

GRINDING MACHINES

by Campbell Grinder Company



Over 50 years of providing world-class grinding solutions.

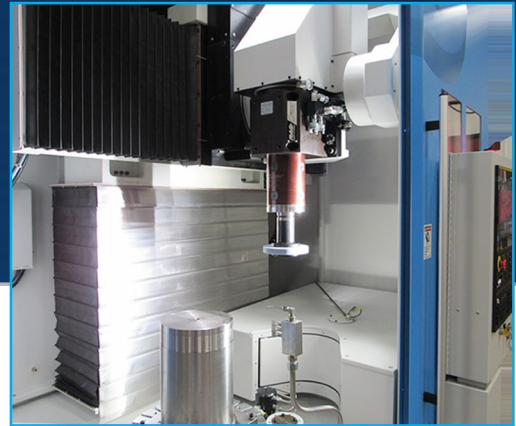
1000 LEAN

Vertical Grinder

**THE 1000 LEAN IS OPTIMIZED FOR
JOB SHOP & TOOL ROOM ENVIRONMENTS**

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CUTTING EDGE FEATURE HIGHLIGHTS

PROGRAMMABLE, ZERO BACKLASH B-AXIS

- Driven by dual worms in a tandem axis control scenario.
- Never needs adjustment from wear.
- Direct feedback.

PRELOADED LINEAR GUIDES WITH EMBEDDED ABSOLUTE SCALES

- No misalignment between axis travel and feedback system.
- No stick-slip.
- No reversal errors.

DIGITAL, LIQUID-COOLED LINEAR MOTORS POWER X & Y AXIS

- No wear.
- High-dynamic performance.
- Zero wind-up.

TRAVELING COLUMN DESIGN

- Provides better machine geometry over the axes' full travel.
- Tall part capacity without compromising geometry.

ROBUST GRINDING SPINDLE AND DRIVE

- Belt-driven cartridge style.
- Spindle provides high-dynamic stiffness, capable of running all currently-known abrasive types.
- Driven by a liquid-cooled spindle motor.

AUTOMATIC TOOL CHANGER

- (6) 12" diameter wheel capacity.

FANUC FRONT-END CONTROLS

- With customized overlay.

SINGLE POINT DRESSING SYSTEM

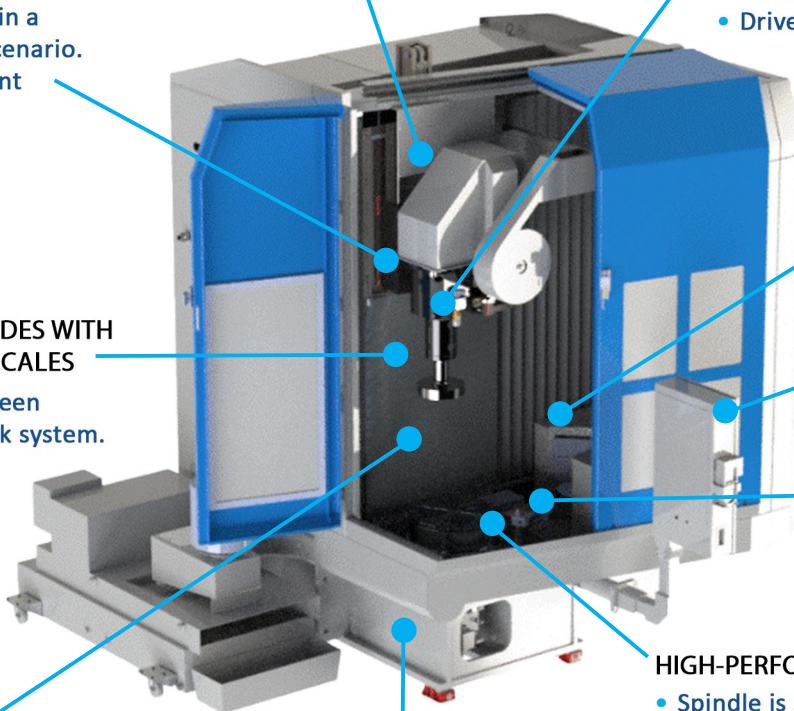
- (3) Diamond locations: 45°, 90°, and 135°.

HIGH-PERFORMANCE TABLE AND DRIVE

- Spindle is supported by both roller and ball bearings, providing the best of both technologies.
- Direct-driven by liquid-cooled torque motor providing extremely smooth rotation.
- No belts, pulleys, or mechanical gearing.
- Outstanding performance characteristics resulting in better part tolerances and surface finishes.

SINGLE PIECE FABRICATED BASE WITH INTEGRATED FLOOR PAN

- Extreme stiffness.
- Thermal uniformity.
- No special foundation needed.



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EXTREMELY INNOVATIVE
ERGONOMICS



SIMPLE
ELECTRICAL MAINTENANCE

VISIBLE & EASY
FLUID ACCESS



SIMPLE & SAFE MACHINE LOADING

Operator ergonomics are best-in-class with dual doors providing access 180° around the table circumference. A wash down nozzle for cleanup is standard as well as LED lighting for operator view. This 1000 LEAN accommodates crane and forklift loading while minimizing risk to parts and equipment. Corner-based, waist-height access allows for easy setup and operator access while reducing risky bending and lifting for production employees.

These design features result in quicker part setups, part loading, and changeovers, all while minimizing risk to the operators.

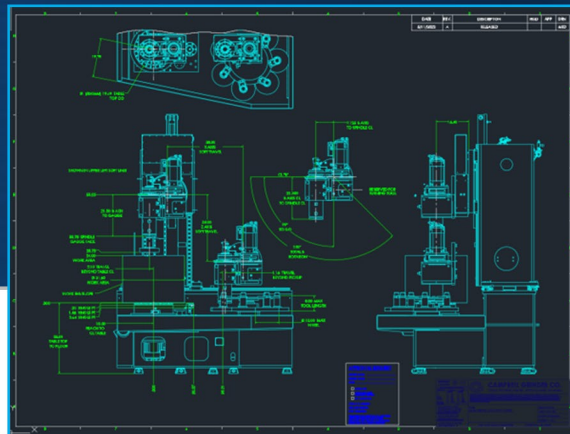


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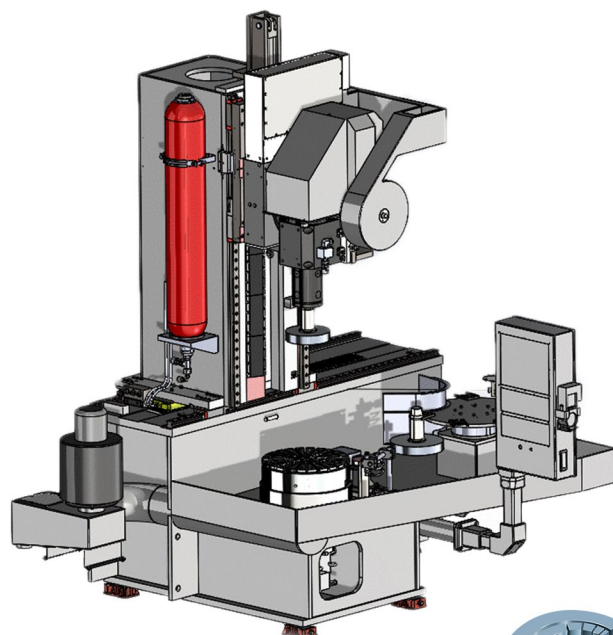
INCREDIBLY CONSISTENT ACCURACIES

Runout Specifications	
Table Runout	< .002 μm (.0001 in) both radial and axial
Grinding Spindle Runout	< .002 μm (.0001 in) both radial and axial
Linear Axes Travels	
Pitch, Roll, & Yaw	< 3 arc seconds
Straightness	< .004 μm (.0002 in)
Squareness	< .004 μm (.0002 in)
Positioning	< .004 μm (.0002 in)
Repeatability	< .002 μm (.0001 in)
B Axis	
Runout	< .004 μm (.0002 in) axial & radial
Positioning	< 5 arc seconds
Repeatability	< 2 arc seconds



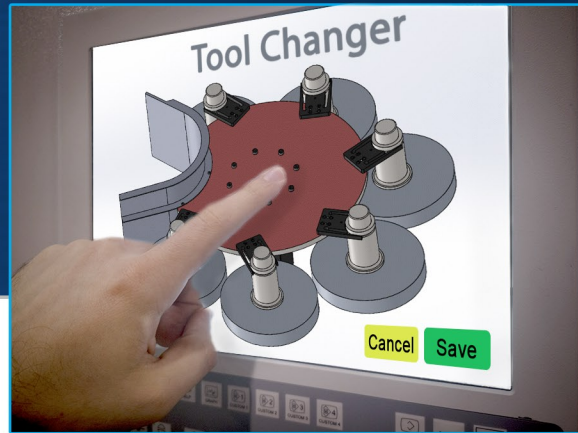
ENGINEERED WITH INNOVATION

The 1000 LEAN has a traveling column and fixed rotary table design. Linear axis travel is guided by preloaded linear rails, that are positioned as close to the table centerline as possible. This drastically minimizes Abbe Errors and maximizes machine stiffness. Both linear axes are directly driven by liquid-cooled linear servo motors. The rotary table and grinding spindle are supported by a combination bearing arrangement, designed for high accuracy and trouble free life. Drive motors, table, and grinding spindle are liquid cooled.



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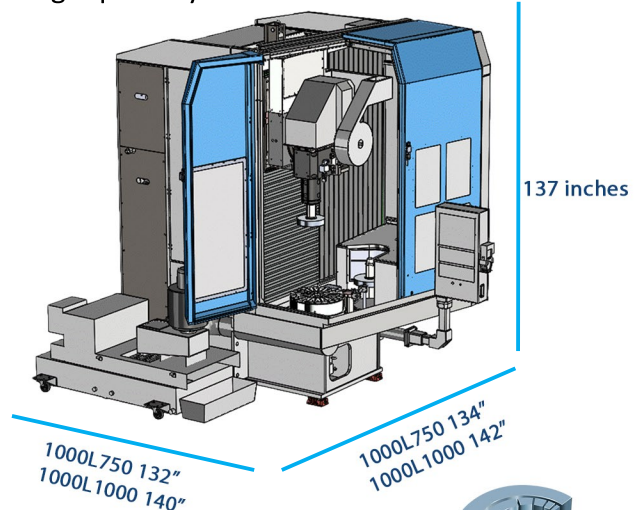


INDUSTRY LEADING SPECIFICATIONS

Part Capacities	1000L750	1000L1000
Max Diameter (Swing)	750 mm (29.5 in)	1000 mm (39.37 in)
Max Height	610 mm (24.0 in)	610 mm (24.0 in)
Max Part & Fixture Weight (combined)	910 kg (2,000 lbs)	910 kg (2,000 lbs)
Grinding Capacities		
Max Diameter	750 mm (29.5 in)	1000 mm (39.37 in)
Max Height	610 mm (24 in)	610 mm (24 in)
Grinding Spindle		
RPM Range	0 - 8,500 RPM	0 - 8,500 RPM
KW / HP	14.9 kw (20 HP)	14.9 kw (20 HP)
Tool Connection Type	HSK 80	HSK 80
Grinding Wheel Capacities		
Max Grinding Wheel Size	305 mm dia x 50 mm wide (12 in dia x 2 in wide)	305 mm dia x 50 mm wide (12 in dia x 2 in wide)
Tool Changer Capacity	6 Tools	6 Tools
Max Tool Length (HSK V notch to outside of wheel clamp flange)	200 mm (8 in)	200 mm (8 in)
Axes Travels		
X Axis	1,000 mm (39 in)	1,100 mm (43.5 in)
Z Axis	865 mm (34 in)	865 mm (34 in)
B Axis	135 degrees (infinitely variable)	135 degrees (infinitely variable)
C Axis	0-250 RPM, reversable & non-positioning	0-200 RPM, reversable & non-positioning

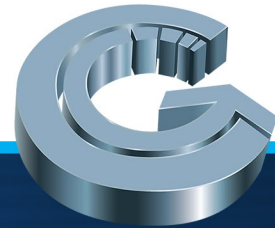
MACHINE CAPABILITIES & CAPACITIES

Grind cylindrical parts up to 750mm and 1000mm in diameter and parts up to 610mm tall. The machine can grind OD, ID, face, and tapered features and all derivations of each. The machine comes standard in one size with the rotary table and all linear axes sized specifically. The accuracy is micron-level, with outstanding surface-finish capabilities. An automatic wheel changer is standard. Coolant for grinding is available on the grinding spindle and the stationary stand pipe. The wheel is dressed by a standard, diamond, single-point system.



Machine Dimensions





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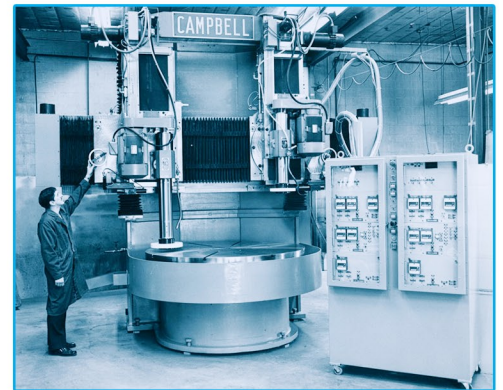
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ADDITIONAL OPTIONS

Add-On Items

- Rotary Disk Dresser
- Part Probing
- Light Turning
- Mag Chuck
- Additional Wheel Arbors
- Additional Warranty



HIGH-PRECISION GRINDING MACHINE INNOVATION SINCE 1969

