

midas

HIGH PRODUCTION MULTI-SPINDLE GRINDER



QUALITY.
Over and over again.

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 variety of part configurations with minimal set-up. Rotary and linear axes are sealed from airborne contaminants providing unmatched longevity in carbide and ceramic grinding applications.

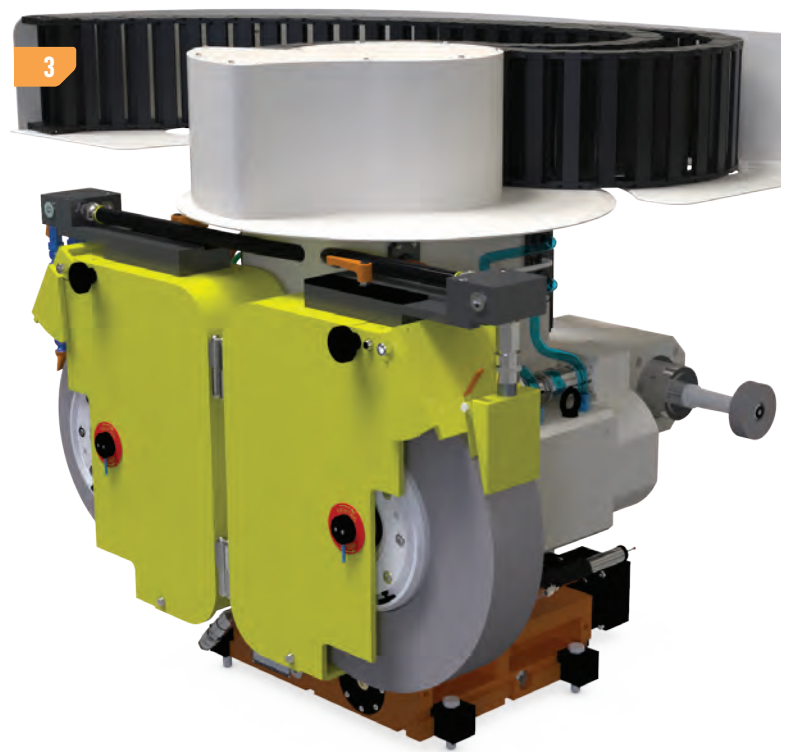
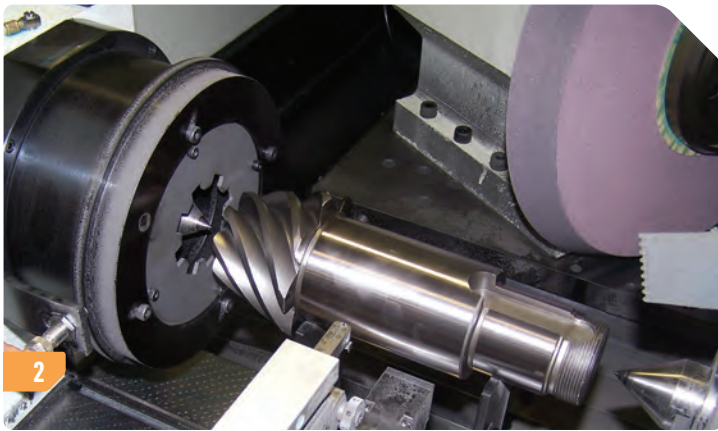
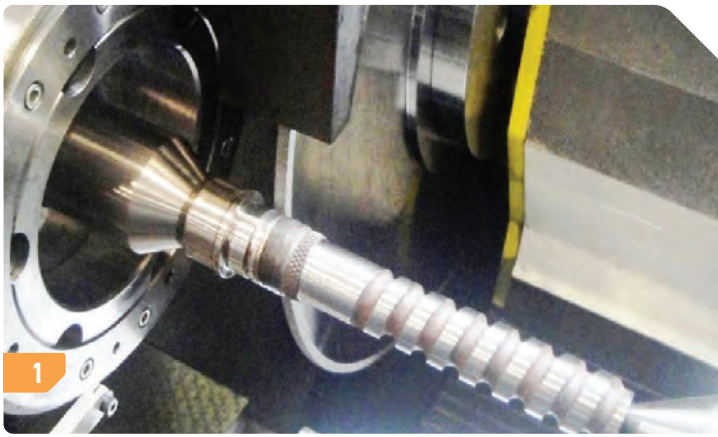
Available with either a straight, angular or turret style wheelhead, the Weldon Midas machines can grind outside diameters, shoulders, faces, tapers, and radii, sometimes in a single set-up. Properly equipped, a Weldon Midas is ideally suited for high speed "Peel" grinding with CBN abrasives. Additionally, a programmable "C" axis package can be provided to accommodate non-round grinding applications.

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



FEATURES: STANDARD

- **Fanuc model 32i-BT CNC** control with color LCD, and servo drives featuring Fanuc AC digital technology.
- **Shear Damper machine base** providing stiffness, vibration control, and thermal stability through the use of shear tubes.
- **Cross-roller linear way system** with recirculating bearings and precision ground rails.
- **Low inertia break-away coupling**, X-axis, for ballscrew protection.
- **Heavy-duty live spindle workhead** with 6" A2 spindle nose and #5 MT center.
- **Preloaded, precision ground, double-nutted ballscrew** assembly for X axis.
- **Fanuc linear motor assembly** for Z axis.
- **Automatic lubrication system**, monitored by the control, with lube fault protection.
- **Tailstock**, lever operated, spring loaded, with #5 MT center.
- **Variable speed wheel drive**, CNC controlled with dynamic braking.
- **Full enclosure** with manually operated front and side sliding door assemblies.



FEATURES: OPTIONAL

- **24" swing capacity** to accommodate larger diameter workparts.
- **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.
- **Programmable workhead** with rotary scale, 475 RPM max. For non-round applications.
- **Power operated tailstock**, 5" stroke, with smart cylinder feedback.
- **Electric rotary dressing systems** for super abrasive wheels or extended diamond life when processing with standard abrasives.
- **High pressure grinding wheel cleaner.**
- **Work holding** can be addressed with manual and powered jaw chucks, collet chucks, magnetic faceplates, vacuum chucks, expanding arbors, pitch-line chucks, and custom fixtures.
- **Coolant supply and filtration systems** are available to suit any application; magnetic, fabric, cyclonic, pressure, and combination filtration units can be provided.
- **Fanuc X-axis linear motor** for non-round applications.
- **Automatic machine tending** with Fanuc 6-axis robots, or custom alternatives can be factory integrated on a turnkey basis.

QUALITY. OVER AND OVER AGAIN.

1. High-speed peel grinding. Possible with vitrified CBN abrasives.
2. Angular wheelhead configuration available for diameter, shoulder and face grinding applications.
3. Optional turret wheelhead available for formed wheel plunge grinding multiple diameter and shoulder grinding.
4. Shear Damper machine base.



VELDON MIDAS SPECIFICATIONS

CAPACITY

Maximum work swing	16"
Maximum distance between centers	25"
Worktable travel	43"
Maximum workpiece weight, between centers	300 lbs.

WORKHEAD (Live Spindle)

Bearings	Precision angular contact
Spindle nose (ASME standard)	6" A2
Center taper	#5 Morse
Through-hole diameter	1.0625"
Speed (Infinitely Variable)	0-900 RPM
Maximum runout	0.000050"
Motor, Fanuc AC servo drive	5.0 HP

WHEELHEAD

Angular contact ball bearings which allow lateral loading while contouring with wheel edge	
Motor (S-2, A-2)	20 hp, T.E.F.C.
Motor (S-3, A-3)	25 hp, T.E.F.C.
Speed (Infinitely Variable)	8,500 SFPM (nominal)
Angle of wheelhead (factory set)	0° or 30°
Travel of wheel slide	15.25"

TAILSTOCK

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

TABLE DRIVES

Fanuc AC digital servo drives	1.9 HP
X-axis Table Drive	Precision ground preloaded ballscrews
Z-axis Table Drive	Fanuc linear motor
Way construction	Hardened and ground rails, cross-roller type
Bearings, preload	Cross-roller, recirculating

GRINDING WHEEL

Maximum OD Wheel diameter (S-2, A-2)	20"
Maximum OD Wheel diameter (S-3, A-3)	24"
Maximum wheel width (S-2, A-2)	4.0"
Maximum wheel width (S-3, A-3)	5.0"
Worn Wheel Size:	
S-2	12"
S-3	16"
A-2	14.5" (wheel width dependent)
A-3	19.5" (wheel width dependent)

LUBRICATION

Wheel spindle	Permanent grease-packed
Workhead spindle	Permanent grease-packed
Ballscrews	Automatic lube oil
Ways	Automatic lube oil
Safety detect interlock to prevent cycling if low oil level is sensed.	
Automatic programmed cycle to lubricate machine at start up.	

ELECTRICAL SPECIFICATIONS

Complete electrical equipment wired in accordance with IEC electrical standards for metalworking machine tools	
Standard voltage	480 VAC, 3-phase, 60 Hertz
Note: 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 pump coolant out to an optional coolant filter or tank system. All necessary piping and solenoids for coolant control from the machine control are provided.

MACHINE DIMENSIONS AND CONSTRUCTION

Width	130"
Depth	91"
Height	93"
Centerline workpiece, height from floor (S-2, A-2)	43"
Centerline workpiece, height from floor (S-3, A-3)	44"
Weight, Nominal (S-2, A-2)	19,800 lbs.
Weight, Nominal (S-3, A-3)	20,100 lbs.
Construction	Welded steel Shear Damper™
Foundation	6" reinforced concrete floor is recommended
Three-point anti-vibration suspension system requiring no floor attachment	

CNC CONTROL SPECIFICATIONS - Fanuc 32i-BT

- Manual pulse generator
- Full linear and circular contouring and positioning capabilities
- Fanuc AC digital servo system
- Direct rpm programming or constant surface feet
- Built-in diagnostics
- 10.4" high-resolution color LCD
- Macro Subroutines
- Automatic recognition of EIA or ISO coding
- Absolute / incremental programming software over travel checking
- RS 232 / Ethernet
- memory card interface / USB

TURRET OPTION SPECIFICATIONS

Indexer positioning increment (servo controlled)	1.0 degree
Rotational capability	270 degrees
Indexing accuracy	+/- 1.5 Arc Second
Repetitive accuracy	+/- 0.3 Arc Second
Centerline workpiece, height from floor	43" with OEM platform
Weight, Nominal	21,600 lbs.

Position #1 (Straight approach wheel spindle assembly)

Integral spindle motor	31.5 HP (23.5 kW)
Maximum wheel diameter	20"
Maximum wheel width	4"
Worn wheel size	13"

Position #2 (Angular approach wheel spindle assembly)

Integral spindle motor	31.5 HP (23.5 kW)
Maximum wheel diameter	20"
Maximum wheel width	4"
Worn wheel size	15" at 4" wheel width, 13" at 2" wheel width

Internal wheel spindle assembly

Spindle diameter	4.725" (120mm)
Spindle speed and power rating	Application dependant