

IBARMIA.

ZVH EXTREME

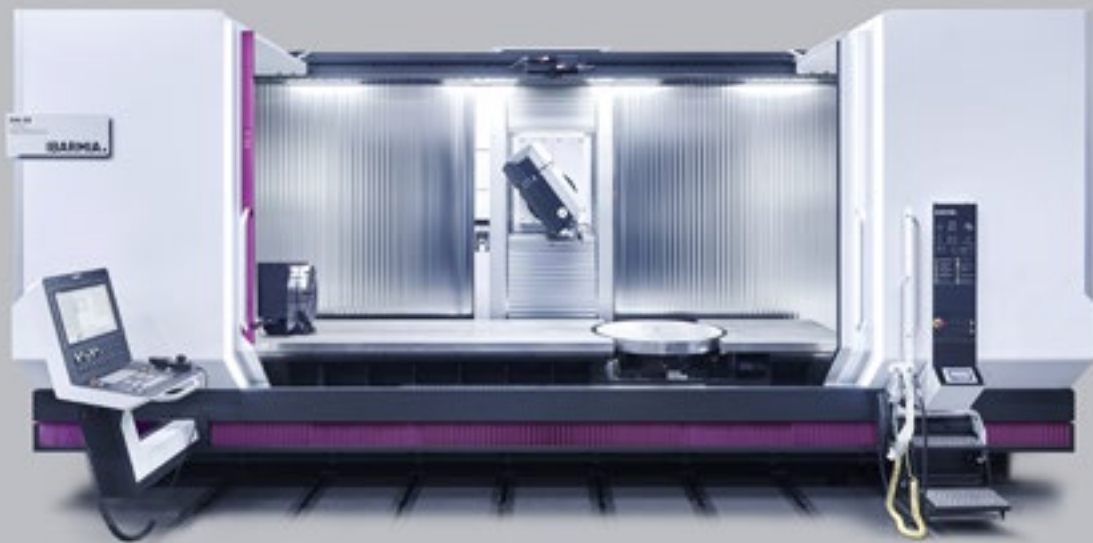
60 - 58 / 55 / 50 - 48 / 45 / 40

5 AXIS MOVING COLUMN MACHINING CENTERS

Combine 5 axis vertical and/or horizontal machining capacity with a fixed table so you can be ready for any job at the shortest notice.



Z SERIES



www.ibarmia.com

Z SERIES AND THE 5 AXIS MACHINING



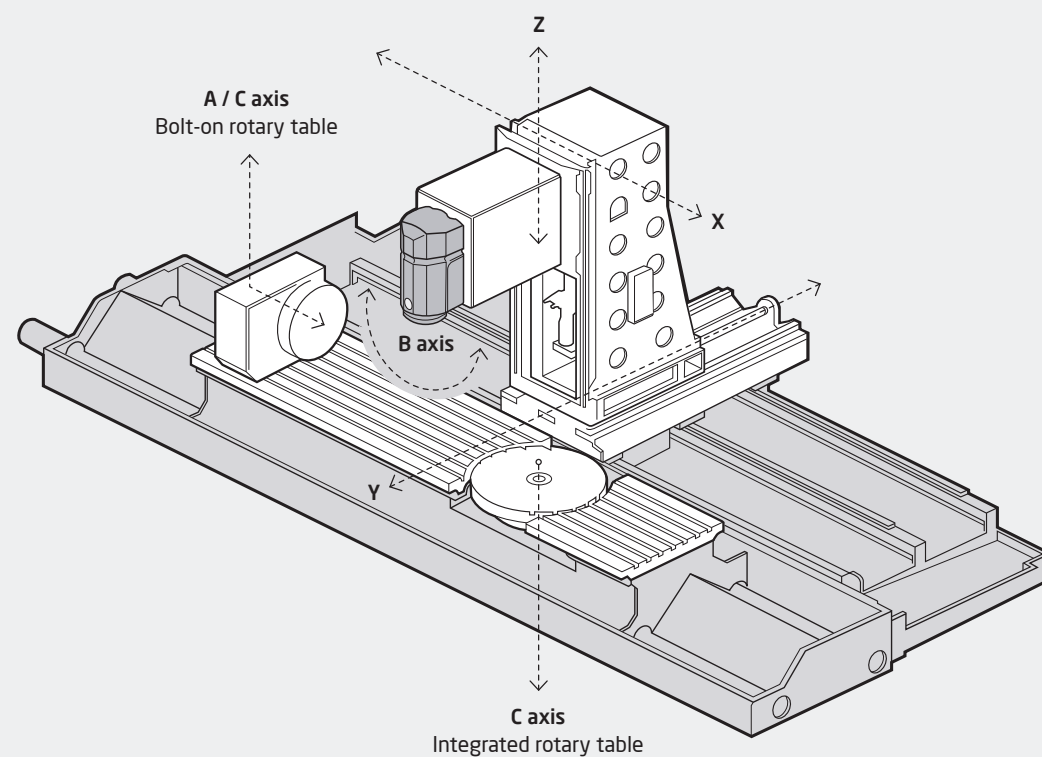
ZVH SPINDLE HEAD
B axis, 4th movement.
Continuous tilting head / Torque motor. +/- 105°

MOVING COLUMN DESIGN

The IBARMIA moving column platform is ideal for flexible manufacturing of a wide range of pieces thanks to its heavy load capacity fixed table provided with standard side windows for extra-long parts (ZV EXTREME). The integration of a powerful and accurate B axis head allows machining complex parts in fewer setups by using rotary tables (ZVH EXTREME).



MANUFACTURING TECHNOLOGY



Z SERIES_ BODY SIZES FOR SK 40 & SK 50

SIZE 4_ 40 / 45 / 48 models



Y-Z travels
Y 600 / 800 / 1000 mm - Z 900 mm
Tool holder (ZVH EXTREME)
SK 40 • BT 40 • HSK A-63

SIZE 5_ 50 / 55 / 58 models

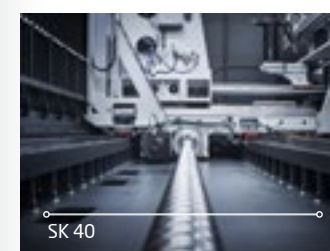


Y-Z travels
Y 600 / 800 / 1000 mm - Z 1100 mm
Tool holder (ZVH EXTREME)
SK 50 • BT 50 • HSK A-100

SIZE 6_ 60 model



Y-Z travels
Y 1100 mm - Z 1100 mm (Option 1300 mm)
Tool holder (ZVH EXTREME)
SK 50 • BT 50 • HSK A-100



#40 Electrospindle
Power in S1 (100%); S6 (40%)
30 kW / 50 kW
Total available power from
2000 rpm
Torque in S1 (100%); S6 (40%)
130 Nm / 200 Nm
Maximal rotation speed
12.000 rpm

2 guideways structure

IBARMIA adapts the machine structure to each electrospindle type. By this way, in the #40 machines the column carriage travels over two guideways.



#50 Electrospindle
Power in S1 (100%); S6 (40%)
74 kW / 84 kW
Total available power from
4000 rpm
Torque in S1 (100%); S6 (40%)
300 Nm / 452 Nm
Maximal rotation speed
12.000 rpm

3 guideways structure

By the same way IBARMIA introduces a bigger three guideways structure for #50 spindles, to endure the forces applied when machining hard materials with high power.

Z SERIES_ UP TO 12.000 mm IN X AXIS



A wide range of lengths available

1600 / 2200 / 3000 / 4000 / 5000 / 6000 / 7000 /
8000 / 9000 / 10.000 / 11.000 / 12.000 mm

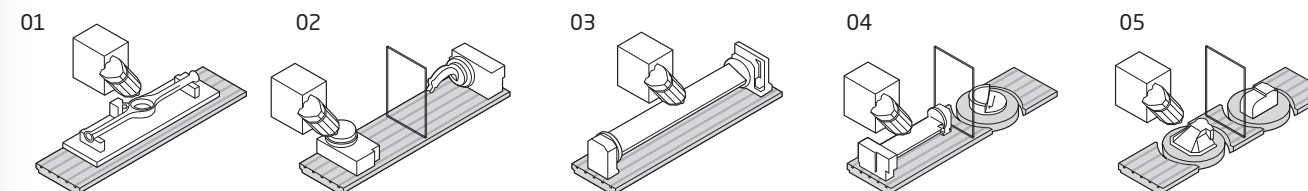
Z SERIES_ Y AXIS ZERO GRAVITY DESIGN



Constant cutting conditions on Y axis

Fixed distance monoblock column design: accuracy, power and rigidity on the full travel of the Y axis.

ZVH EXTREME_ MACHINE IT ALL



Create your own machine

The high configurability and the combination of axes and rotary tables provide an unlimited field of work which ensures an efficient return on the investment.

01_

• Thermo-symmetrical and thermostable structure design.

02_

• Maximum stability in the monoblock design of the machine bed. Structural bodies of maximum rigidity for an optimum performance throughout the machine's life cycle.

• Rectified ball screws of high precision with preloaded double nuts for the longitudinal axis movement in machines up to 6000 mm long.

• Machines from 3000 mm long are provided with ball screw supports to prevent bending and vibrations in rapid movements.

03_

• Rack and pinion system on the longitudinal axis in machines from 7000 mm long.

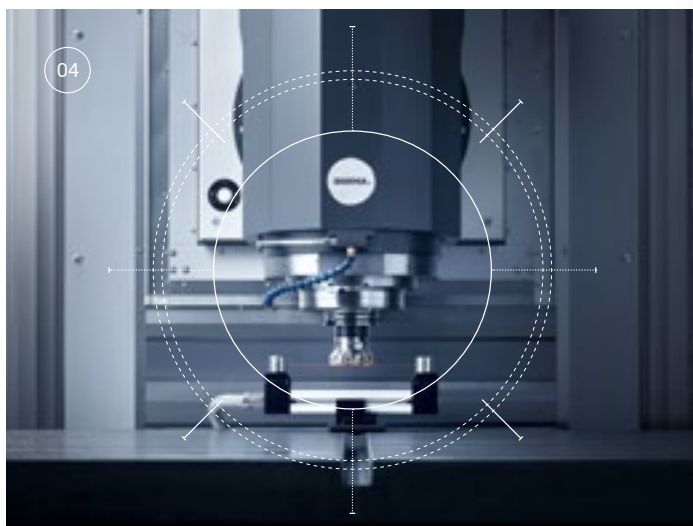
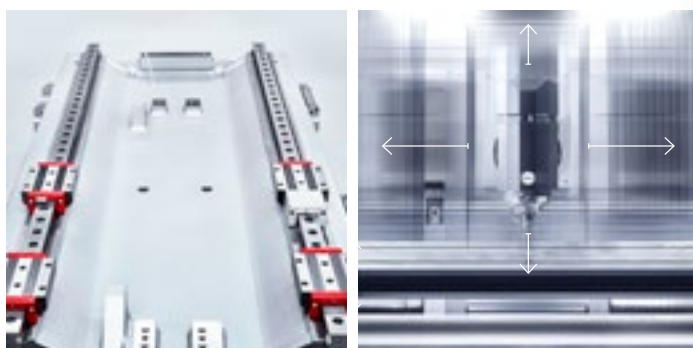
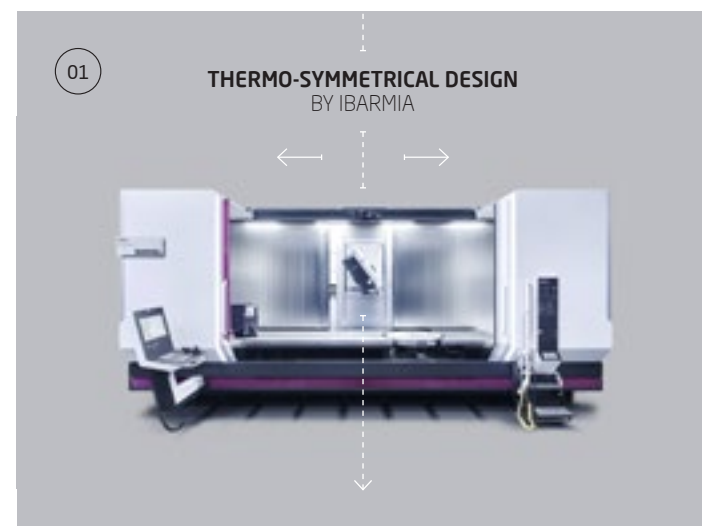
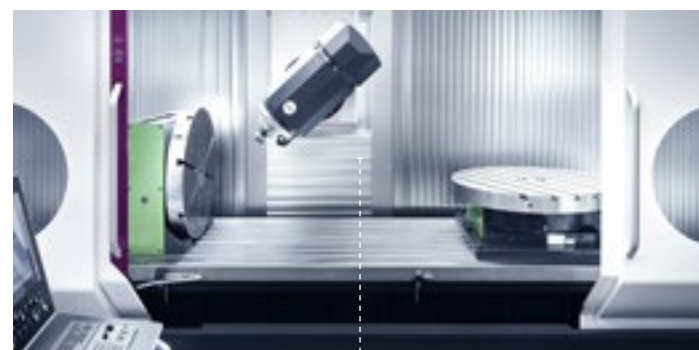
• Movement on X / Y / Z axis over linear guides with preloaded rolling shoes with two rows of circulating rollers.

• Standard measuring device on X, Y, Z axes in our machining centres: glass scales.

04_

• Geometric check and volumetric calibration of the machine by laser interferometer on request, according to ISO 230- 2, -4 and -6.

Z SERIES_ CONSTRUCTION FEATURES



Z SERIES

Z SERIES_ STANDARD CHARACTERISTICS



Totally encapsulated working area and safety windows.



Up to 12.000 mm long working fixed table with "T" slots.



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



Standard convertible roof with an ergonomic design of doors for a wide and smooth opening, facilitating the loading/unloading of pieces by crane.



Loading of extra long pieces through the side panelling which is easily removable.



Chip conveyor with integrated coolant tank.



Double auger system for chip evacuation (long tail chip conveyor in ZVH-ZV 40 and 50 models).



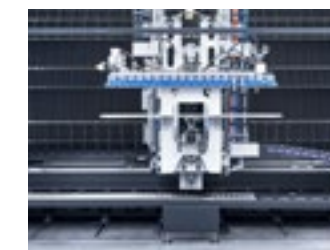
• Climatized electric cabinet with easy access.
• Programmable central lubrication system.



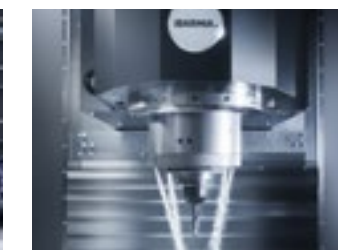
Moving and light control panel with 360° rotation over the entire longitudinal travel.



Control panel with 19" touch screen. Freedom to choose latest CNC controls of the most prestigious manufacturers: HEIDENHAIN, FANUC, SIEMENS.



The tool magazine with automatic tool changer travels with the carriage that makes the longitudinal movement, allowing the tool change at any position on the X axis.



External coolant system around the spindle.

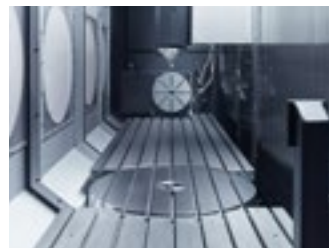


MOVING COLUMN MACHINING CENTERS

ZVH MODELS_ MAIN CONFIGURATION OPTIONS



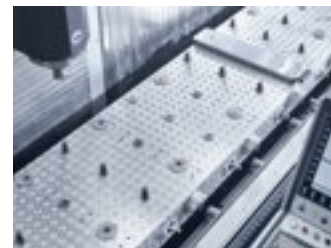
Non stop machining option that includes a central division wall, independent blocking of front doors, and pendulum cycle work area management software.



Integrated rotary tables covering the Y axis, up to ø1500 mm swing, for turning and/or 5 axis machining operations.



Bolt on rotary tables to be used either in horizontal or vertical axis for up to 5 axis continuous machining operations.



Integration of different clamping systems on the fixed table, such as ZERO points, vacuum systems etc.



Pick up stations integrated in the machine to hold special tools, angular heads etc.



Specific solutions for customers that need to manage a high number of tools: fixed magazines, rack type configurations etc.



Tool magazines to load special tools and large angle heads which can be operated by robot.

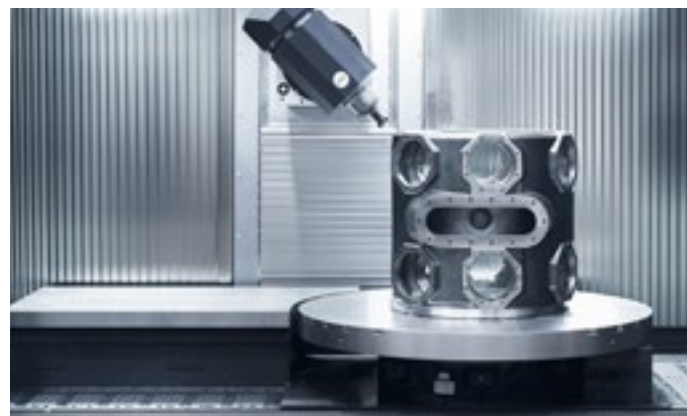


Grinding capability with different cycles depending on the machine model (Extreme / Multiprocess).

Another optional items

- Coolant through spindle.
- Tool measuring and touch systems.
- Steam and mist aspiration system.
- Air and water guns.
- "Comfort" pack: Sliding access stairway along the longitudinal travel with supports for air and water guns.
- "Illumination" pack: LED lights with acoustic signal indicating the state of the machine, integrated into the sides.
- Lights with acoustic signal indicating the machine status.
- Camera settings and display mode.
- Control with touch screen up to 24".

ZVH MODELS_ BIG DIAMETER ROTARY TABLES



All the advantages of the moving column design adapted to bigger diameters and heavier loads.

ZVH D_ SWING Ø INCREASES

SK 50

- ZVH 60: ø1500 to ø2200 mm
- ZVH 58: ø1400 to ø2000 mm
- ZVH 55: ø1200 to ø1600 mm

SK 40

- ZVH 48: ø1300 to ø2000 mm
- ZVH 45: ø1100 to ø1600 mm



MANUFACTURING TECHNOLOGY

ZVH EXTREME_ MAIN CONFIGURATION OPTIONS



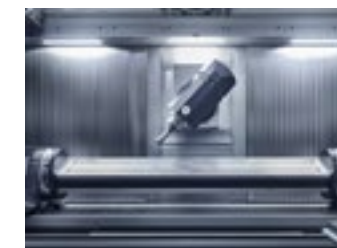
Integrated rotary tables a la carte: tables covering the Y axis (up to ø1500 mm) and /or bigger diameter tables up to ø2200 mm for larger and heavier loads (ZVH D on previous page).



If high production is required, IBARMIA can fit ZERO points on these integrated rotary tables.



Bolt on rotary tables: A wide range of bolt-on rotary tables up to ø800 mm and ø1500 mm swing.



Trunnion fixtures over the fixed table using A-C axis bolt on rotary tables and supporting plates.



Customized workin areas: sliding platforms on guideways replacing the fixed table, that can be quickly re-positioned for machining parts with different lengths.

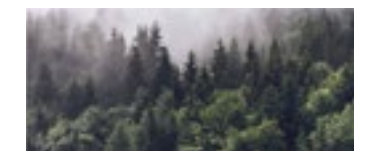
IBARMIA ECO DESIGN



Customized working areas: Trunnion fixtures replacing the fixed table and facilitating the fall of chips to the endless screws.



Clamping systems: It is also possible to integrate ZERO points in both trunnion fixtures and sliding tables.



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



ZVH EXTREME

THE MACHINE
FOR ALMOST
EVERYTHING

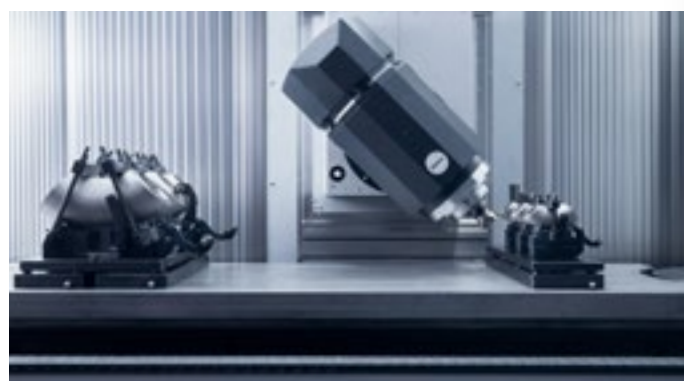
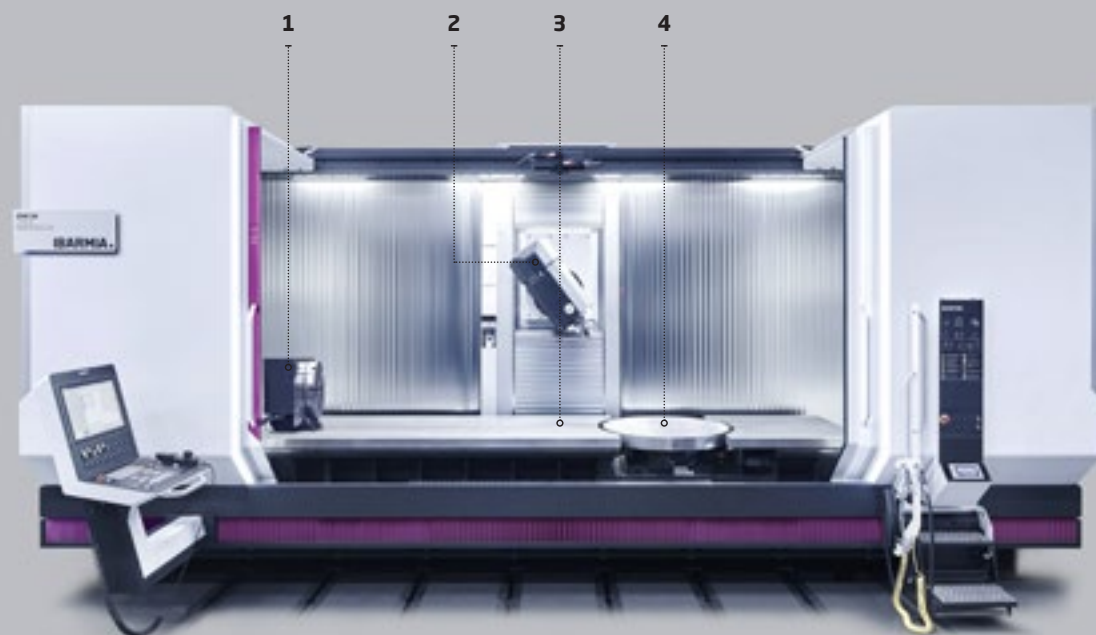
Combine the high dynamics tilting head with the wide range of rotary tables and fixture devices available.

1_ Up to ø800mm diameter A-C axis bolt-on rotary tables.

2_ B axis torque motor milling head. Up to 84 kW / 12.000 rpm.

3_ Two working areas. "Non stop machining" pendulum system.

4_ C axis integrated rotary tables. Swings up to ø1500 mm. Up to 6000 kg.



ZVH EXTREME



MOVING COLUMN MACHINING CENTERS

ZVH EXTREME_ SAMPLE APPLICATIONS



Directional drilling tool



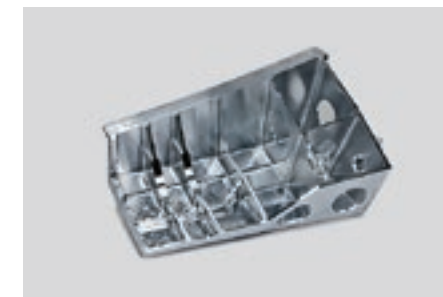
Impeller



Coupling piece



Industrial mold



Aircraft structural part



Engine block



Automatic engine piece



Turbine blade



Quick coupler



OIL & GAS



AEROSPACE



MACHINERY



MOLD & DIE



AUTOMOTIVE



OFFSHORE



YELLOW GOODS

Z SERIES

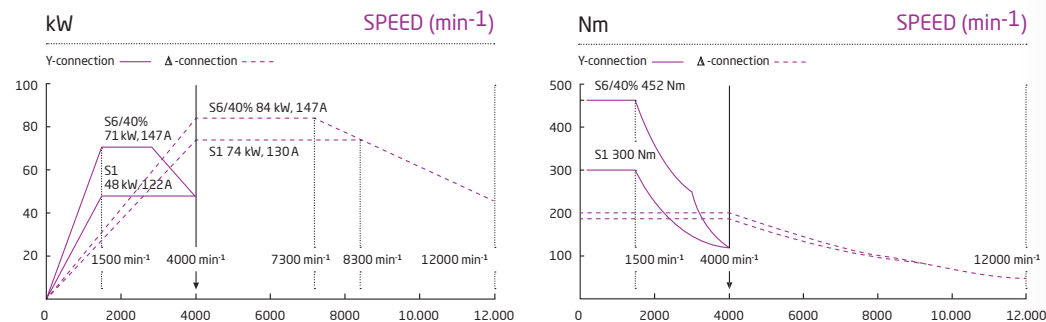
LARGE SELECTION
OF ELECTROSPINDLES*

SK 50 BODY SIZES

1_STANDARD

Power and dynamics

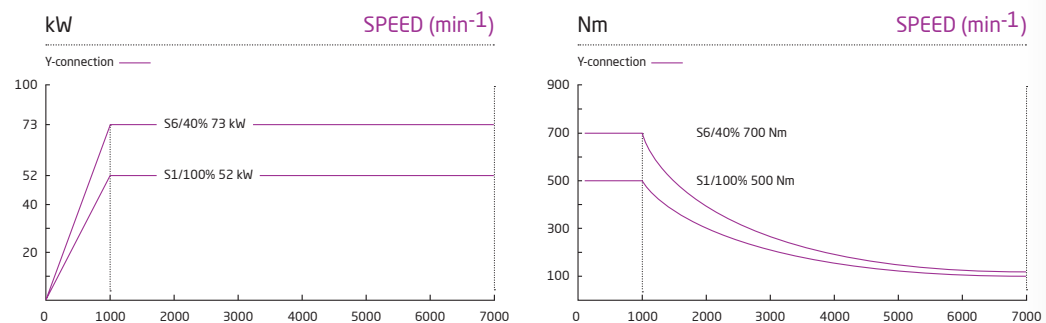
Up to 12.000 rpm.
74/84 kW (S1/S6).
300/452 Nm (S1/S6)



2_OPTIONAL

High torque for the hardest materials

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

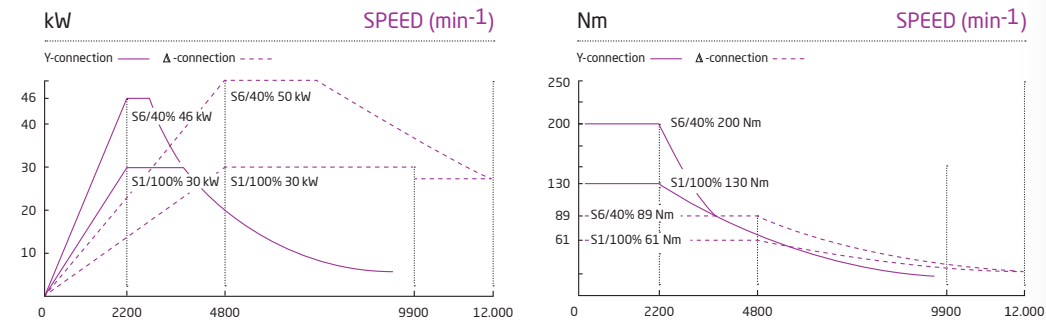


SK 40 BODY SIZES

1_STANDARD

Dynamics and high revolutions_

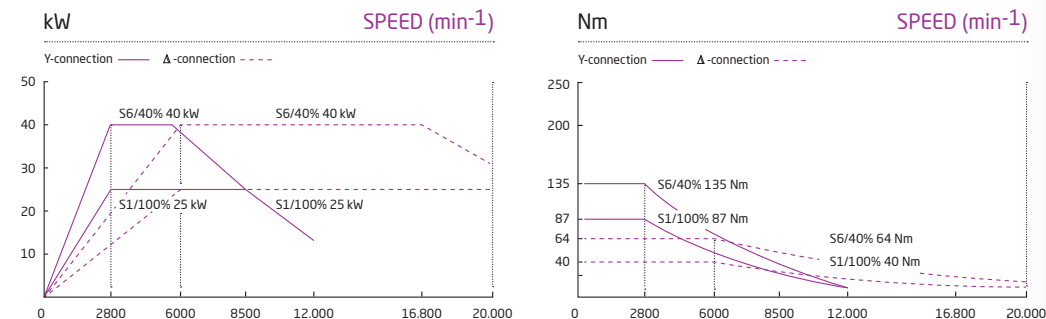
Up to 12.000 rpm.
(Option 15.000 rpm)
30/50 kW (S1/S6).
130/200 Nm (S1/S6)



2_OPTIONAL

Higher speed and dynamics

Up to 20.000 rpm.
25/40 kW (S1/S6).
87/135 Nm (S1/S6)



*More spindles on request

ZVH EXTREME

TECHNICAL DATA

TRAVELS	1600 - 12.000 mm						
-X axis travel (length)	1100 mm	1000 mm	800 mm	600 mm	1000 mm	800 mm	600 mm
-Y axis travel (cross)	1100 mm (1300*)		1100 mm		900 mm		
-Z axis travel (vertical) (*optional)	+/- 105°						
-B axis head tilting range	ø 1500 mm	ø 1400 mm	ø 1200 mm	ø 1000 mm	ø 1300 mm	ø 1100 mm	ø 900 mm
-C axis rotary table maximum swing diameter	1100 mm				900 mm		
-Piece maximum height	0---1100 mm				0---900 mm		
-Distance spindle nose-table. Head in V position	375---1475 mm				360---1260 mm		
-Distance spindle nose-table. Head in H position							

WORKING AREA

-Fixed table dimensions	L1600-2200: X +400 mm; ≥ L3000: X+600 mm & Y +50 mm				
-Maximum table load capacity	2000 Kg/m²		1500 Kg/m²		
-Number of "T" slots	9	7	5	7	5
-"T" slots size	18 H7 mm				
-Distance between "T" slots	125 mm				
-Fixed table height	1075 mm		1050 mm		
-C axis rotary tables	Various models available (see on pages 6-7)				

TILTING HEAD

-Turning torque	800 Nm	782 Nm
-Position clamping force	6000 Nm	

MAIN SPINDLE

-Tool holder	Standard: SK 50 - Option: BT 50 / HSK A-100	Standard: SK 40 - Option: BT 40 / HSK A-63
-Maximum speed	Standard: 12.000 rpm - Option: 7000 rpm	Standard: 12.000 rpm - Option: 20.000 rpm
-Maximum power	Standard: 84 kW - Option: 75 kW	Standard: 50 kW - Option: 40 kW
-Maximum torque (Nm)	Standard: 452 Nm - Option: 700 Nm	Standard: 200 Nm - Option: 135 Nm

FEED

-Feed thrust X-Y-Z 100%	X: 15.021 N / Y: 12.154 N / Z: 10.649 N	X: 11.992 N / Y: 8521 N / Z: 7669 N
-Rapid feed for positioning X-Y-Z	45 m/min	45-48-48 m/min
-Maximum working feed X-Y-Z	30 m/min	
-Rapid feed for positioning in B axis	50 rpm	

ACCURACY VDI / DGQ3441

-Positioning Tp X-Y-Z (1000 mm)	10 µm
-Repeatability	5 µm
-Measuring system on B axis	Rotary scale
-Positioning accuracy B axis	+/- 5 s
-Positioning accuracy C axis	+/- 4 s

CAPACITIES

-Milling capacity in steel St 60	1100 cm³/min	900 cm³/min
-Drilling capacity in steel St 60	ø 70 mm	ø 50 mm
-Tapping capacity in steel St 60	M 45 mm	M 33 mm

TOOL MAGAZINE

-Number of tools	30. Optional: 40, 60, 80 and more available on request.	24. Optional: 40, 60, 80 and more available on request.
-Maximum tool length	400 mm	350 mm
-Maximum tool weight	20 kg	10 kg
-Maximum tool diameter with full magazine	Ø 125 mm (Ø 100 mm with 60-80 ATC)	Ø 90 mm (Ø 80 mm with 60-80 ATC)
-Maximum tool diameter with free spaces	200 mm	150 mm
-Tool changing time	10 s	8 s
-Chip to chip time	12 s	10 s

CNC CONTROL

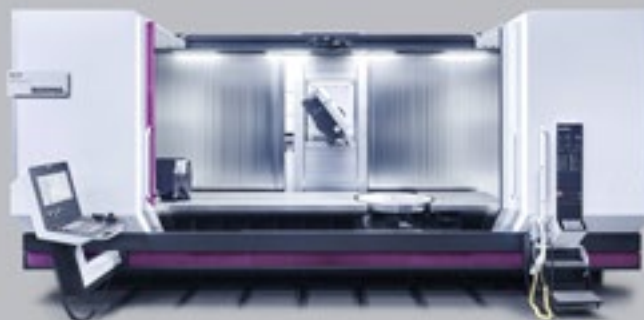
-Available digital controls	Fanuc / Heidenhain / Siemens
-----------------------------	------------------------------

IBARMIA.



YOUR MACHINE TOOL POINT

Diego Umantsoro, 5 - Apdo 35
20720 Azkoitia (Gipuzkoa) Spain. T +34 943 857 000
ibarmia@ibarmia.com



www.ibarmia.com