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Cranfield Precision UK



Cranfield Precision HPB4³

Temperature Controlled Machine Enclosure
Design Optimised with CFD and FEA
Kinematically Supported Machine Base
High Precision Hydrostatic Tool Spindle

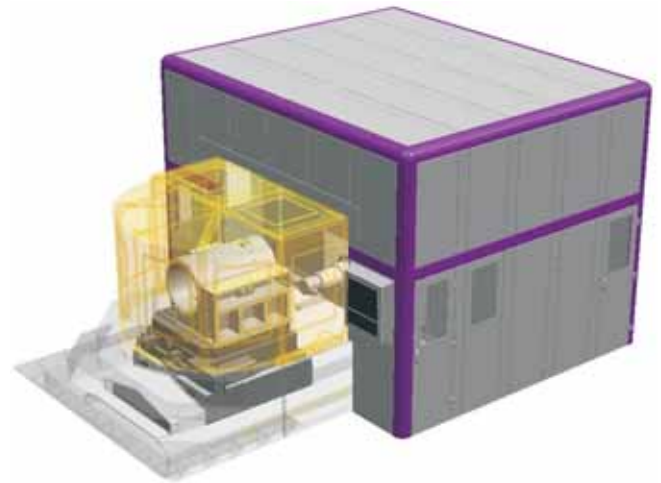
→ **HPB4³ High Precision Boring Machine**



Cranfield Precision HPB4³ High Precision Boring Machine

A large four axis horizontal machining centre with the capacity to machine large precision bores that are round, parallel and in-line

- ▶ Typical work-piece bores 50mm - 600mm
- ▶ Work Volume 4m³
- ▶ Multi-purpose machine: mill, drill, ream, face and bore in one set-up
- ▶ On-machine part measurement
- ▶ Temperature controlled motors, hydrostatic oil, coolant and environment for supreme machining accuracy



Complex Machining Problems Solved

Linear Axes

- ▶ Z Stroke = 1.25m
- ▶ X Stroke = ± 2 m
- ▶ Y Stroke = 1.125m
- ▶ 2m/s² maximum acceleration
- ▶ 0-10m/min work feedrate
- ▶ 20m/min rapid feedrate
- ▶ 15kN axial force
- ▶ 3 μ m bi-directional positioning accuracy
- ▶ 0.005 μ m measuring resolution

Rotary B Axis

- ▶ 1250mm x 1250mm table
- ▶ Servo-driven worm gear drive
- ▶ 4,000Kg load capacity
- ▶ 30kN axial machining force
- ▶ 25kN radial machining force
- ▶ 10 μ m lateral table run-out
- ▶ 10 μ m concentricity of centre bore
- ▶ 0.0001° position resolution

Rotary Tool Spindle

- ▶ Hydrostatic spindle
- ▶ 950N/ μ m radial and axial stiffness
- ▶ HSK A100 collet standard
- ▶ 10-1500 rpm
- ▶ Through tool coolant
- ▶ Spiral cutting and positioning capability
- ▶ Sub micron error motion



CERT. NO. 920237