SOLARIS
Large Capacity OD Grinder
APPLICATIONS

The Weldon Solaris CNC cylindrical grinder is designed to satisfy processing of large, heavy work parts. Rotary and linear axes are sealed from airborne contaminants providing unmatched longevity in carbide and ceramic grinding applications.

Available with either a straight or angular wheel head (factory set) the Solaris 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 Solaris 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.

A sub-spindle option is also available to present a second OD wheel or an internal grinding wheel for sequential grinding of various part features.

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.
- Compound linear slide design to keep floor space requirements to a minimum.
- Z axis linear motor, GE Fanuc X axis precision ballscrew assembly or GE Fanuc linear motor, determined by application.
- 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.
- Heavy-duty tailstock, hydraulically operated, with #5 MT center. Includes manual taper adjustments with eccentric quill design.
- Automatic variable speed wheel drive, CNC controlled with dynamic braking. Normally arranged for constant surface speed as the grinding wheel wears.
- Stainless steel telescoping way covers.
- Full enclosure with manually operated dual sliding door assembly and both side and rear maintenance access panels.

Optional:
- 22” swing capacity for faceplates and fixturing to accommodate larger 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 Heidenhain rotary scale, for non-round applications.
- Sub-spindle fixture (swing-down) hydraulically operated, to accommodate a variety of secondary spindles (OD or ID).
- 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.

For more information, visit our website at www.weldonsolutions.com.
CAPACITY
Maximum work swing ............................................... 16”
Maximum distance between centers .......................... 60”
Worktable travel .................................................. 74”

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 ........................................................................... 25 hp, T.E.F.C.
Wheel speed variable RPM ........................................... 8,500 SFPM (nominal)
Maximum OD wheel diameter ........................................... 24”
Maximum wheel width .................................................. 5.0”

TAILSTOCK
Center taper ...................................................................... #5 Morse
Quill retraction (hydraulic) ................................................. 3”

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

LUBRICATION
Wheel spindle ................................................................ Permanent grease-packed
Workhead spindle ........................................................ Permanent grease-packed
Ballscrews and rollerscrew ........................................ Automatic lube oil

WAYS
Safety detent 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 pump coolant out to an optional coolant filter or tank system from a sump tank. All necessary piping and solenoids for coolant control from the machine control are provided.

MACHINE DIMENSIONS AND CONSTRUCTION
Width .............................................................................. 151”
Depth ............................................................................. 188”
Height ............................................................................. 91”
Weight ............................................................................ 28,000 lbs.
Construction ................................................................. Welded steel Shear Damper™
Foundation ..................................................................... 6” concrete floor is recommended
Multi-point anti-vibration suspension system requiring no floor attachment

CNC CONTROL SPECIFICATIONS - GE Fanuc 18-iTB
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

SOLARIS SPECIFICATIONS

OTHER GRINDER PRODUCTS

Authorized Weldon Distributor

WELDON SOLUTIONS
1800 WEST KING STREET
YORK, PA 17404
VOICE: 717.846.4000
FAX: 717.846.3624
info@weldonsolutions.com
www.weldonsolutions.com

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