



JUARISTI

TH SERIES

HIGH DYNAMICS MULTITASKING CENTERS

Multifunction Milling, Boring and Turning Centers

MILLING. BORING. **THE EXPERTS.**





TH SERIES

High dynamics multitasking centers

High productivity multitasking centers. Precise results in all types of milling, boring or turning operations.

The TH series is a new benchmark in high productivity multitasking centers. Versatile and adaptable to each part's requirements, it is a perfect solution for 360° production and the most demanding industries.

This series of centers are designed to ensure high dynamic properties, improve stability during machining and guarantee a long service life.

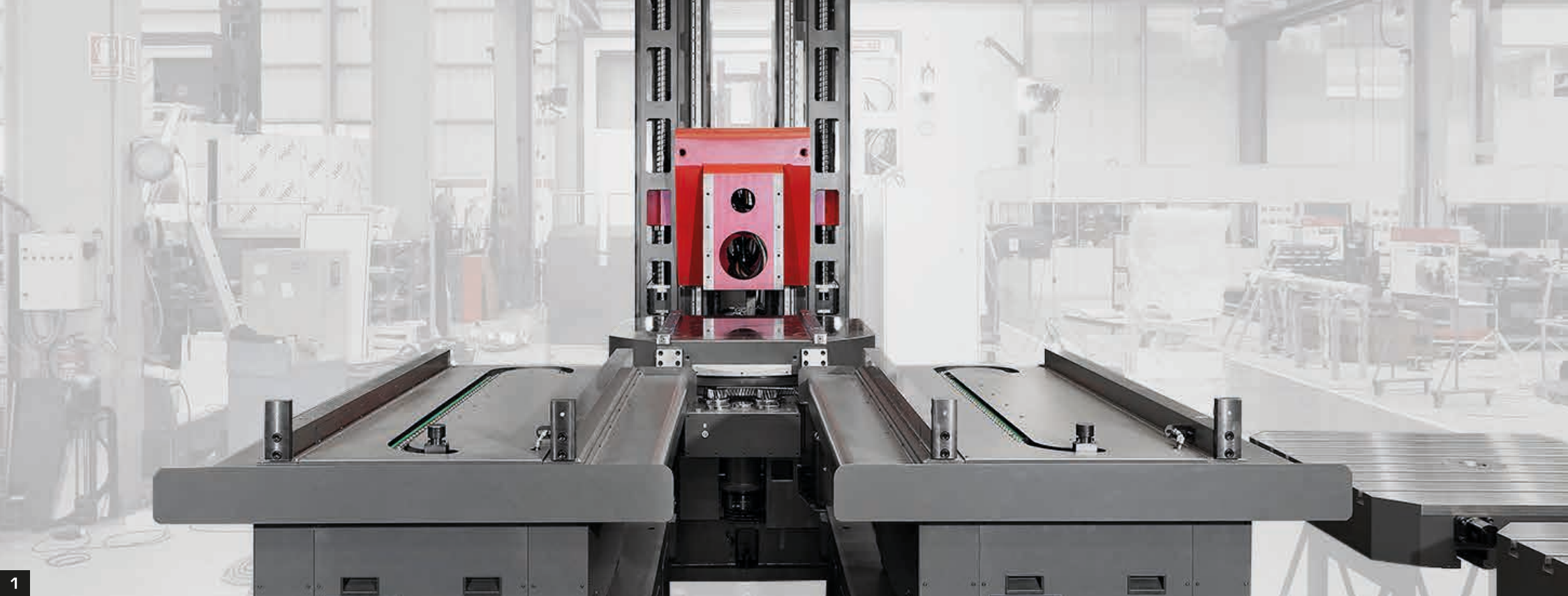
Its symmetrical design with central head and 4 vertical guides (two front and two rear) and the reinforced cast-iron structure make it very robust.

It stands out for its powerful chip removal, with feeds of up to 40 m/min and 3 m/s² acceleration. It is capable of working large, complex parts thanks to the wide axis travels (4,000-2,500-2,500 mm X, Y, Z) and its compatibility with up to 12-tonne rotary tables.

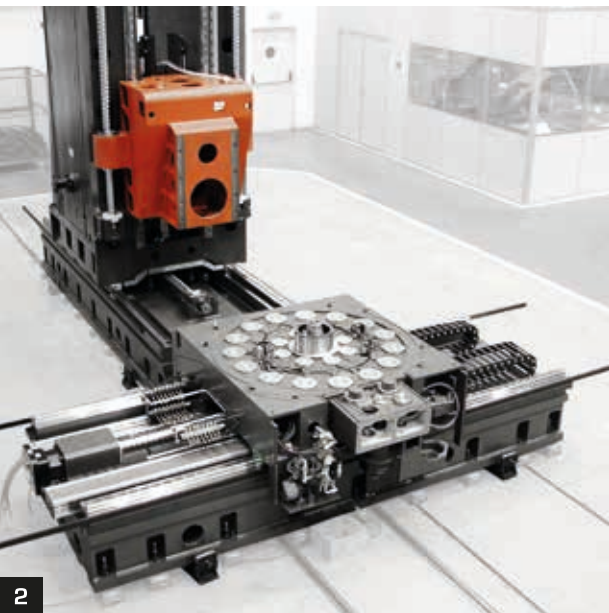
- **Highly dynamic large machining centers**
- **Thermo/symmetric structure**
- **Multi-functionality**
- **Very flexible for customisation and automation**

TH SERIES

Highly dynamic features



1



2



3



4



5

1. Thermo-symmetrical design with central head to ensure stability. 2. 4-guide column head and hydrostatic table rotation with preloaded double pinion. 3. High-precision guided LM with roller skids. 4. Integral fairing with fog extraction system. 5. Comprehensive chip and coolant collection.

/// Fully multifunctional

- Milling, boring and turning with guaranteed precision and reliability.
- Automatic head changer to carry out different machining techniques reducing non-productive lead times.
- Configurable with turning table.

/// State-of-the-art automation

- Wide range of ancillary automation systems.
- Automatic pallet changer with optional FMS system.
- Chain type automatic tool change option (up to 160 tools) or matrix type (up to 400 tools) and robot customisable.

/// Unsurpassed performance

- Unbeatable thermal and mechanical performance thanks to its symmetrical design with central head and 4 vertical guides.
- Structural elements optimised by Finite Element Method calculations to ensure superior robustness.
- LM guiding in X, Y, Z axes with high precision roller shoes.
- Hydrostatic guiding for table rotation.
- Preloaded double pinion with backlash elimination system.

/// Great versatility

- Configurable with different accessories: universal head, 5-axis head, boring bar and fixed horizontal head.
- Wide working space of up to 2,000 x 2,500 mm and turning table compatibility.
- Compatible with the very latest milling tools that enable work to be carried out with feeds of 8 -12m/min.

/// Optimised design to increase dynamic features

- Rapid feeds of up to 40 m/min and 3 m/s² acceleration.
- All-round safety.
- High performance chip removal and excellent finishes on large volume parts.

/// Safety, ergonomics and eco-design

- Travels of up to 4,000, 2,500 and 2,500 mm on the X, Y, Z axes.
- End-to-end safety: closed design full housing with chip conveyor, ceiling showers, fog extraction system and chip conveyors.
- The unit can be equipped with systems for pallet loading/unloading, automatic doors and a parts cleaning system.
- Eco-design: comprehensive collection of coolant, oils and chips.



TH-K Model

/// 5-axis head with continuous rotation

The TH-K multifunction centre model is equipped with a twist head for machining on 5 axes and can be delivered in two configurations depending on customer requirements.

- Mechanical head: 6,000 min⁻¹/1,000 Nm.
- Electro-spindle: 12,000 min⁻¹/300 Nm.
- A-axis range: ± 105°.
- Tool taper: BT-50/HSK-100/HSK 63.
- High pressure coolant through spindle (up to 80 bar).
- A-axis clamping torque: 20,000 Nm.
- A-axis positioning accuracy: 3".





TH-D Model

/// Universal head with continuous rotation 0.001 x 0.001

The TH centre can be configured with an universal head with a continuous rotation of 0.001° x 0.001°.

The JUARISTI ACD is a strong, precise and reliable head capable of working in any position combining 2 rotary axes : 45° and vertical planes. It has a backlash suppression system and double magnetic encoder in each plane, which ensures high precision in every angle.

- Main spindle: 6,000 min¹/40 [46] kW.
- Indexing 0.001° x 0.001°.
- Tool taper: BT-50/HSK-100.
- High pressure coolant through spindle (up to 80 bar).



MILLING. BORING. **THE EXPERTS.**

TH-S Model

/// Boring bar

The TH-S model features a high-precision boring bar made of hardened, nitrided and ground steel to ensure maximum stability and robustness.

The spindle cooling system maintains a constant temperature, ensuring high accuracy regardless of ambient temperature or cutting conditions. Refrigerated oil circulates through the main shaft sleeves and gearbox.

- Spindle diameter: 130/150 mm.
- W axis stroke: 800/1,000 mm.
- Boring bar speed: 4,000/3,500 min⁻¹.
- High pressure coolant through spindle (up to 80 bar).





TH Model

/// Fixed horizontal head

The TH machining centre accommodates a basic configuration with a fixed horizontal output. This is an ideal configuration for straight horizontal machining. The elongated, rigid nose design allows you to get close to the part and ensures rigid, high-speed, high-precision machining.

- Horizontal output dimensions (mm): 280 diameter x 550 long.
- Spindle rotation speed: 6,000 min⁻¹ (option 12,000 min⁻¹).
- Tool taper: BT-50/HSK-100.
- High pressure coolant through spindle (up to 80 bar).



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JUARISTI

Multitasking total

Systems designed to increase our machines' autonomy and productivity

The TH series is the solution that offers the greatest value to our customers in terms of multifunctionality.

It is an all-in-one unit capable of milling, boring and turning with very short tool and head change times.

The TH3-MT model stands out in this respect, featuring a turning table configuration and a universal head with continuous rotation optimised for turning.

OPTIMISED MODEL FOR TURNING

The TH3-MT configuration incorporates a turning table and a special head



1. Robot type ATC tool changer. 2 and 3. Matrix tool changer.

Automated Solutions

QUICK AND RELIABLE

/// Systems designed to increase our machines' autonomy and productivity

The TH series models include numerous systems that enable unattended operation, including bed-integrated chip and coolant collection systems, fog extraction systems, and pallet changing systems (FMS option).

Made by **JUARISTI** automated solutions

- Automatic tool changer.
- Automatic head and accessory changer.
- Automatic pallet changer.
- Automatic head calibration system.
- Calibration system and tool life control.
- Probes for part measurement.

			TH3	TH5	
WORK STROKES	X - Transversal table	mm	2,000 - 3,000 - 4,000		
	Y - Vertical head	mm	1,500 - 2,000	2,000 - 2,500	
	Z - Longitudinal column	mm	1,500 - 2,000 - 2,500		
	W - Axial boring bar (TH-S)	mm	800 (Ø 130 - 150)	1,000 (Ø 150)	
HEAD	TYPE D Universal 1x1°/0.001x0.001° ISO 50 (HSK100)	Spindle rotation speed	min ⁻¹	5,000/6,000	
		Spindle power - S1/S6	kW	40/59	
		Spindle torque - S1/S6	Nm	1,300/1,960	
	TYPE K 5 axes continuous rotation ISO 50 (HSK100 - HSK63)	A axis	°	± 105° with continuous rotation or positioning every 0.001°	
		Mech./Elec. Speed	min ⁻¹	6,000/10,000/18,000	
		Mech./Elec. Power	kW	30/48	
		Mech./Elec. Torque	Nm	1,030/300/90	
	TYPE S Boring bar ISO 50 (HSK100)	Spindle rotation speed	min ⁻¹	4,000	3,500
		Spindle power - S1/S6	kW	40/59	40/59 - 46/65
		Spindle torque - S1/S6	Nm	1,650/2,500	1,650/2,500 - 2,050/2,900
	TYPE H Fixed spindle ISO 50 (HSK100)	Fixed spindle Ø x L	mm	280x550	
		Spindle rotation speed	min ⁻¹	6,000 (12,000 with electro-spindle)	
		Spindle power - S1/S6	kW	40/59 (48 with electro-spindle)	
Spindle torque - S1/S6		Nm	1,400/2,125		
FEEDS	X-Y-Z	m/min	40		
MG ROTARY TABLE	Dimensions	mm	1,000x1,200 - 1,600x2,000	1,450x1,450 - 2,000x2,500	
	Load capacity	Kg	8,000	12,000	
	Rotation speed	min ⁻¹	10	10	
MT TURNING TABLE	Diameter	mm	1,250 - 1,600	1,500 - 2,000	
	Load capacity Turning / Milling	Kg	3,000 - 5,000	5,000 - 8,000	
	Rotation speed	min ⁻¹	400	300	
AUTOMATIC TOOL CHANGER	No. of tools		30 - 40 - 60 - 80 - 100 - 120 - 160 Chain type 150 - 400 Rack/Type Robot		
	Max. tool dimension	Diameter	mm	125 (250)	
		Length	mm	600 - 1,000 (with Robot)	

INDUSTRY APPLICATIONS



Ideal solution for flexible, versatile productions

The TH is an excellent choice for machining companies working in small batches and with multiple reference changes such as subcontractors or 360° producers.

This is a machine designed with a focus on versatility, permitting a wide range of machining: milling, boring, turning and high precision work on large pieces.

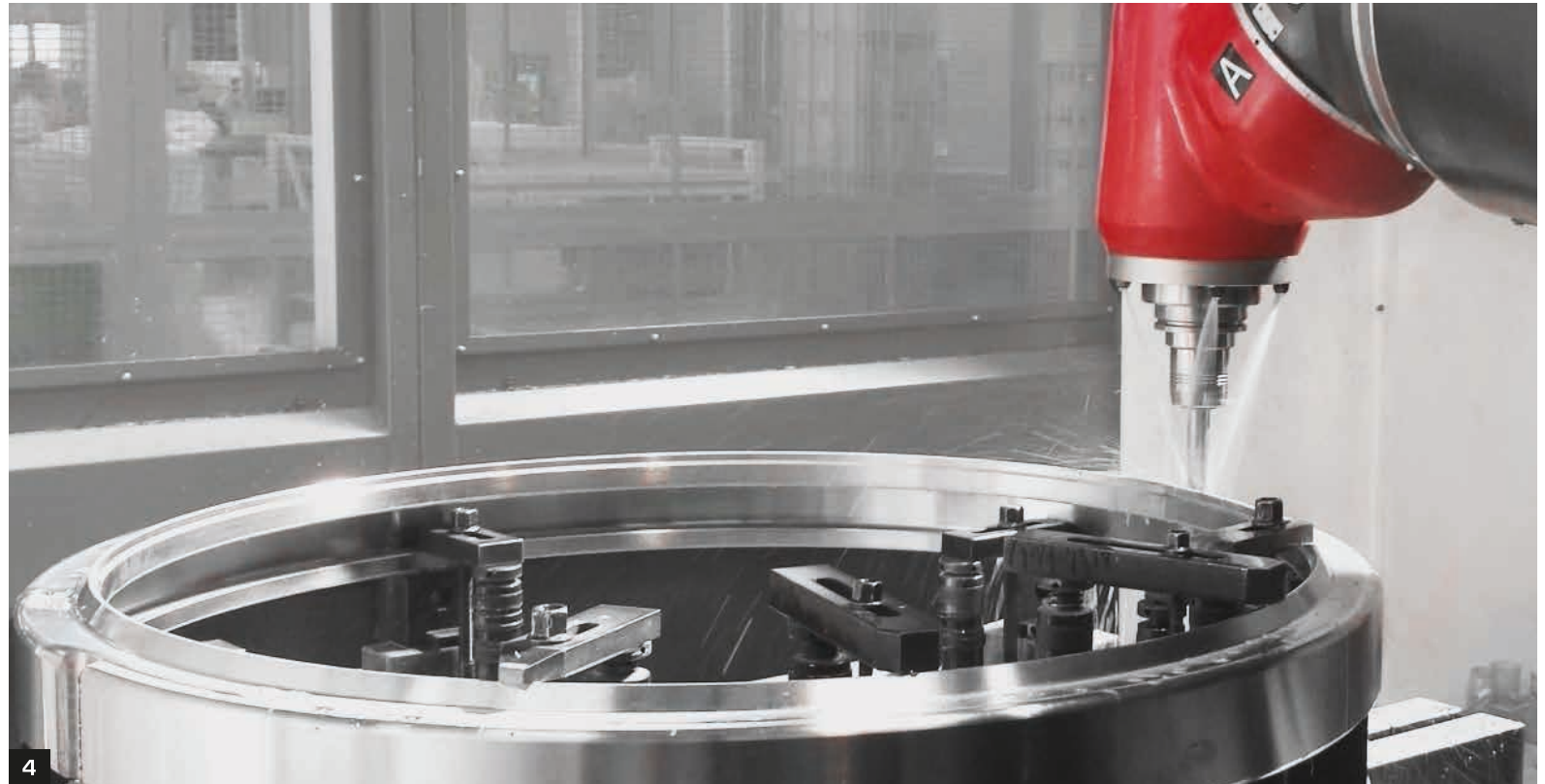
This series enables parts up to 12 tonnes to be worked on, making it suitable for a wide range of sectors.

We have numerous customer testimonials from the most demanding sectors:

- General machining
- Subcontracting
- Oil and Gas
- Mining and Construction
- Aeronautics
- Automotive
- Moulds and dies
- Railways



FOR APPLICATIONS IN THE MOST DEMANDING SECTORS



1. Aeronautical sector applications. 2. Moulds and dies. 3. Mining and construction. 4. Aeronautical engine turbines. 5. Helical gears. 6. Heavy-duty mining equipment. 7. Lorry components. 8. Heavy-duty crane components. 9. Oil and Gas power generation parts.

TECHNOLOGY

My JUARISTI

A cutting-edge software that provides users with tools to improve profitability, increase productivity, reduce downtimes and simplify machine operations.



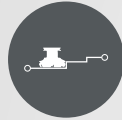
SUPERVISOR

Unifies and streamlines management of all production equipment, allowing direct communication with the end-user's ERP.



OSASUN

Software for machine monitoring, self-diagnostics and predictive maintenance.



ADAPTIVE CONTROL

Adapts cutting conditions by increasing feed and power in favourable conditions and reducing it in adverse conditions.



BALANCE CONTROL

Software for monitoring and correcting unbalanced masses in turning processes.



GPS

Fully automated search for table center for increased accuracy in multi-sided machining.

LEADING TECHNOLOGIES

Our solutions include the most cutting-edge technologies to ensure maximum precision and reliability. They ensure reduced vibrations and enable automatic head calibration or quick machine verification, among many other advantages.



HDS

HYDROSTATIC DAMPING SYSTEM

Reduced vibration and increased cutting capacity thanks to hydrostatic damping.



AHC

AUTOMATIC HEAD CALIBRATION

Fast, automatic head geometry correction to ensure precision.



RPT

RAM PRECISION TECHNOLOGY

Guaranteed geometric precision throughout the entire RAM and bar axis stroke.

Made by JUARISTI

A Promise of Quality

JUARISTI follows an end-to-end production philosophy. 'Made by JUARISTI' ensures that all structural components, tables, heads and automation systems are manufactured and assembled in-house.

JUARISTI's extensive experience in machine tool design and in-depth knowledge of the industry allows us to offer our customers the solution that best meets their needs, with the guarantee of maximum precision and reliability. Moreover, we offer a comprehensive, personalised service throughout your dealings with JUARISTI, from the initial consultation and personalised support phase, to design, manufacture, approval, commissioning and after-sales service.

ACCURACY CUBE

Today's inspiration is tomorrow's innovation

Accuracy Cube promises precision and reliability for our customers.

In this area, we collect and analyse information to improve our patented Accuracy Best+ process, JUARISTI's intelligent production method to ensure precise machining and settings before and after machine assembly.

This state-of-the-art air conditioned and temperature-controlled manufacturing center mean parts are machined and measured with optimum precision and quality guarantees, surpassing customer requirements.

ACCURACY BEST+

Precision Parts Center

Precision machining area



High-precision grinding and superfinishing of cylindrical components. Precision machining of key machine elements: heads, gearboxes, etc.

3D Verification Lab

Room for Dimensional Verification



A space devoted to dimensional verification with a state-of-the-art ultra-precise coordinate measuring machine.

The White Room

Head assembly area



Final assembly of heads in a controlled atmosphere white room free of contaminants.



Closer, faster, more efficient

COMISSIONING

Installation

Final installation at the customer's plant by the machine's team of assembly technicians.

Excellence since day 1

Standardised commissioning protocol to ensure optimum operation and performance.

Training

Training on the operation and maintenance of our machines taught by our team of assembly and commissioning technicians.

KEEP IT RUNNING

Spare parts

Guaranteed spare parts availability with warehouses in Spain, Germany and dealer locations. Wide range of available accessories.

Immediate assistance

Hotline managed by specialist technicians. Comprehensive assistance system.

Preventive maintenance

Continuous machine monitoring and analysis for preventive maintenance.

CONTINUOUS IMPROVEMENT

Upgrades

Updating of all our machines.

Optimisation

A wide range of available technological and automated options.

Consultancy

Technical consulting in all project phases, from before the purchase to our technical service.

ALWAYS ON YOUR SIDE

On site support

Our support team has the technical training that ensures optimum performance of our machines.

One step ahead

Comprehensive assistance system with remote servicing, preventive and predictive maintenance.

JUARISTI **SERIES**

The Next Level



TL - TX SERIES

PLANER TYPE HORIZONTAL BORING - MILLING MACHINES

- High precision, high power and capacity thanks to its thermo-symmetric design.
- Capable of boring and 5-sided machining in a single clamping.
- Option to incorporate various heads, accessory magazines and pallets.



ML SERIES

MOBILE COLUMN MILLING MACHINES

- Optimised design for a quick return on investment.
- Development-based Value Analysis with high dynamics and great versatility.



TH SERIES

MULTIFUNCTION MILLING, BORING AND TURNING CENTERS

- Highly automated high performance multifunction centers.
- Milling, boring or turning operations.
- High dynamics and precision thanks to its thermo-symmetrical structure.



MX - MX RAM SERIES

CENTRAL HEAD MILLING - BORING MACHINES

- High-performance in big formats.
- Powerful chip removal and excellent finishes.
- Powerful and efficient thanks to the closed column console design and four-sided guided RAM.



BL SERIES

BED TYPE MILLING MACHINES

- Dynamic, powerful small format milling machines.
- Equipped with state-of-the-art heads.
- High efficiency, long service life and integrated enclosure.



MP RAM SERIES

HYDROSTATIC MOBILE COLUMN BORING MACHINES

- High-power and precision in machining large parts.
- Unbeatable results and a guaranteed highest precision thanks to hydrostatic technology.
- Designed to meet the requirements of the most complex, critical parts with the highest machine durability.

MILLING. BORING. **THE EXPERTS.**

At JUARISTI, we are experts in delivering solutions for all types of machining operations. Our catalogue spans a wide range of configurations for milling machines, boring machines and machining centers.

We pride ourselves on the quality and robustness of our products, on our close customer cooperation from the consultation during the buying process to our technical service, and on our development of innovations that set us apart to compete globally.

Our technical service network is present in more than 40 countries. The rapid response, spare parts availability and our highly professional technical staff mean we can offer a personalised, professional service that ensures our solutions are reliable.

For more than 75 years, we have led the way in innovation in our sector and provided solutions to customers in the most demanding industries.

JUARISTI Boring & Milling Machines

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