Z SERIES
THE NEW GENERATION OF ZVH MOVING COLUMN MACHINING CENTERS

IBARMIA.
YOUR MACHINE TOOL POINT

Z SERIES Gen6

The most powerful machine of its kind
now **Stronger, Faster and more Efficient**
for an even quicker ROI.

Z SERIES

Z SERIES

Z SERIES_ MOVING COLUMN ARCHITECTURE

It has been almost 40 years since IBARMIA launched in it's first machining center with fixed table and moving column architecture. Nowadays many manufacturers highlight the advantages of this concept, but at IBARMIA we understood this from the very beginning, which has taken us to create the widest range of models, always aligned to the inspiring principle.

1986

ZVL 2000; the IBARMIA's firts moving column machining center.

2001

IBARMIA adds automatic tilting heads to the moving column centers.

2008

IBARMIA adds turning capacity to the 5 axis moving column centers.

2011

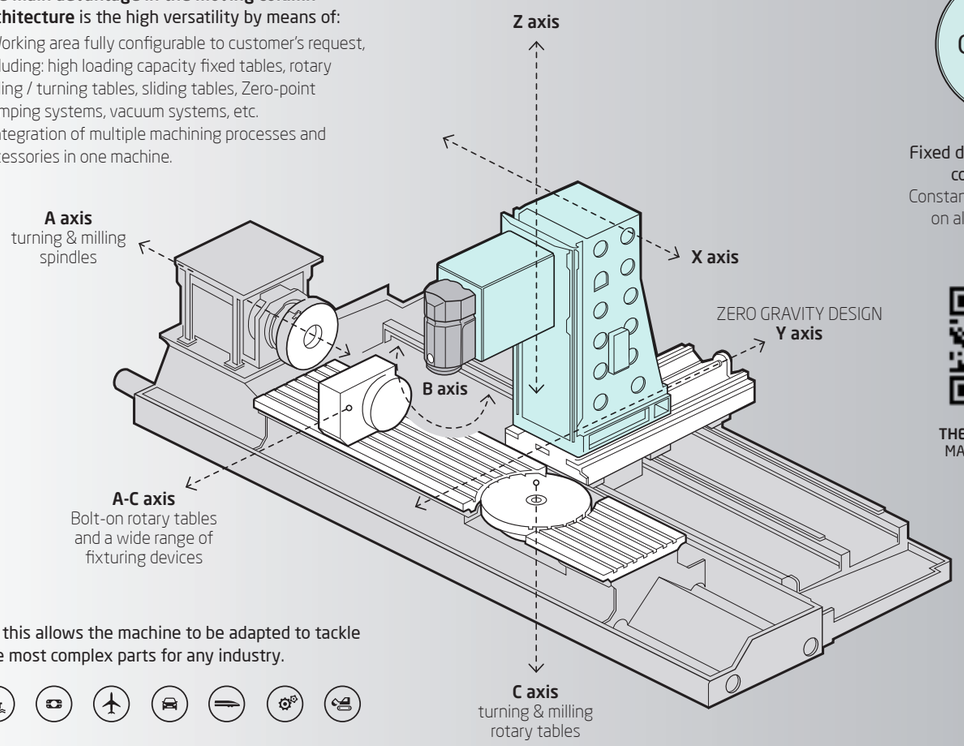
IBARMIA improves the machine design.
The classic round window is here to stay.

2019

IBARMIA launches the 2020 concept, improving the ergonomics, efficiency and appeal of the machine.

The main advantage in the moving column architecture is the high versatility by means of:

- Working area fully configurable to customer's request, including: high loading capacity fixed tables, rotary milling / turning tables, sliding tables, Zero-point clamping systems, vacuum systems, etc.
- Integration of multiple machining processes and accessories in one machine.



ZERO GRAVITY DESIGN

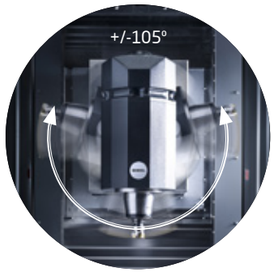
Fixed distance monoblock column design:
Constant cutting conditions on all points of Y axis.

THE MOST FLEXIBLE MACHINE CONCEPT

All this allows the machine to be adapted to tackle the most complex parts for any industry.

ZVH MACHINE MODELS

Since 2001 we turn the head but still look ahead. It was when we decided to add the B axis continuous tilting head to the valuable advantages of our fixed table and moving column machining centers. We apply the most advanced technology in the market: transmission by a torque motor installed on the rotating shaft and direct measuring on the axis.



ZVH HEADSTOCK
B axis | +/-105°
Continuous tilting head with torque motor.

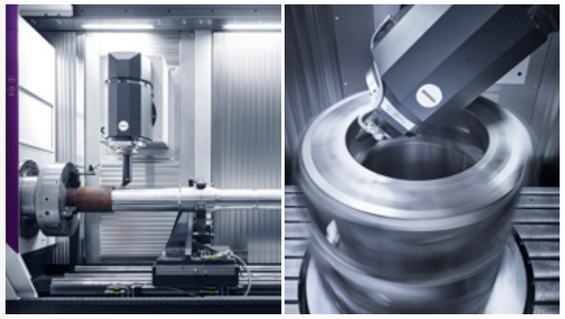
ZVH MACHINES → MULTI PROCESS TECHNOLOGY — 5 AXIS

MOVING COLUMN MACHINING CENTERS

MANUFACTURING TECHNOLOGY

MANUFACTURING TECHNOLOGY

01



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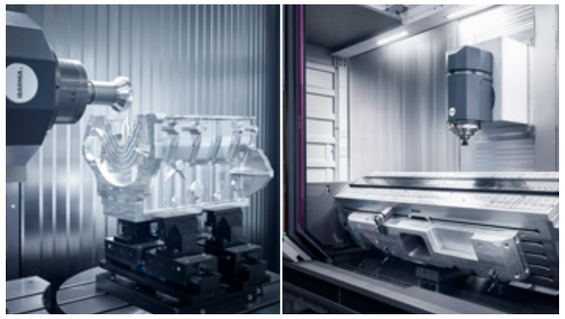


IBARMIA offers two performance levels for the ZVH MODELS:

01_ ZVH MULTIPROCESS: multitasking centers with vertical and /or horizontal turning and milling capacity.
02_ ZVH EXTREME: milling centers with vertical and/or horizontal 5 axis machining capacity.

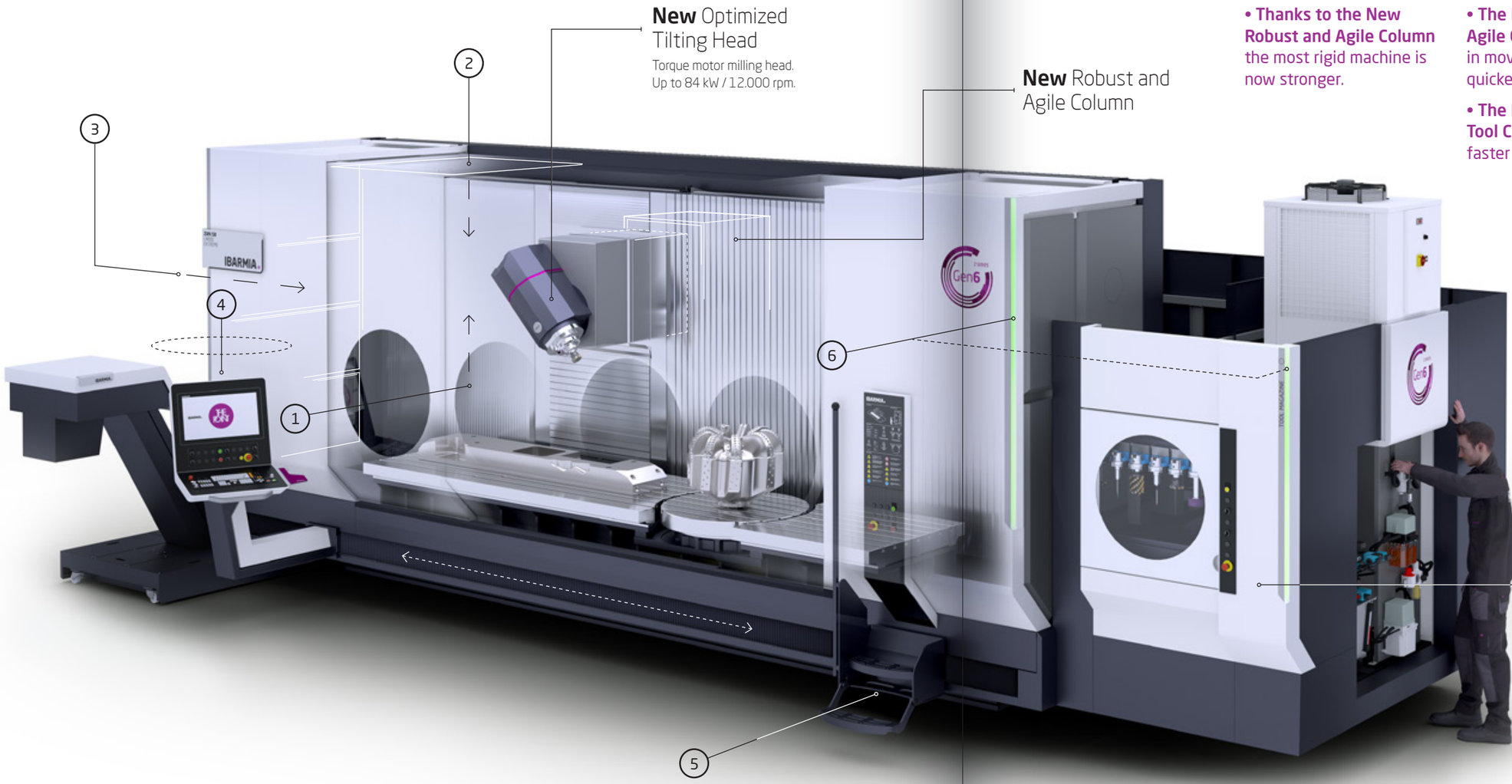
THE NEW GENERATION OF **ZVH MACHINE MODELS**

The most powerful machine of its kind now
Stronger, Faster and more Efficient
for an even bigger ROI.

New Optimized Tilting Head

Torque motor milling head.
Up to 84 kW / 12.000 rpm.

New Robust and Agile Column



New World-Class Tool Changer

USER CENTERED MACHINE DESIGN

A machine designed with the operator in mind in order to achieve the best efficiency in operations and ergonomics in use.

1_ Well lighted working area without horizontal planes and smooth top for an easier maintenance (standard).

2_ Openable roof with an ergonomic door design facilitating the loading/unloading of pieces by crane (standard).

3_ Loading of extra long pieces through the side panel which is easily removable (standard).

4_ Moving control panel along the entire longitudinal travel, with 360º rotation. Possibility to choose latest CNC controls of the most prestigious manufacturers; HEIDENHAIN, FANUC, SIEMENS (standard).

5_ Access stairway movable along the entire longitudinal travel, whith the coolant and air guns, for a safe and ergonomic operations (optional).

6_ LED light signals are very comfortable and effective while working. Can be integrated into the sides, indicating the state of operation and improving the user experience given by the white enclosure and a high quality finishings for a warm interaction with the work environment (optional).

NOW ⟶

Stronger_

- **Thanks to the New Robust and Agile Column** the most rigid machine is now stronger.

Faster_

- **The New Robust and Agile Column:** less mass in movement allows 30% quicker accelerations.
- **The New World-Class Tool Changer** allows 10% faster changes.

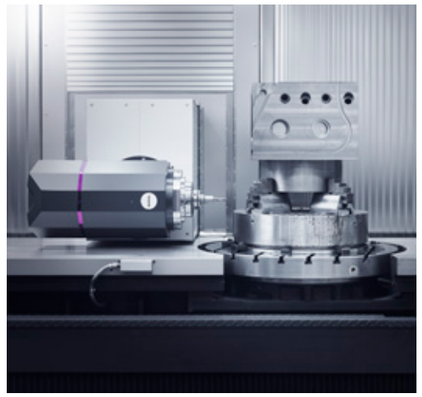
+ Efficient_

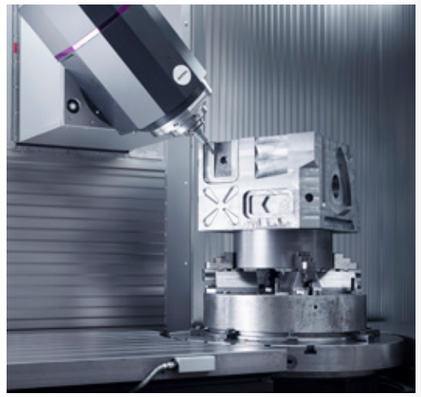
- **Thanks to the New Optimized Tilting Head** the machining area has been improved a 20%.
- **The New World-Class Tool Changer** allows loading / unloading tools while the machine is running.
- **All the maintenance elements are now even more accessible.**
- **The New Machine Design** offers a lower height of the working table (-50 mm) that makes more ergonomic part handling.

IMPROVEMENT POINT_ 1

OPTIMIZED TILTING HEAD

Thanks to an optimized head tilting system, we are now able to maximize the machining area allowing to make bigger parts in the same space. The machine requires less energy for the same movements.





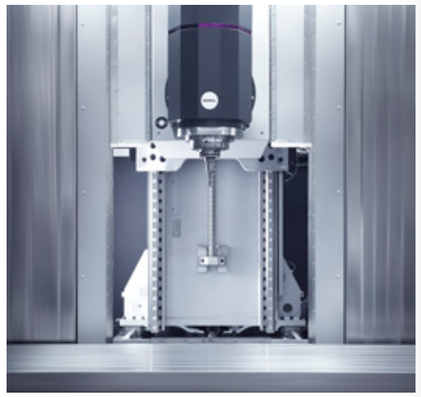
+20% / -20%

Improvement of working volume. / Reduction in energy consumption.

IMPROVEMENT POINT_ 2

ROBUST AND AGILE COLUMN

The column is now even stronger and more dynamic, with quicker accelerations that will dramatically reduce your cycle times. The reduction in the overall mass also offers significant energy savings.



+30% / -10%

Quicker accelerations: +0,5 m/s². / Reduction in energy consumption.

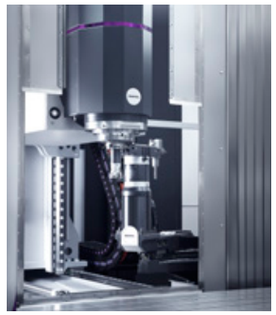
IMPROVEMENT POINT_ 3

WORLD-CLASS TOOL CHANGER

A New Design that allows to easily load tools while the machine is running, faster tool changes and an easier access to the maintenance elements. Furthermore the machine depth is reduced by 4%.

+10% / -4%

Faster tool changes. / Reduction of the machine depth.



Machine efficiency: Faster and risk-free tool changes outside the working area.

Machine efficiency: Tool loading / unloading during machining time.

Machine ergonomy: All maintenance elements are now even more accessible.

ZVH Gen6 →

Z SERIES

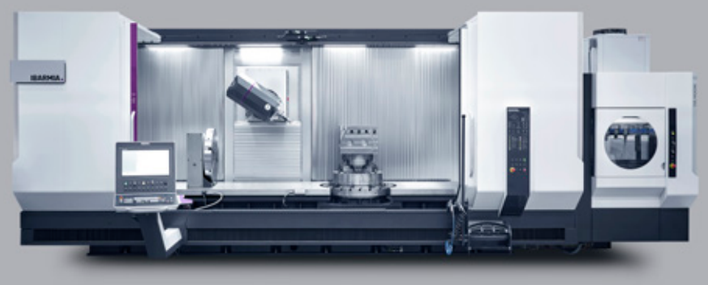
ZVH GEN6 SK 50 MODELS_ PERFORMANCE LEVELS

MACHINE BODY SIZES FOR **SK 50 SPINDLES**

A whole workshop in a single machine_
Integrating vertical and/or horizontal turning capacity:
C axis turning tables
Up to 500 rpm / 83 kW / 4000 Nm / 6000 kg.
A axis turning chucks
Up to 3000 rpm / 78 kW / 1400 Nm / 1500 kg.

ZVH MULTIPROCESS
Multitasking centers for turning and milling operations with grinding and advanced gear machining capacity.

High Dynamics Models_
Integrating new design positioning working tables:
Up to 25 rpm in 5 axis machining operations.



ZVH EXTREME
Milling centers with vertical and/or horizontal 5 axis machining capacity.

ZVH MACHINES → MULTI PROCESS TECHNOLOGY

5 AXIS

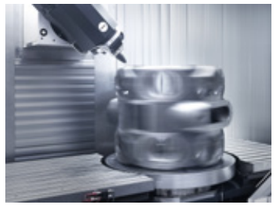
MOVING COLUMN MACHINING CENTERS

MANUFACTURING TECHNOLOGY

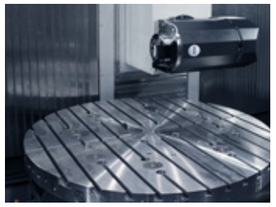
MANUFACTURING TECHNOLOGY

ZVH GEN6 SK 50 MODELS_ MAIN CONFIGURATION EXAMPLES

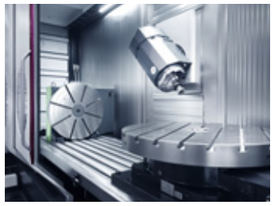
Non-stop machining option that includes a central division wall, independent locking of front doors and pendulum cycle work area management software.



Integrated C axis turning & milling rotary tables up to ø1500 mm swing for turning and/or 5 axis machining operations. Up to 500 rpm and 6000 kg.



The moving column design can be adapted to integrate bigger diameter rotary tables up to ø2200 mm for heavier loads.



Bolt-on rotary tables to be used either with horizontal or vertical axis. Up to ø1500 mm swing for 5 axis machining operations.

Horizontal multitasking machining capacity by integrated lathe spindles in the machine for turning and/or 5 axis machining operations. Up to 1500 kg / 3000 rpm.

Automatic changer with integrated pick-up station for Long Boring Bars and extra large tools used for Internal diameter turning operations.

Integration of different clampling systems on the fixed table, such as Zero-point systems, vacuum systems, etc.

Customized working areas: Trunnion fixtures replacing the fixed table and facilitating the chip evacuation.

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

Advanced gear machining functions (skiving-hobbing) valid for straight and helicoidal gears, depending on the machine model (MULTIPROCESS / EXTREME).

Grinding capability with different cycles depending on the machine model (MULTIPROCESS / EXTREME).

Other standard items
- Totally encapsulated working area and safety windows.
- External coolant.
- Climatized electric cabinet with easy access.
- Programmable central lubrication system.
- 40 tools ATC magazine.

Optional items
- ATC magazines up to 134 tools.
- Coolant through spindle systems.
- Part and tool probes.
- Steam and mist aspiration systems.
- CNC touch screen up to 24".

Z SERIES

SAMPLE APPLICATIONS


Toothed shaft


Crankshaft


Engine housing


Automatic engine piece


Aeronautical component


Directional drilling tool


Industrial mold


Engine block


Nautical engine component

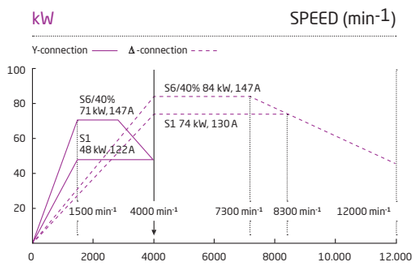

Aircraft structural part

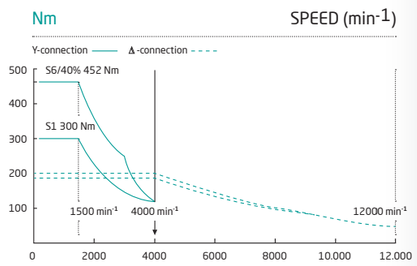

Machinery component


Impeller

MAIN SPINDLE*

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





*More spindles on request.
See parameters of the optional spindle on next page

ZVH GEN6 MODELS
TECHNICAL DATA

	ZVH MULTIPROCESS			ZVH EXTREME		
	ZVH 60	**ZVH 58**	**ZVH 55**	**ZVH 60**	**ZVH 58**	**ZVH 55**
TRAVELS						
-X axis travel (length)	2200 - 12.000 mm					
-Y axis travel (cross)	1100 mm	1000 mm	800 mm	1100 mm	1000 mm	800 mm
-Z axis travel (vertical) (*optional)	1100 mm (1300*)	1100 mm		1100 mm (1300*)	1100 mm	
-B axis head tilting range	+/- 105º					
-C axis rotary table maximum swing diameter	ø 1500 mm	ø 1400 mm	ø 1200 mm	ø 1500 mm	ø 1400 mm	ø 1200 mm
-Piece maximum height	1100 mm					
-Distance spindle nose-table. Head in V position	0---1050 mm					
-Distance spindle nose-table. Head in H position	250---1350 mm					
WORKING AREA						
-Fixed table dimensions	L2200: X +400 mm; ≥ L3000: X+600 mm & Y +50 mm					
-Maximum table load capacity	2000 Kg/m²					
-Number of "T" slots	9	7	5	9	7	5
-"T" slots size	18 H7 mm					
-Distance between "T" slots	125 mm					
-Fixed table height	1025 mm					
-C axis turning tables - A axis turning chucks	Various models available			---		
TILTING HEAD						
-Turning torque (S1/Peak value)	800 / 1259 Nm					
-Position clamping force	6000 Nm					
MAIN SPINDLE						
-Tool holder	Standard: HSK A-100 - Option: Capto C8			Standard: SK 50 - Option: BT 50 / HSK A-100		
-Maximum speed	Standard: 12.000 rpm - Option: 7000 rpm					
-Maximum power	Standard: 84 kW - Option: 75 kW					
-Maximum torque (Nm)	Standard: 452 Nm - Option: 700 Nm					
FEED						
-Feed thrust X-Y-Z 100%	X: 15.021 N / Y: 12.154 N / Z: 10.649 N					
-Rapid feed for positioning X-Y-Z	45 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					
-Drilling capacity in steel St 60	ø 70 mm					
-Tapping capacity in steel St 60	M 45 mm					
TOOL MAGAZINE						
-Number of tools	40. Optional: 60, 134 and more available on request.					
-Maximum tool length	400 mm					
-Maximum tool weight	20 kg					
-Maximum tool diameter with full magazine	ø 125 mm					
-Maximum tool diameter with free spaces	200 mm					
-Tool changing time	10 s					
-Chip to chip time	12 s					
CNC CONTROL						
-Available digital controls	Fanuc / Heidenhain / Siemens					

YOUR MACHINE TOOL POINT

EST. 1953

Z SERIES
MOVING COLUMN
MACHINING
CENTERS

SZG6-1 06/24

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

IBARMIA.

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

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www.ibarmia.com