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Mounting a Router in a Bench or Table Top

You can make a router table from any bench or table top by installing a router base into the surface. The method for doing so is the same whether you are applying it to an existing bench or building a new router table. A great advantage to making a bench top into a router table is the size of the bench top itself. It's hard to run long pieces on a small router table, but easy if the bit protrudes through the middle of a long bench. The disadvantages are that you now have a big hole in your bench, you can't use the router if the bench is being used otherwise, and you can't attach a fence without cutting more holes in the bench top for C-clamps to stick through. Life is full of compromises.

There are two basic approaches to mounting a router into any table. The first is to simply cut a 1 or 1-1/2" hole in the table, and fix a router base beneath it. This will work well for certain operations, but limits the capabilities of your setups for the following reasons. First, because the base is below the table top by the thickness of the top itself, the height adjustment of your router is reduced by the thickness of the top. Secondly, you may sometimes want a larger hole for bigger router bits. But, you'll want a smaller hole when you use smaller bits so your parts don't dip into a gaping chasm in the top.

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Trestle Bench

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Porter Cable 693 Plunge Router
Interchange motor with any PC690.

Solution- mount the router base onto a 1/4" clear plastic plate, and fit that plate into the table in a rabbet. This brings the router base as close as possible to the table top, maximizing its height adjustment distance. And, you can make two or three different plastic plates with different sized central holes for use with different sized router bits.

Begin the procedure by cutting a hole in the center of your router table, or in your table top, for the router base to fit within. Make this hole just large enough for the base to fit through, and remember that the handles on most router bases will unscrew to come out of the way. Cut the hole using a plunge router and a 3/8" or larger straight flute bit. Clamp four fences onto the top as in photo 1 for the edge of the plunge router base to butt against. Measure carefully the distance from the bit to the edge of the plunge router base, and locate the fences that distance from where you want the edge of the hole to be.

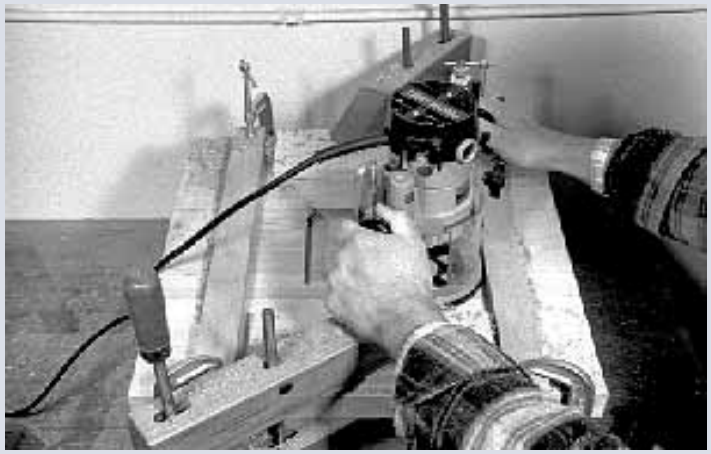

Photo 1- Cut a hole in your router table top using a plunge router and a straight flute bit. Clamp fences around the hole to limit the travel of the router.

If you need clamps, click here.
If you need router bits, click here

Make the cut in stages. First set the plunge router to cut at a depth of 1/4 to 3/8", and cut at this setting all around the perimeter of the hole. Also cut inside the outer perimeter another 1/2" or so to make clearance for the bit as it gets deeper. Then drop the setting another 1/4 to 3/8", and cut again. Continue until your plunge setting cuts through the top. But- don't cut the central waste chunk free with the router, because it could get caught by the bit and thrown. Cut around 90% of its perimeter, then turn off and remove the router, knock the chunk free with a hammer, then use the router again to clean up what's left.

Now move the four fences 1/2" away from the hole. Check that adjacent fences are all at 90o to each other. Set the plunge router to cut at a depth equal to the thickness of the plastic plate that you use. This depth setting is critical because you want the plastic plate to rest flush with the top of the surrounding table. Make test cuts using a small piece of the plastic to test the depth as in photo 2. If you happen to cut it too deep, you can shim up the plastic with masking tape, but if it is not deep enough your parts will hit the lip of the plastic whenever you use the table.

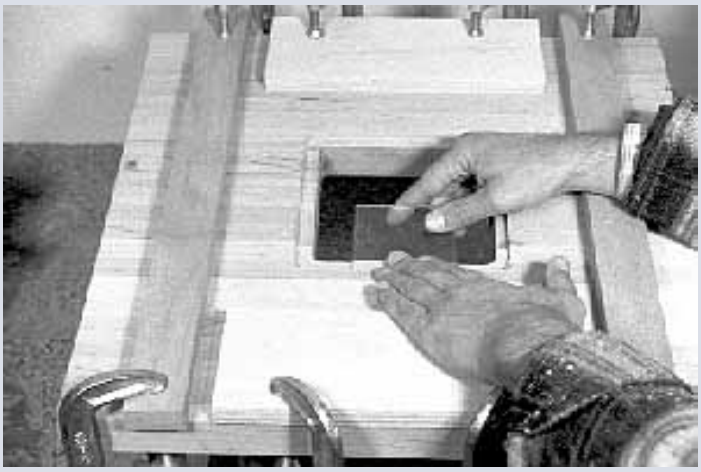

Photo 2- Reset the fences 1/2" behind their first position to cut a rabbet for plastic plates that will hold the router base in place. Carefully adjust the depth of the rabbet to match the thickness of the plastic plates.

Square up the corners of the rabbet for the plastic using a chisel. Cut out several squares of plastic that fit with little or no gap between themselves and the table. Remove the stock plastic base from your router base, and center it on one of the plastic plates. Mark the location of the screw holes that fix the stock plastic base to the router base itself, and mark the center of the base on the plastic plate.

I suggest that you bore these holes on a drill press, because plastic cuts differently than wood and can grab a twist bit as it comes through the cut. A Forstner bit is best for boring the large central hole, though a spade bit will do it. Firmly clamp the plastic in the drill press, and set it on a wood substrate for the bit to go into after the cut is made. Countersink the screw holes so the screw heads will be below the top surface.

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