



Tandem, double the power



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 Tandem a reliable machine over time.

2 FLEXIBILITY

The flexibility of Tandem allows the **ideal configuration** to be set, meeting the production needs of the Client, adapting to 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 Tandem 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, **Tandem is "stitched" onto the workpiece**, complete with work-holding equipment, tools and work program creation.

Tandem has thus become the machine suited to meet the whole process, from blank to workpiece.

Tandem, its power at a glance

- FAMAR DOUBLE BEDFRAME
- FAMAR ELECTRO-SPINDLE
- 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

Doubled power to combine maximum productivity with minimum dimensions. Born from the technological revolution represented by the **vertical lathe**, Tandem has proved itself to be **ideal for the production of high-precision parts**.

Due to the arrangement of working areas and the loading on **two independent automated systems** it is possible to double production, perform the complete processing of the same element in two stages or process two different elements.



FAMAR DOUBLE BEDFRAME

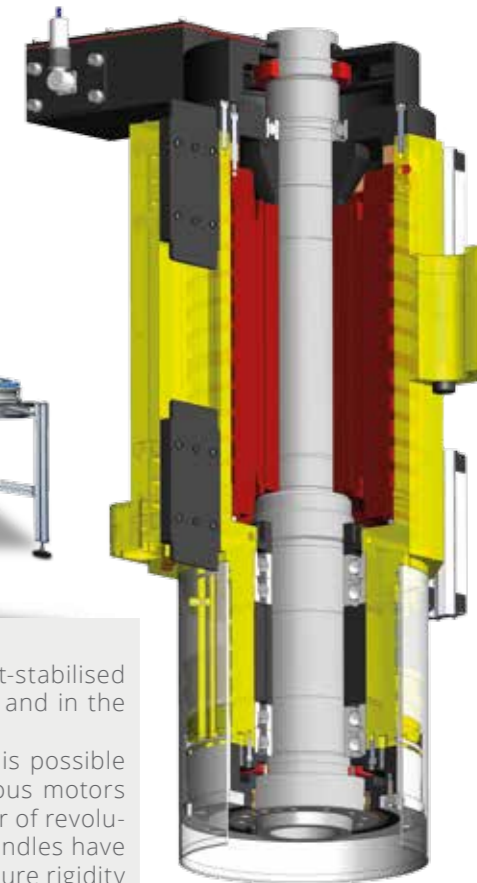
Made of electro-welded and stabilised closed-loop steel, filled with a special cementitious polymeric conglomerate.

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.

The link that connects the two bedframes is made with a unique solution designed by Famar, to completely avoid the transmission of vibrations.

And also to prevent particularly heavy processing from even minimally affecting the one in progress on the second unit.



STEEL PROTECTION

The Tandem 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.

FAMAR ELECTRO-SPINDLE

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.

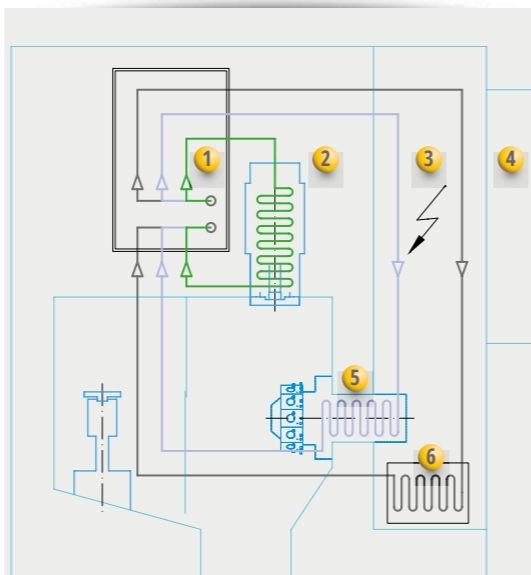
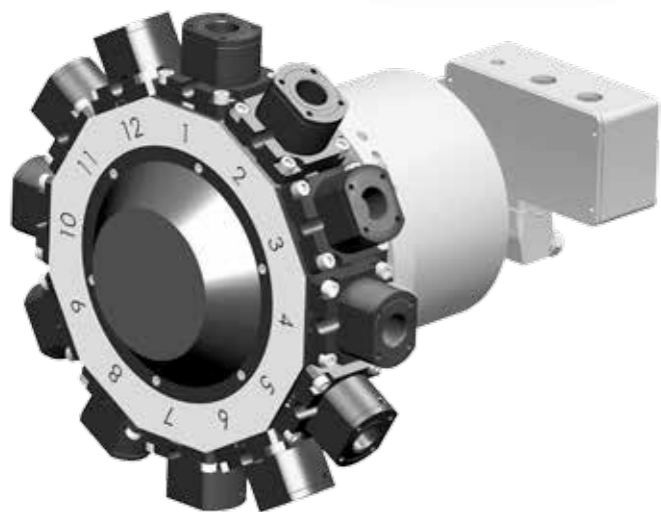
In addition, a direct measuring system ensures precise positioning.

Tandem, unique because of Famar

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.



COOLING SYSTEM

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

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



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 two working areas are on the sides.



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 pre-set the tools directly in the machine in a simple and automatic way.

EASY MAINTENANCE (TPM)

In view of the more modern TPM (Total Productive Maintenance) all Tandem 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 Tandem 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.



a complete Range



TANDEM 200

Allows you to double processing: to operate in two phases or work two different elements with diameters up to 150 mm at the same time.



TANDEM 215

Doubled machining, with a high-performance spindle for greater precision in the machining of parts up to 150 mm.



TANDEM 260

Independent layout of working areas and loading system. High flexibility and excellent quality. In a small space and all working areas and numerical control units are easily accessible by the operator.



TANDEM 315

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

custom designed

WITH AN OPTION FOR HIGHER DEMANDS



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.



TWO VERSIONS FOR SPECIAL PRODUCTIVITY



TANDEM 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...



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

which is completed with innovative solutions



TANDEM 400
Ideal for simultaneous or two-phase processing or processing that includes different elements, with a diameter up to 400 mm. High rigidity and stability. Ideal for dry machining.

TANDEM 415
Includes the Power spindle for heavier machining while maintaining the quality and quantity of the pieces produced.



Find out more at
www.famargroup.com

with options and special applications



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.



SPECIAL APPLICATIONS



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.



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.



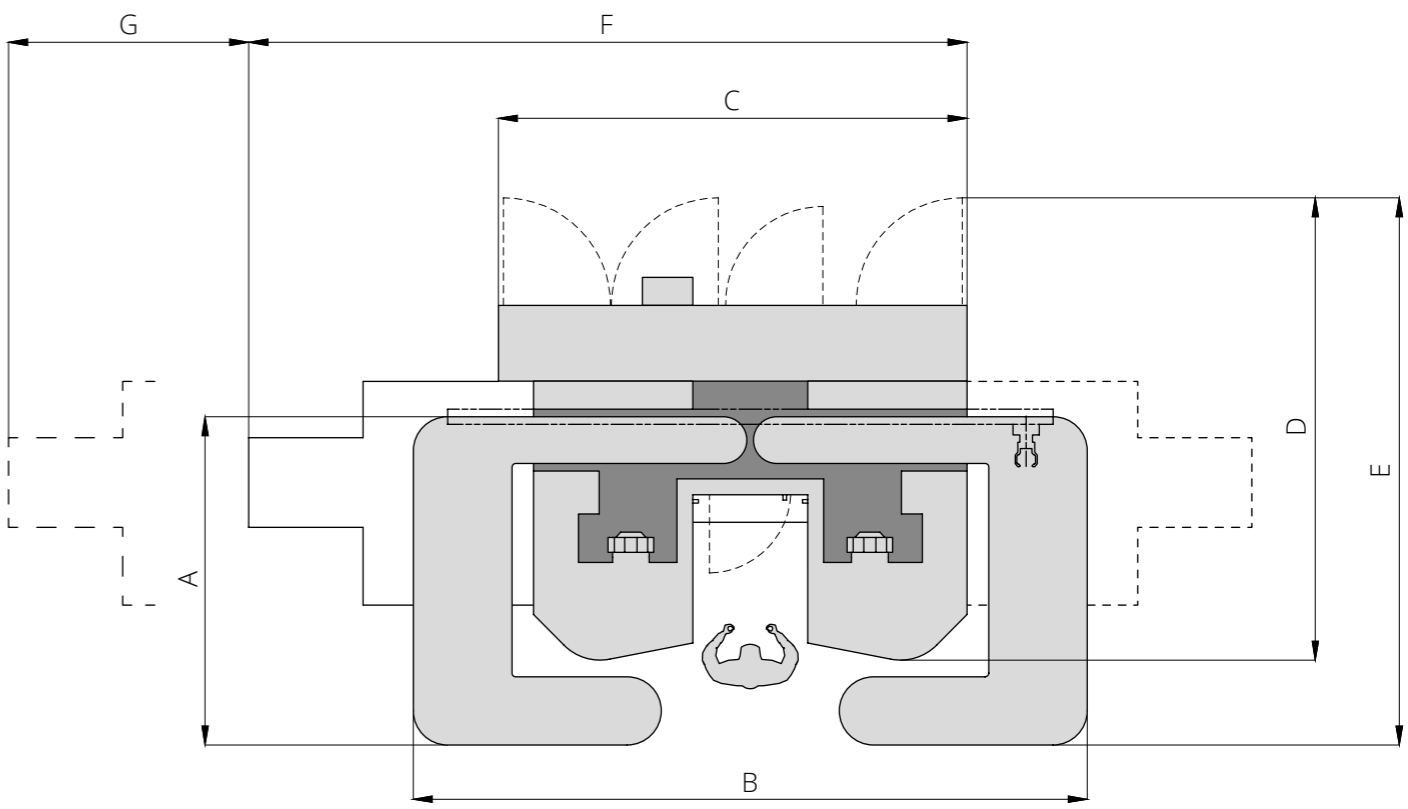
technical characteristics

Machine Model TANDEM		200	215	260	315	400	415
TURNING CAPACITY							
Turning diameter	mm	150	150	250	250	400	400
Swing diameter	mm	300	300	350	350	480	480
Turning length	mm	200	200	240	240	300	300
Standard chuck diameter	mm	170	170	260	260	315	400
Max chuck diameter	mm	220	220	260	315	315	400
AXES							
Total stroke X axis	mm	850	850	1020	1020	1250	1250
Machining stroke X axis	mm	340	340	344	325	475	475
Total stroke Z axis	mm	265	265	265	230	330	280
Stroke Y axis	mm	±60	±60	±90	±90	±120	±120
Rapid speed X axis	m/1'	90	90	90	90	75	75
Rapid speed Z axis	m/1'	60	60	60	60	60	60
Rapid speed Y axis	m/1'	20	20	20	20	20	20
Ballscrew diameter X axis	mm	40	40	40	40	50	50
Ballscrew diameter Z axis	mm	40	40	40	40	40	40
Ballscrew diameter Y axis	mm	32	32	32	32	40	40
S3-25% Thrust X axis	kN	6.7	6.7	12,6	12,6	12,6	12,6
S3-25% Thrust Z axis	kN	10	10	10	10	18,8	18,8
S3-25% Thrust Y axis	kN	10	10	10	10	10	10
MAIN SPINDLE							
Spindle nose ISO 702-1	size	5	6	6	8	8	11
Front bearing Ø	mm	90	100	110	130	130	160
Max speed	Rpm	6500	4800	5300	5000	4000	4000
Max power	kW	30	30	30	48	61,7	77
Max torque	Nm	198	198	196	380	724	1180
TOOLS DRIVEN TURRET FAMAR							
Max speed	Rpm	10000	10000	10000	10000	10000	10000
Max power	kW	12,5	12,5	12,5	12,5	22,4	22,4
Max torque	Nm	88	88	88	88	145	145
Toolholders type	VDI	40	40	40	40	50	50
Toolholders	qty.	12	12	12	12	12	12
Max. tools length	mm	220	220	250	250	220	220
Indexing time	sec	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
Machine weight	Kg	15000	15000	18000	18000	20000	20000

layout/space required

TANDEM		200	215	260	315	400	415
DIMENSIONS							
A	mm	2.700	2.700	2.915	2.915	3000 *	3000 *
B	mm	5.390	5.390	5.210	5.210	5300 *	5300 *
C	mm	3.700	3.700	3.790	3.790	3.825	3.825
D	mm	3.650	3.650	3.950	3.950	4.040	4.040
E	mm	4.360	4.360	4.620	4.620	4.500 *	4.500 *
F	mm	5.350	5.350	5.515	5.515	6.050	6.050
G	mm	2.950	2.950	3.150	3.150	3.150	3.150

* Dimensions with shuttle loading. Pallet conveyor not available.



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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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