

# OMICRON

# CONVENTIONAL

### **UNIVERSAL CYLINDRICAL GRINDING MACHINES**



www.EcoMachineTools.com 770-279-2001

### **CONVENTIONALS**

### MANUFACTURED RESPECTING THE TRADITIONAL ITALIAN PRECISION MECHANICS

- High standards of precision
- Flexibility
- Fast set-up
- Ideal for processing components with very tight tolerances
- Sturdiness and Stability:
  - Machine bed in normalised cast iron
  - Grinding wheel spindle mounted on solid bronze bushes



THE MOST APPRECIATED BY PROFESSIONAL REBUIDERS



THE RANGE OF CONVENTIONAL UNIVERSAL CYLINDRICAL GRINDING IS COMPOSED OF : MODEL R - LIGHT VERSION MODEL E - SUITABLE FOR HEAVIER WORK

ROBBI 2

### CONVENTIONALS

### TRADITIONAL MECHANICS ASSISTED BY INCREMENTAL LINEAR AND DISPLAY UNITS

The following parameters are set on the touch screen panle encoder:

- workhead and wheelhead speeds
- automatic cycle parameters , for example:
  - dwell time at reverse
  - number of spark-out passes.



### MANUAL HANDWHEEL FOR TABLE AND WORKHEAD FEEDS

Division on diamete	r (mm)
Main handwheel	0,01
Micrometric handwheel	0,001
Automatic Zero Stop	



## **OMICRON R**



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WORKING CAPACITY		600	1000	
Distance between centers	max.	600	1000	mm
Grinding length	max.	600	1000	mm
Height of centers over table			160	mm
Swing over table		max.	315	mm
Weight on centers		max.	120	kg
Cantilever weight <sup>1</sup>		max.	40	kg

TABLE(Z-AXIS)	600	1000
Automatic table traverse	max. 680	1080 mm
Curical an aither aide	+9°	+8°
Swivel on either side	-5°	-4°
Automatic traverse min.	3	mm
Hydraulic translation speed	0-500	00 mm/min
Manual feed for handwheel revolution	13	mm

#### WORKHEAD

Rotation speed	0-600	rpm
Spindle hole diameter	26	mm
Internal center taper	4	MT
External center taper <sup>3</sup>	5	ASA
Swivel max.	90°	

#### TAIL STOCK

Spindle stroke	25	mm
Spindle diameter	43	mm
Internal center taper	4	MT

#### WHEEL HEAD (X - AXIS)

Swivel	max.	+/- 1	.80°
Stroke	max	180	mm
Fast hydraulic stroke		50	mm
Handwheel feed stroke		130	mm
Rotation speed (inverter)	600-1	600	rpm

#### **GRINDING WHEEL SPECIFICATIONS**

Diameter	max.	450	mm
Hole		127	mm
	min.	20	mm
width	max.	50	mm

WORKING FEEDS	(m	m)
Automatic feed at each yourgal Dh table	0,01	0,02
Automatic leeu at each reversal kii table	0,03	0,04
Wheel feed for bandwheel revolution		2
	micrometric	0,05
Uppdwhool division volues		0,01
Handwheel division values	micrometric	0,002

#### INTERNAL GRINDING ATTACHMENT

Hole diameter for spindle	80	mm
Electric motor	1,5	kW

#### MOTORS

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Wheelhead	4,00	kW
Workhead	0,75	kW
Hydraulic power pack	0,75	kW
Coolant pump	0,18	kW

DIMENSIONS	600	1000	
Length	2540	3750	mm
Width	1350	1350	mm
Height	1750	1750	mm
Net weight	2600	3300	Kg





BREAST BAR ALIGNMENT DEVICE (Optional)

<sup>1</sup>150 mm from workhead spindle nose

<sup>3</sup>Option

## **OMICRON E**









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WORKING CAPACITY		600	1000	1500
Distance between centers	max.	630	1030	1530 mm
Grinding length	max.	630	1030	1530 mm
Height of centers over table			180	230 <sup>3</sup> mm
Swing over table		ma	x. 355	5 455 <sup>3</sup> mm
Weight on centers		ma	x. 250	) 300 <sup>3</sup> kg
Cantilever weight <sup>1</sup>		ma	x. 80	) 100 <sup>3</sup> kg
TABLE (Z - AXIS)		600	1000	1500
Automatic table traverse	max.	780	1180	1680 mm
Swivel on either side		+9°	+8°	+7°
Swiver on either side		-5°	-4°	-3°

Automatic traverse	min.	3 mm
Hydraulic translation speed		0-5000 mm/mir
Manual feed for handwheel revolution		13 mm

#### WORKHEAD

Rotation speed	0-600 rpm
Spindle hole diameter	31 mm
Internal center taper	5 MT
External center taper <sup>3</sup>	5 ASA
Swivel	90° max.

#### TAIL STOCK

Spindle stroke	35 mm
Spindle diameter	48 mm
Internal center taper	4 MT

#### WHEEL HEAD (X - AXIS)

Swivel	max.	+/- 180°
Stroke	max	250 mm
Fast hydraulic stroke		50 mm
Handwheel feed stroke		200 mm
Rotation speed (inverter)	600-1	600 rpm

#### **GRINDING WHEEL SPECIFICATIONS**

Diameter	450-	500 <sup>3</sup>	mm
Hole		127	mm
	min.	20	mm
width	max.	80	mm

WORKING FEEDS		(mm)	
Automatic food at each reversal Dh table	0,01	0,02	
Automatic feed at each reversal Rh table	0,03	0,04	
Wheel feed for bandwheel revolution		2	
Wheel feed for handwheel revolution	micrometric	0,05	
Uppdwhool division volues		0,01	
Handwheel division values	micrometric	0,002	

#### INTERNAL GRINDING ATTACHMENT Hole diameter for spindle

Hole diameter for spindle	100	mm
Electric motor	1,5	kW

MOTORS	600 1000 1500
Wheelhead	5,50 5,50 5,50 kW
Workhead	1,50 1,50 2,20 kW
Hydraulic power pack <sup>3</sup>	0,75 0,75 0,75 kW
Coolant pump	0,18 0,18 0,18 kW

DIMENSIONS	600	1000	1500	
Length	3350	4150	5500	mm
Width	1350	1350	1500	mm
Height	1750	1750	1750	mm
Net weight	3500	4400	5800	kg



### STANDARD EQUIPMENT





<sup>1</sup>150 mm from workhead spindle nose

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<sup>3</sup>Option

### **TECHNICAL SPECIFICATIONS**



#### BASE

Structure in normalised and stabilised cast iron with large ground guides.

On all the lower part of the perimeter are situated the recesses for machine levelling.

#### TABLE

The table is manufactured in two parts, both are in normalised and stabilised cast iron.

Lubrication is assured by a constant oil flow distributed over the complete length of the table.

The upper part of the table is swivelable in the two directions making it suitable for grinding tapered workpieces.

#### **EQUIPMENT AND ELECTRICAL PLANT**

The cabinet houses all the electrical / electronic components, PCL control, axis motor controllers etc.

#### **LUBRICATION PLANT**

The lubrication power pack, is separate from the machine and supplies continuous oil to the wheelhead and table guides.

The recovered and filtered table oil is returned to the power pack.

#### HYDRAULIC PLANT

The hydraulic power pack, is separate from the machine and activates the hydraulic cylinder of the tailstock.

#### **PNEUMATIC PLANT**

This distributes the air to the air cushion on the workhead, tailstock, table and wheelhead top-slide as required during the set up and manual movement of the major parts.

#### **PROTECTIONS**

For the protection of the operator all movable parts are covered with CE compliant guards. Belts and moving parts are covered.

The front protections are sheet sliding doors with polycarbonate shields, as standard.

There are two fix steel sheets positioned on the sides of the bed.

There is also a movable shield in sheet metal, controlled by a pneumatic cylinder, protects the operator, when the grinding wheel is in rotation and the front sliding doors are open.

A built in interlock safety device, does not permit the automatic cycle to start if the front sliding doors are open



# **TECHNICAL SPECIFICATIONS**

	Automatic table longitudinal movement	hydraulic cylinder	٧
BLE	Large ground guides, accurately hand scrapp	ed to permit a better sliding	٧
TAI	Incremental linear encoder to display the po	sition	٧
	Micrometric device with dial gauge for taper	control	٧
SSER	External diamond dresser on the tailstock		٧
DRE	Internal diamond dressing device positioned	l on the table	٧
ELECT The i	RICAL PLANT CABINET nternal temperature of the cabinet is controll	ed by an air-conditioning unit.	0
		tabel and wheelhead movement	٧
HYDRAULIC CYLINDER DRIVE tailstock		tailstock	0
OIL-A	IR HEAT EXCHANGER		٧
Ĭ	Automatic opening and closing coolant flow		٧
	Large capacity tank for the coolant complete	e with electro pump	٧
S T	Coolant plant with combined magnetic+pap	er roll cleaner.	0
Сом	PLETE CLOSURE		0

# **STANDARD EQUIPMENT**

Coolant equipment o	omplete with pump, electrical equipment, tank, pipes and nozzle	V
	Magnetic and paper roll	0
Coolant Filters	Paper roll	0
	Magnetic	0
	One Grindind Wheel	V
Crinding wheel	Flange	V
Grinding wheel	Balancing arbor	V
	Extractor	V
Set of levelling screws and plates		0
2 cloth bellows for table guide protection		V
Cot of	service spanners	V
Set of	hexagonal spanners	V
Oil for guide lubricati	ion 5 kg	0
Instruction manual		۷

EQUIPMENT			
Avia digital readout	X wheel head	V	
Axis digital readout	Z table	V	
Table manual swivelling system for taper grinding with dial gauge		٧	
Wheel head	Wheelhead slides by means of a recirculating ball screw with double preloaded nut, on linear motion guide with roller cage.	٧	
Hydraulic unit for ta	ilstock control	0	
Pneumatic unit		٧	
Centralized lubrication		٧	

### WHEEL HEAD

#### **POSITIONING PRECISION**

The structure is composed of 2 carriages in normalised cast iron.

The upper carriage, where the hydrodynamic spindle is located, has a manual stroke positioning to optimise the use of the grinding wheel

An air flow facilitates the positioning

The lower carriage slides by means of a recirculating ball screw with double preloaded nut, on linear motion guide with roller cage.

The greasing of the guides is timed.

The lower carriage has two movements:

- fast approach by means of an hydraulic cylinder
- working feed by means of a steel screw and bronze preloaded nut

The position of the grinding wheelhead is visualized by a millesimal optical line (resolution 0,001 mm)

#### Wheelhead Rotation 45°

The wheelhead rotates manually +/- 45° On request, the wheelhead rotation may be executed :

- manually
- manually with DRO
- index swivel of 2.5°, with Hirth coupling (manual)

#### WHEELHEAD CONFIGURATION

Wheelhead can be equipped with a second external grinding wheel, mounted on the right side of the same spindle.

#### WHEELHEAD CUSTOMIZATION

To respond to more complex processing, the machinescan be realized according to customer's requirements such as, for example, grinding wheels mounted on two spindles

#### WHEELHEAD SPINDLE

Hydrodynamic type, rotates on anti-friction metal bushes, guaranteeing high finish degree. Rotation is by means of an AC motor. Transmission by means of pulleys and Poly-V belt. The speed is regulated by an inverter

#### CUSTOMIZATION

On request, the machine can mount electrospindles of different power







### WORK HEAD



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#### Dead and Live Spindle Positioning Facilitated by an Air Flow

The structure in normalised, stabilised and well ribbed cast iron, supports the workpiece weight and the force generated by the grinding operation. Equipped with dead and live spindle. The spindle rotates:

 on high precision ball bearings, guaranteeing restricted tolerance and maximum rigidity in the working;

 by means of a AC motor and the rpm adjustments are programmable on the operator panel;

• may be intermittently manual or automatic. The workhead positioning on the table is facilitated by an air flow.

#### Workheads Rotation 90°

Workhead rotates 90 degrees and the rotation can be:

- manual
- manually with DRO\*
- Automatically with Indexing 1° Hirth coupling \*

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Manually with Indexing 1° Hirth coupling \*

#### \*On request



SPINDLE ROTATION ON HIGH PRECISION BALL BEARINGS, GUARANTEEING RESTRICTED TOLERANCE AND MAXIMUM RIGIDITY

### **INTERNAL GRINDING**

The machine ( on request ) may be equipped with Internal Grinding Attachment, which may be mounted in two versions:

- drop down over wheel head
- on rear side of wheel head.

Robbi Group offers a large range of internal grinding spindles that can be :

- belt driven spindles up to 42,000 RPM
- electric spindles up to 120,000 RPM

LARGE RANGE OF QUILLS AND ATTACHMENTS ARE AVAILABLE INTERNAL GRINDING SPINDLE MOUNTED ON REAR SIDE OF WHEEL HEAD



INTERNAL GRINDING SPINDLE MOUNTED DROP DOWN OVER WHEEL HEAD





### WHEEL DRESSING

#### CUSTOMIZABLE ACCORDING TO THE PROCESS REQUIRED

A well dressed grinding wheel is crucial to obtain a high-performance and high-quality grinding process The wheel dresser for external grinding wheels can be mounted on the:

- table
- tailstock
- The wheel dresser support can be:
- fixed
- tilting hydraulic





### **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 competitive 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, proactively, its customers to ensure they maximise the efficiency of the machine.



*Robbi, in fact, offers various service solutions, including the:* 

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



Understanding the needs of our customers we are offer the best solutions and services that increase their return on productivity thus improving our customers return on his investment.

*Ideas that may improve our business are always appreciated from customers.* 

*If there's anything we can do to improve your experience with Robbi, please let us know.* 

*Robbi have a commitment to ensure all customers are completely satisfied.* 

Choose Robbi precision for increased productivity and a faster return on your investment.

*Call us today,we've have a solution for your grinding application.* 



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