

Infeed/Outfeed Table for a Portable Planer

Adjustable bed reduces snipe and planing time

by Greg Colegrove



A flat, stable planer bed reduces snipe. The author's height-adjustable feed table and platform, both made of melamine, have practically eliminated the problem. Maple edging prevents boards from wandering off the table.

Portable thickness planers that I've used have an annoying habit of sniping the ends of boards. My 12-in. Delta planer is no exception. I initially accepted that I'd have to scrap 2½ in. on both ends of every board I planed. But soon my conscience, spelled checkbook, convinced me there had to be a better way. Because I really am a rocket scientist, I figured I should be able to cure this otherwise fine machine of its hiccups.

Snipe is a deep cut, like a divot, in one or both ends of a planed board (see the inset photo on the facing page). Snipe occurs when the end of the board tilts upward into the cutterhead. Portable planers are known to be snipers because of their short, rollerless beds. Planers that are adjusted for depth of cut by raising and lowering the head are particularly susceptible.

This problem is hard to correct on many small planers because they don't have large, stable beds. A machinery engineer I spoke with confided that the best I could expect with a planer like mine, without any modifications, was about .005 in. of snipe. I knew I could do better, so I started looking for ways to improve support for the workpiece as it passed through the planer.

Designing a rigid, height-adjustable auxiliary bed

My first effort consisted of extension rollers, which required far too much fiddling, and the rollers had no guides to keep stock moving straight. Then I saw a planer auxiliary bed at a local woodshop that went right through the mouth of the planer. I went back to my shop and adapted the idea, making a table that was stiff but adjustable in height (see the photo at left).

The adjustable bed has reduced my planer's snipe to between .002 in. and .003 in. Such a small discrepancy in thickness is easy to sand or handplane out. And with the long bed, I don't have to feed and retrieve one board at a time.

Stock up to about 4½ ft. long is supported at the far end, so I can plane several in a bunch, left to right, or in succession, end to end. Gang-feeding eliminates snipe altogether.

The auxiliary bed reduces my planer's depth of cut capacity by ¾ in., but I rarely plane anything thicker than 4 in. anyway. If I'm planing large, heavy planks, I put blocks under both ends of the table to avoid damaging or moving them.

Choose from two different support platforms—I've built two different versions of the auxiliary bed: one in which the feed table sits on a dedicated base and one that can be moved. The only difference between the feed tables is length. The first bed, which sits on a cabinet platform, is designed for stock up to 6 ft. long.

The second bed, which I built for a cabinetmaker friend, is 8 ft. long and has a more compact platform. It must be placed on a stable bench or work table (see the top photo on p. 45), but it will handle longer stock and is more portable. With the help of a buddy, you could stand the unit—with the planer attached—against a wall,

store it overhead or transport it in a truck or van. Most portable planers don't come with stands, so it's nice to have the planer at a comfortable operating height.

Inexpensive materials and hardware

You should be able to build either one of these planer auxiliary beds for less than \$75. I made both units primarily out of white melamine, which provides a flat, low-friction surface for the feed table. And with melamine, it's easy to spot and remove wood chips and debris. For a rigid table, I fastened two layers of ¾-in. melamine together.

You will need a bit of hardwood to make edge guides for the tables. I used ¼-in.-thick maple strips that extend ¼ in. above the surface. I also covered the melamine ends with maple trim, this time flush with the tabletop. Not too long ago, I added a planer hood that's connected to a dust collector. The table should be kept free of chips; otherwise, boards will plane inconsistently.

I can adjust the flatness of the feed table with 12 connector bolts that join the table to its support platform. The heads of the bolts are sandwiched between the table's two layers of melamine. The bolts screw into threaded inserts set in the top of the platform (see the inset drawing on p. 44). The connector bolts and threaded inserts can be purchased from The Woodworkers' Store (4365 Willow Drive, Medina, MN 55340; 800-279-4441).

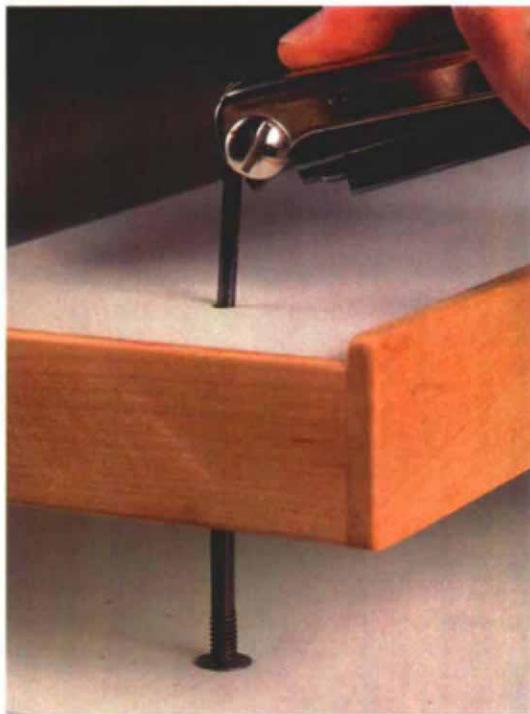
Building the feed table and platform

You can construct the auxiliary bed and platform in about an afternoon. You will need three pieces of melamine for the feed table. Two of the pieces—one for the outfeed side and one for the infeed side—are identical. The third is the continuous top of the table (see the

drawing on p. 44). Passing only one thickness of melamine through the planer minimizes the loss of cutting depth. This allows enough table flexibility for independent height adjustment at the infeed and outfeed ends.

The bottom two pieces are placed just up to the front and back of the planer base. When you have all the table pieces, cut out a piece of melamine for the top of the platform, and place it on a long workbench. Stack the three table pieces on top of the platform top in the right order and relative positions. Temporarily align and clamp the pieces together.

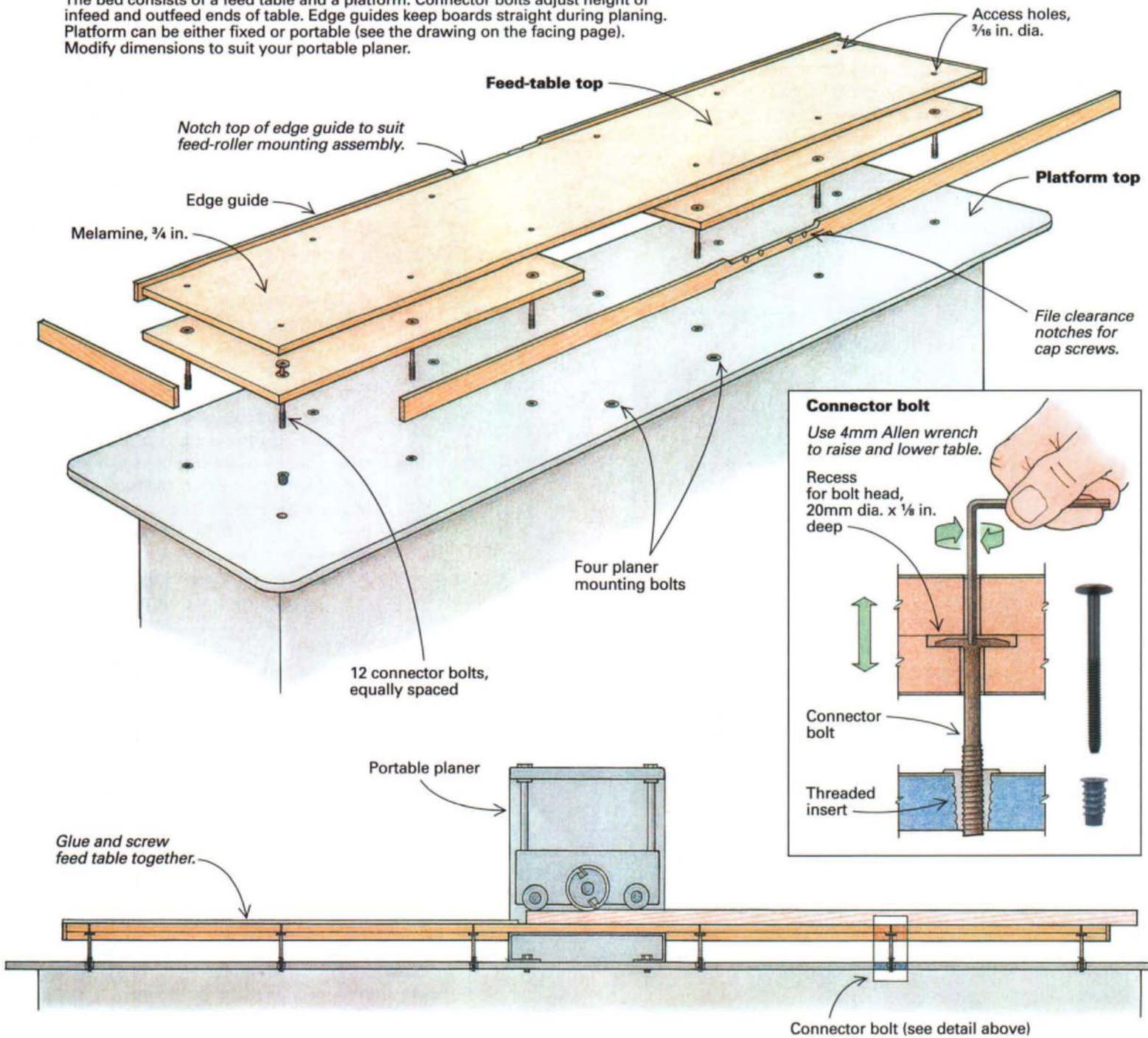
Lay out the six rows of connector bolt holes, mark them with a center punch and drill ⅜-in.-dia. pilot holes through the stack. Unclamp the pile, and remove the piece that will become the feed-table top. Counterbore clearance holes for the heads of the bolts in the two halves of the lower table layer. I used a 20mm Forstner bit (about 13/16 in.). Bore these holes ⅛ in. deep, slightly more than the thickness of a bolt head. Drilling any deeper will only increase backlash and make table adjustment more difficult. Use a 17/64-in.-



Leveling the table—Connector bolts screwed into threaded inserts allow precise adjustments to the height of the planer table.

Auxiliary bed construction

The bed consists of a feed table and a platform. Connector bolts adjust height of infeed and outfeed ends of table. Edge guides keep boards straight during planing. Platform can be either fixed or portable (see the drawing on the facing page). Modify dimensions to suit your portable planer.



dia. bit to enlarge the pilot holes in both lower table sections. These holes should allow a connector bolt to fit easily through. Move back to the feed-table top, and using a $\frac{3}{16}$ -in.-dia. bit, ream out the pilot holes. These will be the access holes for raising and lowering the table with a 4mm Allen wrench (see the inset drawing above).

Assemble the parts in stages—On another flat surface in the shop, insert all 12 connector bolts between the two table layers (three pieces total). Glue the layers together with construction adhesive; keep the glue away from the bolt heads. Clamp the assembly, place it on its back and then fasten the layers together using

$\frac{1}{4}$ -in. #6 particleboard screws, placing them about 6 in. on center. Let the inverted table cure flat.

Move back to the bench so you can finish the platform. Bore out the pilot holes in the top, and install 12 threaded inserts. To prevent them from vibrating loose, I epoxied them in. Cut out and assemble the pieces for the rest of the platform style you've selected, and attach the platform top.

Finally, rip some hardwood strips for the table's edge guides and end caps. Notch the bottom center of the guides to clear the base of the planer. I wanted to be able to plane $\frac{1}{8}$ -in.-thick stock, so I also trimmed the top of the guides to fit under my Delta 22-540's

feed-roller supports, and I filed clearance notches for their cap screws (see the drawing on the facing page). Glue and clamp the edge guides and end caps to the feed table.

Mounting the planer and the table to the platform

Place the planer on the center of the platform, and transfer the bolt-hole locations (one at each corner) from the planer's base. Remove the planer, and drill holes for threaded inserts at those spots. I used 1/4-in. bolts, nuts and washers to mount mine. If your planer has bed-extension wings or other parts that might interfere with the feed-table installation, remove them.

Before you install the feed table, it's a good idea to thread a 1/4-20 nut on each connector bolt. The nuts will keep the bolts from vibrating loose and take up play in the threaded inserts once you've trued up the table. Crank the cutterhead all the way up, slide the feed table through the planer and lower the table until the connector bolts align with the threaded inserts. As you snug the bolts, you'll find that you can only tighten each bolt a few turns before the table starts to bind. Move on to an adjacent bolt, and then continue around the table. Repeat this sequence until the table's edge guides are nesting over and almost touching the base of the planer.

Fixing the platform and adjusting the tables

It's now time to adjust the table for flatness. Place the platform, with planer, where you want it. If it's the portable platform, make sure it's secured to a bench or table. Check that the space between the top of the planer base and the bottom of the feed table is free of sawdust. Tighten the two connector bolts on each side of the planer until the table touches the base. Don't overtighten these bolts. Hold a long (at least 5 ft.) straightedge on the infeed end of the table, and starting at the next pair of bolts, tighten them until that table section is flat (see the photo on p. 43).

Switch to the matching set of bolts on the outfeed end, and do the same procedure. Work outward and back and forth until the entire table is flat. If you installed nuts, snug them to the platform. To reduce friction, I periodically spray the feed table with Top-Cote, a dry lubricant.

Checking planer and depth-of-cut settings

You should check that the planer's two feed rollers are at the right height in relation to the cutterhead and that the knives and rollers are parallel to the table (for more on making planer adjustments, see *FWW*#107, pp. 72-77). The last step before using your auxiliary bed is to reset or replace the thickness indicator to account for the 3/4 in. loss in depth of cut. You can recalibrate the original gauge

or apply a new scale on the planer, offsetting it by 3/4 in.

An accurate way of calibrating the scale is to plane a piece of scrap to a known thickness, and align the scale so that the indicator points to that measurement (see the photo at left).



Reset the depth scale—To correct a 3/4 in. loss of cutting depth, install a new scale or reset the old one.

Greg Colegrove is a rocket-launch countdown specialist. He runs a part-time furniture-making business in Aurora, Colo.

If space is a problem, build a portable base



This planer table can be moved. A feed table attached to a portable base allows a planer to be parked in a corner when it's not needed. The base can be set up quickly on any stable surface, like a table or a benchtop.

