

JONES &  
SHIPMAN

# SUPREMA

## Cylindrical Grinder Range

300 x 650mm, 1000mm or 1500mm Grinding Capacity  
GE-Fanuc® Touchscreen Control, AC Drives & Motors  
Jones & Shipman Easy 'Self Teach' Software Suite





Suprema a one piece 'Tee Bed' designed, robustly constructed, cylindrical grinder, able to accommodate one off, batch, or high volume production. Direct coupled digital servo motors and rotary encoders from GE-Fanuc®, ensure high geometric accuracy.

Touchscreen technology also from GE-Fanuc® together with Jones & Shipman 'Easy' 'Self-Teach' programming software enable any operator to easily and quickly produce their first component.

## DESIGN & BUILD

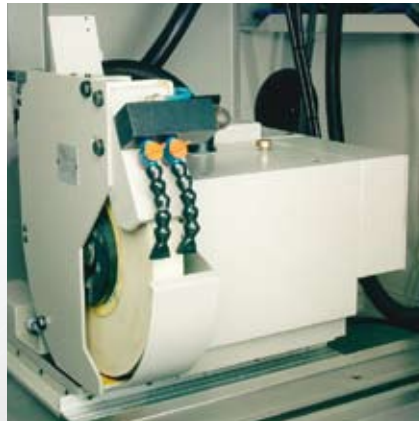
### Slideways

Hand scraped slideways are incorporated in both cast machine table underslide and wheelhead backslide. The underslide being a Vee and Flat configuration whilst the wheelhead backslide operates on high accuracy twin Vee ways. Both axes are ballscrew driven and controlled by direct coupled GE-Fanuc® Digital AC Servo Motors and Encoders. Turcite® coated bearing surfaces, automatically lubricated, assure low friction movement.

### Plain - Straight Approach Wheelhead

A robust external only wheelhead featuring a belt driven angular contact rolling element bearing cartridge and wheelguards with retracting lower wheel safety visors.

- Wheels up to 500mm diameter
- 7.5 kW Motor minimum
- Programmable Constant Peripheral Wheel Speed
- Wheel Speeds 45 m/s and 63 m/s or more available



Plain - Straight Approach Wheelhead

### Universal Swivelling Wheelhead

Provided as standard with Air Cushion and Pneumatic Clamping. The main spindle features a belt driven angular contact rolling element double ended bearing cartridge which can accommodate both left and right hand wheels. An independently belt driven internal spindle is mounted at the rear. All wheels are provided with retracting wheel guards.

- Left Hand Wheels up to 350mm dia. x 50mm wide
- Right hand Wheels up to 300mm dia. x 25mm wide
- 4.2 kW Main Spindle Motor
- 2.2 kW Internal Spindle Motor
- Standard Internal Grinding Spindle Options for Wheel Ø 10 to 80mm
- Variable & High Speed Internal Spindle Options.



Universal Swivelling Wheelhead



Universal Wheelhead set in Internal Mode

### 3D Modular Design

All machine designs based on modular concepts utilising the latest SolidEdge® CAD 3D modelling technology

### Workhead and Tailstock

The air purged combined live and dead centre swivel base workhead contains high precision tapered roller bearings for superior stiffness. It incorporates a synchronous belt variable speed drive that allows direct programmed speed (RPM) or constant surface speed (m/sec) of the workpiece. A robust lever operated plain bearing tailstock is provided as standard, with a high accuracy taper correction tailstock available as an option.

# GE-Fanuc® 'Self Teach' Touchscreen Control

Suprema is controlled via a Man Machine Interface (MMI) comprising of two membrane panels each having a Hand Pulse Generator (HPG) and Digital Read Out (DRO). The left hand panel contains the Z axis manual control HPG plus a GE-Fanuc® LCD touchscreen display panel & ancillary controls. X axis control is via a similar HPG and DRO on the right hand panel. With this layout all controls are immediately to hand for setting and manual operation when required. The extremely easy-to-use Touchscreen control system utilises our own fast-to-set 'easy' software suite. This simple yet powerful multi axis control system enables an inexperienced operator to quickly progress from a manual single diameter application, to linked cycle / multi-diameter single or batch operations.



## Standard Features

- Manual or Automatic Operation
- Manual Traverse or Plunge Grind for 1 off's
- Up to 20 Linked Cycles in Auto Mode
- Manual or Auto Wheel Dressing
- In or Out of Cycle Dressing with Full Compensation
- Dress on Demand
- Straight Dress, Left Hand Face Dressing
- Auto Cycles:- Plunge, Traverse, Face Grinding with L/H side of Wheel, Plunge & Shoulder (L/H only), Multi plunge & Traverse Grind
- Regrind
- Simple Trimming

## Advanced Software Suite Extra Features

- Straight Dress Left or Right Hand Facing Wheels
- Fully compensated Easy Form Dressing of Complex Profiles & Vee Forms without additional form dressing attachments
- Extra Auto Cycles:- Thread Grinding, Peel Grinding, Taper Traverse Grinding, Contour Grinding, etc
- Easy Down Load / Up Load to & from PDA, PC or Network

A few of the most popular items of optional equipment available for Suprema are shown below, many more are available on request.



Gauging Options including - Shoulder, Diameter & Gap Elimination



Head or Table mounted shoulder Probing options



Coolant and Mist Extraction options



Auto and semi auto Wheel balancing options



Taper Correction Tailstock option



Wheel carousel and wheel loading options



Chuck, Collets and Steadies



Standard and variable speed Internal grinding spindle options

# SPECIFICATIONS

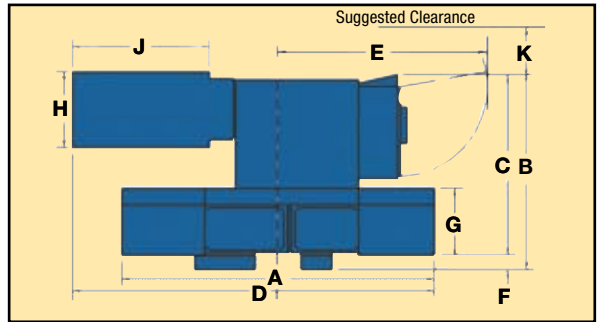
| Model                                    | 650U/E   | 1000U/E            | 1500U/E   |
|--|--|--------------------|-----------|
| Control System                           | GE-Fanuc® Touchscreen  |                    |           |
| <b>Capacities</b>                        |  |                    |           |
| Grinding Length                          | 650mm  | 1000mm             | 1500mm    |
| Centre Height & Grinding Diameter        | 160mm / 300mm  |                    |           |
| Weight between Centres                   | 100 kg   |                    |           |
| <b>Table</b>                             |  |                    |           |
| Traverse Distance                        | 750mm  | 1145mm             | 1645mm    |
| Traverse Speed, Stepless, per minute     | 0,0001mm - 12m   |                    |           |
| Table Swivel - Clockwise / Anticlockwise | +9° / -9°  | +8,2° / -8,2°      | +5° / -5° |
| Electronic Handwheel Increment           | 0,001, 0,010, 0,100mm  |                    |           |
| Traverse Control & Feedback              | GE-Fanuc® Digital AC Servo Motor with Tenth Micron Integral Encoder* |                    |           |
| <b>Wheelslide</b>                        |  |                    |           |
| Total Infeed                             | 260mm  |                    |           |
| Infeed Rate, per minute                  | 0,0001mm - 6m  |                    |           |
| Electronic Handwheel Increment           | 0,001, 0,010, 0,100mm  |                    |           |
| Infeed Control & Feedback                | GE-Fanuc® Digital AC Servo Motor with Tenth Micron Integral Encoder* |                    |           |
| <b>Wheelhead</b>                         |  |                    |           |
| Type                                     | Swivelling   | Fixed External     |           |
| Main Motor                               | 4 kW   | 7,5 kW             |           |
| Wheel Speed                              | 33 ms  | 45 ms              |           |
| Left Hand Wheel (Ø x width x bore)       | 350 x 50 x 127mm   | 450 x 50 x 203.2mm |           |
| Right Hand Wheel (Ø x width x bore)      | 300 x 25 x 127mm   | N / A              |           |
| Internal Grinding System                 | Belt Driven  | N / A              |           |
| Internal Grinding System Motor Power     | 2,2 kW   | N / A              |           |
| Internal Grinding Spindle Option         | High Speed Self Driven   | N / A              |           |
| <b>Workhead</b>                          |  |                    |           |
| Type                                     | Live & Dead Centre   | Dead Centre        |           |
| Swivel Range                             | -15° / +90°  | N / A              |           |
| Speed Range                              | 0 - 660 r.p.m.   |                    |           |
| Output Torque                            | 27 Nm  |                    |           |
| Spindle Taper                            | 5 / 3 MT   | 3 MT               |           |

\* Optional Heidenhain® 'Absolute' 50 Nanometer Linear Scales with Advanced Software Suite.

## STANDARD EQUIPMENT

Coolant tank (settling type) and coolant nozzle assembly.  
Diamond dressing block table mounted behind the workhead accepts 2 diamonds (excluding diamonds).  
Fully enclosed guarding with manual interlocked door & integral work area strip light.  
Automatic re-circulating lubrication to main points of machine.  
3 MT Carbide tipped full & half Centre.  
Wheel balancing mandrel.  
One Emergency stop button on control panel.  
Standard hand tools.  
125mm diameter 3 jaw scroll chuck.  
2 wheelflanges and 1 std. grade grinding wheel.

16,500 r.p.m. Internal grinding spindle, grease lubricated and air purged, to suit wheels 25 - 40mm dia. with 3 quills & adaptor body collet holder for 6mm stem mounted wheels.  
Operators instruction, maintenance and programming manual.  
Each machine is suitable, subject to standard mains tolerance of ± 6%, for 3 phase operation in one of the following supply groups: 208/220/230V 50/60Hz, 380/440V 50Hz or 460/480/575V 60Hz.  
Control voltage 110V AC/24V DC  
Additional Equipment  
A comprehensive range of additional equipment is available to suit individual requirements.



| 650 Model  | 1000 Model | 1500 Model |
|------------|------------|------------|
| A - 3405mm | A - 4021mm | A - 5900mm |
| B - 2117mm | B - 2117mm | B - 2117mm |
| C - 1957mm | C - 1957mm | C - 1957mm |
| D - 3945mm | D - 4393mm | D - 5475mm |
| E - 2280mm | E - 2280mm | E - 2280mm |
| F - 160mm  | F - 160mm  | F - 160mm  |
| G - 725mm  | G - 725mm  | G - 725mm  |
| H - 820mm  | H - 820mm  | H - 820mm  |
| J - 1490mm | J - 1490mm | J - 1490mm |
| K - 800mm  | K - 800mm  | K - 800mm  |

Machine Height - 1850mm

## Performance



**Roundness**  
Dead Centres: 0,000125mm LSC\*  
Live Spindle: 0,00025mm LSC\*  
\*Least square circle.



**Surface Finish**  
0,025µm Ra (Using standard wheel and hardened test piece, improved Ra values can be obtained by using selected grades of grinding wheels applicable to the material being ground)



**Straightness**  
650 model - 0,0025mm (Using 650 x 100mm test bar)  
1000 model - 0,0035mm (Using 1000 x 100mm test bar)  
1500 model - 0,0045mm (Using 1500 x 100mm test bar)

## CUSTOMER WARRANTY

All Jones & Shipman precision grinders come with a minimum twelve months comprehensive Warranty covering both parts and service.

Further information on Customer Warranty is detailed in our Conditions of Sale, subject to amendments for particular models and the specific markets into which they are sold.

Our endeavour is to supply machines that embody the latest developments in design and therefore, whilst the illustrations, text and specifications contained within this brochure are correct at the time of printing, we reserve the right to modify the design and construction of machines and equipment at any time without notice.

In the interests of safety, customers are reminded that when purchasing any technical product for use at work (or otherwise), any additional or up-to-date information and guidance, which it has not been possible to include in the publication, should be obtained by you from your local sales office in relation to the suitability and the safe and proper use of the product. All relevant information and guidance must be passed on by you to the person engaged in, or likely to be affected by or responsible for the use of the product.

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Certificate No.  
FM 09259