On the Job

Custom Vent-Hood Cover

by Gary Striegler

Most of my clients choose high-performance commercial-style ranges that require powerful exhaust fans. Rather than search for a manufactured range hood that meets all of their needs, I prefer to build a custom enclosure. The ventilation is provided by a two-piece insert kit that includes a compact (11¼-inch by 20½-inch) power unit and a surrounding metal hood liner.

The hood that's shown in the photos was part of a modest kitchen upgrade. It was designed to fit between existing cabinets and consists of a rectangular base that supports the fan and a sloping cap that conceals the ductwork.

To work up the design, I made a full-scale drawing on a sheet of plywood. The dimensions for the bottom were determined by the available space between the wall cabinets. The slope of the top section was governed by the size of the ductwork.

I used the drawing as a pattern to lay out and cut the ¾-inch by 2-inch clear poplar that would form the frames for the three facets of the top section **(1)**. I assembled these frames on top of the drawing, using a Kreg jig and pocket screws to form sturdy butt joints, then back-beveled the bottom of each panel so it would rest squarely on the base **(2)**.

The visible portion of the base was formed by three pieces of ¾-inch by 9-inch poplar; the corners were mitered and fastened with brads and glue. A 5-inch-wide poplar stretcher on the back tied it all together **(3)**. Last, a solid piece of ¾-inch birch veneer plywood (cut out for the hood liner) was inserted at the bottom and fastened to the sides with pocket screws.

The three parts of the top section were butt-jointed and fastened with pocket screws and glue **(4)**. The top was nailed to the base using brads driven through beveled


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cleats that conformed to the slope of the hood **(5)**, and a stretcher was placed between the tops of the side panels.

I used ¾-inch birch veneer plywood for the recessed panels. The ones on the side were simply cut to overlap the frame, then glued and nailed through the back with staples. I needed to use the front one for access to hook up the blower, so I undersized it by ⅛ inch. Plywood cleats on top of ¾-inch spacers provided a recessed fastening surface **(6)**. I tacked the panel temporarily to the cleats with 23-gauge headless pins, then started cutting trim.

Since none of the cuts for the 1⅛-inch by ¾-inch panel molding were 45-degree angles, I used a scrap piece to trace where the molding met in the corners and to determine the intersecting angles **(7)**. I nailed the side panel moldings tight, but only tacked those for the front. The last thing I did in the shop was fasten a pair of cleats alongside the plywood cutout to support the fan liner **(8)**.

At the job site, I removed the front panel and trim. Then I lifted the hood into position and fastened it to the studs and the side cabinets. After the mechanical contractors hooked up and wired the fan, I was able to replace the front panel and complete the trim. On this job, I made a plywood box to cover the gap between the hood and the sloping ceiling, and trimmed the remaining joints with panel molding **(9)**.


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***Gary Striegler** is a builder in Fayetteville, Ark.*