weldon
SOLUTIONS

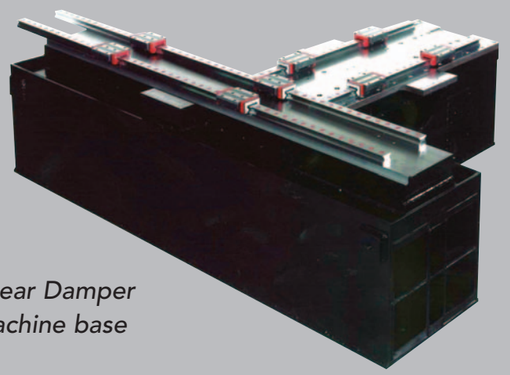
MIDAS

High Production OD Grinder

APPLICATIONS

The Weldon MIDAS series of CNC cylindrical grinders are designed to satisfy high production applications either between centers or in a chucking mode. These machines also provide the flexibility to grind a wide variety of part configurations with minimal set-up. Rotary and linear axes are sealed from airborne contaminates providing unmatched longevity in carbide and ceramic grinding applications.

Available with either a straight or angular wheel head (factory set) the MIDAS machines can grind outside diameters, shoulders, and faces in a single set-up. The CNC control can address complex form grinding (tapers, radii, etc.) via form dressed wheels or profiling. Properly equipped, a MIDAS is ideally suited for high speed "Peel" grinding with CBN abrasives. Additionally, a programmable "C" axis package can be provided to accommodate non-round grinding applications.

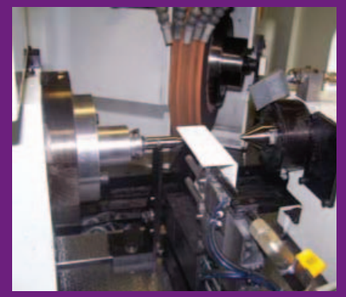


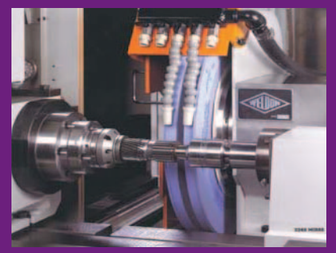
Shear Damper machine base

QUALITY. Over and over again.

High-speed peel grinding. Possible with vitrified CBN abrasives.

Angular wheelhead configuration available for formed wheel plunge grinding multiple diameter and shoulder grinding.





Rotary diamond plunge dressers available for groove grinding applications.

Typical applications: bearing shafts, gear shafts, spindles, hydraulic spools, crankshafts, camshafts, wheel hubs and large bushings.

FEATURES

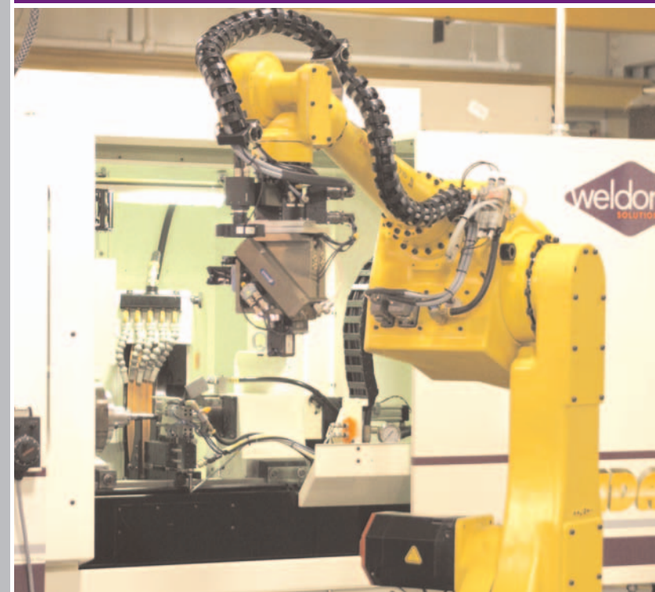
Standard:

- GE/Fanuc model 18i-TB CNC control with color LCD, and servo drives featuring GE Fanuc AC digital technology.
- 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.
- Preloaded, precision ground, double-nutted ballscrew assembly for X and Z axes.
- Low inertia break-away coupling, 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.
- Automatic Trabon lubrication system, monitored by the control, with lube fault protection.
- Tailstock, lever operated, spring loaded, with #5 MT center.
- Includes manual taper adjustment with eccentric quill design.
- Variable speed wheel drive, CNC controlled with dynamic braking.
- Normally arranged for constant surface speed as the grinding wheel wears.
- Full enclosure with manual sliding door assembly and front and rear maintenance access window panels.

For more information, visit our website at www.weldonsolutions.com.

Optional:

- Programmable Workhead with Heidenhain rotary scale.
- In-process gage for automatic size control
- Automatic lateral locator, wheelhead mounted, featuring a Renishaw probe
- Acoustic emissions sensor for gap elimination, crash detection, and touch dressing
- 22" swing capacity to accommodate larger diameter workparts
- 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.
- Automation involving 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.
- GE Fanuc X-axis linear motor for non-round applications.



MIDAS SPECIFICATIONS

CAPACITY

Maximum work swing . . . . . 16"
Maximum distance between centers (120S, 120A, 124S, 124A) . . . 12"
Maximum distance between centers (320S, 320A, 324S, 324A) . . . 26"
Worktable travel (120S, 120A, 124S, 124A) . . . . . 26"
Worktable travel (320S, 320A, 324S, 324A) . . . . . 32"

WORKHEAD

Heavy-duty, preloaded precision antifriction bearings
Spindle nose (ASME standard) . . . . . 6"A2
Center taper . . . . . #5 Morse
Through-hole diameter in spindle for draw bars and knock-out . . . . . 1.0625"
Spindle speed range is infinitely variable and programmed by percentage with manual speed override located on operator control station . . . . . 0 - 900 RPM
Maximum runout . . . . . 0.000050"
Motor, GE Fanuc AC servo drive . . . . . 5.0 HP

WHEELHEAD

Angular contact ball bearings which allow lateral loading while contouring with wheel edge
Motor (120S, 120A, 320S, 320A) . . . . . 20 HP, T.E.F.C.
Motor (124S, 124A, 324S, 324A) . . . . . 25 HP, T.E.F.C.
Wheel speed variable RPM . . . . . 8,500 SFPM (nominal)
Maximum OD wheel diameter . . . . . 24"
Maximum wheel width (120S, 120A, 320S, 320A) . . . . . 4.0"
Maximum wheel width (124S, 124A, 324S, 324A) . . . . . 5.0"
Note: Actual speed and power rating calculated to suit specific application.

TAILSTOCK

Center taper . . . . . #5 Morse
Quill retraction (manual lever) . . . . . 1.5"

TABLE DRIVES

GE Fanuc AC digital servo drives . . . . . 1.9 HP
Command resolution, least programmable increment . . . . . 0.000010"
Position feedback resolution . . . . . 0.0000010"
Precision ground preloaded ballscrews on Z-axis
Way construction . . . . . Hardened and ground cross rails
Bearings, preloaded . . . . . Cross-roller

LUBRICATION

Wheel spindle . . . . . Permanent grease-packed
Workhead spindle . . . . . Permanent grease-packed
Ballscrews and rollerscew . . . . . Automatic lube oil
Ways . . . . . Automatic lube oil
Safety detect interlock to prevent cycling of operation if low air pressure or low oil level is sensed
Automatic programmed cycle to lubricate machine when started up

ELECTRICAL SPECIFICATIONS

Complete electrical equipment wired in accordance with IEC electrical standards for metalworking machine tools
Standard voltage . . . . . 460 volts, 3-phase, 60 Hertz, AC (Any other voltage must be referred to factory for price and delivery.)

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.

COOLANT SYSTEM

Machine is set up to funnel coolant out to an optional coolant filter or tank system via a sheet metal trough. All necessary piping and solenoids for coolant control from the machine control are provided.

MACHINE DIMENSIONS AND CONSTRUCTION

Width, with table travel (120S, 120A, 124S, 124A) . . . . . 103"
Width, with table travel (320S, 320A, 324S, 324A) . . . . . 131"
Depth, with slide travel . . . . . 127"
Depth for shipping, pendulum swung in . . . . . 93"
Height . . . . . 85"
Weight . . . . . 15,500 lbs.
Construction . . . . . Welded steel Shear Damper™
Foundation . . . . . 6" concrete floor is recommended
Three-point anti-vibration suspension system requiring no floor attachment

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

Manual pulse generator
Full linear and circular contouring and positioning capabilities
GE Fanuc AC digital servo systems
Direct rpm programming or constant surface feet per minute
10" high-resolution color LCD
Macro subroutines
Automatic recognition of EIA or ISO coding
Absolute/Incremental programming
RS 232 interface

OTHER GRINDER PRODUCTS

Phoenix
Large Capacity CNC ID

NEW!
Solaris
Large Capacity OD

NEW!
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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