

## Product Catalog Vertical Grinders



# 1000 LEAN SERIES

## VERTICAL GRINDING MACHINE

Specifically designed for the job shop or tool room environment. The CGC Model 1000 Lean Series is part of the core of Campbell Grinder Company's modular machine philosophy. This highly accurate, robust performer is available with several productivity increasing options.

## The 1000 Lean Series

Campbell has leveraged some of the best features of our 1000 and 750 platforms to provide a new compact version of these popular models. The new Lean Series features outstanding accuracy, superb stiffness and world class ergonomics all at an affordable price.

### X-axis

The X-axis rail is supported by the Z-slide. The x-axis is supported by a recirculating roller way system and is driven by a liquid cooled **Fanuc Linear Motor**. Position feedback is from a linear scale. The x-rail structure is cast iron.

### Grinding Spindle

The grinding spindle is a belt driven cartridge style spindle. The nose of the spindle is an **HSK connection** equipped with a special air shield insuring zero coolant ingress in even the most extreme conditions. The spindle is supplied with one-wheel arbor as standard, though other wheel arbors may be purchased. **(Optional 6pc tool changer is available).**

### Enclosure

A total steel enclosure provides a leak and mist free environment for the operator. Large front operator doors are supplied with Poly-carbonate windows which allow the operator good visibility for part and dresser touch off. When the doors are open, they provide easy access to load the part and change tools from (2) sides of the machine. Interior lighting is also provided for better operator visibility. Door interlocks are standard on all Campbell machines. A wash down hose for machine clean-up is provided.

"The NEW Lean Series features outstanding accuracy, superb stiffness and world class ergonomics all at an affordable price."

### Z-axis

The Z-axis assembly is mounted to the face of the column. The Z-axis is supported by a re-circulating roller way system to ensure high axis stiffness. The axis is driven by dual liquid cooled **Fanuc Linear Motor** in a master/slave scenario. Position feedback is from dual linear scales.

### B-Axis

The infinite B-Axis is a dual worm/dual servo drive system which has the ability to electrically set the preload on the worm to ensure zero backlash and maximum rigidity. Run out is 5 arc second. Accuracy is 10 arc seconds.

### Table

The table is supported by a by a heavy duty, ball bearing style spindle. The spindle provides extreme runout accuracy with high capacity.

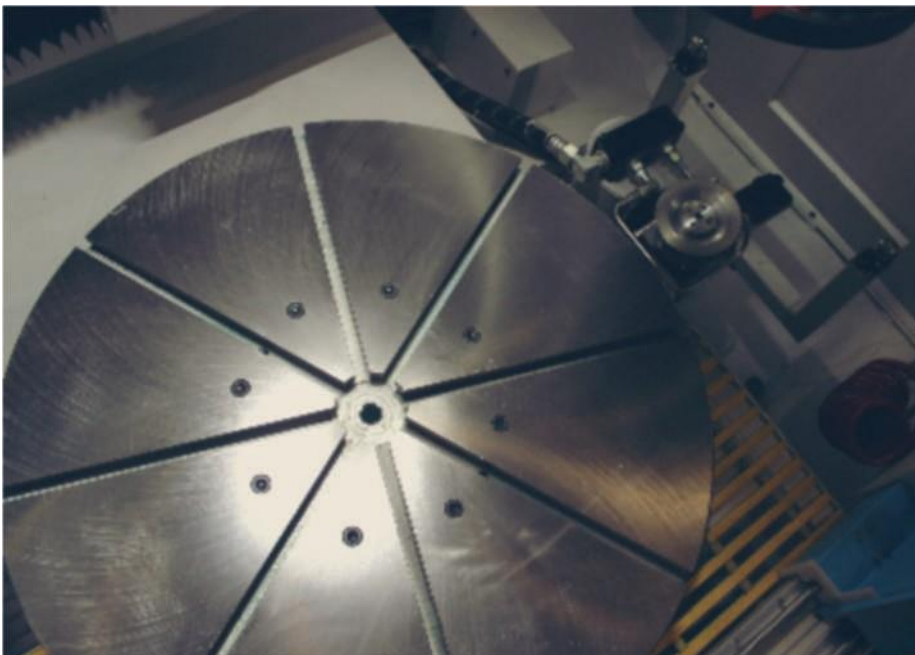
### Machine Frame

The two-piece frame is comprised of the column and a front mounted base. The construction is large box section fabrications that are cross ribbed for superior stiffness. Full FEA and Modal analysis was performed to guarantee outstanding performance. The frame is designed to support the machine without any special foundation requirements.



## Axis Control

- *Advanced High-Resolution Vector Control (HRV2)*
- *Simultaneous control of Multiple Axis*
- *Least command increments of 0.00001-inch, 0.0001 mm, 0.0001 degrees*
- *Hardware and software over travel protection*
- *Absolute position detection*
- *Quick stop function using E- Stop*
- *Fanuc Control and Drives*
- *Heidenhain Absolute Glass Scales*
- *Linear Motor Drive*
- *Campbell Custom User Interface*



## Part Programming Features

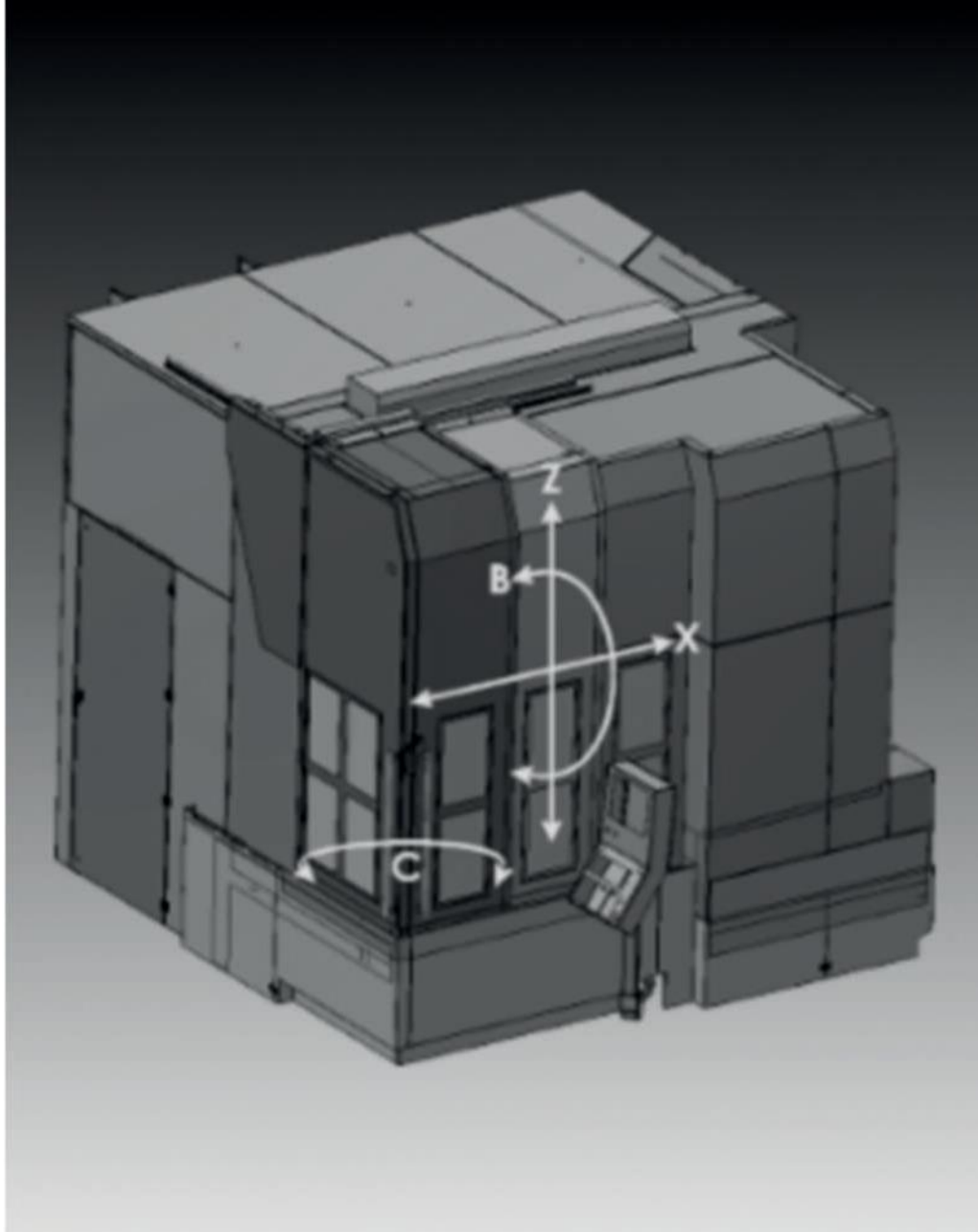
- *Part program storage*
- *Extended part program editing*
- *Part program protection*
- *Custom macros with expanded variables*
- *Inch/metric conversion*
- *Memory card or Ethernet input/output of programs*

## Display

- *Custom display for compact viewing of all data*
- *Alarm history display*
- *Servo adjustment display*



# SPECIFICATIONS



## PRECISION

**Z Axis: Accuracy:** 3 Microns (0.0001")

**X Axis Accuracy:** 3 Microns (0.0001")

**Rotary work table (Table Spindle):**

**(Optional) B Axis Spindle Swivel:**

## STANDARD FEATURES

FANUC CNC Control Panel

Precision Roller Ways – All Axes

Ability to Use Any Abrasive

OD/ID Grinding Spindle

Single Point Dresser (Other

Options Available)

High Accuracy Table Bearing

Linear Scales - All Axes

Full Machine Enclosure

## CAPACITIES & TRAVELS

1,540 lbs Table Capacity

750mm (29.5") Max Part Height

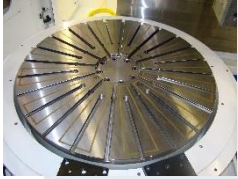
# Optional Equipment:

## Turning Option:

Light turning can be achieved on the 1000Lean machine. This adds to the capability of the grinder. The turning tool is mounted to the B-Axis 90deg from the spindle.



## Magnetic Table:



A Magnetic Table can be fitted as an option in order to increase potential work holding of components. The rotary magnetic chuck will also include Tee-Slots for non-ferrous parts as well. The chuck is an electro-permanent style and is integrated into the CNC controller for safety.

## Coolant Filtration:

Coolant filtration is achieved by a Campbell Gravity Bed Filtration unit. This filter is Campbell Grinders design and has proven reliability in the field. This unit is designed to reduce filter maintenance.



## Part Probing:



Part Probing can be added as an option. This allows for "On Machine" inspection to ensure the part is correct prior to removing from the fixture. This also allows for part features to be ground to a known point and to ensure part print accuracy. The inspected data can be fed back into the control in order to control offsets in the program.

## Wheel Dressing:

Although the 1000Lean machine comes standard with a single point dresser, a Rotary Disk Dresser can be added as an option. This allows for complex dressing of forms in the wheel, longer dresser life and less set-ups for the operator due to less diamonds being replaced.



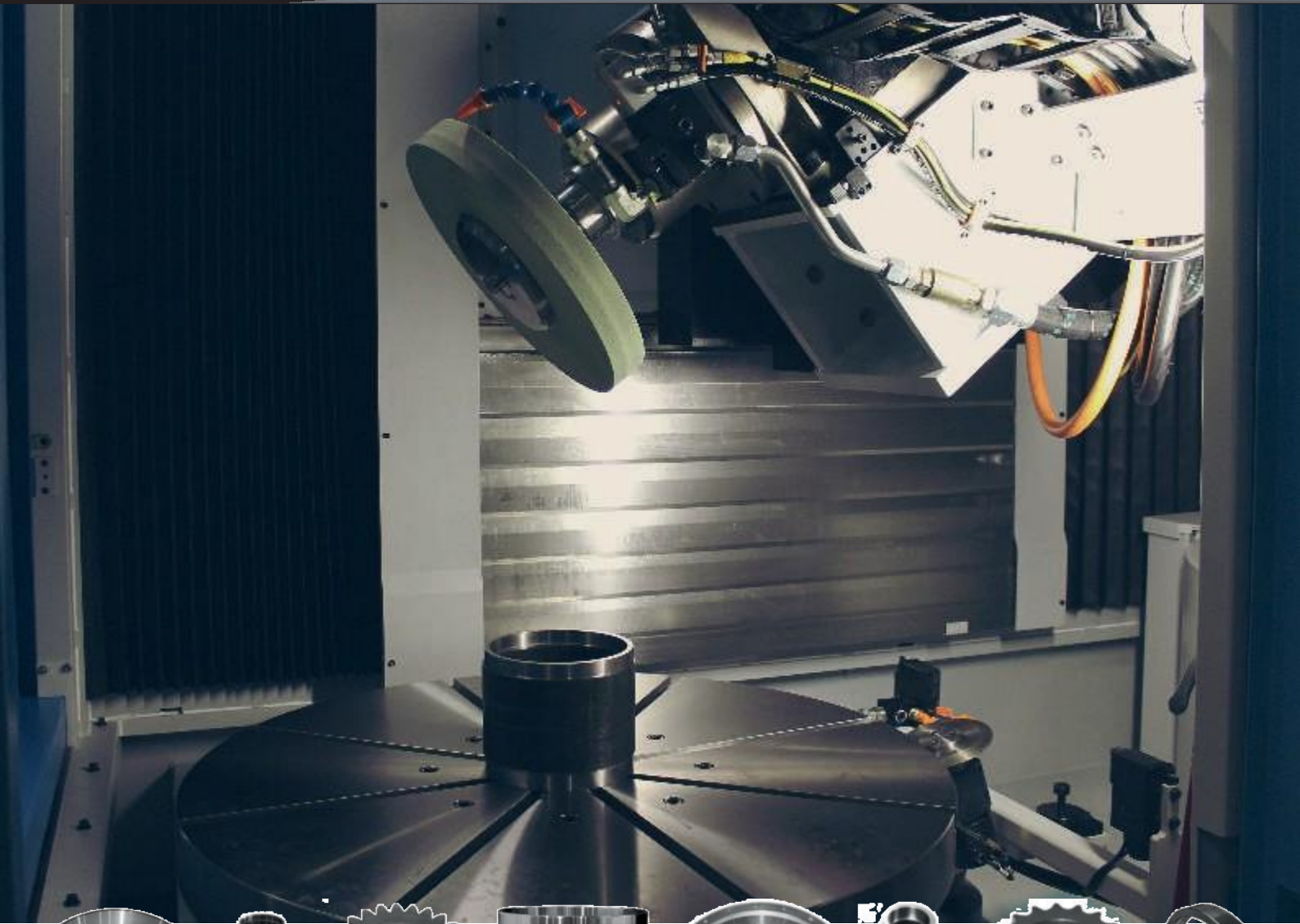
## Tool Changer:



An optional 6 position tool changer can be added to the 1000 Lean grinder. This will allow for several wheels of different shapes to be stored and recalled.

# Product Catalog

## Campbell Grinder Company



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