



CARR'S UPDATE

Laser welding at Carr's goes large.



The new laser 5 system at Carr's for large tools and deep penetrating welds.

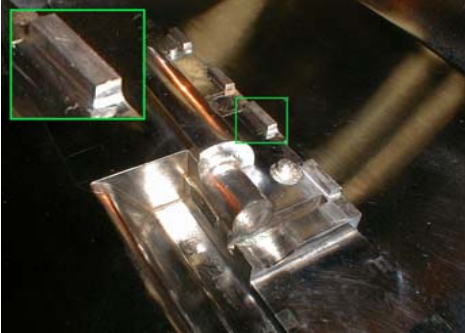
Carr's installed a new laser welding system in November 2003, with more power and a bigger job capacity. The Trumpf HP124 system has 50% more power than Carr's other systems, allowing deeper penetration welds and aluminium components to be welded more easily.

Carr's can handle up to 6 tons and will take on welding and hand dressing / polishing on tools, to damaged areas and even weld porosity problems on aluminium, where Tig would leave a witness. *Continued—*



Aluminium tool welded on new laser at Carr's.

Application Stories.



Tooling might get cheaper to buy, but the tolerances don't get any easier to keep.

This foreign made tool was wrong on delivery, so Carr's laser welded some upstanding features, which were too small when

moulded. When electrodes for sparking the tool are not available, neat minimal weld deposits are essential to make small modifications. When electrodes for sparking the tool are not available,

GOODBYE.

Bob Barr has left the company after 10 years hard work. Good luck Bob, and we wish him well in his new endeavours.

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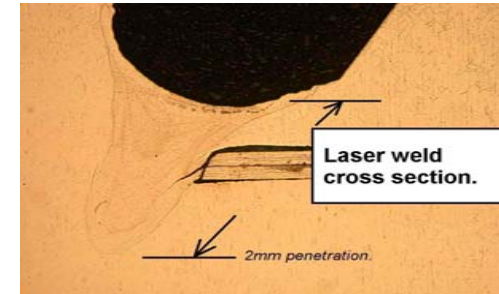
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Laser welding goes large.

The laser system from Trumpf was installed before Christmas at Carr's and not only can it take much larger jobs, but also has far more power. This allows aluminium and copper alloys to be welded, as they require more power than steel. The problem with aluminium is the high level of reflection that occurs when welding, as the power easily bounces off the surface to be welded when molten. Higher power means the ideal welding conditions can still be met at acute angles where normally the power reduction would be such that it could not be welded.



Typical laser weld penetration pattern.

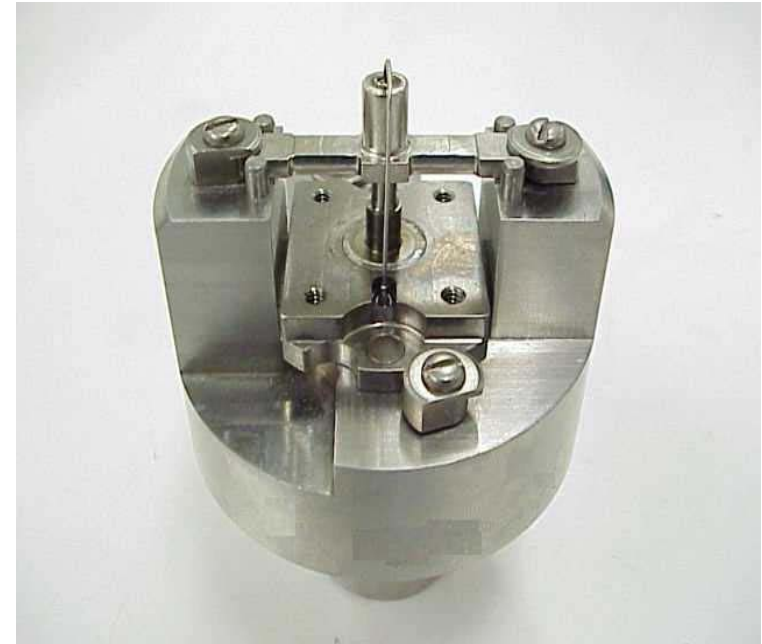
Copper Welding at Carr's

Copper alloys, as with Aluminium, need a lot more heat to weld them, so with conventional techniques, the process is very hot and the chances of distortion is high. The laser welds copper easily, as the beam's energy density is so much more intense, up-to 10 times.



This copper mask gets damaged on the edges. Carr's laser weld the damage and machine the diameter to size.

Production welding at Carr's.



The above jig holds a small assembly in place for laser welding the parts together. The jig is a precision engineered part and will keep the dimensions in tolerance on the assembly.

Carr's will laser weld small assemblies together as a production job, if the volume is small. A typical job of a few 100 parts can be welded, so the customer takes the opportunity of a single set up and hence the piece price, comes down substantially. Carr's now have regular small batches of medical instruments, circular springs, valve assemblies, Philips Hyper-vision bulbs and heat / pressure sensors. All these are welded on our lasers.

For more details ring Phil or Ali on 01536 412828