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Extension Dining Table

A project plan for
a versatile table
that makes room
for company



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Making a Dining Table Expand

Slides do the hard work, but construction is different, too

BY JEFF MILLER

An extension table is a great problem solver. Most days, when the table has to accommodate only a few people, it remains compact to save space. However, when company comes, the two halves of the tabletop slide apart and a leaf (or two) can be added to make room for the extra diners.

Building a sturdy, smooth-sliding extension table isn't especially difficult. If you keep a few rules in mind and follow the basic procedures outlined here, things go together with relative ease.

Anatomy of table slides

At the heart of an extension table is a pair of slides that guide and support the halves as the table is opened and closed. The slides mount to the underside of the tabletop, one along each side, connecting the halves. A typical slide has two to four sections.

Good extension-table slides open and close smoothly and easily. They should hold the tabletop halves in proper alignment so that the leaf (or leaves) can be inserted without a lot of fuss.

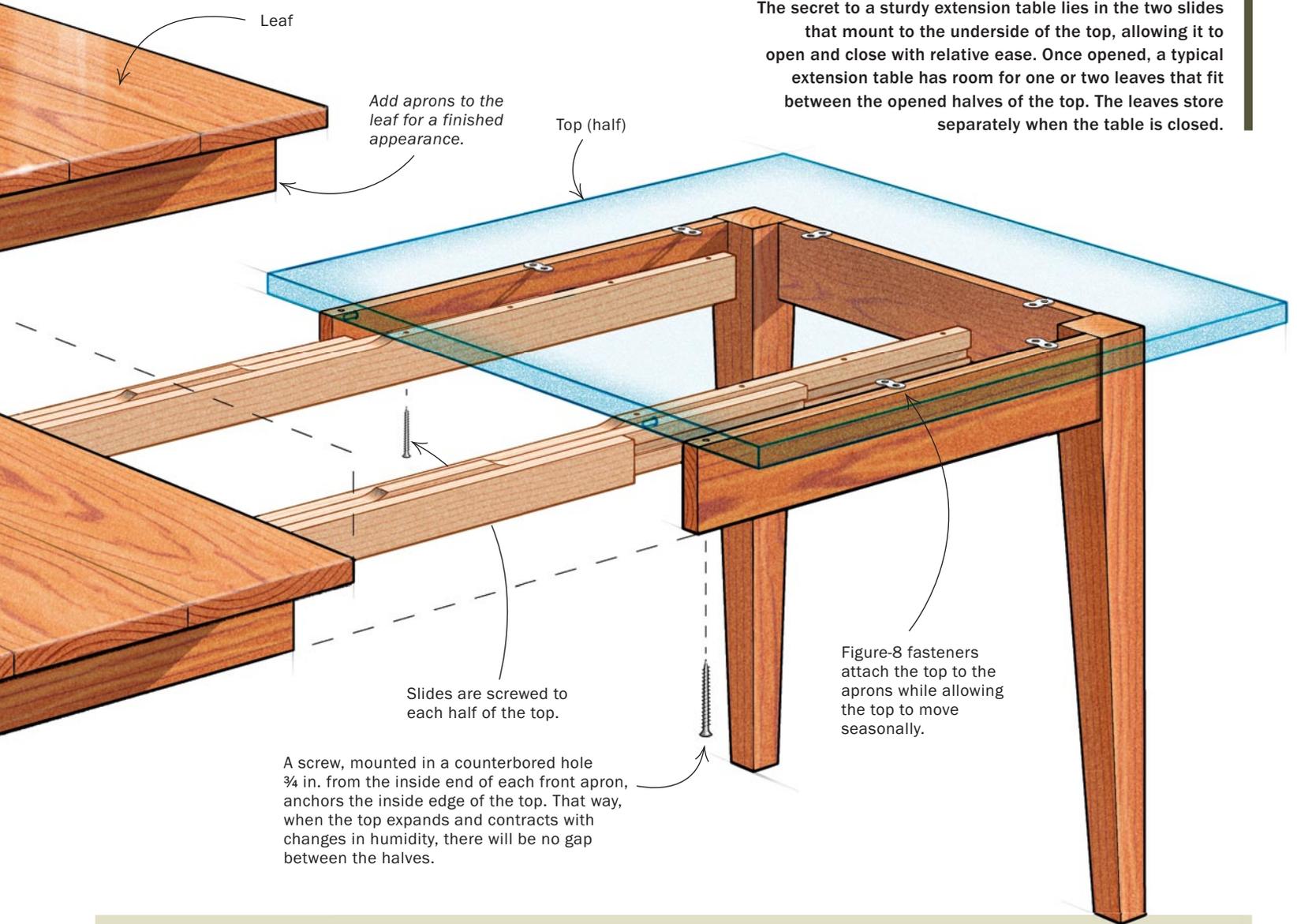
The amount of play inside the sliding sections is an important part of the smooth and easy equation. Too little clearance and the mechanism may be difficult to open and close. Too much clearance and the table may sag when opened, which means the tabletop and leaf won't be flat from end to end.

There are a few different types of slides, but regardless of which you use, you can minimize sag by keeping two general rules in mind. First, use the longest slides that will fit between



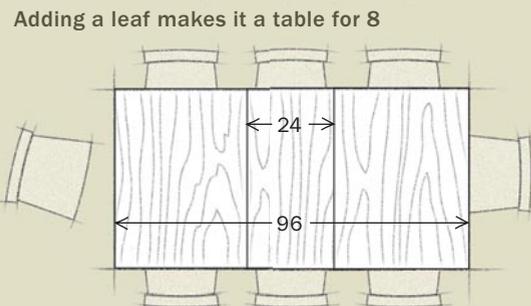
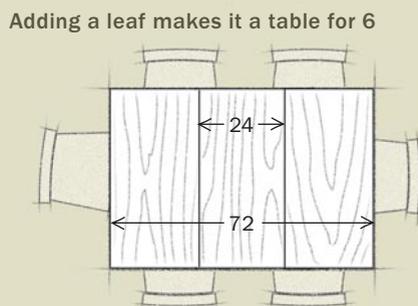
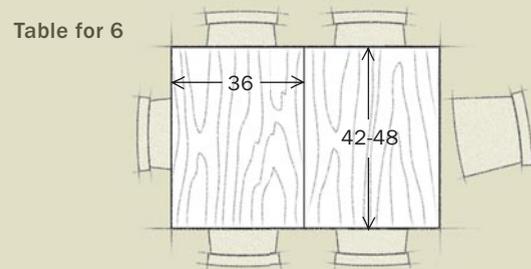
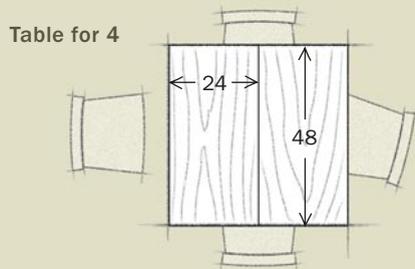
PUTTING THE EXTENSION IN EXTENSION TABLE

The secret to a sturdy extension table lies in the two slides that mount to the underside of the top, allowing it to open and close with relative ease. Once opened, a typical extension table has room for one or two leaves that fit between the opened halves of the top. The leaves store separately when the table is closed.



Room for company

Each additional leaf gets you two more seats at the table. A table measuring 4 ft. square can comfortably accept four diners, while one that's 4 ft. wide by 6 ft. long provides room for six. A 24-in.-wide leaf provides adequate elbow room, but if dining-room space is at a premium, you can get by with a 20-in. leaf.



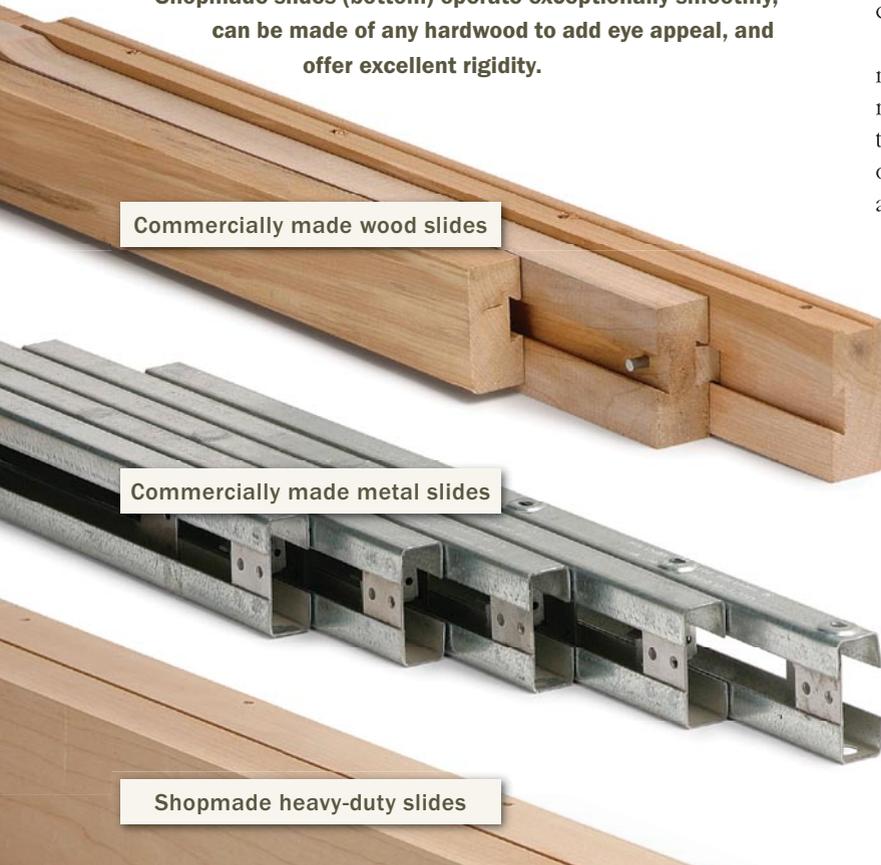
Choose the slides

Extension-table slides come in two basic types: commercially made wood and commercially made metal. I often use a third type, shopmade slides made from heavy-duty drawer slides.

Wood slides (top) look reasonably good and slide smoothly, but they are a bit more likely to sag than other types.

Metal slides (center) slide smoothly, have little sag, and don't warp. But they come up short in the looks-and-feel department.

Shopmade slides (bottom) operate exceptionally smoothly, can be made of any hardwood to add eye appeal, and offer excellent rigidity.



the end aprons when the table is closed. That's because when the table is opened to accept the leaves, it's best if each section doesn't open all the way. The resulting overlap helps stiffen the slides. Second, as long as you have adequate extension, a slide with fewer sections is better than one with more sections.

The best slide for your table

You have options when choosing a commercial tabletop slide: commercially made wood or commercially made metal. A shopmade slide using heavy-duty commercial drawer slides is a third option and one that I often use. Each option has advantages and disadvantages.

Commercially made wood slides—The most common commercial slides are wood. They are available in a variety of configurations. Most work smoothly and look better than steel. However, they tend to have a bit more sag than I like. That usually can be overcome if the table has enough room for long slides with only a few sections.

Commercially made metal slides—Metal extension slides also work smoothly. They have less sag than standard wood slides and don't warp. To me, though, metal slides look somewhat unsightly inside a high-end piece of furniture.

Sources of Supply

WOOD AND METAL SLIDES

Lee Valley Tools
800-871-8158
www.leevalley.com

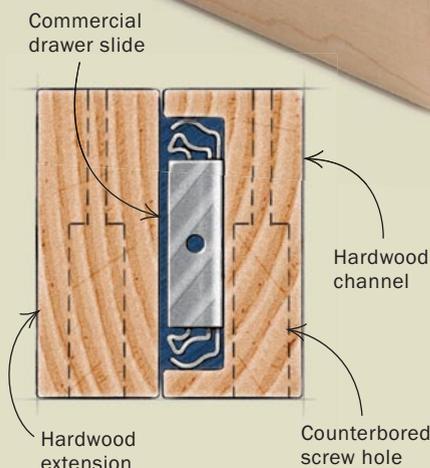
Rockler
800-279-4441
www.rockler.com

DRAWER SLIDES

Accuride
562-903-0200
www.accuride.com

ALIGNMENT PINS

Lee Valley Tools
800-871-8158
www.leevalley.com



SHOPMADE SLIDE HAS JUST THREE PARTS

The shopmade slide consists of a heavy-duty full-extension drawer slide, a hardwood channel, and a hardwood extension piece.



Assembling the slide. The main part of the drawer slide screws into the channel piece. Screws also are used to mount the drawer-slide leg to the extension piece (above).

As they are opened and closed, metal slides often feel a little rough and produce a metal-on-metal sound that's unpleasant to my woodworking ears. This roughness and noise usually can be improved if the edges of the slides are sanded a little. A coat of wax on sliding surfaces also helps. Of course, these issues are only a concern during the short time it takes to add or remove a leaf, so it's hard to completely frown on the use of metal slides.

Heavy-duty drawer slides—My favorite choice for extension slides is a shopmade hybrid that combines some hardwood milling and jumbo-size full-extension drawer slides. The result is a slide that looks good, has little sag, and is an exceptionally smooth operator. The downside is added weight (about 25 lb.) and cost.

Tabletop considerations

Making an extension table involves more than simply building the tabletop halves and choosing slides. The top requires extra attention to work effectively.

Run the grain widthwise—Most solid-wood tabletops are made with the wood grain running lengthwise. On the top of an extension table, however, the grain must run widthwise. That way, when the top halves expand and contract with changes in moisture content, the slides are less likely to become misaligned. Plus, the seam is less visible. When edge-gluing stock for the halves and the leaf, try to make sure that the face surfaces are flush. Later, when flatness and uniform thickness really matter, you won't spend as much time getting the top and the leaf level.

Joint the mating edges—Before you can start leveling the top halves and the leaf, you must joint all the mating edges so that they butt together without gaps. The halves and leaf usually are too big to run over a jointer, so you'll need to use a handplane, the longer the better. Secure each part in a bench vise, then plane to get the edges flat and square.

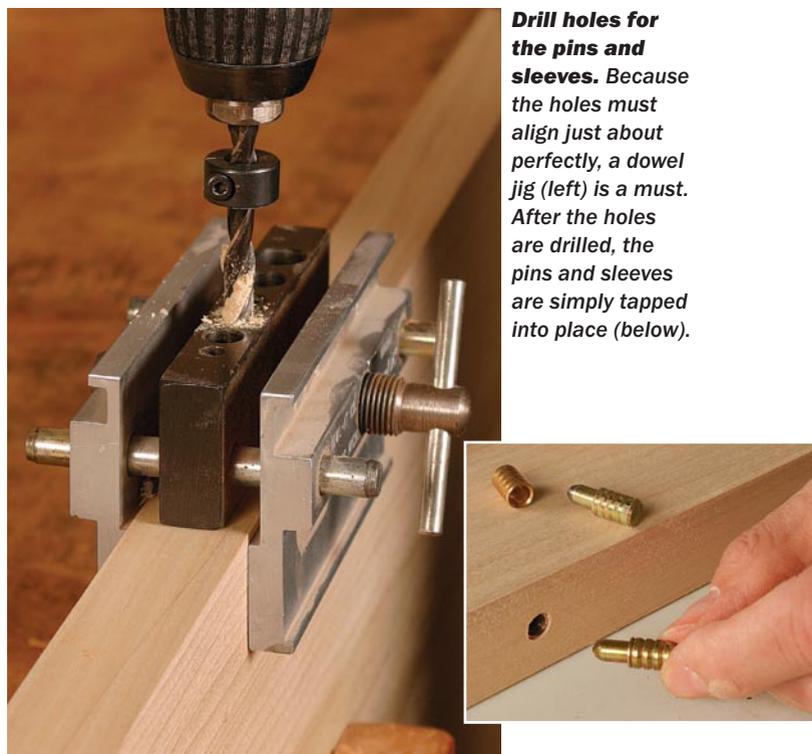
Add the alignment pins—To help ensure perfect alignment between the mating edges of the top halves and the leaf, two pins are added to one edge of one top half and each leaf. When drilling for these pins, be sure to use the top surface as your reference edge.

You can find pins made from wood, but I prefer to use the type made from steel with a brass finish. Each pin fits into a sleeve mounted to the edge of a mating part. The metal pins slip smoothly into the sleeves and hold up better under wear.

Level the top halves and the leaf—For the tabletop to look good, all the top edges should be flush. To do that, you

Install the alignment pins

Plane the edges. Any gap along the mating edges of the top halves and leaf won't look good, so Miller handplanes the edges square and straight (left).



Drill holes for the pins and sleeves. Because the holes must align just about perfectly, a dowel jig (left) is a must. After the holes are drilled, the pins and sleeves are simply tapped into place (below).



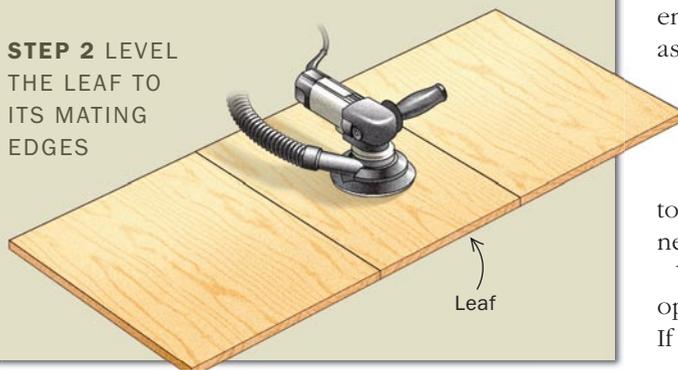
Level the leaf and top

The top halves and leaf must be flat and level with each other. First level the two top halves to one another, then level the leaf to its mating edges. If the leaf is lower than the top halves, go back and sand the halves level with the leaf. Be sure the alignment pins are in place as you sand.

STEP 1 LEVEL THE TOP HALVES TO EACH OTHER



STEP 2 LEVEL THE LEAF TO ITS MATING EDGES



need to level all the tabletop surfaces (see photo and drawings, above and left). With careful preparation of materials, a precise glue-up, and accurate alignment pins, you shouldn't have too much to do here.

Table slides must be square and parallel

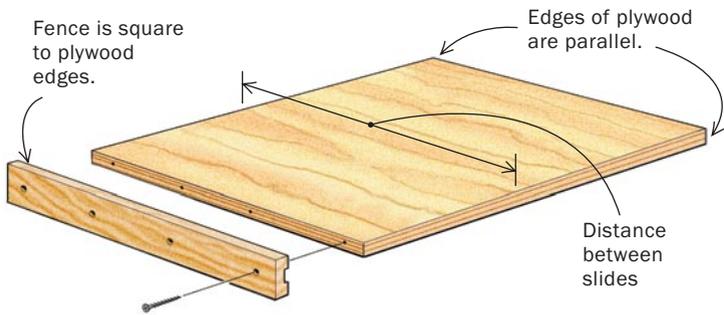
Typically, I position each slide about $1\frac{3}{4}$ in. from the inside face of the side aprons. To work properly, the slides must be parallel to one another and dead square to the mating edges. To help ensure both, I make a quick jig by ripping a piece of plywood as wide as the distance between the slides and adding a fence to one end (see drawing, facing page). For some tables, you might need to drill two oversize holes in the fence so that it can fit over the alignment pins.

Because the grain runs across the table width, you will have to elongate the screw-mounting holes in the slides. This is not necessary for the holes closest to the center.

Without careful planning, the top can shrink back from the opening edge between the two table halves relative to the slides. If you have installed the slides when they are fully closed, the

Install the slides

For the slides to work smoothly, they must be parallel to one another and square to the mating edges of the top halves. A two-piece jig positions the slides just right.



Center the jig. Miller uses a tape measure to help center the jig on one of the top halves.



Mount the slides. Use screws to secure one end of the slide to one of the top halves (left). Then screw the opposite end of the slide to the other half (above).

top then may have a gap. You can prevent this by extending the slides slightly from the fully closed position before screwing them into place.

Aprons allow for wood movement

Wood movement is also a factor when attaching the aprons. Fix each apron in place with a single screw no more than 1 in. from the seam between the table halves. The remaining screws either should be slotted through the aprons or attached with figure-8 fasteners (or table buttons) to allow for wood movement.

To account for wood shrinkage, leave a slight gap between the ends of the side apron halves when the tabletop halves meet. If the top shrinks a little, the aprons won't butt together and prevent it from fully closing. Similarly, if the leaf has aprons, cut them a little short of the leaf edges, so if the top of the leaf shrinks, the aprons won't end up wider than the top and prevent it from closing fully. □

Jeff Miller makes furniture and teaches woodworking in Chicago (www.furnituremaking.com).



Attach the base to the top halves. With all the parts upside down, Miller mounts the table aprons to the undersides of the top halves.