



Specialised Engineering Products

Microhead Waterjet Cutting

Service Overview

2014

Our Waterjet...



Waterjet



Waterjet

What is Microhead Waterjet Cutting?

Waterjet Cutting is an environmentally friendly cutting method with a number of benefits. Now it is available in the field of micro components.

Microhead Waterjet cutting has the same benefits as standard Waterjet. Since there is no "heat-affected zone", water has the ability to cut material without interfering with its inherent structure, and therefore allows the material to be cut without harming or changing intrinsic properties.

Microhead Waterjet cutting is a universal cutting method that allows us to cut virtually all materials with the same tool, from heat sensitive polymers, biomaterials and alloys, to hard engineering ceramics. Waterjet is a non-thermal and environmentally friendly alternative to Laser, Wire EDM, Etching or Fine Stamping.



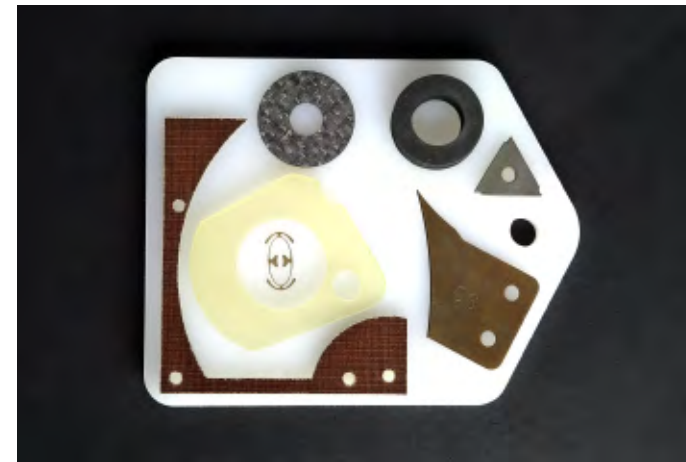
Technical Specifications

High Performance:

- Highly dynamic motion control (feed rate 20m/min, fast feed 40m/min)
- High Precision (1/100mm range)
- Positioning accuracy $\pm 0.01\text{mm}/300\text{ mm}$
- Repetition accuracy $\pm 0.008\text{mm}$

New Cutting System:

- Microhead waterjet cutting with 0.3mm and 0.2mm cut width (radius down to 0.1mm)
- Large 3m x 2m cutting area offers great flexibility depending on the size of the component required





Waterjet

MWJ (Microhead Waterjet) ***The New Alternative to WEDM***

Rubber Extrusion Tool
Hardened tool steel 15mm

MWJ

Max Speed: 11mm/min

Min Speed: 4mm/min

Precision: 0.03mm

Cutting Time: 1hr 30mins

Cost: £80/hr

NB: No heat affected zone

WEDM:

Speed: 1-2mm/min

Precision: Better than 0.01mm

Cutting Time: >8hr

Cost: £40/hr



Waterjet



MWJ vs Laser

The bike to the left was cut with microhead waterjet, while the bike to the right has been cut by laser. The MWJ bike was cut from 2mm stainless steel, and the laser cut bike has been cut from 1mm steel



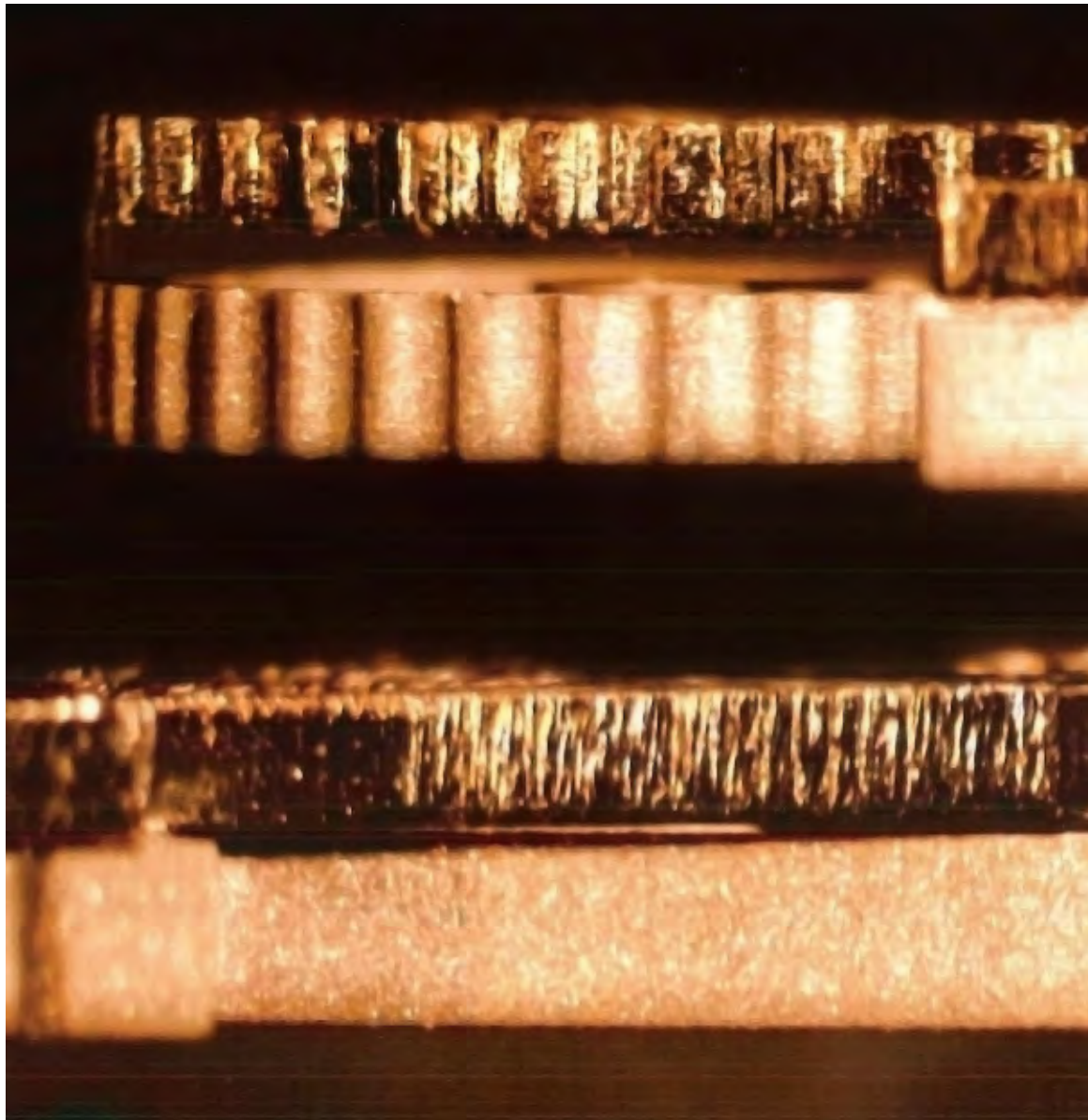
Microhead Waterjet Cutting of Miniature Mountain Bikes

The miniature mountain bike was drawn to resemble a laser cut bike that was made from stainless steel sheet by a major laser machine tool manufacturer. The bike has very small features that allow us to show the ability to cut complex profiles. A microhead waterjet of 0.3mm diameter was used.

Waterjet

**Laser
1mm**

**MWJ
2mm**



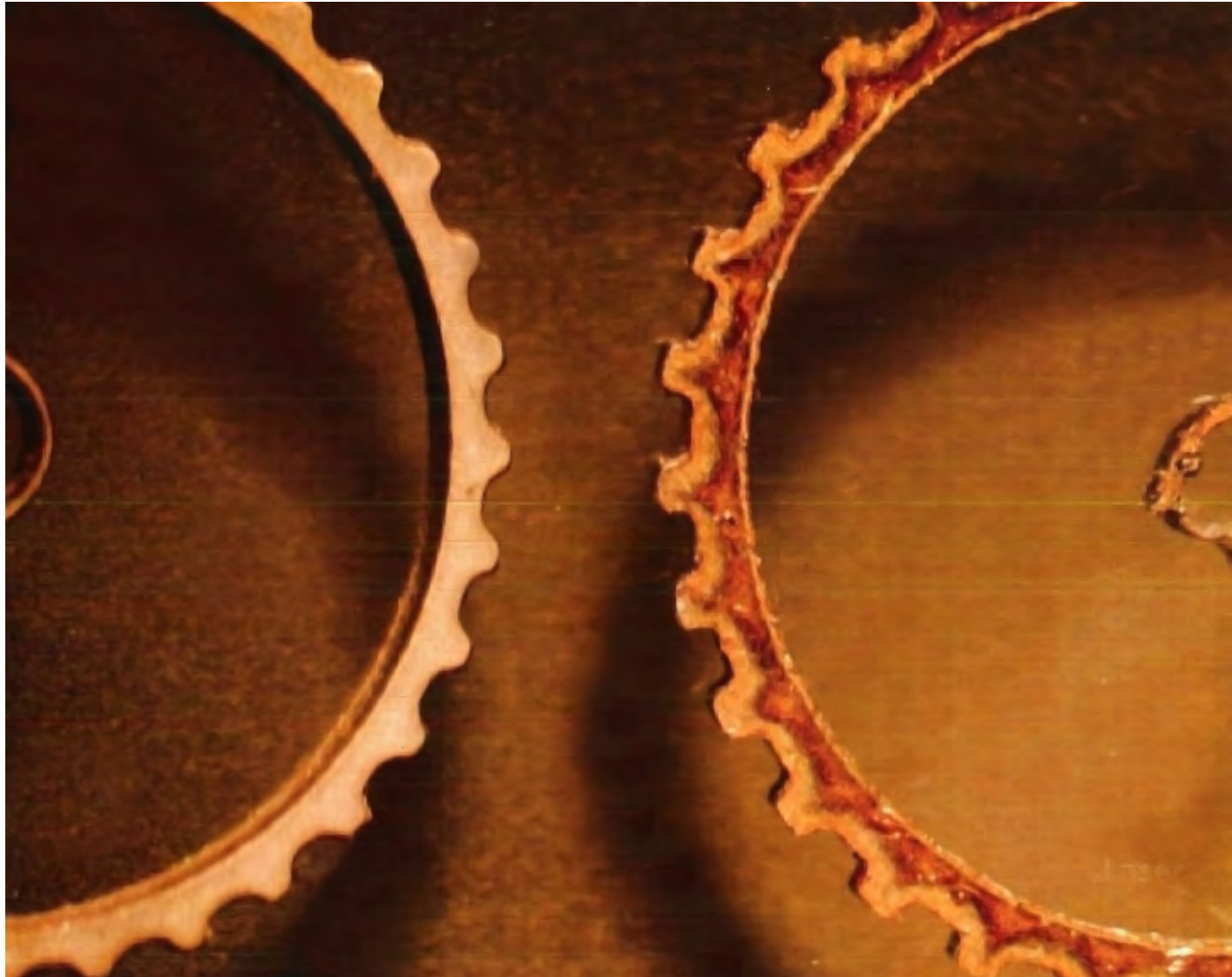
Laser

MWJ

Aerial View

Waterjet

Waterjet



MWJ

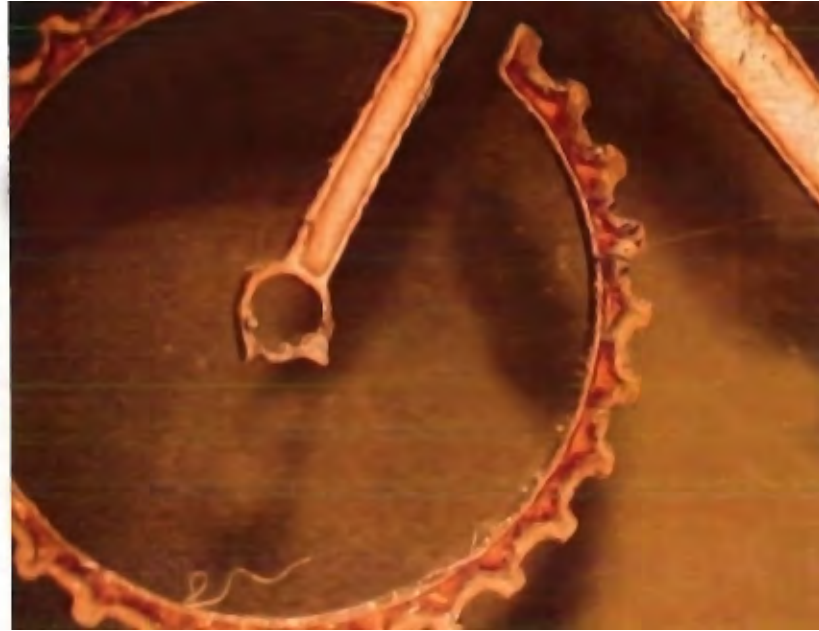
Laser

Detail View

Waterjet



MWJ



Detail View

Laser