



Ergo, the challenge continues



1 RELIABILITY

From design to delivery, every step is monitored and verified to offer a machine designed to **respond to the production needs of the Client with accuracy and speed**. Starting from the bedframe to the electrospindles and turrets to operational accessibility, everything is designed to offer high performance in processing, making Ergo a reliable machine over time.

2 FLEXIBILITY

The flexibility of Ergo allows you to set the **ideal configuration** to meet the production needs of the Client, adapting their characteristics for **insertion in the intended working cycle**. It is a process that Famar develops with a feasibility study, customization of the machine, pre-testing at Famar and at the Client's premises, assistance and support after installation.

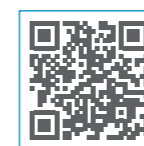
3 CUSTOMIZATION

The Ergo range offers absolute customization, even for the most diverse production requirements. Thanks to the various options described in this catalogue, experience gained over the years and the design skills of our technicians, **Ergo is "stitched" onto the workpiece**, complete with work-holding equipment, tools and work program creation. Ergo has thus become the machine suited to meet the whole process, from blank to workpiece.

Ergo, its strength at a glance



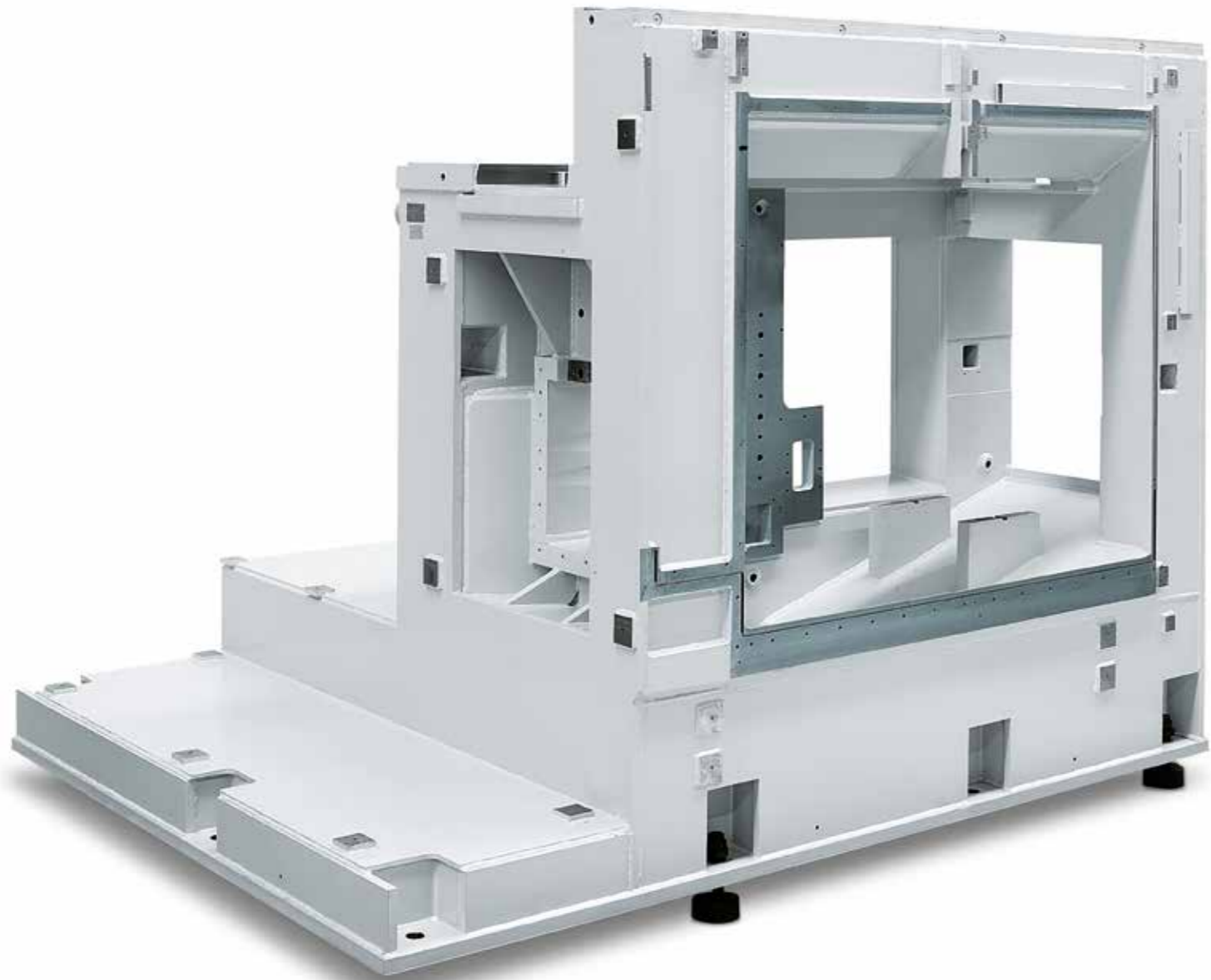
- FAMAR BEDFRAME
- FAMAR ELECTROSPINDLE
- EXCLUSIVE FAMAR TURRET
- COOLING SYSTEM
- STEEL PROTECTION
- ACCESSIBILITY
- IN - PROCESS METER
- EASY MAINTENANCE (TPM)
- TOTAL AUTOMATION
- AUTOMATIC LOADING-UNLOADING



Find out more at www.famargroup.com

Since 1994 Ergo has been Famar's flagship machine. Born from the technological revolution represented by the **vertical lathe**, it has proved, over the years, to be a machine of great flexibility in terms of use and ideal for **small companies as well as big industries**.

Versatile enough to use as a single machine or inserted in the production line. Indicated as the best solution for all processes: from turning to drilling, from milling to hobbing and grinding. **All in one machine**.

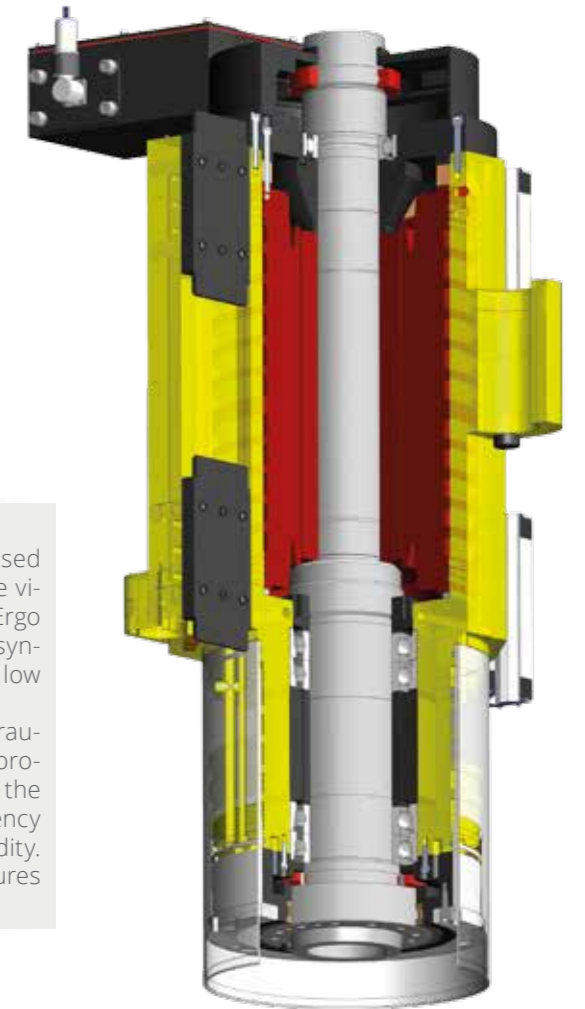


FAMAR BEDFRAME

Made of electro-welded and stabilised closed-loop steel, filled with a special cementitious polymeric conglomerate. The Famar bedframe ensures high rigidity and stability at the same time, with a high absorption of vibrations produced during the machining process with thermal expansion close to zero. Linear guides in an asymmetric position offer great visibility and accessibility to the inside of the machine, increasing the strength of the configuration.

FAMAR ELECTROSPINDLE

All Famar electrospindles are heat-stabilised both in the area of the bearings and in the vicinity of the motor. On the basis of the Ergo size, it is possible to install induction or synchronous motors (with high torque at a low number of revolutions). For the "C" axis, all the spindles have a hydraulic braking system to ensure rigidity for processing. This device is placed directly on the spindle nose, greatly increasing the efficiency of the system and ensuring optimum rigidity. In addition, a direct measuring system ensures precise positioning.

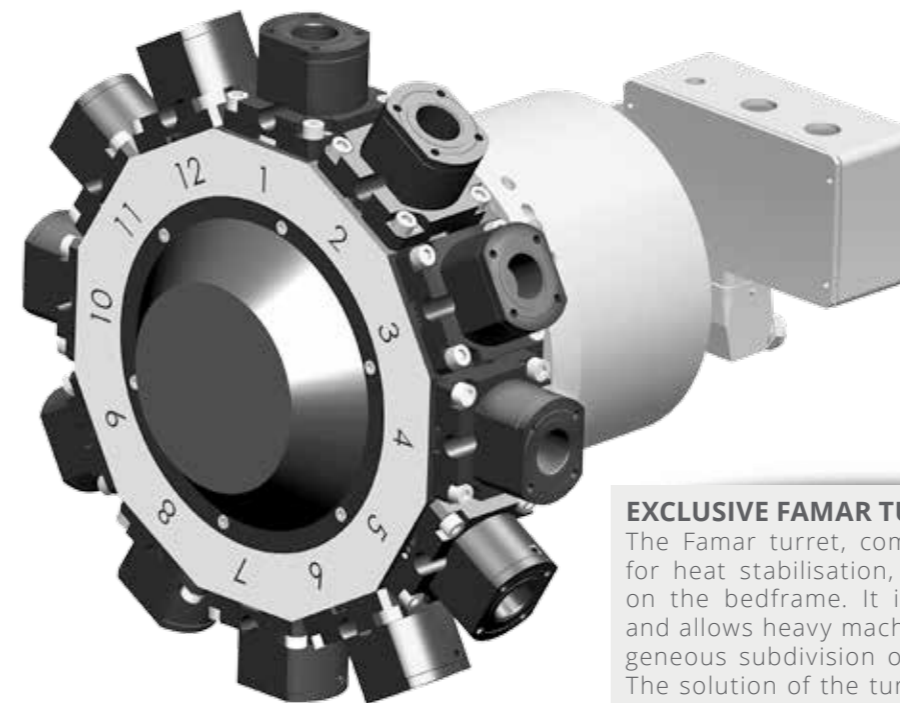
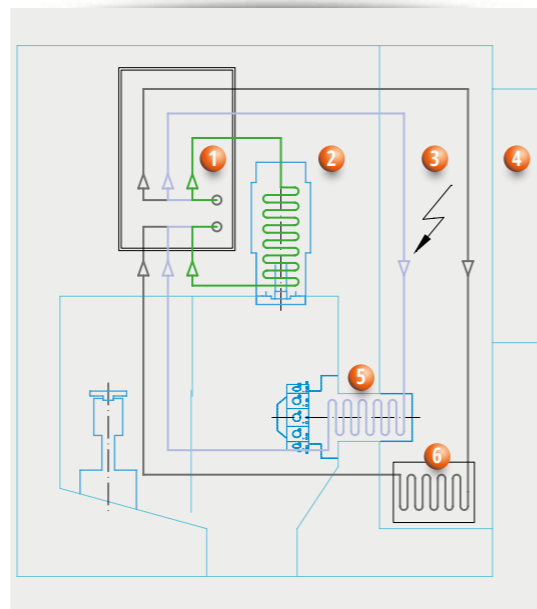


Ergo is unique because of Famar

COOLING SYSTEM

All Ergo machines are equipped with heat stabilisation systems of the spindle and turret, as well as ancillary units when necessary.

- COOLING UNIT 1 4 COOLER
- MAIN SPINDLE 2 5 TURRET
- ELECTRICAL CABINET 3 6 HEAT EXCHANGER



EXCLUSIVE FAMAR TURRET

The Famar turret, complete with system for heat stabilisation, is directly flanged on the bedframe. It is particularly rigid and allows heavy machining with a homogeneous subdivision of the shear stress. The solution of the turret with motorised tools is unique: thanks to an innovative solution (which eliminates the use of gears and bevel gears) the tools are moved by a torque motor directly on the axis, allowing for torque, power and number of revolutions up to three times more than those attainable with the best turrets on the market. The high pressure coolant through the tools, complete the solution making it unbeatable.



STEEL PROTECTION

The Ergo machines prevent chips from escaping from the working area, avoiding errors of loading or accidental wear of the main bodies of the machine. This is done through the complete isolation of the working area from the linear guides, ball screws and control bodies, thanks to two harmonic steel blades that slide together with the main carriage along the "X" axis and a guard with automatic opening-closing that separates the working area from that of loading and unloading.



and with exclusive performance

ACCESSIBILITY

The working areas and numerical control unit are located in a small space in order to have the entire production process under control. The numerical control unit is conveniently located in the centre while the working area is on the side.



EASY MAINTENANCE (TPM)

In view of the more modern TPM (Total Productive Maintenance) all Ergo machines are designed for easy access to the working area and the auxiliaries in order to decrease machine downtime for maintenance operations, simplifying and making them faster.



TOTAL AUTOMATION

The Ergo line allows any type of customization related to automatic feeding solutions. This ensures maximum autonomy of the machine and unmatched production flexibility. From pallet line to the loop, from the flighted elevators to the column palletisation to the robotised and fully automated tending cells.



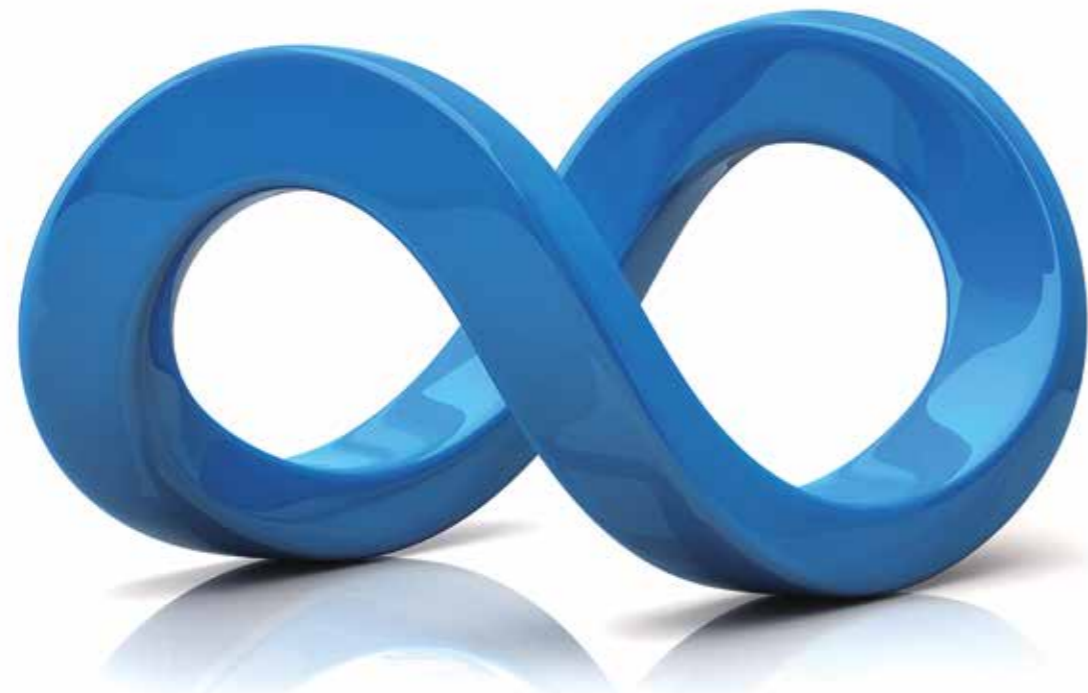
AUTOMATIC LOADING-UNLOADING

The loading-unloading stations include an electrically controlled swivelling and spring system, capable of positioning and perfectly centring the workpiece in the spindle and ensuring proper support of the same. The device is also able to yield vertically to safeguard the picking station in case of collision.

IN - PROCESS METER

A sensor can be installed immediately outside the working area. This allows for constant control of the quantities produced and extreme stability of the manufacturing process, correcting the deviation of tolerances due to wear of the tool. All of this is automatic. Thanks to this device, it is also possible to preset the tools directly in the machine in a simple and automatic way.





an infinite Range



ERGO 200

Manufactures mechanical parts of any shape and material up to 150 mm. The pick-up spindle automatically picks up the pieces while maintaining quality and quantity, even between different shifts.



ERGO 215

Developed based on the Ergo 200, it is equipped with an even more powerful drive spindle with ASA 6" coupling which provides a higher torque at a low number of revolutions to perform heavier processing.



ERGO 260

Ergo 260 is able to machine workpieces up to 200 mm. An ideal choice for both small businesses and for big industry. Usable as a single machine or as part of a production line.



ERGO 315

Boosted with a high performance spindle and an ASA 8 coupling that offers higher torque at a low number of revolutions, for processing heavier pieces and pieces up to 300 mm in diameter.



ERGO 400

For precision machining of mechanical parts up to 400 mm. High rigidity and stability. Simplicity and accuracy in dry machining. Option of specific units for drilling, milling or grinding operations.



ERGO 415

The Ergo 400 characteristics enhanced by a Power spindle, designed by Famar, to perform machining on any material.



ERGO 500

For machining heavy workpieces up to 660 mm. Equipped with a special bedframe and a driven tool turret for additional complex machining. Perfect both as a single machine or inserted in a production line.



ERGO 630

Increased power of the spindle, for more precise machining without shock and vibration, thus increasing the life of the tool and the degree of finish of the piece to be machined.

which is completed with innovative solutions

TWO VERSIONS FOR SPECIAL PRODUCTIVITY



ERGO INFINITY

Consult the dedicated **INFINITY** catalogue to discover the exceptional performance of Famar solutions that allow you to eliminate the time to replace tools, for truly infinite productivity...



ERGO G

Consult the dedicated **G** catalogue to discover all the possibilities of additional processing for grinding, for productivity that is even more flexible.





custom designed



ERGO 815

The power of Power spindle with the flexibility of the Ergo model. The 815 size lets you work on pieces up to a maximum of 800 mm in diameter, even in the case of heavy machining.



ERGO 850

The ideal model for the machining of parts up to 850 mm with 4 vertical guide spindles. The ability to use various feeding solutions allows autonomy and flexibility of production.

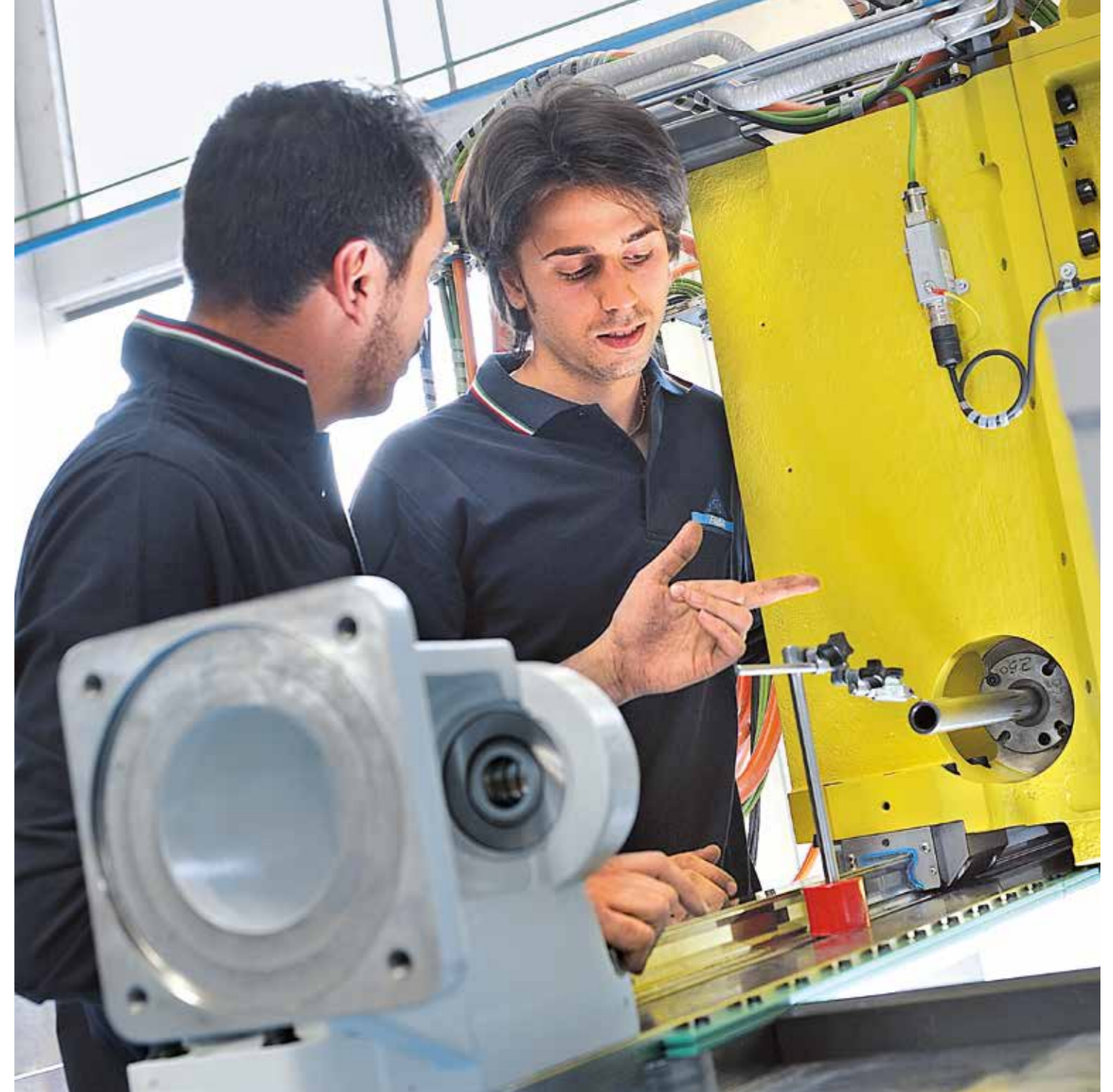


ERGO 1250

Ideal for machining parts in the rail, earthmoving and oil sectors, it is designed to cut a maximum diameter up to 1250 mm. Autonomy, flexibility and high production.



Find out more at
www.famargroup.com



with added options

FOUR OPTIONS FOR THE MOST DEMANDING CLIENTS



OPTION Z

An electrospindle with a door-creator mounted on a support with shifting Y axis and swivelling B axis, are fixed on the bedframe to allow turning and serrating the piece in one or two operations. This is possible due to the rigid bedframe.



OPTION 2T

Applicable on Ergo 260/500 with dedicated bedframe. A second turret is applied and is moved by its own independent X1 axis. Perfect for processing that requires multiple drilling/tapping with variable centre distances.



OPTION L

The bedframe in an extended version allows for the addition of other units of work on the machine and perform, in addition to turning, other operations on the workpiece, avoiding additional secondary machining operations.



OPTION Y

A third controlled axis, mounted on the bedframe, for the transversal movement of the turret, with variable paths depending on the model, for processing (drilling, tapping and milling) outside the axis of rotation of the workpiece.





SPECIAL APPLICATIONS



DANCING
Hydraulically or CN operated, it was designed for facing two opposing planes "in one shot." At process completion, the upper insert detaches allowing retraction from the workpiece.



ROLLING HEADS
It is possible to install them in a turret or as a unit dedicated and attached to the machine bedframe. This application allows you to perform rolling operations directly on the Famar lathes, avoiding a secondary machining operation.



MULTIPLE DEDICATED HEADS
Produced as a function of the workpiece, they are installed on the motor dedicated and fixed directly on the machine bedframe.



complete for all types of processing



MULTIPLE TOOLS
Specially designed, they eliminate turret rotation for passage from one tool to another, thus ensuring reduction in the cycle time.



MULTIPLE HEADS IN TURRET
Thanks to the torque performance and the power of Famar Turrets, it is possible to install multiple drilling and tapping heads directly on them, ensuring a significant reduction in cycle time.



MG SOLUTION
A tilting cradle controlled by CN, for hard or soft milling or grinding of jointed surfaces, off-axis in a single grip, with considerable savings in terms of investment and size.



and any application



FCP SOLUTION
Thanks to an independent tail stock mounted on the bedframe and the additional turret with X1 axis, it is possible to perform the machining of shafts, pistons and constant velocity joints.



OT SOLUTION
Developed on the basis of the long experience of Famar in machining pistons, this solution allows non-cylindrical machining, as for example the oval piston, with excellent precision.



DH SOLUTION
The machining of the interior of a differential case is no longer a problem with this extremely precise application, which allows for a reduction in processing time while maintaining accuracy and high productivity.



technical characteristics

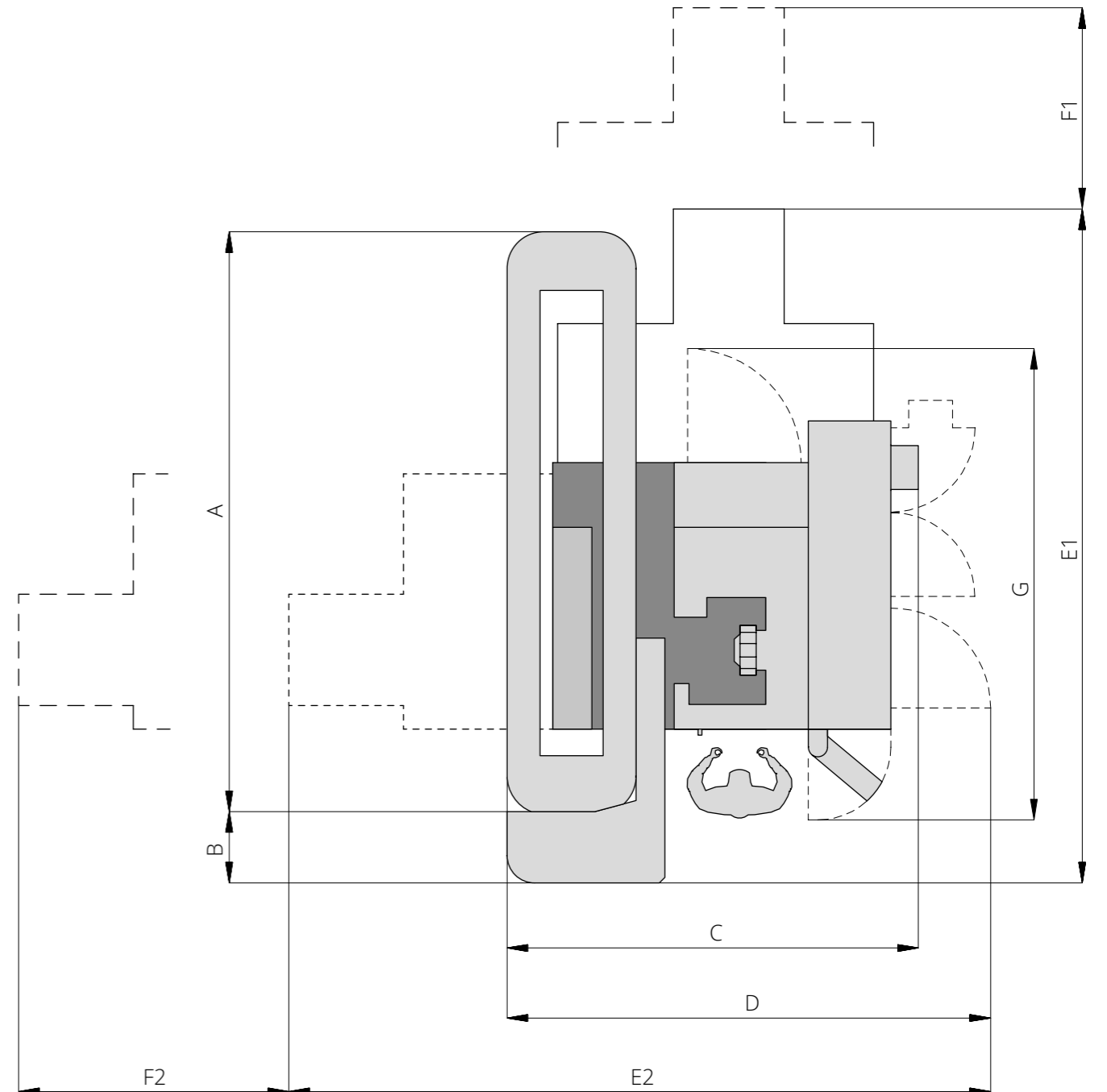
Machine Model ERGO		200	215	260	315	400	415	500	630	815	850	1250
TURNING CAPACITY												
Turning diameter	mm	150	150	250	250	400	400	660	660	800	850	1250
Swing diameter	mm	240	240	350	350	480	480	660	660	850	850	1400
Turning length	mm	200	200	240	240	300	300	300	300	500	500	500
Standard chuck diameter	mm	170	170	260	260	400	400	500	500	630	800	800
Max chuck diameter	mm	220	220	260	315	400	400	630	630	800	850	1250
AXES												
Total stroke X axis	mm	610	610	820	820	1100	1100	1180	1180	1450	2500	4000
Machining stroke X axis	mm	200	200	335	335	395	395	370	370	570	1425	2400
Total stroke Z axis	mm	265	265	265	265	330	330	400	400	500	670	1000
Stroke Y axis	mm	±60	±60	±90	±90	±120	±120	±155	±155	±250	±250	±300
Rapid speed X axis	m/1'	90	90	90	90	75	75	50	50	45	40	40
Rapid speed Z axis	m/1'	60	60	60	60	60	60	30	30	24	20	20
Rapid speed Y axis	m/1'	20	20	20	20	20	20	60	60	30	30	20
Ballscrew diameter X axis	mm	40	40	40	40	50	50	50	50	63	2 x 63	2 x 63
Ballscrew diameter Z axis	mm	40	40	40	40	40	40	50	50	63	2 x 63	2 x 63
Ballscrew diameter Y axis	mm	32	32	32	32	40	40	40	40	50	50	50
S3-25% Thrust X axis	kN	6.7	6.7	12,6	12,6	12,6	12,6	20	20	23	28	28
S3-25% Thrust Z axis	kN	10	10	10	10	18,8	18,8	28	28	50	50	50
S3-25% Thrust Y axis	kN	10	10	10	10	10	10	7	7	18	18	18
MAIN SPINDLE												
Spindle nose ISO 702-1	size	5	6	6	8	8	11	11	11	15	15	15/20
Front bearing Ø	mm	90	100	110	130	130	160	170	170	240	240	240/400
Max speed	Rpm	6500	4800	5300	5000	4000	4000	3200	1600	1600	800	300
Max power	kW	30	30	30	48	61,7	77	36	54,6	54,6	56	70
Max torque	Nm	198	198	196	380	724	1180	783	2517	2517	11000	18000
TOOLS DRIVEN TURRET FAMAR												
Max speed	Rpm	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Max power	kW	12,5	12,5	12,5	12,5	22,4	22,4	22,4	22,4	22,4	22,4	22,4
Max torque	Nm	88	88	88	88	145	145	145	145	145	145	145
Toolholders type	VDI	40	40	40	40	50	50	50	50	50	60	HSK-A 100
Toolholders	qty.	12	12	12	12	12	12	12	12	12	8	6
Max. tools length	mm	220	220	250	250	220	220	220	220	325	380	300
Indexing time	sec	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
GENERAL DATA												
Loading/Unloading time	sec	4÷8	4÷8	6÷10	6÷10	8÷14	8÷14	12÷16	12÷16	18÷28	18÷28	60
Machine weight	Kg	10000	10000	13000	13000	14000	14000	16000	16000	21000	22000	70000



layout/space required

ERGO		200	215	260	315	400	415	500	630	815	850	1250
DIMENSIONS												
A	mm	2.230	2.230	4.240	4.240	5.265	5.265	5.065	5.065	6.400	6.765	7.000
B	mm	500	500	505	505	675	675	-	-	-	-	-
C	mm	2.600	2.600	2.950	2.950	3.755	3.755	4.070	4.070	4.335	6.100	8.000
D	mm	3.175	3.175	3.430	3.430	3.260	4.030	4.790	4.790	4.935	6.700	8.600
E1	mm	4.050	4.050	4.880	4.880	5.830	5.830	5.600	5.600	5.800	7.500	7.000
E2	mm	4.500	4.500	5.080	5.080	5.720	5.720	6.100	6.100	6.300	-	-
F1	mm	820	820	1.750	1.750	1.800	1.800	1.970	1.970	2.200	2.350	3.000
F2	mm	1.240	1.240	1.585	1.585	1.950	1.950	2.100	2.100	2.200	-	-
G	mm	2.880	2.880	3.420	3.420	3.550	3.550	3.800	3.800	4.000	4.500	4.600

* Ergo machines can be supplied in mirror inverted versions, both right and left.



03/2014

Famar constantly updates its products; the data shown in this catalogue are subject to change without notice.



FAMAR. A NEW WAY OF THINKING

Famar is the partner of choice for all your machining needs, from stand-alone machines to integrated production lines. Featuring all the benefits of Famar's international patent-protected vertical lathe—efficiency, precision, high productivity, reliability, and guaranteed assistance.



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