

# **OMAR**

**CYLINDRICAL GRINDING MACHINES**

**PASSION FOR GRINDING**

**C  
E  
R  
B  
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R  
O**



**DOUBLE EFFICIENCY, UNIQUE PRECISION**

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## ID CARD

**CERBERO** is a cylindrical grinding machine for external and internal diameters with simultaneous machining, suitable for machining pieces up to 300 mm. in length and a center height of 230 mm.

## TECHNICAL SPECIFICATIONS

### GENERAL

|                                                  |           |     |
|--------------------------------------------------|-----------|-----|
| Maximum grindable length (external / internal)   | 300 / 200 | mm. |
| Center height                                    | 230       | mm. |
| Maximum rotating diameter                        | 460       | mm. |
| Maximum grindable diameter (external / internal) | 250 / 150 | kg. |
| Max load in overhang machining (device incl.)    | 300       | kg. |
| Machine weight                                   | 14000     | kg. |

### "XE" AXIS - DIAMETRICAL MOVEMENT EXTERNAL WHEEL CARRIAGE

|                     |                         |        |
|---------------------|-------------------------|--------|
| Axis travel         | 350                     | mm.    |
| Max. axis speed     | 15                      | m/min. |
| Axis resolution     | 0,0001                  | mm.    |
| Standard transducer | absolute linear encoder |        |

### "ZE" AXIS - TRANSVERSAL MOVEMENT EXTERNAL GRINDING WHEEL CARRIAGE

|                     |                         |        |
|---------------------|-------------------------|--------|
| Axis travel         | 500                     | mm.    |
| Max. axis speed     | 15                      | m/min. |
| Axis resolution     | 0,0001                  | mm.    |
| Standard transducer | absolute linear encoder |        |

### "XI" AXIS - DIAMETRICAL MOVEMENT INTERNAL WHEEL CARRIAGE

|                     |                         |        |
|---------------------|-------------------------|--------|
| Axis travel         | 350                     | mm.    |
| Max. axis speed     | 15                      | m/min. |
| Axis resolution     | 0,0001                  | mm.    |
| Standard transducer | absolute linear encoder |        |

### "ZI" AXIS - TRANSVERSAL MOVEMENT INTERNAL GRINDING WHEEL CARRIAGE

|                     |                         |        |
|---------------------|-------------------------|--------|
| Axis travel         | 500                     | mm.    |
| Max. axis speed     | 15                      | m/min. |
| Axis resolution     | 0,0001                  | mm.    |
| Standard transducer | absolute linear encoder |        |

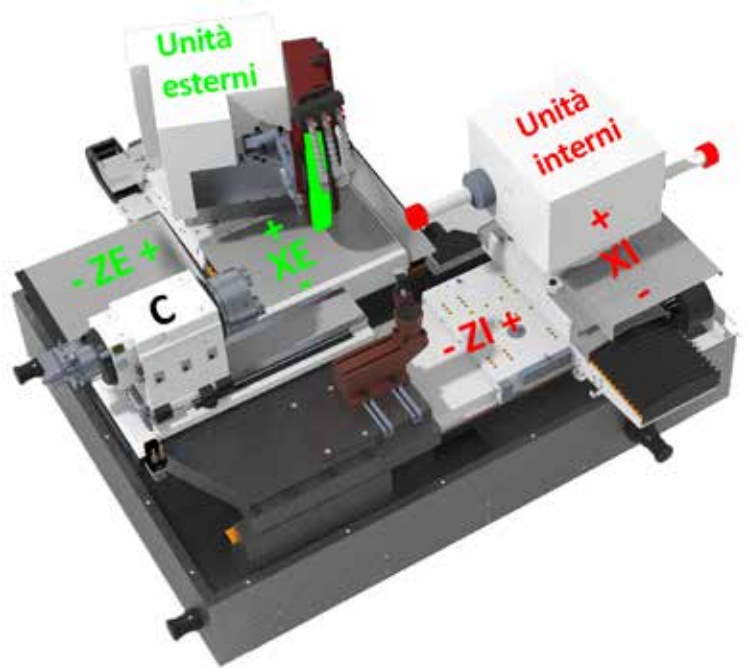
### "C" AXIS - TORQUE WORKHEAD

|                       |         |       |
|-----------------------|---------|-------|
| Mounting taper        | 5 / 6 * | Morse |
| External taper        | 5 / 8 * | ASA   |
| Max. speed            | 800     | rpm   |
| Spindle torque output | 64      | Nm.   |

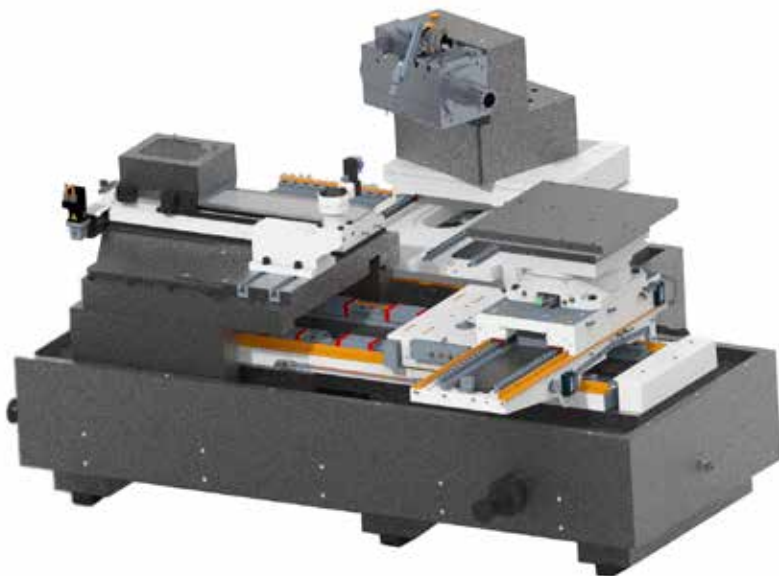
\*Option

## CONTEMPORARY PROCESSING

On **CERBERO**, the grinding carriages are controlled by 2 independent CNC channels, allowing the simultaneous processing of internal, external diameters or face grinding. The cross structure of the axes is designed to also allow wheel dressing movements in independent positions away from the work area. Cycle time is reduced to the minimum possible.



## PROVEN STABILITY



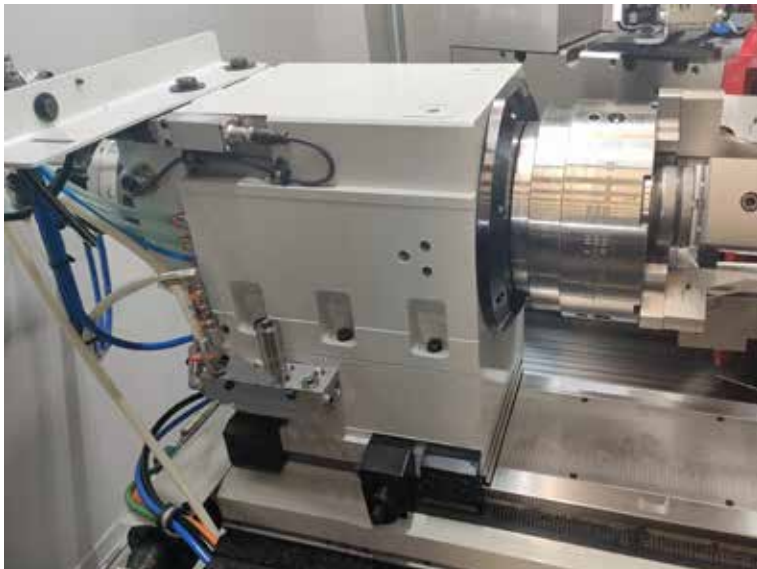
On **CERBERO**, in addition to the natural granite base, the external grinding wheel spindle support, workpiece head and internal grinding wheel spindle support groups are also made of the same material. This, combined with a closed-circuit cooling system on all moving bodies, allows for unparalleled dimensional stability, with the guarantee of greater precision and reliability over time.

## TOTAL ACCESSIBILITY

**CERBERO** is designed for total accessibility to the various processing and dressing points and inspection areas. Every position of the machine can be easily reached from the numerous removable compartments. The areas where routine maintenance is required are allocated in easily accessible points to optimize the management of machine life, while maintaining a total footprint contained in 3400 x 2600 x 2100.



## WITH YOUR HEAD IN PLACE

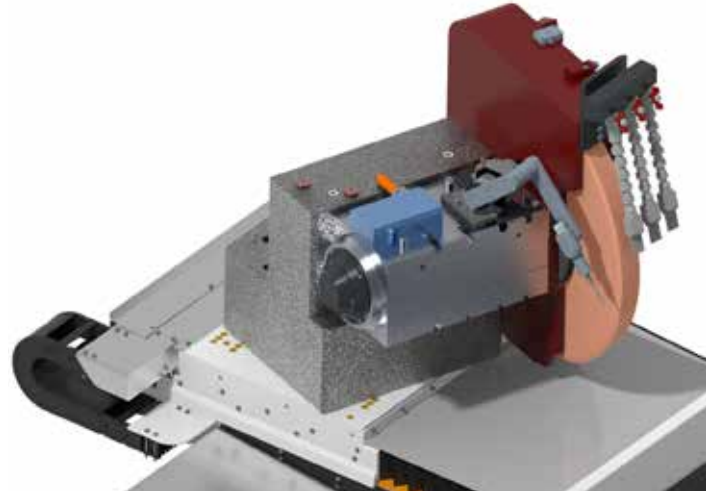


The rotating center workhead with Torque motor is capable of supporting weights of up to 300 kg and has a Morse 5 / ASA 5 connection or, optionally, Morse 6 / ASA 8. The bar passage allows the use of automatic equipment controlled by a special cylinder.

A CNC axis is available for the automatic correction of the internal geometry with automatic locking, in order to reduce machine setup times.

## EXTERNAL GRINDING UNIT

The electrospindle for the external grinding wheel, with automatic wheel balancer and contact sensor, has a power of 14 kW and is liquid cooled with a closed circuit. The granite support, with a fixed angle of inclination, is designed to mount grinding wheels with a diameter of 508 x 60 x 203.2 or, alternatively, a diameter of 610 x 60 x 203.2.



## INTERNAL GRINDING UNIT



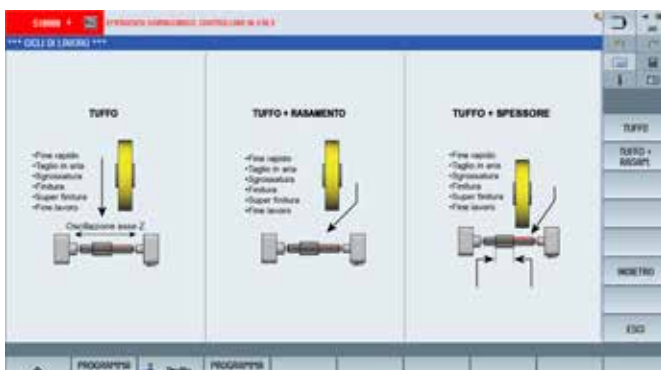
**CERBERO** can be set up with a single electrospindle or with a Torque rotating turret (B axis) with a freely programmable angle, up to 4 electrospindles with bodies with a diameter of 100, 120 or 150 mm. Each electrospindle is cooled in a closed circuit and the start and stop at the end of the cycle are automatically controlled by the CNC.

## INTELLIGENT DRESSING

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!



## PROCESS CONTROL



We have developed our management software internally, to provide you a simple, complete and reliable user interface. To use **CERBERO** 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 **CERBERO** there is room for everything.



## CUSTOMER CARE

On **CERBERO**, attention to the customer goes from different points: a pleasant and simple design, a great machine inspectability and a simple and clear arrangement of all components. In addition to this we continuously improve the best technologies on the market, with the intent to free the customer from complex and confusing operations. Thanks to the field buses and the on-board

diagnostics we can communicate in real time with the customer to identify and correct every problem of use. We also offer a scheduled maintenance service 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 of the Fumagalli brothers was founded in 1967 and was the first Italian surface grinding machine company to introduce the CNC already in 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 machine 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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