



HGA | HGP | HGR

Dynamic Line

Dynamic. Precise.

 **SORALUCE**

As part of our premium solutions, the Dynamic Line High Rail Gantry Machines of Soraluce provides **high speed cutting, great precision rates and high-volume machining capability.**

Three machine models which are oriented to applications in different sectors like the aerospace, mold & die or mechanical engineering, including solutions to machine specific materials like composites, light alloys or steel-based components.

Dynamic Precise Large machining volume

- High feed gantry milling center and fixed floor plate.
- 5 axis continuous machining.
- Rigid high rail structure, ensuring the best accuracy, finishing quality and productivity.
- Improved stiffness and top-level dynamic performance.
- Optimized ergonomic working environment.
- Low maintenance as critical components like the X-Y guideways and driving elements are not exposed to chip projection.

HGA: High rail gantry machine for aerospace industry
HGP: High rail gantry machine for mold & die industry
HGR: High rail gantry machine for general engineering





Nine reasons to choose Dynamic Line

01.

Architecture

High dynamics, precision and compact design.

The SORALUCE high rail gantry milling machine morphology includes unique structural elements and functions.

The compact machine architecture offers high dynamics and precision.

The location of the main axis drives, combined with reduced moving masses leads to maximum dynamics and machining precision, resulting on excellent workpiece finish.

The machine is provided with high dynamics: up to 60 m/min in all axes, being the acceleration of up to 4 m/s² in each individual axis.



02.

Guiding system

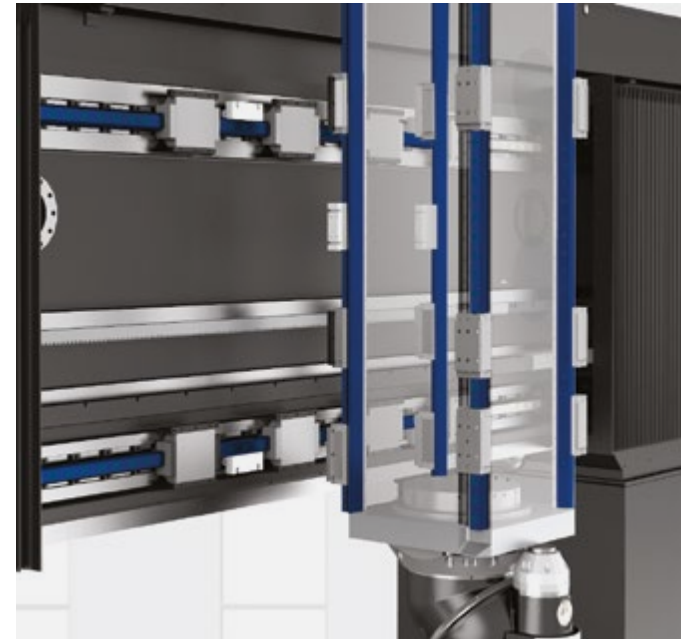
Lifelong durability



- Soraluce is a pioneer in the use of linear guiding systems in large machines and heavyduty applications.
- Design proven since 1991.
- Lifelong durability > 10 years maintenance free at maximum performance.

HGA | HGP: Ram guided with 2 guideways

HGR: Ram guided with 4 guideways



03.

Damping Pads

Great stability

- Soraluce guiding solution based on the combination of linear guides and damping pads.
- The system increases the machining stability.

* Applicable to HGP and HGR models



04. DAS⁺

No chatter

Dynamic Active Stabilizer

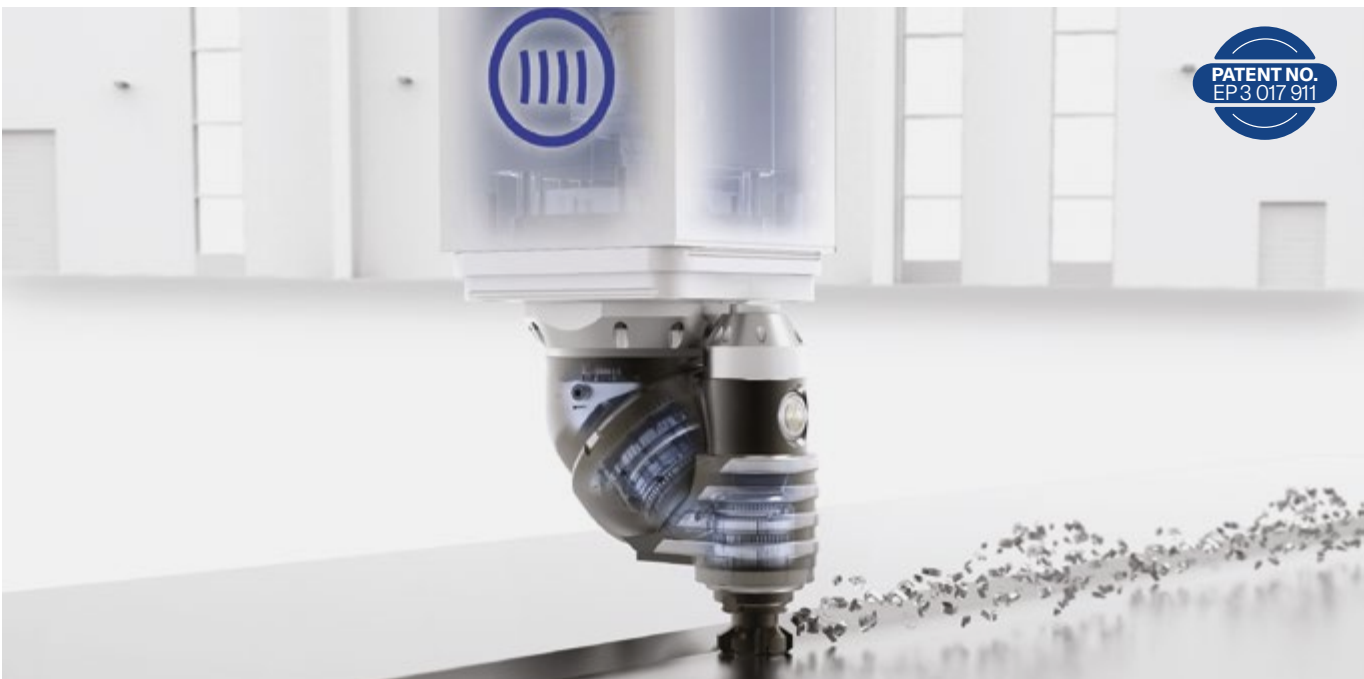
- 100% cutting capacity through the complete workpiece volume.
- Reduced cycle time up to 45%.
- Increased productivity up to 300%.
- Improved surface quality.
- Extended tool life.
- Machine protected: long term precision as reduces machine's key components wear (ballscrew, guideway, gearbox, head), in both roughing and finishing operations.

* Applicable to HGR model.

How does DAS⁺ work?

DAS⁺ is a smart system which oversees the machining process and selects the best technological alternative to eliminate chatter:

- Active damping in the ram.
- Spindle speed tuning by automatic selection of optimum speed.
- Harmonic oscillation of spindle speed.



05. Driving System

Reliable

Double rack and pinion system in the longitudinal and cross axes. Proven solution for long stroke axes.

Dynamic

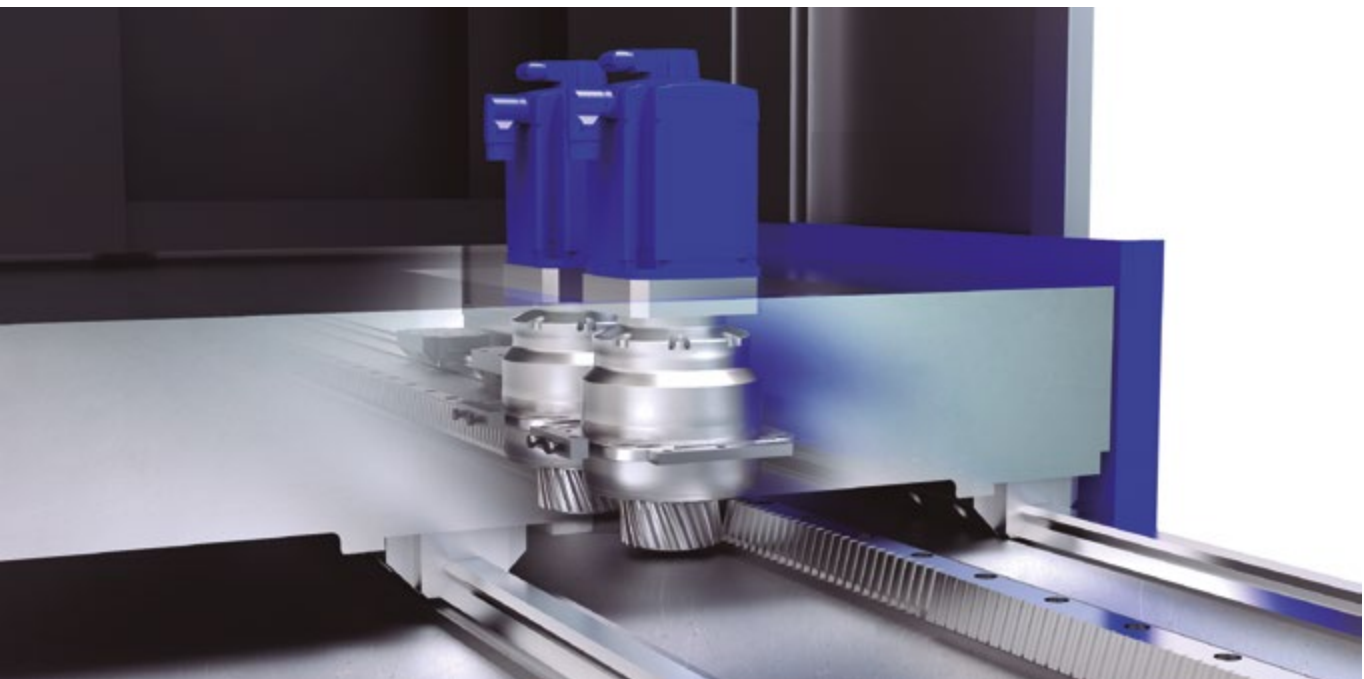
- Up to 60,000 mm/min.
- Up to 4 m/s².

Long term accuracy

- No backlash, no wear.
- Excellent surface quality.

Maintenance free

Automatic lubrication of the rack and pinion system.

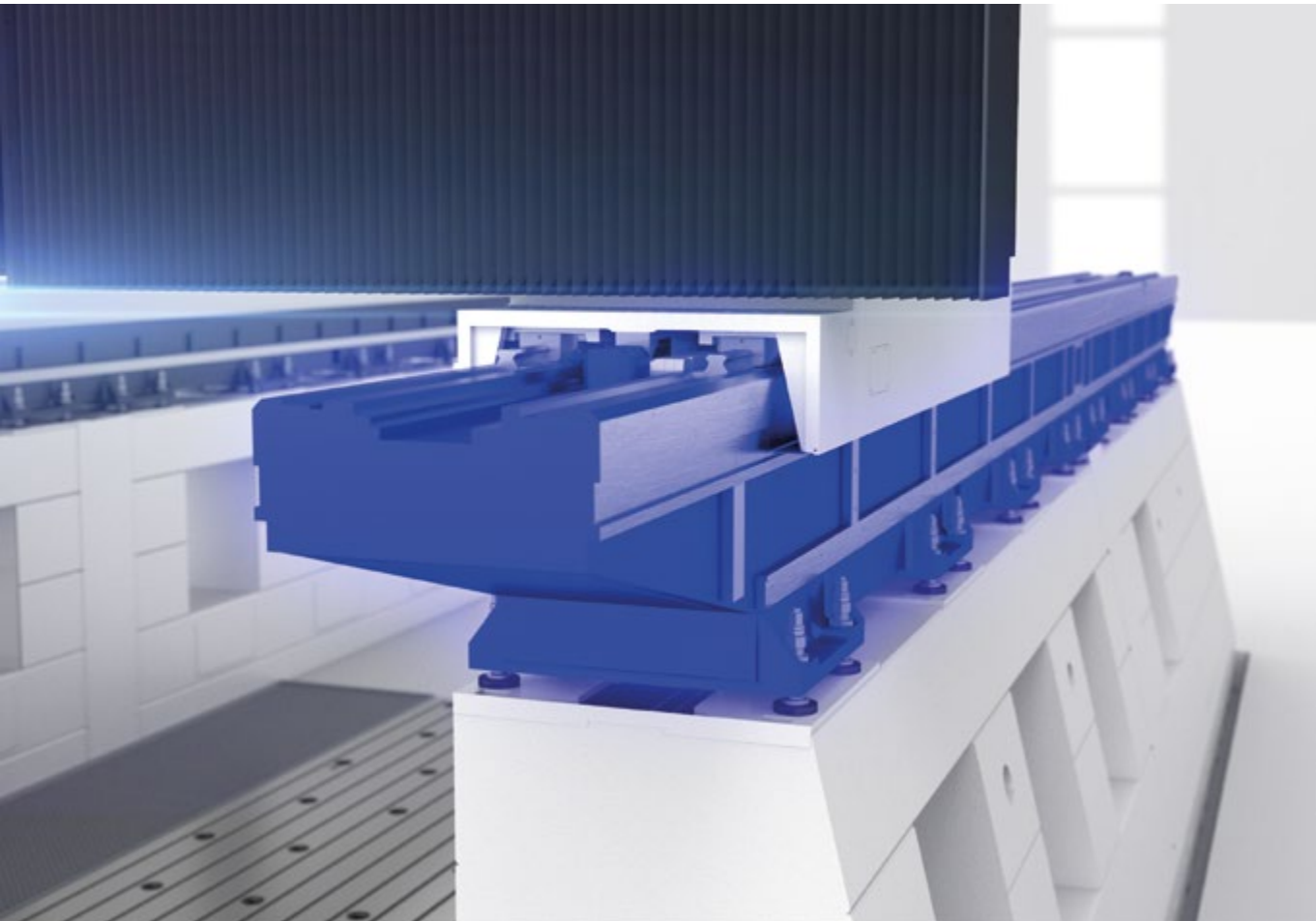


06.

Precision

High rail concept

Independent large-size longitudinal base structure (X axis) on which wide section guideways (2+2) are fixed.
The base structure can be also installed on foundation walls.



No deformation

Unique solution for vertical deflection of the cross beam, by means of a specific linear guide configuration that improves the squareness of the ram all along the cross-rail axis.

No bending

Best lateral positioning accuracy powered by Soraluce software.

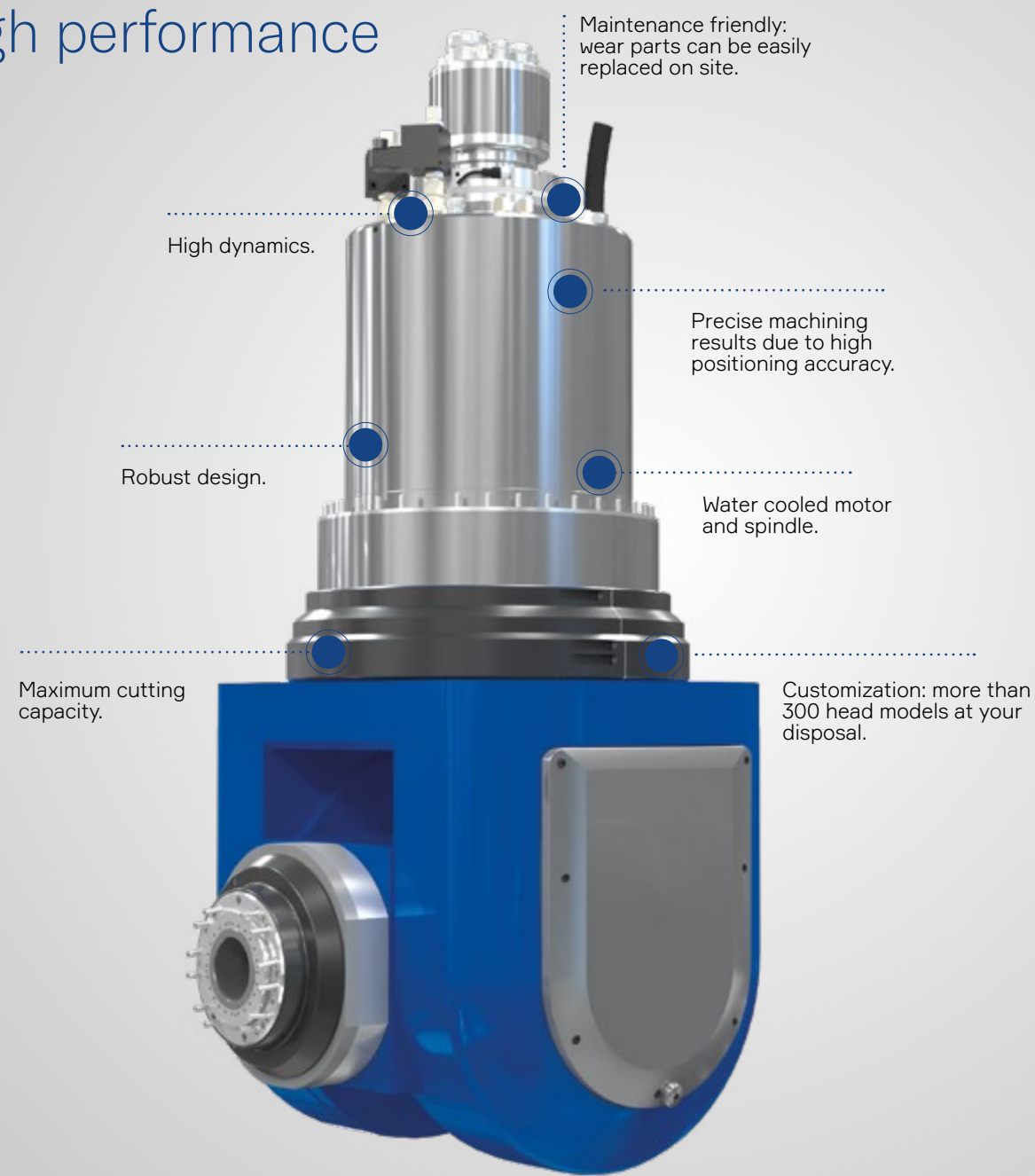
Compact design

Minimum distance between the ram and the cross beam.

07. Soraluce heads

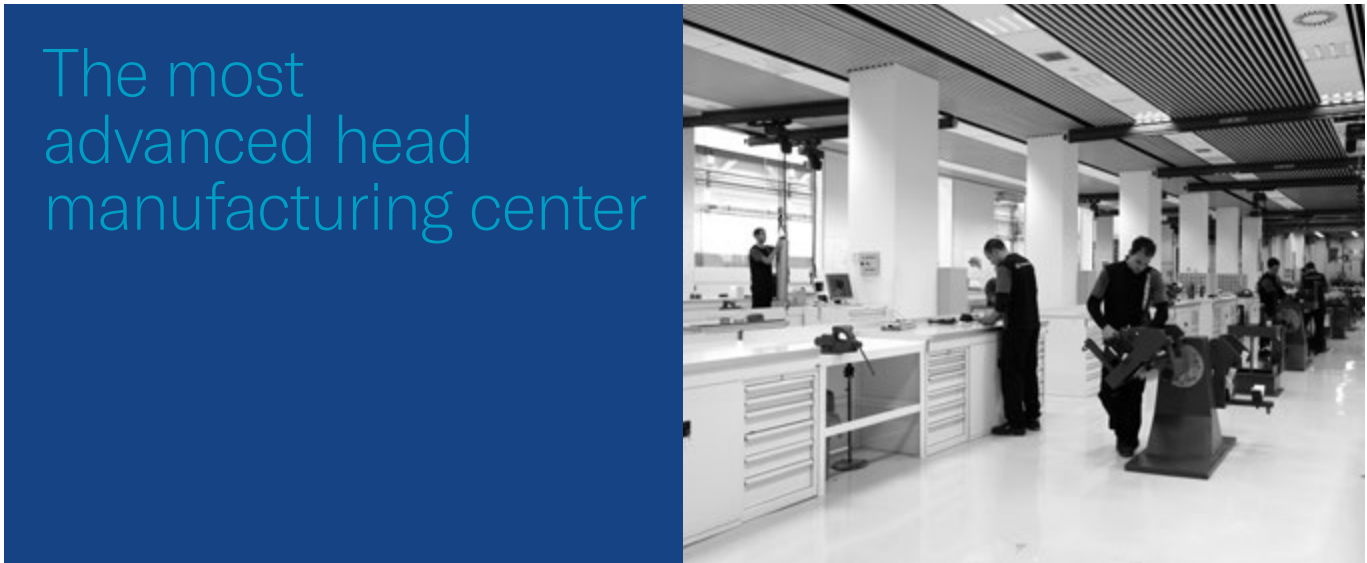
Precision &
High performance

More than
300
head models



Thousand of possibilities

	HGA	HGP	HGR
5 axis electrospindle (fork)	20000 min ⁻¹ 20 kW	12000 min ⁻¹ 34 kW 24000 min ⁻¹ 40 kW 22000 min ⁻¹ 60 kW	15000 min ⁻¹ 50 kW
5 axis electrospindle (orthogonal)			12000 min ⁻¹ 74 kW 20000 min ⁻¹ 25 kW 24000 min ⁻¹ 16 kW
Universal			7000 min ⁻¹ 37 / 60 kW
Orthogonal			7000 min ⁻¹ 37 / 46 kW
Fixed boring			5000 min ⁻¹ 43 / 60 kW
5 axis mechanical			7000 min ⁻¹ 37 / 60 kW



In-house made



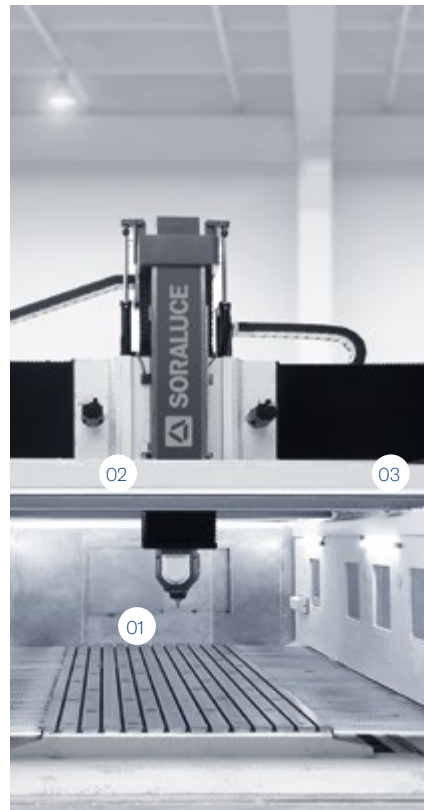
Head service hubs

- Your trusted service partner.
- Know-how directly from the manufacturer.
- Maintenance & repair.
- Spare head service available.
- Head service hubs in Belgium, Brazil, China, Germany, Italy, India, Spain, Turkey and USA.

150
Spare heads available

08. Ergonomics

Wide range of accessories and configurations to make your work center more powerful and customized.



01 Accessible and spacious work area.



02 Protection of the critical machine components.



03 Working area perfectly lightened.

06 Accessible intervention areas to ease maintenance tasks.

Full enclosure

- A 4-sided safety enclosure to cover the machining area.
- The workpiece can be loaded through large sliding doors at the front of the machine.
- The enclosure system can be completed with a movable protective roof with automatic opening.



Automatic head changing system

Head magazine integrated into the working space.

* Automatic head changing system applicable to HGR model.



Automatic tool change

- Capacity from 40 to 500 tools.
- Integrated into the working area. Optionally it can be installed outside.
- Customized tool pick up solutions are also available.



09.

Smart Technology



Energy save Package

+30% save
on energy consumption

You decide how and when the different components of the machine are switched on / off!

- Spindle
- Axes
- Machine power
- Control
- Lightning
- Air supply
- Hydraulic parts
- Warm-up program
- Calendar planning



Automatic re-setting of head kinematics to increase accuracy. It compensates the head articulation positioning deviation for one particular position of the head.

+ ACCURACY



Eliminates any chatter that may arise during the machining process.

Machine protected: long term precision as reduces machine's key components wear.

+ PRODUCTIVITY
Patent no. EP 3017911



Smart and automatic setting of defined cutting parameters according to actual machine power consumption.

30% time saved in roughing process!

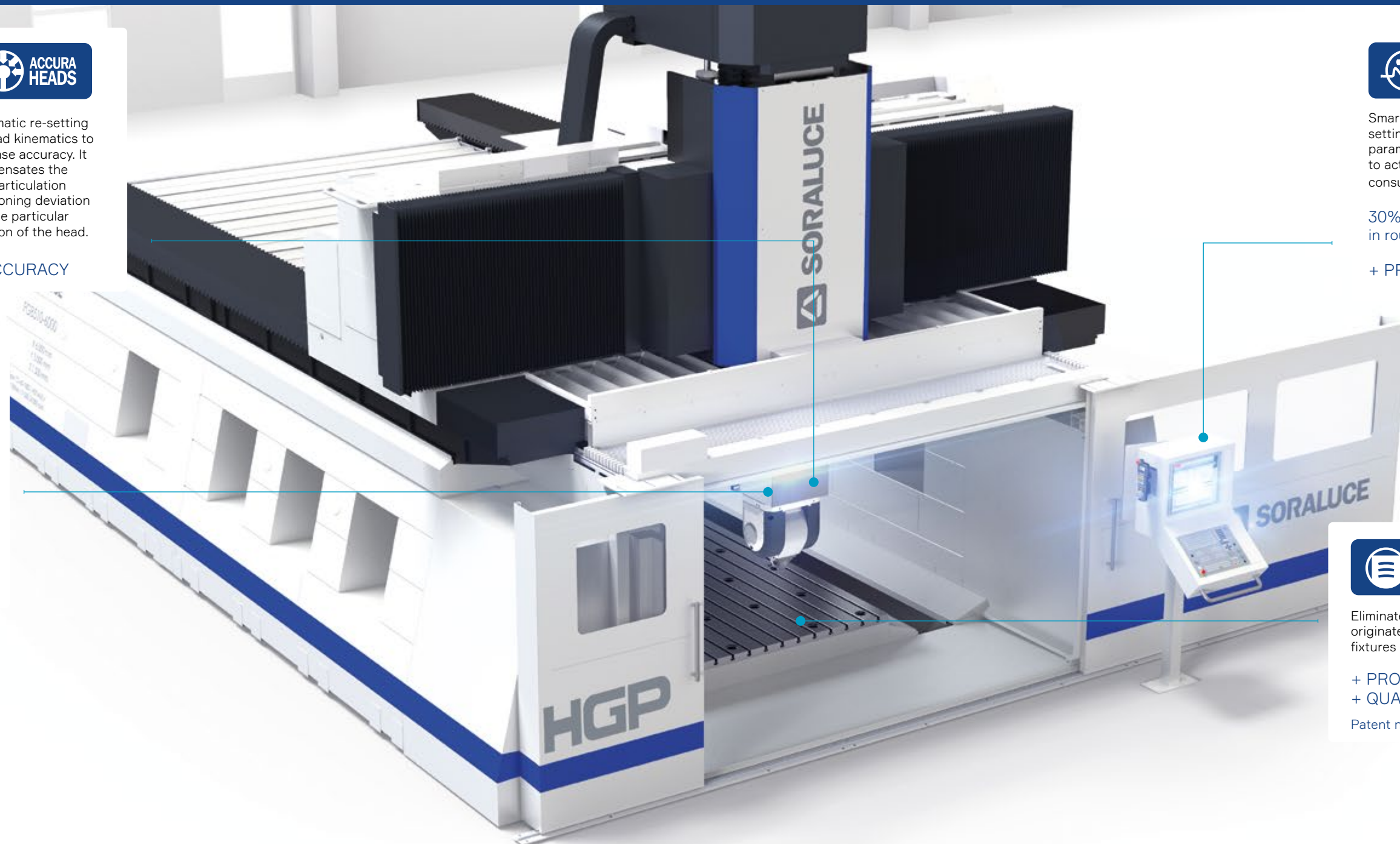
+ PRODUCTIVITY

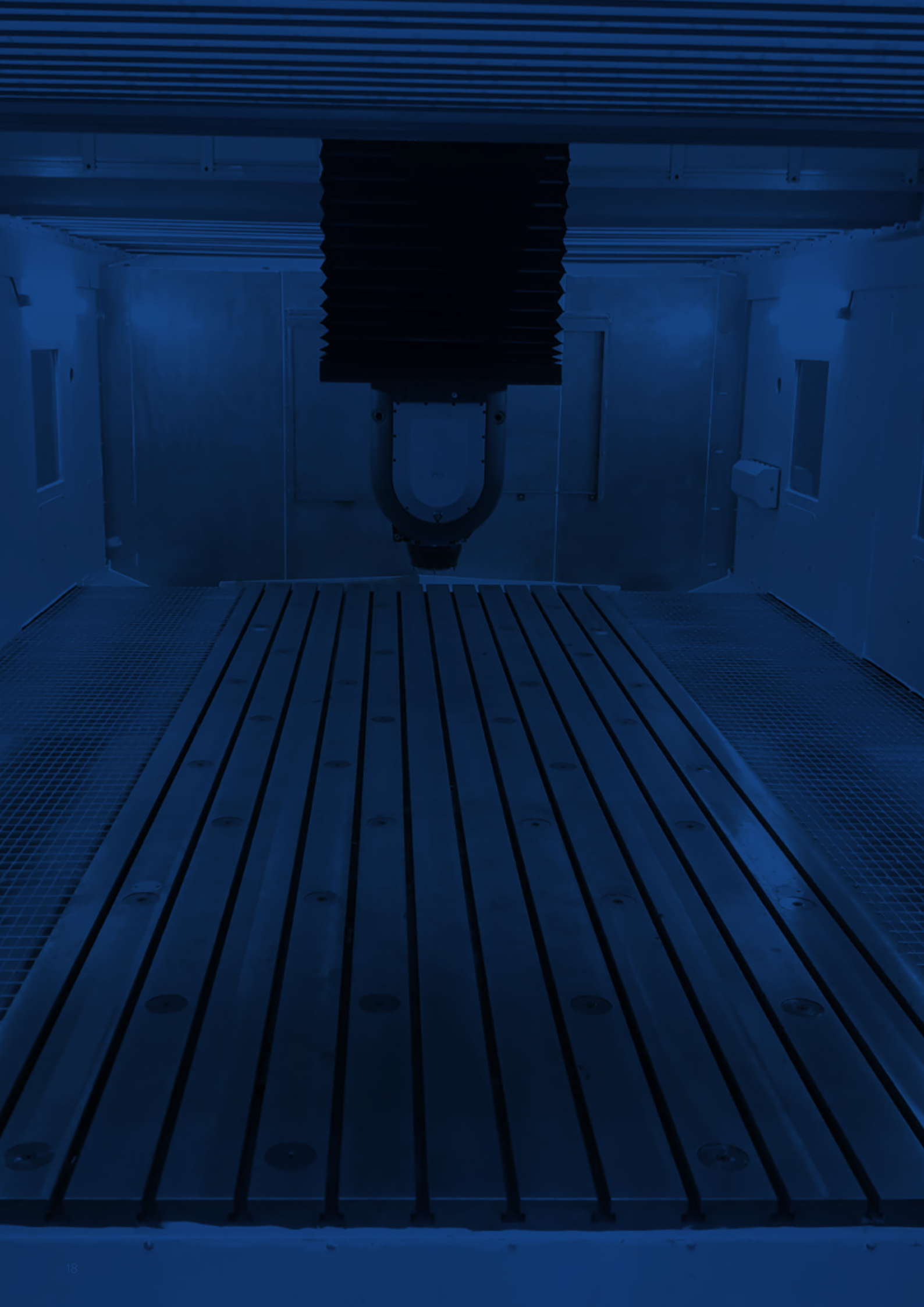


Eliminates chatter originated on either fixtures or workpieces.

+ PRODUCTIVITY
+ QUALITY

Patent no. EP 2517823 B1





Meet
the machines



HGA

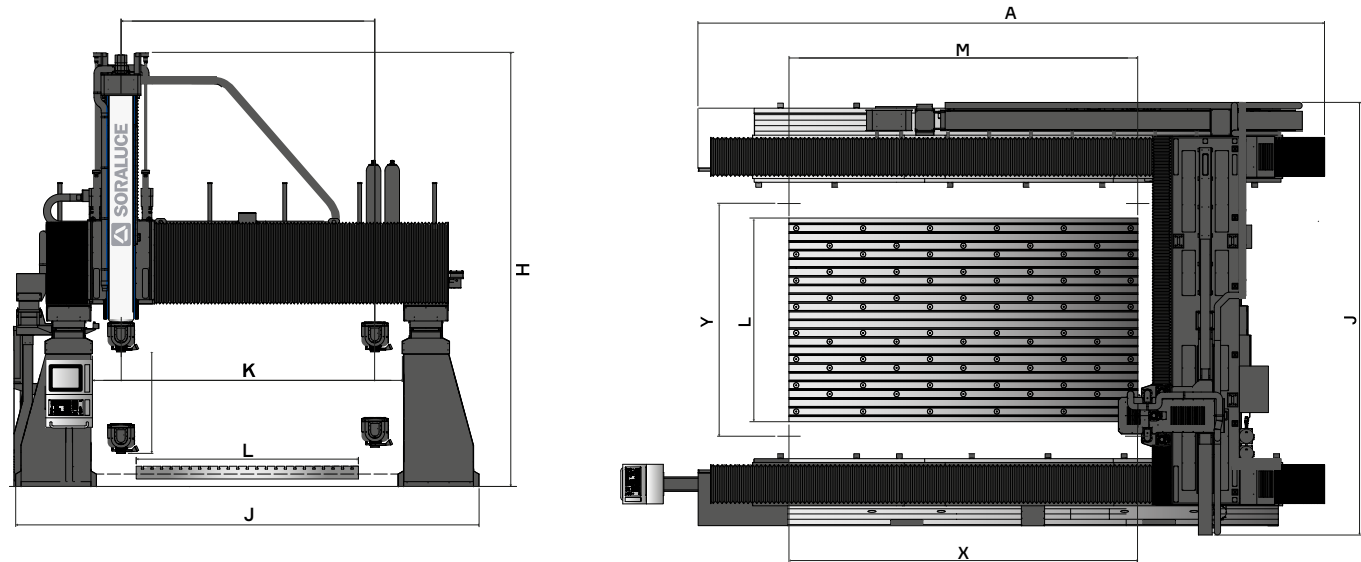
SORALUCE HGA high gantry machine provides the solution for the machining of large composite or aluminum structures for the aerospace industry, including specific features that maximize the performance of the process.

- 5-axis machining with fork type milling heads.
- Machining of composites and aluminum.
- High-volume machining capability.
- Two or more working areas (pendulum working system).
- Possibility to be equipped with application specific fixturing technology.
- Complete splash guarding available.
- Dust extraction system on the head.
- Chip conveyors.

Technical characteristics

HGA		
Longitudinal traverse "X" axis	mm	4000 + 2000 x N
Table length	mm	4000 + 2000 x N
Table width	mm	2500 / 3500 / 4500
Table capacity	kg/m²	3000
Cross traverse "Y" axis	mm	3000 / 4000 / 5000
Vertical traverse "Z" axis	mm	1500 / 2000 / 2500
Rapid traverse	mm/min	50000 ("X" / "Y" axes) / 30000 ("Z" axis)
Traverse acceleration	m/s²	2
Spindle power	kW	20
Spindle speed range	min ⁻¹	20000
Heads	Type	5 axis electrospindle (fork)
Tool Magazine	No. Tools	40 / 60 / 80 / 100 / 120

Layout



Layout	X	Y	Z	A	J	H	M	K	L
HGA	4000 + 2000 x N	3000 / 4000 / 5000	1500 / 2000 / 2500	X + 4400	Y + 3300	6800 / 7800 / 8800	X	Y + 900	Y - 500

Dimensions in mm.

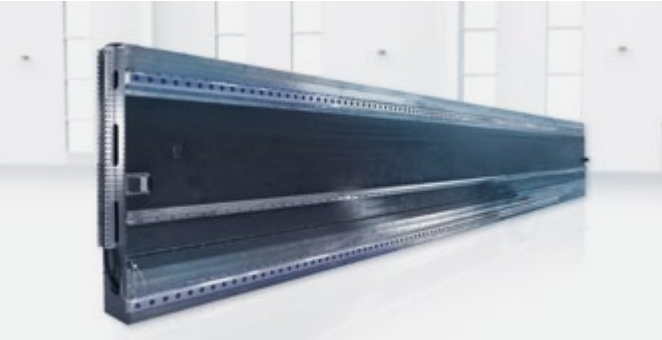


HGP

SORALUCE HGP high-rail gantry machine achieves precise results and outstanding surface quality in mold & die machining. It offers the best results in semi-finishing and finishing of steel and aluminum workpieces for the automotive industry.

- 5-axis machining.
 - Fork type milling heads with water-cooled high frequency spindle and direct drives.
 - High dynamics.
 - Medium size working volume.
- Oversized rack and pinion drives in X-Y axes.
 - Two or more working areas (pendulum working system).
 - Thermally monitored machine structure.
 - Complete splash guarding available.
 - Chip conveyors available.

Full cast iron



Long term stability.

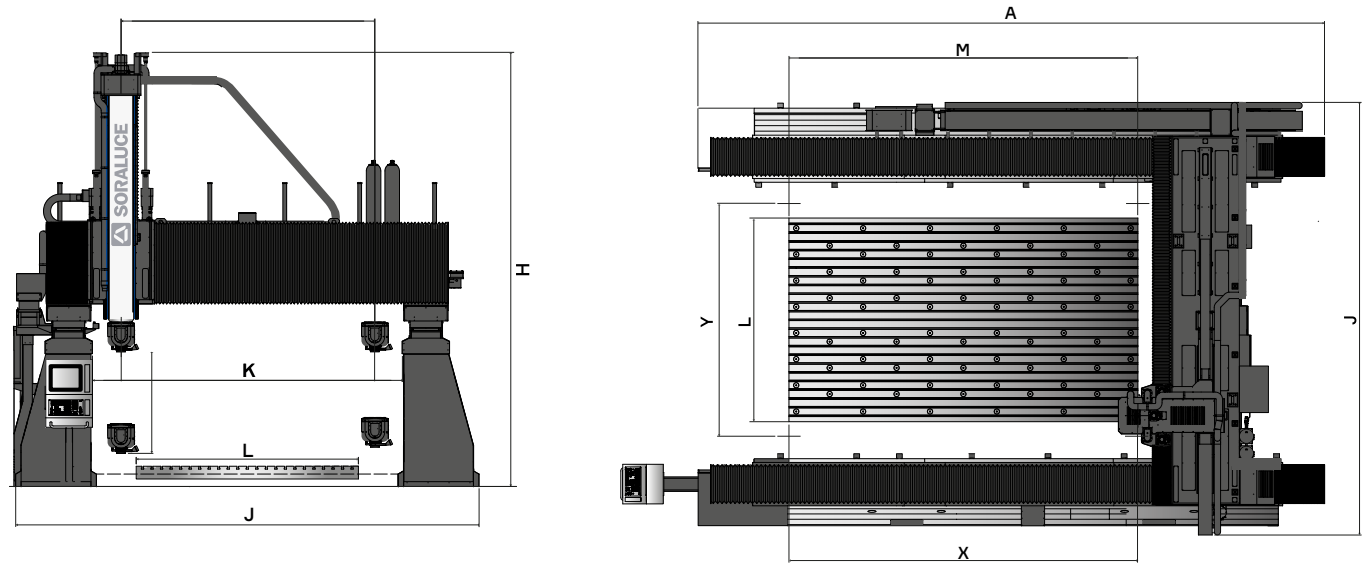
Thermostability

- Expansion under control: quantity, speed, direction.
- Vibrations absorption, damping capacity.
- Best performance against temperature variations.
- Main structure: column, saddle, ram.

Technical characteristics

HGP		
Longitudinal traverse "X" axis	mm	2500 + 1000 x N
Table length	mm	2500 + 1000 x N
Table width	mm	2000 / 3000
Table capacity	kg/m²	3000 / 5000
Cross traverse "Y" axis	mm	2500 / 3500
Vertical traverse "Z" axis	mm	1200 / 1500
Rapid traverse	mm/min	60000 ("X" / "Y" axes) / 35000 ("Z" axis)
Traverse acceleration	m/s²	3
Spindle power	kW	34 / 40 / 60
Spindle speed range	min ⁻¹	12000 ÷ 24000
Heads	Type	5 axis electrospindle (fork)
Tool magazine	No. Tools	40 / 60 / 80 / 100 / 120

Layout



Layout	X	Y	Z	A	J	H	M	K	L
HGP	2500 + 1000 x N	2500 / 3500	1200 / 1500	X + 4400	Y + 3300	6200 / 6800	X	Y + 900	Y - 500

Dimensions in mm.



HGR

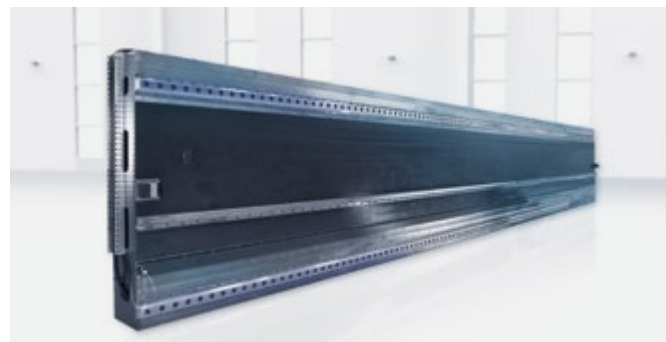
The SORALUCE HGR machine is the most versatile model in the range. It allows high customization and configurability thanks to a wide range of heads and travels of the axes.

- Wide variety of milling heads from electrospindle based to mechanical heads.
- Configurable working area.
- High stock removal rate.
- Active damping of the ram.

It is the perfect solution for high-speed machining without sacrificing rigidity and cutting capacity. It is ideal for machining large mold & die, stainless steel parts, or general machining.

- Possibility to include two pendular working areas.
- Automatic head change option.
- Bellow type roof available.
- Swarf conveyors.

Full cast iron



Long term stability.

Thermostability

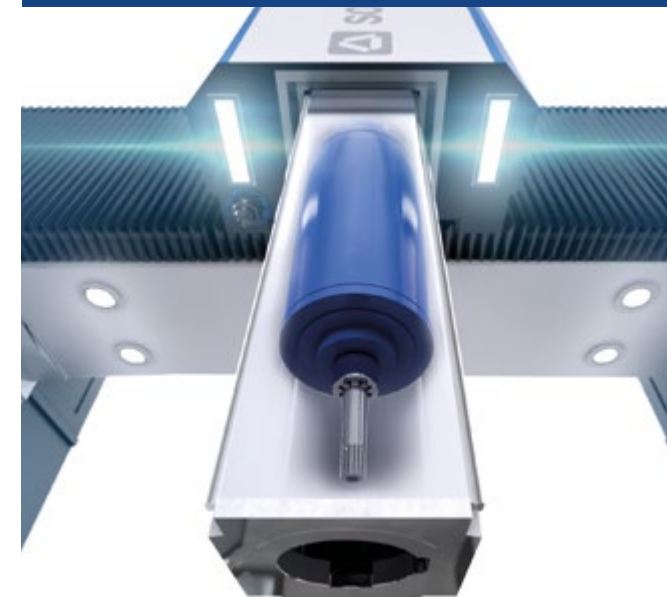
- Expansion under control: quantity, speed, direction.
- Vibrations absorption, damping capacity.
- Best performance against temperature variations.
- Main structure: column, saddle, ram.

Inline transmission

Compact-design transmission shaft.

Placed at the front of the ram close to the head.

Up to
60 kW



High torque direct drive spindle motor inside the ram, with a built-in cooling system.

Best reliability

No belts, no reducers, neither long transmission bars.

Great precision

Best thermal stability provided by cooled inline motor.

Enhanced rigidity

Frontal assembly, all sides of the ram are solid.

Ease of maintenance

Quick exchange of the main spindle motor.

- Up to 60 kW / 2000 Nm.
- High efficiency.
- Minimum noise level.
- High performance thanks to optimized power-torque curve.
- Full power at low rpm.
- Short distance between main motor and head transmission.

Head changing system

- Rapid.
- Accurate.
- Applicable to any head.
- Universal system: heads are fully standard.
- Head's pick-up fully covered.



Fully modular system through adapter flanges



Adapter flange with quick released couplings for fluids.

Quick release electric connectors.

High Performance Heads



Heavy-duty heads Cooled oil lubrication

- Up to 60 kW (S1-100%).
- Robust performance.
- Highest reliability.
- Long-life design (wear-free gears and bearings).
- Maintenance free.
- Thermal stability.
- Quick change for maintenance purposes.

High performance heads Air-oil lubrication

- Up to 37 kW (S1-100%).
- High speed up to 7000 min⁻¹.
- Optimum accessibility thanks to reduced size.
- Robust performance.
- Highest reliability.
- Fast positioning.
- Thermal stability.
- Quick change for maintenance purposes.

Thousands of possibilities

5-axis continuous head

37 / 60 kW
0.001° x 0.001°
Up to 7000 min⁻¹ (mechanical) /
Up to 30000 min⁻¹ (electrospindle)

Universal head

37 / 60 kW
2.5° x 1° / 0.001° x 0.001°
Up to 7000 min⁻¹

Fixed Boring head

43 / 60 kW
2000 / 3000 / 4000 / 5000 min⁻¹
Different lengths and diameters

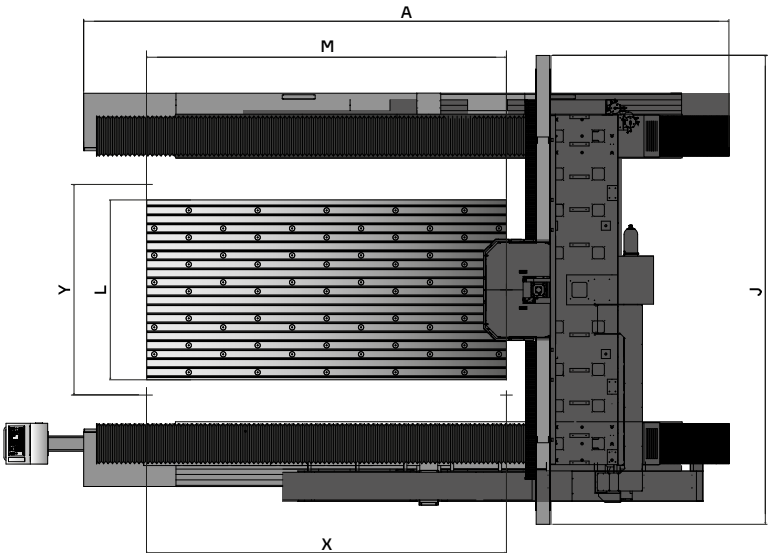
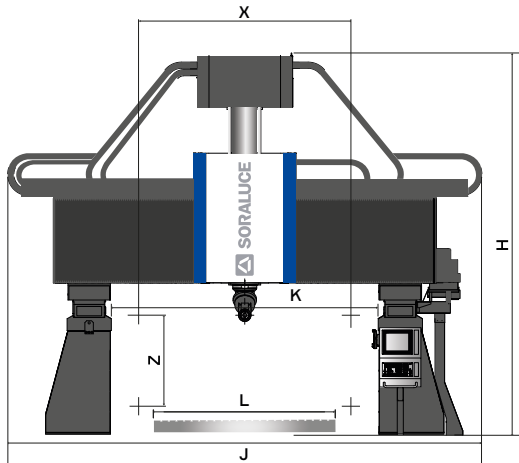
Orthogonal head

37 / 46 kW
1° x 1°
Up to 7000 min⁻¹

Technical characteristics

HGR		
Longitudinal traverse "X" axis	mm	3000 + 1000 x N
Table length	mm	3000 + 1000 x N
Table width	mm	3000 / 3500 / 4000
Table capacity	kg/m ²	3000 / 5000 / 15000
Cross traverse "Y" axis	mm	3500 / 4000 / 4500
Vertical traverse "Z" axis	mm	1500 / 2000
Rapid traverse	mm/min	50000 ("X" / "Y" axes) / 35000 ("Z" axis)
Traverse acceleration	m/s ²	X: 2 Y/Z: 3
Spindle power	kW	43 / 60
Spindle speed range	min ⁻¹	7000 ÷ 24000
Heads	Type	Universal, orthogonal, fixed boring, 5 axis (mechanical & electrospindle), 5 axis fork
Tool magazine	No. Tools	40 / 60 / 80 / 100 / 120

Layout



Layout	X	Y	Z	A	J	H	M	K	L
HGR	3000 + 1000 x N	3500 / 4000 / 4500	1500 / 2000	X + 4400	Y + 4000	6500 / 7500	X	Y + 900	Y - 500

Dimensions in mm.



There is only one first

Soraluce

Osintxu Auzoa - E-20570 Bergara (Gipuzkoa) - Spain
+34 943 76 90 76

www.soraluce.com

DANOBATGROUP

