



Woodsmith **PLANS**

MOBILE PLANER STAND



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Make your shop workhorse even more productive with this handy project.



Pound for pound, a portable planer has to be one of the hardest-working machines in the shop. And when you combine your planer with the versatile stand shown above, for you, the work will get a lot easier.

This project starts with a rugged, plywood case that puts the planer at just the right working height. A drawer for accessories, a large

open storage area, and a set of locking casters round out the case.

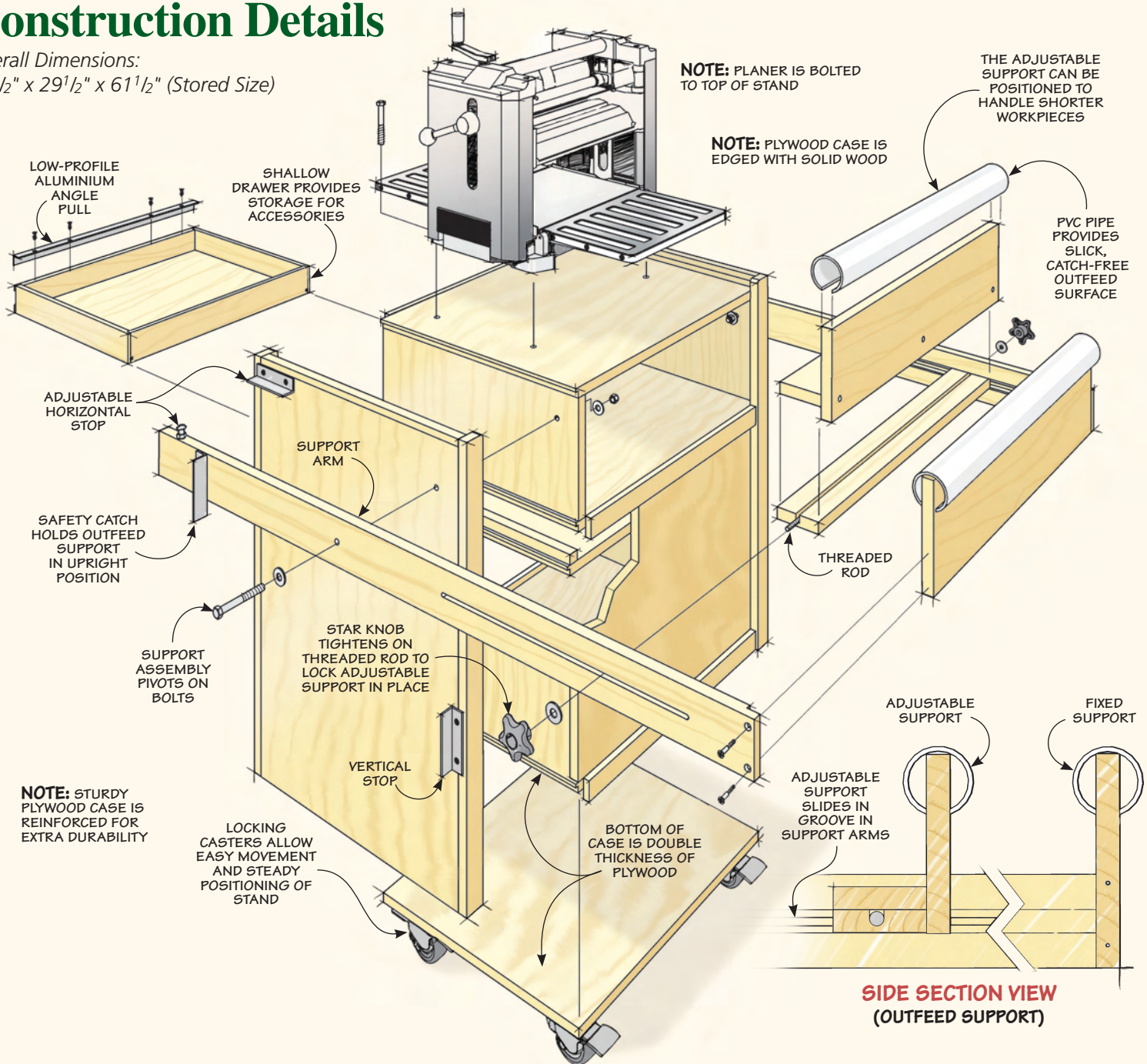
But the feature that really stands out is the built-in, adjustable out-feed support. The key is that it's only "out" when you need it. When the job is complete, the support swings up over the stand and locks in place for easy movement and compact storage (inset photo).



Construction Details

Overall Dimensions:

21¹/₂" x 29¹/₂" x 61¹/₂" (Stored Size)



MATERIALS & SUPPLIES

A Sides (2)	20 x 30 - 3/4 Ply.	O Drawer Guides (2)	3/4 x 13/16 - 20	(2) 1/4" Washers
B Top/Upper Divider (2)	20 x 24 - 3/4 Ply.	P Support Arms (2)	3/4 x 3 - 48	(1) 1/4" x 28" Threaded Rod
C Bot./Lower Divider (2)	19 1/4 x 24 - 3/4 Ply.	Q Adj. Support Guide (1)	3/4 x 3 - 25 1/2	(2) 3/8" x 3" Hex Bolts
D Back Panel (1)	18 1/2 x 23 1/2 - 3/4 Ply.	R Adj. Support Guide Cover (1)	3/4 x 3 - 25	(4) 3/8" Washers
E Side Filler Panels (2)	20 x 8 3/4 - 3/4 Ply.	S Adj. Support Upright (1)	3/4 x 7 rgh. - 25	(2) 3/8" - 16 Lock Nuts
F Bottom Filler Panel (1)	20 x 23 1/2 - 3/4 Ply.	T Fixed Support Upright (1)	3/4 x 8 rgh. - 25 1/2	(2) 1/4" - 20 Threaded Inserts
G Side Caps (2)	1/2 x 3/4 - 20	HARDWARE		
H Stiles (4)	3/4 x 1 1/2 - 30 1/2	(5) 1" x 1" - 4" Aluminum Angle (1/8" Thick)		(2) 1/4" - 20 x 1 1/2" Rh Machine Screws
I Narrow Edging (4)	1/2 x 3/4 - 22	(1) 1" x 1" - 21 7/8" Aluminum Angle (1/8" Thick)		(2) 1/4" - 20 Hex Nuts
J Wide Edging (3)	1/2 x 1 1/2 - 22	(2) 1 1/2" I.D. x 25" PVC Pipe		(7) #8 x 1 1/4" Fh Woodscrews
K Drawer Front (1)	3/4 x 21 3/16 - 22 7/8	(4) 3" Locking Swivel Casters		(12) #8 x 3/4" Fh Woodscrews
L Drawer Back (1)	1/2 x 21 3/16 - 21 7/8	(2) 1/4" - 20 Star Knobs		(16) #14 x 1" Lag Screws
M Drawer Sides (2)	1/2 x 21 3/16 - 19 1/4			(16) 1/4" Washers
N Drawer Bottom (1)	19 x 21 3/8 - 1/4 Ply.			(2) #6 x 1 1/2" Rh Woodscrews

A Sturdy Plywood Case

Even a portable planer is a fairly heavy tool and the stand that it sits on may take a considerable amount of abuse. So I wanted to get off on the right foot by building a very sturdy case. I accomplished this with a combination of solid joinery and some “structural” reinforcement in a few critical spots.

SIDES AND DIVIDERS. A look at Figure 1 shows you how the plywood case is put together. The top, bottom, and dividers are joined to the sides with a tongue and dado, as shown in Figure 1a. This joint gives you both good gluing strength and racking resistance.

The first step is to cut the two case sides to size. Next, each side needs four dados. Your only worry here is to match the position of the dados on both side pieces.

With the work on the sides complete, you can cut the top, bottom, and two dividers to size. The top and upper divider are identical.

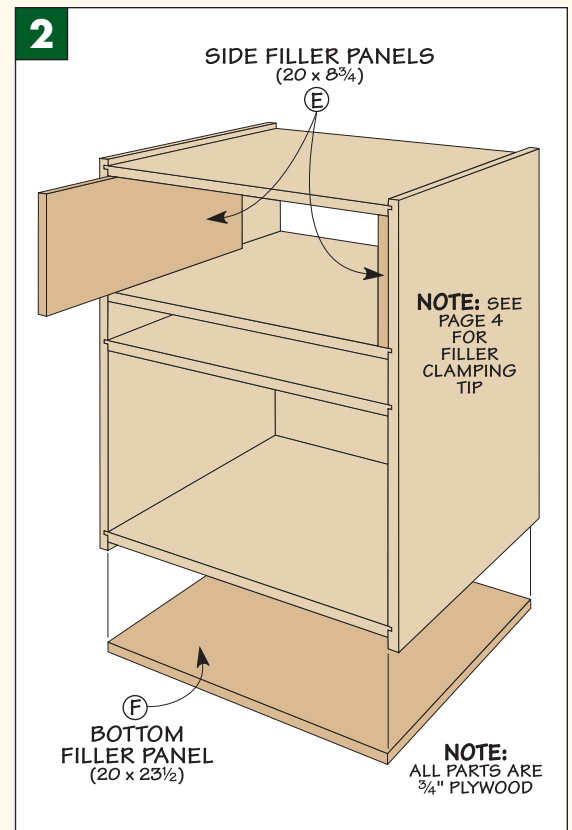
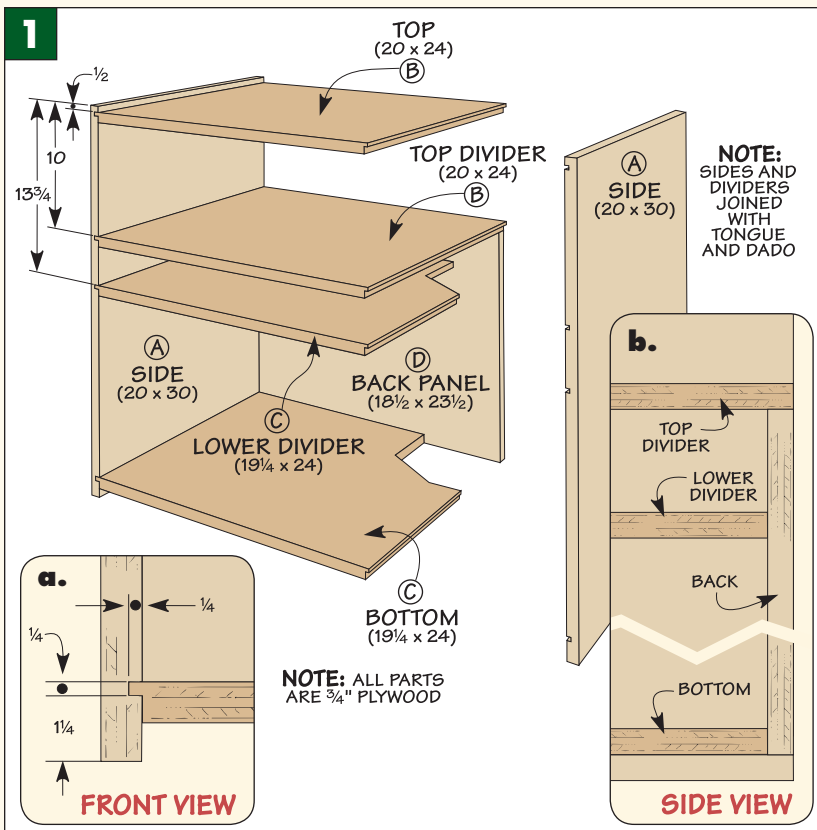


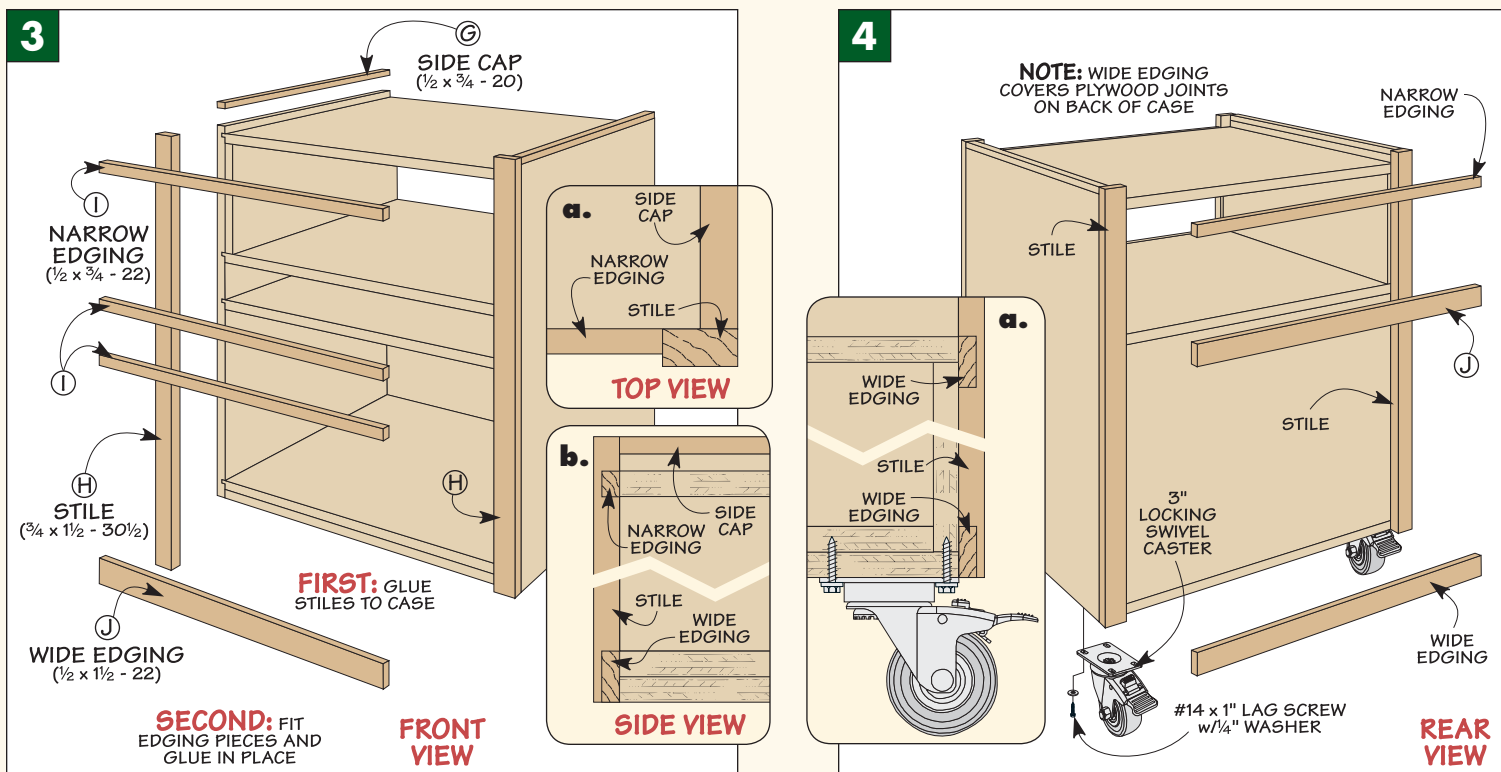
The bottom and lower divider are likewise identical, but $\frac{3}{4}$ " narrower (front to back). This makes room for a plywood back panel you'll add later. After cutting snug-fitting tongues on the dividers, you can start assembling the case. Glue and clamps are all it takes.

REINFORCEMENT. Next, I turned my attention to beefing up the case in a few spots. First, I added the

$\frac{3}{4}$ " plywood back panel (Figure 1b). This adds an extra level of racking resistance and also closes in the drawer opening and lower storage area. The back is sized to fit between the sides. It butts up to the upper divider and sits flush with the case bottom (Figure 1b).

Next, I strengthened the joints between the top and the sides by gluing a second layer of plywood





to the inside of the case, as shown in Figure 2. You'll find a handy clamping tip that will help you with this in the box below.

The final spot for reinforcement is the bottom of the case. Here again, I "doubled up" the plywood to create a very solid foundation for the casters (Figure 2). And I should note that this piece extends flush to the case back and sides.

THE EDGING

At this point, you have a solid case, but it's a little unfinished on the outside. Some hardwood edging glued to the plywood case will give it a cleaner look and help it stand up to shop wear and tear.

A look at Figures 3 and 4 above shows what needs to be done. The edging I applied is a cross between simple edging and a face frame. The pieces are simply glued in place one at a time. The front and back of the case get a similar treatment, but the pieces are a bit different.

THE PIECES. The first step is to glue a "cap" on the top edges of the sides and trim it flush. Next, I added side "stiles" cut from 3/4"-thick stock. They should be flush at the top, bottom, and outside edges, as in Figures 3a and 3b.

With the stiles in place you can start adding the horizontal edging. These pieces are thinner — just 1/2" thick — and are simply cut to fit between the stiles. And here is where there's a minor difference between the front and back.

On the front of the case, all of these pieces are sized to fit flush with the surfaces of the plywood (a double thickness at the bottom).

At the back, there are only three horizontal edging pieces. The two lower pieces are sized to conceal the joint between the dividers and the case back (Figure 4a).

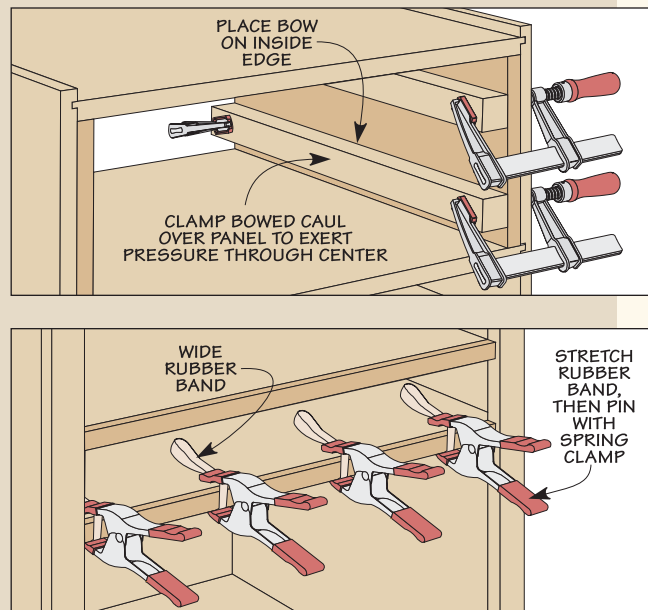
THE CASTERS. Once all the edging was in place, I took the time to add the locking casters. This way, you can easily move the case while finishing the job. Just flip the case over and screw them to the bottom.

CLAMPING TIPS

The challenge I came up against when assembling the case was how to apply clamping pressure in places my clamps couldn't reach. Here are a couple of tricks I used to get the job done.

When gluing the filler panels into the case, I used heavy cauls with a slight bow planed on one edge. A clamp tightened at either end is all you need to apply pressure across the width of the panels (upper drawing).

The lower drawing shows how I teamed up heavy rubber bands and spring clamps to glue edging in place. Simply stretch the rubber band and pinch it with the clamp.



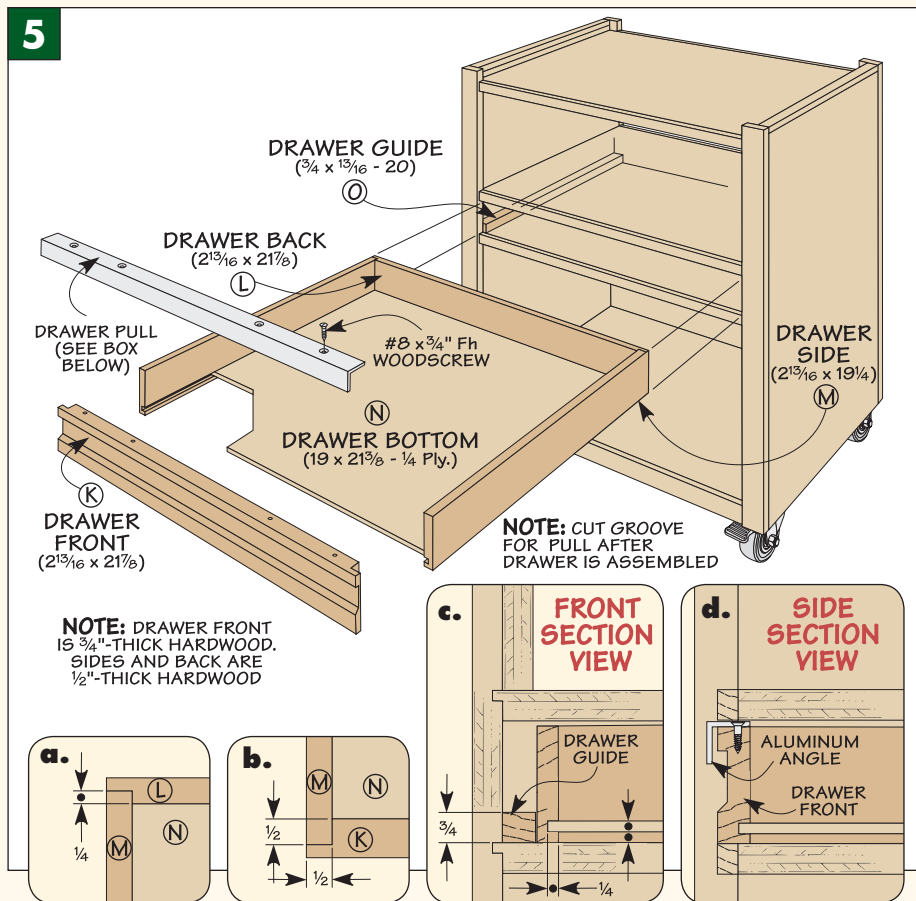
Adding a Drawer

There are a few items that you'll want to keep close by your planer — spare knives, set-up gauges, the owner's manual, and various adjustment tools. The shallow drawer in the center of the case is the perfect spot for these things.

CONSTRUCTION BASICS. As you see in the drawing at right, I kept the drawer simple. It's sized to fit the opening in the case with $\frac{1}{16}$ " clearance on either side. And I left enough top-to-bottom clearance to accommodate the "top-mounted" pull. The drawer slides on the lower divider, and a pair of guides keep it centered (Figure 5c).

The joinery is basic, but solid. The ends of the front and back are rabbeted to accept the sides. A groove in all four parts will hold the plywood bottom. Then you can glue everything together.

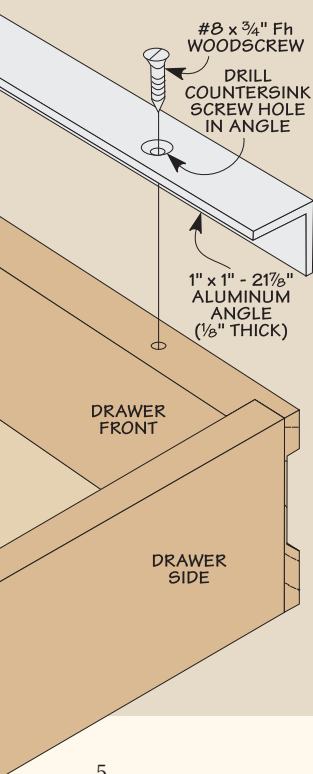
A LOW-PROFILE PULL. Once the drawer is assembled, you can add its one unique feature — the pull. I wanted a drawer pull that would be easy to get a hold of, but also out of "harm's way." A length of aluminum angle was the answer. As you can see in Figure 5d, the combination of a groove cut into the drawer front



and the overhanging flange of the angle makes an easy-to-grip, low-profile pull. The box below shows you how to make and fit the pull to the drawer front.

DRAWER GUIDES. Now the drawer guides can be cut to size and glued in place. They should stick past the inside edges of the stiles a bit to keep the drawer centered in the opening.

MAKING A DRAWER PULL

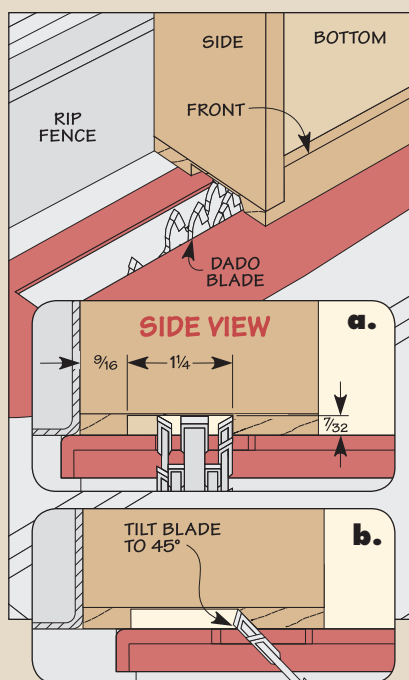


Creating the handy, low-profile pull from a length of aluminum angle is a pretty straightforward, three-step job. The drawings here take you through the process.

The first step is to create a shallow finger recess in the drawer front by cutting a wide groove along its length (detail 'a'). I used a dado blade on the table saw, and some sanding, to get this job done.

Next, I switched to a standard blade and tilted it to 45° to bevel one edge of the groove (detail 'b').

Now, the aluminum angle can be cut to length and countersunk screw holes can be drilled in one flange (left drawing). Finally, you can screw the pull to the top of the drawer front with the upper flange flush to the inside edge.



▲ **Low-Profile.** A length of aluminum angle makes an easy-to-grip, low-profile drawer pull.

Building the Outfeed Support

With the case complete, the next step is to start work on the pivoting, adjustable outfeed support.

OVERVIEW. First, let's take a look at the overall assembly. The outfeed support starts with two long arms that pivot on bolts fastened at the back edge of the case. The arms carry two support assemblies — one fixed at the end of the arms for long stock and a second, adjustable support for shorter pieces. Two different sets of stops hold the assembly in either the horizontal or the vertical position.

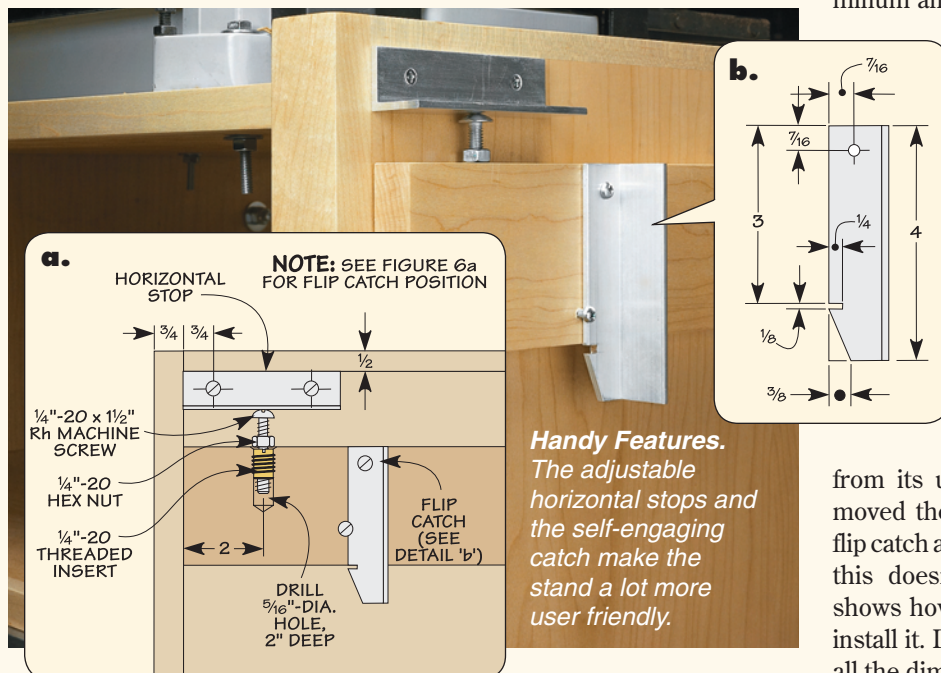
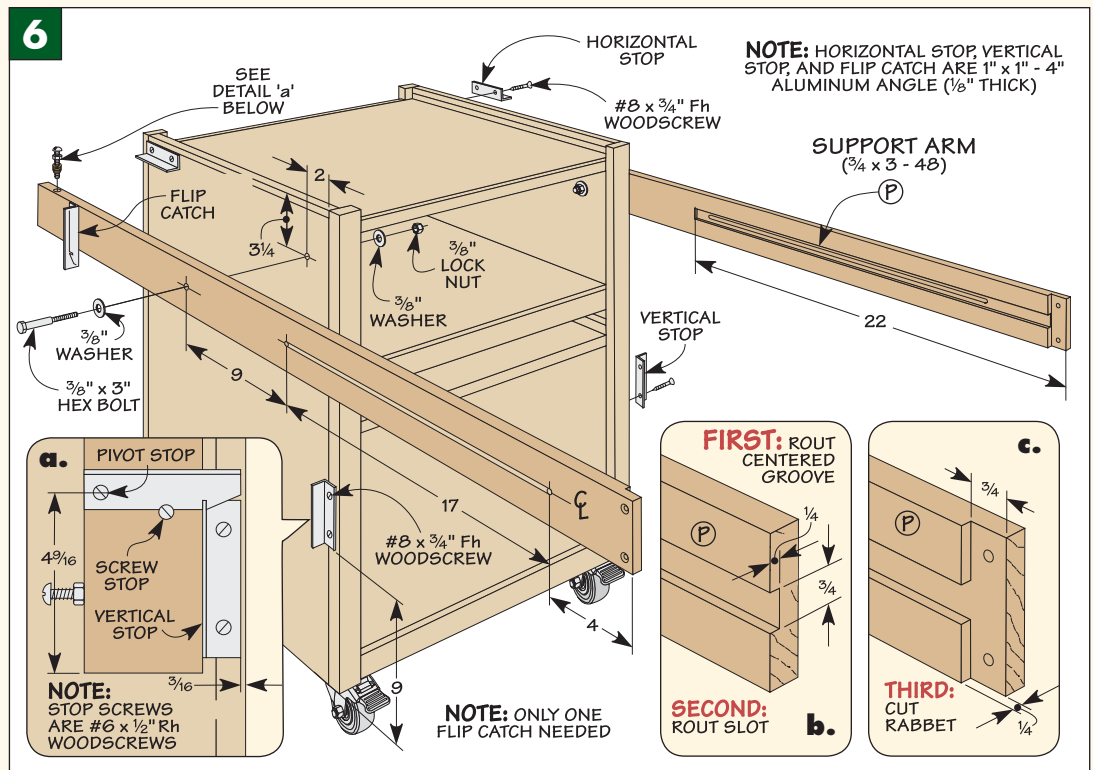
SUPPORT ARMS. Start by making and installing the support arms and the stops (Figure 6). Then on the following pages you'll see how the two supports are built and installed.

First, I cut the two arms to size from $\frac{3}{4}$ "-thick stock. Then I took them to the router table and routed a stopped groove partway along the inside face of each piece (Figure 6b). This groove will hold the adjustable support assembly.

Next, to accommodate the locking mechanism of the adjustable

support, I routed a $\frac{1}{4}$ "-wide slot down the center of the groove (Figure 6). I just drilled a starter hole at each end of the slot and then routed between them.

As you can see above, the fixed support is held in rabbets cut into the ends of the arms. Cutting these rabbets and drilling pilot holes for the screws used to attach the arms completes the work on the "outboard" ends (Figure 6c).



Handy Features. The adjustable horizontal stops and the self-engaging catch make the stand a lot more user friendly.

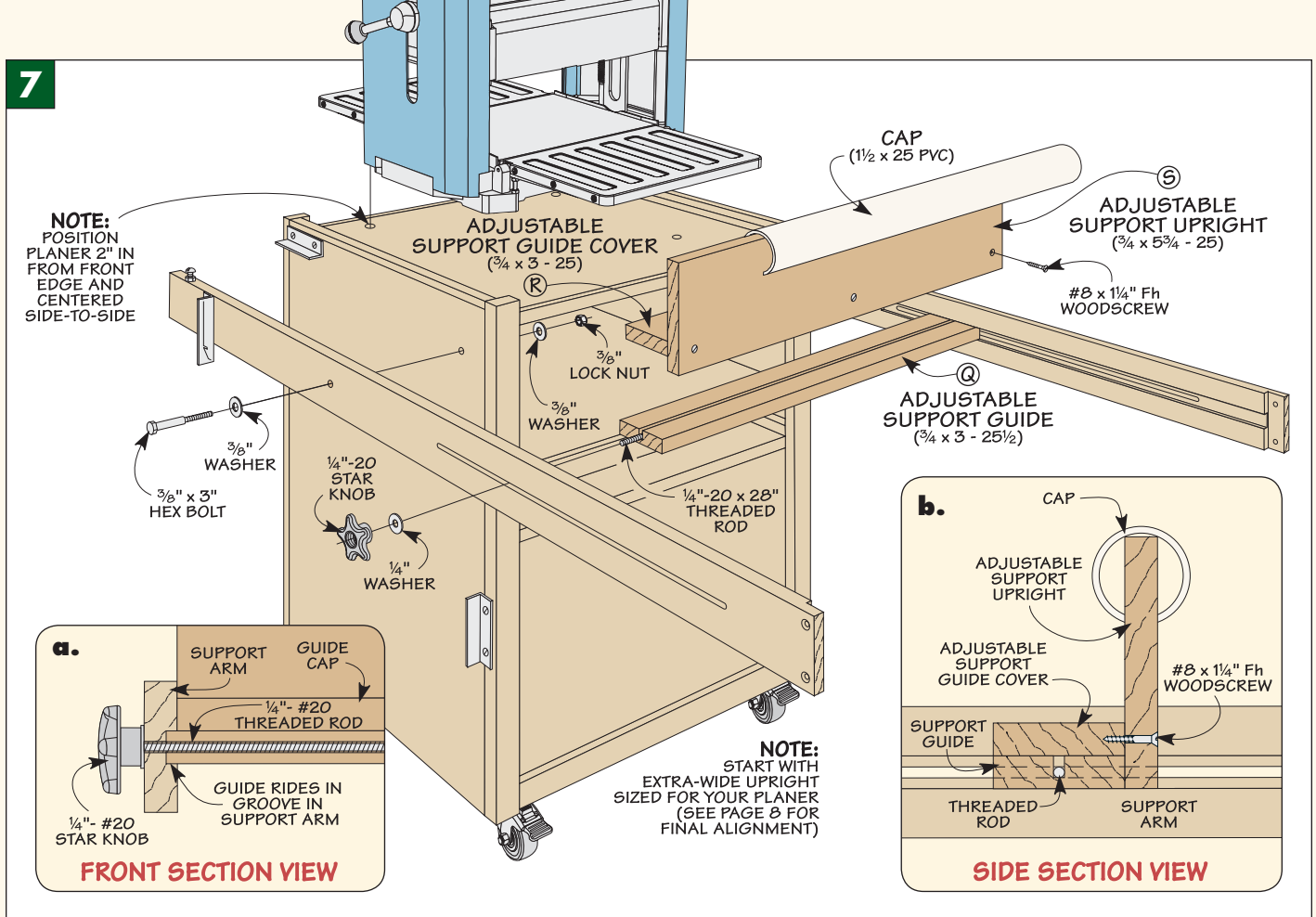
THE STOPS. Before mounting the arms, you'll want to install both sets of stops. The vertical stops are simply sections of aluminum angle screwed to the back edge of the case, as shown in Figure 6a.

The details for the adjustable horizontal stop assemblies are shown in the photo and detail 'a' below. In a nutshell, the head of a bolt threaded into an insert in the arm butts up to a piece of aluminum angle screwed to the case.

Turning the bolt in or out, adjusts the height of the supports on the opposite end of the arms. It's simple, but effective.

MOUNT THE ARMS. With the two stops installed, you can bolt the arms to the case (Fig. 6). And finally, I wanted to make sure the outfeed support assembly didn't fall

from its upright position when I moved the stand. A self-engaging flip catch added to one arm ensures this doesn't happen. Figures 6a shows how it works and where to install it. Detail 'b' at left gives you all the dimensions you need.



With the support arms installed, you can start on the business end of the assembly — the two supports. This is pretty straightforward, but one thing needs explanation.

STRAIGHT AND LEVEL. The real key to getting the most from the outfeed supports is to install them perfectly straight and level with the planer bed. Having solid outfeed support at the right height

gives you two important benefits. First, by supporting a workpiece as it exits the planer, you eliminate a lot of running back and forth from the infeed to the outfeed side. Second, it helps prevent the problem of snipe by supporting the workpiece perfectly level with the planer bed through the entire cut.

So you want the supports positioned at just the right height, but the question is, how do you size them to achieve this? The easy answer is to first make the supports to rough height and then custom fit them to your planer sitting on the stand. The box at the bottom of the following page shows how to do this. At this point, to get a ballpark figure for the supports, you need to set your planer on the stand and bolt it down, as shown above.

THE ADJUSTABLE SUPPORT. With this done, you can now get to work. The adjustable support is more involved, so I started there.

If you take a look at Figures 7 and 7b above, you'll see how the adjustable support is built. It's made up of three pieces cut from

¾"-thick hardwood and a cap made from a section of PVC pipe.

The base of the support is a guide piece that rides in the grooves in the support arms. The key here is to size this piece so that it slides easily in the grooves.

Down the center of the guide, I cut a groove to hold a length of threaded rod. The rod (glued in place with epoxy) will extend through the slots in the support arms. This allows you to tighten a star knob at either end and lock the support in position (photo at left).

On top of the guide piece, I glued a shorter guide cover. It's sized to fit between the support arms and its main purpose is to help keep the support aligned squarely between the two arms. A look at Figure 7a will give you the idea here.

The third piece is an upright that's screwed at right angles to the guide assembly. For now, you can cut this piece to length, but leave it extra wide for final fitting and don't fasten it in place.

THE FIXED SUPPORT. Before you begin working on the PVC pipe cap for the



◀ **Locking Mechanism.**
The adjustable support is quickly locked in place by tightening a star knob.

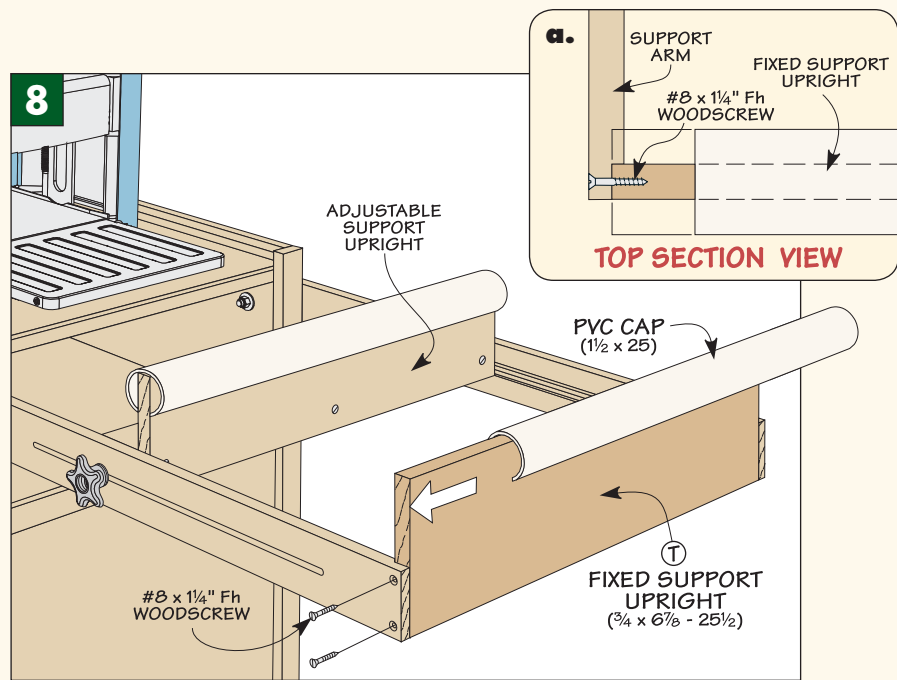


adjustable support, you'll need to make the fixed support upright. It's simply cut to fit between the rabbets in the support arms. Again, you'll want to cut it extra wide. But don't screw it to the support arms just yet (Figure 8).

A SMOOTH-SLIDING CAP. Now you can make and add caps to the uprights in preparation for the final fit and assembly. Here, I wanted the bearing surface of the supports to be friction-free and "catch-free." The smooth surface and round shape of some 1½" I.D. PVC pipe is the perfect solution.

To fit the caps over the uprights, you'll need to cut an accurately sized slot down the length of each pipe section. The key here is to size the slot so that the cap snugly pinches the upright and stays put, as in Figures 7b and 8.

A CUSTOM FIT. With caps added to the two uprights, the final step is to



custom fit and install the supports on the support assembly. The technique I used to get them perfectly aligned with the planer bed is shown in box below.

And once the two uprights are screwed in place, you're in business. All you need to do now is come up with a project to put your hard-working planer to use.

ALIGNING THE SUPPORTS

Installing the two supports so that they were perfectly aligned with the bed of the planer turned out to be a lot easier than I thought. As I mentioned before, the trick is to cut the pieces extra wide and then custom fit them to the support assembly using the planer bed for reference. The drawings show the simple steps involved.

The first step, shown in Figure 1, is to "zero out" the two

support arms by aligning them parallel to top of the stand (and planer bed).

Now, you can align the adjustable support to the planer bed with the help of a pair of straight-edged blanks (Figure 2). After marking and trimming the waste from the upright, clamp it back in place and install the screws. Then reposition the blanks and follow the same procedure for the fixed support (Figure 3).

