

# **OMAR**

**CYLINDRICAL GRINDING MACHINES**

**X  
5  
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0**

**PASSION FOR GRINDING**



**THE SMALL FOR BIG TASKS**

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## ID CARD

**X500** is a cylindrical grinding machine for external or internal diameters with mobile column, suitable for machining pieces up to 500 mm. in length and a rotating diameter of 250 or 360 mm.

## TECHNICAL SPECIFICATIONS

### GENERAL DATA

|                                 |      |     |
|---------------------------------|------|-----|
| Max. grindable length           | 500  | mm. |
| Centres height                  | 180  | mm. |
| Max. rotating diameter          | 360  | mm. |
| Max. load between centres       | 100  | kg. |
| Max. load in overhang machining | 70   | kg. |
| Machine weight                  | 5500 | kg. |

### "X" AXIS - DIAMETERAL MOVEMENT OF GRINDING CARRIAGE

|                     |                         |        |
|---------------------|-------------------------|--------|
| Axis travel         | 350                     | mm.    |
| Max. axis speed     | 12                      | m/min. |
| Axis resolution     | 0,0001                  | mm.    |
| Standard transducer | absolute linear encoder |        |

### "Z" AXIS - TRANSVERSAL MOVEMENT OF GRINDING CARRIAGE

|                     |                         |        |
|---------------------|-------------------------|--------|
| Axis travel         | 980                     | mm.    |
| Max. axis speed     | 12                      | m/min. |
| Axis resolution     | 0,0001                  | mm.    |
| Standard transducer | absolute linear encoder |        |

### UNIVERSAL TORQUE WORK HEAD

|                       |               |       |
|-----------------------|---------------|-------|
| Mounting taper        | 4 / 5 *       | Morse |
| External taper        | 4 / 5 *       | ASA   |
| Max. speed            | 800           | rpm   |
| Spindle torque output | 30 / 60 *     | Nm.   |
| Standard transducer   | absolute ring |       |

### TAILSTOCK

|                               |                                 |       |
|-------------------------------|---------------------------------|-------|
| Sleeve diameter               | 55                              | mm.   |
| Sleeve stroke                 | 30                              | mm.   |
| Mounting taper                | 4                               | Morse |
| Max. weight between pointes   | 50 (spring) / 100 (pneumatic) * | kg.   |
| Cilindricity correction range | + / - 0,15                      | mm.   |

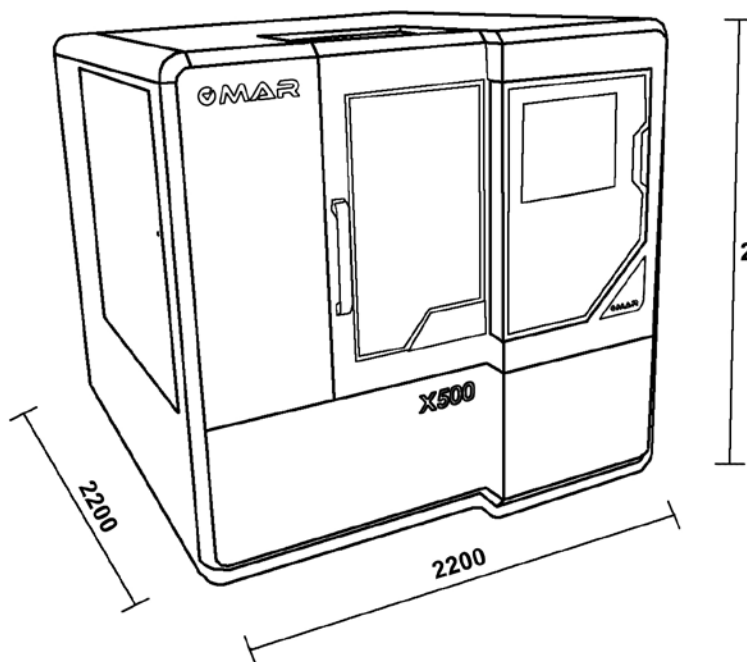
\*Option

## THE STARTING BLOCK

The natural granite base, in addition to ensuring maximum stability over time, is equipped with only 3 leveling points, to always be perfect on each floor. The granite is worked in Italy with exact precisions like a surface plate and guarantees at the same time a long duration in time.



## ALL, IN LESS THAN 5 SQM.



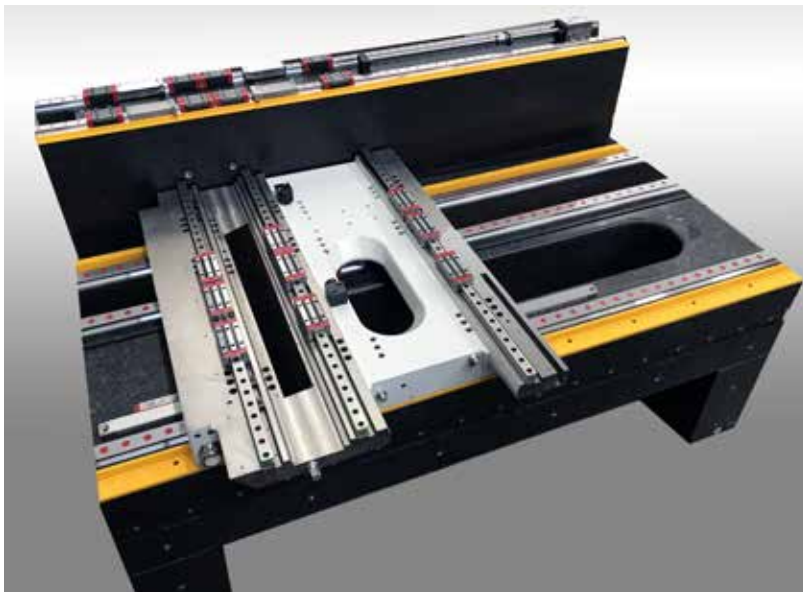
The cross arrangement of the X and Z axes, combined with movement by linear motors, allows the smallest possible footprint on the ground, limiting it to 2,200 x 2,200 mm. This is all the space that **X500** needs to produce your details.

## FLEXIBLE UNIT

One of the innovations of the X500 lies in the passage of the various connections, which from the Torque multi-spindle turret descend through the base and then enter directly into the electrical cabinet, minimising cable lengths and eliminating splices or extensions. Up to 2 electrospindles can be accommodated on the turret, with variable configurations for both outdoor and indoor grinding wheels.



## THE ULTIMATE OF MOVEMENT



Both the X and Z axis slide on a triple linear guide with recirculating roller skates, moved by latest generation linear motors and controlled by absolute optical scales pressurized. Despite the dimensions of **X500**, the rigidity of the movement is record-breaking!

## WITH YOUR RIGHT HEAD

Universal workhead (C axis), for machining between fixed or rotating centers, with Torque motor and Morse 4 / ASA 4 attachment cone (Morse 5 option / ASA5). Alternatively, it is possible to have a workhead with electro-spindle for machining only overhanging with speeds up to 2000 rpm and housing for disk diamond. The group, mounted on linear guides and locked by electro-pneumatic brakes, can be moved automatically by means of a recirculating ball screw coupled to a digital brushless motor, with position controlled by absolute optical scale pressurized.



## ALL-IN-ONE TAILSTOCK



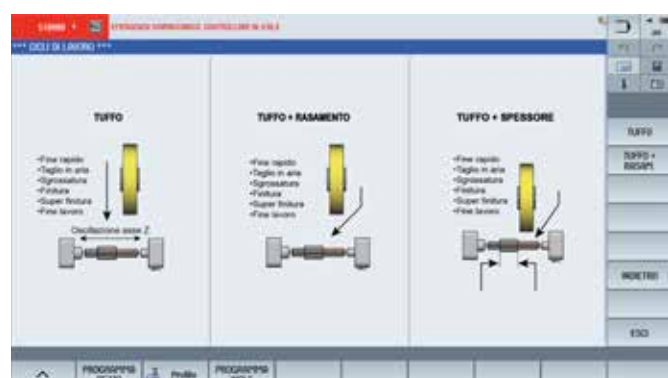
Manual lever movement and push with adjustable preload spring, with Morse 3 connection (optional Morse 4). The sleeve, sliding on adjustable bushings, can have a pneumatic opening and closing movement to facilitate the loading and unloading of the pieces. The fine adjustment of the cylindricity, equipped as standard in the tailstock, can be motorized and managed by the NC, to reduce the machine alignment time. Programming is done by directly entering the correction value in a specific CNC mask.

## PROCESS CONTROL

The hardware of the CN package can be Fagor or Siemens, and includes motors, drives and peripherals machine management. Digital technology always integrates the free remote diagnosis, so as to allow us to be at your side without making you wait even a minute second. Industry 4.0 has never been so close!



## SOFTWARE FOR EVERYONE



We have developed our management software internally, to provide you a simple, complete and reliable user interface. To use **X500** you do not need high mechanical skills, our software with touch screen interface simplifies the programming of work cycles.

## 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 **X500** there is room for everything.



## CUSTOMER CARE

On **X500**, 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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