

ZVH 45/L1500-3000 STAR EDITION MACHINING CENTERS

IBARMIA.
YOUR MACHINE TOOL POINT

Z SERIES EDITION_ MOVING COLUMN MACHINING CENTERS

The most aggressive 5 axis moving column machine.
High technology in a combination of elements to meet
a wide range of requirements for the quickest ROI.



Z SERIES



www.ibarmia.com

ZVH 45/L1500/L3000

STAR EDITION

IBARMIA HIGH TECHNOLOGY
COMPRESSED IN A
PREMIUM MODEL

01

ZVH 45/L1500

STAR EDITION

5 axis moving column machining center



The ZVH 45 STAR is a new milestone in the history of IBARMIA, launching for the first time a machine with a closed configuration covering the widest range of machining requirements. This configuration is based on the awarded moving column architecture and the strategy of using only the best quality products with a high technological content. There are two models in option; STAR L1500 and STAR L3000 (L: mm in X axis).

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Z SERIES
SPECIAL EDITION



5 AXIS
TECHNOLOGY

02

ZVH 45/L3000

STAR EDITION

5 axis moving column machining center



ZVH 45/L1500/L3000

STAR EDITION

B AXIS HEADSTOCK_

SUPERIOR TECHNOLOGY

Head tilting range $\pm 105^\circ$. Transmission by a torque motor installed on the rotating shaft and direct measuring on the axis. Extraordinary dynamics, automatic recovery after collisions and maximum precision in positioning and repeatability.

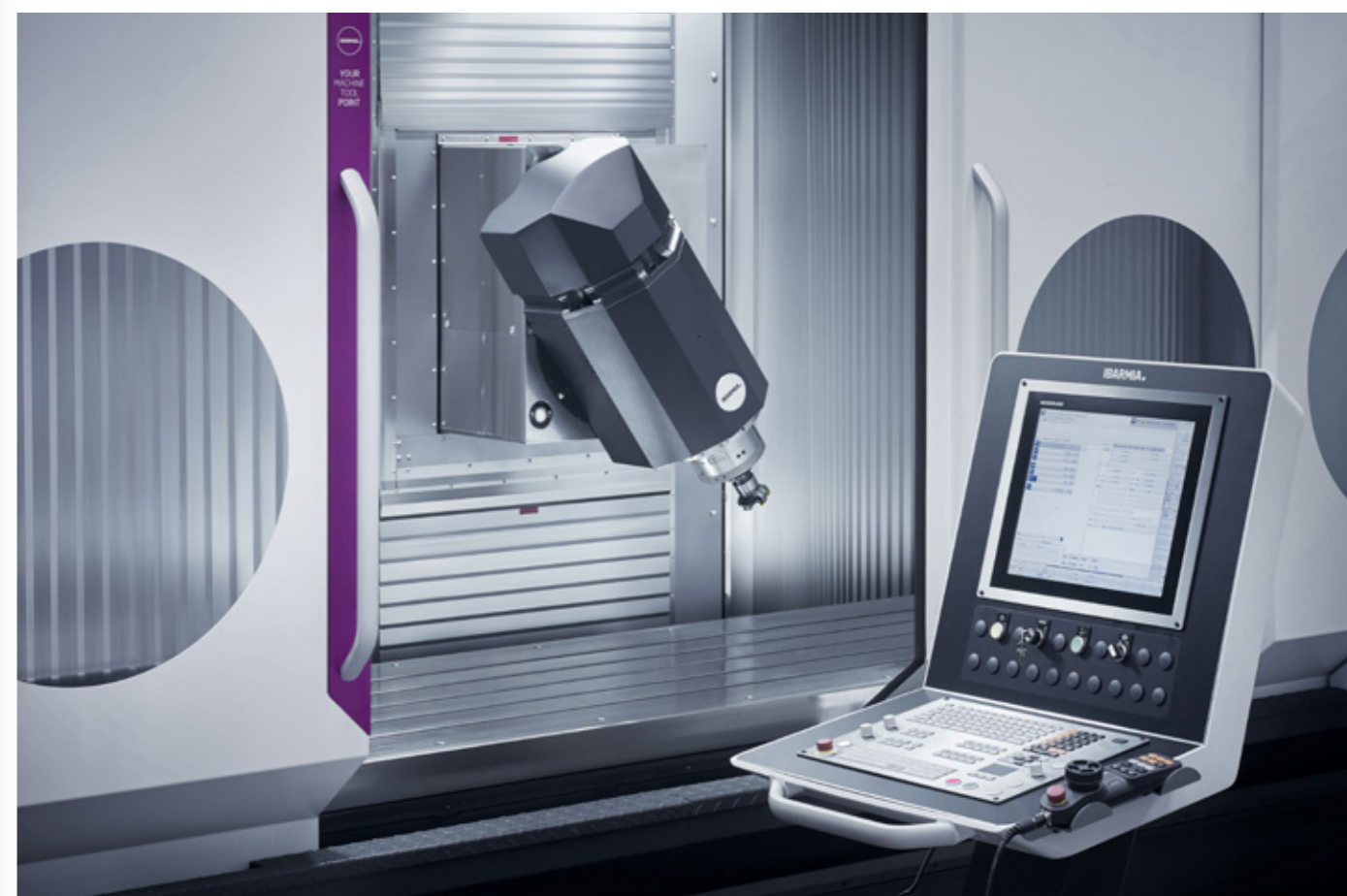
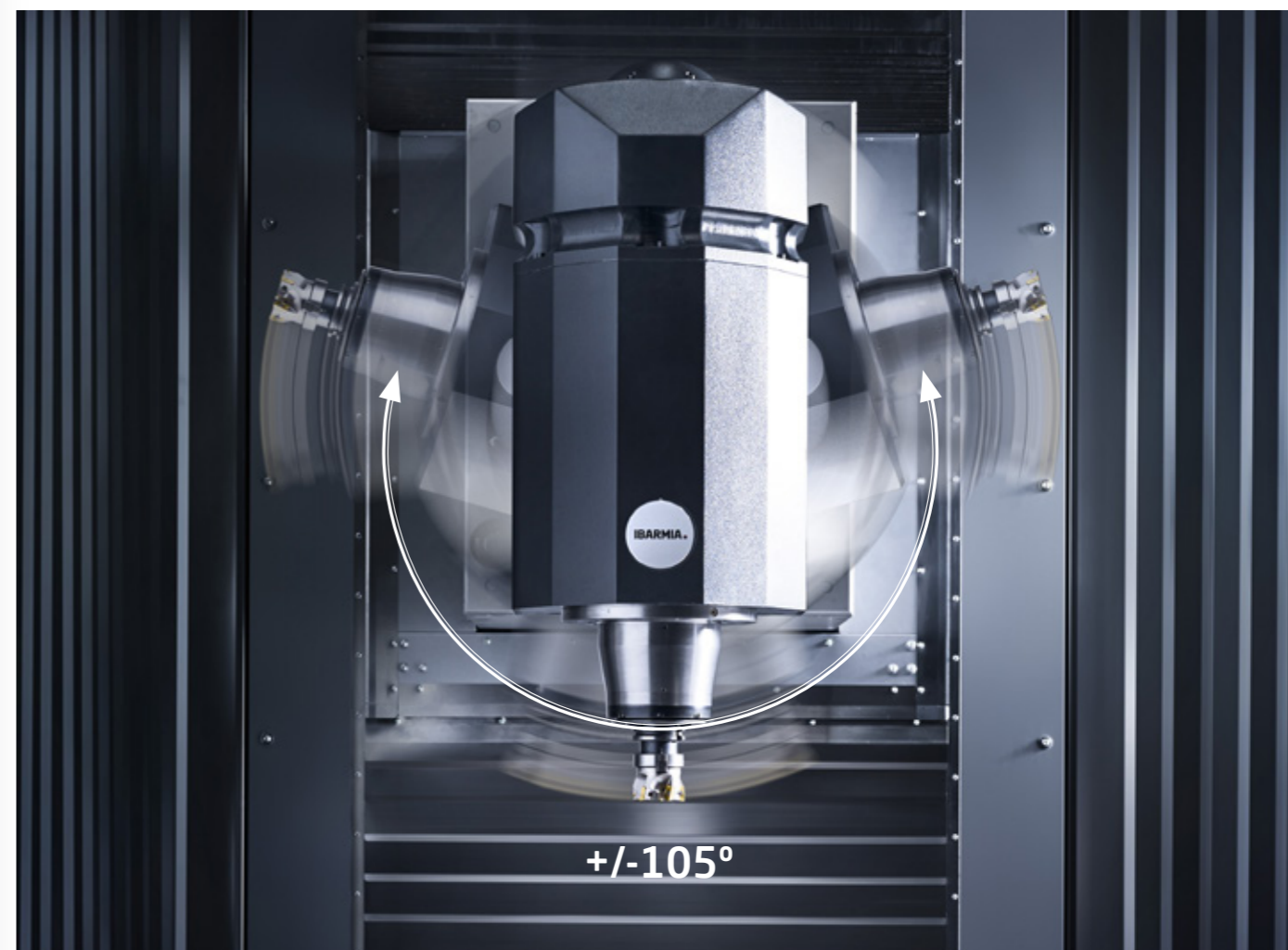
- Absolutely ZERO wear the transmission.
- Absolutely ZERO backlash clockwise and anticlockwise
- No damage of the cinematic chain in case of collisions.



- TORQUE MOTOR technology.
- Turning torque S1: 628 Nm.
- Turning torque peak value: 1038 Nm.
- AWARD winning B axis.
- Fast continuous and accurate movements measured by glass scale.
- Tilting range: $\pm 105^\circ$
- Positioning accuracy: 8"
- 6000 Nm clamping force.

Automatic hydraulic clamping/ unclamping of tools

There is a button on the front side of the head for manual clamping/unclamping of tools by the operator from the working area.



ZVH 45/L1500/L3000

STAR EDITION

ELECTROSPINDLE

THE DEFINITE SPINDLE

The ZVH STAR provides high dynamics and high torque electrospindles of prestigious manufacturers. The motor is attached directly to the spindle, avoiding transmissions and kinematic chains. This motor provides high power at low speed for the most demanding operations on hard materials while reaching high speeds to increase the productivity when the conditions allow it. This "do it all" spindle together with the flexible combination of axes and rotary tables is the perfect combination for companies aiming to cover a wide range of machining requirements.



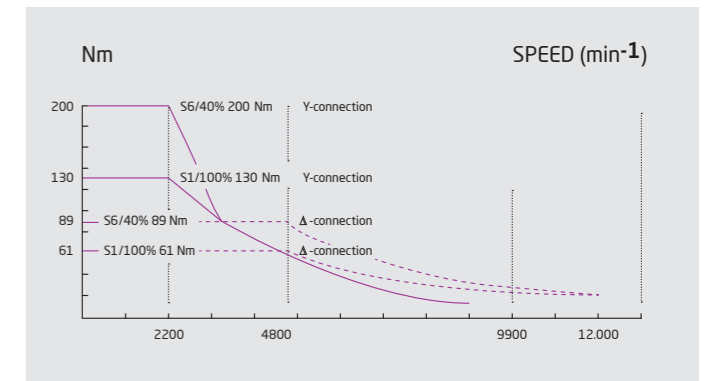
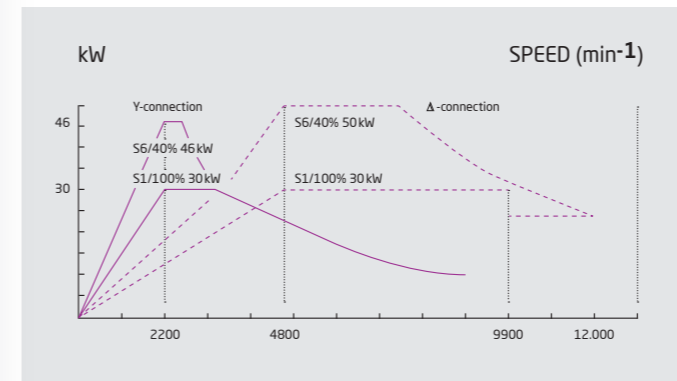
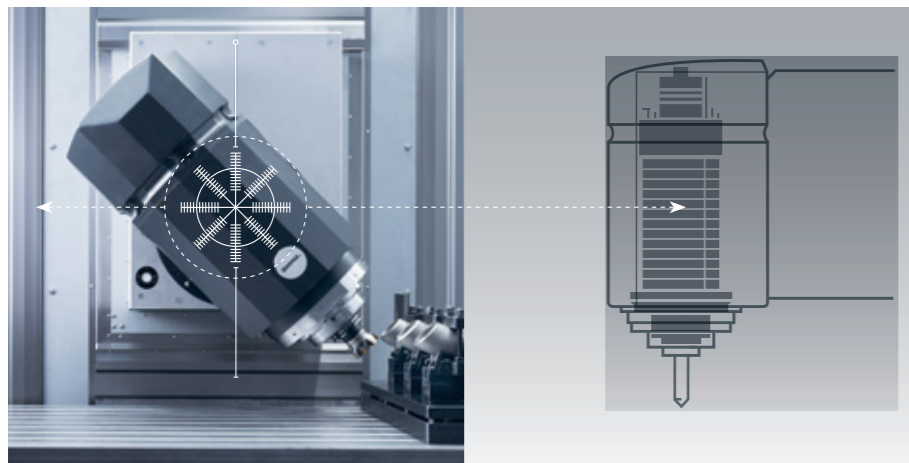
Digital technology spindle; dynamics and high revolutions:

- Spindle taper: **ISO-40 | SK-40**
(Option: **HSK A-63**)
- Power in service S1 (100%): **30 KW**
- Power in service S6 (40%): **50 KW**
- Total available power from: **2000 rpm**
- Torque in service S1 (100%): **130 Nm**
- Torque in service S6 (40%): **200 Nm**
- Maximal rotation speed: **12.000 rpm**
(Option: **15.000 rpm**)

A key element for:

- Machining various materials.
- Machining various shapes.
- Suitable for single pieces and large batches.

The spindle is refrigerated by a central refrigeration unit. See on page 44.



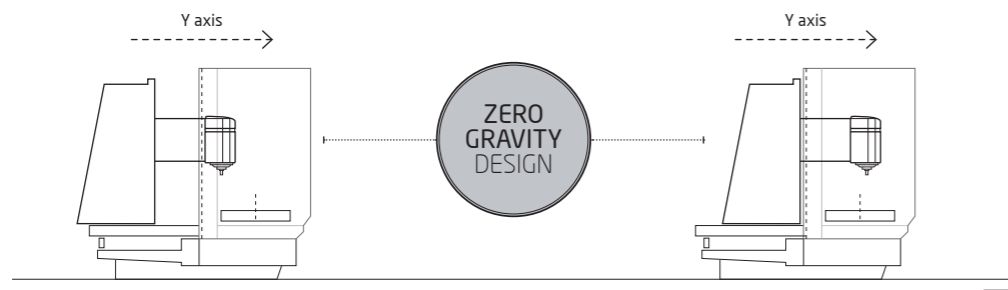
ZVH 45/L1500/L3000

STAR EDITION

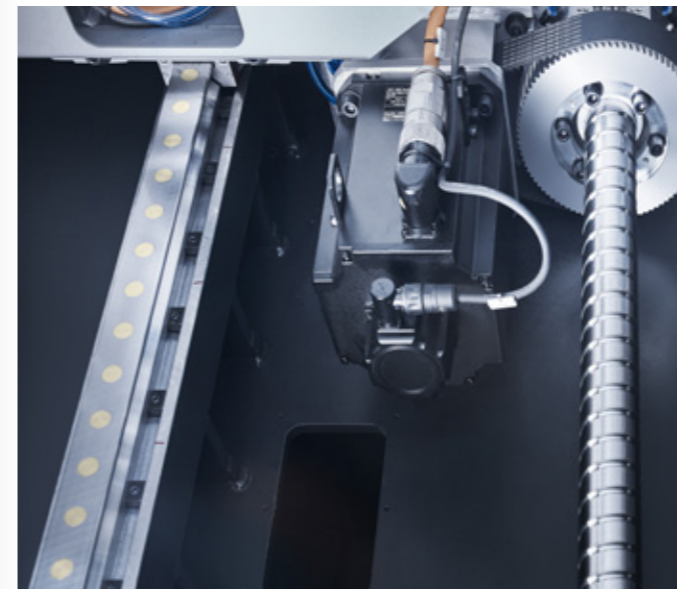
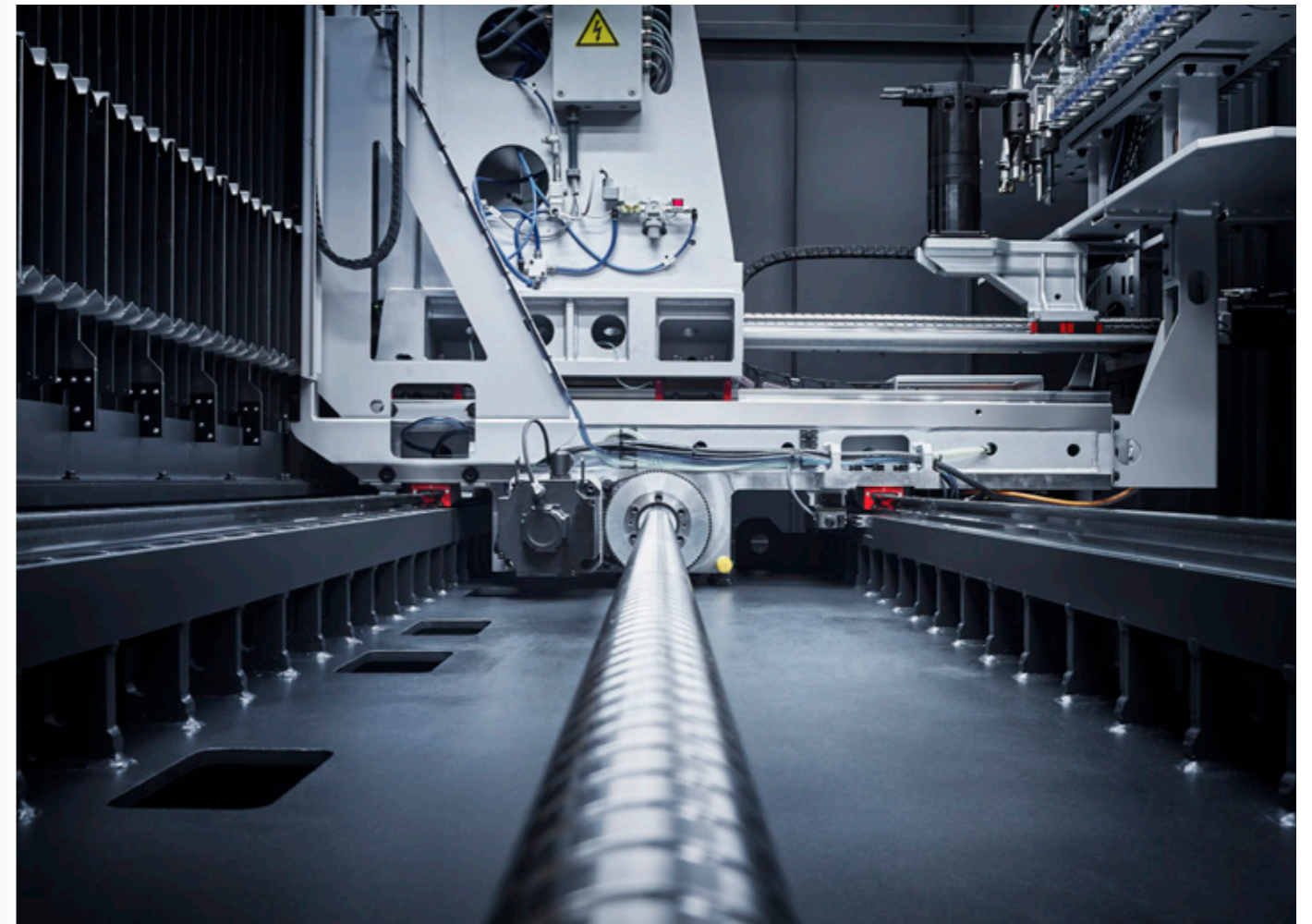
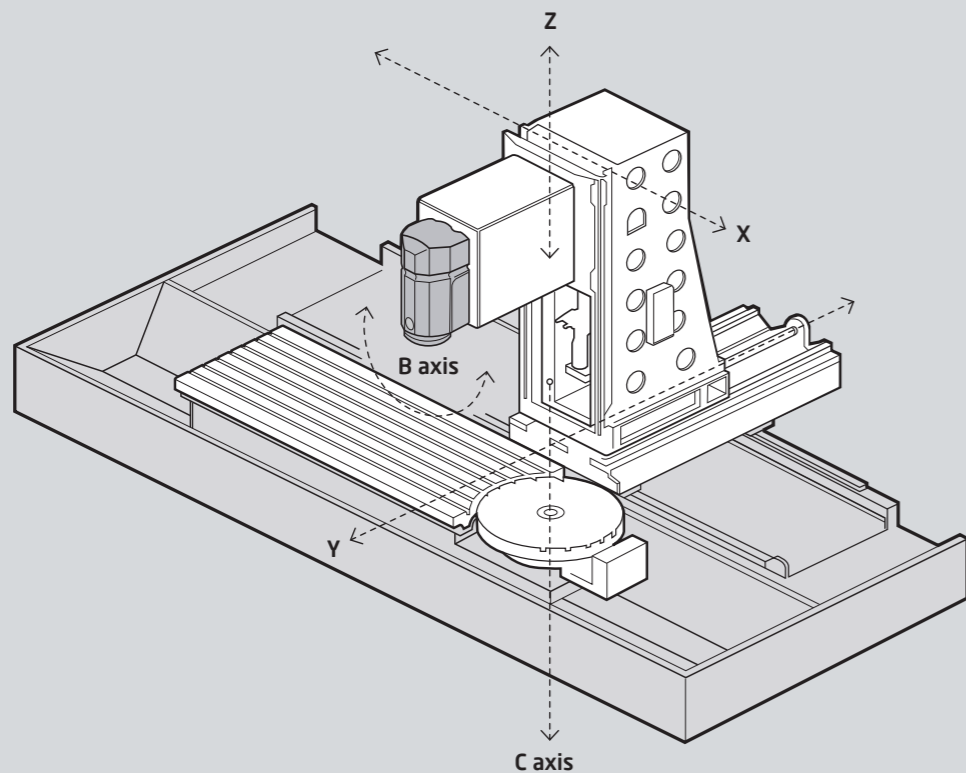
AWARD WINNING MOVING COLUMN DESIGN

Monoblock machine bed, everlasting stability in moving column architecture. High dynamic performance, lineal rapid movements at 40 m/min with high accelerations. Movements on X / Y / Z axis over linear guides with preloaded rolling shoes with two rows of circulating rollers. With more than 250 size combinations IBARMIA is a world reference in high productivity moving column machining centers.

- FIX DISTANCE DESIGN: Constant cutting conditions in all points of Y axis.
- DYNAMIC AND POWERFUL MOVEMENTS on guideways with INTEGRATED MEASURING SYSTEMS in all axes.



Moving column on Y axis travel.



Guides and ballscrew for the moving column X axis travel.



Guides for the moving column Y axis travel.



ZVH 45/L1500/L3000

STAR EDITION

WORKING AREA & ROTARY TABLES



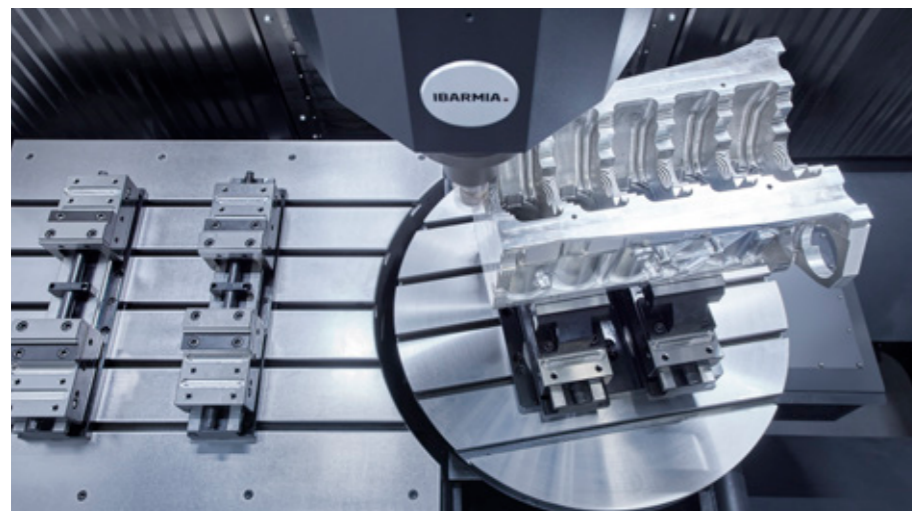
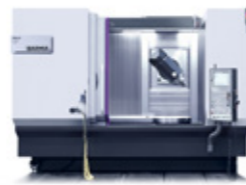
FIXED IN
INTEGRATED
ROTARY TABLE

A 1700x850 mm working fixed table in combination with and ø800 mm integrated rotary table for 5 axes simultaneous machining.

HIGH LOAD CAPACITY FIXED TABLE COMBINED WITH HIGH DYNAMICS ROTARY TABLES

ZVH 45/L1500

STAR EDITION



- Length x width of the table: **1700x850 mm**
- Number of T slots: **5**
- Size of T slots: **1x18(H7) / 4x18(H12)**
- Distance between T slots: **125 mm**
- Maximum admissible load over the table: **1500 Kg/m²**
- Diameter of integrated rotary table: **800 mm**
- Distance from table surface to spindle nose:
V (min./max.): **0/800 mm**
H (min./max.): **360/1160 mm**
- Table height: **1000 mm**



FIXED IN
INTEGRATED
ROTARY TABLE

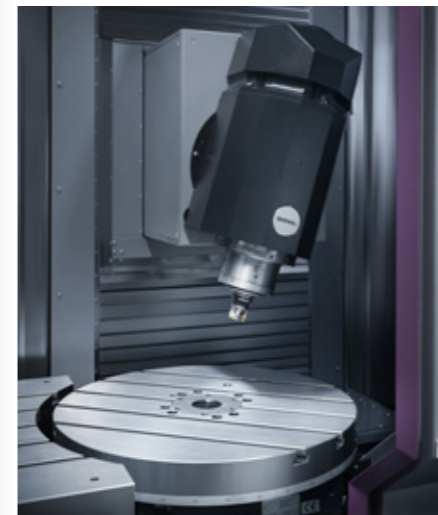
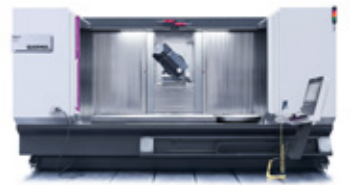


BOLT ON
A/C AXIS
ROTARY TABLE

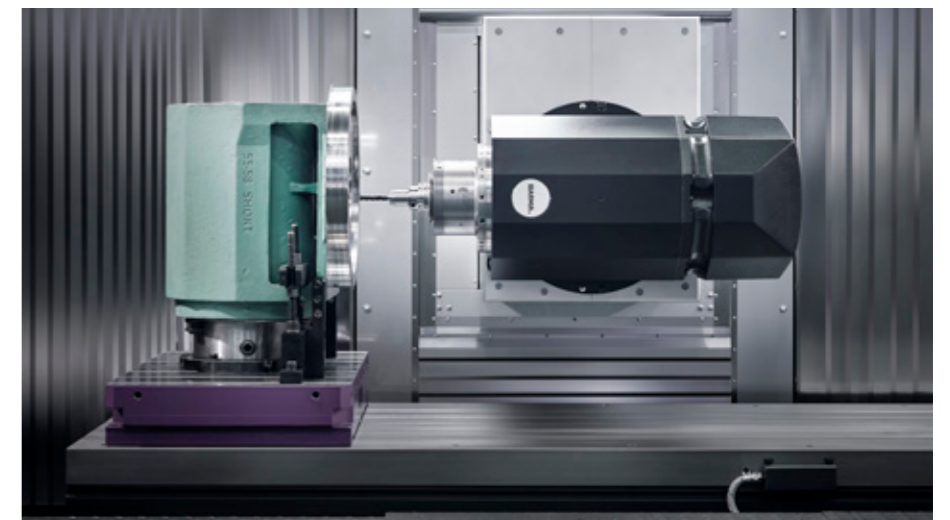
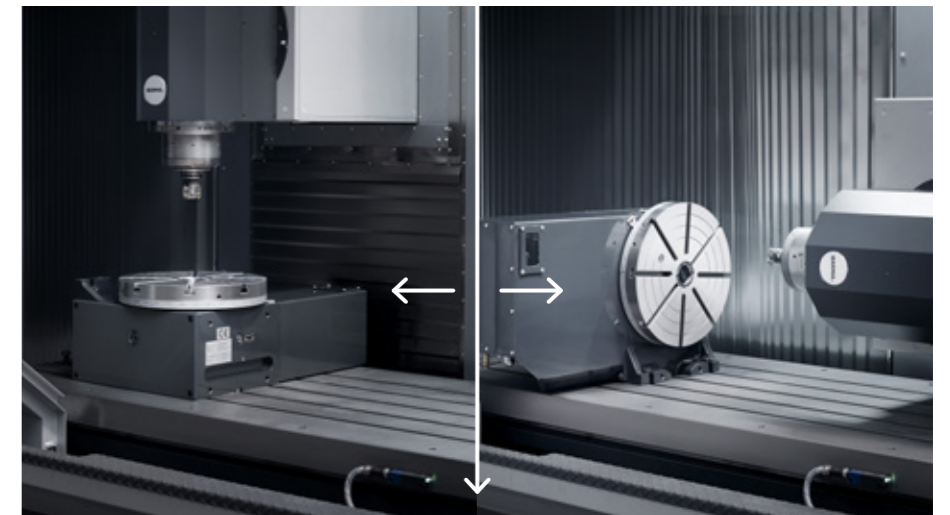
A 3000x850 mm working fixed table in combination with 3 options of rotary tables for 5 axes simultaneous machining. An integrated rotary table and/or a bolt on rotary table to be used either in horizontal or vertical axis.

ZVH 45/L3000

STAR EDITION



- Length x width of the table: **3000x850 mm**
- Number of T slots: **5**
- Size of T slots: **1x18(H7) / 4x18(H12)**
- Distance between T slots: **125 mm**
- Maximum admissible load over the table: **1500 Kg/m²**
- Diameter of integrated rotary table: **800 mm**
- Rotary table positioning accuracy: **+/- 4"**
- Distance from table surface to spindle nose:
V (min./max.): **0/800 mm**
H (min./max.): **360/1160 mm**
- Table height: **1050 mm**



ZVH 45/L1500/L3000

STAR EDITION

MACHINE IT ALL_

ONE STAR FOR ALL YOUR

MACHINING REQUIREMENTS

Capacity to machine a wide range of size and shapes in various materials. Ideal for subcontractors that work in various sectors such as Aerospace, Energy, Automotive etc... The high configurability and the combination of axes and rotary tables provide an unlimited field of work which ensures an efficient return of the investment.

Machining capacity TEST

HIGH FEED MILLING (Power 80%)

- $\phi 66$ mm (2,59")
- n (rpm): 2200
- Vf (mm/min): 11.000 (433"/min)
- ap (mm): 1,5 mm (0,05")

SHOULDER MILLING (Power 84%)

- $\phi 63$ mm (2,48")
- n (rpm): 1010
- Vf (mm/min): 1210 (47,63"/min)
- ap (mm): 4 mm (0,15")

MILLING (Power 90%)

- $\phi 100$ mm (3,93")
- n (rpm): 850
- Vf (mm/min): 1200 (47,24"/min)
- ap (mm): 2 mm (0,08")

DRILLING (Power 82%)

- $\phi 48$ mm (1,88")
- n (rpm): 1758
- Vf (mm/min): 281 (11"/min)

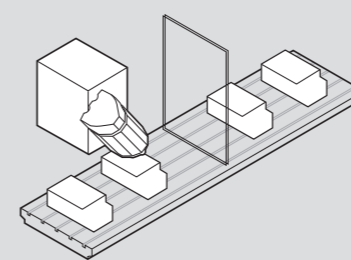
TAPPING (Power 82%)

- M33 x 3,5 mm (G1 x 11)
- n (rpm): 115
- Vf (mm/min): 3,5 (0,14"/min)



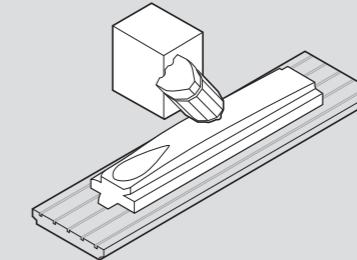
Use the fixed table (1700 or 3000 mm) for endless applications:

1_



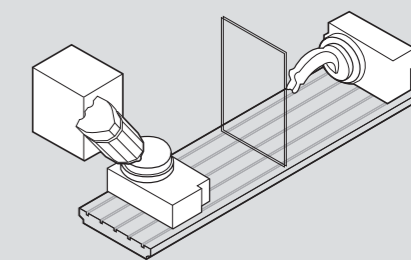
Machining in pendulum cycle of batches of small or medium size pieces, avoiding constant tool changes. (STAR 3000)

2_



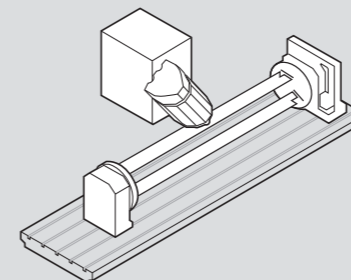
Machining of all kind of pieces of complex surface. (STAR 1500 / 3000)

3_



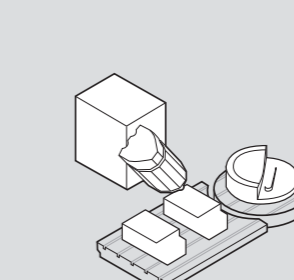
Machining in pendulum cycle with a vertical/horizontal rotary tables placed over the fixed working table. (STAR 3000)

4_



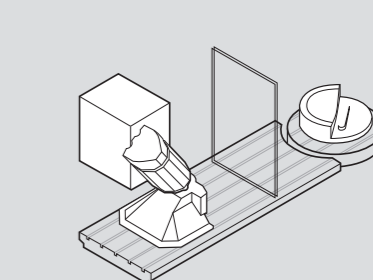
Machining of pieces fixed on plates or cubes rotated by a horizontal rotary table and support. (STAR 3000)

5_



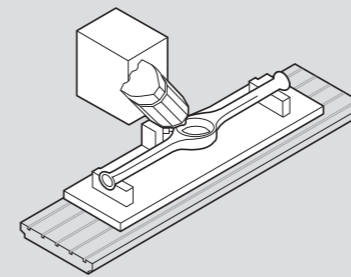
Machining with a rotary table in one side and pieces on the fixed working table on the other side. (STAR 1500 / 3000)

6_



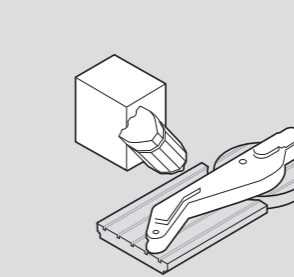
Machining in pendulum cycle with an integrated rotary table. (STAR 3000)

7_



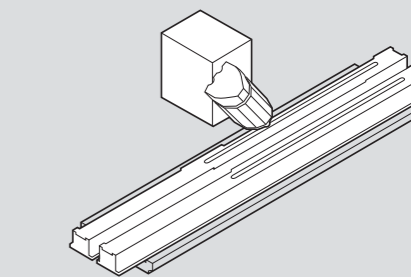
Machining of the sides and top face of a long piece (STAR 1500 / 3000).

8_



Machining of large pieces along the whole extension of the working table (STAR 1500 / 3000).

9_



Machining of extra long pieces thanks to side windows on the guarding. (STAR 3000)

ZVH 45/L1500/L3000

STAR EDITION

TOOL MAGAZINE & AUTOMATIC CHANGER

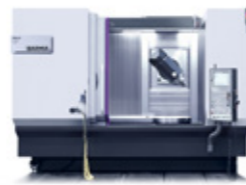


60 POSITIONS
TOOL MAGAZINE

The STAR 1500 machine design has been optimized to house an optimal number of tools in a reduced space. Located in the right side of the machine, the disk type tool magazine with automatic tool changer is separated from the working area, away from chips and coolant so you can change tools without interferences.

ZVH 45/L1500

STAR EDITION



- Number of positions: **60 Positions**
- Maximum tool diameter:
Previous & Posterior taken position: **75 mm**
Previous & Posterior free position: **127 mm**
- Maximum tool length: **300 mm**
- Maximum tool weight: **7 kg**
- Tool changing time: **8"**
- Chip to chip time: **10"**
- Tool management system: **Random**

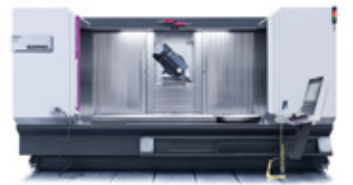


40 POSITIONS
TOOL MAGAZINE

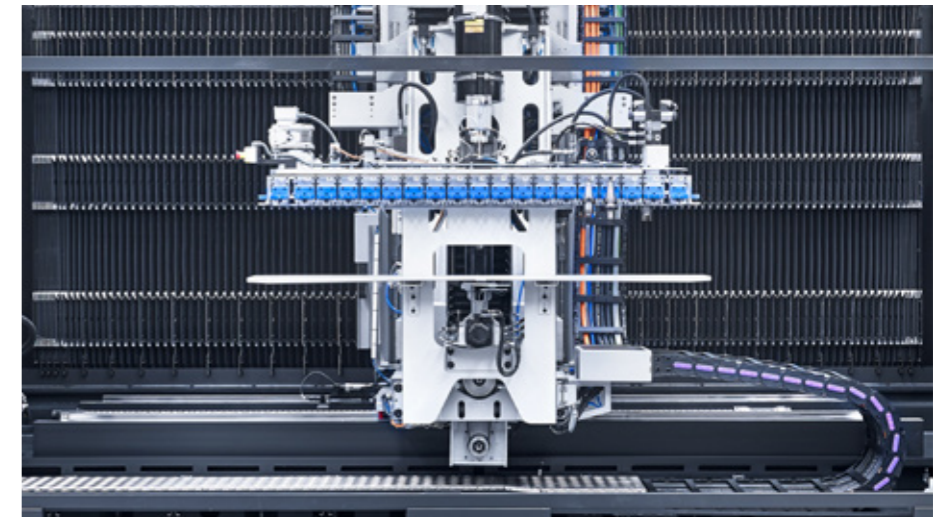
In the case of the STAR 3000, separated from column to avoid vibration interference, the tool magazine travels with the carriage that makes the longitudinal movement, allowing the tool change at any position on the X axis. The tools are protected, away from the working area so you can change tools without interferences.

ZVH 45/L3000

STAR EDITION



- Number of positions: **40 Positions**
(60 positions in option)
- Maximum tool diameter:
Previous & Posterior taken position: **90 mm**
Previous & Posterior free position: **150 mm**
- Maximum tool length: **350 mm**
- Maximum tool weight: **8 kg**
- Tool changing time: **8"**
- Chip to chip time: **10"**
- Tool management system: **Random**

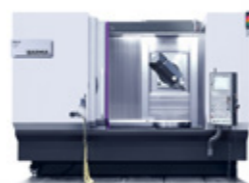


ZVH 45/L1500/L3000 STAR EDITION EQUIPED WITH THE LATEST CNC SYSTEM

A workshop orientated control, especially suited for high speed milling and five axis machining. An optimized user interface to make your job even easier.



ZVH 45/L1500 STAR EDITION

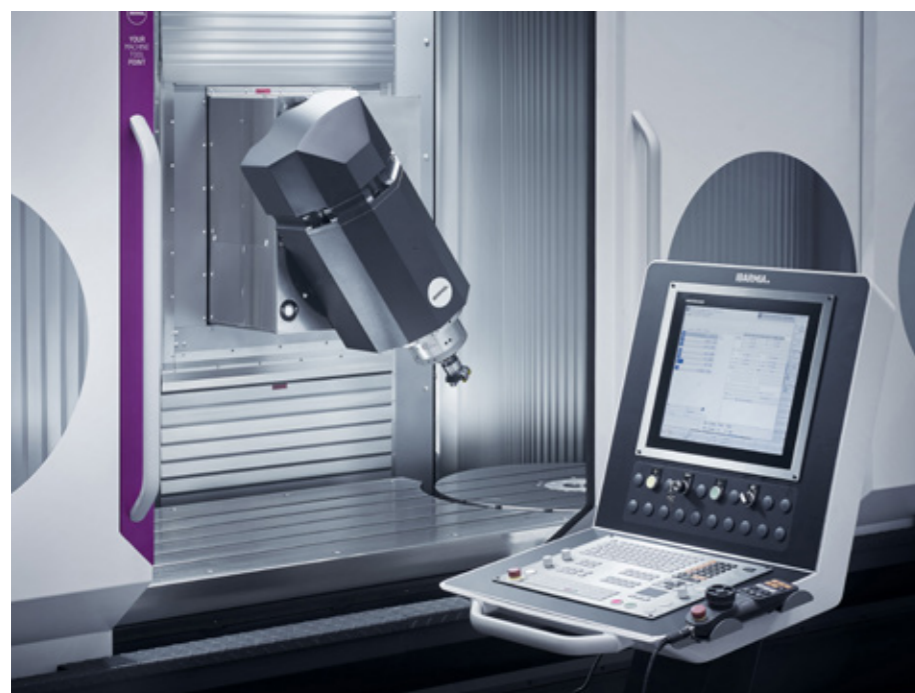


- CNC control: **Heidenhain TNC 640 HSCI**
(Fanuc 31iB in option)
- Control screen: **Touch screen 19"**
- Control panel: **Vertical fixed panel**

ZVH 45/L3000 STAR EDITION

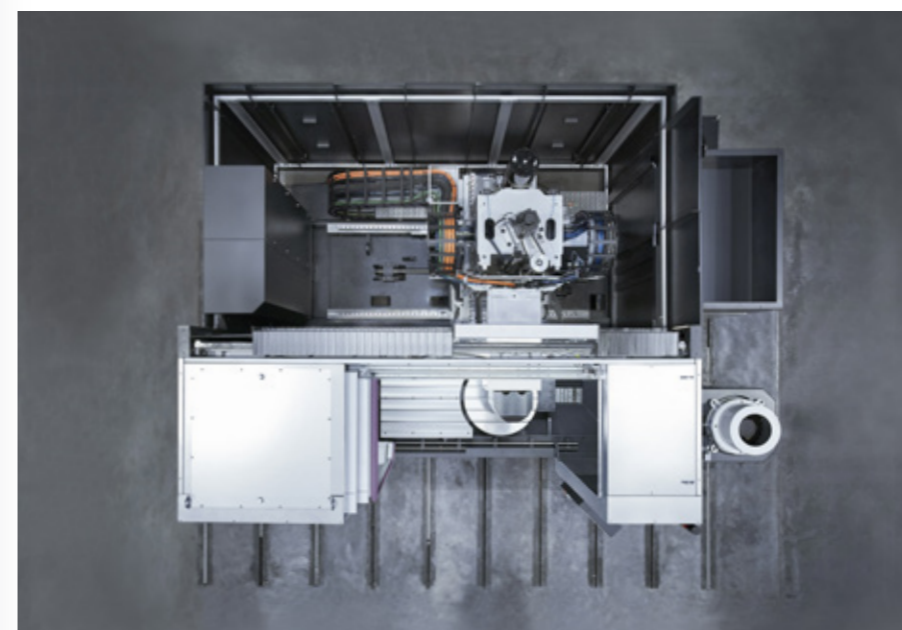


- CNC control: **Heidenhain TNC 640 HSCI**
(Fanuc 31iB in option)
- Control screen: **Touch screen 19"**
- Control panel: **Moving panel**

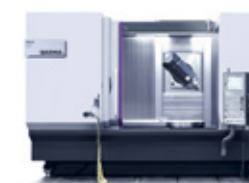


ZVH 45/L1500/L3000 STAR EDITION OPTIMAL FLOOR SPACE OCUPATION

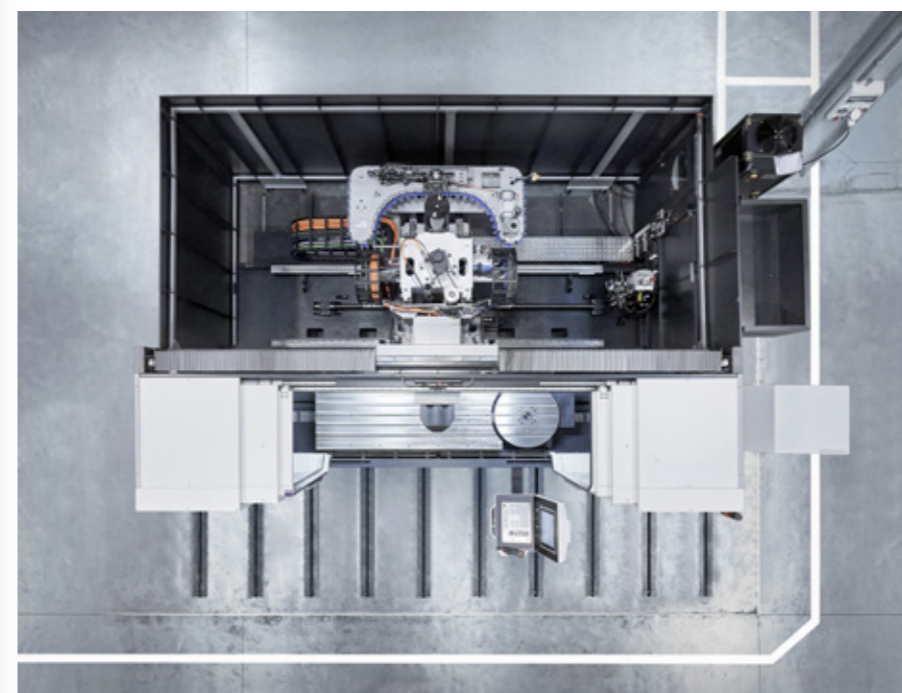
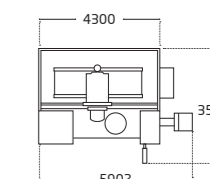
An efficient design for a machine with this working area. Chip evacuation, tool magazine and the electric cabinet are designed to take the minimum space on your floor.



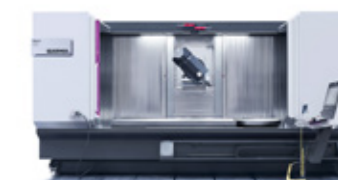
ZVH 45/L1500 STAR EDITION



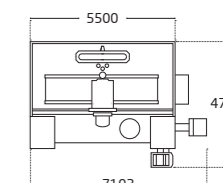
Floor plant



ZVH 45/L3000 STAR EDITION

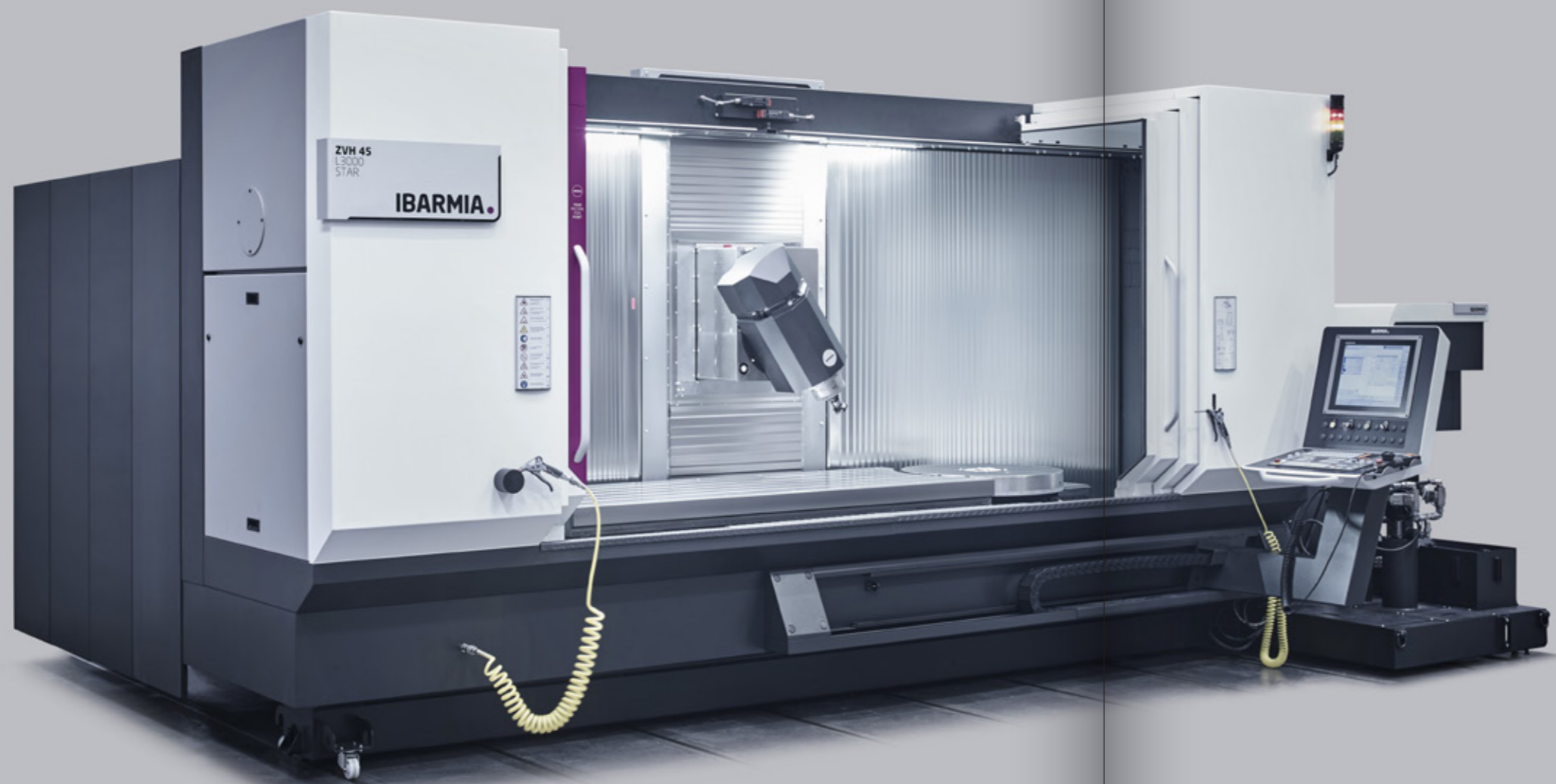


Floor plant



ZVH 45/L1500/L3000 STAR EDITION EQUIPMENT

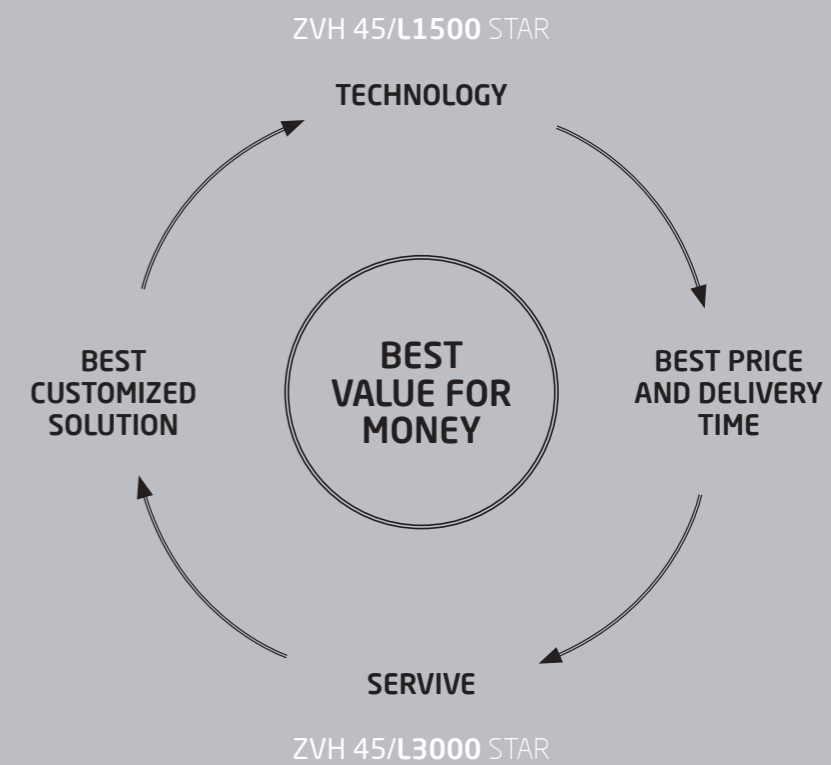
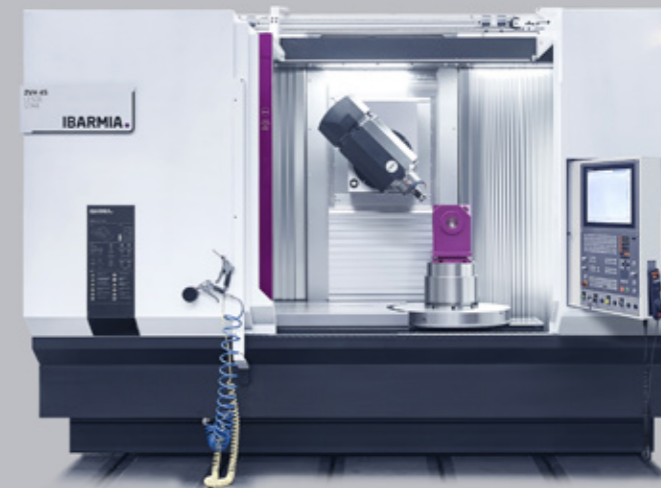
A PREMIUM MACHINE WITH THE PRICE AND
AVAILABILITY OF A STANDARD MACHINE



Z SERIES
SPECIAL EDITION



5 AXIS
TECHNOLOGY

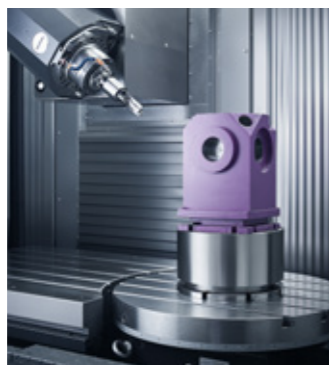


ZVH 45/L1500/L3000 STAR EDITION EQUIPMENT

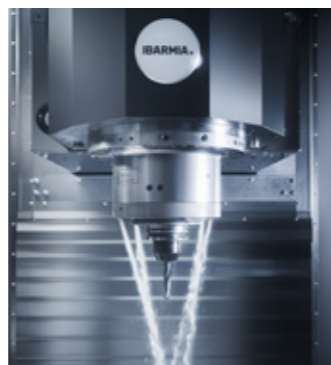
INCLUDED ITEMS IN STANDARD CONFIGURATION



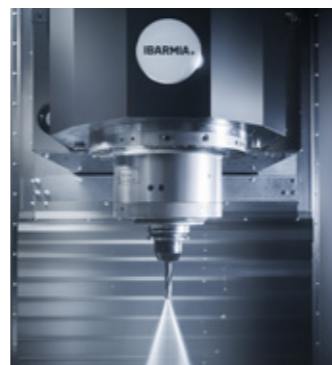
Full enclosure of the working area.



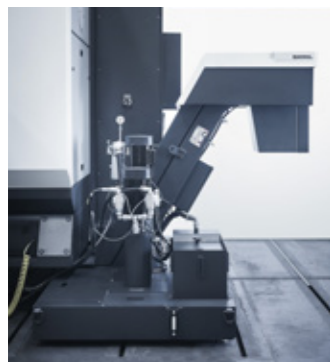
ø800 mm integrated rotary table. (STAR 1500)



External coolant system around the spindle (12 bar).



Coolant through spindle (22bar).



Chip conveyor with integrated coolant tank.



Climatised electrical cabinet.



LED lighting in the working area.



Side windows for long parts. (STAR 3000)



60 tool ATC magazine (STAR 1500)
40 tool ATC magazine (STAR 3000)



Air gun (one unit).
Spray gun (one unit).



Electronic handwheel.



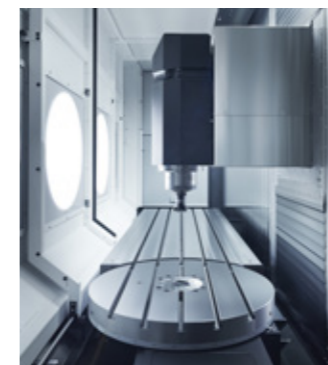
-Heidenhain TNC 640 HSCI control.
-19" touch screen.



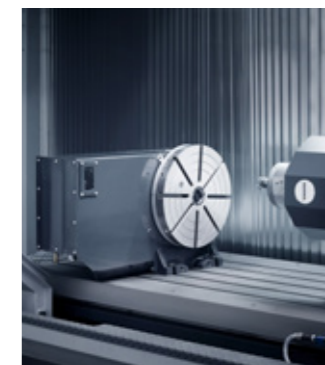
OPTIONAL ITEMS



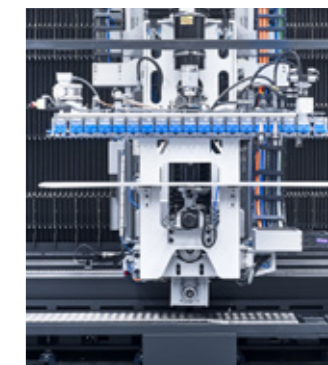
Fanuc 31i-B control.



ø800 mm C axis integrated rotary table. (STAR 3000)



A-C axis bolt-on rotary tables. (STAR 3000)



60 tool ATC magazine. (STAR 3000)



NSM software and division wall of working areas (STAR 3000).



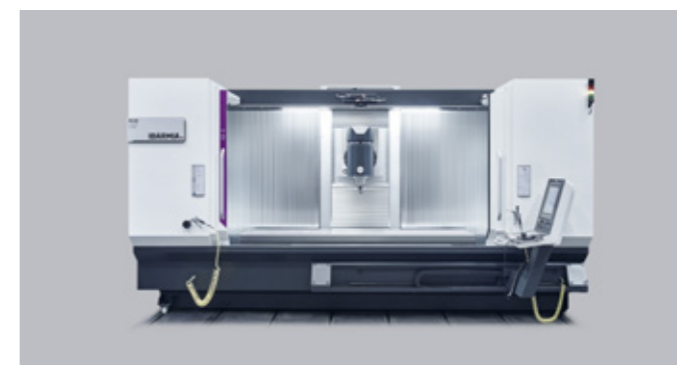
3 light tower with acoustic signal.



Steam and mist aspiration system.



Tool measuring an touch systems.



ZV vertical headstock (ZV 45/L3000 STAR model).

IBARMIA.
YOUR MACHINING TOOL POINT

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

ZVH 45/L1500/L3000

STAR EDITION

TECHNICAL SPECIFICATIONS

STAR EDITION		STAR 1500	STAR 3000
STROKES			
-X axis travel (length)	mm	1500	3000
-X axis travel working in 2 areas (vertical)	mm	-	1200
-Y axis travel (cross)	mm	800	
-Z axis travel (vertical)	mm	800	
-B axis head range	°	+/-105	
-Maximum swing diameter (C axis integrated rotary table)	mm	1100	
TABLE			
-Fixed table dimensions	mm	1700x850 mm	3000x850 mm
-Maximum table load capacity	Kg/m ²	1500	
-Number of "T" slots		5	
-"T" slots size	mm	1x18(H7) / 4x18(H12)	
-Distance between "T" slots	mm	125	
-Min. / Max. distance spindle nose / table	mm	V (0----800) - H (360----1160)	
-Table height	mm	1000	1050
TILTINH HEAD			
-Turning torque	Nm	782	
-Position clamping force	Nm	6000	
MAIN SPINDLE			
-Spindle taper		Standard: SK 40 - Option: HSK A-63	
-Maximum speed	rpm	12.000 - Option: 15.000	12.000
-Maximum power	kW	46	
-Maximum torque	Nm	200	
CONTROLS			
-Available digital controls		Standard: Heidenhain TNC 640 HSCI - Option: Fanuc 31i-B	

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

STAR EDITION		STAR 1500	STAR 3000
FEED			
-Feed thrust X-Y-Z 100% (S3 40%)	N	X: 12.020 (19.120) / Y: 8500 (13.600) / Z: 8558 (13.700)	
-Rapid feed for positioning X-Y-Z	m/min	40	
-Maximum working feed X-Y-Z	m/min	30	
-Rapid feed for positioning in B axis	rpm	50	
ACCURACY VDI / DGQ3441			
-Positioning accuracy Tp X-Y-Z (1000 mm)	µm	10	
-Repeatability	µm	5	
-Measuring system on B axis		Rotary scale	
-Positioning accuracy Tp B	s	8"	
CAPACITIES			
-Milling capacity in steel St 60	cm ³ /min	900	
-Drilling capacity in steel St 60	Ø mm	50	
-Tapping de roscado en acero St 60	mm	M33	
TOOL MAGAZINE			
-Number of tools		60	40 (Option: 60)
-Maximum tool length	mm	300	350
-Maximum tool weight	Kg	7	8
-Maximum tool Ø with full magazine	mm	75	90
-Maximum tool Ø with free spaces	mm	127	150
-Tool changing time	s	8"	
-Chip to chip time	s	10"	
GENERAL			
-Machine painted in 3 colours	RAL	White 9010, Ligth Grey 9006, Dark Grey 7021	
-Total power installed	kW	60	
-Power connection voltage	V	400 V / 50 Hz	
-Required compressed air pressure	bar	6	
-Aproximate net weight	kg	13.000	21.000

YOUR MACHINE TOOL POINT

EST. 1953

Z SERIES
STAR EDITION
MOVING COLUMN
MACHINING
CENTERS

STAR.G 02/24
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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.



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