

IBARMIA.

ZVH MULTIPROCESS

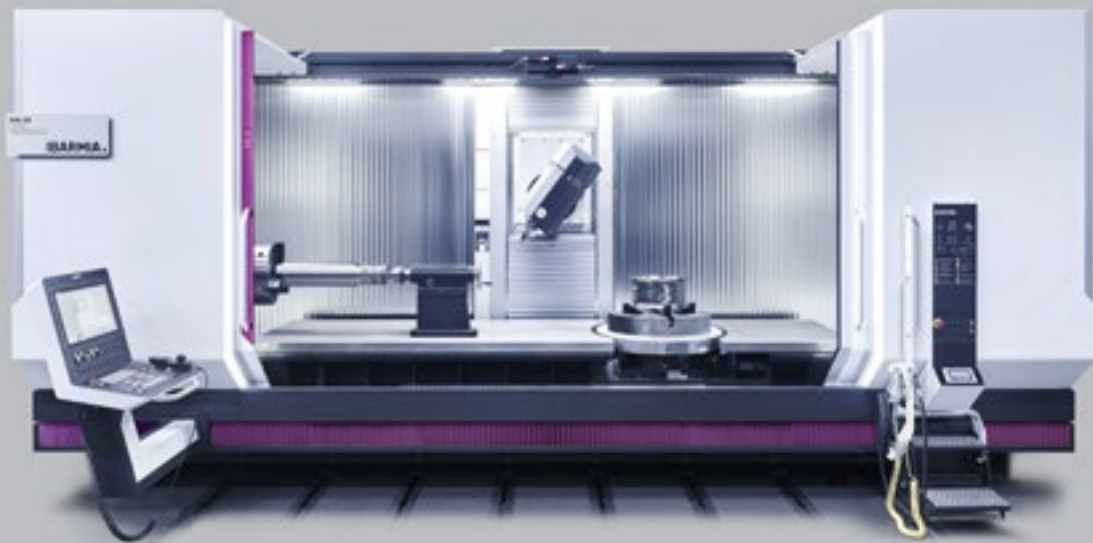
60 - 58 / 55 / 50 - 48 / 45 / 40

5 AXIS MULTITASKING MOVING COLUMN MACHINING CENTERS

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



Z SERIES



www.ibarmia.com

Z SERIES MULTITASKING CONCEPT



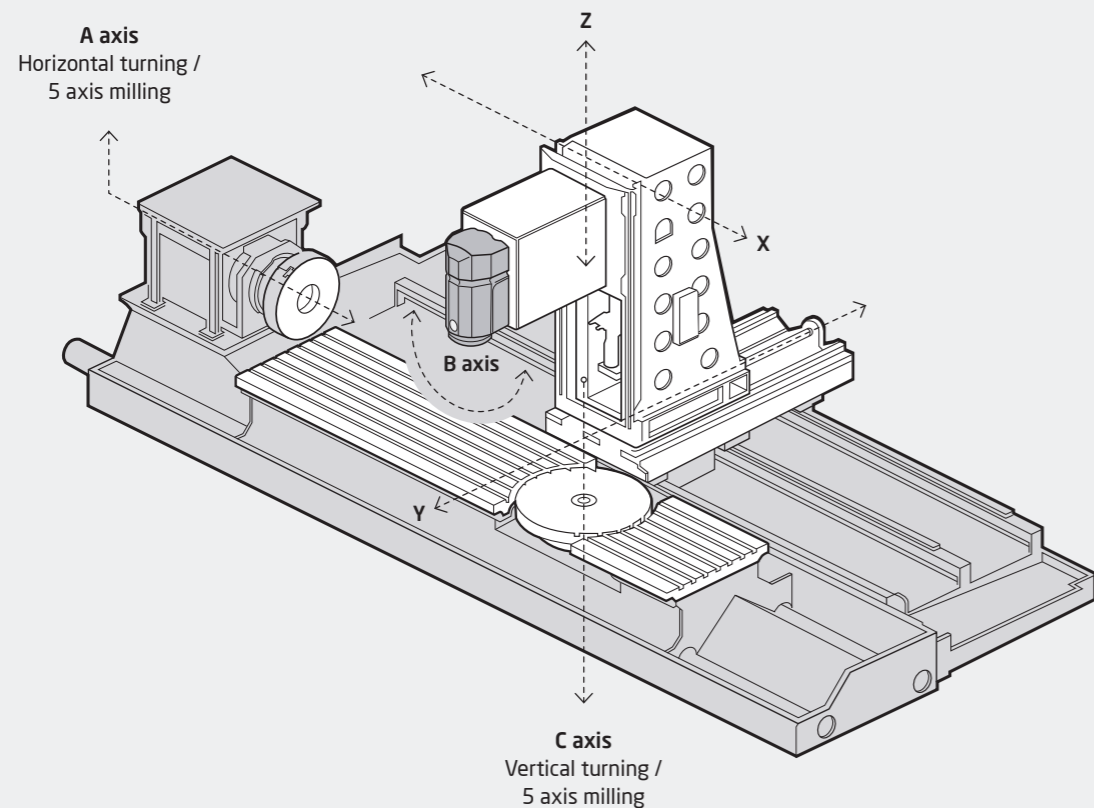
ZVH SPINDLE HEAD
B axis, 4th movement.
 Continuous tilting head / Torque motor. +/-105°

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). Finally, you can add turning capacity to the wide range of rotary tables available and the result will be a machine able to machining the most complex parts in only one setup (ZVH MULTIPROCESS).



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 MULTIPROCESS)
HSK A-63 • CAPTO 6

SIZE 5_ 50 / 55 / 58 models



Y-Z travels
Y 600 / 800 / 1000 mm - Z 1100 mm
 Tool holder (ZVH MULTIPROCESS)
HSK A-100 • CAPTO 8

SIZE 6_ 60 model



Y-Z travels
Y 1100 mm - Z 1100 mm (Option 1300 mm)
 Tool holder (ZVH MULTIPROCESS)
HSK A-100 • CAPTO 8



#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

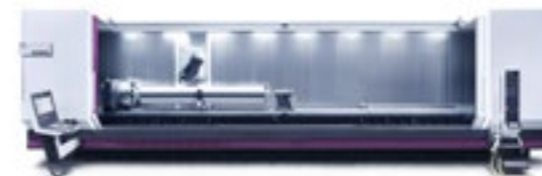
2 guideways structure
 IBARMIA adapts the machine structure to each electrospindle type. By this way, in the #40 machines the column carriage travels over two guideways.



#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

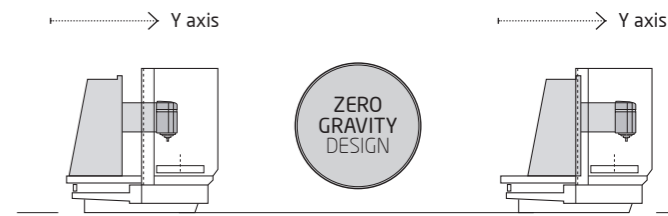
3 guideways structure
 By the same way IBARMIA introduces a bigger three guideways structure for #50 spindles, to endure the forces applied when machining hard materials with high power.

Z SERIES_ UP TO 12.000 mm IN X AXIS



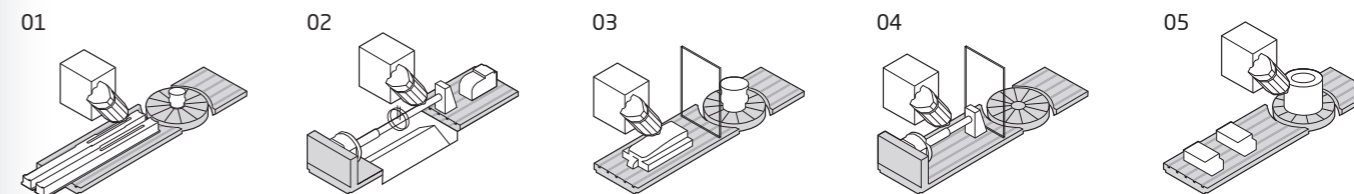
A wide range of lengths available
 1600 / 2200 / 3000 / 4000 / 5000 / 6000 / 7000 /
 8000 / 9000 / 10.000 / 11.000 / 12.000 mm

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 MULTIPROCESS_ MACHINE IT ALL



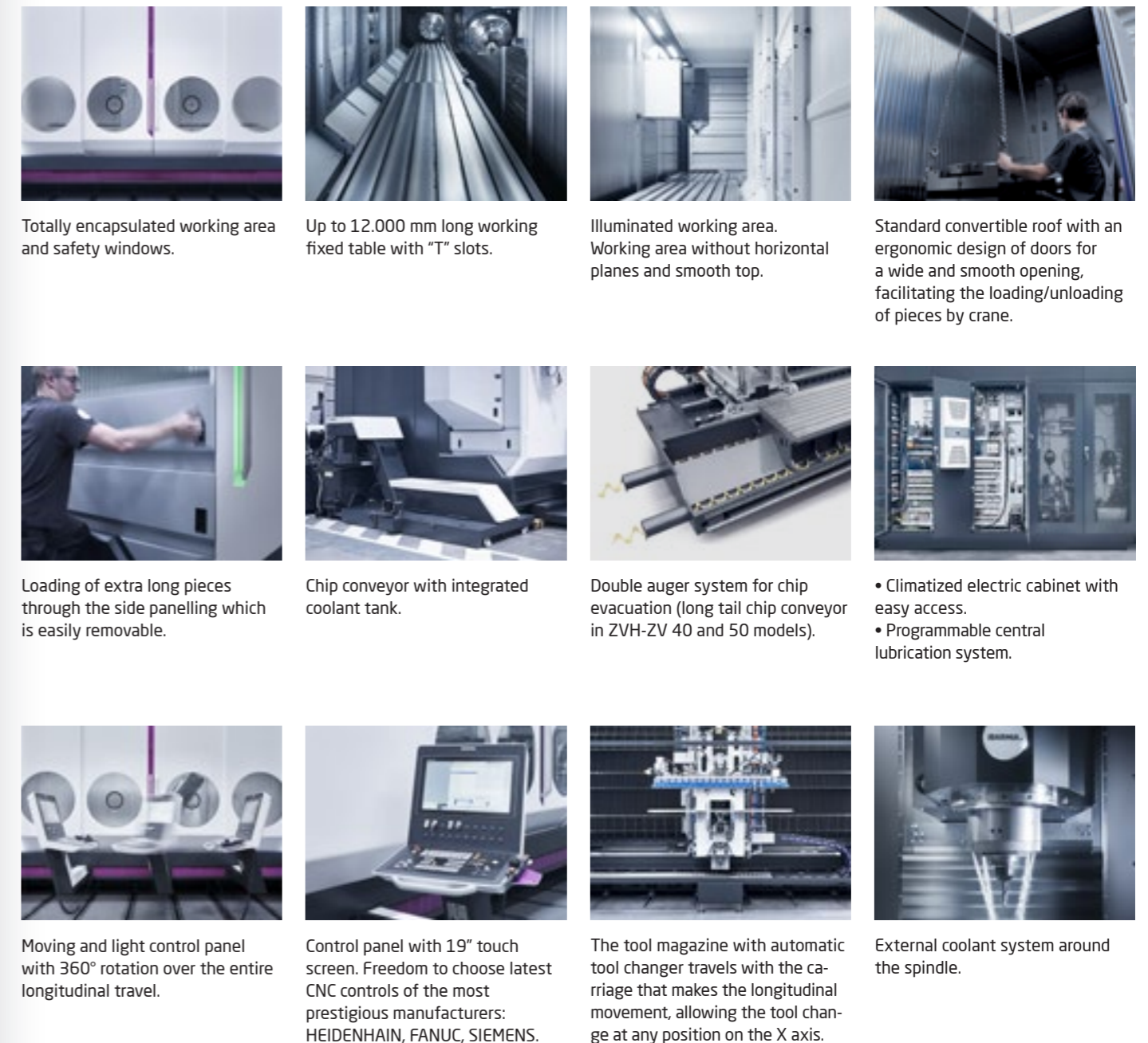
Create your own machine
 The high configurability and the combination of axes and rotary tables provide an unlimited field of work which ensures an efficient return on the investment.

- 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.
- 03_
- 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.
- 04_
- 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.
 - 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_ STANDARD CHARACTERISTICS



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

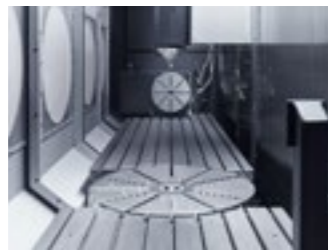


MOVING COLUMN MACHINING CENTERS

ZVH MODELS_ MAIN CONFIGURATION OPTIONS



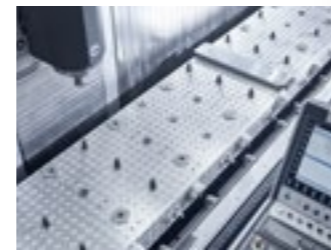
Non stop machining option that includes a central division wall, independent blocking of front doors, and pendulum cycle work area management software.



Integrated rotary tables covering the Y axis, up to $\varnothing 1500$ 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.

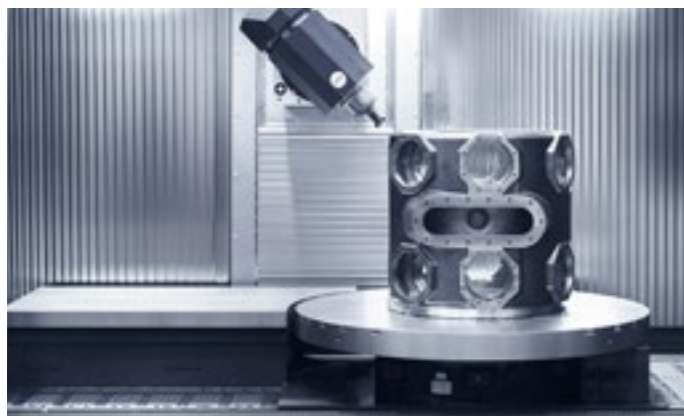


Grinding capability with different cycles depending on the machine model (Multiprocess / Extreme).

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 \varnothing INCREASES

SK 50

- ZVH 60: $\varnothing 1500$ to $\varnothing 2200$ mm
- ZVH 58: $\varnothing 1400$ to $\varnothing 2000$ mm
- ZVH 55: $\varnothing 1200$ to $\varnothing 1600$ mm

SK 40

- ZVH 48: $\varnothing 1300$ to $\varnothing 2000$ mm
- ZVH 45: $\varnothing 1100$ to $\varnothing 1600$ mm



MANUFACTURING TECHNOLOGY

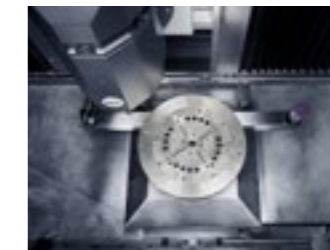
ZVH MULTIPROCESS_ MAIN CONFIGURATION OPTIONS



C axis integrated turning & milling rotary tables. Wide range of turning speeds available.



Customized working areas: Big diameter C axis turning & milling rotary tables for big parts, that can be integrated in the fixed table, or replace it.



Customized working areas: IBARMIA adapts the working area to allow the multiprocess machining of a wide range of parts (big, small, special parts...).



Customized working areas: Servo driven tailstocks for horizontal multiprocess machining.



Horizontal multiprocess machining by chucks integrated in the machine.



Automatic change of long boring bar up to 4 meters long.



Long boring bars for Internal diameter turning operations with high rigidity and stability.



Advanced gear machining functions (skiving-hobbing) valid for straight and helicoidal gears.

ZVH MULTIPROCESS_ TURNING SPINDLES



C axis vertical turning tables

- Table \varnothing from 525 to 1200 mm ($\varnothing 2200$ mm in case of ZVH D).
- Max load from 600 to 6000 kg.
- Max speed from 500 to 800 rpm.
- Max power from 34 to 83 kW.
- Max torque from 324 to 4000 Nm.

A axis horizontal turning chucks

- Chuck \varnothing from 180 to 380 mm.
- Max load from 250 to 1500 kg.
- Max speed from 1800 to 3000 rpm.
- Max power from 24 to 78 kW.
- Max torque from 100 to 1400 Nm.

IBARMIA ECO DESIGN



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



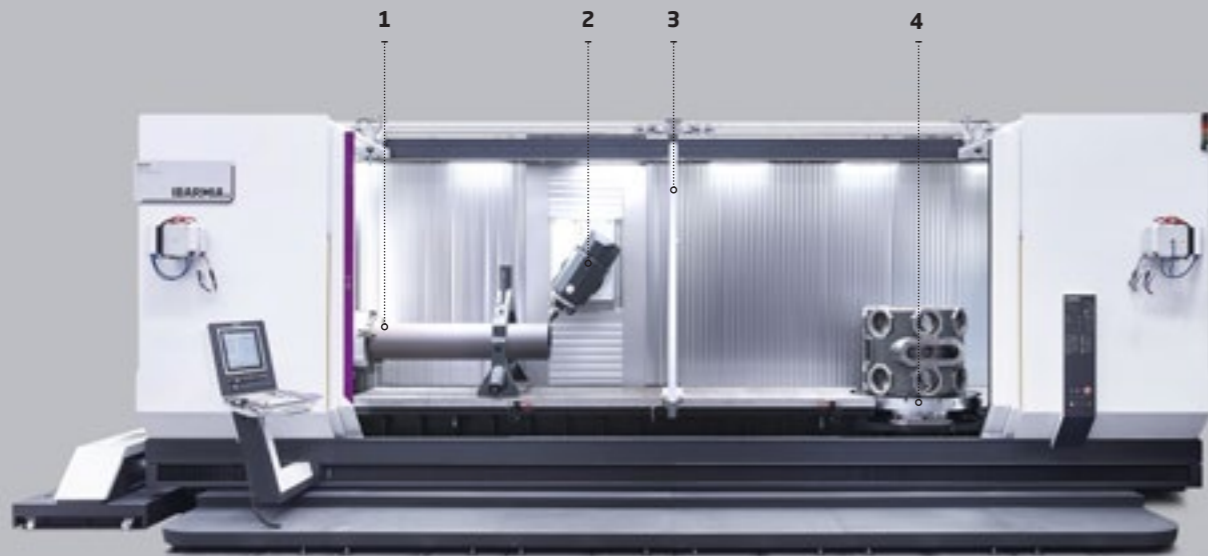
ZVH MULTIPROCESS

PROBABLY, THE MOST FLEXIBLE MACHINE IN THE MARKET

Integrate vertical and/or horizontal turning capacity into a ZVH 5 axis model, combining the high dynamics tilting head with the wide range turning plates available.

1_ A axis turning & milling chucks up to $\varnothing 630$ mm and 2000 rpm.
2_ B axis torque motor continuous tilting head for milling operations. Up to 84 kW / 12.000 rpm.

3_ Two working areas. "Non stop machinig" pendulum system.
4_ C axis turning & milling tables. Swings up to $\varnothing 1500$ mm. Up to 6000 kg / 800 rpm.



The "total" machining center

Combine axes and processes integrating 5-axis milling, turning and grinding capabilities, with the most advanced gear machining manufacturing technologies in the same machine.

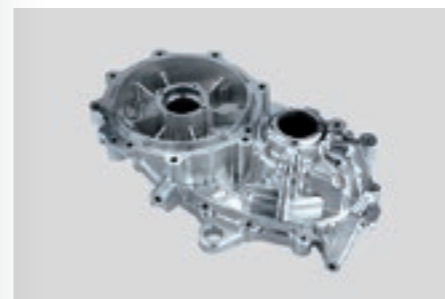


ZVH MULTIPROCESS



MOVING COLUMN MACHINING CENTERS

ZVH MULTIPROCESS_ SAMPLE APPLICATIONS



Nautical engine component



Automobile wheel



Aerospace compressor housing



Engine housing



Toothed shaft



Crankshaft



Pipe line support



Aeronautical component



Landing gear main adapter



MACHINERY



AUTOMOTIVE



AEROSPACE



YELLOW GOODS



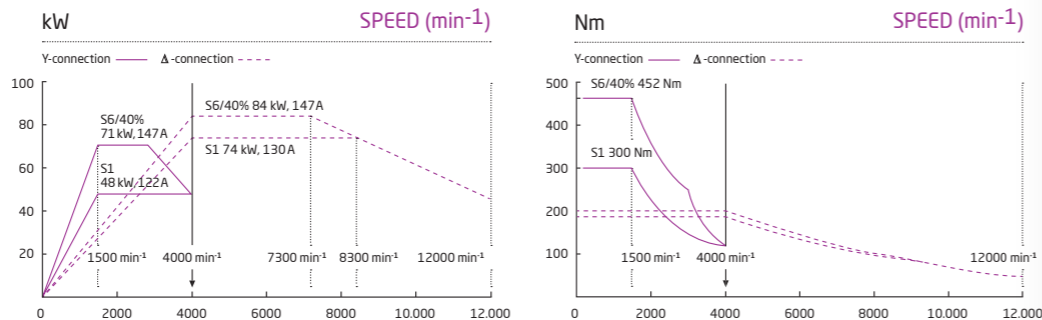
OIL & GAS

Z SERIES
LARGE SELECTION
OF ELECTROSPINDLES*

SK 50 BODY SIZES

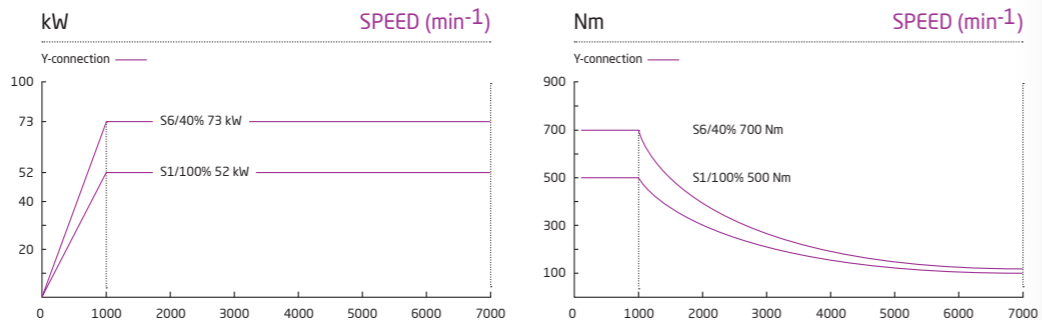
1_ STANDARD

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



2_ OPTIONAL

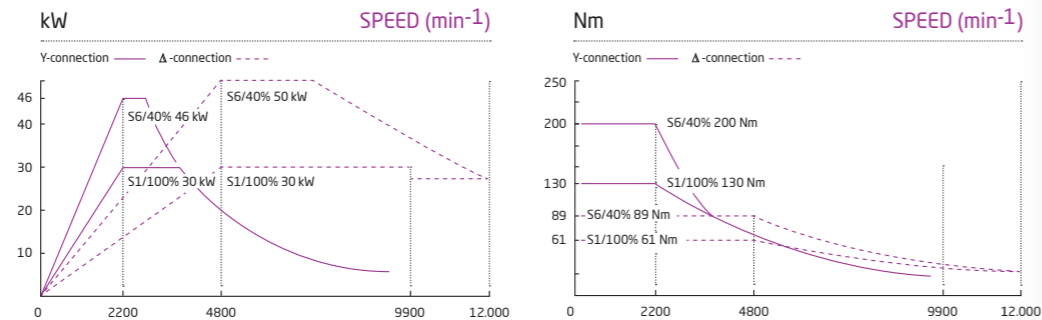
High torque for the hardest materials_
Up to 7000 rpm.
52/73 kW (S1/S6).
500/700 Nm (S1/S6)



SK 40 BODY SIZES

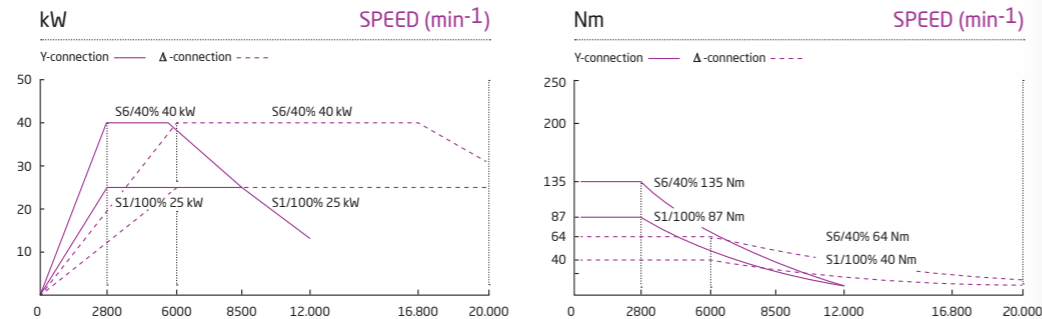
1_ STANDARD

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 MULTIPROCESS
TECHNICAL DATA

TRAVELS

- X axis travel (length)
- Y axis travel (cross)
- Z axis travel (vertical) (*optional)
- B axis head tilting range
- C axis rotary table maximum swing diameter
- Piece maximum height
- Distance spindle nose-table. Head in V position
- Distance spindle nose-table. Head in H position

WORKING AREA

- Fixed table dimensions
- Maximum table load capacity
- Number of "T" slots
- "T" slots size
- Distance between "T" slots
- Fixed table height
- C axis turning tables - A axis turning chucks

TILTING HEAD

- Turning torque
- Position clamping force

MAIN SPINDLE

- Tool holder
- Maximum speed
- Maximum power
- Maximum torque (Nm)

FEED

- Feed thrust X-Y-Z 100%
- Rapid feed for positioning X-Y-Z
- Maximum working feed X-Y-Z
- Rapid feed for positioning in B axis

ACCURACY VDI / DGQ3441

- Positioning Tp X-Y-Z (1000 mm)
- Repeatability
- Measuring system on B axis
- Positioning accuracy B axis
- 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

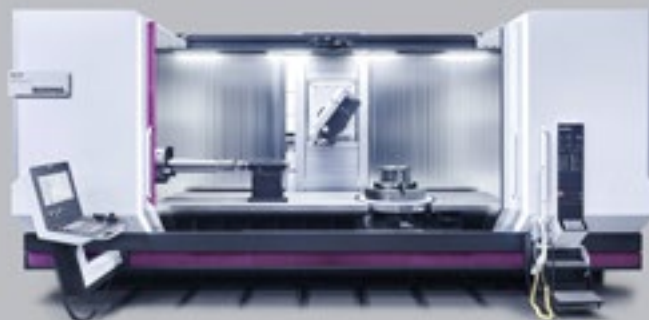
SK 50 BODY SIZES				SK 40 BODY SIZES		
ZVH 60	ZVH 58	ZVH 55	ZVH 50	ZVH 48	ZVH 45	ZVH 40
-X axis travel (length)						
1600 - 12.000 mm						
-Y axis travel (cross)						
1100 mm	1000 mm	800 mm	600 mm	1000 mm	800 mm	600 mm
-Z axis travel (vertical) (*optional)						
1100 mm (1300*)						
-B axis head tilting range						
+/- 105°						
-C axis rotary table maximum swing diameter						
ø 1500 mm	ø 1400 mm	ø 1200 mm	ø 1000 mm	ø 1300 mm	ø 1100 mm	ø 900 mm
-Piece maximum height						
1100 mm						
-Distance spindle nose-table. Head in V position						
0---1100 mm						
-Distance spindle nose-table. Head in H position						
375---1475 mm						
360---1260 mm						
-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 turning tables - A axis turning chucks						
Various models available (see on pages 06-07)						
-Turning torque						
800 Nm						
782 Nm						
-Position clamping force						
6000 Nm						
-Tool holder						
Standard: HSK A-100 - Option: Capto C8						
Standard: HSK A-63 - Option: Capto C6						
-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 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						
-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						
-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						
-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						
-Available digital controls						
Fanuc / Heidenhain / Siemens						

IBARMIA.



YOUR MACHINE TOOL POINT

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