Phoenix
Large Capacity CNC ID Grinder
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.

APPLICATIONS

- 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 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, CBN abrasive application for non-round ID grinding, with electric rotary dresser.
- 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.
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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.weldon solutions.com.
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

PNEUMATICS (air moisture: 70°F dew point maximum)
Air pressure .............................................. 80 PSIG
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

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

OTHER GRINDER PRODUCTS
Solaris
Large Capacity OD
Midas
High Production OD
AGN4
Small Part OD
P175
Small Part Non-Round OD
1632/1612 Gold
Ultimate Versatility OD/ID

QUALITY. Over and over again.

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