

HIGH PRECISION
MACHINES

GRINDING | ULTRA PRECISION

Cranfield Precision Redefining the Limits of Ultra Precision

Grinding | Diamond Turning | Temperature Control
Process & Engineering Consultation | Testing & Demo Centre

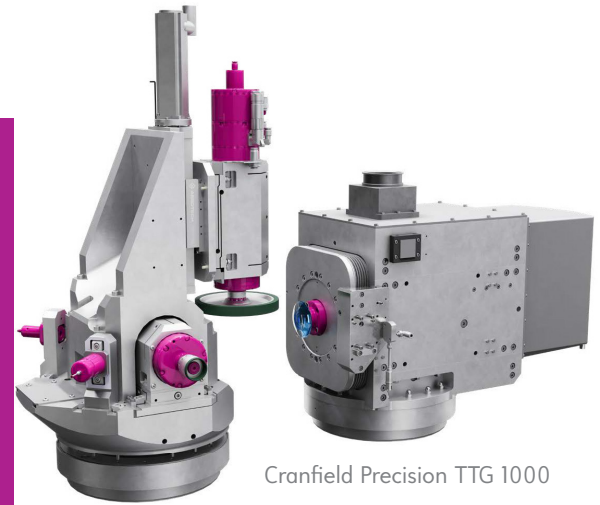
CRANFIELD PRECISION TTG

Versatile & Flexible Ultra Precision Freeform Machining

The Cranfield Precision TTG series is a highly configurable twin-turret, multi-spindle solution to grind a wide range of optical surfaces for freeforms, aspheres and optical molds, including edging, lightweighting and surface probing.

Minimal sub-surface damage and mid-spatial frequencies, disrupting traditional processes.

- Patented configuration
- Thermally isolated & highly symmetric machine base
- Hydrostatic turret bearings & workhead
- Robust air bearing grinding spindles
- Multiple grinding/milling spindle & turning tool configuration possibilities
- “Tool-normal” or axis perpendicular grinding capability
- LVDT, Touch Trigger Probing & non-contacting optical metrology for form & texture
- Cranfield Precision CNC 6400 control system



Cranfield Precision TTG 1000



CRANFIELD PRECISION EcoR

Ultra-Precision Diamond Turning Machine

The Cranfield Precision EcoR series drum roll diamond turning machine (DTM) is specially designed for production level machining of optical quality components.

The main axis of the machine uses a stepped hydrostatic design with rail positioning that provides virtually zero roll errors in the tool traverse direction, drastically reducing the errors experienced on conventional lathes.

- Optical quality diamond turning
- Outstanding thermal stability
- High system stiffness & damping
- Almost twice as stiff as traditional flatbed



Cranfield Precision EcoR series

Precision-driven
solutions tailored
for specialised markets



Optics



Semicon



Defence



Energy



Medical



Aerospace



Bearings



Research Facilities

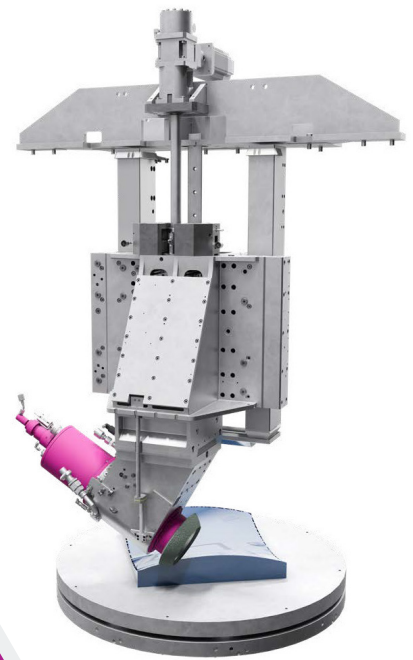
CRANFIELD PRECISION OGM SERIES

High Precision Freeform Grinding Machine

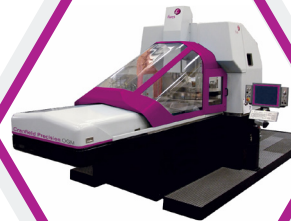
Cranfield Precision off-axis grinding machines (OGM) have the capacity to produce large freeform components up to 2000 mm at faster production rates than conventional grinding machines. It features hydrostatic bearings, linear motors coupled with a highly stiff, intrinsically thermally stable and symmetrical machine design - enabling high speed freeform spiral grinding.

Minimal sub surface damage and mid spacial frequencies, enabling much reduced process flow times.

- Hydrostatic rotary & linear bearings
- Linear motor drives
- In-situ measuring probe
- Patented vertical axis counterbalance
- Available in 800/1200/1600/2000 variants
- Optional auxiliary spindle for light weighting/ edging, smoothing, or additional probing



Cranfield Precision OGM

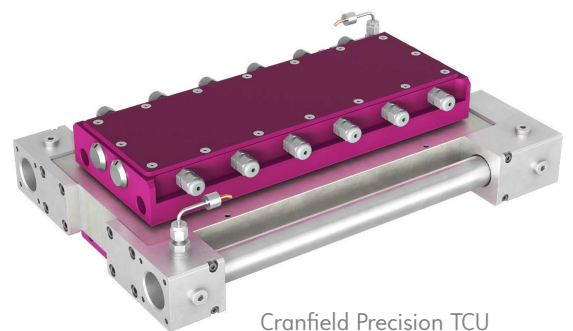


CRANFIELD PRECISION TCU

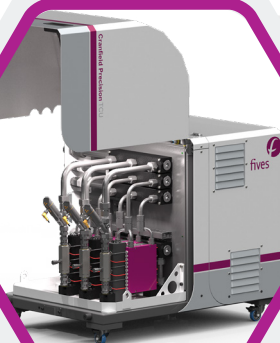
High Flow, High Precision Temperature Control Unit

The Cranfield Precision patented high precision fluid temperature control system fine tunes the temperature of machine liquids (oil, water, grinding coolant etc) to better than $\pm 0.01^{\circ}\text{C}$. The system is compact and modular with flow rates of up to 50 l/min for each TCU module.

- Compact footprint and energy efficient
- Patented solution with a wide range of uses
- Plug and play technology
- Modular, scalable and expandable
- Integrated into Cranfield Precision machines as standard, also available as a standalone product



Cranfield Precision TCU



ULTRA-PRECISION DEMONSTRATION & TEST CENTRE

MACHINING PROCESS DEVELOPMENT



State of the art demonstration, test and metrology facilities - available for demo and sub-contract proof of concept machining.

Including equipment and products, such as:

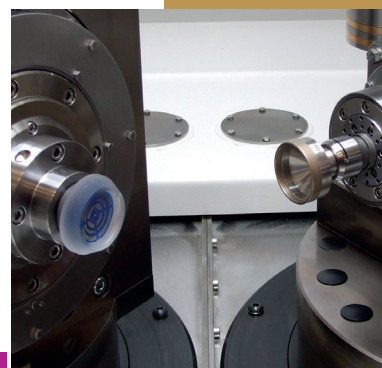
- OGM 1200
- TTG 1000
- TCU
- CCI White Light Interferometer 4MHD
- Taylor Hobson PGI Optics & Form Talysurf 1240
- Aberlink CMM

Download the full
Cranfield Precision
offer here



For more than 50 years, Cranfield Precision has provided Ultra Precision machine tool solutions for the most demanding applications and challenges ranging from the highest quality optical film, to semiconductor wafer, next-gen lithography, precision optics and mirrors for space telescopes.

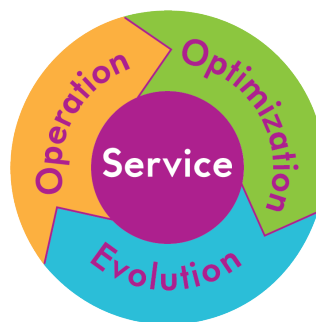
Bringing a history of problem solving & building partnerships, our machines achieve high levels of precision through exceptional stiffness, damping, thermal stability and flexible control system.



COMPLETE LIFE-CYCLE SOLUTIONS

Worldwide grinding and ultra precision services:

- Spares packages & obsolescence support
- Production & TPM support
- On-site service & technical support
- Training & process consultation
- Software control upgrades
- Process optimization & retooling
- Refurbishment & machine modernization



| CONTACT US

Cranfield Precision
Division of Fives Landis Ltd.
Woburn House, 3 Adams Close
Kempston, Bedford MK42 7JE
UNITED KINGDOM
Tel: +44 (0) 1234 312 820

Fives Landis Ltd.
Eastburn Works, Skipton Road
Cross Hills Keighley
West Yorkshire BD20 7SD
UNITED KINGDOM
Tel: +44 (0) 1535 633 211

Fives Landis Corp.
16778 Halfway Blvd.
Hagerstown, MD 21740
UNITED STATES OF AMERICA
Tel: +1 (301) 797 3400

Bryant | Cincinnati | Cranfield Precision | Daisho | Gardner | Giustina | Landis

grinding-ultraprecision@fivesgroup.com

www.fivesgroup.com


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