

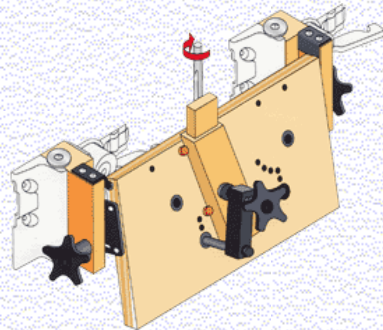


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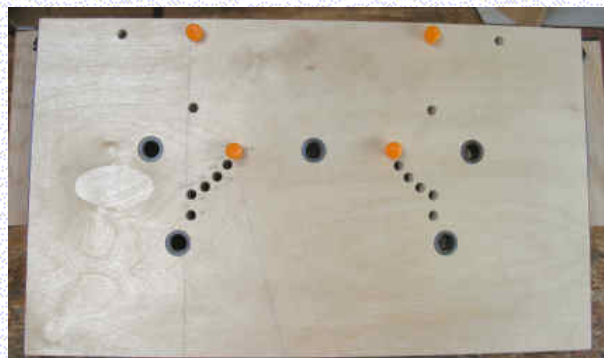
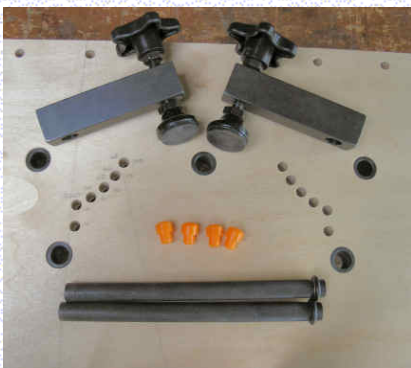


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The Multi Angle Clamping Jig

Hello, here I am again after a bit of a break. Had explosive blood pressure possibly due, I am told to, a virus attack followed by a week away with the missus, so apologies for the wait.

After all the little outstanding chores were done I again quietly sneaked off to have a fumble into the cardboard carton and grabbed the Craftsman Gallery Multi Angle Clamping Jig.



Now the 'Rat has no difficulty holding the work vertically/horizontally or at 45degrees with the mitre box etc. but sometimes it needs a bit of head scratching on how to hold the work at compound angles.

Enter the Multi Angle Jig:

This in essence is a mortise rail that can tilt up to 45 degrees and holds work at various angles. The kit comprises of a good quality birch-ply plate, four plastic buttons and two solid steel clamp assemblies. Oh, and of course an instruction sheet. The clamping "feet" have a rubber like sole and are connected to the threaded rod by a ball and socket joint. It did take a couple of re-reads of the manual to realise that the star knobs were secured onto the rods with lock nuts. There are five steel ferrules (flanged sockets) fitted into the plywood into which knurled steel bars are inserted to set the clamps. The side

cheeks that fit into the cam-locks are made of *Oak*! The whole assembly has a feel of solidity and robustness about it. The instructions call for checking that the bars run smoothly through the ferrules and to remove any burred edges. Mine were perfect, requiring no clean up at all. The plywood faces are not sanded or coated and still have a very slight "off the shelf" roughness. This is not a criticism as I feel that it increases friction and so aids in clamping.



Rear view of ferrule

Clamp Assembly

Button Holes

In the plywood plate are drilled a number of strategically placed holes into which the buttons can be inserted as shown above. The work rests against these buttons and their positioning defines the preset angle. I placed the orange buttons in every combination of settings and measured the relevant angles. I am pleased to report that they were all *very* accurately positioned. Preset positions of 90,5,10,15,20,22.5,30,55,40,45 degrees are available and mirrored on the right hand side of the plate. Compounding these presets with any angle between parallel and 45 degrees to the face makes for some very versatile work holding. There aren't any preset marks on the hinges for tilt angle and so the C.G. angle finder is a very useful tool for that job.

I preset mine at some common angles and scribed some reference lines onto the hinges.

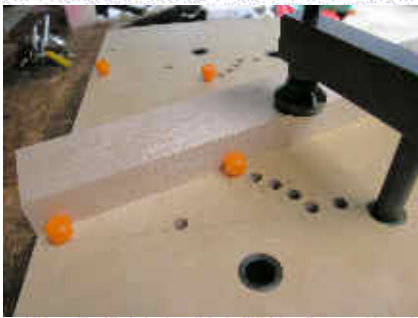
On the plywood board I chose to mark in pencil the degree settings next to each hole for quick reference. You might just be able to see that in the above photo. I found the orange buttons to be a snug fit in to the holes reducing the risk of any movement when in use, but occasionally requiring "persuasion" to remove them. No doubt this fit will ease over time. These buttons are standard WoodRat parts and are inexpensive to replace.



There are some basic checks to be made before use. With the jig mounted in the cam locks and with the large washer sitting on the top of each fence as shown in the right hand photo, measure the distance of the plate from the face of the channel. It should be equidistant on each side, if not, a degree of adjustment can be made with the screws and elongated slots in the black mounting hinges as can be just seen in the left hand photo. (Mine were perfect!)



Again with the jig mounted in the cam locks quickly test and lock the jig face, when closed, at 90 degrees to the 'Rat plate. There are two adjustable alloy brackets as shown above to set as stops. Loosen the side knobs and test that you can set to 45 degrees. You may or may not have to adjust the side hinges backwards or forwards to achieve this. Again I experienced no problems.



The photos above show the general clamping procedure. Sprouting a third hand here would definitely be an advantage, as you need to hold the work against the orange stops whilst inserting the steel bar, holding the clamp against the wood and then tightening the star knob! These clamps have a mighty firm grip when tightened, and you can have confidence that nothing will move when set. Occasionally I found the ferrules not to be ideally placed for narrow stock since it was not possible to have full engagement of the clamp foot, however, the work was still well gripped with no slippage. Maybe another two ferrules would increase versatility but is by no means an essential requirement. These are of course available from The Craftsman Gallery as spare parts.



The picture on the right is a close up of the knurled bar

In each of the oak side cheeks are three drilled stopped holes to take an orange button. From the instructions:

"for mortising, place an orange stop in one of the three holes in each side piece. Use top hole if no riser plate, 2nd hole if one riser plate and 3rd hole if two riser plates. Re-clamp the jig with the stops riding on top of the fences."

On mine the the stops were easily inserted but didn't want to come out. I pleaded and threatened them but in the end had to resort to pliers. This is not at all due to poor manufacture, but in fact quite the converse as all the holes are very clean and accurate. Its more likely due to very slightly swollen wood in our rainy weather. The simple answer is to drill right through

the cheeks so that they can be tapped out from the other side. Much better tight than loose.



To mortise a rail I found no problems with raising the jig until the ply was level with the base of the 'Rat plate and then clamping the work. What can be seen from the left hand photo is that there is a limit to how narrow a work-piece can be clamped. Narrower pieces will not be level with the top of the plywood if you want secure clamping. To mortise narrower work, a good router plunge depth and WoodRat's longer cutters will make an obvious advantage, however this jig's prime strengths are for angled work.



Level mounting of the jig is simplicity itself since the fixed washers on each cheek side just rest on the top of the fixed fences. The right hand photograph shows a piece of maple mounted for a 20 degree mitre cut.



Above left, a 20 degree cut achieved, clean, simple, quick no problems, however, a word of caution!

When clamped to the jig, the work is four inches or more from the channel face. Nothing can be done about this as it is a function of the fixed fence depth and the oak cheeks which enclose the hinges. Any minor play or "rattle" in the carriage therefore has the potential to be amplified at this distance out from the face if care is not taken to remove any slack when mounting the jig. On one cut I neglected to do this which resulted in a poor cut on the cheek of the cut as can be just seen on

the picture above.



A 20 degree half lap mitre? Easy Peasy!!

So, in conclusion, what are my thoughts?

This is an innovative and robust jig made from quality materials. It is not cheap but you do get a very versatile addition to your WoodRat. If you plan to make furniture or indeed anything requiring angular cuts then it will be money well spent as I can see how much time and thought can be saved. I think I would like to add a couple of extra ferrules on mine and drill through the holes in the oak cheeks but these are purely personal preferences. Although not advertised, The Craftsman Gallery assure me that all parts are available as spares should you need any.

I can find no reason why you shouldn't buy one.

The whole jig kit costs \$139

Rods are \$8 each, Flanged sockets \$4 each Drilled plywood face plate \$20

All plus any delivery and tax charges relevant to your locality.

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