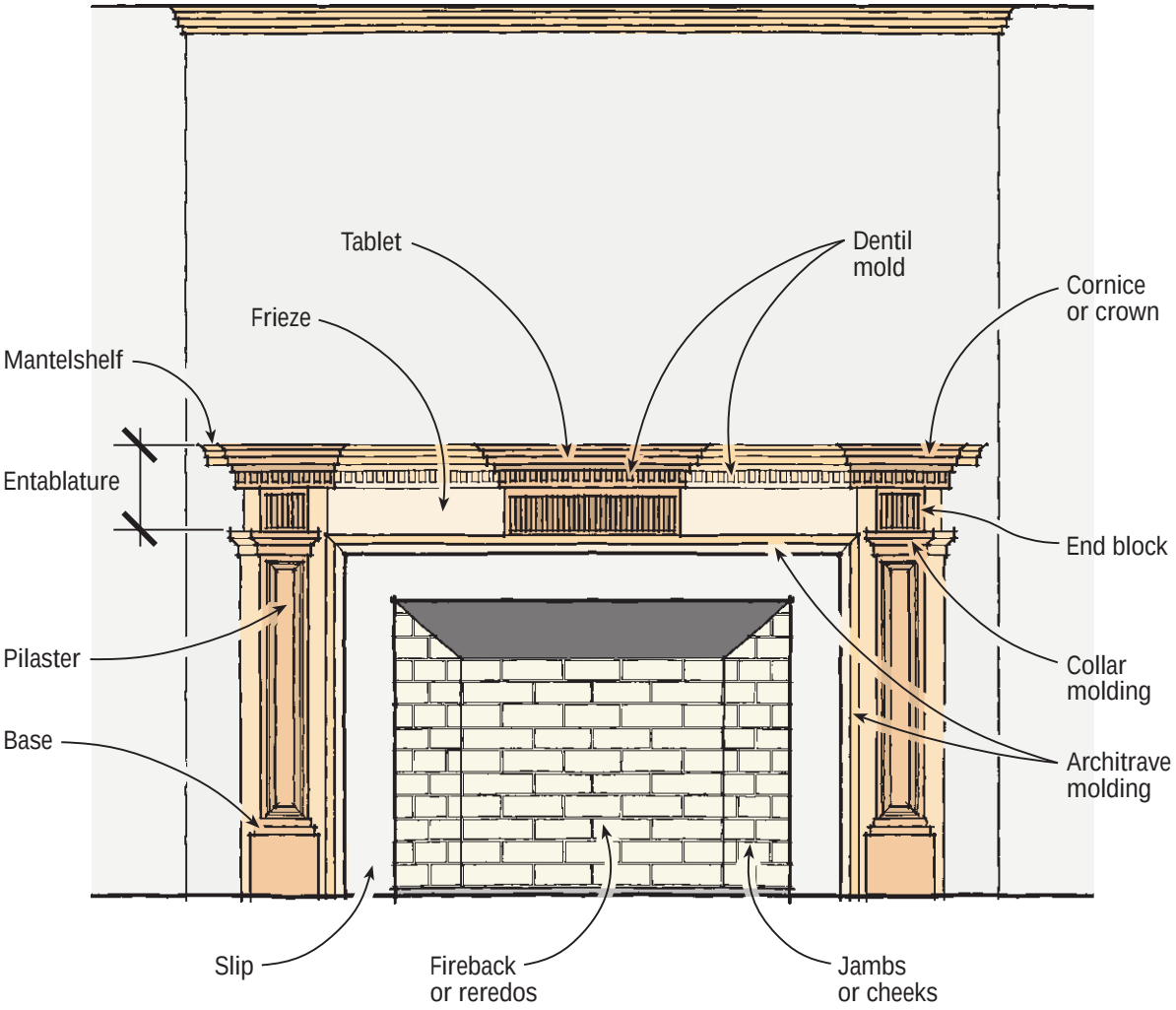
Simple Site-Built MANTELS

Use MDF and stock moldings to create fast, affordable mantelpieces

by Gary Katz

The first mantelpiece I ever built was just a simple shelf. I used a 6-inch-wide pine board for the shelf, 4-inch crown for the cornice, and a 2-inch strip of pine for the "soffit" beneath the crown. It only took a couple hours from start to finish, but I was very pleased with it. Since then, building mantelpieces has always been a favorite job of mine. I've built fabulously expensive hardwood behemoths and cut-rate specials, but have learned that classy mantelpieces can always be created for a modest investment in time and material. To build the mantel in this article, for example, I bought about $100 of materials from a local lumberyard — mostly MDF moldings as well as a couple of sheets of 3/4-inch MDF —

Anatomy of a Mantel



then copied an example from a magazine photograph supplied by the homeowner. The entire job only took about four hours for a carpenter and me to finish.

Laying Out Pilasters and Frieze

Mantelpiece construction begins with careful layout. No matter how fine the moldings or the joinery, an attractive mantelpiece must be proportioned properly. Most traditional mantelpieces follow a basic classical baroque shape, with an entablature supported by columns or pilasters (see "Anatomy of a Mantel"). The entablature should always be taller than the width of the pilasters, so it appears that the

Figure 1. The mitered pilaster pieces are glued and pinned together (top), then scribed to the wall (middle). Before attaching the pilasters, the author makes sure the tops are level, scribing to the floor as needed (above).

pilasters are bearing a larger weight. The top of the slip, or surround (sometimes referred to as the jambs), should be taller than the width of the sides, too.

For this mantelpiece, I played with several variations of pilasters and entablature sizes before deciding on the final dimensions. I wanted the original brickwork to look as if it were installed after the mantel, so I chose to leave nearly a full brick exposed on the jambs, or about 8 inches. That meant at least 12 inches of brick had to be exposed above the fireplace opening. I balanced the pilaster legs and entablature height with those dimensions, while keeping a close eye on the photograph supplied by the client. I always draw pencil marks on the wall for every important dimension, particularly the amount of exposed frieze, the height of the crown, and the thickness of the mantelshelf. Those marks guide me as I install the various pieces.

Assemble and Attach the Pilasters

Installation always begins with the pilaster legs, which on this mantel have to wrap around the back edge of the original brick surround. I cut the pieces on my portable table saw and rip them with a 45-degree bevel on one edge, then use glue and pin-nails to join the mitered corner (see Figure 1). If the slip hasn't yet been installed, you'll need to add backing behind the pilaster to increase the depth and allow for the thickness of the surround material. The

Figure 2. Masonry anchors (left) and construction adhesive (center) work together to secure the pilasters: The screws (right) hold the pilasters in place while the adhesive cures.

return leg of the pilaster gets scribed to the wall so that when the front of the pilaster touches the brick face, the return leg is tight against the wall.

Once the pilasters are cut to fit, drill mounting holes through the face, placing the holes near the center so they'll be covered by trim. Make sure the pilasters are perfectly level before installing them; if necessary, scribe and cut the bottom of one leg (Figure 2). I then mark the mounting hole locations on the brick with an awl or pencil and use a masonry bit to drill for plastic anchors. I use a liberal amount of construction adhesive on the brick before installing each pilaster leg. This provides the real bond between the mantelpiece and the masonry; the screws secure the wood while the adhesive dries. Before tightening the last screws, be sure that the legs are parallel to each other, so that the frieze board can be cut perfectly square at each end.

Installing the Frieze Backing

For this mantelpiece, the frieze board must be joined flush with the pilaster (Figure 3). I usually like to avoid this situation and build the pilasters thicker than the frieze. But for a paint-grade piece, working the joints flush isn't too difficult. I measure and cut the frieze board somewhat tight, check the fit, then use adhesive and screws to secure it. I don't tighten the screws immediately. First, I flush up

Figure 3. The pilasters must be dead parallel so that the frieze board fits snugly in between.

Figure 4. The base block installs with a 3/4-inch reveal on both sides (top). The pilaster fluting (middle), which gets glued and nailed, gets a 1-inch reveal so that it steps in slightly from the base block (above).

the joints with small shims, then tighten the mounting screws. To finish the flush joint, I use Minwax Woodfiller, which is like Bondo but adheres much better and will even take a stain. Once the filler dries, I sand it smooth with a pad sander.

Base Blocks, Pilaster Fluting, and End Blocks

After the pilaster and frieze board are installed, I lay out the height of the crown molding, then determine the height of the end blocks, marking these lines on the pilaster and frieze. Generally, the end blocks should terminate so that they're level with the bottom of the frieze board. In this case, however, the client's photograph called for the blocks to terminate above the bottom of the frieze. Though this design departs from tradition, it adds height to the pilaster leg and a more buoyant look to the mantelshelf.

Once again, I start with the bottom block and work up. I rip the bottom block narrower than the pilaster leg, allowing for a 3/4-inch reveal (Figure 4), then apply glue to the back of the block, center it on the pilaster, and fasten it with 1 1/4-inch finish nails. Next, I cut the pilaster fluting so that it fits from the top of the base block to the bottom of the end block. The molding I use is reversible — one side is cut with fluting and the other side is cut with beading. I spread glue on the back of the molding, then center it on the pilaster with a 1-inch reveal from the pilaster edge, which allows a 1/4-inch reveal at the base block. Finally, I install the end blocks, which are cut flush with the top of

the pilaster and frieze board, providing an even line of support for the mantelshelf (see lead photo).

Mantelshelf and Nosing

Build the mantelshelf from two pieces of 3/4-inch MDF (Figure 5). Glue and screw the pieces together, then scribe the shelf to fit around the brick surround. The cut doesn't have to be perfectly tight to the brick, as the crown molding will hide it from below and a small piece of trim molding will cover the joint above the shelf. But a tight fit is best, especially against the finished walls where trim isn't used. After checking that the fit is correct, I squirt a little construction adhesive on the top of the frieze board and the pilaster legs, then set the shelf down and nail it tightly. The nosing around the mantelshelf goes on next, mitered at each corned, and glued and nailed to the edge of the shelf.

Installing the Crown

The crown molding comes next. Some carpenters prefer to use a sliding compound miter saw for crown and cut the material on the flat. I started installing crown well before compound miter saws, and I learned to cut it standing up. As long as you remember to turn the crown upside down, this method is fast and accurate. I don't need to know the exact angle of the crown at the wall and ceiling; I just have to be certain to hold the crown in exactly the same position for every cut. For that reason, I always attach stops to the extension tables on my chop saw. With stops, cutting crown is hassle-free: The stops help

Figure 5. The mantelshelf consists of two pieces of 3/4-inch MDF, scribed to the wall (top), nailed to the end blocks (middle), and trimmed with a nosing (above).

Figure 6. The frieze and end blocks get trimmed with crown.

Figure 7. Panel molding around the inside of the surround (top left) covers up any cracks between the pilasters and the brick. The same panel molding dresses up the frieze (top right). A small molding around the top of the shelf completes the mantel, and it's ready for paint (above).

secure each piece at precisely the right angle throughout the cut. With a good set of extension tables and stops, even long pieces of crown are easy to manage.

I cut the long piece across the frieze first, but I only tack it in place. Next I cut the three pieces that break around the end blocks, then I fasten those pieces together with glue and pin-nails before installing them on the blocks. Assembling these small pieces flat on the floor makes it easier to get tighter joints, especially when some of the pieces are only 3/4 inch long. Install the crown around the blocks slowly and carefully, tapping the long piece across the frieze up or down until the last joints are tight, then nail off the molding to the frieze and end blocks (Figure 6).

Architrave and Frieze Panel

The final steps are the simplest. A small molding, called an architrave molding, is installed around the MDF surround (Figure 7). If the brick or tile surround is uneven, you can use the molding to cover any gaps, but also try to keep an even reveal on the edge of the pilaster and frieze. The panel molding across the frieze should be centered, with an even reveal all the way around. Glue and nail the molding to the frieze, and use nails and glue on the miters, too, so that the paint won't crack. For a final finishing touch, install trim on the top of the mantelshelf, around the brickwork. Now it's time to call a painter.

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Making Paneled Pilasters

Building attractive pilasters doesn't require expensive tools like shapers and panel molding bits. In fact, several appealing styles can be made with the typical tools of a trim carpenter — a table saw, chop saw, router, and nail gun. I built these pilasters right on the wall, though they could have been assembled in the shop, too.

The pilasters in this example had to be deep enough to provide a point of termination for the frieze as well as a reveal step between the frieze and the face of the pilaster. To create the 1 3/4-inch-deep pilaster, I first ripped the backing — one piece of 3/4-inch MDF and another of 1/4-inch MDF, and attached both pieces to the drywall with panel adhesive and nails for a 1-inch-thick buildout. I then ripped four 2-inch strips, which I sent through the table saw for a 45-degree bevel on one edge. The final width was slightly more than 1 3/4 inches, allowing a little room for scribing to irregularities in the wall and still bringing the short point of the miter flush with the pilaster in front. (A little extra depth doesn't cause any problem but ensures a tight-fitting joint.) I cut these four pieces to length, then glued and nailed them to the sides of the two backing pieces.

Next I ripped and beveled four 1 3/4-inch-wide strips of MDF; their final width was 1 1/2 inches.

I glued and pin-nailed the beveled pieces together, then closed the miters by rubbing them with a piece of hardwood and sanding them smooth with 120-grit sandpaper.

I cut the face-frame rails on my chop saw so that they fit between the stiles snugly, attached them with glue and nails, and sanded the joints smooth. I used a standard 5/8x3/4-inch panel mold around the inside, and a stock 2 1/2-inch casing around each pilaster as a collar molding to define the separation between the pilaster leg and the end block above.

— *G.K.*

Strips of MDF mitered, glued (left), and pinned together on the pilaster base (right) provide a buildout for a paneled look.

The completed buildout gets trimmed with panel molding and a collar molding to create an elegant painted mantelpiece.