

OMICRON

UNIVERSAL CYLINDRICAL GRINDING MACHINES

- CONVENTIONAL
- PLC
- CNC

ROBBI

Precision Since 1936

MADE IN ITALY

Robbi Group srl
Via dell'Industria 7
37040 Veronella - VR
Italia
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39 0442 47966
robbi@robbispa.com
www.robbispa.com

MEMBER COMPANY UCIMU

R

120 kg

CON



600 ÷ 1.000 mm

E

250 kg



600 ÷ 1.500 mm

P

1.200 kg

M

4.000 kg

SEMI

CNC





32

600 ÷ 1.000 mm

630 ÷ 1.000 mm





36

630 ÷ 2.030 mm





60

1.150 ÷ 3.150 mm





80

3.000 ÷ 8.000 mm

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

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

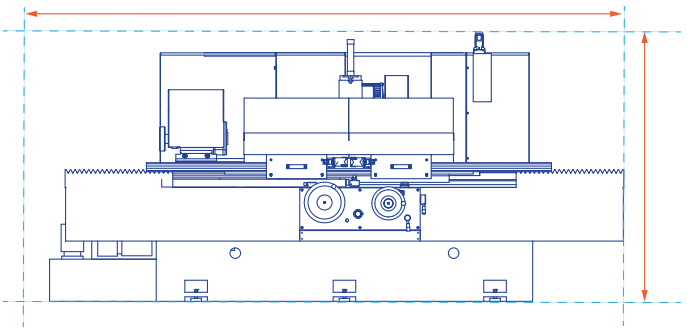
	Division on diameter (mm)
Main handwheel	0,01
Micrometric handwheel	0,001
Automatic Zero Stop	

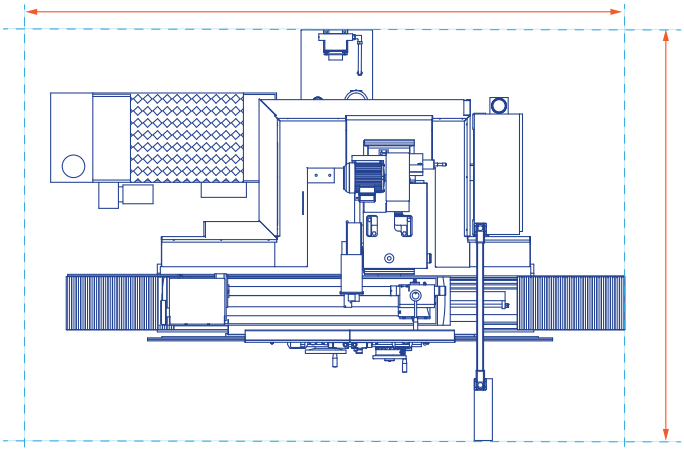


OMICRON R









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[1]	max. 40		kg

TABLE(Z-AXIS)	600	1000	
Automatic table traverse	max. 680	1080	mm
Swivel on either side	+9°	+8°	
	-5°	-4°	
Automatic traverse min.	3		mm
Hydraulic translation speed	0-5000		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[3]	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.	+/- 180°
Stroke	max	180 mm
Fast hydraulic stroke		50 mm
Handwheel feed stroke		130 mm
Rotation speed (inverter)	600-1600	rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter	max.	450	mm
Hole		127	mm
Width	min.	20	mm
	max.	50	mm

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

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

MOTORS		
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



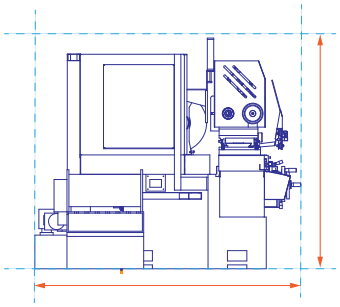


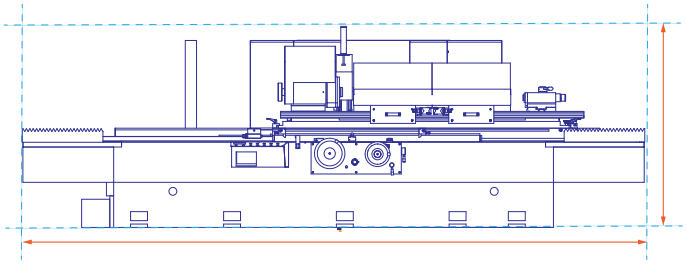
BREAST BAR ALIGNMENT DEVICE
(Optional)

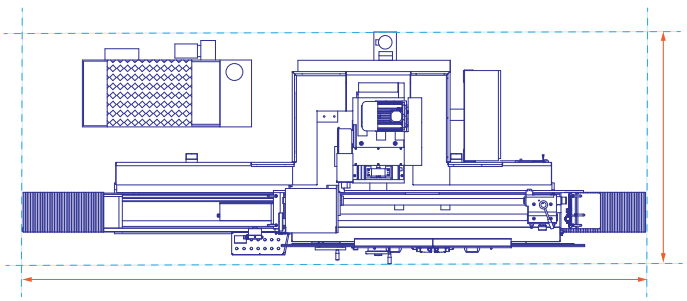
[1]150 mm from workhead spindle nose [2]Without Inverter [3]Option

OMICRON E









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 [3]	mm
Swing over table		max.	355	455 [3]	mm
Weight on centers		max.	250	300 [3]	kg
Cantilever weight[1]		max.	60	150 [3]	kg

TABLE (Z - AXIS)		600	1000	1500	
Automatic table traverse	max.	780	1180	1680	mm
Swivel on either side		+9°	+8°	+7°	
		-5°	-4°	-3°	
Automatic traverse		min.		3	mm
Hydraulic translation speed				0-5000	mm/min
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[3]	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)			600-1600 rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter		450-500 [3]	mm
Hole		127	mm
Width	min.	20	mm
	max.	80	mm

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

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

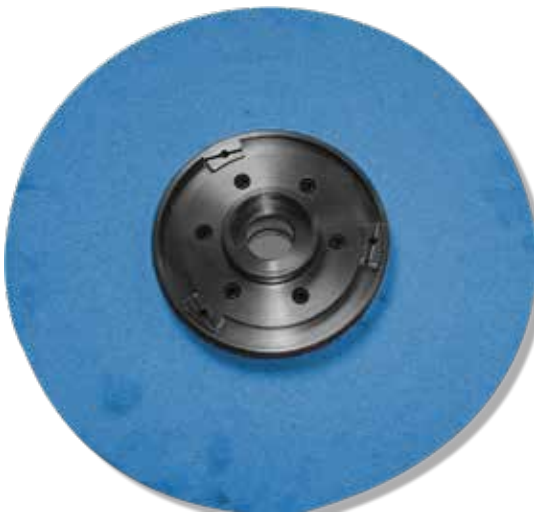
MOTORS	600	1000	1500	
Wheelhead	5,50	5,50	5,50	kW
Workhead	1,50	1,50	2,20	kW
Hydraulic power pack [3]	0,75	0,75	0,75	kW
Coolant pump	0,18	0,18	0,18	kW

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





[1] 150 mm from workhead spindle nose [2] Without Inverter [3] Option

OMICRON T6: PLC

AUTOMATED AND ECONOMIC GRINDERS



AUTOMATIC AND MANUAL OPERATIONS GRINDERS

- Excellent versatility and high quality standards
- Extremely fast and precise also when processing complex components
- Easy preset of working diameter
- Single or small batch production workpieces, with the ability to function both in manual or automatic-mode
- Automatic compensation of diameter after dressing
- In-process measuring gauge and gap control system (on request)

STANDARD OPERATOR PANEL



Simple Human-Machine Interface

- Wheelhead and table position visualized on operator panel
- Possibility 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

Axis		Automatic	Manual
X	Movement of wheel head	√	√
Z	Movement of table	√	√

Selection of the electronic handwheel division

Working Cycles with Easy Programming

	OD	ID
PASS	√	√
PLUNGE	√	√
FACING	√	
MULTI DIAMETER	√	√

- 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

Operator Panel (Optional)



Parametric Screens





OMICRON R T6



COMPLETE CLOSURE - TYPE B

REMOTE HANDWHEEL (Optional)



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[1]			max. 40	kg

TABLE (Z - AXIS)		600	1000	
Automatic table traverse	max.	680	1080	mm
Swivel on either side		+9°	+8°	
		-5°	-4°	
Automatic traverse min.			3	mm
Speed			1-5000	mm/min
Handwheel division	0,001	0,01	0,1	mm

WORKHEAD			
Rotation speed		0-600	rpm
Spindle hole diameter		26	mm
Internal center taper		4	MT
External center taper [3]		5	ASA
Swivel		90°	

TAIL STOCK			
Spindle stroke	25	50[3]	mm
Spindle diameter	43	70[3]	mm
Internal center taper	4		MT

WHEEL HEAD (X - AXIS)				
Swivel	max.		+/- 180°	
Handwheel division	0,001	0,01	0,1	mm
Manual position travel			250	mm
Stroke	max		480	mm
Speed	max	0,2-3000		mm/min
Rotation speed (inverter)		600-1600		rpm

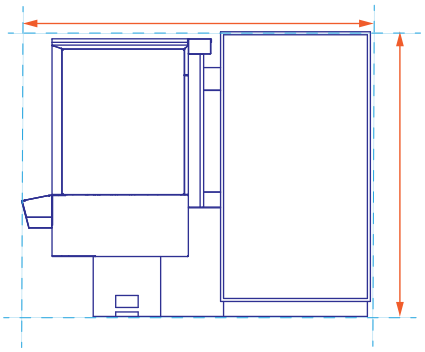
GRINDING WHEEL SPECIFICATIONS			
Diameter	max.	450	mm
Hole		127	mm
Width	min.	20	mm
	max.	50	mm

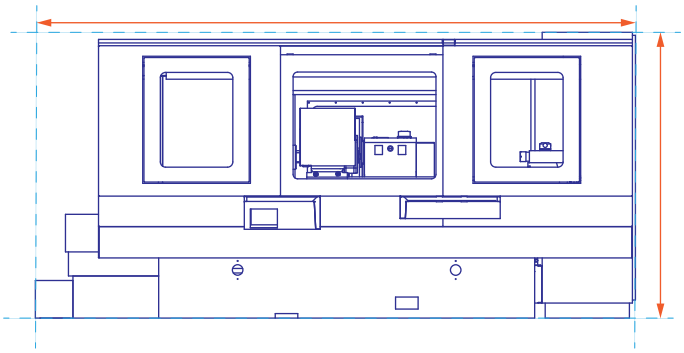
WORKING FEEDS	(mm)
Minimum programmable feed	0,001

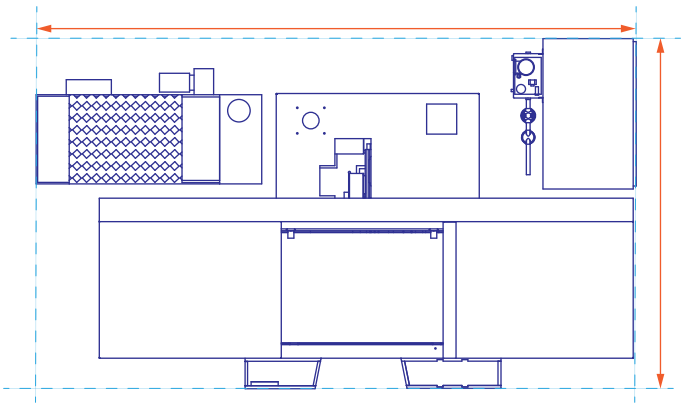
INTERNAL GRINDING ATTACHMENT		
Hole diameter for spindle	80	mm
Electric motor	1,50	kW

MOTORS		
Wheelhead	4,00	kW
Workhead	0,75	kW
Wheelhead feed (X axis)	3,00	Nm
Table feed (Z axis)	6,00	Nm
Hydraulic power pack [3]	0,75	kW
Coolant pump	0,18	kW

DIMENSIONS	600	1000	
Length	2900	3550	mm
Width	1350	1350	mm
Height	1750	1900	mm
Net weight	2800	3500	Kg





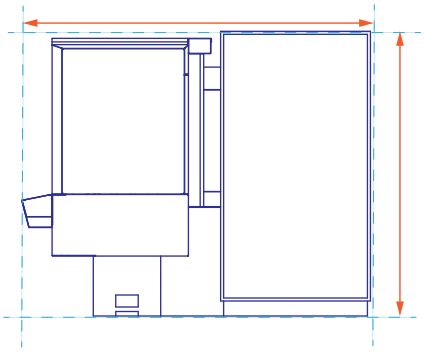


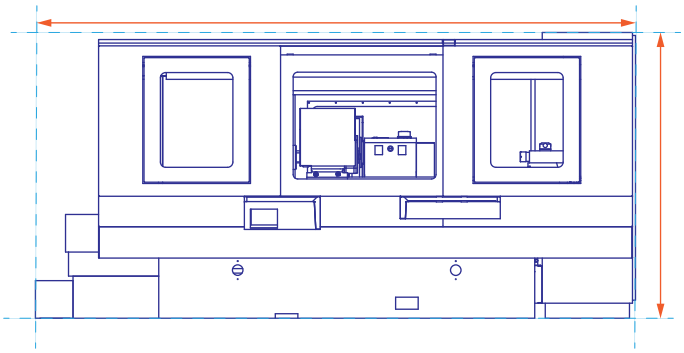
[1] 150 mm from workhead spindle nose [2] Without Inverter [3] Option

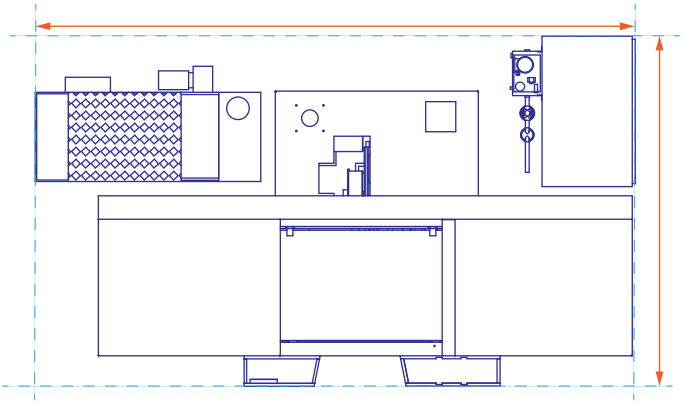
OMICRON E T6



ESSENTIAL REPAIR - C TYPE







WORKING CAPACITY		600	1000	1500	2000	
Distance between centers	max.	630	1030	1530	2030	mm
Grinding length	max.	630	1030	1530	2030	mm
Height of centers over table				180	230[3]	mm
Swing over table			max.	355	455[3]	mm
Weight on centers			max.	250	300[3]	kg
Cantilever weight[1]			max.	80	80	kg

TABLE (Z - AXIS)		600	1000	1500	2000	
Automatic table traverse	max.	780	1180	1680	2180	mm
Swivel on either side		+9° -5°	+8° -4°	+7° -3°	+6° -2°	
Automatic traverse	min.				3	mm
Speed					1-5000	mm/min
Handwheel division		0,001	0,01	0,1		mm

WORKHEAD		
Rotation speed	0-600	rpm
Spindle hole diameter	31	mm
Internal center taper	5	MT
External center taper[3]	5	ASA
Swivel	90°	

TAIL STOCK		
Spindle stroke	35 70[3]	mm
Spindle diameter	48 70[3]	mm
Internal center taper	4 5	MT

WHEEL HEAD (X - AXIS)				
Swivel	max.		+/- 180°	
Handwheel division	0,001	0,01	0,1	mm
Manual position travel			250	mm
Stroke	max		480	mm
Speed	max	0,2-3000		mm/min
Rotation speed (inverter)	600-1600			rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter		450-500[3]	mm
Hole		127	mm
Width	min.	20	mm
	max.	80	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT		
Hole diameter for spindle	100	mm
Electric motor	1,50	kW

MOTORS	600	1000	1500	2000	
Wheelhead		5,50 - 7,50[3]			kW
Workhead		1,50 - 2,20[3]			kW
Wheelhead feed (X axis)		3,00			Nm
Table feed (Z axis)		11,00			Nm
Hydraulic power pack [3]		0,75			kW
Coolant pump		0,18			kW

DIMENSIONS	600	1000	1500	2000	
Length	2900	3700	5200	6600	mm
Width	1500	1500	1500	1500	mm
Height	2100	2100	2100	2100	mm
Net weight	3800	4700	6200	7700	Kg



LATERAL REMOTE HANDWHEEL (Optional)



[1]150 mm from workhead spindle nose [2]Without Inverter [3]Option

OMICRON P T6

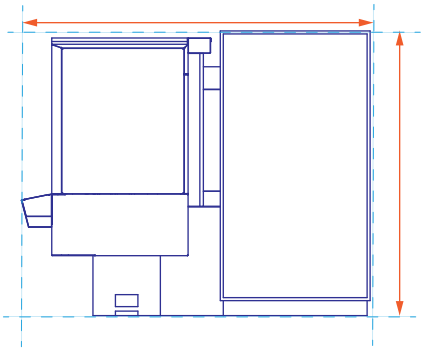


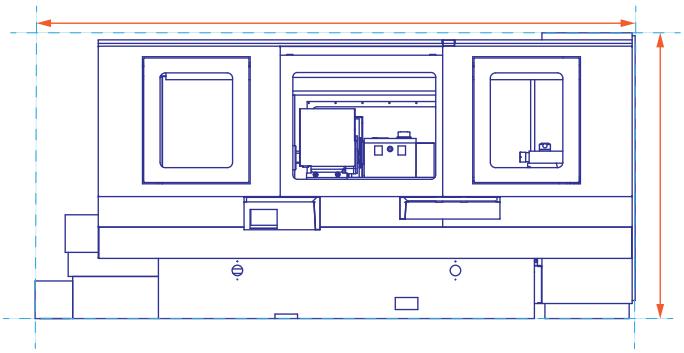
ESSENTIAL REPAIR - C TYPE

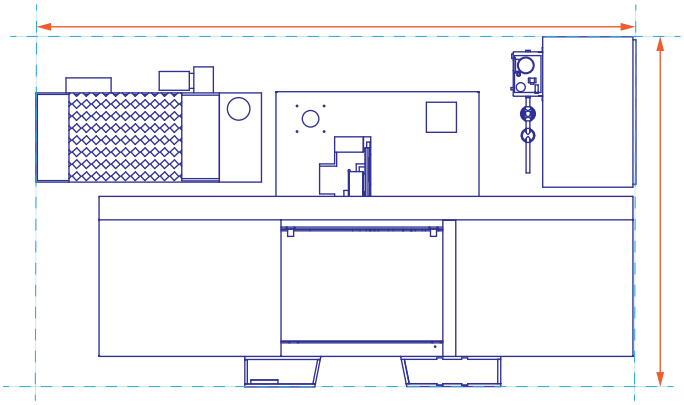


ESSENTIAL REPAIR - C TYPE (rear view)









WORKING CAPACITY		1000	1500	2000	3000	
Distance between centers	max	1150	1750	2250	3150	mm
Grinding length	max	1000	1600	2100	3000	mm
Height of centers over table				300	350 [3]	mm
Swing over table			max.	595	695 [3]	mm
Weight on centers			max.	1200		kg
Cantilever weight[1]			max.	120		kg

TABLE (Z - AXIS)		1000	1500	2000	3000	
Automatic table traverse	max.	1150	1650	2150	3050	mm
Swivel on either side		+8° -4°	+7° -3°	+6° -2°	+5° -1°	
Automatic traverse		min.			3	mm
Speed					1-5000	mm/min
Handwheel division		0,001	0,01	0,1		mm

WORKHEAD		
Rotation speed	0-300	rpm
Spindle hole diameter	44	mm
Internal center taper	6	MT
External center taper[3]	8	ASA
Swivel	90°	

TAIL STOCK		
Spindle stroke	70	mm
Spindle diameter	80	mm
Internal center taper	5	MT

WHEEL HEAD (X - AXIS)				
Swivel		max.	+/- 180°	
Handwheel division	0,001	0,01	0,1	mm
Manual position travel			250	mm
Stroke		max	480	mm
Speed	max	0,2-3000		mm/min
Rotation speed (inverter)		600-1250		rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter	max.	610	mm
Hole		230	mm
Width	min.	50	mm
	max.	120	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT			
Hole diameter for spindle	100	120[3]	mm
Electric motor	2,20	4,00[3]	kW

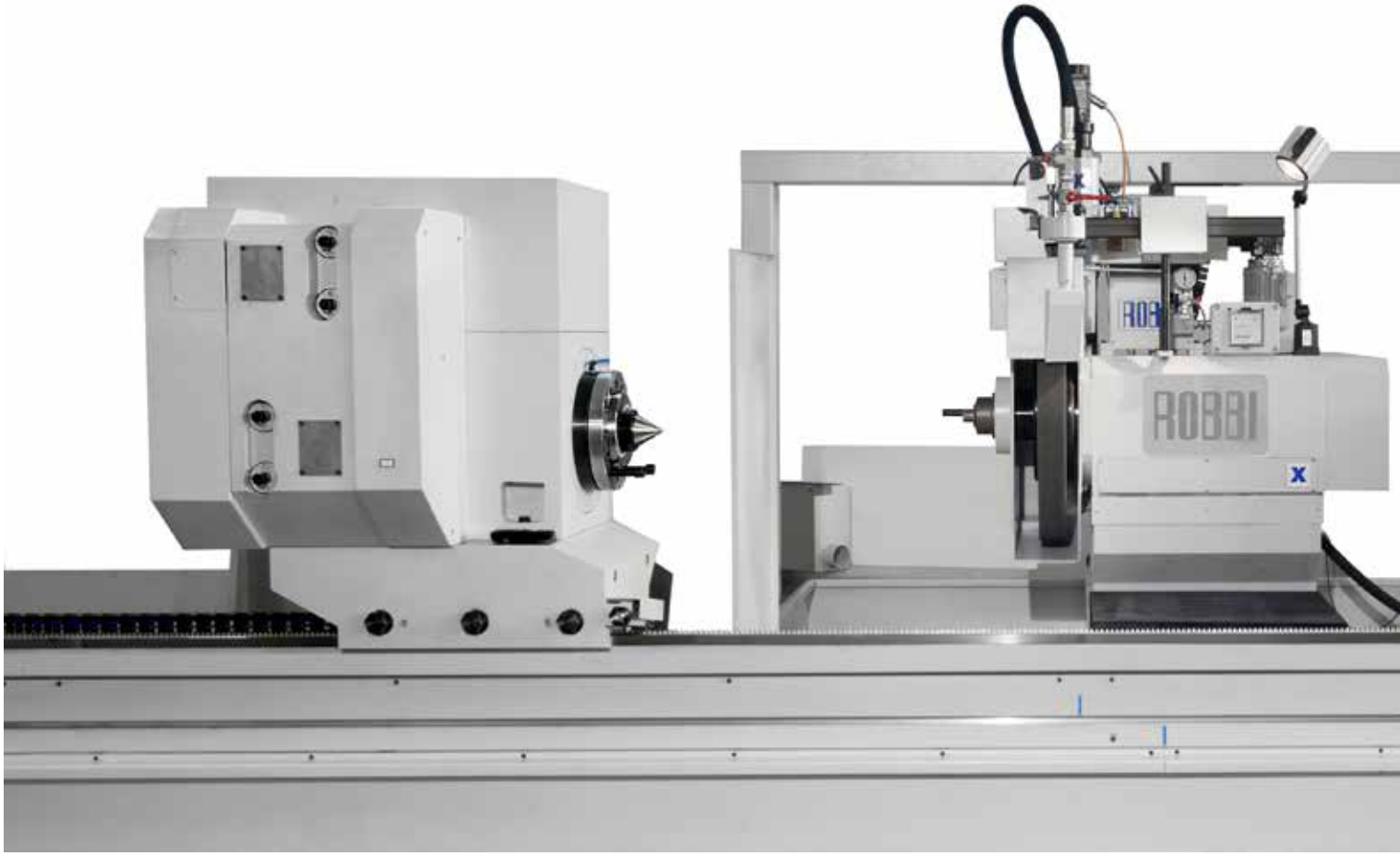
MOTORS			
Wheelhead	11,00	15,00[3]	kW
Workhead	4,0	5,5[3]	kW
Wheelhead feed (X axis)		6,00	Nm
Table feed (Z axis)		11,00	Nm
Hydraulic power pack		0,75	kW
Coolant pump		0,18	kW

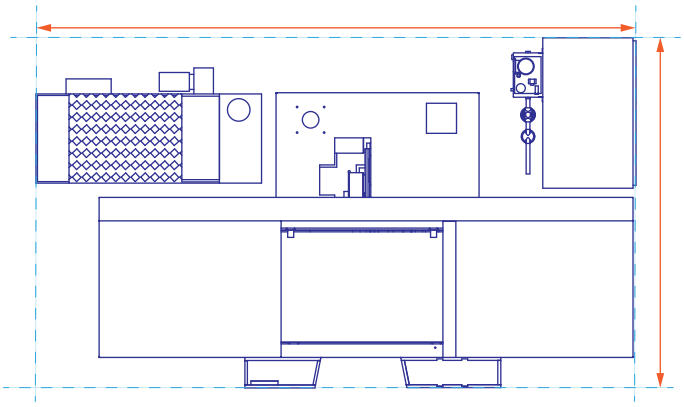
DIMENSIONS	1000	1500	2000	3000	
Length	5200	5700	6850	9000	mm
Width	1950	1950	1950	1950	mm
Height	2100	2100	2100	2100	mm
Net weight	6800	8100	9300	11000	Kg

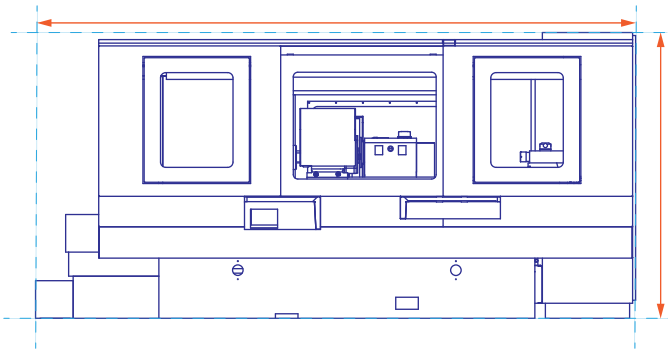
[1] *150 mm from workhead spindle nose* [2] *Without Inverter* [3] *Option*

OMICRON M T6

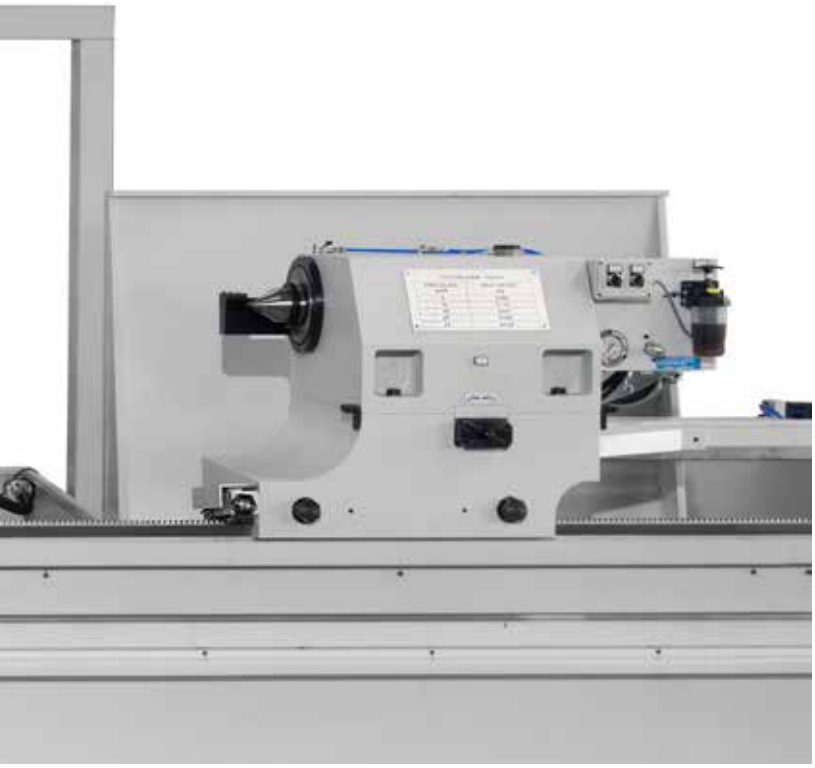


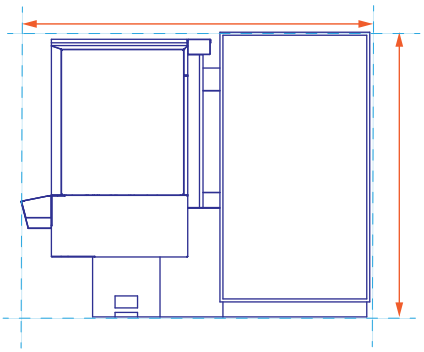












WORKING CAPACITY		3000	4000	5000	6000	8000	
Distance between centers	max	3000	4000	5000	6000	8000	mm
Grinding length	max	3000	4000	5000	6000	8000	mm
Height of centers over table				400	450 [3]	500 [3]	mm
Swing over table	max.			795	895 [3]	955 [3]	mm
Weight on centers	max.				4000		kg
Cantilever weight[1]	max.				180		kg

TABLE (Z - AXIS)		3000	4000	5000	6000	8000	
Automatic table traverse	max	3200	4200	5200	6200	8200	mm
Swivel on either side		+5° -1°	+4° -1°	+3° -1°	+2° -1°	+0° -0°	
Automatic traverse	min.					3	mm
Speed						1-5000	mm/min
Handwheel division			0,001		0,01	0,1	mm

WORKHEAD		
Rotation speed	0-150	rpm
Spindle hole diameter	44	mm
Internal center taper	6 MT -8 METRICO [3]	
External center taper [3]	8 ASA	
Swivel	90°	

TAIL STOCK		
Spindle stroke	80	mm
Spindle diameter	120	mm
Internal center taper	6 MT	

WHEEL HEAD (X - AXIS)			
Swivel	max.	+/- 180°	
Handwheel division	0,001	0,01	0,1 mm
Manual position travel		250	mm
Stroke	max	480	mm
Speed	max	0,2-3000	mm/min
Rotation speed (inverter)	600-1250		rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter	760-1200		mm
Hole	305		mm
Width	min.	50	mm
	max.	120	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT			
Hole diameter for spindle	100	120 [3]	mm
Electric motor	2,20	4,00 [3]	kW

MOTORS		
Wheelhead	15,00	kW
Workhead	7,50	kW
Wheelhead feed (X axis)	6,00	Nm
Table feed (Z axis)	36,00	Nm
Hydraulic power pack	1,50	kW
Coolant pump	0,18	kW

DIMENSIONS	3000	4000	5000	6000	8000	
Length	9860	12260	14000	16500	18500	mm
Width	2400	2400	2400	2400	2400	mm
Height	2650	2650	2650	2650	2650	mm
Net weight	23000	25000	27500	30000	35000	Kg

[1] 150 mm from workhead spindle nose [2] Without Inverter [3] Option

OMICRON CNC



THE POWER OF THE CNC AND THE PROCESS SIMPLICITY

- The work cycle can be optimised in-process with geometrical and working parameters.
- The CNC grinding machines versions were developed in response to needs for medium-high production volumes.
- Equipped with the latest-generation of SIEMENS 840D sl control system.
- Machines can be equipped with automatic measurement devices to process complex components.
- The CNC allows the operator to profile the grind wheel specifically to create geometries for the type of job required.
- High precision crowning operations can be performed by equipping the machines with a third interpolated axis and a bespoke software for this processes.

EASY PROGRAMMING

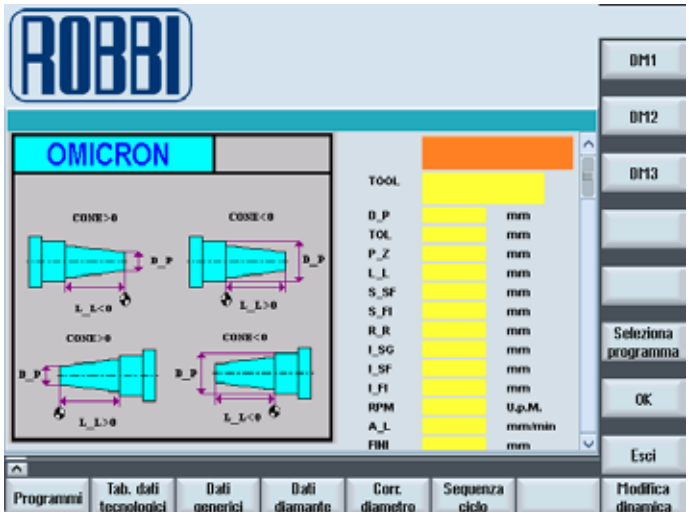
The machine operator may create a program, even complex, without ISO programming knowledge.

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.



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.

Easy Human Interface





Complete Closure - A Type

Standard Programs Supplied with the Machine

	OD	ID
PASS	√	√
PLUNGE	√	√
FACING	√	√
MULTI PLUNGE	√	
ANGULAR PLUNGE	√	√
TAPER	√	√

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

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.

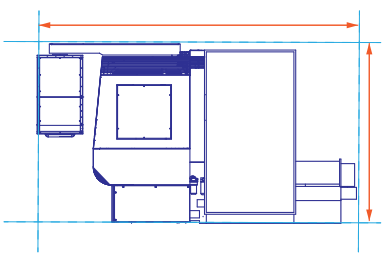
AUTOMATICALLY
The machine executes, before the finishing operation, the shoulder grinding operation, up to the programmed quote.

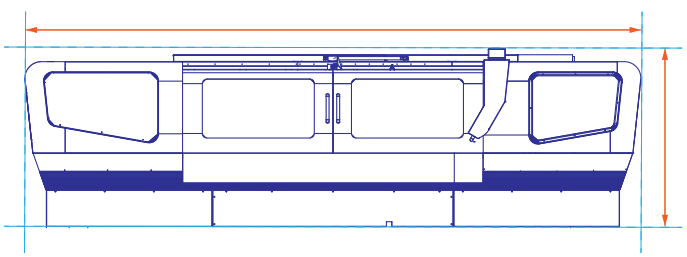
AUTOMATICALLY WITH GAP CONTROL
The machine executes, before the finishing operation, an automatic research of the shoulder to be ground by using the gap control. After the contact, the cycle automatically removes the quantity of programmed material . After the shoulder grinding operation it is possible, 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 cycletime

OMICRON CNC 32^{xx}



COMPLETE CLOSURE - A TYPE







WORKING CAPACITY		3206	3210	
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[1]	max.	40		kg

TABLE (Z - AXIS)				
		3206	3210	
Automatic table traverse	max.	680	1080	mm
Swivel on either side		+9°	+8°	
		-5°	-4°	
Automatic traverse min.		3		mm
Speed		1-5000		mm/min
Handwheel division	0,001	0,01	0,1	mm

WORKHEAD		
Rotation speed	0-600	rpm
Spindle hole diameter	26	mm
Internal center taper	4	MT
External center taper	5	ASA
Swivel	90°	

TAIL STOCK		
Spindle stroke	50	mm
Spindle diameter	70	mm
Internal center taper	4	MT

WHEEL HEAD (X - AXIS)				
Swivel	max.	+/- 180°		
Handwheel division	0,001	0,01	0,1	mm
Manual position travel		130		mm
Stroke	max	200		mm
Speed	max	0,2-3000		mm/min
Rotation speed (inverter)		600-1600		rpm

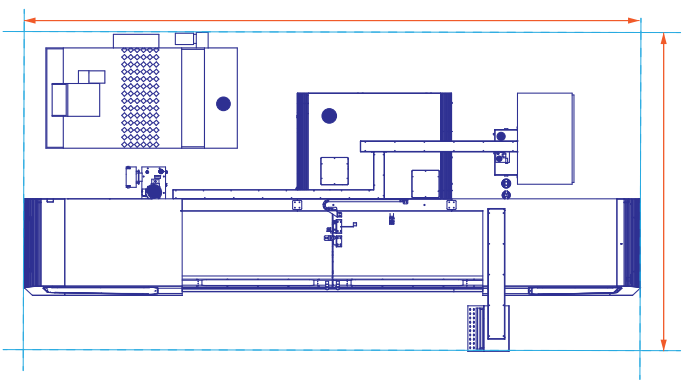
GRINDING WHEEL SPECIFICATIONS			
Diameter	max.	450	mm
Hole	ø	127	mm
Width	min.	20	mm
	max.	50	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT		
Hole diameter for spindle	80	mm
Electric motor	1,50	kW

MOTORS		
Wheelhead	4,00	kW
Workhead	0,75	kW
Wheelhead feed (X axis)	3,00	Nm
Table feed (Z axis)	6,00	Nm
Hydraulic power pack	0,75	kW
Coolant pump	0,18	kW

DIMENSIONS	3206	3210	
Length	2900	3700	mm
Width	1350	1350	mm
Height	1750	1900	mm
Net weight	3700	4900	Kg



[1] 150 mm from workhead spindle nose [2] Without Inverter [3] Option

OMICRON CNC 36XX









WORKING CAPACITY		3606	3610	3615	3620	
Distance between centers	max.	630	1030	1530	2030	mm
Grinding length	max.	630	1030	1530	2030	mm
Height of centers over table				180	230[3]	mm
Swing over table			max.	355	455[3]	mm
Weight on centers			max.	250	300[3]	kg
Cantilever weight[1]			max.	80	80	kg

TABLE (Z - AXIS)		3606	3610	3615	3620	
Automatic table traverse	max.	780	1180	1680	2180	mm
Swivel on either side		+9°	+8°	+7°	+6°	
		-5°	-4°	-3°	-2°	
Automatic traverse	min.		4			mm
Speed			1-5000			mm/min
Handwheel division		0,001	0,01	0,1		mm

WORKHEAD		
Rotation speed	0-600	rpm
Spindle hole diameter	31	mm
Internal center taper	5	MT
External center taper	5	ASA
Swivel	90°	

TAILSTOCK		
Spindle stroke	70	mm
Spindle diameter	70	mm
Internal center taper	5	MT

WHEEL HEAD (X - AXIS)			
Swivel	max.	+/- 180°	
Handwheel division	0,001	0,01	0,1 mm
Manual position travel		200	mm
Stroke	max	380	mm
Speed	max	0,2-3000	mm/min
Rotation speed (inverter)		600-1600	rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter		450-500[3]	mm
Hole		127	mm
Width	min.	20	mm
	max.	80	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT		
Hole diameter for spindle	100	mm
Electric motor	1,50	kW

MOTORS	3606	3610	3615	3620	
Wheelhead		5,50 - 7,50[3]			kW
Workhead		1,50 - 2,20[3]			kW
Wheelhead feed (X axis)		3,00			Nm
Table feed (Z axis)		11,00			Nm
Hydraulic power pack [3]		0,75			kW
Coolant pump		0,18			kW

DIMENSIONS	3606	3610	3615	3620	
Length	2900	3700	5200	6600	mm
Width	1500	1500	1500	1500	mm
Height	2100	2100	2100	2100	mm
Net weight	3800	4700	6200	7700	Kg

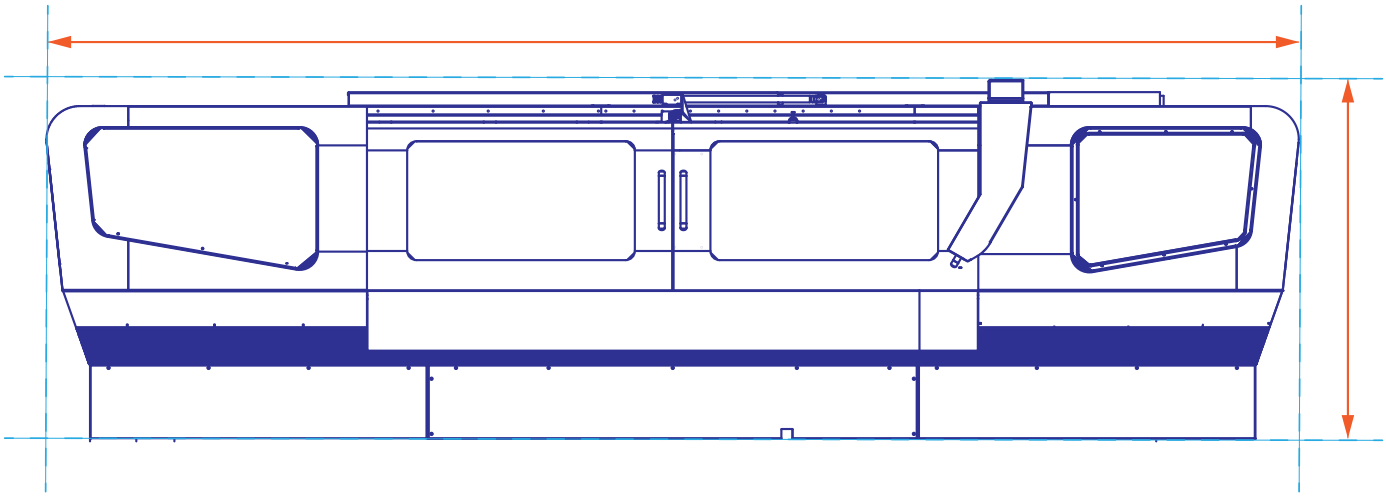
[1] 150 mm from workhead spindle nose [2] Without Inverter [3] Option

OMICRON CNC 60^XX



COMPLETE CLOSURE - A TYPE







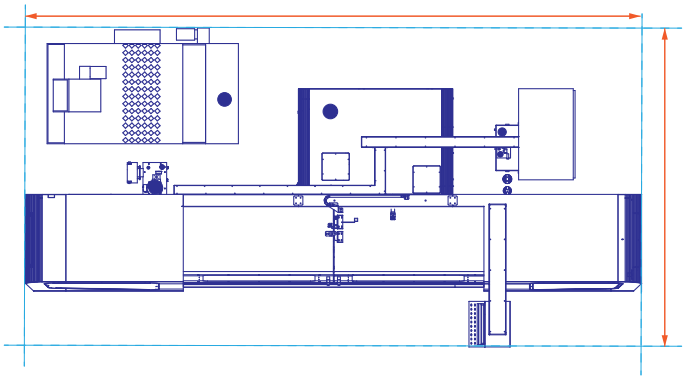
WORKING CAPACITY		6010	6015	6020	6030	
Distance between centers	max.	1150	1750	2250	3150	mm
Grinding length	max.	1000	1600	2100	3000	mm
Height of centers over table				300	350[3]	mm
Swing over table			max.	595	695[3]	mm
Weight on centers			max.	1200		kg
Cantilever weight[1]			max.	120		kg

TABLE (Z - AXIS)		6010	6015	6020	6030	
Automatic table traverse	max.	1150	1650	2150	3050	mm
Swivel on either side		+8° -4°	+7° -3°	+6° -2°	+5° -1°	
Automatic traverse min.			3			mm
Speed			1-5000			mm/min
Handwheel division		0,001	0,01	0,1		mm

WORKHEAD		
Rotation speed	0-350	rpm
Spindle hole diameter	44	mm
Internal center taper	6	MT
External center taper	8	ASA
Swivel	90°	

TAIL STOCK		
Spindle stroke	70	mm
Spindle diameter	80	mm
Internal center taper	5	MT

WHEEL HEAD (X - AXIS)			
Swivel	max.	+/- 180°	
Handwheel division	0,001	0,01	0,1 mm
Manual position travel		250	mm
Stroke	max	480	mm
Speed	max	0,2-3000	mm/min
Rotation speed (inverter)		600-1250	rpm

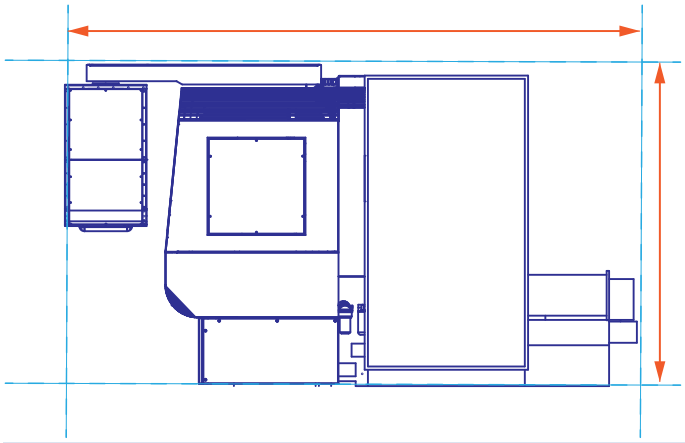


GRINDING WHEEL SPECIFICATIONS			
Diameter	max.	610	mm
Hole		230	mm
Width	min.	50	mm
	max.	120	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT			
Hole diameter for spindle	100	120[3]	mm
Electric motor	2,20	4,00[3]	kW

MOTORS	
Wheelhead	15,00kW
Workhead	3,60kW
Wheelhead feed (X axis)	6,00 Nm
Table feed (Z axis)	11,00 Nm
Hydraulic power pack	0,75kW
Coolant pump	0,18kW



DIMENSIONS	6010	6015	6020	6030	
Length	5200	5700	6850	9000	mm
Width	1950	1950	1950	1950	mm
Height	2100	2100	2100	2100	mm
Net weight	6800	8100	9300	11000	Kg

[1] *150 mm from workhead spindle nose* [2] *Without Inverter* [3] *Option*

OMICRON CNC 80^{xx}









WORKING CAPACITY		8030	8040	8050	8060	8080	
Distance between centers	max	3000	4000	5000	6000	8000	mm
Grinding length	max	3000	4000	5000	6000	8000	mm
Height of centers over table				400	450[3]	500[3]	mm
Swing over table	max.			795	895[3]	955[3]	mm
Weight on centers	max.			4000			kg
Cantilever weight[1]	max.			180			kg

TABLE (Z - AXIS)		8030	8040	8050	8060	8080	
Automatic table traverse	max	3200	4200	5200	6200	8200	mm
Swivel on either side		+5° -1°	+4° -1°	+3° -1°	+2° -1°	+0° -0°	
Automatic traverse	min.			4			mm
Speed				1-5000			mm/min
Handwheel division		0,001	0,01	0,1			mm

WORKHEAD		
Rotation speed	0-150	rpm
Spindle hole diameter	44	mm
Internal center taper	6	MT
External center taper	8	ASA
Swivel	90°	

TAIL STOCK		
Spindle stroke	80	mm
Spindle diameter	120	mm
Internal center taper	6	MT

WHEEL HEAD (X - AXIS)			
Swivel	max.	+/- 180°	
Handwheel division	0,001	0,01	0,1 mm
Manual position travel		250	mm
Stroke	max	480	mm
Speed	max	0,2-3000	mm/min
Rotation speed (inverter)	600-1250		rpm

GRINDING WHEEL SPECIFICATIONS			
Diameter		760-1200	mm
Hole		305	mm
Width	min.	50	mm
	max.	120	mm

WORKING FEEDS	(mm)
Minimum programmable feed	0,001

INTERNAL GRINDING ATTACHMENT			
Hole diameter for spindle	100	100[3]	mm
Electric motor	2,20	4,00[3]	kW

MOTORS			
Wheelhead	15,00	18,00[3]	kW
Workhead	7,50		kW
Wheelhead feed (X axis)	6,00		Nm
Table feed (Z axis)	36,00		Nm
Hydraulic power pack	1,50		kW
Coolant pump	0,18		kW

DIMENSIONS	8030	8040	8050	8060	8080	
Length	9860	12260	14000	16500	18500	mm
Width	2400	2400	2400	2400	2400	mm
Height	2650	2650	2650	2650	2650	mm
Net weight	23000	25000	27500	30000	35000	Kg

[1]150 mm from workhead spindle nose *[2]Without Inverter* *[3]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

			CON	SEMI	CNC
TABLE	Automatic table longitudinal movement	hydraulic cylinder	√		
		re-circulating ball screw with preloaded nut		√	√
	Large ground guides, accurately hand scrapped to permit a better sliding		√		
	Micrometric device with dial gauge for taper control		√	√	√
	Machines with distance between centers of more than 4000 mm, the swivelling is facilitated and more precise with teh an air cushion system			√	√
DRESSER	External diamond dresser on the tailstock		√	√	√
	Grinding wheel dressing with radius on the edges and interpolation between X and Z				√
	External wheel dresser support mounted on headstock				O
	High frequency diamond roll (dressing wheels in CBN or PCD)			O	O
	Internal diamond dressing device positioned on the table		√	√	√
	Internal wheel dresser support, tilting hydraulic			O	O
Electrical Plant Cabinet The internal temperature of the cabinet is controlled by an air-conditioning unit.			O	O	√
Hydraulic Cylinder Drive		tabel and wheelhead movement	√		
		tailstock	O	O	V
Re-Circulating Ball Screw nuts: Grease Lubricated				√	√
COOLANT PLANT	Automatic opening and closing coolant flow		√	√	√
	Large capacity tank for the coolant complete with electro pump		√	√	√
	Coolant plant with combined magnetic+paper roll cleaner.		O	O	√
Fixed Steel Sheets Installed on the Bed Sides				√	√
Complete Closure			O	O	O

Standard Equipment

			CON	SEMI	CNC
Coolant equipment complete with pump, electrical equipment, tank, pipes and nozzle			√	√	√
Coolant Filters		Magnetic and paper roll	O	O	√
		Paper roll	O	O	
		Magnetic	O	O	
Grinding wheel	One Grinding Wheel		√	√	√
	Flange		√	√	√
	Balancing arbor		√	√	√
	Extractor		√	√	√
2 hard metal tipped centres				√	√
Set of levelling screws and plates			O	O	O
2 cloth bellows for table guide protection			√	√	√
Set of	service spanners		√	√	√
	hexagonal spanners		√	√	√
Oil for lubrication		wheel spindle 5 kg		√	√
		guide 5 kg	O	O	O
Instruction manual			√	√	√

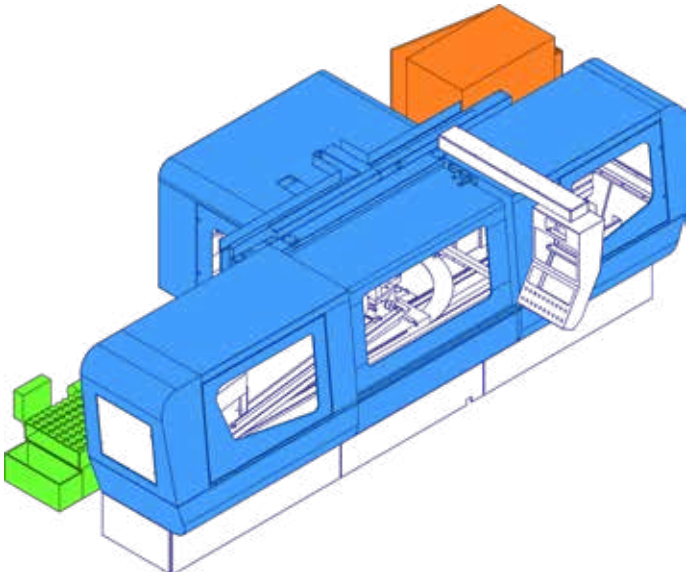
Equipment

			CON	SEMI	CNC
Axis digital readout		X wheel head	√	O	√
		Z table	√	O	O
Wheel head and table automatic electronic feeds controlled by brushless motors				√	√
Re-circulating ball screw with preloaded nut		X wheel head		√	√
		Z table		√	√
Table manual swivelling system for taper grinding with dial gauge			√	√	√
Wheelhead	Wheelhead slides by means of a recirculating ball screw with double pre-loaded nut, on linear motion guide with roller cage.		√	√	√
Hydraulic unit for tailstock control			O	O	√
Pneumatic unit			√	√	√
Centralized lubrication			√	√	√

Encloser

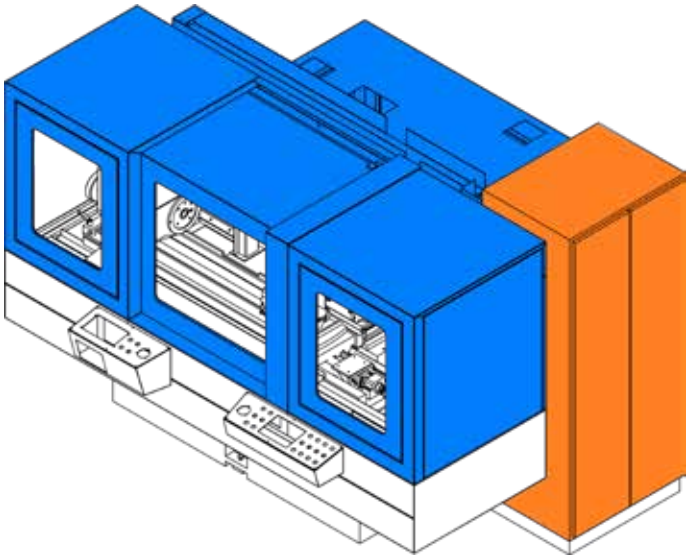
Type A - Rounded

- Complete Encloser
- Elegant
- Balanced Style



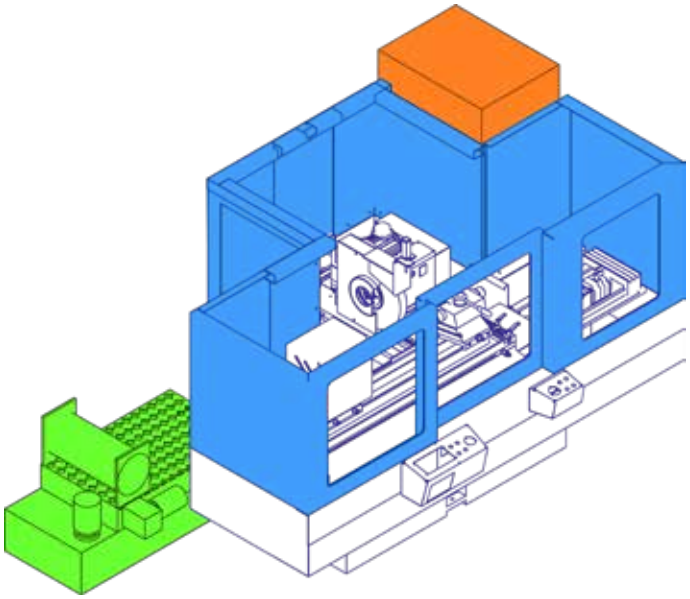
Type B - Square

- Complete Encloser
- Functional
- Essential



Tipo C - Standard

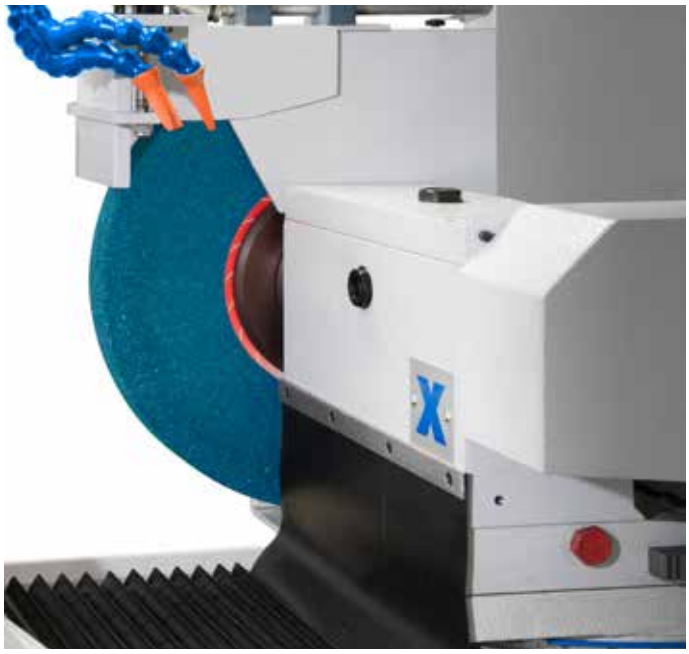
- Open Top
- Functional



Wheelhead

Positioning Precision

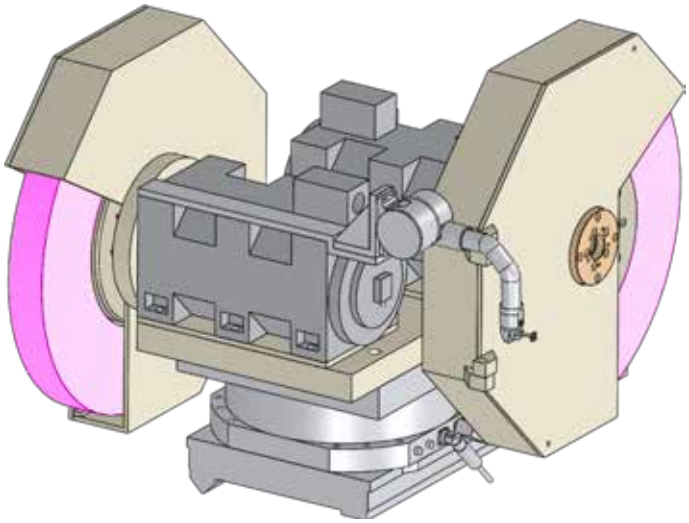
The structure is composed of two carriages in normalised cast iron.
The upper carriage where the hydrodynamic spindle is located, has a manual stroke positioning to optimise the use of the grinding wheel
An air flow facilitates the positioning
The lower carriage slides by means of a recirculating ball screw with double preloaded nut, on linear motion guide with roller cage.
The greasing of the guides is timed.
The brushless motor which moves the screw, may be controlled (on request) with a closed loop by the incremental linear encoder, which guarantees a positioning precision on the complete stroke of 0,0001 mm



Wheelhead Rotation 180°

The wheelhead rotates manually 180°.
On request, the wheelhead rotation of 180° may be executed :

- manually
- manually with DRO
- index swivel of 2.5°, with Hirth coupling :
  - manual
  - automatic with brushless motor
- in continue with TORQUE motor



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 iby means of an AC motor.
Transmission by means of pulleys and Poly-V belt.
The speed is regulated by inverter

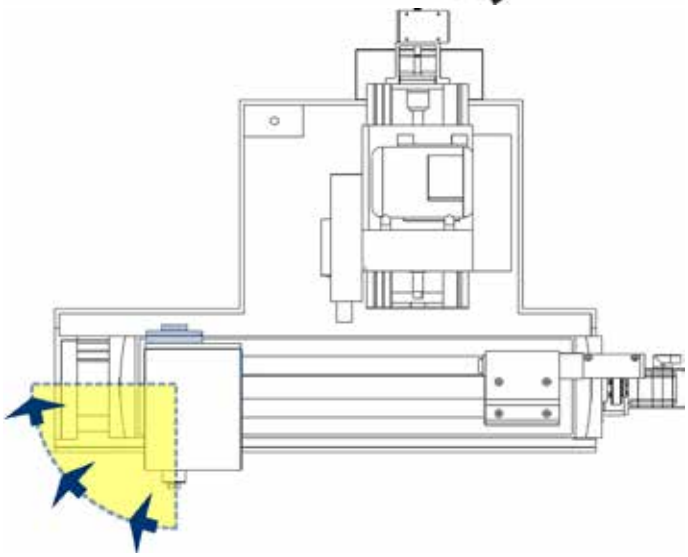


Customization

On request electrospindle of different power can be assembled

Workhead





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.

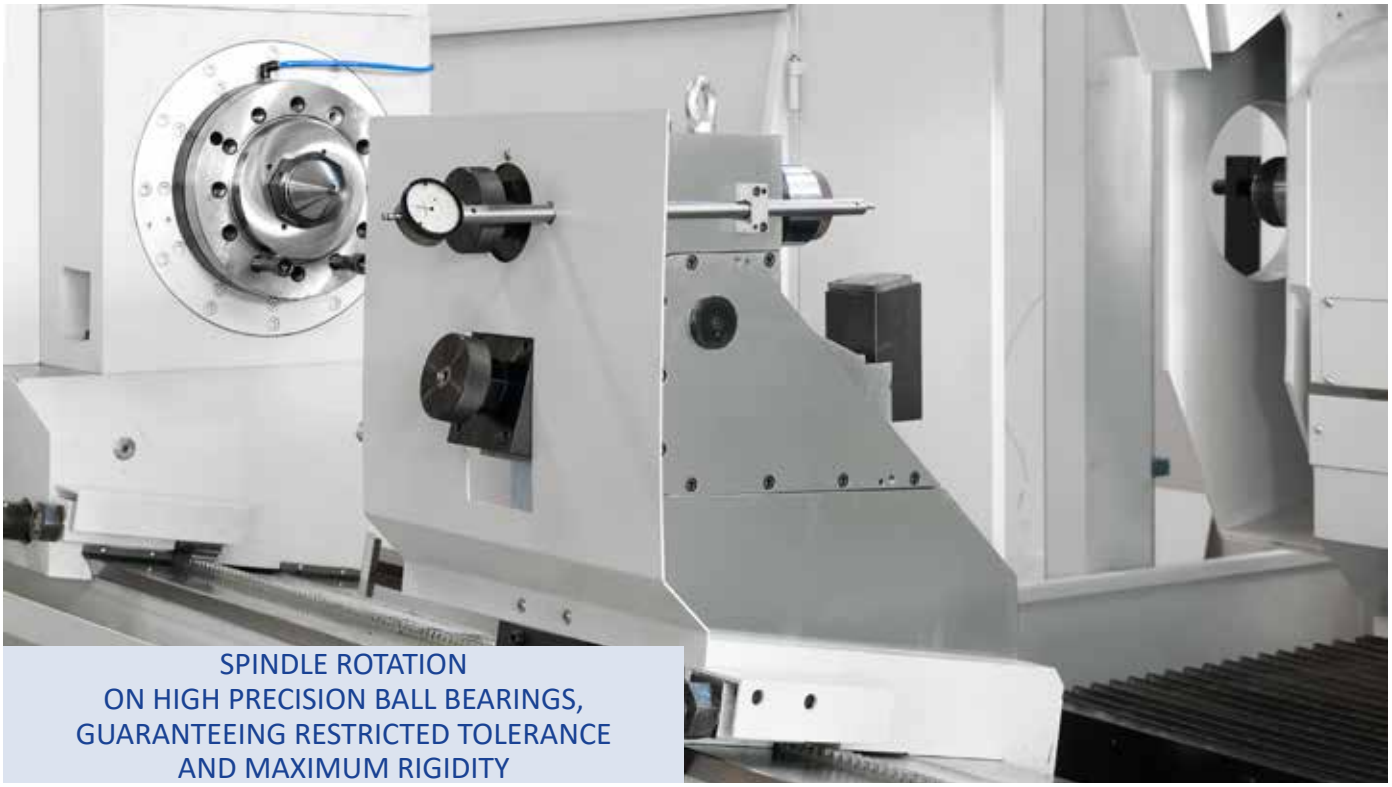
The workhead positioning on the table is facilitated by an air flow.

Workheads Rotation 180°

Workhead rotates 90 degrees and the rotation can be:

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

*On request



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

TAILSTOCK

Machine models PT6 and MT6, are supplied standard with Hydraulic opening / closure and micrometric correction of the cylindricity

Machine models RT6 and ET6 are available in three different versions:

- manual opening (standard);
- hydraulic opening (on request);
- hydraulic opening / closure and micrometric correction of the cylindricity (on request).



Internal Grinding

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

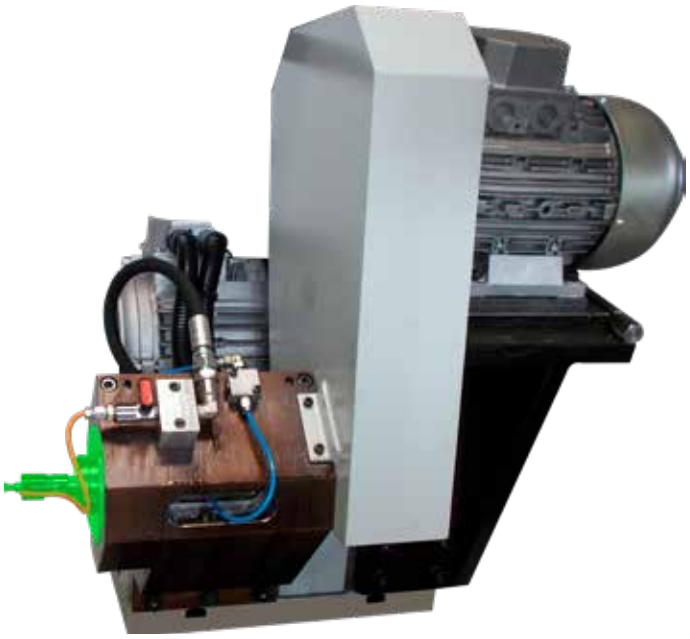
- drop down over wheel head
- on rear side of wheel head.

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

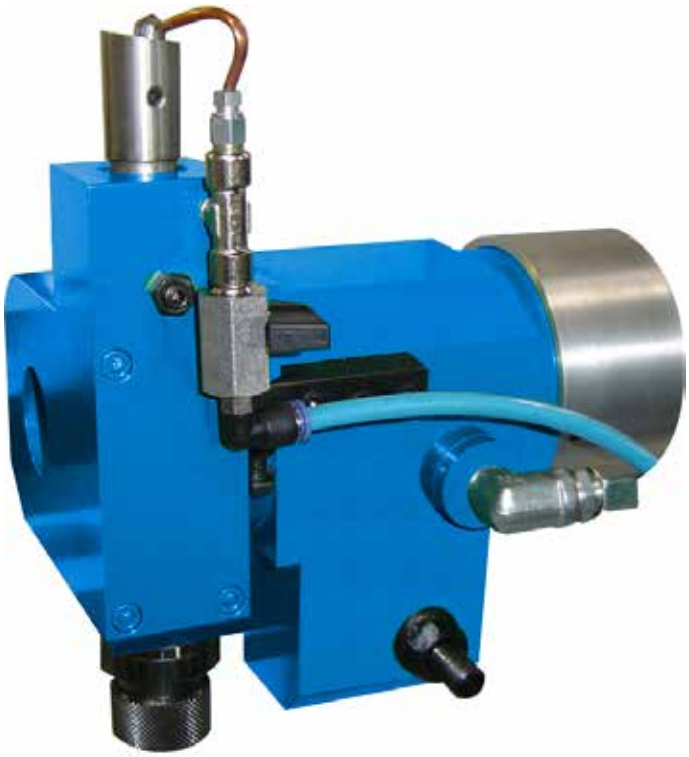
Customizable According to the Process Required

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



Dressing Fixed Tools or High Frequency Diamond Rolls

The machine can use for dressing:

- fixed tools
- or high frequency diamond rolls, particularly useful for internal grinding wheels





Process Control

Grinding Wheel Balancing

Continuously monitors the condition of the machine in real time and compensates any unbalance of the grinding wheel .
Grinding Wheel Balancing :

- improves the mechanical stability
- improves the surface quality, avoiding risks of facets , circularity defects errors and roughness
- allows to increase the peripheral speed of the grinding wheel
- increases the productivity
- reduces stress on the spindle bearings



Contact Control

The instant in which the grinding wheel comes into contact with the workpiece, is important to:

- reduce the cycle time
- minimise the 'gap' time, maximising the axis feeds

The analysis of the contact between grinding wheel-dresser, consents to obtain a perfect profile optimising the scrap.

Detects Sub-micron Contacts ("Gap")

Monitors Constantly the Work

Prevents Collision ("anti-crash")

In Process Measuring System

Workpiece Setting

The use of a flagging device combined to the PLC control records the position of the workpiece in Z axis (table).

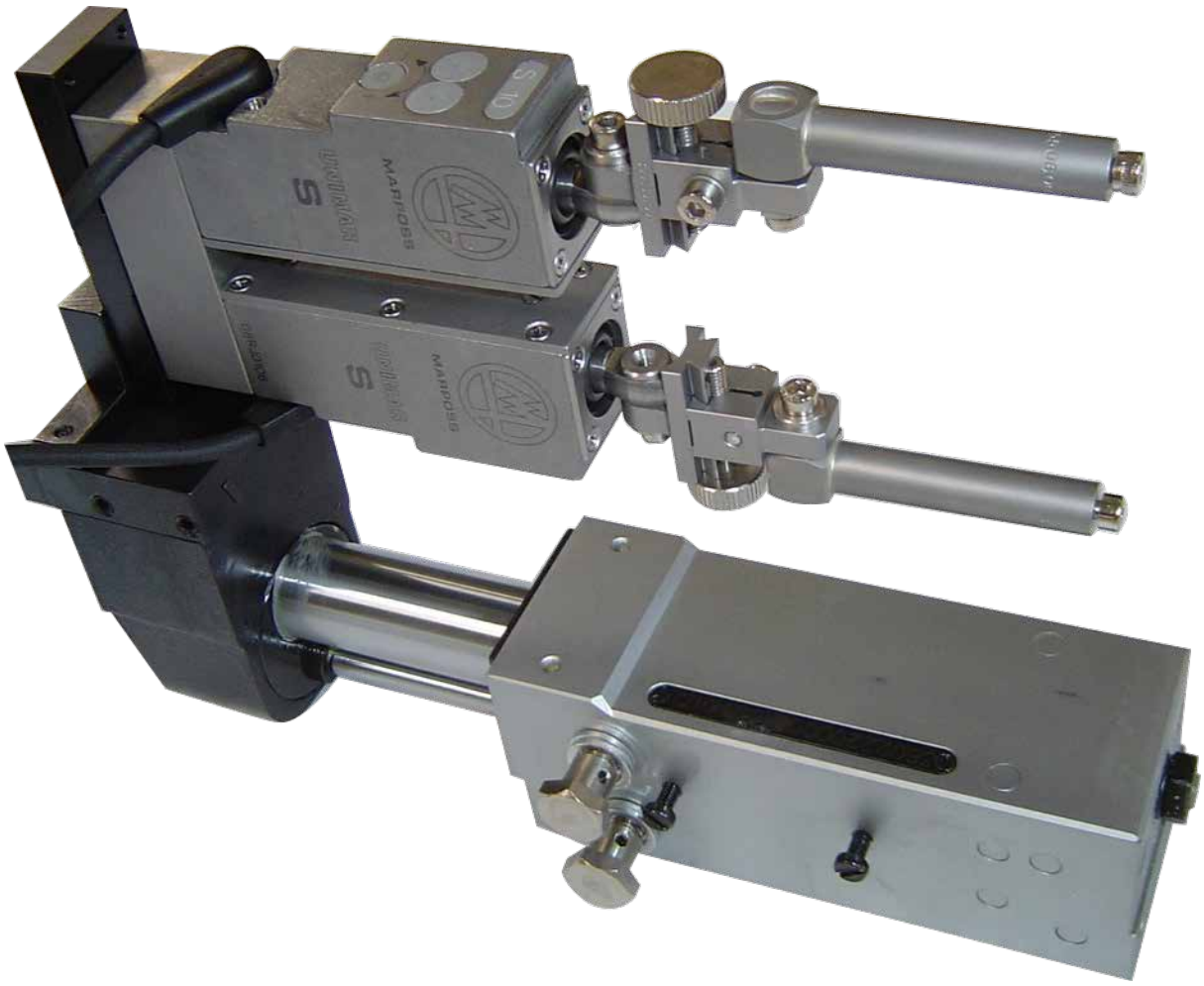
In Process Measuring System

The use of measuring systems during the working, permits to grind components with high restricted tolerance.

The available methods are :

- Absolute measurement of diameters, with large ranges
- Measurement of small and large ranges, with reference master
- Control of continuous and interrupted surfaces (regular and irregular)
- Analysis of roundness and shape
- Measurement of the diameters: external, internal, thickness, scrap, taper, shoulder, etc.
- Automatic compensation of the in-process correction.





Digital Factory

Omicron CNC Grinding Machines Are Equipped With (Optional) MindSphere Siemens



- More Productivity
- More Quality
- Digitalization of Production Process

The CNC machines can be integrated with software and with appropriate sensors to:

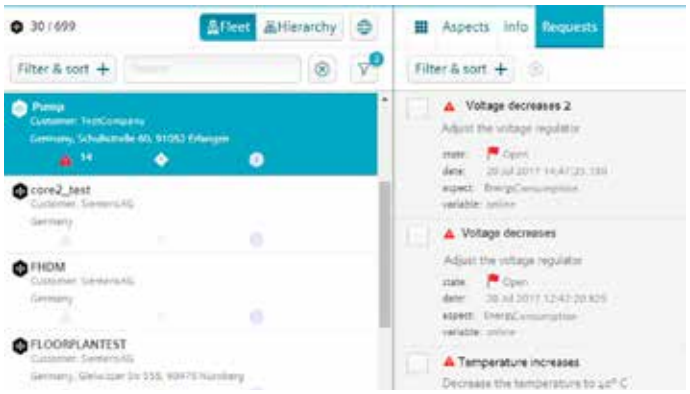
- digitize the production process
- analyze the working parameters
- verify the machine status

The CNC machines may be further customized (on request) to meet customer's production process requirements

- Analysis of:
  - Acceleration
  - Temperature
  - Speed
  - Vibrations



- to monitor continuously the working conditions
- to be checked and serviced worldwide, safely
- to perform part programs from an external memory



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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