

# IBARMIA.

## T EXTREME

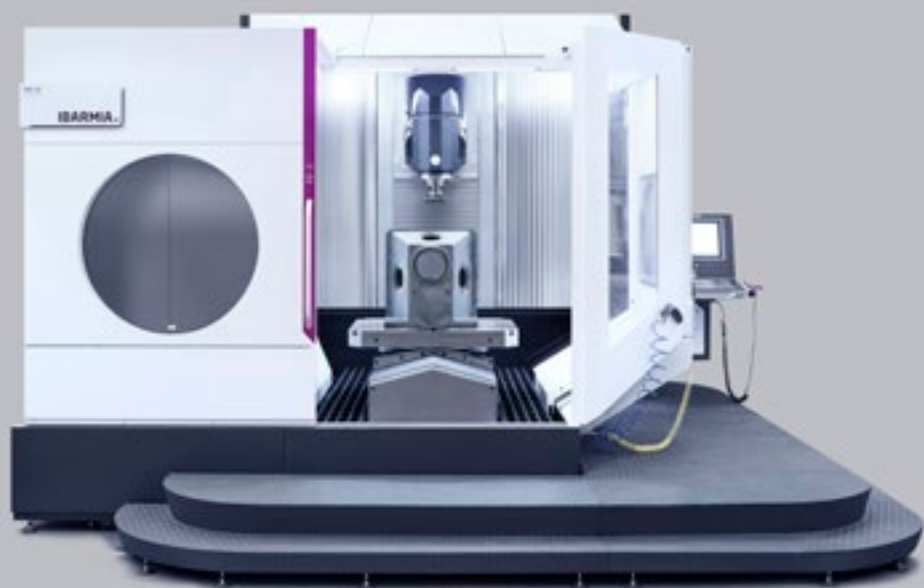
36 / 30 / 22 / 16 / 12

### 5 AXIS UNIVERSAL MACHINING CENTERS

Universal machining centers for 5 axis machining of big diameter parts focused on high productivity by integrating different degrees of automation systems.



### T SERIES



[www.ibarmia.com](http://www.ibarmia.com)

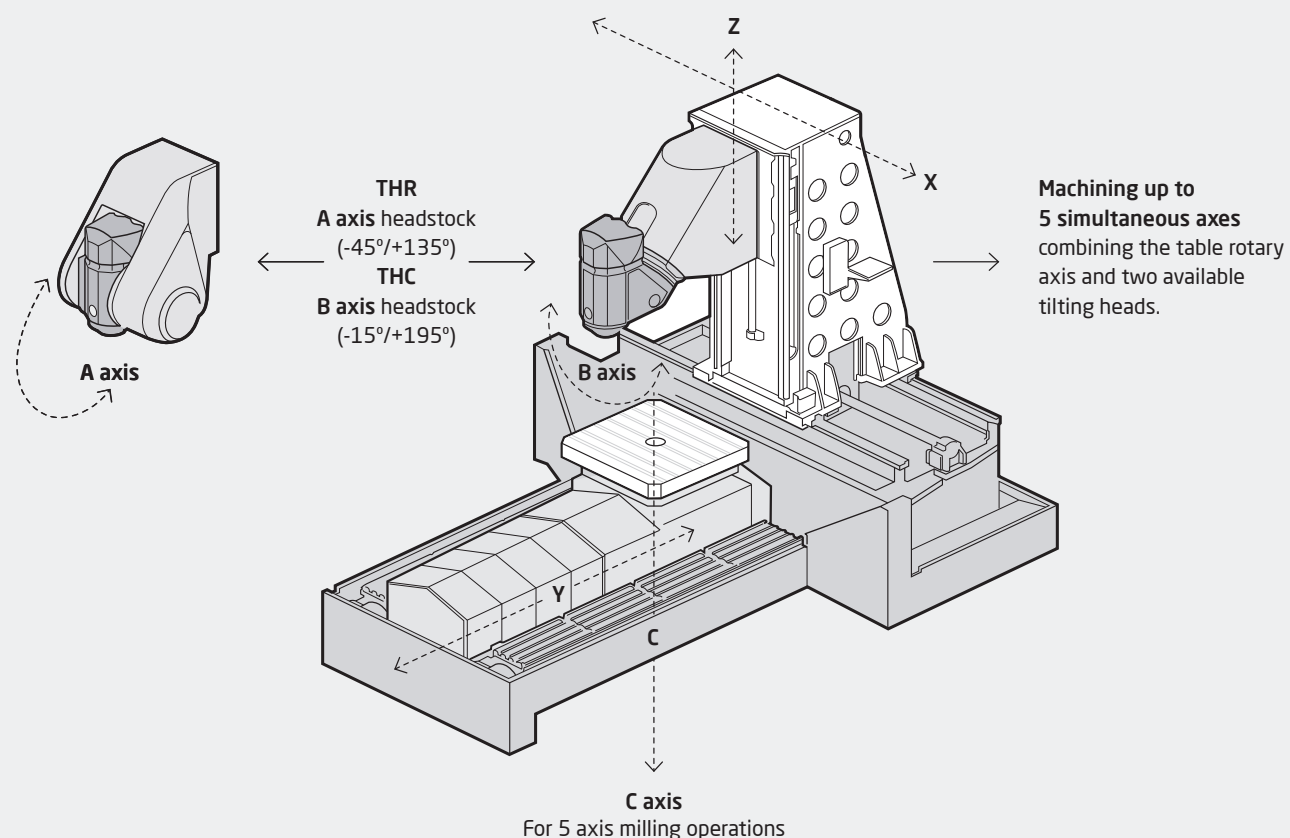
## T EXTREME



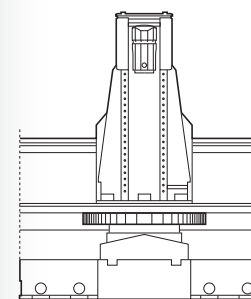
MANUFACTURING TECHNOLOGY

## HIGH PRODUCTIVITY ADVANCED MACHINING

The IBARMIA T SERIES is designed for high productivity in 5 axis machining of heavy pieces thanks to its high load capacity rotary tables and powerful spindles. Its award-winning tilting heads (two models in option) provide the speed, accuracy and reliability required for the most complex jobs. The possibility to adapt the size of each model to specific parts or to provide the most advanced automation solutions for automatic pallet changing and special head changing operations, make IBARMIA T SERIES the ideal solution for the most demanding production requirements.

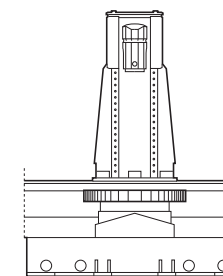


## T SERIES\_ BODY SIZES



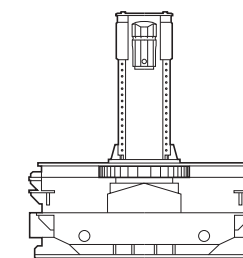
T36

Maximum swing diameter  
Ø 3600 mm  
Maximum part height  
h 2150 mm  
Maximum load capacity  
25.000 Kg\*  
(\*Extreme)



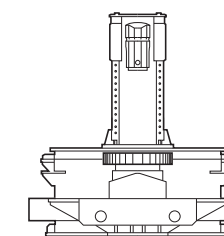
T30

Maximum swing diameter  
Ø 3000 mm  
Maximum part height  
h 1950 mm  
Maximum load capacity  
20.000 Kg



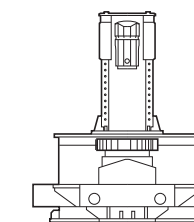
T22

Maximum swing diameter  
Ø 2200 mm  
Maximum part height  
h 1750 mm  
Maximum load capacity  
10.000 Kg



T16

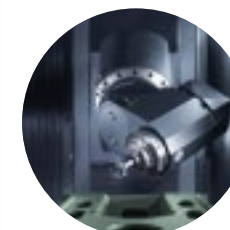
Maximum swing diameter  
Ø 1600 mm  
Maximum part height  
h 1700 mm  
Maximum load capacity  
6000 Kg



T12

Maximum swing diameter  
Ø 1250 mm  
Maximum part height  
h 1600 mm  
Maximum load capacity  
4000 Kg\*  
(\*Extreme)

## T SERIES\_ SPINDLE HEADS



**THC\_ B axis head**  
Maintain the same tool center point  
across the full range  
-15°/+195°



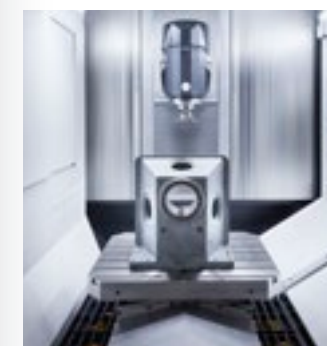
**THR\_ A axis head**  
Fork type spindle head ideal for  
negative angles  
-45°/+135°



**Two Options Available**  
Standard: Dynamics and high  
revolutions; Optional: high torque  
for the hardest materials.

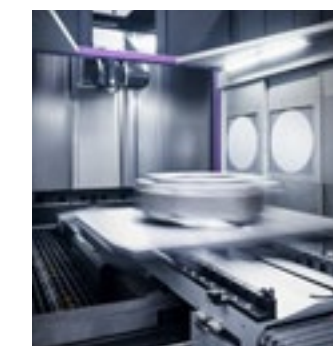
Tool holders (Extreme)  
SK 50 / BT 50 / HSK 100 / CAPTO C8  
Total available power from  
Standard: 4000 rpm  
Option: 700 rpm  
Power in S1 (100%); S6 (40%)  
Standard: 74 kW / 84 kW  
Option: 52 kW / 73 kW  
Torque in S1 (100%); S6 (40%)  
Standard: 300 Nm / 452 Nm  
Option: 500 Nm / 700 Nm  
Maximal rotation speed  
Standard: 12.000 rpm  
Option: 7000 rpm

## T SERIES\_ SINGLE PALLET MACHINES



All the T models are available with fixed table, for those customers looking for the advanced manufacturing of big swing diameter parts in only one set up.

## T SERIES\_ MULTIPALLET MACHINES



On the other hand, IBARMIA offers different degrees of automatic pallet changers that allow a perfect adaptation of the specific production requirements in each case.

01\_

- Thermo-symmetrical and thermostable structure design.
- Monoblock design of the machine bed designed to optimize the evacuation of chips. Maximum stability and rigidity ensured by the well proportioned distances between guides.

02\_

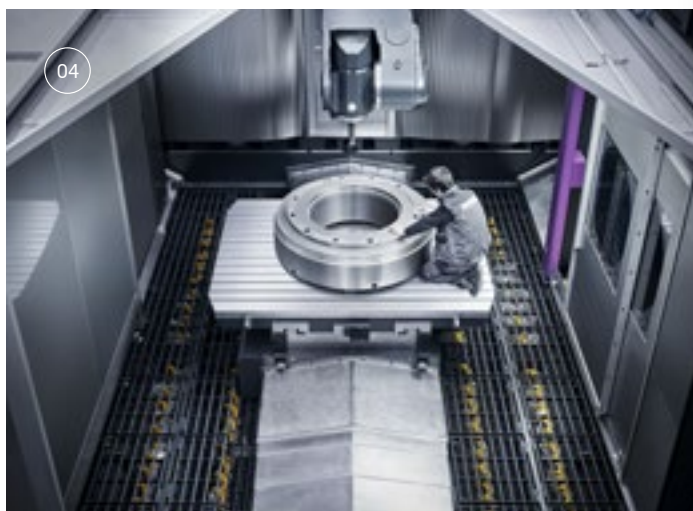
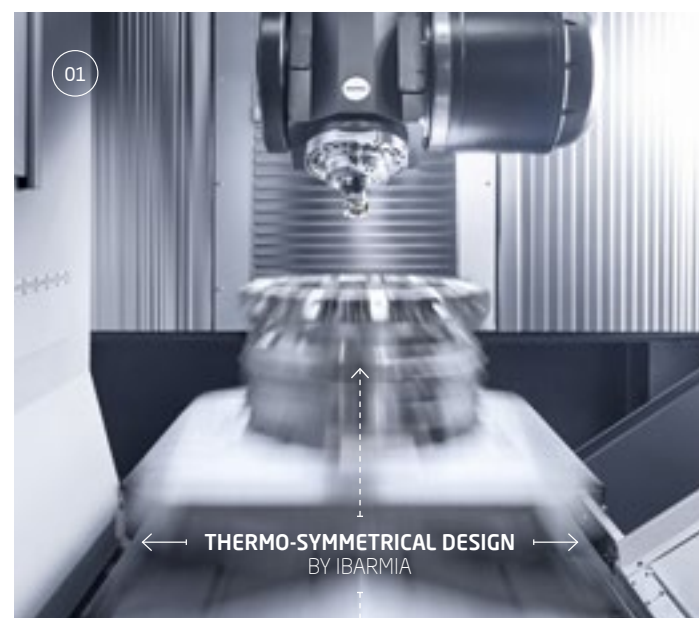
- Finite Elements optimization of the maximum rigidity structural bodies.
- Movement on X / Y / Z axis over linear guides with preloaded rolling shoes with two rows of circulating rollers.

- Rectified ball screws of high precision with preloaded double nuts for the longitudinal axis movement.
- Direct measuring on linear X, Y, Z axes: glass scales.

03\_

- Measuring by rotary scale on rotary axes. Geometric check and volumetric calibration on request.
- 04\_
- Endless screws system on both sides of the working table for an optimum evacuation of chips (double screw in T36 / T30; optional in T22 / T16).

## T SERIES\_ CONSTRUCTION FEATURES



## T SERIES

## T SERIES\_ STANDARD CHARACTERISTICS



Stairs for an easy access to the working area.



Totally encapsulated working area and safety windows.



Illuminated working area. Working area without horizontal planes and smooth top.



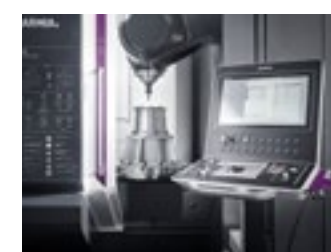
Standard convertible roof facilitating the loading/unloading of pieces by crane.



Chip conveyor with integrated coolant tank.



Climatized electric cabinet with easy access.



Moving control panel with 19" touch screen.



60 positions chain driven tool magazine with servomotors.



### Other standard items

- External coolant system around the spindle.
- Hydraulic counterweight for the head.
- Servomotors with braking system for the axes.
- Programmable central lubrication system...

Subject to change without prior motive. Informative contents are not binding.



UNIVERSAL MACHINING CENTERS

## T MODELS\_ MAIN CONFIGURATION OPTIONS



**Tool management:** 120-240-360 positions chain driven tool magazine with servomotors.



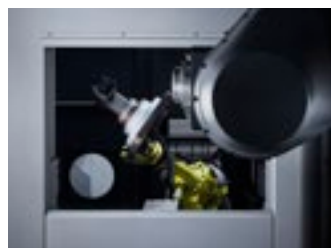
**Tool management:** Pick-ups for special tools (heavier and/or longer tools).



**Tool management:** S.A.S stations for agile manual feeding of tools to the magazine.



**Tool management:** Rack type robotized magazines available.



**Tool management:** Random system tool magazines managed by robot arm to combine tool and head change.



**Working table management:** Manual fast pallet changin system. For automatic pallet changing solutions, see below.

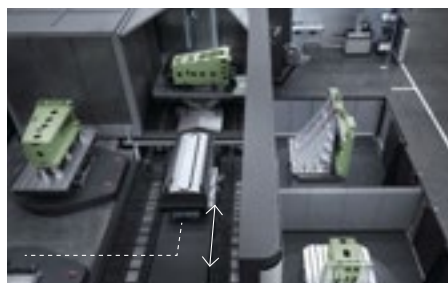


Grinding capability with different cycles depending on the machine model (Multiprocess / Extreme).

### Other optional items

- Coolant through spindle.
- Tool measuring and touch systems.
- Steam and mist aspiration system.
- "Illumination" pack: LED lights with acoustic signal indicating the state of the machine, integrated into the machine.
- Lights with acoustic signal indicating the machine status.
- Camera settings and display mode.
- Control with touch screen up to 24".

## T MODELS\_ OPTIONAL MULTIPALLET SOLUTIONS



**1\_ PALLET POOLS** For T36 / T30 / T22 models  
IBARMIA manufactures customized modular solutions with 2 to 4 stations that can be extended in the future.



**2\_ PALLET POOLS** For T16 / T12 models  
Facilities integrating a flexible pallet warehouse in combination with one or more T16 or T12 machining centers.

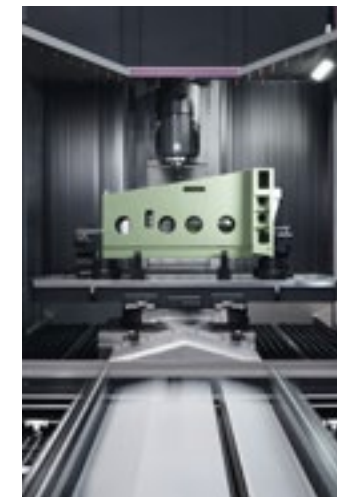
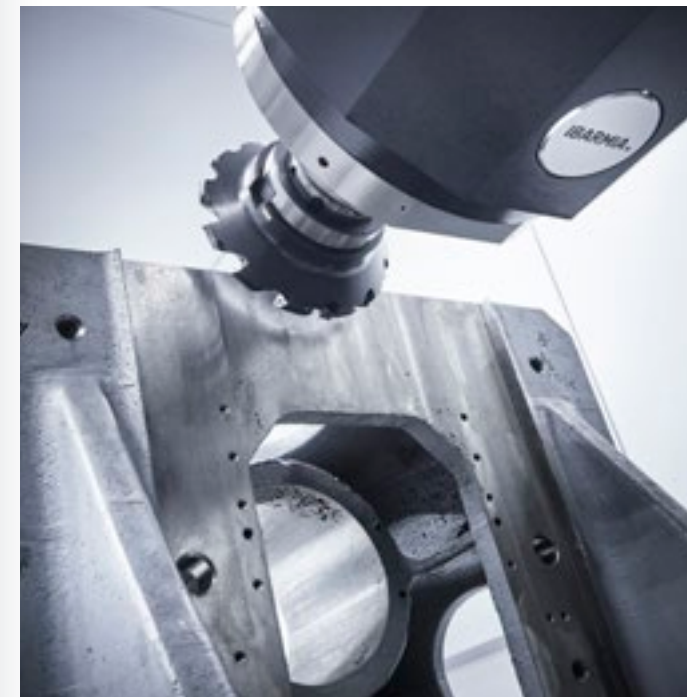


**3\_ ROTOPALLET** for T16 / T12 models  
A rotary double fork device on the frontside of the machine makes a quick change of two pallets.



MANUFACTURING TECHNOLOGY

## T EXTREME



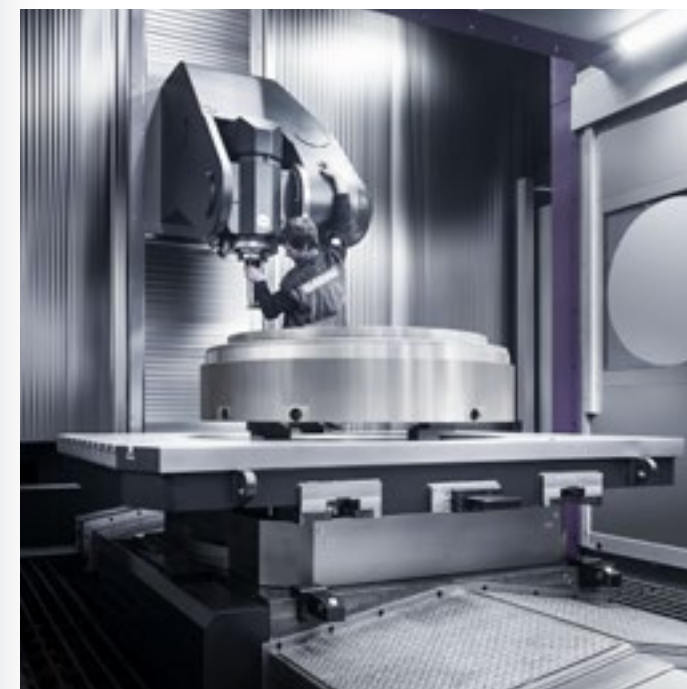
### Advanced machining

Machining up to 5 continuous axes in one clamping, combining tilting heads with heavy load capacity rotary tables.



### High productivity concept

The multipallet options allow machining single and medium to large batches of big diameter parts. IBARMIA offers different automation degrees for a perfect adaptation to the specific production requirements of each case.

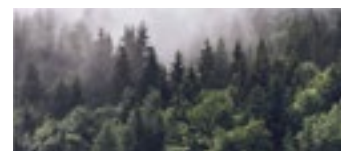


### C axis vertical rotary tables

In option, tables with direct drive technology (torque motor) in T16 and T12 models.

- Max load from 4000 to 25.000 kg.
- Torque in S1 from 2100 to 18.000 Nm.
- Direct measuring by rotary scale on the rotary axis.
- Positioning accuracy +/-4".

## IBARMIA ECO DESIGN



Machines designed considering the environmental impact during all their useful life cycle.



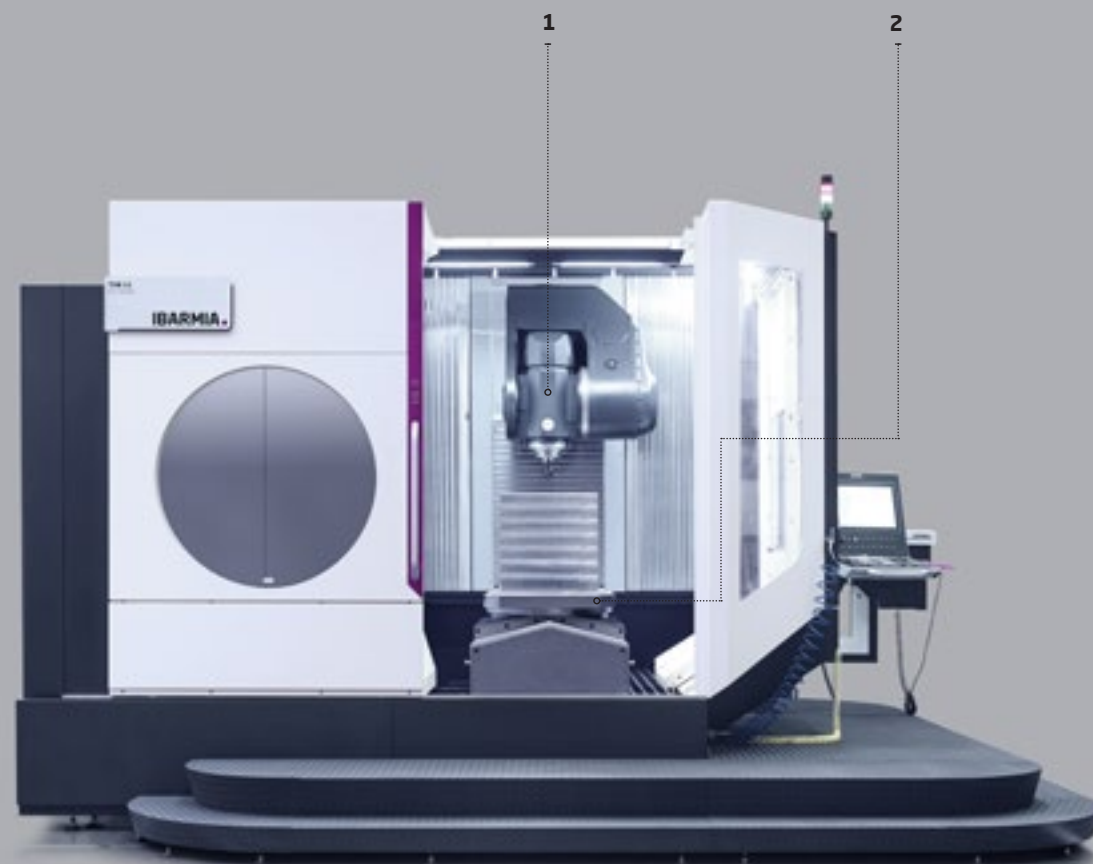
## T EXTREME

### POWER & CAPACITY IN HIGH PRODUCTIVITY 5 AXIS MACHINING CENTERS

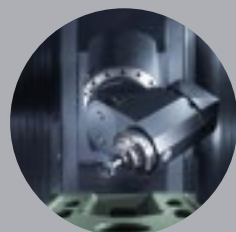
The T EXTREME is a perfect machine for machining single complex parts and/or large batch manufacturing in one clamping.

**1\_ B - A axis torque motor** continuous milling heads. Direct measuring by encoder installed on the rotary axis. Up to 84 kW / 12.000 rpm.

**2\_ C axis rotary tables.** Parts up to  $\varnothing 3600$  mm and 2150 mm height. Up to 25.000 kg



IBARMIA can provide two types of spindle heads to adapt the machine to specific jobs. A wide range of options allows tailoring solutions to each requirement.



**THC\_ B axis head**  
Maintain the same tool center point across the full range  
-15°/+195°



**THR\_ A axis head**  
Fork type spindle head ideal for negative angles  
-45°/+135°

## T EXTREME



UNIVERSAL MACHINING CENTERS

### T EXTREME\_ SAMPLE APPLICATIONS



Fluid end



Industrial mold



Impeller



Turbocharger housing



Aerospace engine housing



Engine block



Roller cage for bearings



Machinery structural part



Quick coupler



OIL & GAS



MOLD & DIE



AEROSPACE



AUTOMOTIVE



RAILWAY



MACHINERY



YELLOW GOODS

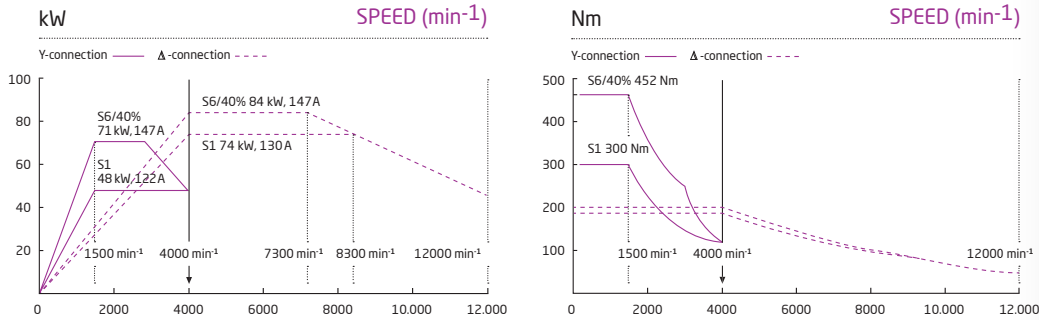
T SERIES  
ELECTROSPINDLES AVAILABLE\*

DIGITAL TECHNOLOGY SPINDLES

1\_ STANDARD

Power and dynamics\_

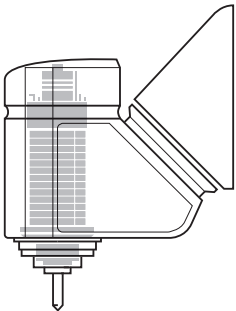
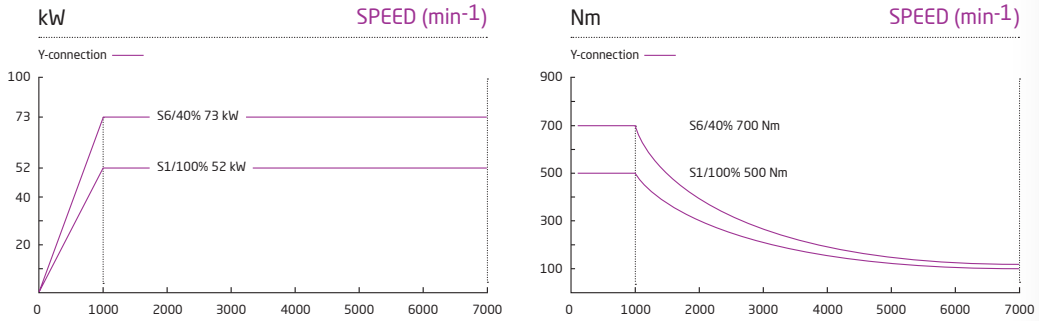
Up to 12.000 rpm.  
74/84 kW (S1/S6).  
300/452 Nm (S1/S6)



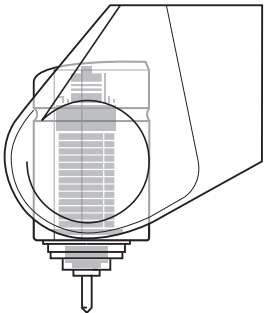
2\_ OPTIONAL

High torque for the hardest materials\_

Up to 7000 rpm.  
52/73 kW (S1/S6).  
500/700 Nm (S1/S6)



THC\_ B axis head



THR\_ A axis head



\*More spindles on request

T EXTREME  
TECHNICAL DATA

TRAVELS

|                                                   |
|---------------------------------------------------|
| -X axis travel (length)                           |
| -Y axis travel (cross)                            |
| -Z axis travel (vertical)                         |
| -B - A axis heads tilting range                   |
| -Maximum swing diameter                           |
| -Piece maximum height                             |
| -Distance spindle nose-table. Vertical (B axis)   |
| -Distance spindle nose-table. Horizontal (B axis) |
| -Distance spindle nose-table. Vertical (A axis)   |
| -Distance spindle nose-table. Horizontal (A axis) |

TABLE\*

|                              |
|------------------------------|
| -Table dimensions            |
| -Maximum table load capacity |
| -Nominal speed               |
| -Maximum speed               |
| -Nominal torque              |

TILTING HEAD

|                          |
|--------------------------|
| -Turning torque          |
| -Position clamping force |

MAIN SPINDLE

|                 |
|-----------------|
| -Tool holder    |
| -Maximum speed  |
| -Maximum power  |
| -Maximum torque |

FEED

|                                         |
|-----------------------------------------|
| Maximum working feed X-Y-Z axes         |
| -Rapid feed for positioning X-Z axes    |
| -Rapid feed for positioning Y axis      |
| -X-Y-Z axes acceleration                |
| -Rapid feed for positioning in B-A axes |

ACCURACY VDI / DGQ3441

|                                  |
|----------------------------------|
| -Positioning Tp X-Y-Z (1000 mm)* |
| -Repeatability                   |
| -Measuring system on B - A axes  |
| -Positioning accuracy B - A axes |
| -Positioning accuracy C axis     |

CAPACITIES

|                                   |
|-----------------------------------|
| -Milling capacity in steel St 60  |
| -Drilling capacity in steel St 60 |
| -Tapping capacity in steel St 60  |

TOOL MAGAZINE

|                                           |
|-------------------------------------------|
| -Number of tools                          |
| -Maximum tool length                      |
| -Maximum tool weight                      |
| -Maximum tool diameter with full magazine |
| -Maximum tool diameter with free spaces   |
| -Tool changing time*                      |
| -Chip to chip time                        |

CNC CONTROL

|                             |
|-----------------------------|
| -Available digital controls |
|-----------------------------|

| T 36                              | T 30           | T 22           | T 16           | T 12          |
|-----------------------------------|----------------|----------------|----------------|---------------|
| 3600 mm                           | 3000 mm        | 2200 mm        | 1600 mm        | 1200 mm       |
| 2300 mm                           | 2000 mm        | 1600 mm        | 1600 mm        | 1300 mm       |
| 1900 mm                           | 1700 mm        | 1500 mm        | 1200 mm        | 1000 mm       |
| B: -15° / +195° - A: -45° / +135° |                |                |                |               |
| 3600 mm                           | 3000 mm        | 2200 mm        | 1600 mm        | 1250 mm       |
| 2150 mm                           | 1950 mm        | 1750 mm        | 1700 mm        | 1600 mm       |
| 100 / 2000 mm                     | 100 / 1800 mm  | 100 / 1800 mm  | 100 / 1300 mm  | 100 / 1100 mm |
| 100 / 2000 mm                     | 100 / 1800 mm  | 100 / 1800 mm  | 100 / 1300 mm  | 100 / 1100 mm |
| -115 / 1785 mm                    | -115 / 1585 mm | -115 / 1385 mm | -115 / 1085 mm | -115 / 885 mm |
| 260 / 2160 mm                     | 260 / 1960 mm  | 260 / 1760 mm  | 260 / 1460 mm  | 260 / 1265 mm |

\*More table options on request

|                |                |                |                |              |
|----------------|----------------|----------------|----------------|--------------|
| 1600 x 1600 mm | 1250 x 1600 mm | 1250 x 1250 mm | 1000 x 1000 mm | 800 x 800 mm |
| 25.000 kg      | 20.000 kg      | 10.000 kg      | 6000 kg        | 4000 kg      |
| 1,5 rpm        |                |                | 30 rpm         | 35 rpm       |
| 5 rpm          |                |                | 40 rpm         | 50 rpm       |
| 18.000 Nm      | 13.000 Nm      | 6000 Nm        | 3100 Nm        | 2100 Nm      |

|         |
|---------|
| 1210 Nm |
| 7000 Nm |

|                                                        |
|--------------------------------------------------------|
| Standard: SK 50 - Option: BT 50 / HSK A-100 / Capto C8 |
| Standard: 12.000 rpm - Option: 7000 rpm                |
| Standard: 84 kW - Option: 75 kW                        |
| Standard: 452 Nm - Option: 871 Nm                      |

|                                |                                  |                                |                              |                              |
|--------------------------------|----------------------------------|--------------------------------|------------------------------|------------------------------|
| *With dynamic upgrade (option) |                                  |                                |                              |                              |
| 30 m/min                       | 50 m/min*                        | 60 m/min*                      |                              |                              |
| 40 m/min                       | 50 m/min*                        | 60 m/min*                      |                              |                              |
| 30 m/min                       | 50 m/min*                        | 60 m/min*                      |                              |                              |
| 1,5 / 1,5 / 2 m/s <sup>2</sup> | 1,7 / 1,8 / 2,2 m/s <sup>2</sup> | 2 / 2,1 / 3,3 m/s <sup>2</sup> | 4 / 4 / 5 m/s <sup>2</sup> * | 4 / 5 / 5 m/s <sup>2</sup> * |
| 50 rpm                         |                                  |                                |                              |                              |

\*Under certain conditions

|              |      |      |
|--------------|------|------|
| 10 µm        | 7 µm | 6 µm |
| 5 µm         |      |      |
| Rotary scale |      |      |
| +/- 5 s      |      |      |
| +/- 4 s      |      |      |

|                           |
|---------------------------|
| 1100 cm <sup>3</sup> /min |
| ø 70 mm                   |
| M 45 mm                   |

\*Under certain conditions

|                                     |      |      |     |     |
|-------------------------------------|------|------|-----|-----|
| Standard: 60. Option: 120, 240, 360 |      |      |     |     |
| 600 mm                              |      |      |     |     |
| 20 kg                               |      |      |     |     |
| 125 mm                              |      |      |     |     |
| 250 mm                              |      |      |     |     |
| 6 s                                 |      |      |     |     |
| 16 s                                | 14 s | 12 s | 8 s | 7 s |

|                              |
|------------------------------|
| Fanuc / Heidenhain / Siemens |
|------------------------------|

# IBARMIA.



## YOUR MACHINE TOOL POINT

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