RAINFORD PRECISION

rainfordprecision.com

Machining NEWS

Finecut WMC 500II

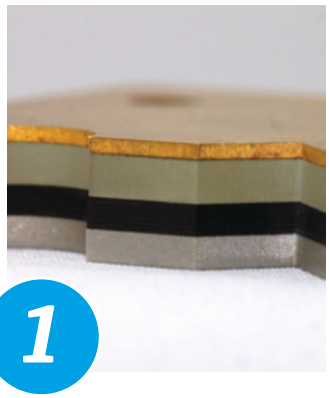
Micro Abrasive Waterjet Cutting Machine

A new machining capability adding high precision to an industry not used to discussing small micron tolerances.

In the past the phrase **'waterjet cutting'** conjured up visions of large machines with deep tanks, of a size that can be quite overpowering, but now **RAINFORD PRECISION** can offer a small machine with a working area of 500 × 500 mm to the UK and Irish manufacturing industries.

New vocabulary with words such as ***finesse, sensitivity and micron accuracy*** can now be applied to waterjet machining bringing a wealth of benefits to all who have micro components or micro features to be machined on larger parts.

Micron accuracy, flexibility and control during manufacture



1

Cut Various Materials
From hard and brittle materials (hard steel, glass or ceramics to soft and malleable materials (wood, rubber or polymers) including various forms of composite materials, metal matrix composites or sandwiches of a whole variety of materials.

2

No White Layer
Importantly the process of waterjet cutting does not create a white layer or heat affected zone on the surface of cut materials. Thus offering extra capabilities where laser cutting and wire or sink EDM are prohibited. Medical and aerospace industries are good examples.

3

Fine Machining
What differentiates the Finepart micro abrasive waterjet WMC500II machine is the micro-fine jet of just 0.2 mm and the axis linear motor drive systems giving a positional accuracy of ± 2.5 μm and repeatability of ± 2 μm.

4

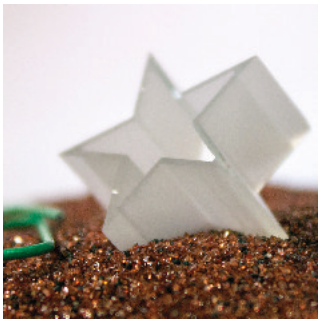
Thin Workpieces
Stainless steel component 0.18 mm thick, machined with a feedrate of 400 mm/min and cycle time of only 16 seconds. With no burrs, burns or heat distortion.

Live 4 axis machining component manufacture using micro abrasive waterjet cutting

In this example, the ***composite material*** of spectacle frames is being cut with a micro abrasive waterjet around the profile and contour of the frame and lens cavities. The use of a ***controlled 4th axis table*** allows multiple components to be produced in one clamping.

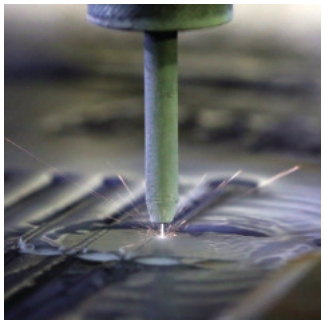
Glass machining
Although bullet proof glass can stop a projectile, it cannot offer resistance to a micro abrasive waterjet. Extremely hard and brittle materials can be cut with small features without damaging the glass.

Machining bullet proof glass: This component is 22 mm tall, with 7 holes 3.7 mm in diameter.



Thin walls without cracking or breaking: Glass star with a height of 10 mm, walls 0.5 mm thick!

Decorative glass bike: Machined from 3 mm plate glass showing details on tyres and wheel axles.



Micro abrasive waterjet cutting: Fine machining with 0.2 mm wide jet at 4,000 bar pressure.

Finepart 5 axis machining Two options providing flexibility in manufacturing

To give ***total flexibility*** for component manufacturing, Finepart offers ***two options*** for five axis machining. The most flexible to use, is the **2-axis tilt and swivel head** with up to ±15° of movement in each axis. The alternative is a **2-axis tilting and rotating submersible table** with 110° tilting movement and 360° rotation.

RAINFORD PRECISION

T 01744 889726 **E** sales@rainfordprecision.com

Find out more, visit our website
rainfordprecision.com