

OMAR

CYLINDRICAL GRINDING MACHINES

**X
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PASSION FOR GRINDING



THE SPACE REVOLUTION

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ID CARD

X300 is a cylindrical grinding machine for external diameters with a mobile column, suitable for machining pieces up to 300 mm. in length and a tip height of 130 mm.

TECHNICAL SPECIFICATIONS

GENERAL DATA

Max. grindable length	300	mm.
Centres height	130	mm.
Max. rotating diameter	250	mm.
Max. load between centres	50 / 10 *	kg.
Max. load in overhang machining	30 / 30 *	kg.
Machine weight	4000	kg.

"X" AXIS - DIAMETERAL MOVEMENT OF GRINDING CARRIAGE

Axis travel	350	mm.
Max. axis speed	20	m/min.
Axis resolution	0,0001	mm.
Standard transducer	absolute linear encoder	

"Z" AXIS - TRANSVERSAL MOVEMENT OF GRINDING CARRIAGE

Axis travel	350	mm.
Max. axis speed	20	m/min.
Axis resolution	0,0001	mm.
Standard transducer	absolute linear encoder	

UNIVERSAL BELT WORK HEAD / SYNCHRONOUS TORQUE *

Mounting taper	4 / 4 *	Morse
External taper	4 / 4 *	ASA
Max. speed	2000	rpm
Spindle torque output	18 / 30 *	Nm.
Standard transducer	encoder / absolute ring *	

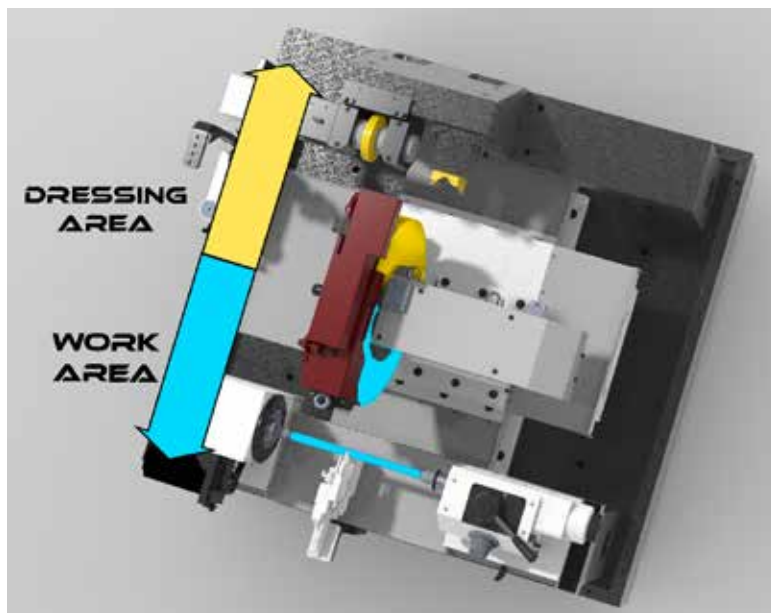
STANDARD TAILSTOCK / SYNCHRONOUS TORQUE *

Sleeve diameter	55 / 32 *	mm.
Sleeve stroke	30 / 45 *	mm.
Mounting taper	CM 4 / Ø 10 mm *	
Max. weight between pointes	50 (spring) / 100 (pneumatic) *	kg.
Cilindricity correction range	+ / - 0,1	mm.

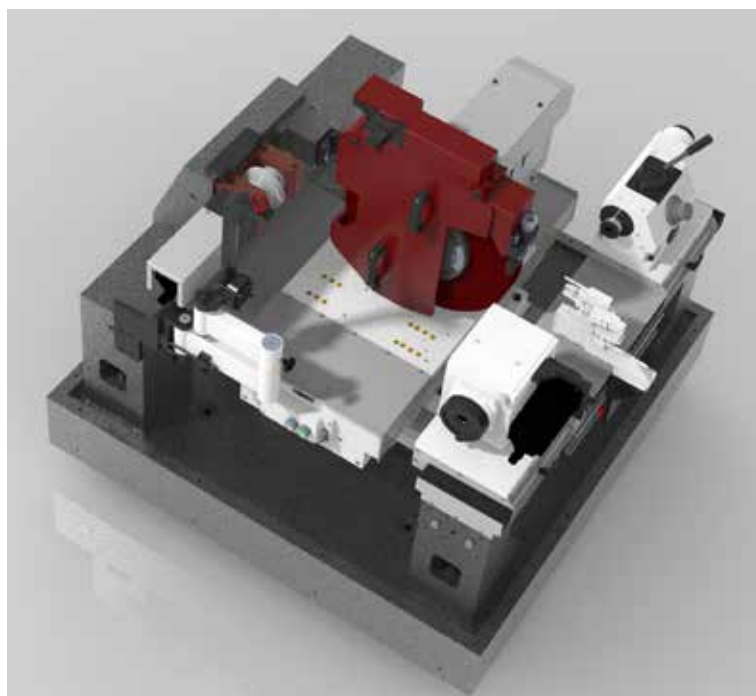
*Option

INNOVATIVE KINEMATICS

On **X300**, thanks to the innovations used on the linear X and Z axes, the dressing area is on the opposite side to the work area. In this way, in addition to reducing the travel of the axes, it is also possible to dress the grinding wheel during the automated piece change phase, reducing working times. The small dimensions of the machine allow convenient access to all inspection areas.



EVERYTHING, IN 3 SQM.

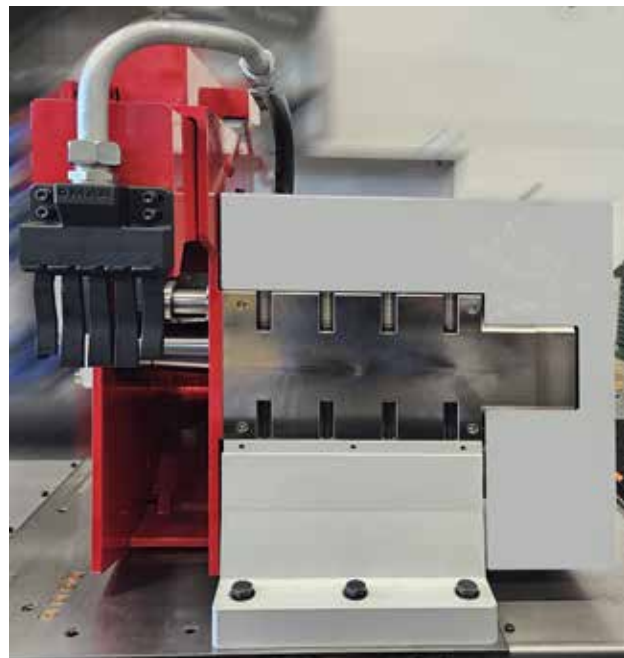


The revolutionary concept of movement of the grinding wheel axles and a targeted study on space reduction allow the X300 to have the smallest possible footprint on the ground, limiting it to 1,500 x 2,000 mm. The height of the fairing (1,500 mm) also helps to contain the volume, and thanks to the gull-wing front opening, manual loading of the pieces and machine positioning are very practical.

FLEXIBLE GRINDING UNIT

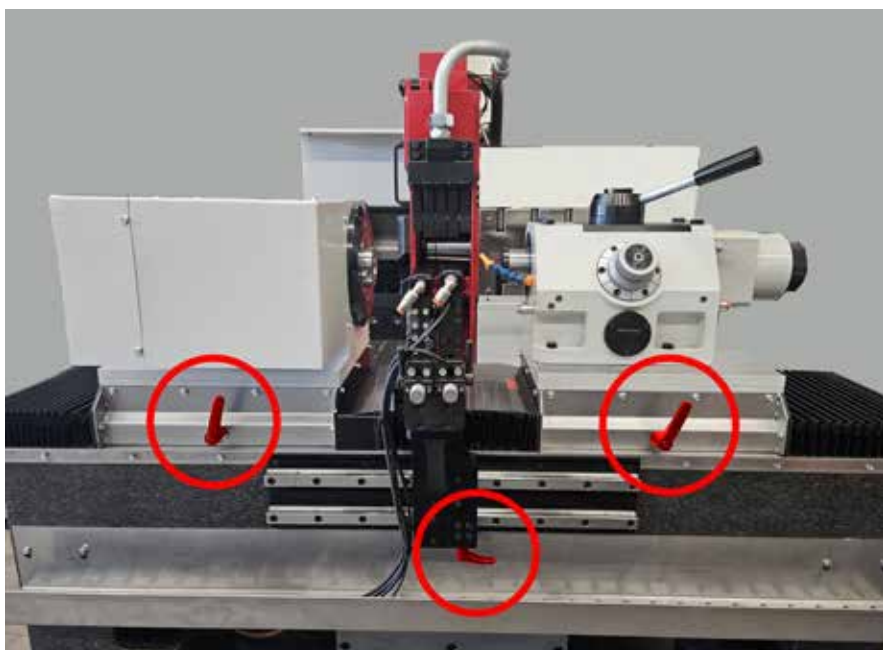
X300 can be configured with a straight left wheel or with a right wheel inclined at a fixed angle of 26.5°. The available electrospindles, both liquid-cooled and equipped with an internal balancer with ultrasonic contact sensor, are:

- 8 kW version for grinding wheel diameter 400 or 508 mm x width up to 60 mm;
- 14 kW version for grinding wheel diameter 508 mm x width up to 80 mm;



QUICK TOOLING

The main groups of the machine are mounted on linear guides with recirculating roller skates, and equipped with a very simple manual lever for locking and unlocking. With this system, no equipment of any kind is needed for positioning the machine, with an extreme reduction in setup times.

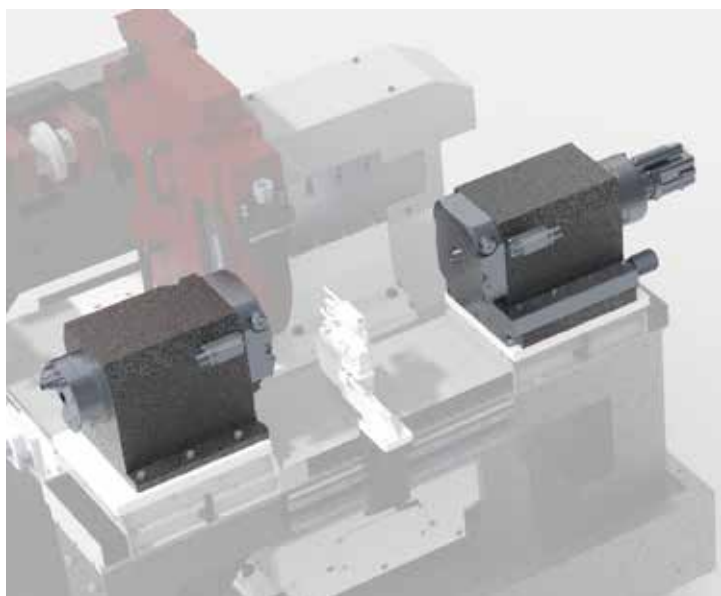


HIGH PRECISION GROUPS

The universal belt-driven workhead was designed specifically for the **X300**. The new design, extremely reduced, was created to obtain high precision, with roundness errors lower than 0.4 mcr, giving the possibility of working with fixed or rotating centres. A tailstock complete with taper adjustment, lever or automatic opening with pedal, and push load adjustable both with spring and pneumatic closing is supplied together.



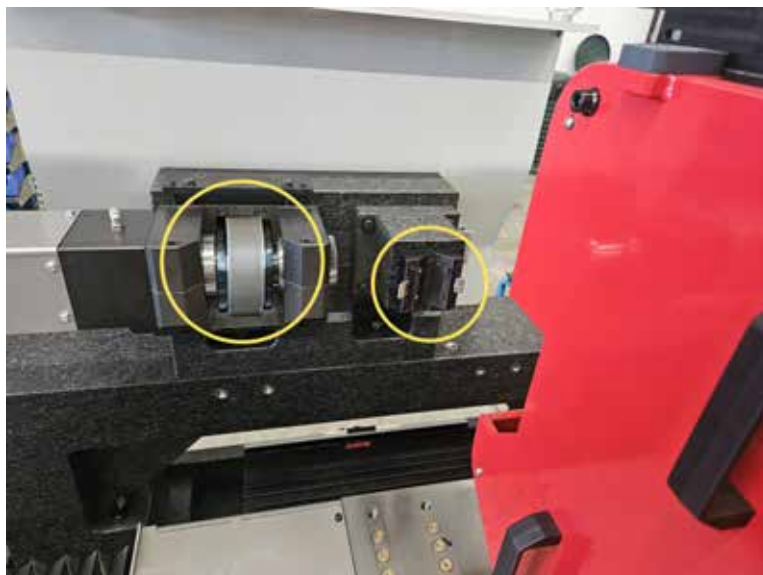
PERFECT SYNCHRONISM



Upon request, **X300** can be equipped with a synchronous rotating workpiece head and counter spindle. This solution includes granite groups, inside which new generation liquid-cooled Torque electrospindles are mounted to reduce roundness errors to a minimum. The sub-spindle has a quill with automatic travel of 45 mm. to lock the piece, and a cylindricity adjustment of 0.2 mm.

THE DRESSING STATION

On the rear of the **X300** is the wheel dressing area, composed of a modular granite base designed to house various dressing devices. Diamond roller spindles or even electrospindles for special discs and profiles can be added to the classic fixed diamond support, to allow maximum flexibility and tool life.



PROCESS CONTROL



The hardware of the CN package can be Fagor, Fanuc or Siemens, and includes motors, drives and machine management peripherals. Digital technology always integrates remote diagnosis, and all the machine software is developed entirely by **MAR**, for a simple, complete and reliable user experience. Furthermore, with the touch screen interface of the **MAR** software the programming of the cycles work is simple and intuitive.



ACCESSORIES FOR EVERY NEED

MAR collaborates with the most important companies in the sector to be able to provide you with all the customizations that make the difference. In addition to automatic loading systems, integrated measuring devices, piece holding equipment or dressing spindles, it is also possible to rely on **MAR** for process expertise, specific training courses and tailor-made services. On **X300** there is room for everything.



CUSTOMER CARE

On **X300**, attention to the customer passes through several points: a design pleasant and simple, great inspectionability of the machine and a simple and clear layout of all the components. In addition to this, we continuously implement the best technologies on the market, with the aim of freeing the customer from operations complex and confusing. Thanks to fieldbuses and diagnostics

on board we can communicate in real time with the customer for identify and correct each usage problem. We also offer a service scheduled maintenance to maintain the quality of your machine over time.



EXTERNAL, INTERNAL AND UNIVERSAL GRINDING MACHINES



MAR srl was born in San Marino in June 2015 from the intuition of 5 friends with the same decades of experience in precision mechanics. In 2017 the idea of designing and producing completely new grinding machines was born: flexible and modular machines, high-performance and accessible to all customers, united by modern technologies such as natural granite bases, linear motors and customized software interface. The standard production range covers grinding needs for external, internal and universal diameters up to 2,000 mm. in length.



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VERTICAL GRINDING MACHINES AND SPECIAL APPLICATIONS



FEF, owned by the Fumagalli brothers, was founded in 1967 and was the first Italian tangential grinding machine company to introduce the CNC as early as 1980. FEF grinding machines have always used the most innovative technologies to adapt to the multiple requests of its customers. The technologies used range from the hydrostatic support system developed entirely by FEF, to linear motors, Torque axes and the use of electrospindles built specifically for individual applications.



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AUTOMOTIVE AND HIGH PRODUCTION GRINDING MACHINES



SAGITECH was born in Alessandria in 2015, providing technological support in the cylindrical grinding machines sector. In 2021 it expands with a new operational form and becomes part of a group of companies all operating in the sector of cylindrical grinding machines and special applications. As part of group synergies, SAGITECH operates mainly in the sector of production cylindrical grinding machines with high-speed tools.



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