

T SERIES MACHINE PROGRAM

UNIVERSAL 5 AXIS
MACHINING CENTRES

IBARMIA.
YOUR MACHINE TOOL POINT



T SERIES

POWER & CAPACITY

UNIVERSAL 5 AXIS
MACHINING CENTRES

1 Torque motor
continuous axis.
Direct measuring by
encoder installed on the
rotating axis.

2 Heavy load capacity.
Available MULTIPROCESS.
Up to 500 rpm.

THR 16 MULTIPROCESS





YOUR
MACHINE
TOOL
POINT

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Concept, ergonomics, description
and construction features.

T_ MULTIPROCESS P12

Multi-tasking machining centres
with universal head for
5 axis works.



T_ EXTREME P18

Universal 5 axis
machining centres.



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T SERIES MACHINE PROGRAM

CONCEPT_

Technology and Innovation. For those customers looking for big swing diameters or aiming to machine in one set up IBARMIA proposes the T Series models, which serial name refers to the bed shape and the configuration and distribution of X/Y axes, in combination with different head types and rotary tables. The entire range of machines is available with single table or pallet changer, and in EXTREME version (milling centre) or in MULTIPROCESS version (milling and turning centre) to increase the versatility and flexibility of the machine even more.



AN UNRIVALLED PROPOSAL
IN TERMS OF ERGONOMICS
AND FLEXIBILITY.

ERGONOMICS_

Ergonomics, that becomes a full, immediate, near and comfortable access for the operator during the loading/unloading of parts, the machining or the verification and control of the parts.

A work area designed for the easy evacuation of chips must be added to this, a top access with an overhead crane, moving control panels and with suitable screen and keyboard tilting and a broad view of the work area.

1_ DOOR OPENING*

Motorised* opening to avoid physical efforts. **Optional.*

2_ SLATTED IN ALL OF THE INSIDE OF THE MACHINE

Easy part loading-unloading and preparation. The operator can move around the table. (T22 / T30 / T36).

3_ FOLDING SLATS

It makes access and cleaning the endless screw area easier.

4_ TOTAL CLOSING WORK AREA

Reduces the acoustic and environmental contamination.

5_ ERGONOMIC WORKING HEIGHT

Optimized plate/table height avoiding uncomfortable postures for the operator.

6_ MANUAL TOOL CHANGE PEDAL

It allows the operator to have 2 free hands in operations in the warehouse.

7_ ERGONOMIC MAINTENANCE

Easy and fast access to maintenance elements, grouped by functions: hydraulic, pneumatic, greasing...

8_ CONTROL PANEL

Ergonomic design. The distribution of the elements, the inclination, the height and the distances are designed for an optimum interaction with the operator.

CONTROL, SIGNALS, INFORMATION

Clear and unmistakable messages. Overloads of information are minimised. Easy to identify and accessible control functions, to minimise mental fatigue of the operator.

MOVILITY OF THE PANEL*
Control panel with double joints. Allows taking the panel to the side of the part with the operator inside it.

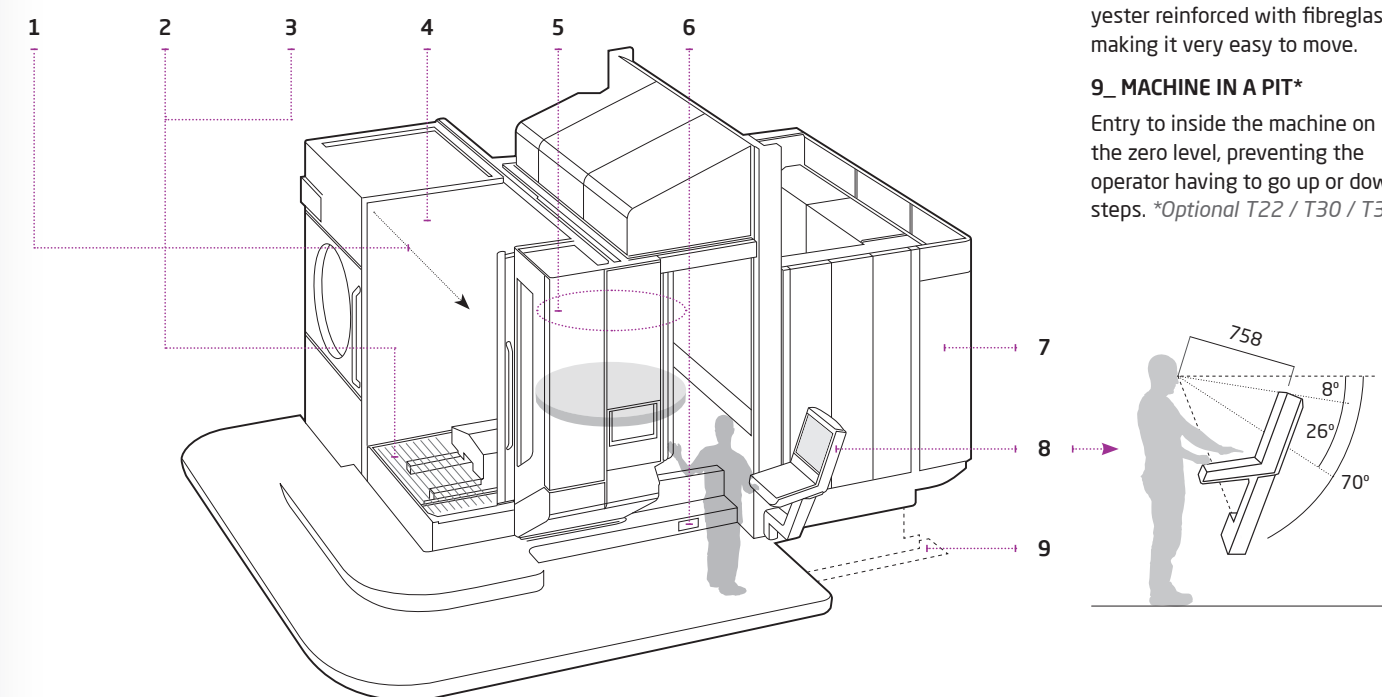
**Optional T22 / T30 / T36.*

LIGHT CONTROL PANEL

The control panel is very light thanks to the materials used (polyester reinforced with fibreglass), making it very easy to move.

9_ MACHINE IN A PIT*

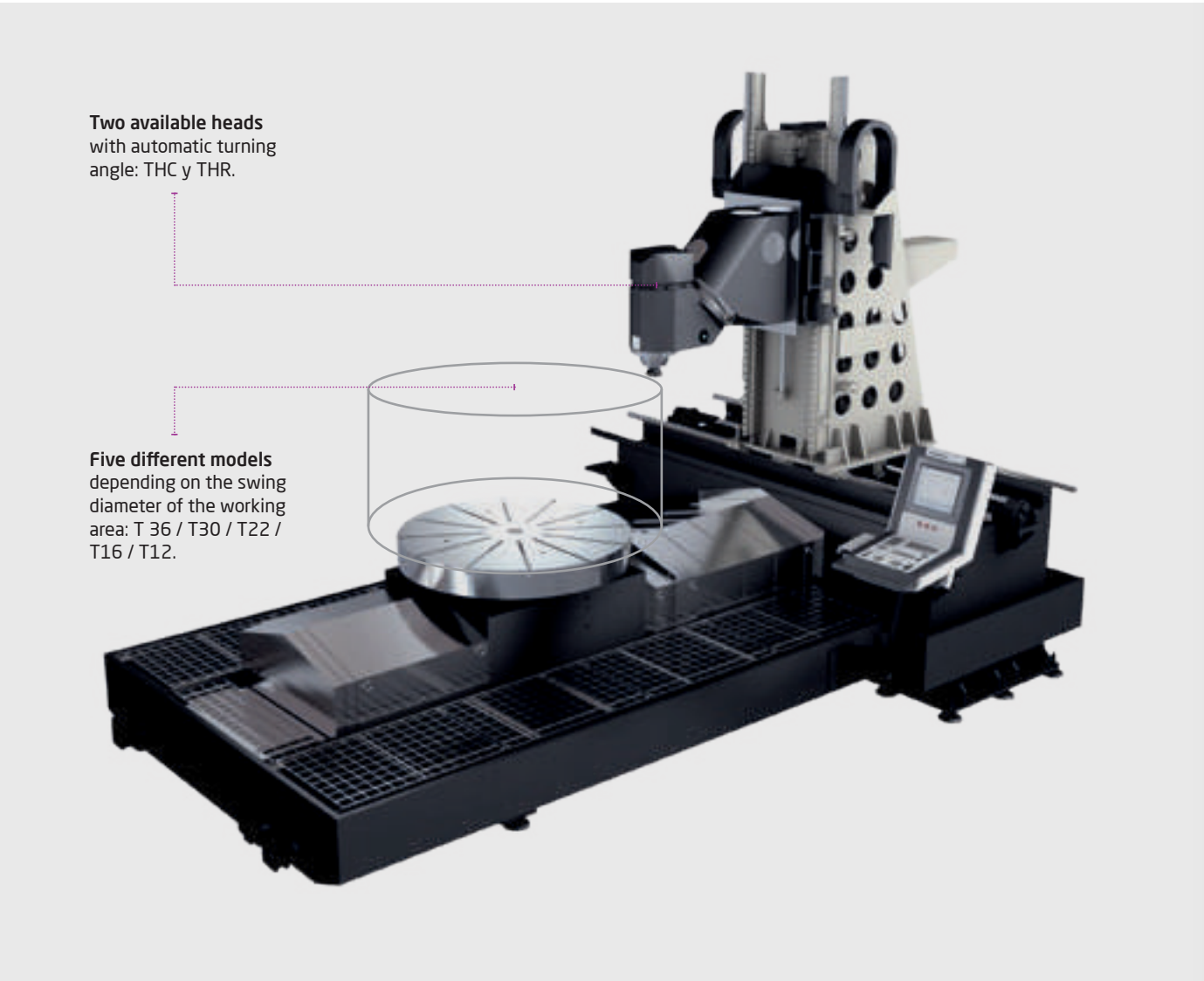
Entry to inside the machine on the zero level, preventing the operator having to go up or down steps. **Optional T22 / T30 / T36.*



DESCRIPTION_

BECAUSE YOU KNOW
WHAT YOU NEED, WE LEAVE
IT UP TO YOU TO CHOOSE:
CONFIGURE YOUR MACHINE

The T Series covers 5 different models depending of the axis strokes and swing diameter of the working area T12, T16, T22, T30 and T36 for strokes that go from 1200 mm to 3600 mm. There are two available heads in the range, both for continuous 5axis machining with high dynamics. The B axis head with a turning angle at 45° and the A axis head which allows working on negative angles. Both heads work by direct transmission with a torque motor on the turning shaft, avoiding backlash issues and guaranteeing dynamics and accuracy while minimizing maintenance and repair costs in case of collision.



1_ SIZES

maximum diameter and height of piece



ø 3600 mm
h 2150 mm



ø 3000 mm
h 1950 mm



ø 2200 mm
h 1750 mm



ø 1600 mm
h 1450 mm



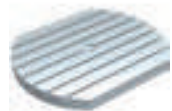
ø 1200 mm
h 1250 mm

T_ EXTREME TABLES

T_ MULTIPROCESS TABLES



Standard
Square table with parallel
T grooves.



Optional
Square-round table with
parallel T grooves.



Standard
Round table with radial
T grooves.



Optional 1
Round table with radial
T grooves & automatic
clamping with zero points.



Optional 2
Round table with radial
T grooves & special
machining for jaw-blocks.

Several table configurations to respond to the needs of each customer: different construction sizes and flexibility in the configuration of geometries, grooves and types of attachments. High dynamics and positioning precision, with firm position locking and maintenance in high load machining operations. Wide range of rotation speeds, in the MULTIPROCESS versions (milling/turning) depending on weights and turning over of parts to be machined.

2_ HEADSTOCKS



THC
B AXIS UNIVERSAL HEADSTOCK
Universal head with a turning angle at 45°.
-15°/+195°



THR
A AXIS FORK HEADSTOCK
Fork head that allows machining
negative angles.
-45°/+135°

Machining in up to 5 simultaneous axes in combination with the table rotary axis. Robust design that guarantees optimum rigidity during machining. High dynamics of the headstock rotation using direct motor technology. High positioning precision using direct measuring systems in the axes. Optionally available with tool rotation blocking for milling and turning applications.

CONSTRUCTION FEATURES_

The design of the machine has been optimized based on static and dynamic calculations to ensure its behaviour during the most demanding capacity tests. These calculations have been supported by monitoring the real behaviour of the machine during static and dynamic trials. This way we have been able to determine the limits of the machine in different cutting conditions and machining operations.

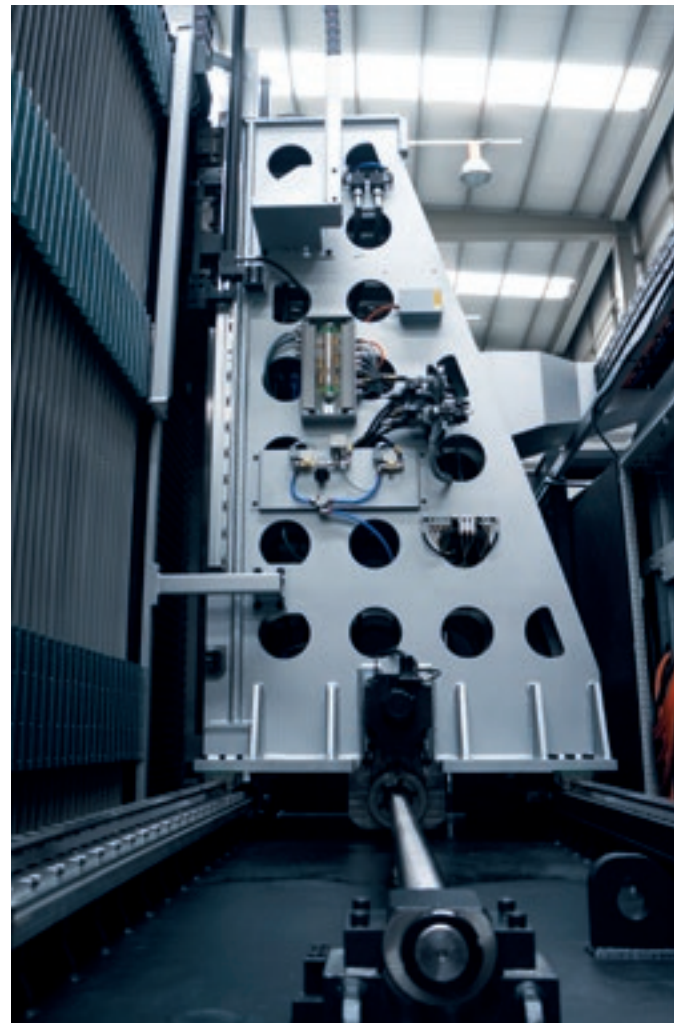
MAIN CHARACTERISTICS



1_ Maximum stability and rigidity ensured by the well proportioned distances between guides. Monoblock design of the machine bed designed to optimize the evacuation of chips.

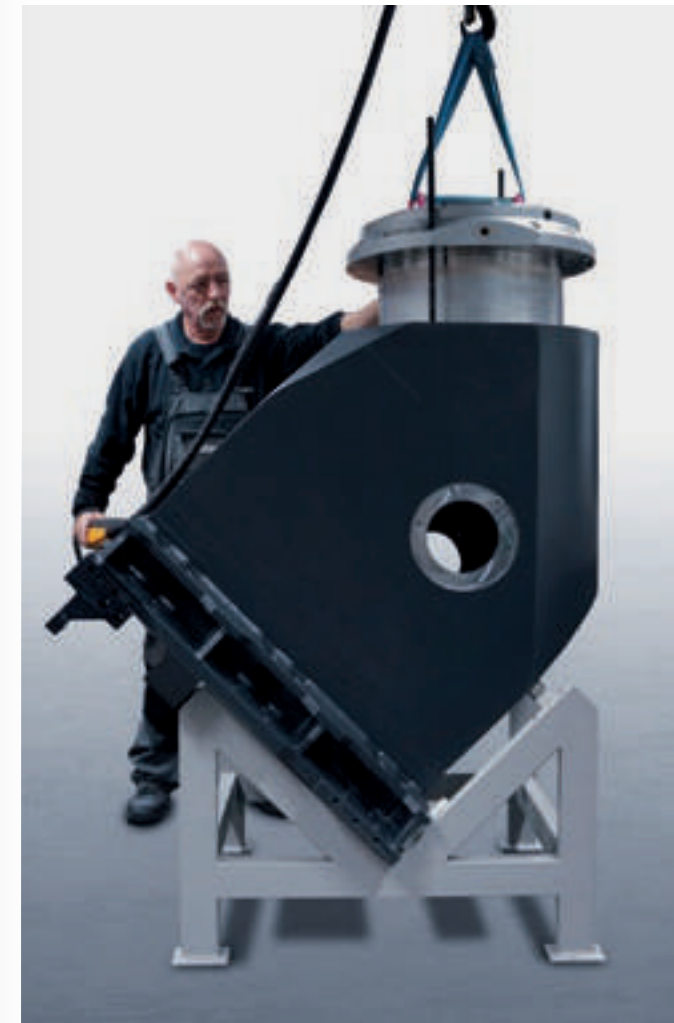


2_ Endless screws on both sides of the table for an optimum evacuation of chips.



3_ Movement on X/Y/Z axis over linear guides with preloaded rolling shoes with two rows of circulating rollers which provide everlasting, rapid and precise movements (maintenance free).

POWER, RIGIDITY AND DYNAMICS
TO ENSURE ACCURACY AND
PRODUCTIVITY.



4_ Finite Elements optimization of the structures to ensure the rigidity and performance of the machine during its life cycle.



5_ High dynamics axes incorporating spindles up to 12.000 rpm and 74 kW. Advanced technology for advanced companies.

T_

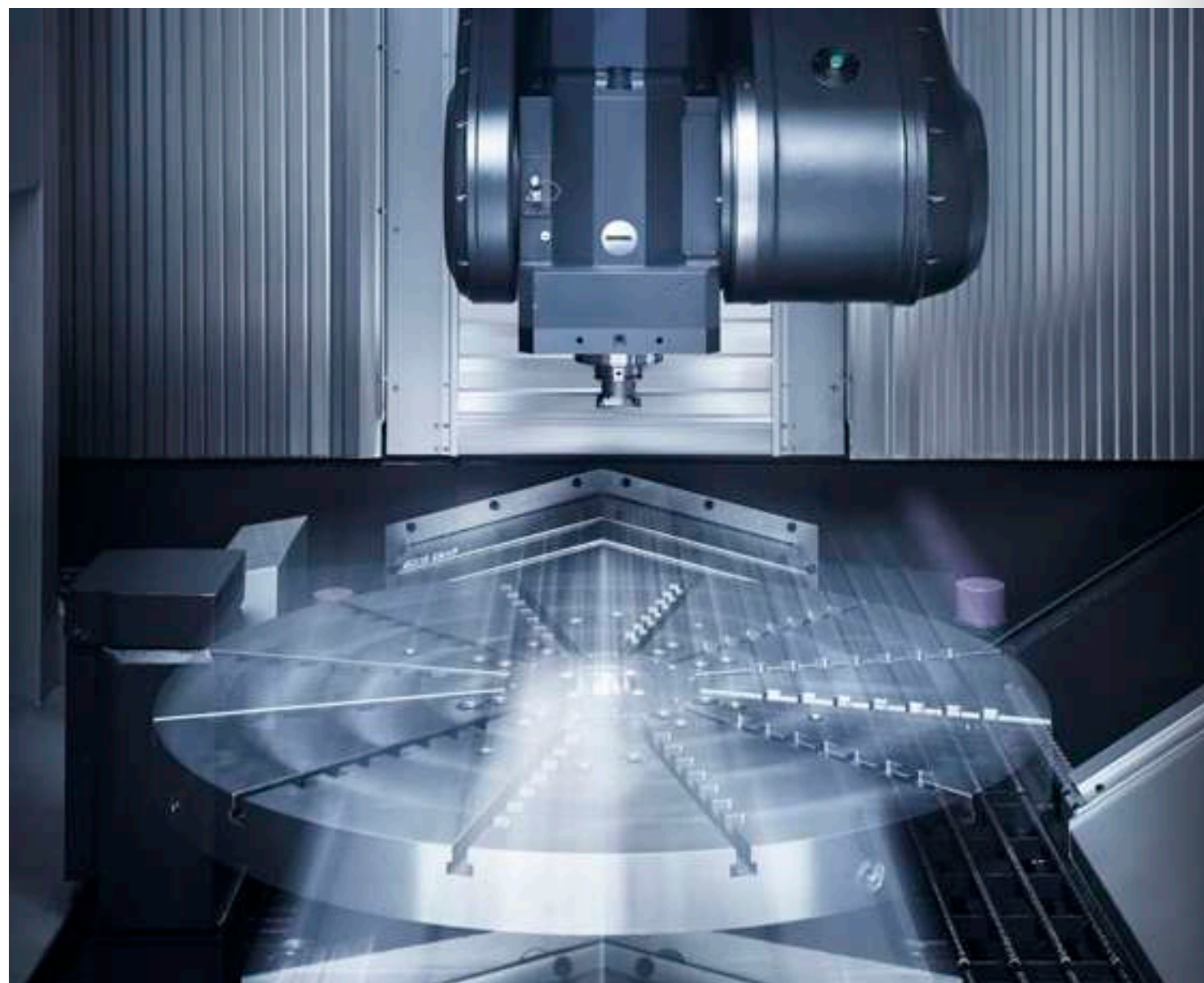
MULTIPROCESS

36/30/22/16/12

MULTIPROCESS MACHINING CENTRE:
5 AXIS MILLING + VERTICAL TURNING.

Multi-tasking (milling/turning) with T shaped structure, available with 2 types of spindle head (HC / HR) for works on rotary tables with various levels of automation.

- Spindle head: THC / Universal, THR / Fork.
- High torque and power spindle with milling and turning capacity.
- Various tool blocking options during the turning process.
- Working table for positioning and turning operations: direct motor of high power and dynamics. Maximum working dimensions: swing diameter 3600 mm and height 2150 mm.



MULTIPROCESS: MORE
PRODUCTIVITY FOR YOUR
MACHINING PROCESSES,
MORE COMPETIVENESS FOR
YOUR COMPANY.

The integration of various processes is key in high performance machines. IBARMIA offers this technology minimizing the quantity of machines required and reducing the machining times of complex work pieces. The efficiency associated to MULTIPROCESS machines is even more obvious when we handle big and heavy work pieces of difficult handling and clamping works.

The MULTIPROCESS concept becomes key for the competitiveness of the companies: it improves the quality of the pieces as fewer machines and set ups are required, it reduces the cost of the investment, the space required is smaller, it eliminates the transit of pieces in the factory and it simplifies the industrial management.

T_ 36 / 30 / 22 / 16 / 12



HIGH PERFORMANCE

In turning mode, the generous dimension of the structural elements and the powerful blocking system of the turning tool in the main spindle provide great rigidity with big material removing capacity. An intelligent balancing system integrated in the machine, guides the operator detecting and minimizing unbalanced positions ensuring a safe machining process.

WORK SET UP

Clamping systems designed for milling and turning operations. Design and manufacture of specific clamping systems for our customers.

TURNING TABLES

The T MULTIPROCESS Series machines incorporate a wide range of tables with high dynamics for turning and accurate positioning for milling operations, with different weight and speed capacities. These tables have direct motors of high dynamic and torque.

TOOL CLAMPING

Powerful and rigid clamping force for milling and turning tools in the standard configuration: HSK A-100. Optionally IBARMIA can offer various clamping systems for turning and boring operations with long tools.

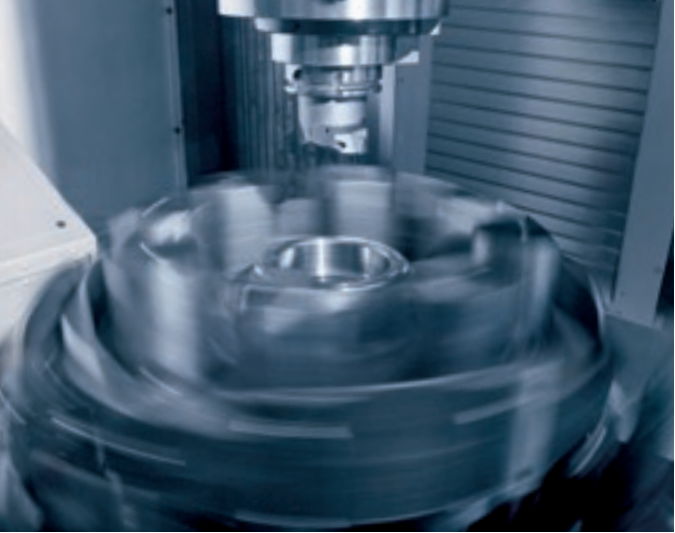
TECHNICAL CHARACTERISTICS

	T36	T30	T22	T16	T12
Strokes					
X axis	3600 mm	3000 mm	2200 mm	1600 mm	1200 mm
Y axis	2300 mm	2000 mm	1600 mm	1300 mm	1100 mm
Z axis	1900 mm	1700 mm	1500 mm	1200 mm	1000 mm
Table					
Dimensions	ø2200 mm	ø1800 mm	ø1600 mm	ø1250 mm	ø1000 mm
Maximum diameter of swing	ø3600 mm	ø3000 mm	ø2200 mm	ø1600 mm	ø1200 mm
Piece maximum height	2150 mm	1950 mm	1750 mm	1450 mm	1250 mm
Electrospindle					
Spindle taper	HSK A-100. (Op. Capto C8)				
Power / Speed	74 kW - 12000 rpm. (S1 100%)				



SAFETY
Total enclosure of the working area. Vertical interior protecting the tool magazine and guideways from chips and coolant, steel protection around the spindle head.

MAINTENANCE
Easy access to service and maintenance elements for an optimized execution of these tasks to extend the life of the machine.



**INTEGRAL SOLUTION:
PERFORMANCE GUARANTEED**
At IBARMIA we cooperate with our customers analysing the optimum machining process of their pieces and the total configuration of the machine.
In these cases, IBARMIA can offer the machine, clamping systems, tools and the machining programs required. This service ensures the maximum performance of such an advanced technology, especially in MULTIPROCESS machines.



INNOVATING & ATTRACTIVE DESIGN

IBARMIA has been awarded with diverse prizes by the quality of its designs.

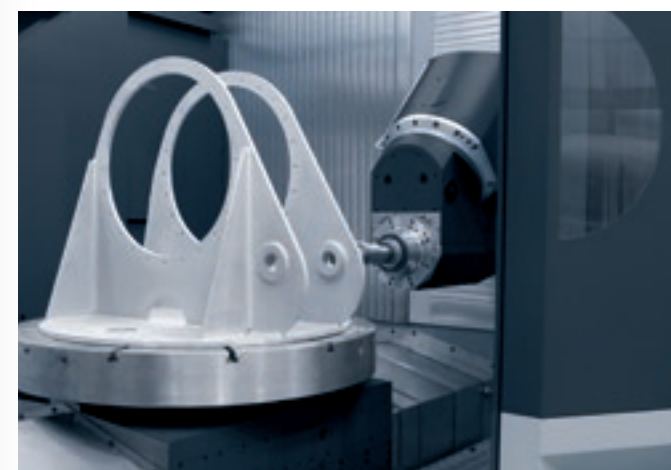


The design of the T Series provides functionality, ergonomics and great stability. The latest technology is combined with an attractive design. The original round windows, differentiate the machine from others.

The combination of colours and the use of stainless and aluminium materials gives elegance and harmony to the overall design. IBARMIA has been awarded with many prizes for the quality of the designs.

ADVANCED MANUFACTURING

The constant demand in productivity and accuracy and the technological development of machinery and tools is making old production means become obsolete faster. At IBARMIA we offer production equipment of latest generation that incorporates the "state of the art" of technology. The "multiprocess" system reduces time and errors and increases the productivity and accuracy. We combine the following processes in one machine: milling, drilling, tapping, gear milling, boring, turn/milling, turning. The CNC includes specific functions to support every process and optimize the performance of the machine.



T_ EXTREME 36/30/22/16/12

THC AND THR:
5 AXIS MACHINING CENTRES

T shaped machining centres, with 2 different spindle head styles, (HC/ HR) for works on rotary table with various levels of automation.

- Spindle head: THC / Universal, THR / Fork.
- High power & torque spindle with high dynamics.
- Maximum swing diameter: 3600 mm.
- Maximum work piece height: 2150 mm.



HIGH PERFORMANCE MACHINE FOR YOUR PRODUCTION REQUIREMENTS

T_ 36 / 30 / 22 / 16 / 12



COMFORT AND SAFETY

Total enclosure of the working area. The operator is protected from noise, chips, coolant and mist generated during the machining process. Mist extractors can be included optionally. Machine designed with the operator in mind in every situation: Loading of work pieces, maintenance works, machining process etc...

DYNAMICS AND ACCURACY

Large preloaded rollers with high dynamics and low friction. This system allows fast and accurate positioning in the most demanding machining operations as well as in low tolerance finishing jobs. Every axis is provided with direct measuring systems by means of glass scales on linear axes and encoders on rotating axes.

CONTROL OF THE PROCESS

The use of CAM systems allows machining complex work pieces in high performance conditions and reducing the risk of collisions.

GUARANTEE OF ACCURACY

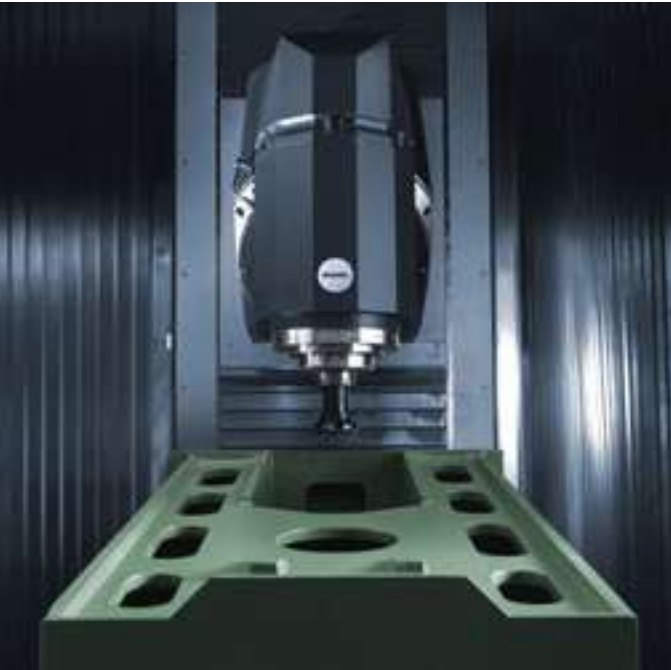
The accuracy is priority from the first stages of design of the machine. The linear axes are verified by laser interferometers and the circularity is checked by ball-bar.

The THC range is equipped with a continuous tilting spindle head at 45° with high acceleration and positioning dynamics. Ideal for medium to large work pieces that require high performance and versatility. It is the perfect machine for single units and large batch manufacturing as it is possible to machine 5 faces and angled sides in one clamping,

improving the accuracy and productivity. The machine can be customized to specific requirements with many automation solutions such as pallet systems, big tool magazines, etc...

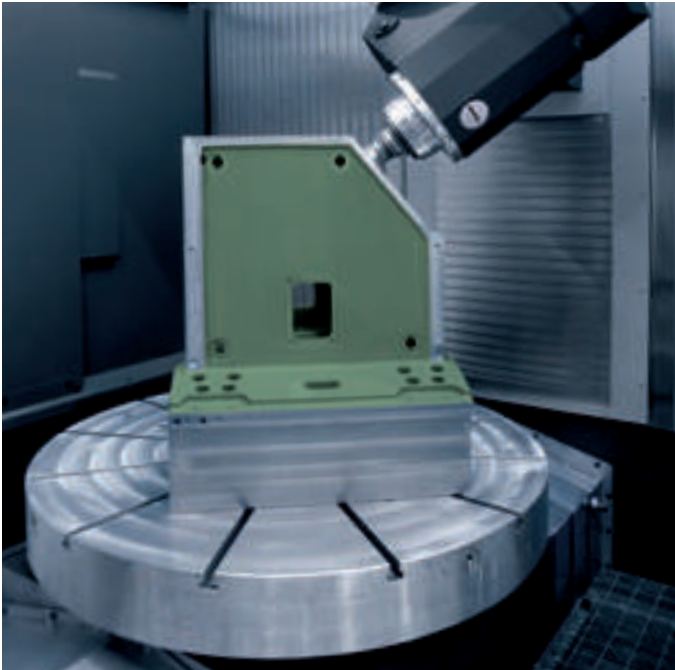
TECHNICAL CHARACTERISTICS

	T36	T30	T22	T16	T12
Strokes					
X axis	3600 mm	3000 mm	2200 mm	1600 mm	1200 mm
Y axis	2300 mm	2000 mm	1600 mm	1300 mm	1100 mm
Z axis	1900 mm	1700 mm	1500 mm	1200 mm	1000 mm
Table					
Dimensions	1600 x 1600	1250 x 1600	1250 x 1250	1000 x 1000	800 x 800
Maximum diameter of swing	ø3600 mm	ø3000 mm	ø2200 mm	ø1600 mm	ø1200 mm
Piece maximum height	2150 mm	1950 mm	1750 mm	1450 mm	1250 mm
Electrospindle					
Spindle taper	SK-50. (Op. BT-50 / HSK A-100 / Capto C8)				
Power / Speed	74 kW - 12000 rpm. (S1 100%)				



POWER AND DYNAMICS

A spindle head that gives you confidence at first sight. The accurate control of power and dynamics is achieved with the THC head.



ENDLESS FLEXIBILITY

Ideal machine for pieces of complex geometries that require accuracy and fabrication speed. The automation system options allow machining single units and medium to large batches of pieces.

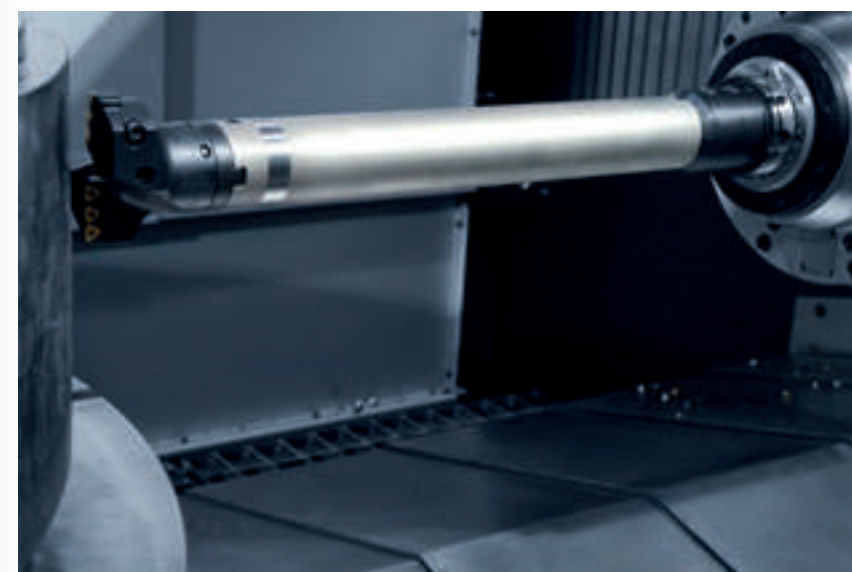
MAXIMUM STABILITY AND ACCURACY
A thermo symmetrical structure and the thermal isolation of heat sources during the process guarantee the accuracy and repeatability during the machining operations. Constant rigidity on every point of the working area. Great working space to machine voluminous and heavy work pieces with big clamping devices. Optimized design in order to reduce the forces required in the machining process.





MAKE IT EASY

Manipulating and setting up heavy and voluminous work pieces causes long and expensive "non machining" times. These details have been thoroughly considered in the T Series to ensure the ergonomics, comfort and safety of the operators.



ONE MACHINE: ENDLESS POSSIBILITIES

The T EXTREME Series can be easily adapted to a wide range of geometries due to various configurations of heads and tables. Machining on horizontal, vertical and inclined angles, with strokes to maximize the use of the working area. An advanced technology for advanced companies.

T SERIES AUTOMATION SYSTEMS

One of the big drivers of the current industry is automation given the capacity of answering the challenge of making the machines work for as many hours as possible and, if possible, unattended. Therefore, the focus on improving productivity is permanent, minimising the production times and response to the market. Now, more than ever, we are trying to reduce the in process inventory with just in time production techniques.



IBARMIA offers different degrees of automation that allow a perfect adaptation of the specific production requirements of each case.

WE OFFER VARIOUS MACHINE AUTOMATION SOLUTIONS COOPERATING WITH LEADERS IN THE SECTOR.

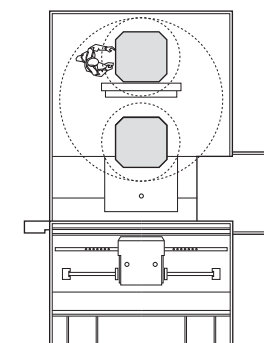
SYSTEM 1

ROTOPALLET T12 / T16

The pallet change is executed by a double fork in the machine front in the T12 and T16 models. Quick pallet change system. It increases the autonomy and production minimizing the floor space.



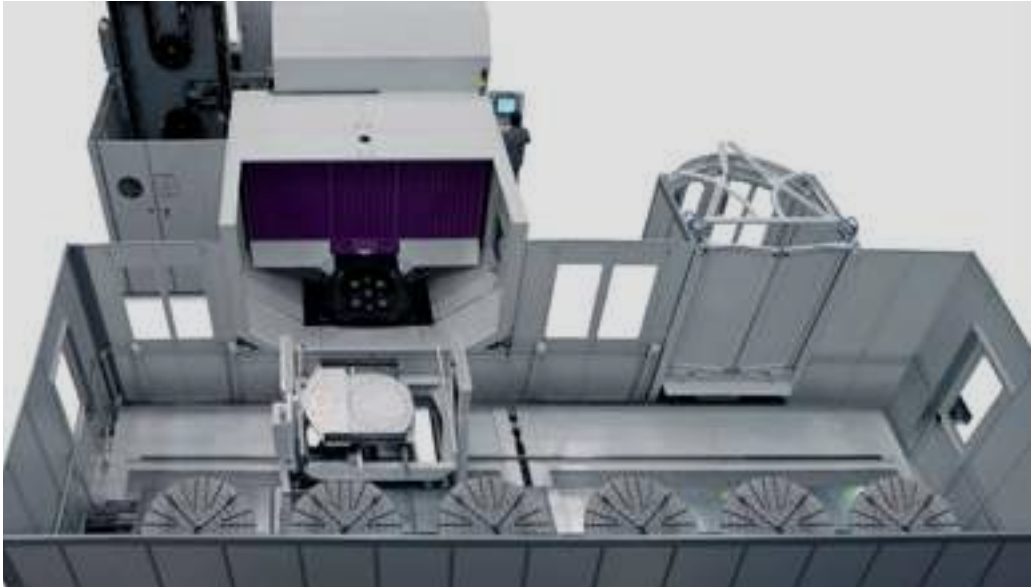
The operator prepares the next job during the machining process. Optionally the loading position can turn manually 4x90° for a better access to the workpiece.



SYSTEM 2

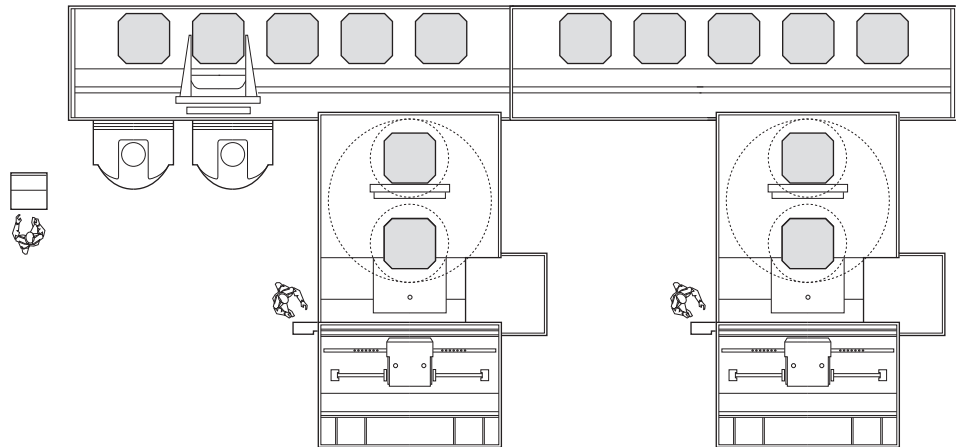
MULTIPALLET SOLUTIONS
T12 / T16

IBARMIA cooperates with market leaders in automation systems and offers standard and competitive palletizing solutions in combination with one or various T Series machines. These installations ensure the maximum performance of the equipment, event in unattended shifts, accelerating the return of the investment due to its intense use. Great storage capacity with minimum floor space. Multi floor solutions subject to weight and dimension of pieces. The basic installation can be extended with additional pallets to face a work increase or to feed a second machine.



To add flexibility to our proposal, IBARMIA offers various solutions:

- 4 x 90° Manual indexing loading/unloading station.
- Automatic indexing loading/unloading station.
- Additional stations for piece inspection, turn-over, welding etc...
- Automatic chip and coolant evacuation systems in pallet pools.



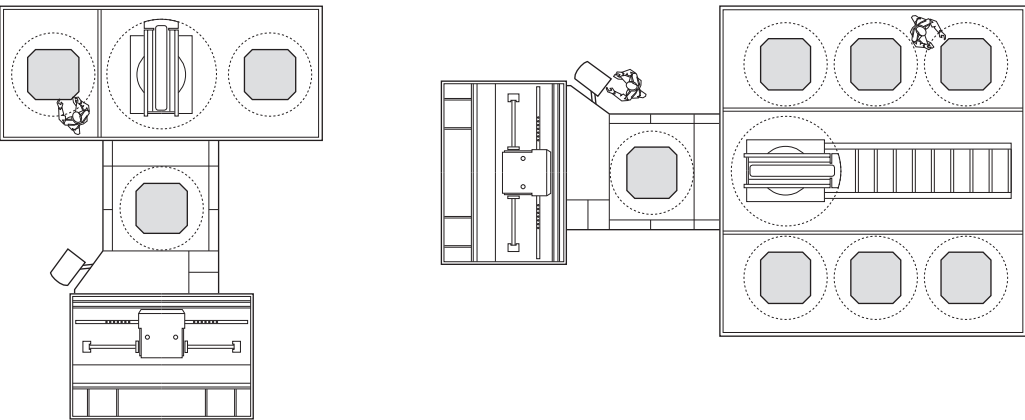
SYSTEM 3

MULTIPALLET SOLUTIONS
T22 / T30 / T36

The automation system in the T22, T30 and T36 models is different due to heavier loads and bigger swing diameters. The key factors to determine the number of pallets are the average cycle time of the pieces and the length of unattended use of the machine. IBARMIA offers simple modular solutions of 2 and 4 positions for the T22 / T30 / T36 models. Projects requiring a larger number of pallets can have linear storage with capacity for future growth, either for station units and/or machining units.



The flexible manufacturing systems respond to large series and single unit fabrication, making them attractive to companies and sector of every size.



T SERIES TOOL MANAGEMENT

IBARMIA offers multiple and modular solutions in the tool management and storage field. Over 30 years experience in the manufacture and use of machining centres and problems associated to tool management, at the service of our customers. The magazines are configured and designed according to the application and the customer's requirements.



THE RIGHT QUANTITY OF TOOLS AND THEIR CORRECT MANAGEMENT ARE KEY FOR A MAXIMUM PERFORMANCE OF THE MACHINE.

As an option, we offer: Smart management of the tools by means of the reading of a chip in the tool itself, the data is entered automatically in the CNC, reducing the set-up times and mistakes in the entry of manual data. Different tool breakage and wear control devices using feeling, laser beam or measuring headstock consumption.

ATC



Situated outside the working area, separated from the main structure so its movements do not affect the machine. We offer 60-120-240-360 chain driven tool magazines, with

servomotors for a quick and smooth tool selection. A tool changing arm with double holder ensures a quick tool change.

ATC & ACH



Tool and head magazine, with a maximum of 400 positions managed by an arm robot. Ideal to combine tool changes with head changes for boring operations, angular heads, U axis special heads, long turning tools.

Two configurations depending on the weight of tool and heads: 40kg and up to 100kg. An additional control panel for tool loading can be offered as an option.

T SERIES SMART FUNCTIONS



Connected machines provided with the required technology for the most demanding production needs. For example, the SMART POINT platform, designed for smart intelligent management of data during the machining process, or our range of apps for an active support in the manufacturing process.

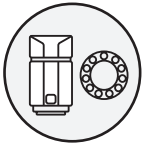
TOWARDS THE SMART MACHINE



- 1_ Indirect electrospindle compensation
- 2_ Variable electrospindle preload
- 3_ Electrospindle protection
- 4_ Ball-screw preload control
- 5_ Gear hobbing
- 6_ Grinding
- 7_ Mould pack
- 8_ Y axis autotuning
- 9_ C axis autotuning
- 10_ Residual unbalance check
- 11_ Cooling on demand
- 12_ Temperatures reporting
- 13_ Tool reporting
- 14_ Status monitoring
- 15_ Machine production



INDIRECT
ELECTROSPINDLE
COMPENSATION



VARIABLE
ELECTROSPINDLE
PRELOAD



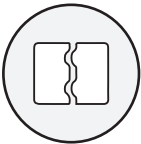
ELECTROSPINDLE
PROTECTION



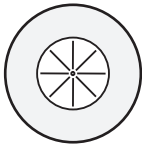
BALL-SCREW
PRELOAD CONTROL



GEAR HOBGING



MOULD PACK



RESIDUAL
UNBALANCE CHECK



STATUS
MONITORING



MACHINE
PRODUCTION



MACHINE
MAINTENANCE

T SERIES ELECTRONIC EQUIPMENT

Purchasing an IBARMIA machine means choosing from a wide range of configurations to find the most suitable equipment for each customer. From an electronic point of view, we offer the possibility of adding high quality components to increase the machine's performance even more.

PRESETTING DEVICES



Sender/receiver on fix support
(must be located inside the
machining area).



Sender/receiver mounted
separately (no interference with
the machining area).



Alignment, fixing of reference
points and measurement by
means of contact probes by radio
waves or infrared beams.



Touch trigger automatic
presetting probe for length
and radius (probe must be in the
working area).

CNC CONTROL

Freedom to choose and user's comfort, basis for our CNC control proposal.



HEIDENHAIN



FANUC



SIEMENS

Latest generations of CNC controls of the most prestigious manufacturers: HEIDENHAIN, FANUC, SIEMENS.

T SERIES

ECO FUNCTIONS

The 80-90% of the environmental impact of a machine is due to its electric consumption. IBARMIA takes measures in the design of the machines to reduce that consumption. The environmental impact of a machine with ECO Measures is 10-15% lower than a machine without any measure. This reduction prevents the emission of 50Tn CO₂ to the atmosphere during the life cycle of the machine. We work for the sustainability of the planet plus saving in electricity bills for our customers.

1_ GREASE LUBRICATION*

Grease lubrication in guideways and ballscrews. Important reduction of oil consumption. **Optional.*

2_ HYDRAULIC INSTALLATION*

The motor stops when there is not pressure requirement from the installation. **Optional.*

3_ PNEUMATIC INSTALLATION

Strategies to reduce the air consumption during the use of the machine.

4_ EFFICIENT SERVO MOTORS

Ecodyn series from Heidenhain: More efficiency and less consumption.

5_ COMPACTAR, ALIGERAR PARTES MÓVILES

Tool magazines, hydraulic groups are light and compact to reduce the consumption of servo motors.

6_ SPINDLE HEAD COMPENSATION

Reduction of the consumption of the Z axis servomotor.

7_ STEEL STRUCTURES

More rigid than cast iron, it reduces the use of raw materials and the consumption of servo motors.

8_ STRUCTURES OPTIMIZED BY FEM

It optimizes the use of raw materials and the consumption of servo motors.

9_ ELECTRIC CABINET

Attached to the machine to avoid the use of long cables. Rittal Blue Efficiency air conditioning: less consumption. Use of reversible regulators.



10_ TIGHT ENCLOSURE

It avoids losing coolant and lubricant and it improves their re-use.

11_ MULTIPROCESS*

Integration of milling and turning processes. 1 machines instead of 2. Savings in raw materials, less transport, less installed power, less consumption. **Optional.*

12_ ELECTRIC MOTORS FOR AUXILIAR MOVEMENTS

Cleaner energy than using hydraulics.

13_ DIRECT DRIVE TRANSMISION

The rotary tables (*) and B-axis use torque motors: Maximum efficiency and reduction of consumption. **Multiprocess.*

14_ MQL LUBRICATION*

Drastic reduction of coolant plus avoiding the use of pumps. **Optional.*

15_ WORKING AREA ENCLOSURE

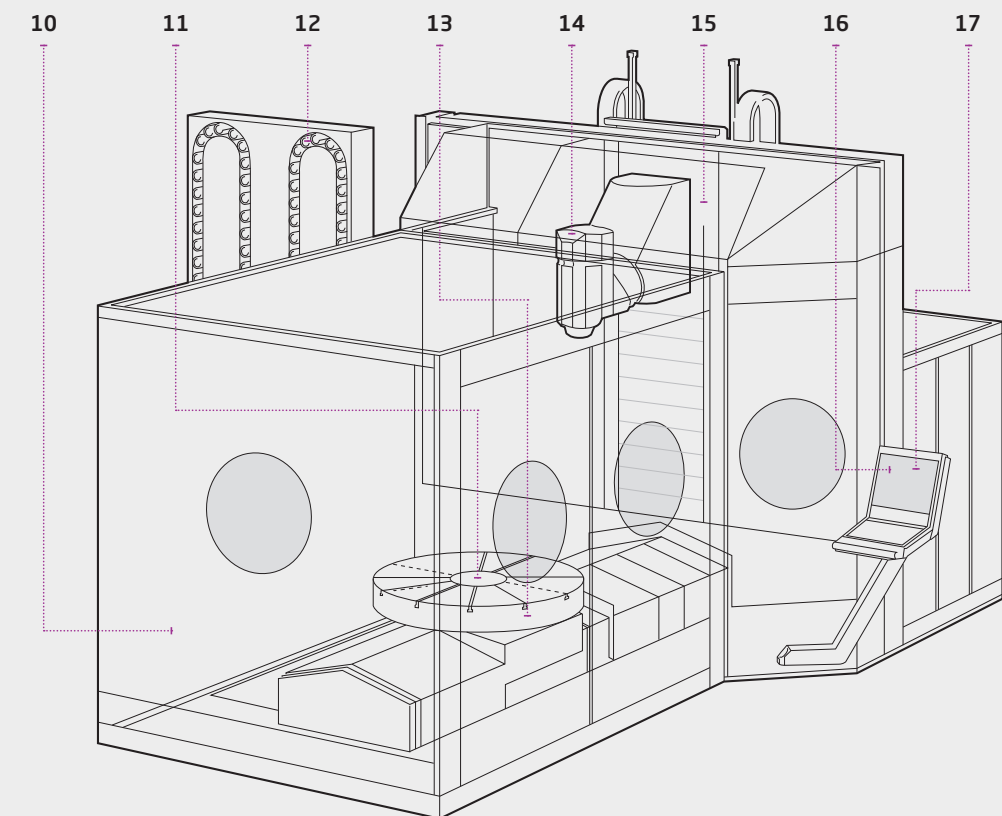
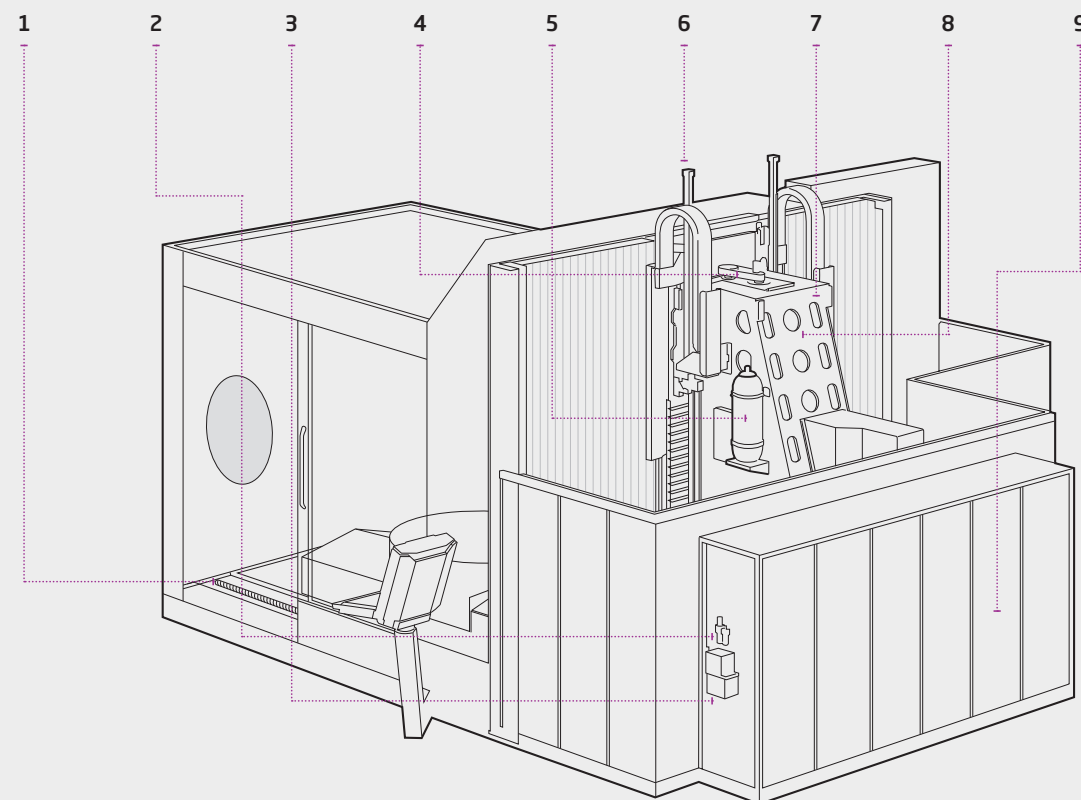
It reduces the material used covering the back side of the machine.

16_ PREVENTIVE DIAGNOSE

Monitoring of levels, leakage detections, pressure and temperature controls.

17_ STAND BY*

The machine goes into a low consumption mode if there is no activity. **Optional.*



IBARMIA.

YOUR SERVICE POINT

COMMITTED TO THE PROFITABILITY AND RELIABILITY OF YOUR MACHINE.

When a customer becomes part of the IBARMIA family, that special link makes us work together throughout the machine's lifetime. Servicepoint is the human team and their advanced technical means, endeavoured to meet the customer's requirement since the machine goes into their facilities. A high performance team, highly qualified and trained to work in complex situations and under pressure, a team that works together with our customers to get the most of our machines.

YOUR SERVICE POINT

Because we are committed with the profitability and reliability of your machine, at servicepoint we propose:

CUSTOMIZED MAINTENANCE CONTRACTS

Various levels of maintenance contracts adjustable to each customer.

SPARE PART MANAGEMENT

We are well aware of the importance that the parts replaced in our machines maintain the same quality as the originals. Our spare part management service ensures that.

PERIODIC PREVENTIONMAINTENANCE

servicepoint staff checks the machine periodically and tune it, ensuring an optimal availability of the machine.

INTELLIGENT DATA REGISTRATION, FILTERING AND PROCESSING

Data recovery applying advance AI techniques to generate information about optimal machine use, life cycle of its components or information about the process.

MACHINE RECALIBRATION

The accumulation of working hours and other factors might affect the machine's adjustment. At servicepoint we offer the possibility of readjusting them, leaving them almost as brand new.

REMOTE AND ONLINE MONITORING AND DIAGNOSE

It allows knowing the machine status from the distance to ensure an intelligent diagnose of the key elements.

ASSISTANCE AND LOCAL SERVICE

Objective, to respond to our customers quickly, efficiently and at a reasonable cost. We are creating a global service network to ensure we respond to our clients in the shortest time possible.

CRITICAL COMPONENTS HIRE

Our machines have a high level of technology reflected on key elements of high value and sometimes long delivery times. Following our commitment to reduce the machine break down times to a minimum, we stock those key elements for hire.

BECAUSE WE ARE NOT INFALLIBLE, WE BELIEVE IN SERVICE.



YOUR SERVICE POINT



TELEPHONE SUPPORT SERVICE BY EXPERT MULTILINGUAL STAFF



HIGHLY QUALIFIED TECHNICIANS



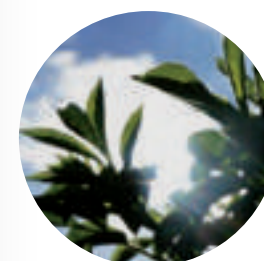
ONLINE AND REMOTE MONITORING AND DIAGNOSE



QUICK REACTION AND SOLUTION TIMES



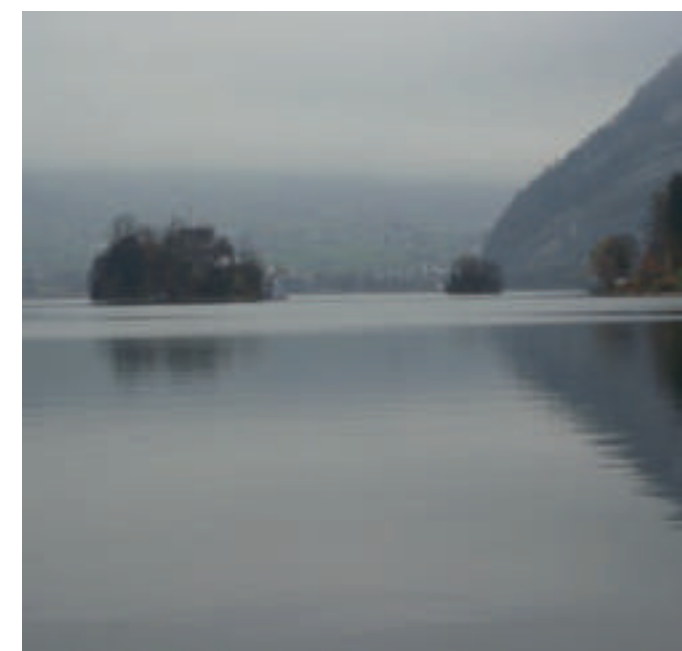
GLOBAL SERVICE VOCATION



¿WHERE IS OUR PLANET GOING?



Some people paint it green; others paint it blue. Both colours reflect purity, life, joy, hope. Forests and oceans, trees and waves, meadows and skies, green and blue. But, who cares about colours! The important thing is the meaning. Nature. Nature damaged so many times that we feel as a duty to recover for future generations. Nature that generously provides us with clean resources such as the sun, water and wind. In the past, in the name of evolution, nature has been damaged. Today, evolution provides the technical resources to recover it and the machine tool industry is key for that purpose.



Because we are proud of our commitment, we want to take active part in this change. Our support to the European Initiative "Blue Competence" which gathers companies sensible about the environment, is good proof of that. We show our commitment to sustainability in 2 fields:

- **Internally**, applying ECO design concepts from the beginning all the way through the process to the scrapping of our machines.

- **Externally**, focusing our offers and solutions in key sectors in the sustainability of our planet such as renewable energies.

TECHNICAL DATA_ T MULTIPROCESS

TECHNICAL DATA_ T MULTIPROCESS		T12		T16		T22		T30		T36	
STROKES											
X axis stroke (length)	mm	1200		1600		2200		3000		3600	
Y axis stroke (cross)	mm	1100		1300		1600		2000		2300	
Z axis stroke (vertical)	mm	1000		1200		1500		1700		1900	
NC head tilting range (B - A)	continuous					B: -15°/+195° - A: -45°/+135°					
C axis turning range	continuous					360°					
Maximum diameter of swing	mm	Ø 1200		Ø 1600		Ø 2200		Ø 3000		Ø 3600	
Piece maximum height	mm	1250		1450		1750		1950		2150	
Minimum distance from spindle nose to table with spindle head in vertical position (THC)	mm	100 / 1100		100 / 1300		0 / 1500		100 / 1800		100 / 2000	
Minimum distance from spindle nose to table with spindle head in horizontal position (THC)	mm	-200 / 900		-200 / 1100		-200 / 1400		-350 / 1650		-350 / 1950	
TABLE											
Table dimensions	mm	Ø 1000		Ø 1250		Ø 1600		Ø 1800		Ø 2200	
Maximum table load capacity	kg	t2250 / f4500		t3000 / f6000		t6000 / f10.000		t14.000 / f20.000		t16.000 / f30.000	
Nominal speed	rpm	260		275		195		85		50	
Maximum speed	rpm	500		500		400		300		200	
Nominal torque	Nm	1850		3000		4085		10.000		20.000	
“T” slots						Radial					
Number of “T” slots						12					
“T” slots size	mm	T18				T22					
Distance between “T” slots	degrees					30°					
MAIN SPINDLE											
Spindle taper		HSK A-100 (DIN 69893) / CAPTO C8									
Tool clamping force	N	45.000									
Turning motor torque (continuous turning: “CT”)	Nm	1210									
Hydraulic clamping for positioning (“CT”)	Nm	7000									
HEADSTOCK ELECTROSPINDLE											
Maximum speed	rpm	Standard: 12000 / Option: 7000									
Power at 100% (S6 40%)	kW	Standard: 48/74 (71/89) / Option: 52 (73)									
Torque at 100% (S6 40%)	Nm	Standard: 300/177 (452/200) / Option: 500 (700)									
CONTROLS											
Available digital controls		Fanuc - Heidenhain - Siemens									
FEED											
Maximum working feed X / Y / Z	m/min	30									
Rapid feed for positioning X-Z	m/min	40									
Rapid feed for positioning Y	m/min	30									
X / Y / Z axes acceleration	m/s²	2,3 / 3,1 / 3,7		2,2 / 2,7 / 3,6		2 / 2,1 / 3,3		1,72 / 1,8 / 2,22		1,5 / 1,5 / 2	
Positioning feed rate on the B axis	rpm	50									
ACCURACY VDI / DGQ3441											
Positioning accuracy Tp X-Y-Z (1000 mm)	µm	10									
Repeatability	µm	5									
Measuring systems on B axis		Encoder									
Positioning accuracy Tp B	s	8”									
CAPACITIES											
Milling capacity in steel St 60	cm³/min	1100									
Drilling capacity in steel St 60	Ømm	70									
Tapping capacity in steel St 60	mm	M 45									
TOOL MAGAZINE											
Number of tools		Standard: 60 / Option: 120, 240, 360									
Maximum tool length	mm	450									
Maximum tool weighth	kg	20									
Maximum tool Ø with full magazine	mm	125									
Maximum tool Ø with free spaces	mm	250									
Tool changing time	s	6”									
Chip to chip time	s	8”									
GENERAL											
Machine painted in 3 colours	RAL	Grey 7021, Grey 9006, Violet 4008									
Power	kW	105		140		140		150		170	
Power connection voltage	V	400 V / 50 Hz									
Required compressed air pressure	bar	6									
Aproximate net weighth	kg	25.000		32.000		39.000		59.000		87.000	
STANDARD EQUIPMENT											
Measuring by glass scales in X / Y / Z											
Chip conveyor and coolant tank											
Full protection guarding											
Rotating control panel											
Automatic central lubrication system											
Lighting equipment											
Cooled electrical cabinet											
Air blowing for cone cleaning											
Headstocks hydraulic counterbalance											
Vertical protection on the X axis											
MAIN OPTIONS											
Coolant through main spindle											
APC Pallet Changer (Rotopallet, pallet pool)											

TECHNICAL DATA_ T EXTREME

TECHNICAL DATA_ T EXTREME		T12	T16	T22	T30	T36
STROKES						
X axis stroke (length)	mm	1200	1600	2200	3000	3600
Y axis stroke (cross)	mm	1100	1300	1600	2000	2300
Z axis stroke (vertical)	mm	1000	1200	1500	1700	1900
NC head tilting range (B - A)	continuous	B: -15°/+195° - A: -45°/+135°				
C axis turning range	continuous	360°				
Maximum diameter of swing	mm	Ø 1200	Ø 1600	Ø 2200	Ø 3000	Ø 3600
Piece maximum height	mm	1250	1450	1750	1950	2150
Minimum distance from spindle nose to table with spindle head in vertical position (THC)	mm	100 / 1100	100 / 1300	0 / 1500	100 / 1800	100 / 2000
Minimum distance from spindle nose to table with spindle head in horizontal position (THC)	mm	-200 / 900	-200 / 1100	-200 / 1400	-350 / 1650	-350 / 1950
TABLE						
Table dimensions	mm	800 x 800	1000 x 1000	1250 x 1250	1250 x 1600	1600 x 1600
Maximum table load capacity	kg	3500	6000	10.000	20.000	30.000
Nominal speed	rpm	1,5				
Maximum speed	rpm	15	13	10	5	4
Nominal torque	Nm	2000	3200	8000	13.000	18.000
T slots		Parallel				
Number of *T* slots		7		9		
T slots size	mm	T18		T22		
Distance between *T* slots	mm	100	125			
MAIN SPINDLE						
Spindle taper		Standard: ISO 50 (DIN 69871) Optional: MAS 403 BT50 (Pull Studs JIS B 6339); HSK A-100 (DIN 69893) / CAPTO C8				
Tool clamping force	N	17.000				
Turning motor torque (continuous turning; *CT*)	Nm	1210				
Hydraulic clamping for positioning (*CT*)	Nm	7000				
HEADSTOCK ELECTROSPINDLE						
Maximum speed	rpm	Standard: 12000 / Option: 7000				
Power at 100% (S6 40%)	kW	Standard: 48/74 (71/89) / Option: 52 (73)				
Torque at 100% (S6 40%)	Nm	Standard: 300/177 (452/200) / Option: 500 (700)				
CONTROLS						
Available digital controls		Fanuc - Heidenhain - Siemens				
FEED						
Maximum working feed X / Y / Z	m/min	30				
Rapid feed for positioning X-Z	m/min	40				
Rapid feed for positioning Y	m/min	30				
X / Y / Z axes acceleration	m/s²	2,3 / 3,1 / 3,7	2,2 / 2,7 / 3,6	2 / 2,1 / 3,3	1,72 / 1,8 / 2,22	1,5 / 1,5 / 2
Positioning feed rate on the B axis	rpm	50				
ACCURACY VDI / DGQ3441						
Positioning accuracy Tp X-Y-Z (1000 mm)	µm	10				
Repeatability	µm	5				
Measuring systems on B axis		Encoder				
Positioning accuracy Tp B	s	8"				
CAPACITIES						
Milling capacity in steel St 60	cm³/min	1100				
Drilling capacity in steel St 60	Ømm	70				
Tapping capacity in steel St 60	mm	M 45				
TOOL MAGAZINE						
Number of tools		Standard: 60 / Option: 120, 240, 360				
Maximum tool length	mm	450				
Maximum tool weighth	kg	20				
Maximum tool Ø with full magazine	mm	125				
Maximum tool Ø with free spaces	mm	250				
Tool changing time	s	6"				
Chip to chip time	s	8"				
GENERAL						
Machine painted in 3 colours	RAL	Grey 7021, Grey 9006, Violet 4008				
Power	kW	95	95	100	100	120
Power connection voltage	V	400 V / 50 Hz				
Required compressed air pressure	bar	6				
Aproximate net weighth	kg	25.000	32.000	39.000	59.000	87.000
STANDARD EQUIPMENT						
Measuring by glass scales in X / Y / Z						
Chip conveyor and coolant tank						
Full protection guarding						
Rotating control panel						
Automatic central lubrication system						
Lighting equipment						
Cooled electrical cabinet						
Air blowing for cone cleaning						
Headstocks hydraulic counterbalance						
Vertical protection on the X axis						
MAIN OPTIONS						
Coolant through main spindle						
APC Pallet Changer (Rotopallet, pallet pool)						

IBARMIA.

THC 30P EXTREME

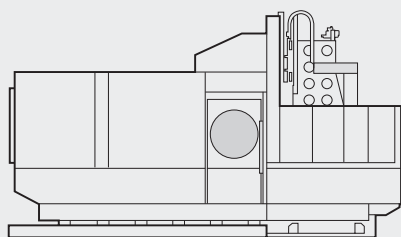


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