Cutting Sheet Goods Down to Size

Alternative rigs for sawing and routing large panels

by Charley Robinson

The challenging job of cutting full sheets of plywood *into manageable pieces is made easier by circular-saw accessories that guide a straight cut. Exac-T-Guide above uses a T-square (to which the saw is attached) guided in a U-channel to produce accurate results.*

I hate plywood, but I've used a lot of it. And I've used plenty of medium-density fiberboard (MDF) in my time, too. The inherent stability of sheet goods makes them very convenient for cabinet carcases, built-in units and other remodeling projects. But trying to horse the heavy sheets through a tablesaw can be difficult, particularly if you work alone. And even with a helper, you still need almost 20 ft. of floor space to rip a full sheet.

Large commercial shops and lumberyards have used panel saws for years, but I couldn't justify $800 to $1,000 for such a specialized tool. My low-tech solution was to use a circular saw and the cutting guide shown in the sidebar on p. 84. The system works great for occasional use but can be cumbersome and time-consuming; the guide needs to be realigned and clamped for each cut.

At recent trade shows, three guide systems for cutting plywood with a circular saw caught my eye. Exac-T-Guide, Glide-Easy Saw and Blade Runner II (see the photo above and the photos on the facing page) all use a carriage to mount the saw and a fence or rail system to guide the carriage. Each manufacturer claims their guide system will rip and crosscut full 4x8 sheets, and two say they will replace the tablesaw for cutting sheet goods. The cost for these units, including the extras you will need to set them up for cutting plywood, ranges from $215 to $235. In addition, the systems all have router capabilities or will in the near future.

I wanted to try out these systems, so I designed and built some closet organizers and several sets of bookshelves to put the units through their paces. Typical of most sheet-good work, these projects required ripping panels to width, crosscutting them to length and routing dadoes and grooves. If you're used to working sheet goods on a tablesaw, it will take an open mind to see how versatile these tools can be. For example, when making a bookcase, shelf dadoes must align. With one of these units, I was able to rout dadoes across the panel before ripping it into individual bookshelf sides, thereby ensuring alignment. I'll describe how each system is set up and how they performed these basic functions.

Glide-Easy Saw

The Glide-Easy system suspends a circular saw above the workpiece on a pair of aluminum brackets. Nylon rollers ride along some 2-in.-dia., electrical conduit to guide the saw, as shown in the top left photo on the facing page. For $185, Intelligent Product Designs (see the sources of supply box on p. 85) includes the aluminum brackets that clamp to the saw's baseplate, a pair of plywood glide-rail supports and plywood height-adjustment blocks, as shown in the top right photo on the facing page. To this you need to add about $30 worth of materials: four 10-ft.-long 2x4s and two 10-ft.-long pieces of 2-in. inside diameter (ID) electrical conduit.

Once you have all the parts on hand, Glide-Easy can be put together in about a half hour. Fortunately, this system is simple because the instruction sheet that accompanies it is rather cryptic. The glide-rail supports clamp to the conduit, and the height-adjust-

The contents of the Glide-Easy kit (above) *are rather basic. A circular saw rides smoothly along 2-in.-dia. electrical-conduit guide rails (left) to make straight cuts. This unit can also crosscut and rip dimensional stock. Convenience and accuracy could be improved with such refinements as stops or a fence for making duplicate cuts.*

Blade Runner II's strong suit *is cross-cutting and mitering dimensional stock, but with the addition of 60-in.-long optional rails (left), it can also rip and crosscut a 4x8 panel. An optional drop-in router mounting plate is available for quick changes from sawing to routing. The array of hardware and components (below) required several hours to assemble.*
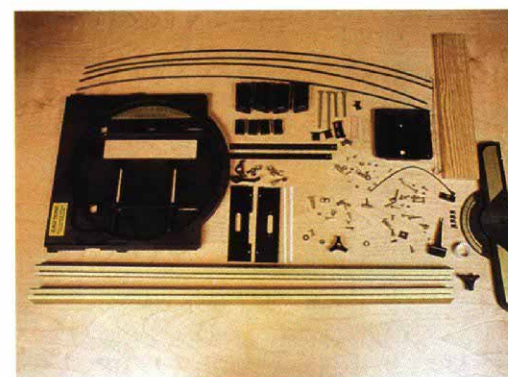
ment blocks, which are already attached to the glide-rail supports, are screwed to the four 2x4s. A 36-in.-long plywood crosscut gauge is screwed to the 2x4 base at one end of the unit perpendicular to the line of cut. Glide-Easy will rip and crosscut a full 4x8 sheet and will handle stock up to 2-in. thick.

Ripping and crosscutting—Glide-Easy is designed to be used on the ground with the workpiece supported by the 2x4 base and your body weight holding the workpiece in place. Before you can use the system, you must saw a kerf the length of the base 2x4 that is directly under the saw. This kerf serves as the reference for lining up the workpiece. Then slide the panel in from the side, and align cut marks at each end with the sawkerf. Once the piece is positioned and held down with your body weight, push the saw carriage along the guide rails to make a straight cut. You can make crosscuts in the same manner but with the panel oriented perpendicular to the rails instead of parallel to them. Because of this configuration, Glide-Easy requires at least 10 ft. by 10 ft. of floor space.

Routing—The Glide-Easy system doesn't have a router carriage at this time, but the manufacturer plans to have one available soon.

Blade Runner II

When I unpacked Blade Runner II, I was reminded of the kid's toys labeled "some assembly required" that take several hours on Christmas eve to put together. There were seven different bags of hardware and 14 components, as shown in the bottom right photo, which took over three hours to assemble. Fortunately, the owner's manual gave detailed instructions.

Blade Runner II, as shown in the bottom left photo, is similar in function to Glide-Easy in that a tool carriage is guided above the work by a pair of rails that are screwed to a shopmade worktable. When properly set up, the plastic carriage glides smoothly on the extruded aluminum rails that include a rip gauge for the saw on one rail and a gauge for setting the router on the other rail.

In its standard form, Blade Runner II is designed for crosscutting, ripping, mitering and routing standard lumber up to 2 in. thick and 27 in. wide and sells for $135. I added the optional 60-in.-long rails ($80) to extend the length of cut to a full 48 in., so I could crosscut and rip full sheets of plywood Including the plywood base, out-of-pocket costs will run about $235 to get this unit ready.

Ripping and crosscutting—The manufacturer suggests making a wider worktable for better support if you are going to be doing a lot of ripping. To rip on Blade Runner, rotate the saw plate in the carriage so that the blade is parallel to the adjustable fence. The saw is positioned using the rip scale on the guide rail and clamped in place with the carriage locking knob. The hairline pointer on the carriage makes accurate setups easy. The workpiece is then fed through the saw as if you were using a tablesaw, so you'll need

To rout dadoes across panels with Exac-T-Guide, clamp the T-square in place at both ends, and slide the router on the mounting plate along its long arm, as shown. Exac-T-Guide is the only unit that has a stock mounting plate that accepts a wide variety of tools.

about 20 ft. of floor space to push the panel through the saw.

Blade Runner II's carriage has a removable plate that holds the circular saw. The plate can be rotated in the carriage to position the saw perpendicular to the rails for rip cuts or parallel to the rails for crosscuts. For crosscutting, slide the workpiece under the rails and against the adjustable fence. A kerf in the **lead** board attached to the fence serves as a reference for aligning the cut. If the fence is accurately set, pushing the saw through the piece will result in a square crosscut. Sliding a large piece of plywood into position, however, can exert sufficient leverage to affect the accuracy of the fence. I found it best to mark the workpiece on both edges and then align one cutting mark with the kerf in the lead board and the other edge with the sawblade.

Routing—An optional drop-in router mounting plate ($36) is available for fairly easy tool changes. To rout dadoes, position the stock under the rails and against the fence, and then push the carriage-mounted router along the rails (the same as crosscutting). To rout grooves the length of the panel, follow the ripcutting-setup procedure, and then push the panel past the bit.

Exac-T-Guide

Exac-T-Guide shown in the photo on p. 82 takes a different approach to guiding the cutting tool. The saw (router, biscuit joiner, jigsaw or laminate trimmer) mounts on an easily detached glass-filled plastic mounting plate. The mounting plate slides on the extruded-aluminum long arm of a large T-square. The stamped-steel short arm of the T-square, in turn, rides in a U-channel screwed to the edge of a 4x8 plywood work surface. (The $224 it took to set up Exact-T-Guide includes $199 for the tool and $25 for the plywood.) In addition to the U-channel, I screwed a perpendicular end stop to the work surface and completed the setup by assembling and truing the T-square.

When I was setting up Exac-T-Guide, I thought I could skip the cut-and-adjust procedure described in the instruction sheet by instead using the factory edge of another panel to align the U-channel. But I found that factory edges may not be as perfect as I had thought. My first cut bowed $3/32$ in. from the ends to the middle of a 7-ft.-long piece. By readjusting the fence as prescribed, I eliminated all of the bow. The entire setup is a simple procedure that shouldn't take more than about an hour, including setting the U-channel.

Ripping and crosscutting—Sheet goods up to $7/8$ in. thick are ripped on the work platform with the T-square guided by the U-channel, as shown in the photo on p. 82. The panel is placed on the work platform and butted against the U-channel. Any width ripcut up to 4 ft. can be accommodated by sliding the saw mounting plate along the long arm of the T-square and then tightening a knob to lock it in place. The scale on the T-square's long arm and the hairline indicator on the mounting plate make accurate adjustments a snap. The short arm of the T-square rides in the channel and guides the saw parallel to it.

Other materials, such as doors, that are too thick for the U-channel can be ripped or crosscut by guiding the short arm of the T-square along an edge parallel to the cut while pushing the saw forward.

Although panels can be crosscut as described above for doors, I found it easier just to swing the panel 90° and, like a ripcut, use the

Double-edged cutting guide and sturdy worktable

Before I had a shop that could handle full sheets of plywood, I used a couple of simple cutting guides that relied on the factory edges of a sheet of medium-density fiberboard (MDF) to make accurate cuts. At first, I had an 8-ft.-long and a 4-ft.-long guide for both my router and my circular saw. But for easier handling and to cut down on shop clutter, I modified the design so that one guide would work for both the router and saw, as shown in the drawing on the facing page.

I used to cut sheet goods with a couple of 2x4s stretched between some wobbly, old sawhorses and invariably had to try to catch one side or the other as I was finishing my cut. I've found that the knockdown worktable shown in the drawing allows me to concentrate on cutting, instead of catching, by fully supporting the entire sheet of plywood. And the folding sawhorses (Pack Horses by Davalco Products, see the

sources of supply box), are stable and strong. I found their height to be just right, and they fold into self-storing packages that can be latched together and lugged around by their carrying straps with just one hand. Also, Pack Horses' sawhorses fit easily into a trunk.

Making the cutting guide: The dual-purpose cutting guide is made by cutting two strips from the edge of a sheet of $1/2$-in.-thick MDF. The first strip is the 5-in. or 6-in.-wide center guide, and the second strip, about 14 in. wide, serves as the cutting-guide base. The actual width of the base will depend on the circular saw and router that you will be using with the guide (see the drawing detail at right). If you are making a dual-purpose guide, the center-guide strip will need to be run through a tablesaw, with the factory edge against the fence, to true up the edge that's

cut and make it parallel to the factory edge.

Measure the baseplates on your saw and router to determine the position of the center guide on the cutting-guide base, and then glue and screw the center guide to the base. Now a pass with the circular saw on one side and with the router on the other side will trim the edges of the guide so that they coincide with the sawblade and the router bit. Be sure to trim the guide with the same router bit that you will be using with the guide. I used a special 18mm-dia. ($23/32$-in.), down-shear straight bit (available from Woodhaven, see the sources of supply box), so I can rout dadoes that fit tightly to the metric plywood I use. The appropriate edge of the cutting guide is now easily lined up with the layout marks on the plywood. Don't forget to mark each side of the guide, so you'll know which side is for the saw and which is for the router. *C.R*

U-channel to guide the T-square. However, swinging the panel will require at least 10 sq. ft. of floor space. The manufacturer indicates an accessory mount is being developed that allows the mounting plate to be rotated 90° yet still slide along the long arm of the T-square. With this mounting, you could cut perpendicular to the U-channel for crosscuts without having to turn the panel.

Routing—Exac-T-Guide provides very controlled router movement, both across the panel and along its length. Grooves are easily routed in the same fashion as ripcuts: Clamp the mounting plate at the desired position along the long arm of the T-square, and push the T-square, guided by the U-channel, the length of the panel. Rout dadoes by clamping both ends of the T-square in place and then sliding the router on the mounting plate along the long arm of the T-square (see the photo on the facing page). By using a set of four accessory stops ($40) to control router movement, it's easy to rout stopped grooves, dadoes or even a square opening anywhere in the panel.

The bottom line

Although all these tools can cut a straight line, there is a considerable difference in their ease of use. Lining up cuts on the Blade Runner II is a little fussy, and repetitive cuts are a real irritation because there is no provision for setting a stop. Ripping sheet goods on Blade Runner II has the same problems as ripping on a tablesaw: It needs 20 ft. of floor space to push the heavy, awkward panels through the saw. And the overhead rails make it difficult to use a push stick to feed panels through the saw. I also found it difficult to rout a straight groove the length of an 8-ft. piece by pushing the stock past the bit. In addition, the router mounting plate flexes enough to create uneven depths when trying to plunge cut for a stopped dado.

Glide-Easy can cut sheet goods or dimensional lumber as well, but it's a pain to line up the workpiece with the sawkerf in the 2x4. I'd get one mark lined up only to have it move while aligning the other end. Also, Glide-Easy has no fence or stops for making repetitive cuts. Glide-Easy's ground-level working arrangement means you don't have to lift heavy panels to a raised table, but bending over the work and crawling along a panel can be hard on your back and knees. And, finding a flat place to set up could be a challenge on a job site.

My favorite tool for working with plywood is Exac-T-Guide. It produces ripcuts and crosscuts that are more accurate than possible with my tablesaw and with a lot less stress and strain. The built-in carriage locks and accessory stops make it easy to set the saw for repeat cuts that yield exactly the same size panels. This tool would also be useful for straightening the bowed edge of a board up to 8-ft. long, which is something that can't be easily done on a tablesaw.

Exac-T-Guide is equally adept at controlling a router. But I discovered that both ends of the T-square must be clamped when routing dadoes; otherwise, there's enough play in the free end of the T-square to allow the dado to drift off course by 1/8 in.

Exac-T-Guide can also be used for taper cuts and routing or cutting circles. Although Exac-T-Guide's mounting plate is the only one that will accept a variety of tools, I would opt for an extra mounting plate (about $50). Then, with just the twist of a knob, I could switch from the saw to a router in a matter of seconds to conveniently and easily handle most of the work I need to do on sheet goods. □

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Sources of supply

Exac-T-Guide, BradPark Industries, Inc., 91 Niagara St., Toronto, Ont. Canada M5V 1C3; (416) 594-9455, (416) 461-1601.

Glide-Easy Saw, Intelligent Product Designs, 1556 Halford Ave. #363, Santa Clara, CA 95051; (408) 296-4066.

Blade Runner II, Professional Tools, Inc., PO Box 672525, Houston, TX 77267-2525; (713) 872-1885.

Pack Horse sawhorses, Davalco Products, 301 West 53rd St., Suite 3D, New York, NY 10019; (800) 945-9545.

Carbide-tipped, shear-dado router bits (metric and standard diameter), Woodhaven, 5323 W. Kimberly Road, Davenport, IA 52806; (800) 344-6657.

Shopmade cutting guide and worktable

One side of this cutting guide is for ripping plywood with a circular saw, and the other side is for cutting grooves with a router. Mark each side for its intended use.

A second cutting guide, 4 ft. long, is more convenient for crosscutting and dadoing.

Hole for hanging cutting guide on wall

Worktable, half-lapped 2 x 4s, dry-assembled is sturdy and easily stored or transported.

Guide base is slightly oversized, and then ripped or routed to the appropriate width by running tools' baseplates against the edge of the center guide.

Waste

Portable worktable setup

Pack Horse folding sawhorses fit neatly into a car trunk yet support very heavy loads.

Detail: Cutting guide

Center Guide

Factory edge

Rip this edge on a tablesaw so that it is parallel to the factory edge.