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## Reviews3

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### Laser Guide

Permit me to ask a personal question if I may. Its OK, I can keep a secret! Well, here it is: Have you ever made an expensive purchase because you can afford it and you *wanted* to rather than *needed* to? You know the sort of thing, a super radio for the car, some expensive golf gloves, a Lie-Nielson plane..... etc. Yes, I am sure you have and I am guilty too. The reasons are not really justifiable but in this hobby have been (in a well known woodworking forum) termed the "gloat factor"

I have a sneaky feeling that the high quality Laser Guide from the Craftsman Gallery falls into this category and owning one can certainly provide that secret feeling of 'one-up-manship'.

I am sure that Lewis Stepp of the Craftsman Gallery won't mind if I quote part of an email he sent to me which outlines the background to this device.

"We designed our laser mount for the 625, but several customers have adapted it to the 621 by drilling a 3<sup>rd</sup> hole in the phenolic mounting plate. It is best with the 625 (type 3) because the PlungeBar does not get in the way of the laser. Looking at our PlungeBar sales, 66% of our USA customers are using the DeWalt 625. No other router has more than 10% usage by our customers. Older 625 models (type 2) have only one tap for the edge guide and will require some adaptation in mounting.

I ordered the laser with a 1/32" wide beam. That may seem wide, but I am able to center within the beam. Be sure to provide plenty of illumination in addition to the laser. We pay a high price for the laser because it is made in the USA and we order only 100 at a time, but I expect the price to decline with time and increased parts integration. The laser, like most tools, is helpful in certain situations, but not all. If you received the model with clips separating the battery pack and laser module, we have eliminated the clips and now directly connect the battery pack with the laser. "

It has taken some time to arrive at this review as I don't own a DeWalt 625 Router. In return for some programming advice on their communications system, a local distributor has kindly given me one on extended loan. As is usual, we in the UK are disadvantaged by the the fact that the prices here are roughly double those of America.

So, armed with a new router and having purchased a new type A PlungeBar from WoodRat, I have been able to make a start.



Here is a view of the kit part assembled. It comes with a comprehensive and clear instruction pamphlet. The two black rectangles are self adhesive Velcro strips for fixing the battery pack to the back of the router. This kit is the later version with no connector in the battery to laser cable. The well made phenolic base, the metal parts and even the nylon screws have a feel of quality about them. The battery pack, ah yes, the battery pack, caused me considerable embarrassment. I blame it on old age, tiredness, a full moon or indeed anything, but I removed the cover screw and *couldn't open it!!!* My son Paul, B. Eng, PhD etc opened it in a flash. The cover just *slides off* you see. "Look" he said, "there's an arrow" -so there is. "A 5 year old could do it." I couldn't find one at the time.

OK back to reality, it runs on three AA sized alkaline cells. I don't yet know how long they last or if re-chargeables are permitted. If you own one perhaps you could let me know.



A plastic knob holds the mounting bracket into a T-slot on the phenolic base and slides for adjustment to centre the laser onto the work. One nylon bolt is set against the bracket as a returnable reference point and the other is adjustable to set the width of the router bit. The details and suggestions for actual use are described in the kit literature. The photo on the right is looking down the barrel of the laser.

***Never, ever look into the laser with it switched on!!!***

The laser barrel itself is very clearly of very high quality and industrial design. The body is of smooth and thick black steel with a brass retaining ring holding the lens in place.



At this time I made an interesting discovery. This laser is a focussed one. I own some laser levels and an Axminster laser pointer and they all transmit parallel beams so I suppose I expected this one to be the same. I presume there is some strong engineering reason for this; the image is certainly very bright. The left photo shows how I set up a simple jig and found the laser cross to be in sharp focus at ~5inches. At 3 inches and 9 inches from the lens the image is blurred. This is important to remember in use. It is also a compound image in so much as it consists of a wide very fine lined cross with a much bolder and thicker cross in the centre. I did have some problems photographing these images as I suspect that the laser light was in some way confusing the focusing of my camera.



Picture on the left shows the laser mounted in its bracket and fixed to the router. Since neither the router nor the laser are mine, I elected not to stick the Velcro tape to either to prevent any marks. It doesn't make any difference to the operation provided that the battery pack can rest on the mount. The nylon fixing bolts are simply screwed into the tapped holes used for fixing the router fence bars. Hopefully you can see on the above photograph the double cross image. This proved to be very useful for calibrating the laser setup.

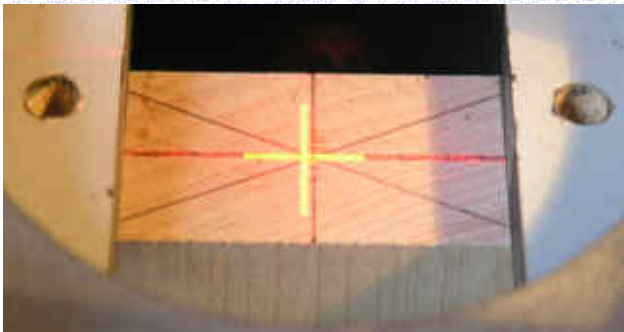


I do own a DeWalt 621 router and the base is easily adapted to fit that, requiring another mounting hole to be drilled and a small piece removed from the left side of the phenolic. I believe that this laser pointer could be successfully fitted to other routers providing that there two screw holes available to fix it to. As an experiment I quickly put together this mount for a 621 from some acrylic stuck together with super glue. I used the 'Rat of course to rebate two strips which I glued onto the base to create the T-slot. If you own a slot cutter then it would be even easier.

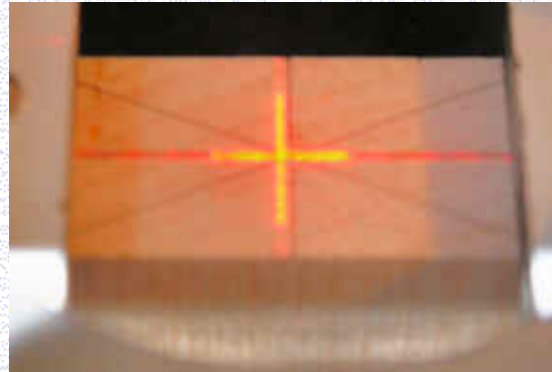


I cut out a rectangular strip of maple and marked the end with lines as shown above. Do this as accurately as you can. Place this test stick into the camlock at the height to which you normally work, which for me is tight up under the plate.

I fitted a v-groove cutter into the router so that I could plunge it to leave a small mark on the test stick in exactly the same manner as described in my centre finder article. If the router is perfectly mounted to the central east/west position then this will align with the line on WoodRat's centre liner. If you have made a mounting error and the router is off centre then all will be OK once the laser is "calibrated".



Illuminated from above.



Not Illuminated.

Without the laser switched on, I repeatedly plunged the router to leave the slightest of marks and adjusted the east/west and north/south position tracking until I was satisfied that the bit was falling spot onto the centre of the cross.

Switch the laser on and set up the mounting. You will need to slide it left or right in its mount, adjust the angle, slide it in or out of the alloy mounting holder to set a sharp focus (about 5") and twist it to get the image horizontal and vertical. Sounds complicated but in reality only takes a few seconds to do. When finally positioned move one of the nylon "marker" bolts and set it against the mounting bracket to mark as a returnable reference position. Don't forget that if afterwards your work is held lower down then some re-adjustment of the laser angle and positioning will be needed. From the photos you will note that the fine and larger projected lines make for easy set up, all very clever stuff. The central cross image is very bright and the lines are approximately 1/32 inches wide when the laser is focussed. You can either work to the centre of the cross as Lewis suggests or work to the sharp edge of the line as I have opted to do as shown above.

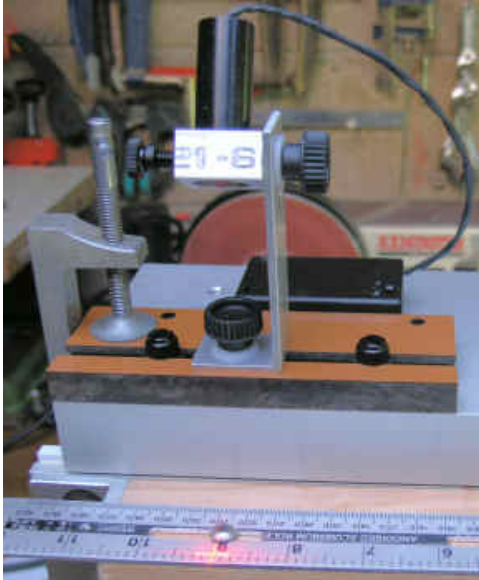
When not illuminated from above a faint pixelated square grid surrounding the central cross is just apparent but I did not find it obtrusive. The image is very bright though.

With a light shining down from above as I normally do anyway, that grid disappears and you are left with a clear sharp image.

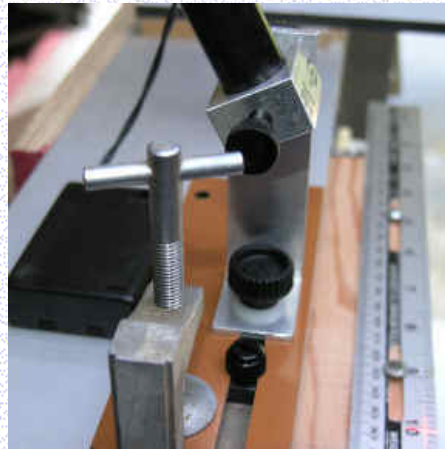
I do *not* propose in this review to wade through actual joint making as the principles are well explained in the WoodRat Manual. What can be seen from the article so far is that it is very easy to set the laser for router bit centre, right of the bit or left of the bit. If your work is marked with pencil lines, it is simplicity itself to track the carriage until the laser is correctly positioned, plunge and cut away! Its marvellous for cutting an accurate mortise.

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The Craftsman Gallery market the laser primarily to be router mounted but it is much more versatile than that. You don't have to own a DeWalt 625 to take advantage of it. As usual experimentation quickly gripped me and in no time at all another method came into being.



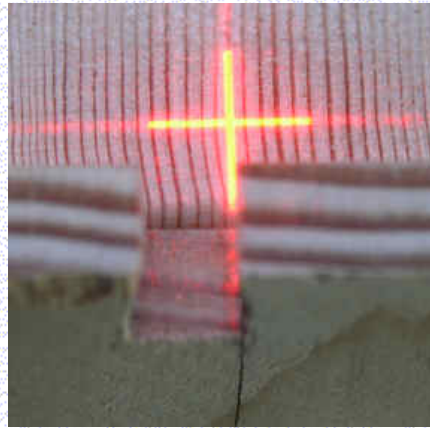
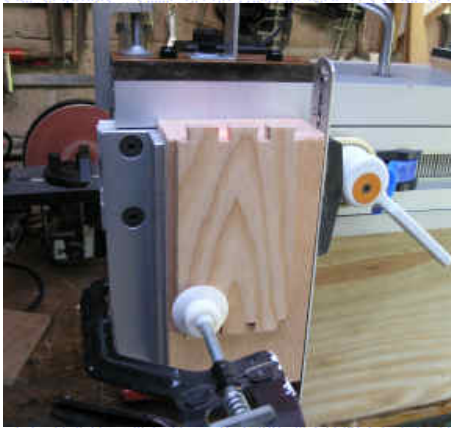
I cut two elongated slots into the centre of an alloy rule on the 'Rat and fixed onto a 8 inch block of wood as shown above. Two dome headed screws allow the ruler to be slid E/W to set a zero position. The laser assembly is simply fixed using a small clamp onto the channel top. Alternatively, fix the ruler and adjust the laser bracket. I used a wood block measuring 8"x 4"x2" thick which gives a good distance for a sharp laser image.



For example to cut a box or finger joint. Start with the right hand cutting edge of the router bit just touching the left edge of the work under the router and slide the rule to any preferred line to set as your zero or reference start line. The very fine laser line is just perfect for this as shown above. If using an 8mm bit, track the carriage 16mm to the left and make the first cut. repeat this to make the next cut and so on. For the mating side, zero again and make the first cut 8mm followed by 16mm. Well I am sure you understand the principle now.



My WoodRat 8mm cutter actually cuts a groove 8.02mm which in my opinion is a very good manufacturer's tolerance. Look!! The very fine laser line allowed me to cut a matching tongue 8.02mm to fit. Luck? Well maybe but more than accurate enough for me.



I rotated the block onto its edges and clamped a tail board to it. Yes it was possible to get the fine laser line right into the corner so very useful for cutting the pins to match.

I made up this little jig in just over 20 minutes and I am sure that I am only just scratching at the possibilities.

So in conclusion, what can I say? I have managed very well without a laser guide but have now seen the benefits it can bring especially with my eyesight. I particularly like the double cross image as the fine line makes extreme accuracy easy. It is more versatile than The Craftsman Gallery advertise and can be made full use of even if you don't own a DeWalt 625. It can be adapted to fit other routers with a bit of thought if you wish but at \$118 it isn't cheap. Quality gear rarely is. Even more expensive in the UK by the time Customs add import duty and VAT.

If you have some spare money burning a hole in your pocket and are in the market for a quality add-on for your WoodRat then you won't go far wrong with one of these.