

Better Way to

Dovetail cleat is strong



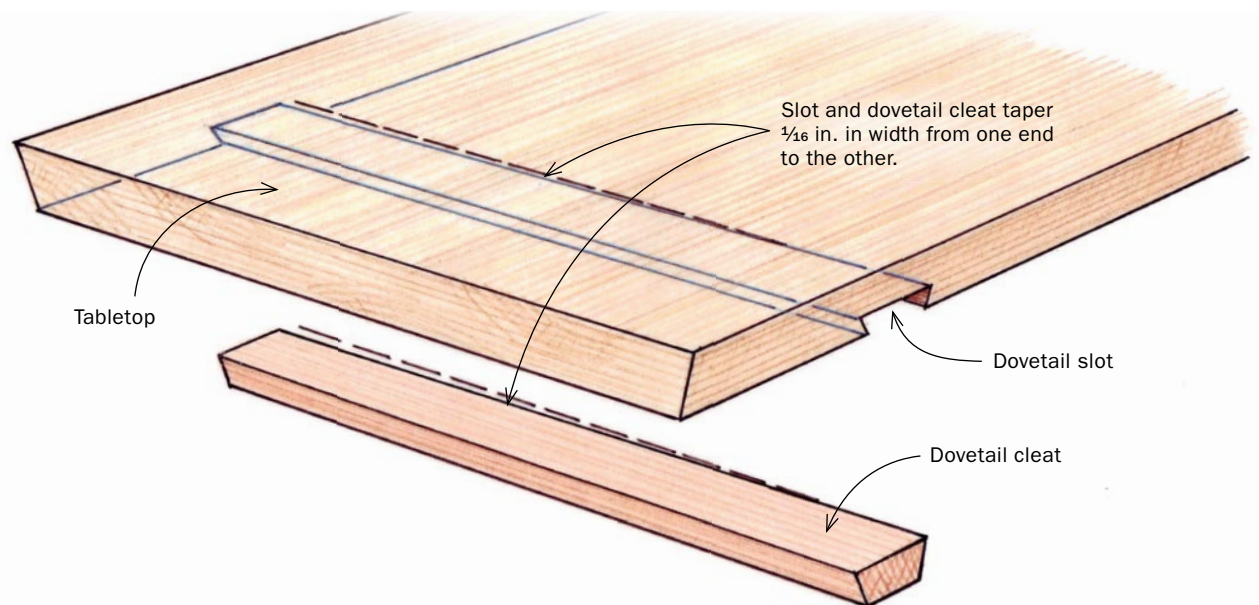
FLAT CLEAT

Simply a board with beveled edges, this cleat is easier to make than the shouldered version (facing page), but can't be very tall. It works well with a base that has four legs.



TAPER THE DOVETAILED FOR EASY ASSEMBLY

With the table base attached to the cleats, assembly would be devilish if the cleats and slot were not tapered a bit. It's not hard to do. Most of the work is done with machines, and handwork brings the taper to a perfect fit.



Attach Tabletops

and stylish

BY ANDREW HUNTER

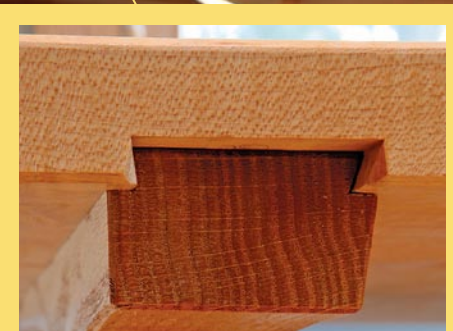
The sliding dovetail joint is not a modern invention. Examples are found in furniture dating back over 500 years, and I suspect the joint's origins go back into ancient history. But I use this joint to secure tabletops to their bases. The dovetailed cleats keep a solid-board top flat, and they also allow for expansion and contraction. And by leaving them exposed, I make them part of the design.

A taper along the length of the cleat and slot makes for a tight-fitting joint. The farther you slide the cleat into its slot, the tighter the joint. This taper eliminates the precision needed to fit a straight cleat and the need for glue. With no glue, you can remove the base from the top if needed, and if the fit of the cleat loosens due

to wood movement, you can tap it back home or remove and shim it if necessary. I've never had to do either because I start off with very dry wood and use quartersawn lumber for the cleat.

I prefer this joint to slotted screws or steel brackets. When you put so much time and care into the base and top, it makes sense to put that same care into joining the two, without relying on mechanical devices.

I use two types of tapered sliding dovetails to secure tabletops: shouldered and unshouldered, depending on the design. Most of the work for an unshouldered cleat is done on the tablesaw, and I make the shouldered cleats on the router table. The key to a tight-fitting joint is matching the taper of the cleat with the taper of



SHOULDERED CLEAT

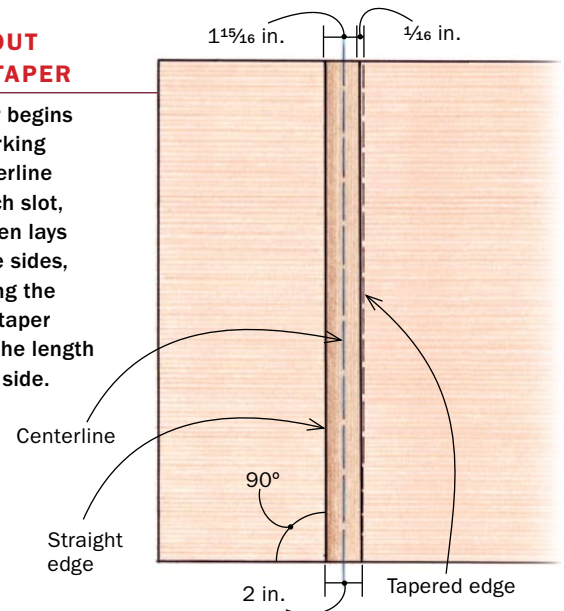
A shouldered cleat can be much taller and narrower, so it can be profiled and used as the top member of a trestle-style base.

For either type of cleat, rout the slot first



LAY OUT THE TAPER

Hunter begins by marking a centerline for each slot, and then lays out the sides, marking the $\frac{1}{16}$ -in. taper down the length of one side.



the slot, then fine-tuning the fit with a handplane. For shouldered cleats, you typically would need a specialized dovetail plane to adjust the tapered shoulder directly, but I figured out that a piece of wood taped to the edge of the cleat lets you use a router and then a bench plane instead.

Begin by gluing up the solid-wood tabletop, making sure it is straight and true. A sliding dovetail cleat can straighten a slight cup in a top, but correcting twist is difficult.

Cut the tapered slot

It's easiest to rout the tapered dovetail slot in the underside of the tabletop, and then create the cleat and tweak it to fit. For both shouldered and unshouldered joints, the slots are made with a handheld router and clamped straightedges. First, draw



TIP **Clear the waste.** Before routing the slot, take a few passes with a circular saw, set to depth, to make it easier for the router to go through the wood.

SAW AND ROUT THE SLOT



Straightedge keeps router in line. A solid-wood straightedge clamped to the tabletop guides a hand-held router.



Three passes to a clean slot. Hunter cuts one edge of the slot, resets the straightedge to waste away the center, and resets it again to cut the other edge.



Unshouldered cleat is quick and easy

To make an unshouldered cleat, use the tablesaw to cut one untapered edge, and a jig on the tablesaw to cut the tapered edge. Then fine-tune the fit. Because the angled edge is wide and flat, it is easy to use a bench plane to tweak the taper to the perfect fit.



Tablesaw cuts both edges of cleat. Cut the straight side of the cleat on the tablesaw with the blade tilted (above). Then use a simple L-shaped jig with a 1/16-in. shim between the jig and cleat to cut the tapered side of the cleat (right), and tweak the fit with a handplane.



a centerline for each slot, making sure they are parallel to one another and square to the table edges. Then lay out the sides, marking the taper down the length of one edge.

Using a dovetail bit and a clamped straight-edge, rout a test piece to determine the exact distance from the straightedge to the inside and outside edges of the slot. Transfer these measurements to the underside of the top, clamp the straightedge along those lines, and then rout.

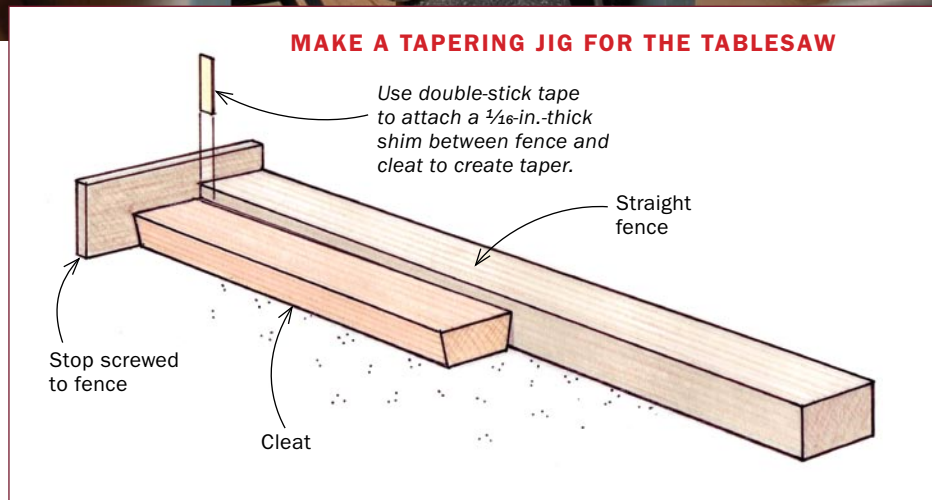
How to make the cleats

To make an unshouldered cleat, begin with stock 6 in. longer than the width of the tabletop. This extra length helps when fitting the cleat to the slot. Lay out the joint on the blank, centering it in its length. With the tablesaw blade tilted to match the angle of the dovetail slot, cut the straight edge of the cleat. Then, using a simple tapering jig (above), cut the tapered edge of the cleat to match the tapered edge of the slot. Handplane the taper to get an exact fit in the slot. After waxing, drive it home and mark and cut its finished length.

To make the shouldered dovetail cleat, begin as with an unshouldered cleat, with a blank longer than the table is wide. Now lay out the dovetail, centering it on the cleat and tapering one edge 1/16 in. over the same length as the slot. Cut the dovetail shoulders on the router table. For the straight shoulder, simply run

that edge of the cleat along the fence, cutting to the layout line. To cut the tapered shoulder, handplane the desired taper onto a long stick, and attach it to the edge of the cleat. Run this edge along the router-table fence. Creep up on the cleat's fit, testing it in the slot as you go. The joint can be fine-tuned by handplaning the stick and rerouting until the tapers match exactly and the cleat can be driven to the far end of the tabletop. The extra length of the cleat comes in handy here. Now wax both the slot and the cleat and drive it home. Remove the tapered stick and cut the cleat to length. □

Andrew Hunter designs and builds custom furniture in his studio in Gardiner, N.Y.





Route the shouldered cleat

The shouldered cleat uses the same concept as the unshouldered cleat, but the dovetail is best made at the router table, with a simple stick attached to create just the right taper. Start by routing the straight side of the dovetail, and then proceed as follows to cut and fit the tapered side.

TAPER AN AUXILIARY STICK

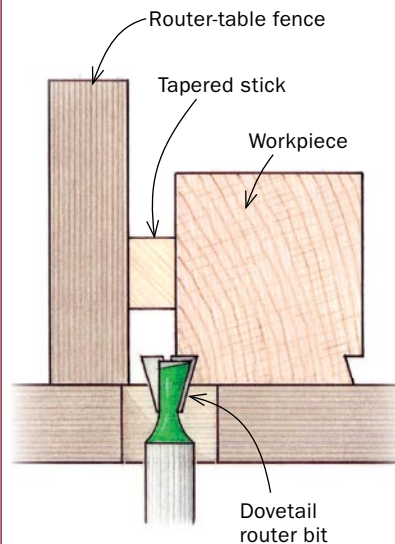
Plane the taper. Draw the $\frac{1}{16}$ -in. taper along the side faces of a $\frac{3}{4}$ -in.-square stick and simply handplane to the lines.



Attach the tapered stick to the cleat. Use double-sided tape to ensure it stays attached to the cleat during routing.



ROUT THE DOVETAIL



Run the tapered stick against the router-table fence. This automatically builds the taper into the dovetail shoulder on the cleat.

FINE-TUNE THE FIT



Test-fit the cleat in the slot. You can check the accuracy of the taper by inserting the cleat and lifting the front and back. If either pulls away from the top, it is loose in that spot. Plane a shaving off the stick in the tighter area and rerout.

