Conquering Crown Molding

Accurate measurements, careful cuts, and the right tools make this method fast and flawless

BY GARY M. KATZ

I see a lot of woodworkers standing at their miter saws with eyes closed, holding two pieces of crown molding overhead. I know exactly what they're doing because for years I did the same thing: I tried to visualize which way to miter the crown for each corner. Believe me, cutting crown is a lot easier with your eyes open.

I'm not a "fine woodworker," but as a finish carpenter, I install thousands of feet of crown molding every year. I've heard it said that cutting crown is a test of a carpenter's skill. That's hooey. There are basic techniques that take the mystery out of installing crown. To demonstrate, I installed it on a mantelpiece, but this method works as well on kitchen cabinets or even a Federal-style armoire.

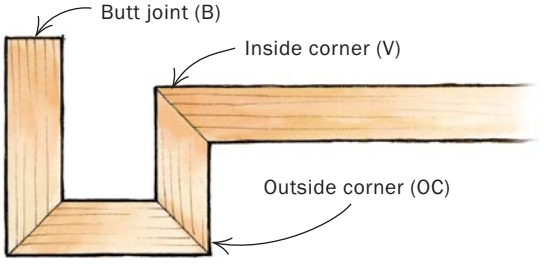
Create a cutlist and set up the saw

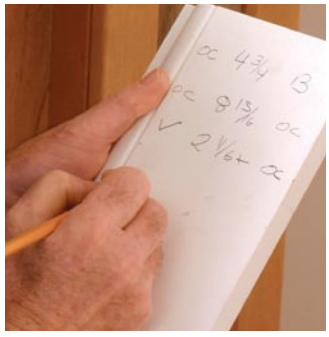
Rather than visualize each corner, I make a cutlist of all the pieces. I measure the mounting surface and record the length of each

Measure first, then cut precisely

1 MAKE A CUT LIST

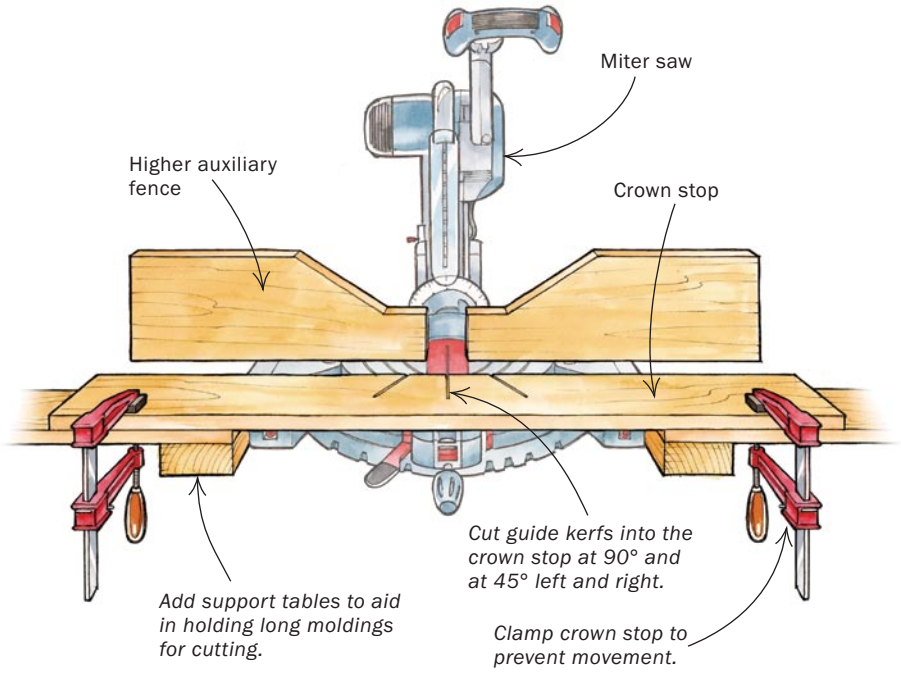
Before you cut any crown molding, measure the mounting surface at the base of each piece (left). Indicate inside corners with a "V"; outside corners with "OC"; and for 90° cuts, write a "B" (butt joint). Record the type of corner at each end of the piece (right).





2 SET UP THE MITER SAW

Crown molding is best cut "in position," leaning against the miter saw's fence, because it is faster, easier, and more accurate. A higher auxiliary fence supports the back of the molding, while a crown stop clamped to the saw table prevents the molding from moving when it is cut.



piece of molding at its base. On either side of the number I write the type of cut required. I indicate inside corners with a "V," for outside corners I write "OC," and for 90° cuts I write a "B" (butt joint).

I know the corners on this mantelpiece are perfectly square because I built it myself, but I often check the corners, especially on walls and commercial cabinets, with a protractor. If the corner is more than 2° out of square, I make a note on my cutlist and compensate while cutting each miter. For a corner that reads 88°, for example, I cut each miter at 44°.

Cut upside down and backward—Crown molding can be cut "in position," leaning against the miter saw's fence, or "on-the-flat," lying on the saw's table. I prefer the former, because you only need a saw that makes side-to-side miter cuts, not one that can flop over to cut bevel angles. Besides, many miter saws have an upright cutting capacity of 4 in., which accommodates most crown moldings, and cutting in position is faster, easier, and more accurate.

Cutting crown in position doesn't mean you place it on the saw exactly the way it's positioned when installed, leaning away from the saw's fence. If you tried that, the material would move all over the place as soon as the blade touched it. Instead, turn the molding upside down so that the top

Photos: Mark Schofield

of the crown is supported by the miter-saw table, and the bottom is leaned against the fence (that's why carpenters call it "upside down and backward"). This position has two advantages: The bevel angle is always 90°; and because crown molding is almost always measured at the bottom, you can see your measurement marks.

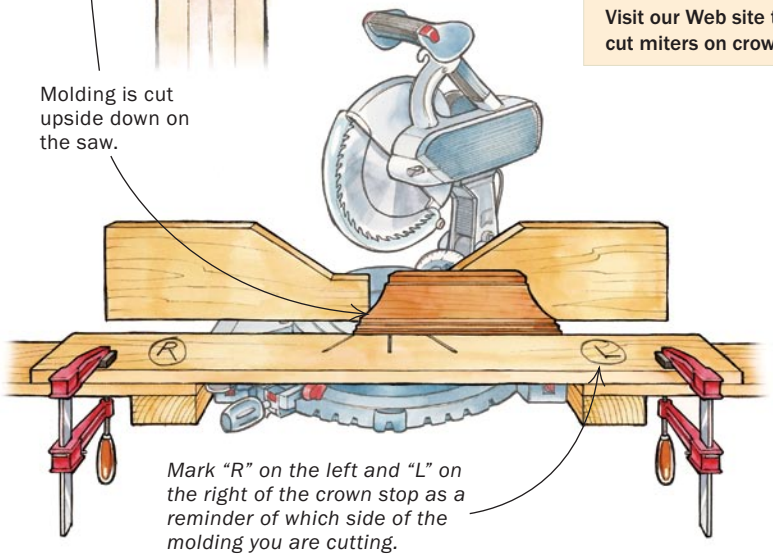
Make two modifications to your saw—I always attach an auxiliary fence to my miter saw, for two reasons: The fence must be taller than the crown molding when it's standing up; I also need a fence with square ends on which to hook a tape measure (see photo, bottom). Most factory fences are rounded.

I place the molding upside down against the auxiliary fence and wiggle it until it is resting against both the fence and the saw table. I then place a crown stop, a sacrificial board, on the table to secure the molding. Before clamping the stop to the saw, I measure the distance at both ends between the front edge of the stop and the auxiliary fence to make sure the board is perfectly parallel. With the crown stop attached, even long pieces of molding are held securely in position, and similar cuts are made at precisely the same angle.

Before I start cutting molding, there are two more tasks. I put an "L" on the right-hand end of the stop and an "R" on the left-hand end to remind me that because the molding is upside down, the miters will be cut on the opposite sides of the

3 CUT CROWN MOLDING "UPSIDE DOWN AND BACKWARD"

When crown molding is cut vertically, as opposed to lying flat on the saw table, it leans against the fence in the direction opposite to how it will be installed. To compensate for this and to cut the miters at the correct angle, the piece must be placed upside down against the fence. Cuts made to the left-hand end of the molding are made on the right-hand side of the saw, and vice versa.



finewoodworking.com

Visit our Web site to see the author cut miters on crown molding.

Follow the cutlist. *Work your way down the cutlist, cutting each section of molding to the prescribed length and with the correct miter at each end.*

MEASURING TIP

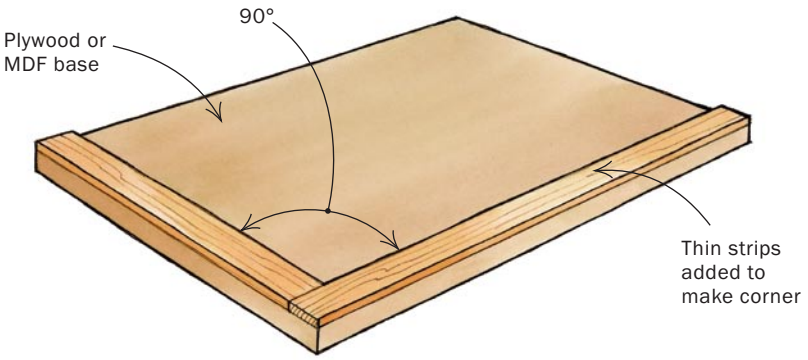
Use the fence to measure outside corners. *On a piece with two outside corners, it is impossible to hook the tape measure over the end. Instead, align the molding with the square end of the auxiliary fence and hook the tape measure to the fence.*

Drawings: Stephen Hutchings

Gluing mitered moldings

1 MAKE PERFECT 90° CORNERS WITH A SET-UP TABLE

To assemble the molding, Katz uses a set-up table made from a piece of plywood or medium-density fiberboard (MDF). Cut one corner perfectly square and add thin strips of wood to the edges that form the corner. Then place the two pieces of molding into the corner and check their fit.



saw. Last, I cuts three kerfs into the crown stop at 90° and 45° left and right. It is hard to see the saw's angle marker with the stop in place, and if I make a cut at the wrong angle, the kerfs will signal my error.

Cut the molding accurately and safely

For most cabinet work, I get better results by pre-assembling crown molding. I measure all pieces carefully, but I also judge how much to add or subtract from each measurement. For pieces with two outside corners, I add a bare 1⁄32 in., to be sure the finished assembly will fit around both corners; for pieces with two inside corners, I subtract the same amount. The finished assembly must fit tightly but not too tightly.

Mitering molding is all about short points and long points. When you cut crown, the long point of the miter/bevel always will be against the fence for an inside corner; the short point of the miter/bevel always will be against the fence for an outside corner. That rule never changes.

If there is an inside corner, I cut that end first, then hook my tape on the long point and reach across the crown to measure the opposite end. For pieces with two outside corners, I cut one end and align the short point of the miter with the square end of the auxiliary fence. I hook my tape on the end of the fence to measure the molding.

Always keep your free hand behind and tight against the auxiliary fence to protect your fingers and ensure precise cuts. Make a very shallow cut slightly wide of the pencil mark, and then with your thumb wrapped over the top of the molding,

Use specialized clamps. *Apply a spring clamp to the outer joint of the molding, massage the joint to find the best fit, and then apply a second clamp (above). To make the joint stronger, use 23-ga., headless pin nails to reinforce both sides of the joint (left). The holes are easily filled with dust when the molding is lightly sanded.*

2 ASSEMBLE IN SECTIONS

After you have assembled the molding for each column of the mantelpiece, test the fit. It should be slightly loose.

Clamp inside corners. *To give the spring clamps a better grip on the smooth back of an inside corner, drill small holes ⅛ in. deep.*

gradually ease the molding along the fence until the saw cuts precisely on the mark. If the molding is too short to reach the end of the auxiliary fence, it is too short to cut safely, so grab another piece.

The one thing you can't do is allow the crown to move once you start cutting. Any movement, even a slight deflection as the blade enters the molding, will alter the miter/bevel angles. Deflection usually will result in a mismatch, with one miter coming out longer or shorter than the other.

A pair of tools aids accurate assembly

I use a set-up table to make sure that each corner of the molding is perfectly square. The table is made of a scrap of plywood or medium-density fiberboard (MDF) with one corner cut perfectly square and thin strips of wood glued to the two edges that form the corner. I place the two pieces of molding into the corner and check their fit. I make sure that they meet at 90°, that one piece doesn't go inside the marked corner of the other, and that the profiles on the outside match. You rarely will achieve perfection in all three areas, so compromise for a good all-around fit. But don't crowd your measurement marks or the assembled sections may not fit together.

When you are satisfied, spread a generous bead of glue over each face. Place the pieces back on the set-up table and clamp the joint. Using spring clamps is the only way to be sure the miter joints stay tight, especially when you fire a nail through the molding. I use spring clamps and a pair of dedicated pliers made by Collins Tool Co. (www.collinstool.com) because they're strong but needle sharp, so they don't leave large marks in the molding. While the glue is still wet, reinforce the joint with 1-in.-long, 23-ga. headless pin nails. Conceal the tiny holes with a light sanding.

Attach the finished molding. *When the molding is assembled, slide it onto the mantelpiece and secure it to the shelf with 16- or 18-ga. finish nails.*

For the mantelpiece, I assembled the three pieces of molding that crown each column and checked their fit. I then cut the long center piece of molding and checked its fit. Finally, I assembled all three sections, sanded the high spots, and attached the molding to the mantel shelf. □

Gary M. Katz is contributing editor to Fine Homebuilding. *For more tips on trim carpentry, visit his Web site at www.GaryMKatz.com.*