails. When adjusted correctly, the cutting tips of your 1/4-inch straight cutter should be EVEN with the face of your shaper fence and the curve of the bead-and-cove shape on the coping cutter should leave a 1/32" step at the end of the rail. It should NOT create a knife-edge.

Check your set-up by making a short cut on the END of a rail test piece. If it's correct, the coping cutter will form the bead-and-cove profile while the 1/4-inch straight cutter mounted below it will barely brush against the end of your rail, "smearing" the pencil lead without removing it.

IMPORTANT: You must be sure to create a full profile cut without reducing the overall length of your rail pieces. You may have to make a few test passes to achieve the correct adjustment...and the first couple of passes may not even touch your workpiece. That's OK. Take as much time with this set-up as necessary to get as close to perfect as possible.

Splintering on the ends of your rails can be prevented by installing a 2-inch high x 3/4-inch thick wooden extension to your miter gauge face. Make it long enough that its end just touches the Shaping fence once it's been adjusted to its final setting. This extension will serve as a backup on the exit side of your cross-grain cuts at the ends of your rails

Once you're confident of your set-up, use your Miter Gauge and Safety Grip to keep your hands out of harm's way as you make your cuts in the ENDS of all RAILS.

Sticking Cut Set-Up -- Without changing your table or fence settings, remove the arbor (with cutters attached) from the shaper spindle and change to the Sticking cutters (A,B,C).

As before, be sure the arbor "bottoms-out" when you install it on the spindle of your machine. Rotate the cutter by hand to once again verify all clearances to the fence and table. Adjust your vertical setting so the top surface of your 1/4-inch cutter is exactly even with the top surface of the tongue left on the end of the test rail you cut earlier.

Making the Sticking cut -- Now, cut the inside EDGE of your test RAIL . . . then make your sticking cut on the inside EDGE of your test STILE. Check the accuracy of your cut by matching-up the coping cut on the end of your test RAIL with the sticking cut you just made.

Once you're satisfied that your cuts match-up, shape the inside EDGES of all rails and stiles.