

# **INTERNAL GRINDING MACHINES**

### SEMI-AUTOMATIC - CNC



EcoMachineTools.com

770-279-2001

# **OMICRON IGR 250**



### **TECHNICAL SPECIFICATIONS**

		IGR 250 IGR 600			
Workpiece diameter		Max	355	595	mm
Cantilever weight (150 mm from workhead spindle nose)		Max	80	400	Kg
Workpiece length including clamping device (Distance between headstock plate and grinding spindle all chm	ent)	Max	1.200	2.300	mm
Grinding depth for internal grinding		Max		1.000	
Diameter of internal grinding spindle			120	120	mm
Table suited			+8°	+6°	
Table swivel			-4°	-2°	
Table speed			0-4	0-4	m/min
Workhead rotation speed			0-400	0-400	rpm
Workhead internal centre taper			5	6	CM
Self centering chuck diameter (on request)			250	250	mm
Wheelhead motor			4,0	11,0	kW
Workhead motor			1,5	4,0	kW
Coolant pump motor			2,2	2,2	kW
	Maximum grinding diameter (with cup wheels)			355	mm

### FACING GRINDING DEVICE



Grinding wheel diameter

Maximum swivel

Height of centers over table

Headstock plate

Spindle attachment

125

10°

mm

ROBBI

2

# **OMICRON IGR 600**



### EQUIPMENT

SIEMENS TP 700 touch screen control panel Wheel head and table automatic electronic feeds controlled by brushless motors Re-circulating ball screw with preloaded nut for wheel head and table movement Table manual swivelling system for taper grinding with dial gauge Wheelhead slides on linear motion guide with roller cage Incremental linear encoder for wheelhead movement Electric installation, in separate cabinet Pneumatic unit Centralized lubrication

### SER

Internal grinding attachment Facing device grinding wheel Ø 125 mm Wheel Head spindle motor inverter driven Coolant equipment complete with pump, tank, pipes and nozzle Straight wheel dressing unit (without diamond) mounted on hydraulic plant Oil for guide lubricating 5 Kg. Instructions manual

### FACING GRINDING DEVICE



# **OMICRON IGU**



### **INCREMENTAL LINEAR ENCODER ON BOTH AXIS**

- Maximun positioning accuracy and repeatability
- Excellent performance during the working in interpolation

### **ROLLER LINEAR GUIDES**

- Maximum rigidity
- Speed and acceleration over the very low speed
- Elimination of stick slip.

### **GRANITE BASE**

- Low thermal expansion
- Excellent rigidity
- Absorption of the vibrations





## **UP TO 4 GRINDING SPINDLES ON ROTATING TURRET**

An important component of the IGU 400 is represented by the spindle turret that, in the maximum configuration, can be equipped with:

- 4 spindles (one of which for external)
- 4-spindles for internal grinding
- tailstock to facilitate the grinding borecentering

**INTERNAL GRINDING** 

The tower has an integrated swivel axis that runs automatically and allows you to use up to 4 grinding spindles.

The rotation of the turret is automatic and the positioning is accurate and precise (the turret do not rotates in the versions numer 1 and 2)

# **EXTERNAL INTERNAL GRINDING** 5 3 INTERNAL GRINDING WHEEL **EXTERNAL GRINDING WHEEL** TAILSTOCK

### **TECHNICAL SPECIFICATIONS**

SPINDLE TURRET POSITIONING			
Number of spindles	Max	4	num
Turret spindle diameter	Max	120	mm
Swiveling range		-5°	+275°
Repetition accuracy		< 1"	
Swiveling time for 180 deg		< 10	sec
Resolution		0,001	gradi
WORK HEAD			
Spindle speed			1—800 rpm
Spindle taper			6 ASA
Spindle taper			5 CM
Spindle bore diameter			35.5 mm
Driving power			1,6 kW
cantilever weight 150 mm from workhead	d spindl	e nose	80 kg

Height of centres over table		325 mm
Rotating diameter	Max	650 mm
Workpiece length	Max	300 mm
Internal grinding depth	Max	200 mm
External grinding diameter	Max	200 mm

#### Z Axis

Travel	Max	650 mm
Speed	Max	10.000 mm /min
Resolution		0.0001 mm

#### **X Axis**

Travel	Max	450 mm
Speed	Max	10.000 mm/min
Resolution		0.0001 mm

#### **B**AXIS

Swivelling range	+30° -20°	
Repetition accuracy	< 1"	
Resolution	0.001 r	nm



Height	1700 mm
Lenght	2600 mm
Width	1600 mm
Weight	2600 kg

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# SIMPLE HUMAN-MACHINE INTERFACE

- Wheelhead and table position visualized on operator panel
- Possibily to program up to 12 different diameters, on the same grinding cycle
- Possibility to update the operator panel, with the correction of each diameter
- Semi automatic grinding cycle, with stop of the grinding wheel feed once the programmed diameter has been reached
- Automatic grinding wheel dressing cycle with compensation of all the grinding dimensions

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### WORKING CYCLES WITH EASY PARAMETERS

PASS	V
Plunge	V
Facing	V
Multi Diameter	V

- stock removal rough and finish
- dwell table inversion
- sparkout time
- sparkout pass

### PASS GRINDING CYCLES

Automatic increments - rough and finish **PLUNGE GRINDING CYCLES** Automatic feeds - rough and finish

Touch screen operator panel SIEMENS TP700 for easy programming of grinding cycles



# SIMPLE HUMAN-MACHINE INTERFACE

### EASY PROGRAMMING

The machine operator may create a program, even complex, without ISO programming knowledge. **GUIDED COMPILATION** 

The compilation of the parameters is guided by a series of messages and icons that explain step by step the meaning of the various parameters.

The programming of the working cycles is done by filling the same parametric working cycle.

Once the working cycle has been programmed, it is also possible to modify the execution sequence of the various cycles, simply and intuitively.

#### **ERRORS CONTROL**

To eliminate errors in the execution of a program, there is available a summary page to control the main geometric parameters of every single working cycles.

### Standard Programs Supplied with the Machine

Pass	V	
Plunge	V	
FACING	V	
Multi Diameter	V	
ANGULAR PLUNGE	V	
TAPER GRINDING	V	

### WHEEL DRESSING PROGRAMMING

It is possible to program all the automatic grinding wheel dressing cycle parameters.

- The dressing operation may be executed:
- outside the grinding cycle
- automatically inside the grinding cycle (beginning before finishing or end of cycle)
- automatically using a cycle counter
- on demand, during the grinding cycle



#### **ACCURATE GEOMETRIC RESULTS**

In each cycle it is possible to correct eventual taper errors, interpolating the two axis X and Z. This permits, in a short time, to obtain very accurate geometric results.

### SHOULDER GRINDING IN 3 MODES

In each cycle, it is possible to insert the shoulder grinding operation:

#### MANUALLY

The machine stops before the finishing operation, permitting the operator to execute the shoulder grinding operation with the electronic handwheel.

#### AUTOMATICALLY

The machine executes, before the finishing operation, the shoulder grinding operation, up to the programmed quote.

#### **AUTOMATICALLY WITH GAP CONTROL**

The machine executes, before the finishing operation, an automatic research of the shoulder to be ground by using the gap control. After the contact, the cycle automatically removes the quantity of programmed material. After the shoulder grinding operation it is possible, to execute a zero setting of the Z axis.

In this way it is possible to execute other shoulder grinding operations on the same workpiece with high precision and reduction in cycle time

# **AT YOUR SERVICE SINCE 1936**



Robbi has operated in the machine tool market since 1936 and specialise in the manufacture of machines tailored to meet the more demanding needs of the customer's complexed and more specialised demands.

Whilst maintaining compete prices, Robbi have ensured their machines have stability and precision.



Robbi grinding machines, use the best technology and the most robust and reliable components available on the market in their build programme.

Robbi have a commitment to assist and help, proacdely, its customers to ensure they maximise the elency of the machine.



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- development of manufacturing processes;
- replacement parts spare part programme,
- making parts available for older models,
- tailored opera@nal training programs
- and maintenance training to maximise the features of grinding machines and maintain the Robbi Grinders longevity.



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