



# Phoenix

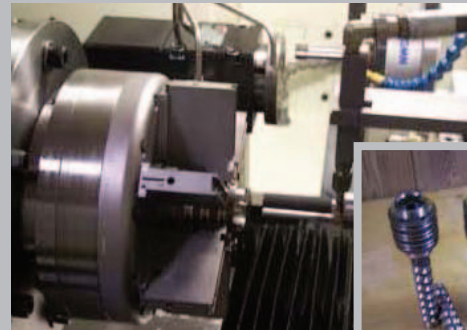
Large Capacity CNC ID Grinder

# APPLICATIONS

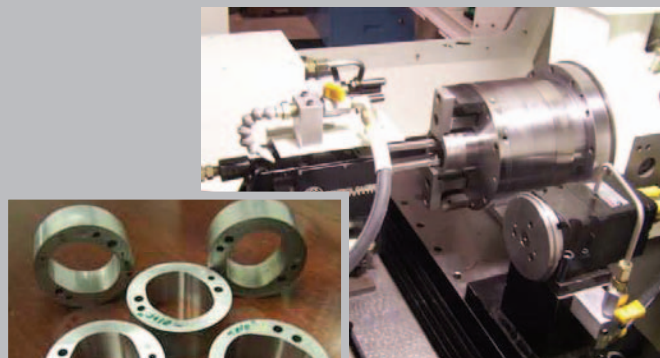
The Weldon Phoenix is a heavy-duty CNC grinder ideally suited for high-production, heavy part, carbide/ceramic, and flex-production applications. An optional programmable "C" axis package provides non-round (cam) grinding capability.

Designed for the use of superabrasives, the Phoenix can accommodate both diamond and vitrified CBN grinding wheels. The Phoenix can also be equipped with up to three spindles for multiple-feature grinding (bores, outside diameters, faces, etc.) in a single set-up.

Typical applications: transmission gears, pump cam rings, wear plates, large bushings, air-foil inserts, rotary valves, and bearings.

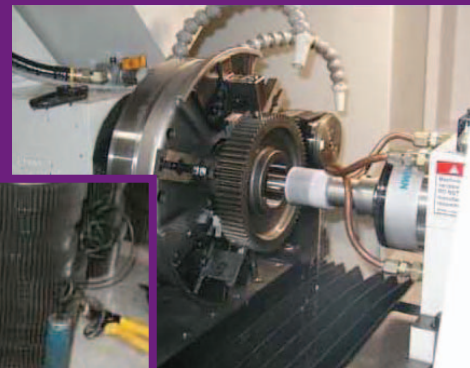


Dual spindle ID grinding process using vitrified CBN abrasives for rough and finish grinding in a single set-up. System features a precision pneumatic chuck and electric rotary dresser.



Single spindle, CBN abrasive application for non-round ID grinding, with

in-cycle post-process sizing gage. System features a high torque gear drive workhead, acoustic emission sensing, and electric rotary dresser.



Single spindle, high-production bore grinding with aluminum oxide abrasives. Featuring a custom pitch-line chuck for work support, and electric rotary dressing.



Dual spindle, diamond abrasive application for ID, OD, facing, and non-round operations on a wide variety of ceramic components. System includes custom vacuum chuck and programmable workhead.

# FEATURES

## Standard:

- GE/Fanuc model 18i-TB CNC control with color LCD, and servo drives featuring GE Fanuc AC digital technology. Includes a battery backup absolute feedback system eliminating the need to reference at each start-up.
- Shear Damper design machine base providing stiffness, vibration control, and thermal stability through the use of steel shear tubes covered with a viscous material and encapsulated with a special replicating resin.
- Cross-roller linear way system with recirculating bearings and precision ground rails. Includes integral way bearing seals and an external wiper system.
- Low inertia break-away coupling on X axis, for ballscrew protection.
- Heavy-duty live spindle workhead with 6" A2 spindle nose and #5 MT center. Features a 4.7" spindle diameter and a quad set of angular contact bearings.
- Full enclosure with manual sliding door assembly and side and rear maintenance access window panels.
- GMN high frequency grinding spindles with threaded or HSK quill arrangements. Spindles sized to suit the application.

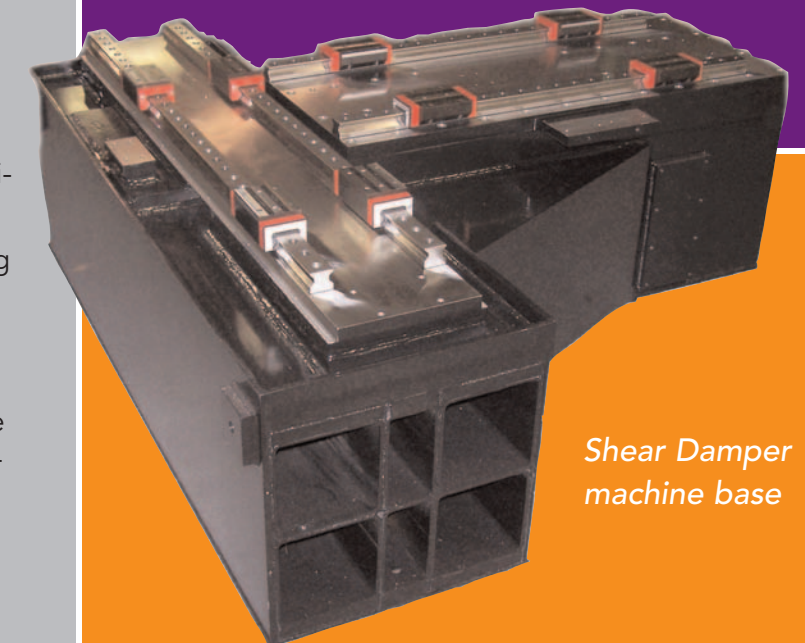
## Optional:

- 22" swing capacity for faceplates and fixturing to accommodate larger workparts
- Programmable workhead with Heidenhain rotary scale, 475 RPM max. For non-round applications.
- OD grinding spindle, straight or angular, with variable speed drive.
- Multiple grinding spindle configurations providing the opportunity for mounting two ID spindles, or one OD and one ID spindle to perform multiple grinds in a single set-up.
- Electric rotary dressing systems for super abrasive dressing or extended diamond life when processing with standard abrasives.
- Work holding solutions can be addressed with a variety of systems such as manual and powered jaw chucks, collet chucks, magnetic faceplates, vacuum chucks, expanding arbors, pitch-line chucks, and custom fixtures.



- Machine tending gantry systems, Fanuc 6 axis robots, or custom alternatives can be factory integrated on a turnkey basis.
- Coolant supply and filtration systems are available to suit any application; magnetic, fabric, cyclonic, pressure, and combination filtration units can be provided.

For more information, visit our website at [www.weldonsolutions.com](http://www.weldonsolutions.com).



Shear Damper machine base

**QUALITY.** Over and over again.

# PHOENIX SPECIFICATIONS

## CAPACITY

Maximum work swing . . . . . 16"  
 Work piece weight . . . . . 200 lbs. (Nominal)

## WORKHEAD

Heavy-duty, preloaded precision angular contact bearings  
 Spindle nose (ASME standard) . . . . . 6" A2  
 1.062" through-hole diameter for draw bars and air tubes  
 Spindle speed range is infinitely variable 0-900 RPM.  
 Motor . . . . . GE Fanuc AC digital servo  
 Work table slide travel . . . . . 15.25"

## WHEELHEAD

Wheel spindle (high frequency) Motor . . . . . 13 KW  
 Wheel speed . . . . . 30,000 RPM  
 Wheel slide travel . . . . . 26"  
 Note: Actual speed and power rating calculated to suit specific application.

## TABLE DRIVES

GE Fanuc AC digital servo drives command resolution, least programmable increment . . . . . 0.000010"

## LUBRICATION

Wheel spindle . . . . . Air/Oil  
 Workhead spindle . . . . . Permanent grease-packed  
 Ballscrews . . . . . Automatic lube oil  
 Ways . . . . . Automatic lube oil  
 Safety detect interlock to prevent cycling if low air pressure or low oil level is sensed

## ELECTRICAL SPECIFICATIONS

Wired in accordance with IEC standards, 460 VAC, 3-phase, 60 Hertz

## PNEUMATICS (air moisture: 70° F. dew point maximum)

Air pressure . . . . . 80 PSI  
 Air volume . . . . . 5 SCFM  
 Note: System requires a filtered and dry air source.

## CNC CONTROL SPECIFICATIONS - GE Fanuc 18i-TB

Inch/metric programming  
 Manual pulse generator  
 Full linear and circular contouring  
 GE Fanuc AC digital servo systems  
 Direct rpm programming or constant surface feet built-in diagnostics  
 10" high-resolution color LCD  
 Automatic recognition of EIA or ISO coding  
 Absolute/incremental programming software over travel checking  
 RS 232/memory card interface

## MACHINE DIMENSIONS AND CONSTRUCTION

Width . . . . . 95"  
 Depth . . . . . 90"  
 Height . . . . . 85"  
 Weight . . . . . 14,500 lbs.  
 Base construction . . . . . Welded steel Shear Damper™  
 Way construction . . . . . Cross-roller linear way system with recirculating bearings and precision ground rails  
 Foundation . . . . . 6" concrete floor is only requirement three-point antivibration suspension system requiring no floor attachment

# OTHER GRINDER PRODUCTS



**Solaris**  
Large Capacity OD



**Midas**  
High Production OD



**UGC**  
Small Capacity ID



**1632/1612 Gold**  
Ultimate Versatility OD/ID



**AGN4**  
Small Part OD



**P175**  
Small Part Non-Round OD



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