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Can-Do Can Crusher

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- Exploded view and elevation drawings.
- How-to photos with instructive captions.
- Tips to help you complete the project and become a better woodworker.

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Can-Do Can Crusher

There's no question that recycling is here to stay, and those piles of empty cans take up a lot of space unless you flatten them down. Store-bought can crushers aren't expensive, but most are as flimsy as they are cheap. Our version is both economical and fun to make. It's also rugged enough to last for years of hard use.

Here's a woodworking project that's sure to get put through it's paces. If you've ever witnessed a store-bought can crusher fall apart within just a year or two of use, here's a way to make your own and have it go the distance. Basically, many fabricated models aren't rugged enough. They're made of lightweight metal and plastic with riveted joints. In no time the joints give way and some of the parts end up cracking.

This design is plenty beefy, and our author and several of his buddies tested the prototype extensively. One of his friends owns a gas station where they all gather every night to play cards. Since installing this homemade crusher, more than two thousand cases' worth of beer cans have been crushed.

Our can crusher is made from simple parts, most of which you probably have around the shop. Even if you have to buy the material, it'll only set you back a few dollars. Take a look at the *Material List* on page 83 to make sure you have all the hardware.

Figure 1: *To ensure straight holes in the handle and washers, use a wood handscrew clamp to hold the dowels square to the drill press table.*

Digging Through the Scrap Bin

When you're raiding the scrap bin for this project, pick hardwood for strength. The pieces you'll need are pretty small. If you don't have the scrap material on hand, one 3/4" x 6" x 39" board will take care of everything but the dowels. In either case, cut the arms (pieces 1), the base (piece 2) and the sides (pieces 3) to the sizes described in the *Material List*. Cut your stock for the jaws (pieces 4) a little oversize at first, then trim them to size later, after the laminations dry.

Once the parts are cut, glue the four jaw pieces into two pairs. We decided to make the jaws extra thick so they'll

stand up to the stress of can crushing. This is one of the places where the store-bought can crushers often crack.

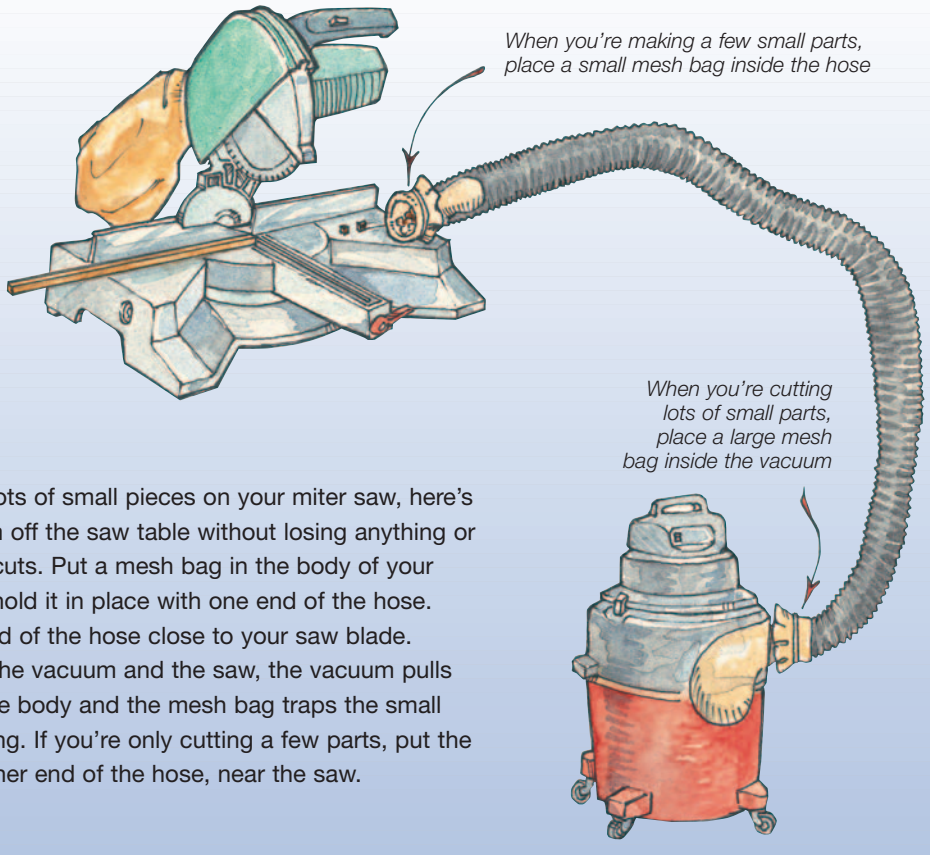
While the glue dries in the jaw laminations, drill the bolt holes in the arms and sides (see *Elevation Drawings* on page 84). Make sure the counterbored carriage bolt holes in the sides are deep enough to conceal the bolt heads. Once all the holes are drilled, trim the front corners on the side pieces to a 3/4" radius and rout all but the back edges with a 3/8" roundover bit. Use this roundover bit on all the edges of the arms as well.

The next parts of the can crusher to tackle are the handle (piece 5) and washers (pieces 6). First cut a piece of 1⅛"-diameter dowel for the handle and cut another 3"-long piece for the two washers. Find the center point on both ends of each dowel and chuck a 3/8" brad point bit in your drill press. To hold the dowels steady and square to the bit while you bore the lengthwise bolt holes, secure them in a wood handscrew clamp (see *Figure 1*). You'll have to bore into both ends of each dowel to complete the through holes. Once the holes are drilled, cut the 3" dowel to length for the washers.

By now the glue in the jaw laminations is probably dry so you can cut them to their finished size. For a more durable wearing surface, cover the working face of each jaw with plastic laminate (pieces 7). Use contact cement to adhere the plastic and, once it's set, trim it flush with the jaws and soften the edges with a mill file.

The guide bolt holes that pass through the upper jaw are a full 3/8" in diameter, but the holes in the lower jaw are slightly smaller so they secure the threaded end of the guide bolts (see *Elevation Drawings* on page 84). Drill the upper jaw holes completely through the lamination. Now drill the pivot holes

QuickTip



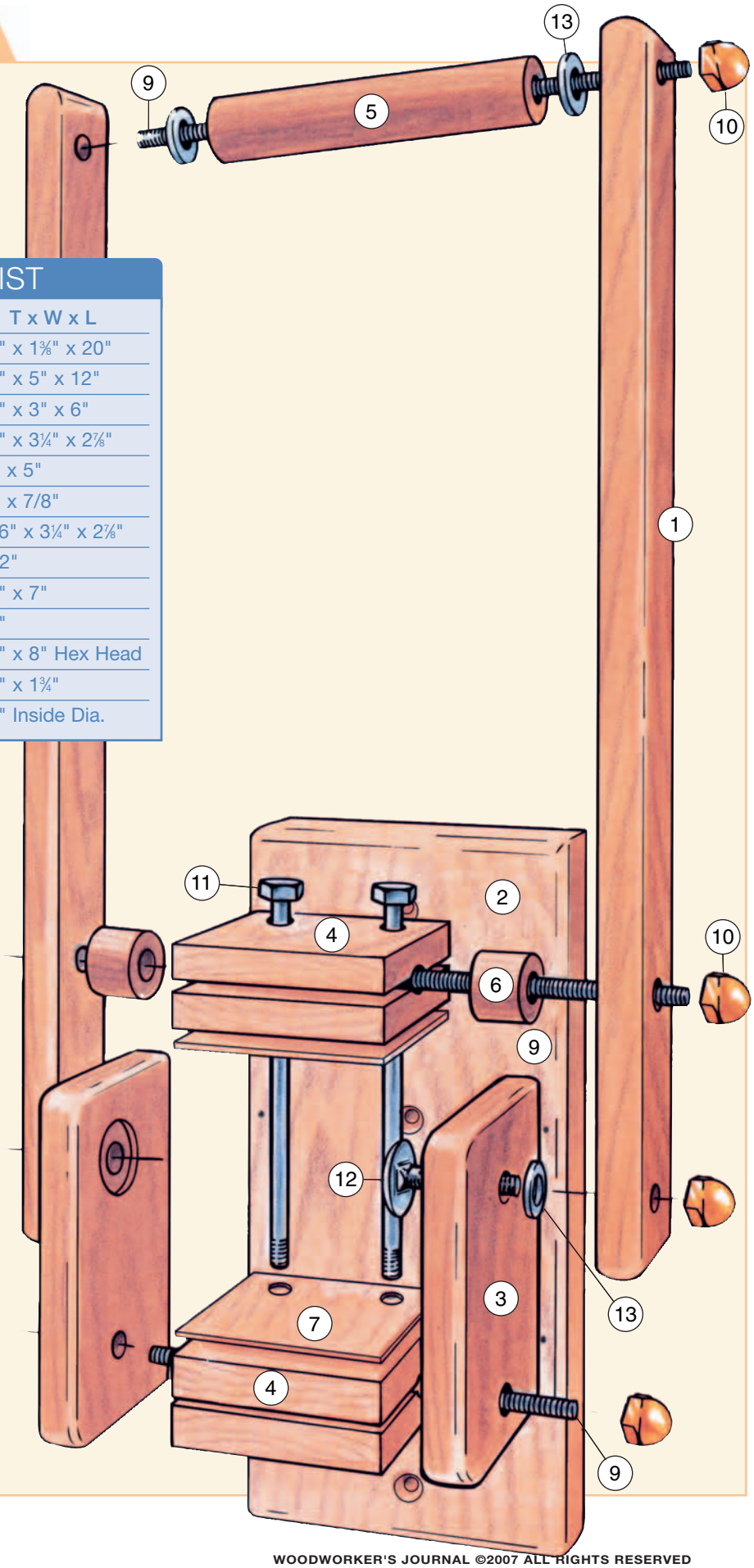
It's in the Bag

If you need to cut lots of small pieces on your miter saw, here's a way to clear them off the saw table without losing anything or stopping between cuts. Put a mesh bag in the body of your shop vacuum and hold it in place with one end of the hose. Attach the other end of the hose close to your saw blade. When you turn on the vacuum and the saw, the vacuum pulls the sawdust into the body and the mesh bag traps the small pieces you're making. If you're only cutting a few parts, put the mesh bag in the other end of the hose, near the saw.

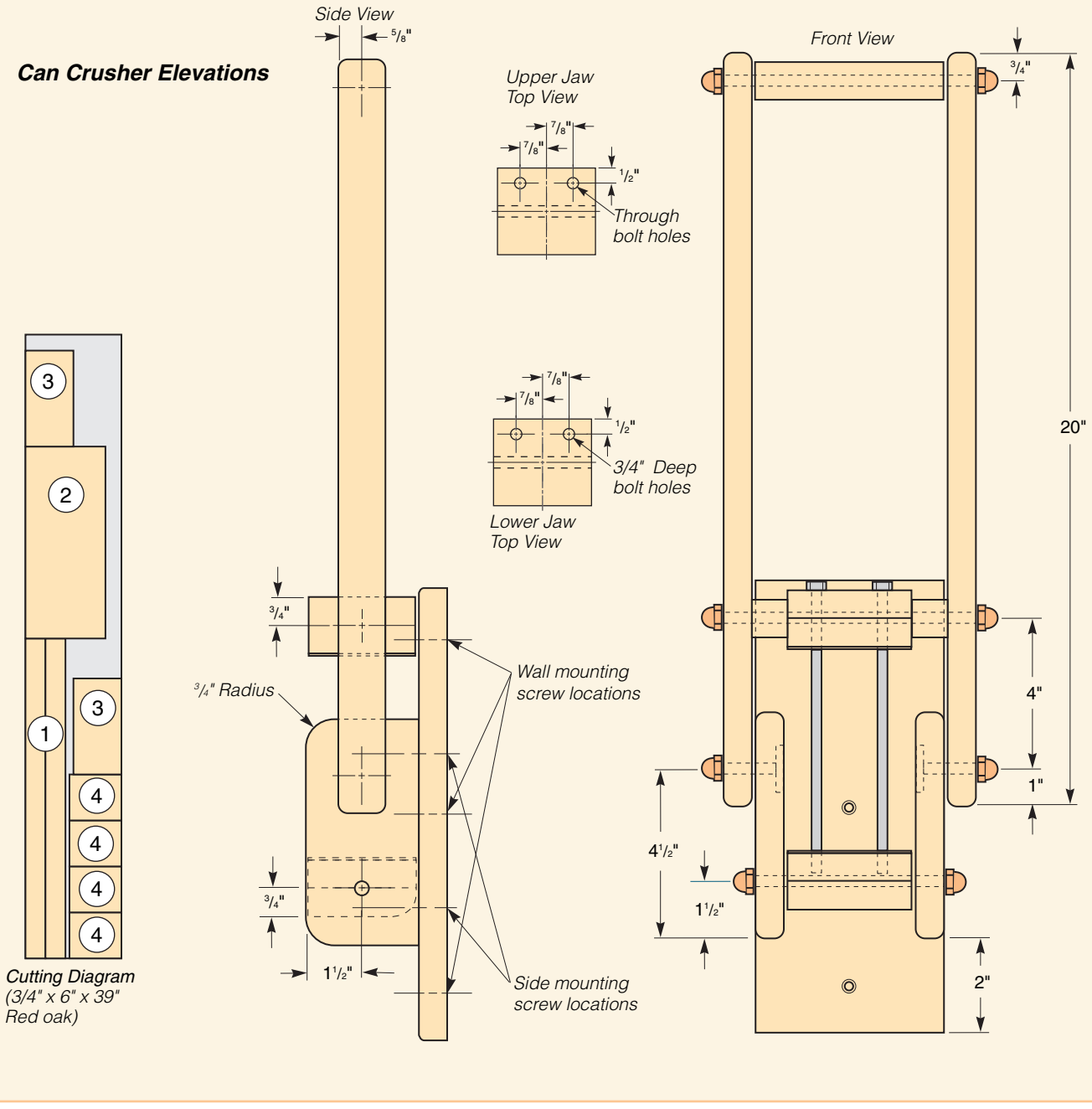
Can Crusher Exploded View

MATERIAL LIST

		T x W x L
1	Arms (2)	3/4" x 1⅜" x 20"
2	Base (1)	3/4" x 5" x 12"
3	Sides (2)	3/4" x 3" x 6"
4	Jaws (4)	3/4" x 3¼" x 2⅞"
5	Handle (1)	1⅛" x 5"
6	Wood Washers (2)	1⅛" x 7/8"
7	Plastic Laminate (2)	1/16" x 3¼" x 2⅞"
8	Wood Screws (7)	#8-2"
9	Threaded Rods (3)	3/8" x 7"
10	Cap Nuts (6)	3/8"
11	Guide Bolts (2)	3/8" x 8" Hex Head
12	Carriage Bolts (2)	3/8" x 1¾"
13	Washers (4)	3/8" Inside Dia.



Technical Drawings



in the sides of both jaws. Switch to a slightly smaller bit and drill the lower jaw holes for the guide bolts 3/4" deep. After drilling all the holes, rout the bottom back edge of the lower jaw with a 3/4" roundover bit. Rounding this edge is necessary to allow the lower jaw to pivot without binding against the base.

Putting the Pieces Together

With all the parts cut and drilled, you can move on to the assembly. Clamp each side to the base and drill two countersunk pilot holes for #8-2" wood screws (pieces 8). Separate the pieces to spread glue in the butt joints, then permanently screw them back together. Next, drill three countersunk pilot holes in the base for screwing the crusher to the wall, and rout the front edges of the base with a 3/8" roundover bit.

Our author recommends finishing all the wood parts of the can crusher with two coats of polyurethane. It's

tough enough to stand up to daily use, and it creates a smooth surface that's easy to wipe clean. Brush the finish on now, before you go further with the assembly, so you cover all the nooks and crannies easily.

Using a hacksaw, cut your continuous threaded rod into three 7"-long sections (pieces 9) for the handle and jaw assemblies, and test-fit the cap nuts (pieces 10) on their ends. If the cap nuts fail to thread onto the rods properly, file the tips of the threads a little bit to get them to work.

Now assemble all the parts except the guide bolts (pieces 11). Once everything is together, push the handle and jaws into the fully open position and put a few drops of quick-setting epoxy in the lower jaw holes. Slip the guide bolts through the upper jaw holes and thread them into the holes in the lower jaw. Stop driving the guide bolts when the bolt heads sit about 1/16" off the top of the upper jaw.

Mounting Hints

Your crusher is now complete, but you still need to mount it on the wall. It's very important—in fact essential—that the screws holding the crusher on the wall be driven into the studs. If you miss the wall framing, you'll probably end up with a hunk of sheetrock at your feet after crushing the first can. If you do hit the studs, give the crusher a trial run, or better yet, throw a party and really put your project to the test. Once you start crushing cans you'll quickly notice another advantage of this design—the cans fall directly out of the jaws after they've been crushed. All you have to do is set a recycling bag below the crusher to catch the falling cans. Smashing those cans has never been easier or more fun!

QuickTip

Left in the Dust

If you're too busy to paint the ends of a piece of green stock, just toss it into a box of wood shavings until you can tend to it. It's an excellent way to control the moisture loss in turning blanks as well as green lumber. Sawdust and shavings will help to draw out the moisture evenly and at a rate that won't cause the wood to check on the ends or warp excessively. After initially drying the wood in the shavings and dust, remove the stock and let it air dry. Sticks and turning blanks work best with the bark removed. Just stir up the shavings every day or two so the moisture doesn't accumulate and promote mildew growth.