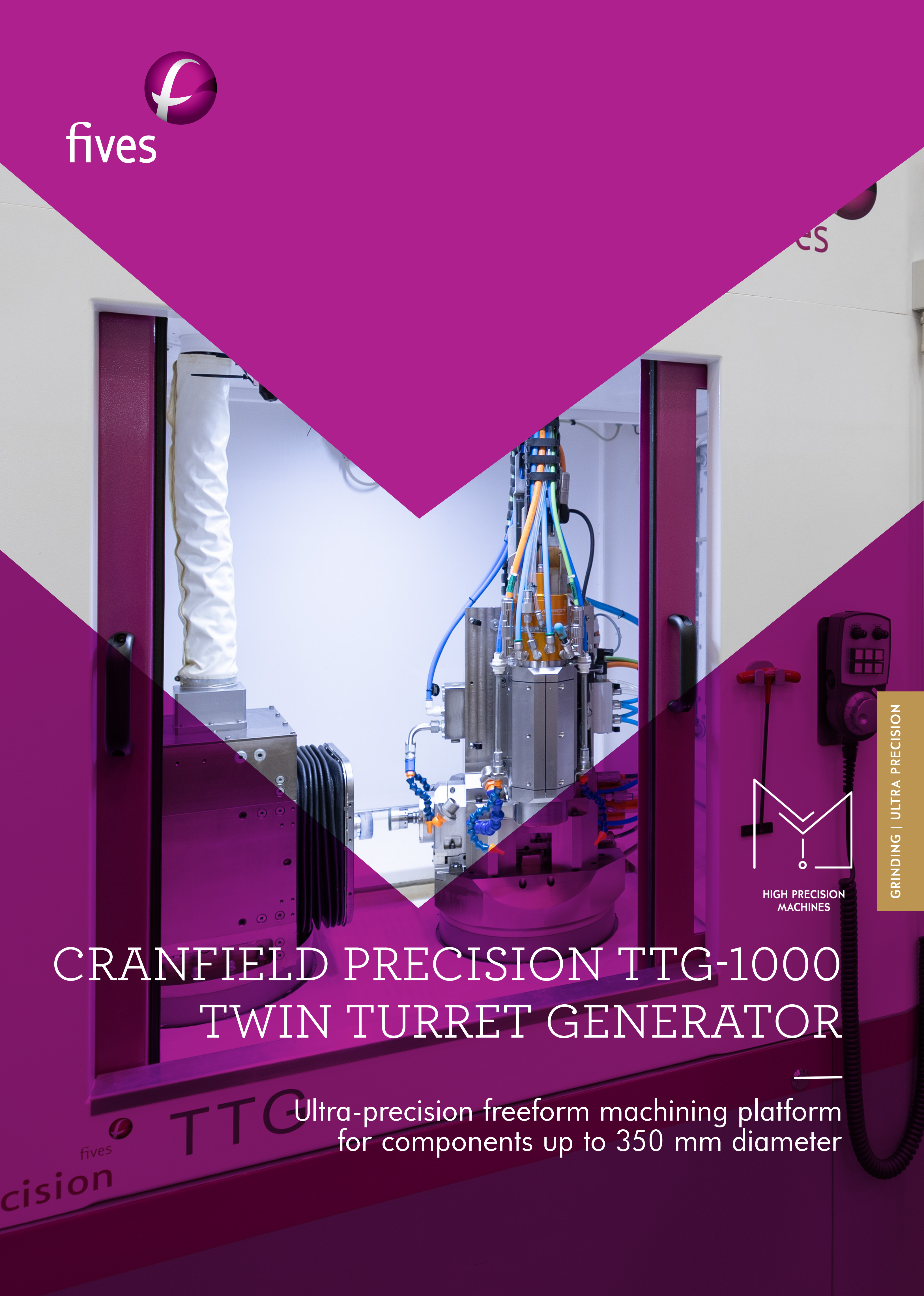


CRANFIELD PRECISION TTG-1000 TWIN TURRET GENERATOR

Ultra-precision freeform machining platform
for components up to 350 mm diameter

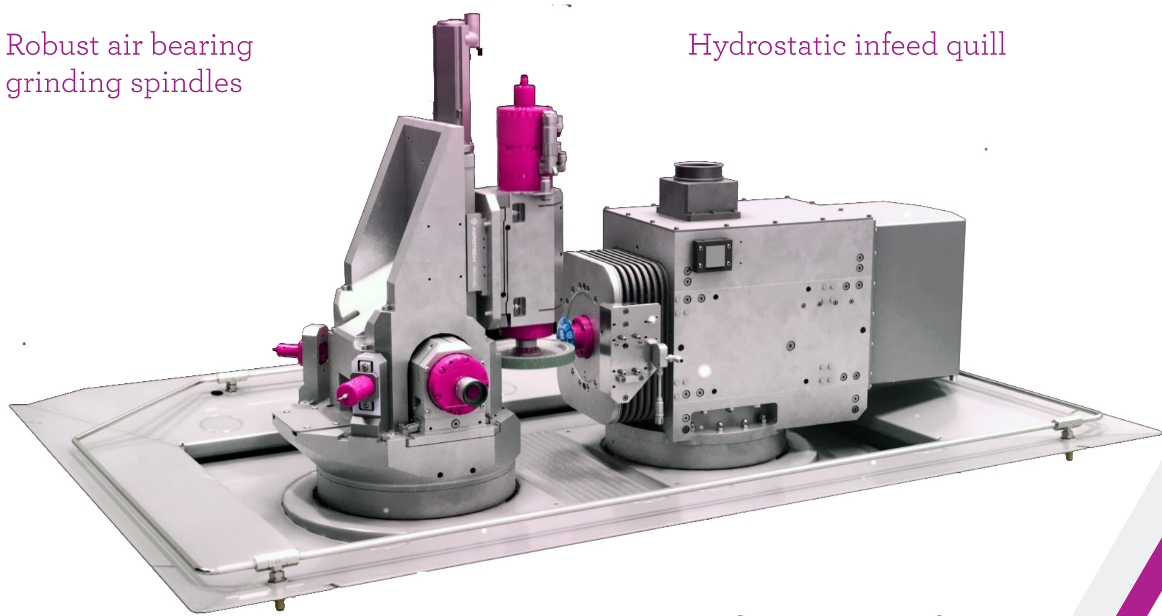
HIGH PRECISION MACHINES

GRINDING | ULTRA PRECISION

CRANFIELD PRECISION TTG-1000: SETTING A NEW STANDARD FOR OPTICAL GRINDING PERFORMANCE

Reach Higher Productivity Benefits | Unrivalled Precision | Minimal Sub-Surface Damage | Unmatched Flexibility

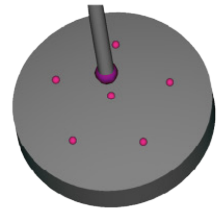
PATENTED CONFIGURATION, THERMALLY ISOLATED AND SYMMETRIC MACHINE BASE

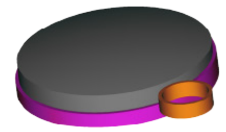


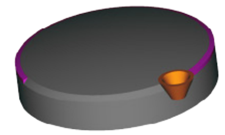
FLEXIBLE MACHINING MODES

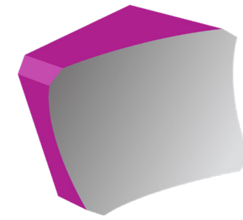

Asphere - spiral

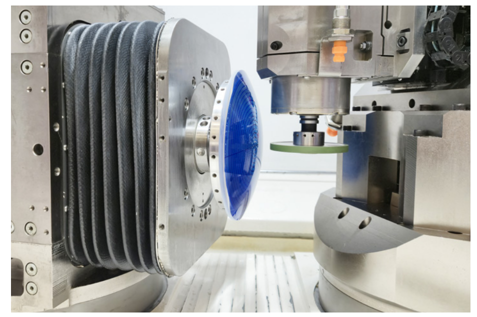

Asphere - raster

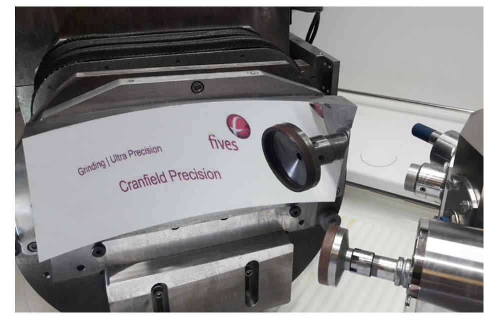

Multipoint probing


Edging

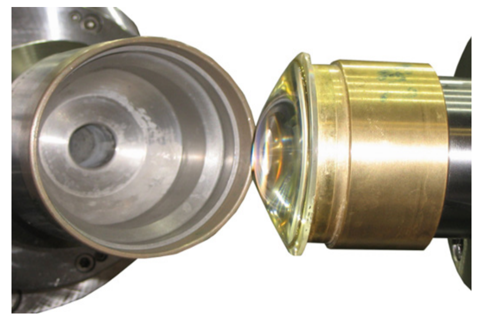

Chamfering

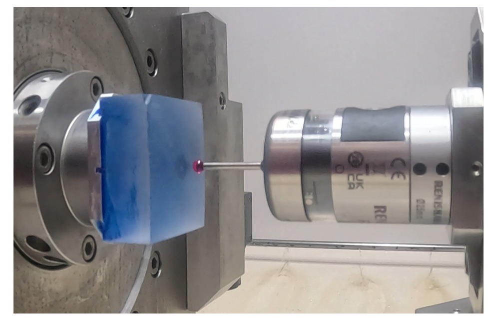

Freeform raster and spiral grinding


Asphere

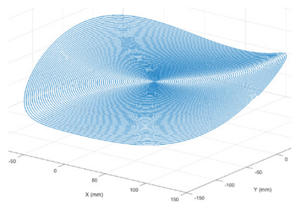


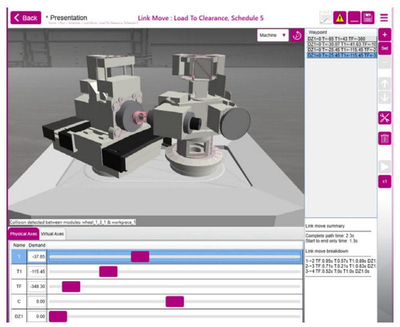
Freeform


Tool normal asphere metrology


3D freeform metrology

BESPOKE CRANFIELD PRECISION CNC 6400 CONTROL SYSTEMS

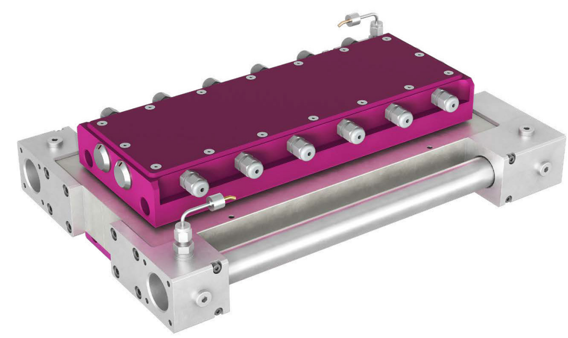




- In-house developed control system with 0.5ms clock-rate
- Digital Twin Simulation
- Data Logging at CNC clock-rate for cycle and axis data
- Intuitive Part-Program Editing and MobiusCam Tool Path Generator software
- Windows based OS, Sercos Servo Interface with IsaGraf soft PLC, using Profibus or Profinet protocols

TCU: HIGH FLOW, HIGH PRECISION, TEMPERATURE CONTROL UNIT

- Regulates hydrostatic oils, motor coolants, and cutting fluids
- < +/- 0.01 °C capability
- Compact footprint and energy efficient
- Patented solution
- Modular, scalable and expandable
- Integrated into Cranfield Precision machines as standard, also available as a standalone product



ASPHERIC AND FREEFORM GENERATOR

The Cranfield Precision TTG-1000 is a highly stiff, intrinsically thermally stable and flexible ultra precision machining platform.

FEATURES

— Flexibility: Multiple features in a single machine
— Proven for direct to MRF capability
— Negligible mid-spatial frequencies
— Highly stiff, well damped hydrostatic turret, linear, and workhead bearings
— Air bearing grinding spindles
— Thermally isolated machine base
— Patented machine with multiple configurations available
— Tool normal or axis perpendicular grinding capability
— Cranfield Precision CNC 6400 control system
— Auto-tool change capability for added flexibility

MACHINE CAPABILITY

— < 300 nm/60 mm P-V form accuracy
— < 1 nm Sa surface texture capability
— < 1 arc sec turret accuracy

View the full Cranfield Precision presentation here

Model	Cranfield Precision TTG-1000
Machine capacity	
Max. grinding diameter (OD)	350 mm*
Linear axis stroke	200 mm
Max. workpiece weight	25 kg
Tool spindle turret	
Swivel range	+/- 135 deg
Turret bearing	Hydrostatic
Configuration options	• Horizontally and vertically mounted aerostatic spindle options • Vertical slide option • On-board metrology options: LVDT Profilometer, 3D Touch Trigger Probe • Diamond turning capability • Post grind smoothing
Max. wheel Ø	140 mm
Max. wheel width	12 mm
Max. grinding spindle power	5.8 kW
Max. grinding spindle speed	80,000 rev/min
Work spindle turret	
Swivel range	+/- 135 deg
Turret bearing	Hydrostatic
C-axis	Hydrostatic (air option)
Workhead speed	2,000 rev/min
Linear axes travel (infeed)	150 mm
Dimensions	
Dimensions (W x L x H)	1,800 x 1,950 mm x 2,500 mm
Machine weight	3,500 kg

*Larger than 350 mm component dependent

Precision-driven solutions tailored for specialised markets

Optics
Semicon
Medical
Defence
Research Facilities
Aerospace
Energy
Bearings

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

fives
Industry can do it