



fives

CRANFIELD ECOR2200

High accuracy diamond
turning machine

Date: 2/2023

Prepared by: Caitlin Barnhart

CRANFIELD PRECISION ECOR2200

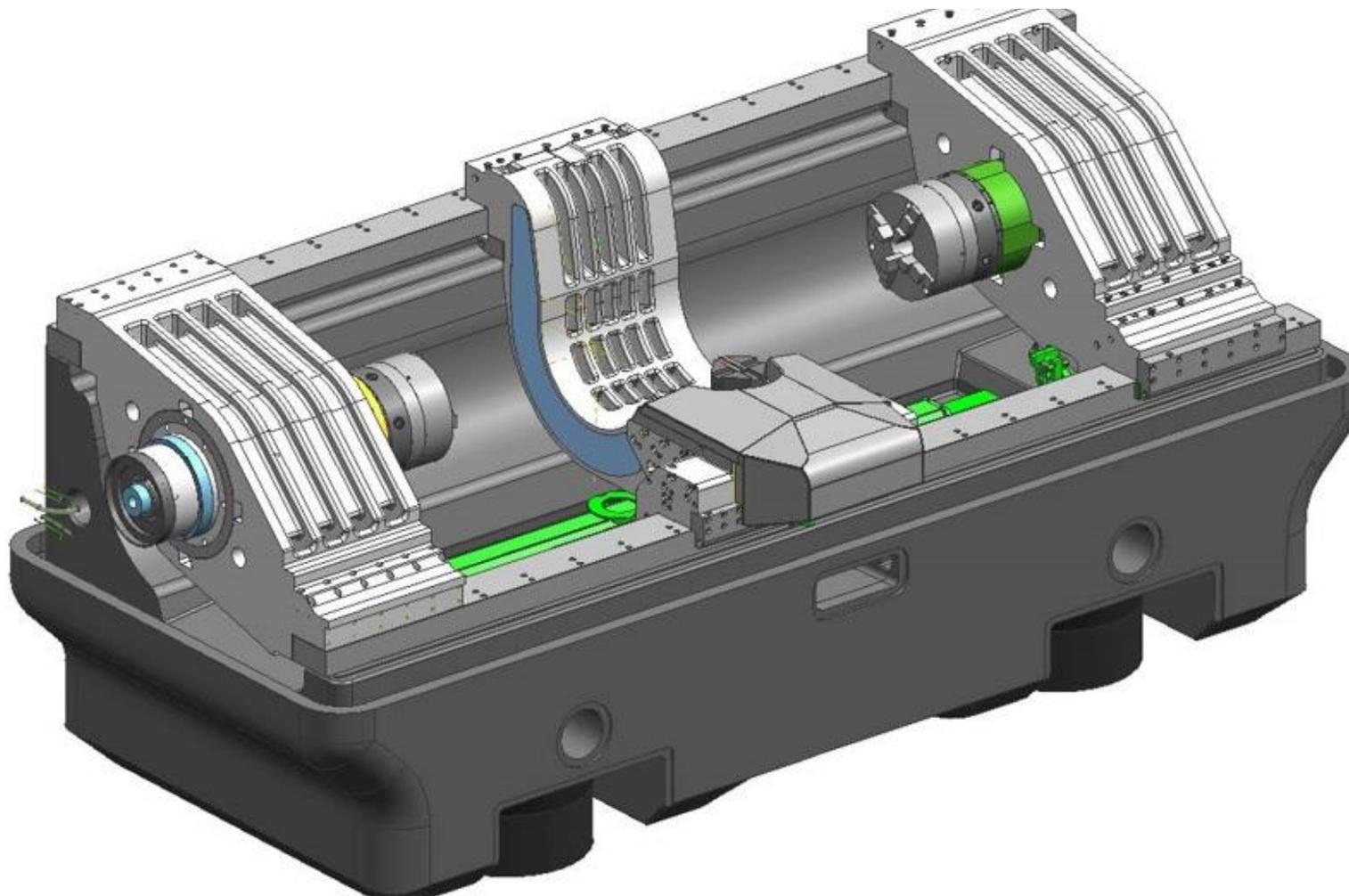


Diamond turning machine

- Hydrostatic bearings
- Linear motors
- 1.0nm feedback resolution
- 50mm/s velocity
- Monolithic polymer concrete casting
- Microclimate with oil shower to 0.01°C



CRANFIELD PRECISION ECOR2200



CRANFIELD PRECISION ECOR2200

Diamond turning machine

- Stroke 205 mm
- Compensated accuracy $<0.5 \mu\text{m}$
- Feedback resolution $< 1.0 \text{ nm}$
- Bearings Hydrostatic oil
- Drive Linear motor
- Thrust 346 N Continuous, 1385 N Peak
- Velocity 50 mm/s
- Acceleration 50 mm/s²

Z Axis

- Stroke 1630 mm
- Compensated accuracy $<2.0 \mu\text{m}$
- Feedback resolution $<1.0 \text{ nm}$
- Bearings hydrostatic oil
- Drive linear motor
- Thrust 437 N continuous, 1748 N peak
- Velocity 50 mm/s



Workpiece

- Diameter 410 mm (16")
- Length 1625 mm (64")
- Weight 680 kg (1500 lb)

Workpiece

- Type Cranfield Precision CNC6400

Environmental Control

- Hydrostatic oil temperature control to 0.01°C
- Microclimate oil shower temperature control to 0.01°C

CRANFIELD PRECISION ECOR2200



Specifications

Grinding capacity	
Maximum roll diameter (OD)	410 mm (16")
Maximum roll length	2,200 mm (86.6")
Maximum roll mass	1,000 kg (2,204 lb)
X axis (tool Infeed)	
Axis stroke	205 mm (8.1")
Compensated accuracy	<0.5 µm
Feedback resolution	1 nm
Maximum linear motor force	1,385 N
Maximum axis velocity	50 mm/sec (2 in/sec)
Maximum axis acceleration	50 mm/sec ² (2 in/sec ²)
Z axis (tool traverse)	
Axis stroke	2,200 mm (86.6")
Compensated accuracy	<2 µm
Feedback resolution	1 nm
Maximum linear motor force	1,748 N
Maximum axis velocity	50 mm/sec (2 in/sec)

C Axis (headstock spindle)	
Load capacity	500 kg (1,102 kg)
Max speed	1,200 rev/min
Axis resolution	<0.05 arc sec
A Axis (tailstock spindle)	
Load capacity	500 kg (1,102 kg)
Max speed	1,200 rev/min
Axis resolution	<0.05 arc sec
B Axis (tool spindle)	
Load capacity	100 kg (220.5 lb)
Feed back resolution	0.05 arc sec
Maximum torque	40 Nm
Environmental control	
Microclimate (oil shower temp. control)	0.01 °C