

P SERIES

5 AXIS UNIVERSAL MACHINING CENTERS

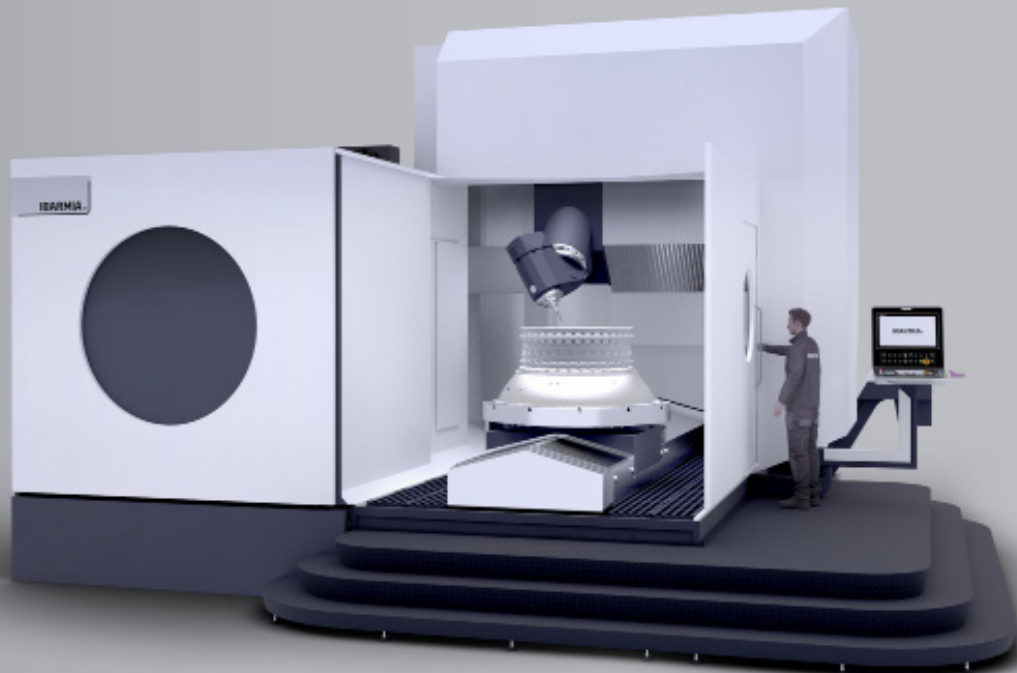
P26 / P30 / P36 MODELS

IBARMIA.
YOUR MACHINE TOOL POINT

Portal structure machining centers for 5 axis machining of big diameter parts, focused on high productivity by integrating multitasking technology and automation systems.



P SERIES



www.ibarmia.com



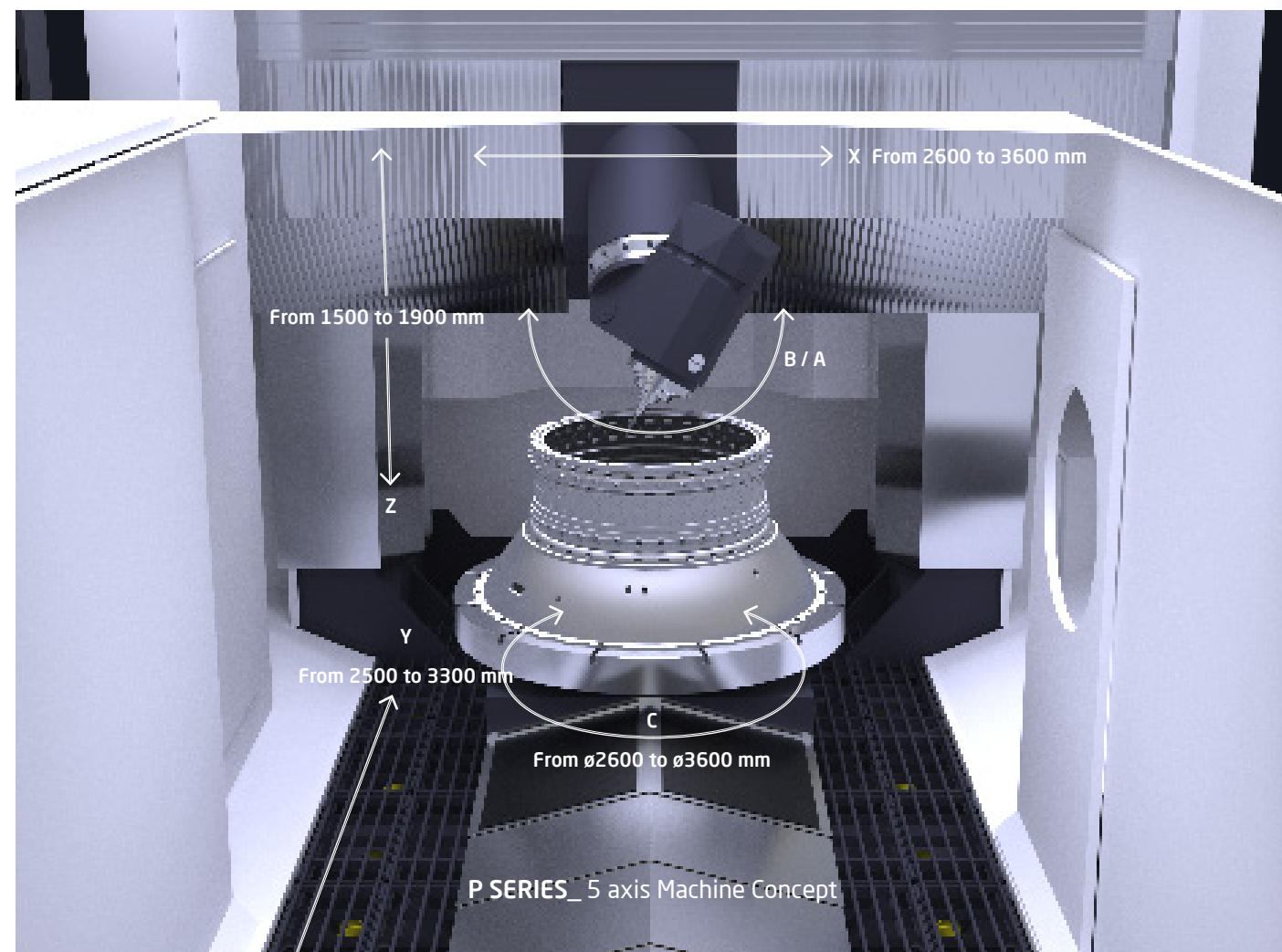
P SERIES

1_ GENERAL VIEW

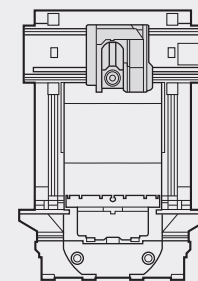
MACHINING BIG COMPLEX PARTS

The P SERIES is a natural evolution of the successful T SERIES to respond to market demands. It has been conceived to go beyond the X-Z plane due to the T SERIES moving column architecture is a limitation for some applications, completing by this way the IBARMIA's range of solutions for the advanced machining of big complex parts. The P SERIES concept even allows the part to be machined completely without the need

to use the C axis, simplifying programming and optimising the machining process. In summary, the introduction of the P SERIES combines all the advantages of the T SERIES with an improved architecture that eliminates the X-Z plane limitation, simplifies programming and increases swing capacity, thus offering our customers a more advanced and efficient solution for their large part machining needs.

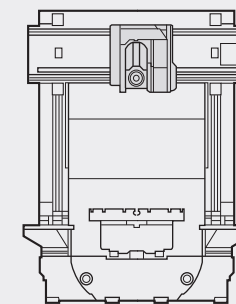


MACHINE SIZES



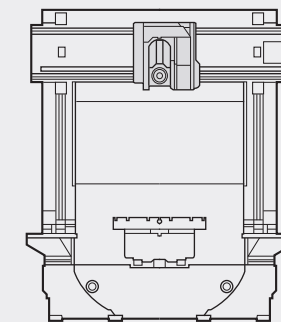
T26

Maximum swing diameter
ø 2600 mm
Maximum part height
h 1750 mm
Maximum load capacity
15.000 Kg



T30

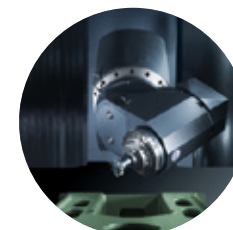
Maximum swing diameter
ø 3000 mm
Maximum part height
h 1950 mm
Maximum load capacity
20.000 Kg



T36

Maximum swing diameter
ø 3600 mm
Maximum part height
h 2150 mm
Maximum load capacity
25.000 Kg

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°



High torque & high speed
Latest technology
electrospindles

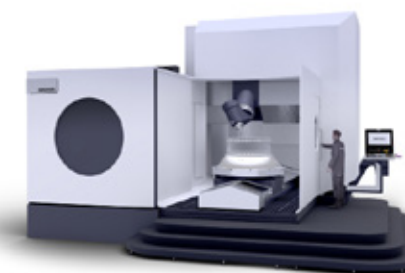


Direct Drive Technology
Torque motor transmission
working tables

ELECTROSPINDLES

WORKING TABLES

PERFORMANCE LEVELS



P MULTIPROCESS
Universal machining centers for 5-axis
vertical milling and turning operations.
Housing: HSK A-100 / Capto C8

Freedom to choose
among the most
prestigious
CNC platforms

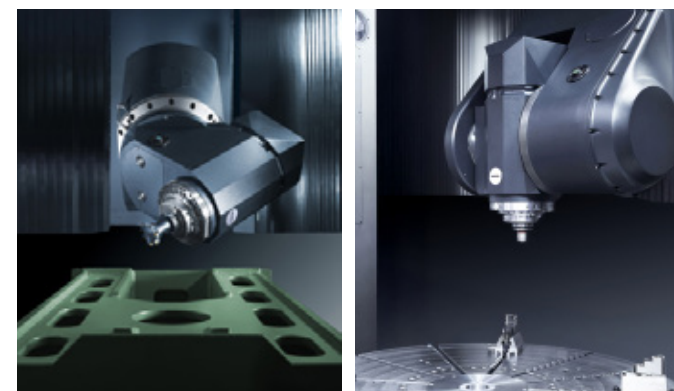
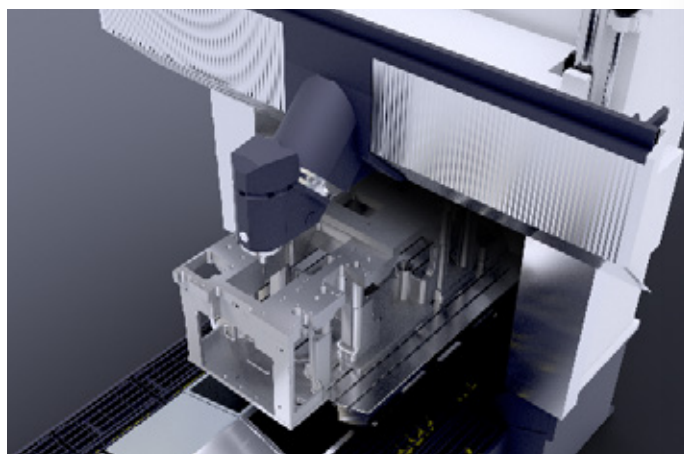
HEIDENHAIN
FANUC
SIEMENS



P EXTREME
Universal machining centers for 5-axis /
5-sided milling operations.
Housing: SK 50 / BT 50 / HSK A-100

P SERIES PROGRAM_ FOCUSED ON HIGH PRODUCTIVIT

Machine up to in 5 simultaneous axes in combination with the table rotary axis and the high dynamics of the headstock rotation, by using direct motor technology, with high positioning precision thanks to direct measuring systems in the axes. To complete the range and focusing on high productivity, IBARMIA offers a complete range of machine automation solutions, so through own development Pallet System Solutions than in collaboration with the most prestigious manufacturers for the management of special tools and heads, to configure a complete manufacturing cells to produce big complex parts in only one set up.

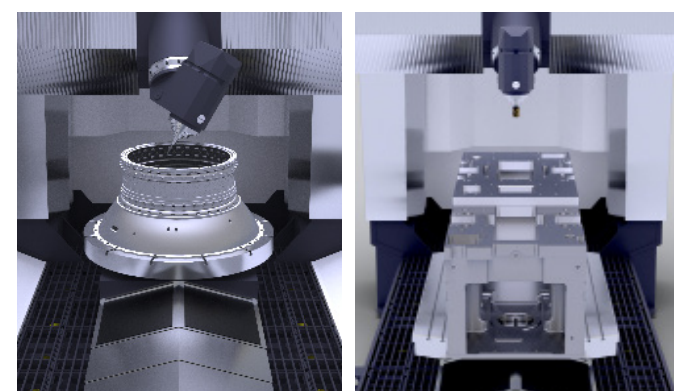


MACHINE ROTARY AXES CONFIGURATION_ 1_ TILTING HEADS

DIRECT
DRIVE

- High dynamics B or A axis continuous tilting heads
- TORQUE MOTOR technology.
- Fast continuous and accurate movements.
- Measured by rotary scale.
- Backlash free.
- Extraordinary precision.
- Maintenance reduction.

- Positioning accuracy: 10"
- Turning torque S1: 1210 Nm
- Turning torque peak value: 2120 Nm
- Clamping force: 6000 Nm
- Rapid feed for positioning: 50 rpm



MACHINE ROTARY AXES CONFIGURATION_ 2_ WORKING TABLES / PERFORMANCE LEVELS

DIRECT
DRIVE

- Direct Drive transmission TORQUE MOTOR technology turning & milling tables (Multiprocess level), or milling tables (Extreme level).
- Maximum dynamics in turning operations and positioning accuracy in milling operations.

- Positioning accuracy: +/-4"
- Nominal torque up to 18.000 Nm
- Max power up to 120 kW



MACHINE AUTOMATION CONFIGURATION_ HIGH PRODUCTION MANUFACTURING CELLS

AUTOMATIC PALLET CHANGER_ The average cycle time of the pieces and the length of unattended use of the machine are the key factors to determine the number of pallets. P SERIES offers simple modular solutions of 2 and 4 positions Projects requiring a larger number of pallets can be configured with linear storage with capacity for future growth, either for station units and/or machining units.

AUTOMATIC TOOL CHANGER_ P SERIES offers various degrees of tool management, from standard 60-360 chain driven ATCs, to large capacity polar type magazines up to 400 positions tools managed by robot.

The high-rigidity crossbeam provides transversal movement along the X axis through a rotating ball screw system and two guidelines with direct measurement.

Structural bodies of maximum rigidity optimised by finite elements (FEM). X / Y / Z axes 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.

Thermo-symmetrical and thermostable structure design complemented with digital thermal twin models.



- Positioning (ISO 230-2): 10 µm
- Repeatability (ISO 230-2): 7 µm

Integral cooling measures to improve the thermal behaviour of the machine:

1_ Spindle head

- Motorised electrosindle.
- Direct Drive torque motor B axis.
- Direct Drive torque motor A axis.

2_ Rotary table

- Bearing.
- Direct Drive torque motor.

3_ Basic structure

- X / Y / Z axis motors.
- Support motors X / Y / Z axes.
- Ball screw nut support X / Y / Z axes.
- Bearing support combined Z axis.
- Cooler with PID control.
- Cooler for coolant with PID control.

MACHINE BASIS STRUCTURE_

B / A axis milling heads
Multiprocess / Extreme
Working rotary tables

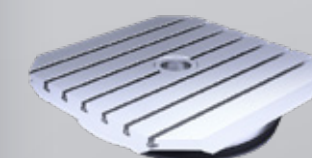


HC_ B axis head

Maintain the same tool center point across the full range:
-15°/+195°.

HR_ A axis head

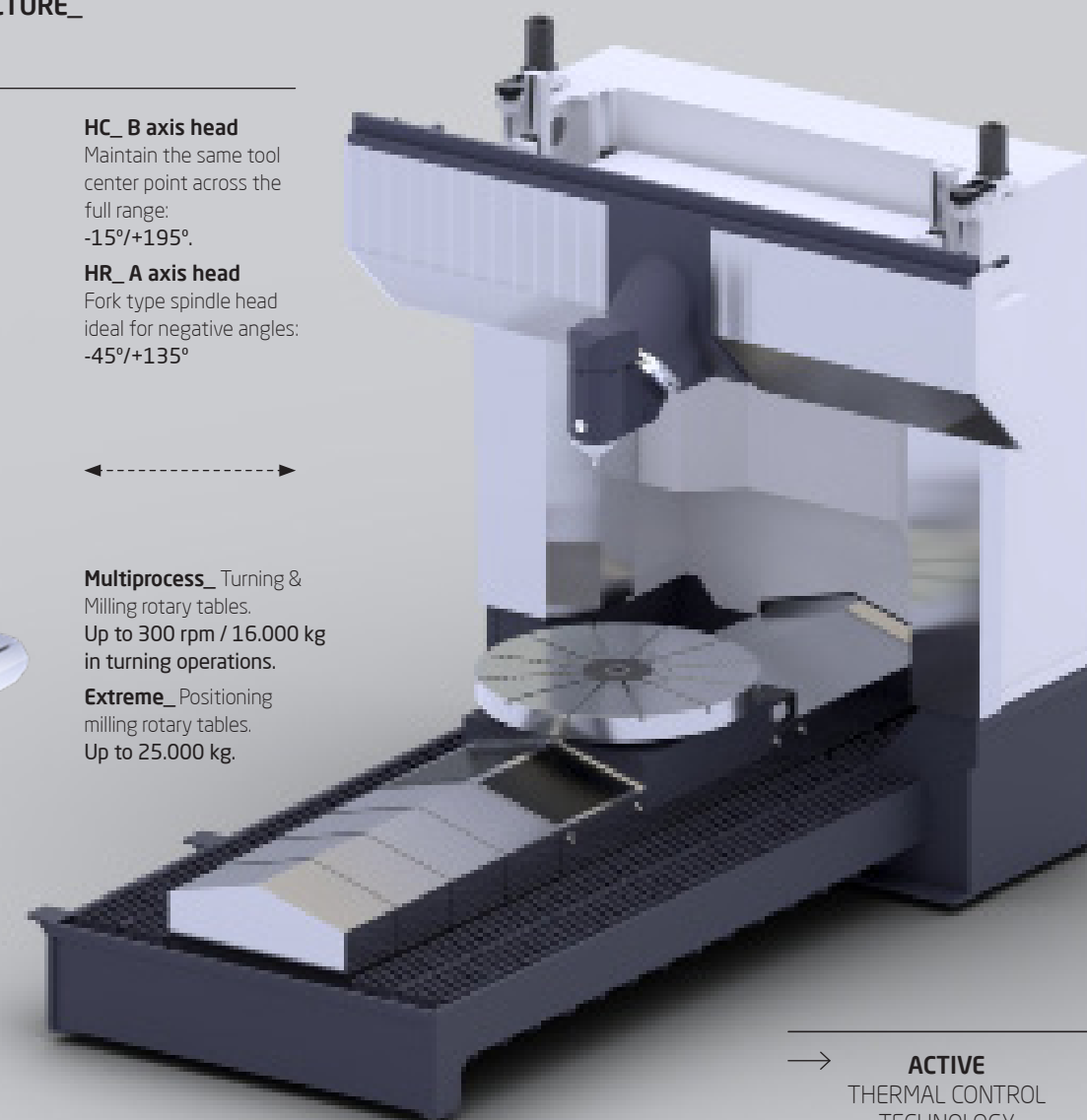
Fork type spindle head ideal for negative angles:
-45°/+135°



Multiprocess_ Turning & Milling rotary tables.

Up to 300 rpm / 16.000 kg in turning operations.

Extreme_ Positioning milling rotary tables.
Up to 25.000 kg.



→ **ACTIVE**
THERMAL CONTROL
TECHNOLOGY

(IN THE PICTURE, PHC 26 MULTIPROCESS)



P SERIES

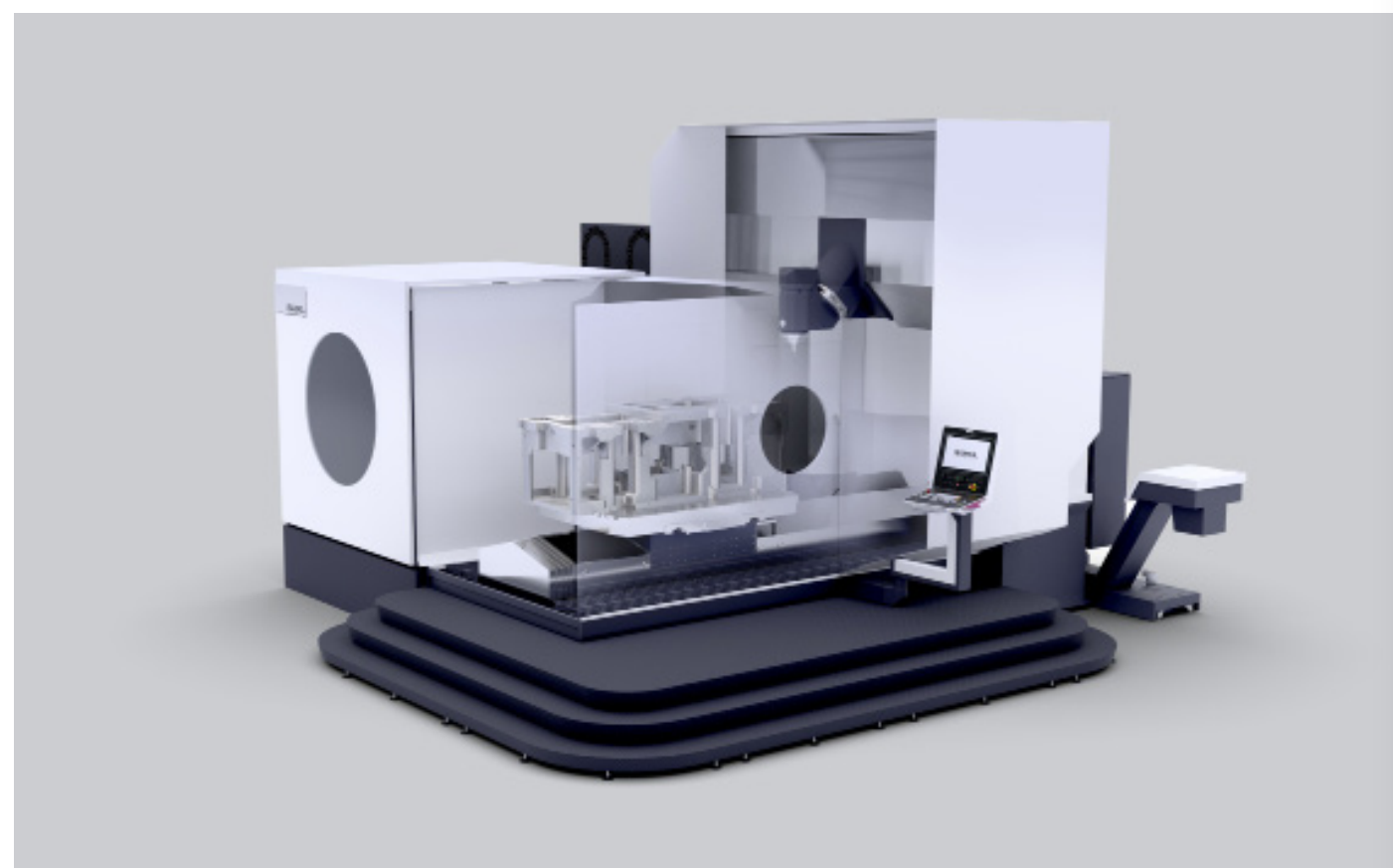
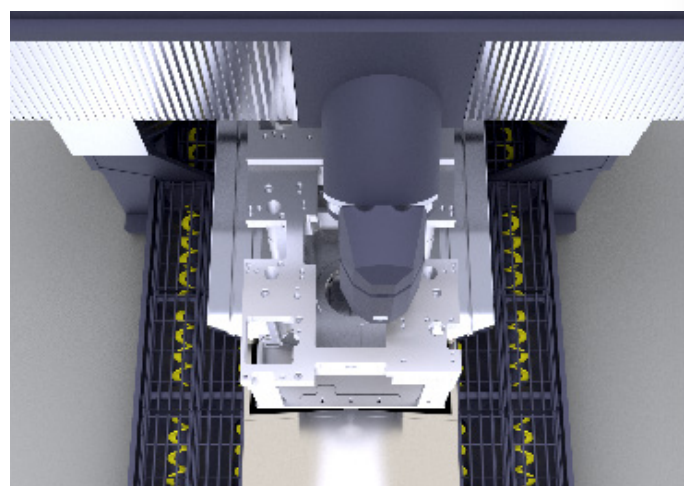
2_ APPLICATION INDUSTRIES

5 AXIS ADVANCED MACHINING

The P SERIES is the ideal solution for high production of large size cubic pieces in a single set up, with power and accuracy. A generous workspace and the combination of linear and rotary axes, offer a wide range of solutions for advanced machining in 5 axes / 5 faces on parts up to $\varnothing 3600$ mm and h2150 mm in a wide range materials and the most complex geometries.

RANGE OF MACHINING

○ ———— ○
Extra long parts Medium diameter parts Big diameter tall parts



SAMPLE APPLICATIONS



Fluid end



Industrial mold



Compressor Cylinder



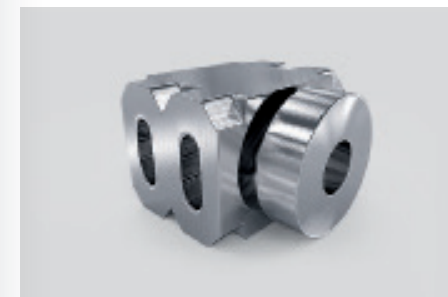
Turbocharger housing



Valve body



Engine block



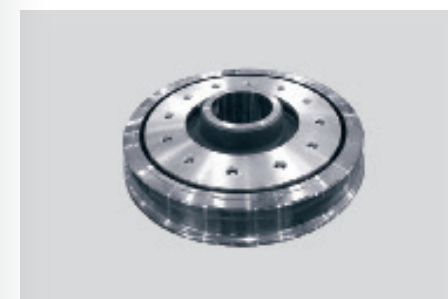
Ram Bop



Roller cage for bearings



Aerospace engine housing



Railway wheel



Pipe line compressor housing



Impeller shaft

INDUSTRIES & MATERIALS



OIL & GAS



MOLD & DIE



AEROSPACE



AUTOMOTIVE



RAILWAY



MACHINERY



YELLOW GOODS

Low-Alloy Steel | Grey Cast Iron | Nickel based Super Alloy | Austenitic Stainless Steel | Aluminium based Alloy | Extra hard Steel



P SERIES

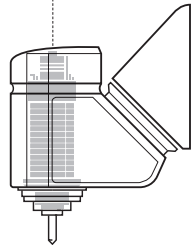
3_ ELECTROSPINDLES

ELECTROSPINDLES_ POWER DIAGRAMS

A range of electrospindles to cover all machining needs; Dynamics and high revolutions, and high torque from very low turns for the hardest materials.

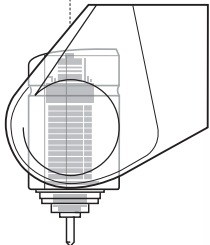
IBARMIA offers more electrospindles on request.

HC_ B axis head
Continuous tilting head



Maintain the same tool center point across the full range
-15°/+195°

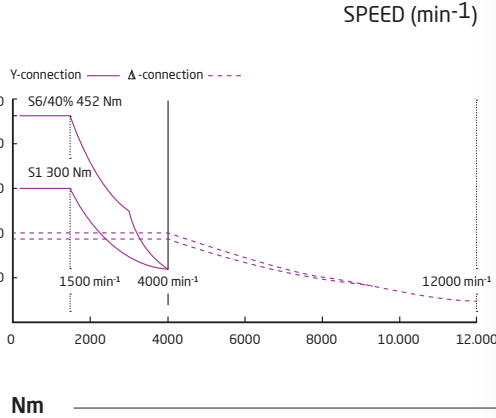
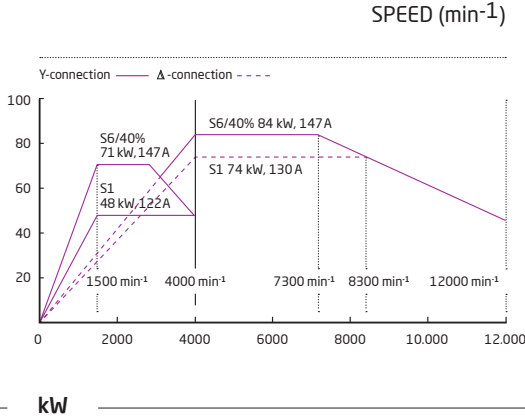
HC_ A axis head
Continuous tilting head



Fork type spindle head ideal for negative angles
-45°/+135°

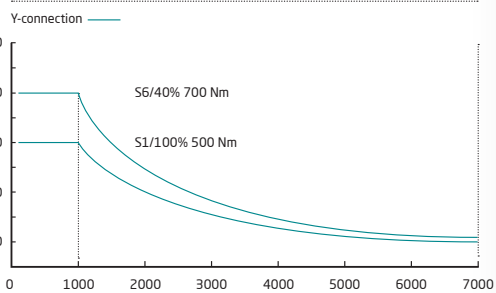
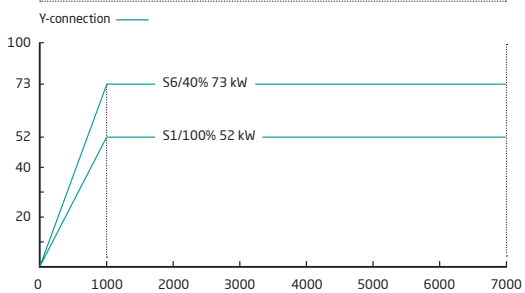
1_ STANDARD

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



2_ OPTIONAL

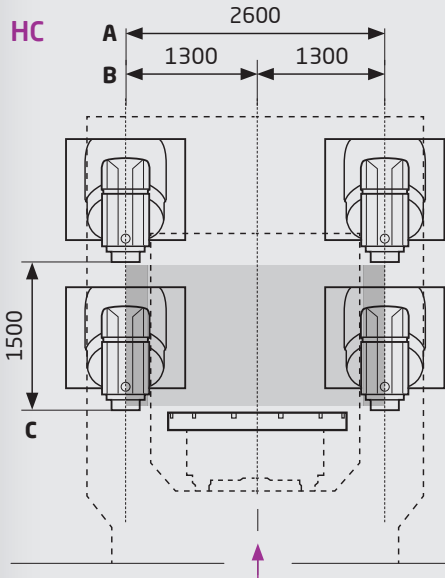
High torque for the hardest materials_
Up to 7000 rpm.
52/73 kW (S1/S6).
500/700 Nm (S1/S6)



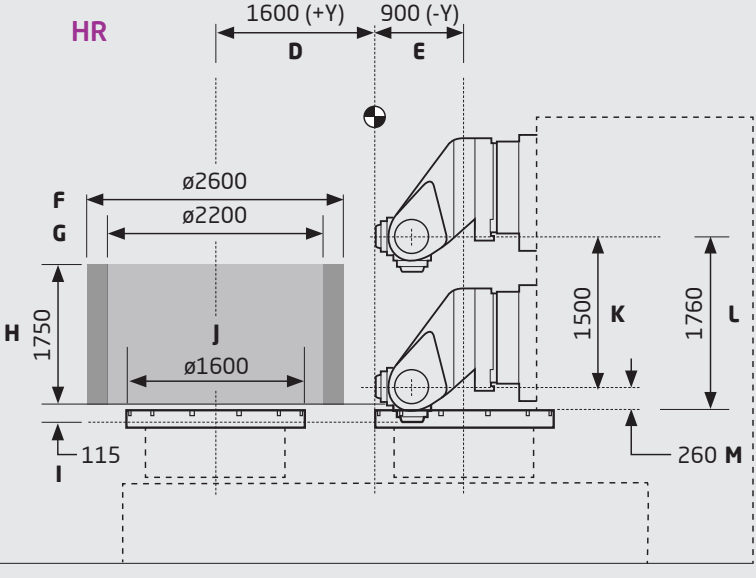
P SERIES

4_ MACHINE TRAVELS

HC

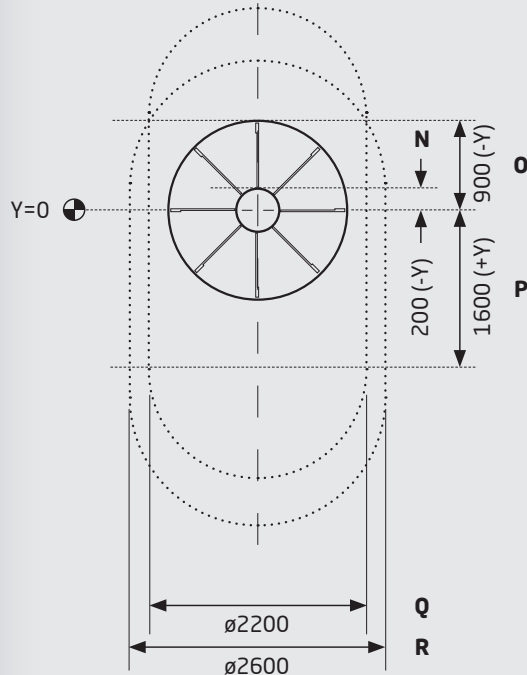


HR



PHC / PHR 26_

Drawings with HC / HR milling heads
(General measures valid for both headstocks)



PHC / PHR 30_

Dimensions following letters in the drawings.

A_ 3000 mm
B_ 1500 mm
C_ 1700 mm
D_ 1900 mm
E_ 1100 mm
F_ 3000 mm
G_ 2600 mm
H_ 1950 mm
I_ 115 mm
J_ 1800 mm
K_ 1700 mm (HR head)
L_ 1960 mm (HR head)
M_ 260 mm
N_ 200 mm
O_ 1100 mm
P_ 1900 mm
Q_ 2600 mm
R_ 3000 mm

PHC / PHR 36_

Dimensions following letters in the drawings.

A_ 3600 mm
B_ 1800 mm
C_ 1900 mm
D_ 2000 mm
E_ 1300 mm
F_ 3600 mm
G_ 3000 mm
H_ 2150 mm
I_ 115 mm
J_ 2000 mm
K_ 1900 mm (HR head)
L_ 2160 mm (HR head)
M_ 260 mm
N_ 200 mm
O_ 1300 mm
P_ 2000 mm
Q_ 3000 mm
R_ 3600 mm

YOUR MACHINE TOOL POINT

EST. 1953

P SERIES
5 AXIS UNIVERSAL
MACHINING
CENTERS

SPG 09/25
Subject to changes
without previous warning.
Informative content
is not binding.

IBARMIA is an advanced technology manufacturer of
high added-value solutions adapted to customers' needs
by highly customized machining centers.



Diego Umantsoro, 6 - Apdo 35
20720 Azkoitia (Gipuzkoa) Spain. T +34 943 857 000
ibarmia@ibarmia.com

Follow us on our social networks



www.ibarmia.com
