

Laser Welding

Tugwell Tooling and Design is proud to offer a new service to our line up with the introduction of a versatile state of the art laser welder.



Absolute precision welding on any material, without affecting the material properties, thus no pre or post heat treatment required.

Robotic control in four axis' with Leica optics magnifying the operators view 15 fold, enables weld positional accuracy of down to 0.1mm

Dimensions: width 950 mm x height 1550 mm x length 1250 mm
Weight: 370 kg net

Completely portable, we will be able to come straight to your doorstep

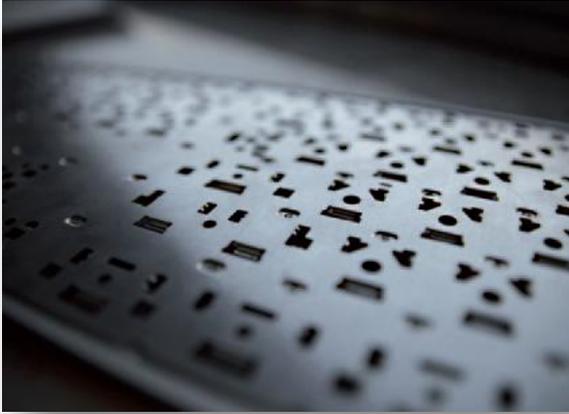
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automotive tooling & design

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Various Industries

Electronics



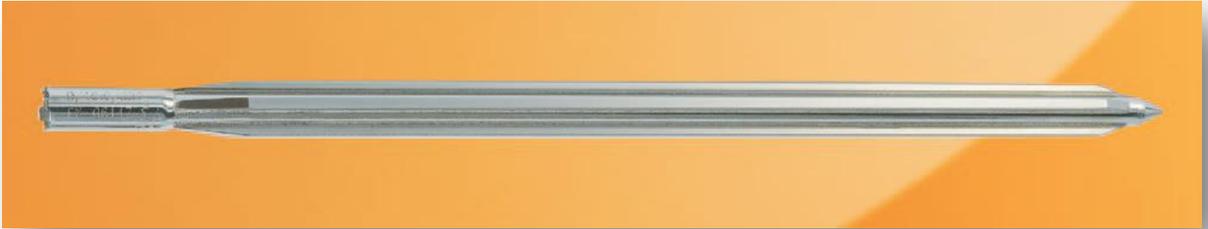
Point welding on keyboards

Tool and Die



Die insert injection moulding tool

Medical Technology



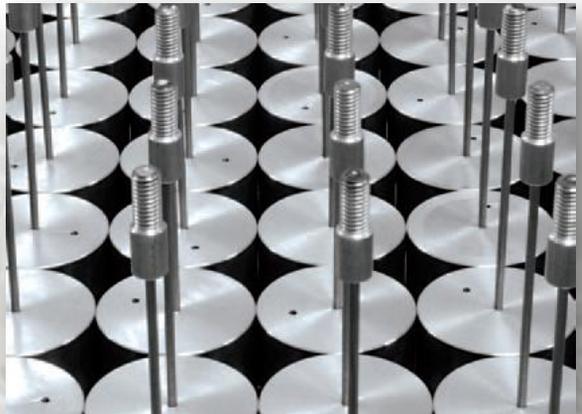
Implants for invasive transplants

Aeronautic Engineering



Engine components for military and civil aviation

Mechanical Engineering



Machine parts from complex, or dissimilar alloys

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Practical Example

Injection Mold Refurbishment

Job definition

Signs of wear and tear become apparent in the areas of plastic tools, perhaps the part produced is consequently out of tolerance, or accompanied with excess flash.

Problem description

- Extensive and time-consuming assembly and disassembly work for the tools.
- Cutting of pockets, and installing inserts.
- TIG/Pulse Welding the affected areas. Tool steels are notoriously difficult to weld and involves pre-heating and post heat treatment. There will be a “Heat Affected Zone” and distortion will be encountered.

Solution

- The laser welder allows the repair to be undertaken directly on the operating site of the tool, hence downtime is minimised.
- Material properties remain in tact, up to a hardness of 55 RW, without distortion.
- Your Mold is ready to run in the next shift.



You have just saved time and money, and executed a technically superior repair...

Dissimilar materials



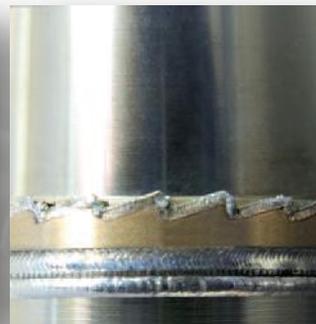
Basic component

Mold Core for the production of bottle caps. Consisting of tool steel 1.2343 combined with CuBe (Copper Beryllium)



First Step

Edge protection by means of material coating



Second Step

Fusing mold core with insert



Third Step

Entire application of a 0.2 mm thick protection and wear-resistant coating

Polishing Services



We Optimize your Molds

Our experienced, trained technicians utilize a complete range of bespoke Stones, Diamond files and Polishing Machines to work the repaired areas back to perfection.



A valuable skill often overlooked in the local tooling market.



Contact us today for a quote

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