

# LARGE CAPACITY IN A COMPACT AND ERGONOMIC FORMAT

**FIXED TABLE TRAVELLING COLUMN  
MILLING MACHINES › [SLP](#)**





## ERGONOMIC AND USER FRIENDLY

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The new generation of SORALUCE SLP brings the customer important improvements in maintenance, ergonomics, high dynamics and safety in the work environment.

The SORALUCE SLP fixed table travelling column machine is a large capacity machine designed in a compact and ergonomic format, offering great flexibility. The machine offers high precision finishing results, based on a unique traditional machine architecture: table attached column supported by a separate rear guide, to improve machine stability, whilst maintaining its very low centre of gravity.

It is the ideal machine for several applications in different sectors such as industrial vehicles, moulds and dies, capital goods and medium sized precision engineering components, ensuring highest precisions and efficiency results.



# BACKGROUND CONCEPTS

## DESIGN

The design of the machine structure and dimensions have been optimised by an analysis based on “Finite Element Method” (FEM) simulation technique, optimising:

- › Stiffness
- › Antivibration
- › Stress absorption
- › Complete mechanical stability

## HIGH PERFORMANCE

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

- › Great precision
- › High efficiency
- › Low heat
- › Reduced noise
- › No maintenance
- › No losses in the transmission
- › Stable working conditions

## LONG LASTING PRECISION

Full cast iron, enabling:

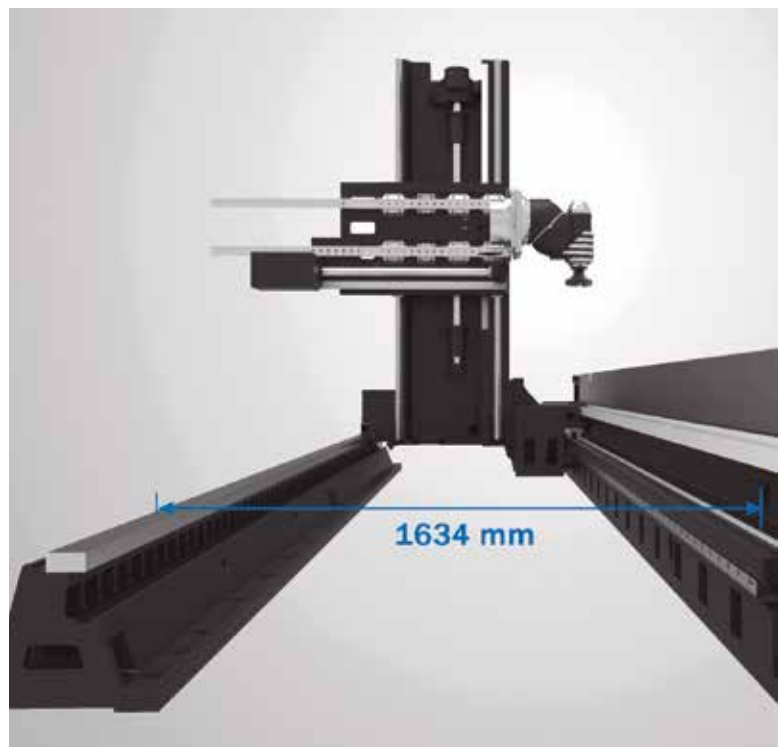
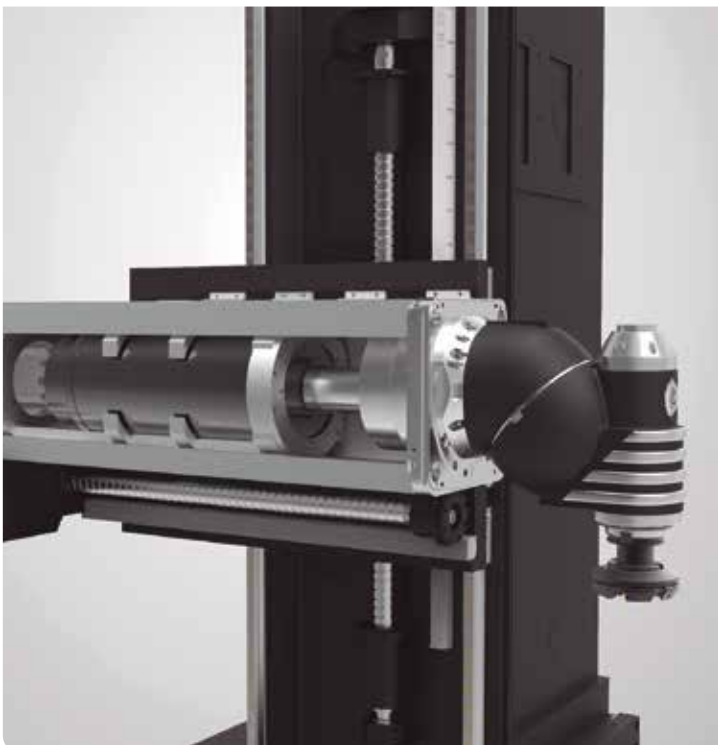
- › Accuracy: long lasting precision
- › Stiffness: proven physic stability
- › Productivity: high cutting capacity

Thanks to the unique mechanical features of the cast iron and the optimised design, the precision and robustness of the machine are ensured for all the machine's life.

## PROVEN STABILITY

Unique machine architecture based on table attached column supported by a separate-rear guide.

- › Maximum machine stability due to the high distance between X axis guideways
- › Maintains the centre of gravity very low
- › Saves on foundation costs as the entire machine is on the same level
- › Improves the ergonomics in the use and eases the maintenance works



## COMBINED GUIDING AND DAMPING SYSTEM

SORALUCE is a pioneer in the use of linear guiding systems in high machining capacity equipment and heavy duty applications.

- › The system combines our own specially developed hydrostatic damping elements with INA guiding systems on each axis
- › The system guarantees immense stability eliminating any vibration during machining processes
- › Using linear guiding systems since 1992
- › More than 1500 references in the market working with this system
- › It guarantees high precision and dynamics, low friction, low heat levels, minimum maintenance and reduced grease consumption



## HIGH ACCURACY

Optimised machine structure and guiding system that guarantee the precision along the machine's life.



## INCREASED PRODUCTIVITY

High dynamics on the axes and machine's stability provide the right features to ensure stable machining on demanding applications while enables the high performance tools to give their best.



## ENERGETIC EFFICIENCY

- › Low maintenance costs
- › Low heat levels
- › Reduced grease consumption



# THE NEXT LEVEL OF INNOVATION

## DAS SYSTEM (DYNAMICS ACTIVE STABILISER)

### Beyond machine tool limits

The DAS system is a device capable of actively increasing the dynamic rigidity of the machine, which reduces the risk of chatter and increases the cutting capacity by up to 300% improving dramatically the production time during the roughing process.

The DAS system measures the vibrations during the machining process and generates, in real and time, by means of ram built-in actuators, an oscillation force that opposes the vibration.

- › Allows the use of maximum power throughout the whole working area
- › Up to 300% improvement of productivity
- › Better surface quality of the machined part
- › Extends lifetime of the tools
- › Avoids premature aging of machine components

**PATENT  
PENDING**

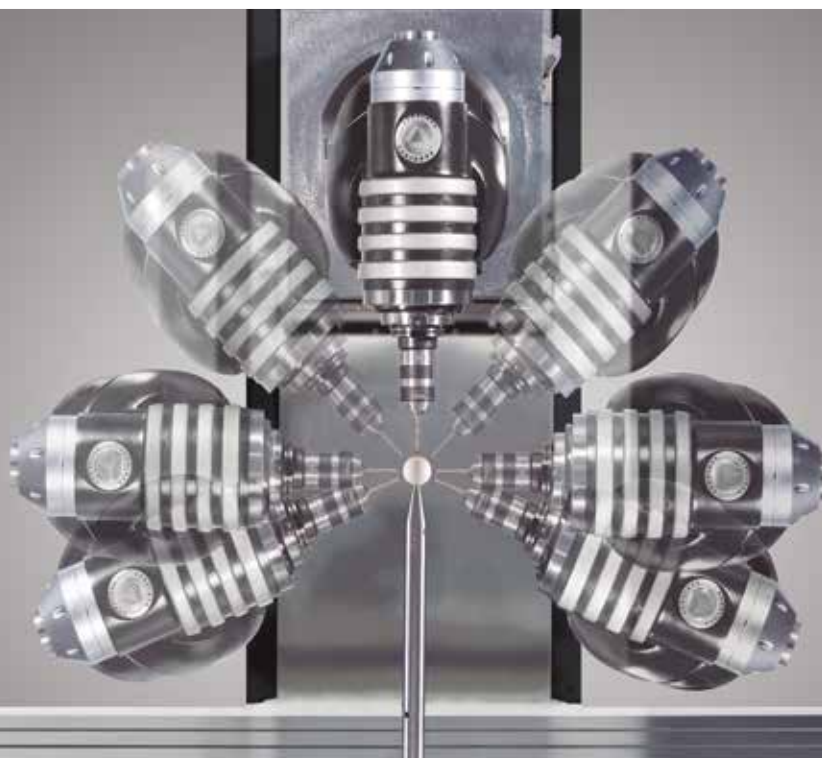


## DYNAMIC HEAD CALIBRATION

### Even more accuracy in the working area

Thanks to specific SORALUCE developments, head articulation positioning deviations have been reduced to a minimum. This system allows the compensation of head's kinematic values on the whole working area.

- › Automatic calibration for any type of head
- › Transparent for the user: Automatic calibration of the head without the need to use specific programming functions
- › Calibration of the head for any working area
- › Offset error compensation due to thermal expansion
- › Easy-to-use interface, 100% integrated with HEIDENHAIN and SIEMENS



# TOTAL MACHINE

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## THE COMPLETE WORKING AREA ANALYSED FOR AN OPTIMAL RESULT

The new SORALUCE SLP Generation is based on a complete revision of the machine from the user's point of view focusing on improving operation efficiency and developing a Total Machine Concept.

The Total Machine Concept takes into account the machine but also the complete working area. All the interactions of the operator with the different machine elements are analysed for an optimal implementation.

Not only the machine, but the work area and its surroundings are analysed as a whole in order to guarantee an optimal final result. All of the interactions are studied to optimise from the clamping and loading of the workpiece to its removal once machined and its subsequent cleaning. The environment and its processes must be linked to the machine's own work, making all parts of the entire process as simple, safe and ergonomic as possible.

With this new design concept, SORALUCE has added to its equipment large number of innovations not only with the aim of facilitating work and making them a safer environment, but also to simplify maintenance and to minimise stoppage times, thus increasing the productivity and profitability of the machine.





# MILLING AND TURNING HEADS

IN-HOUSE MANUFACTURED  
HIGH RELIABILITY  
BROAD RANGE

In order to cater to the diverse needs of each customer, SORALUCE's contrasted head technology is fundamental and provides the necessary customisation for an optimal

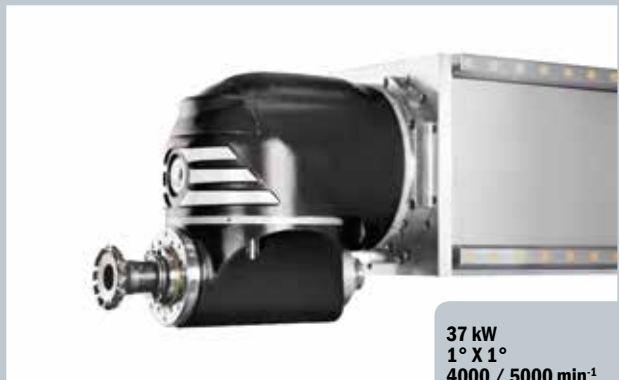
configuration, with the possibility of including a large variety of standard heads and special solutions.

## UNIVERSAL HEAD



**37 kW**  
**2,5° x 2,5° / 0,001° x 0,001°**  
**4000/5000/6000/7000 min<sup>-1</sup>**

## ORTHOGONAL HEAD



**37 kW**  
**1° X 1°**  
**4000 / 5000 min<sup>-1</sup>**

## COMPACT ORTHOGONAL HEAD

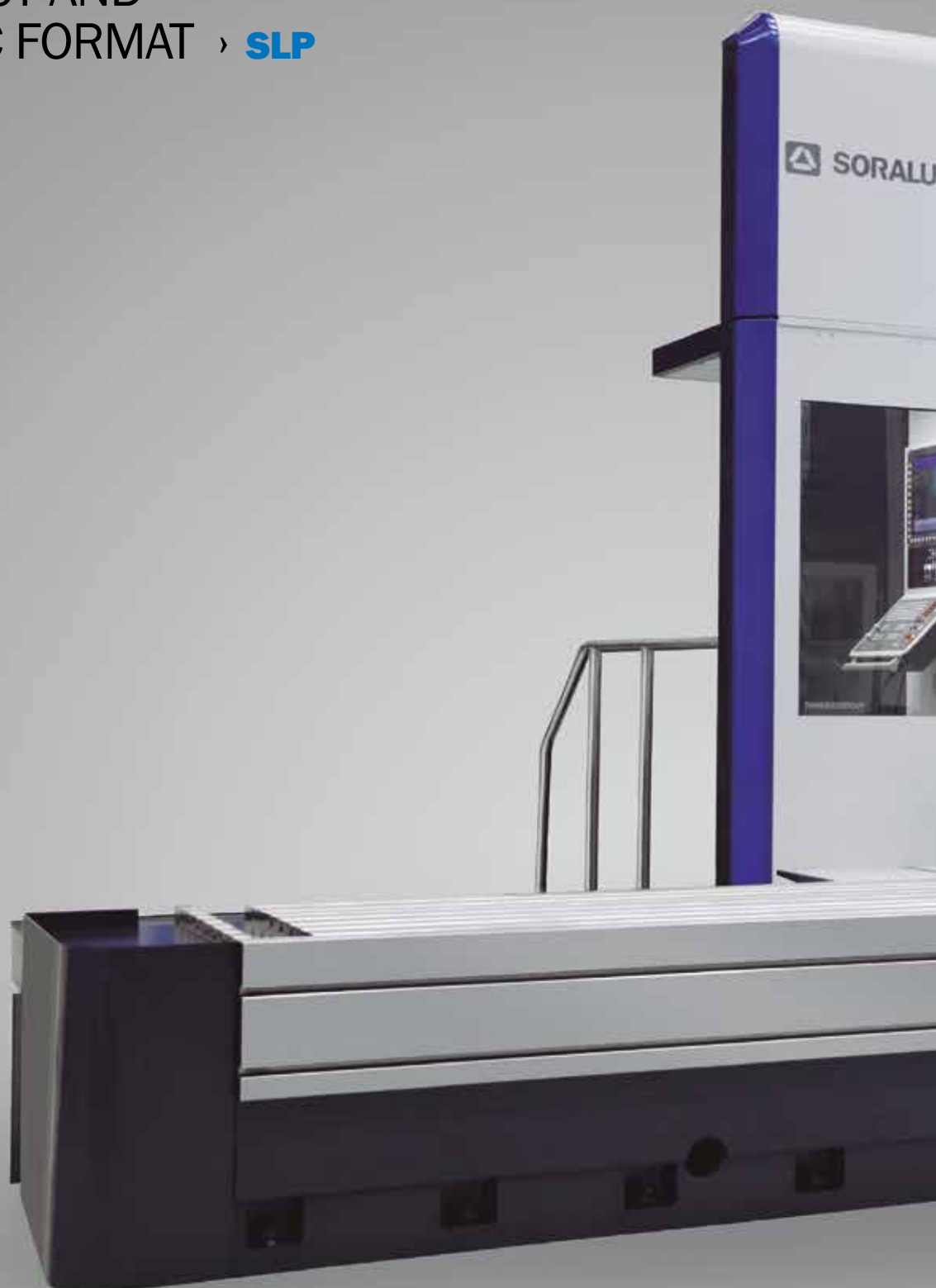
The SORALUCE SLP milling machine can be equipped with the SORALUCE orthogonal head indexing at 1° x 1°, with its compact design specially conceived for machines with an in-line motor. It allows the simultaneous positioning of both head articulations, reducing non-production time.

Inverse machining capability:

- › Up to -45°
  - › No additional setups
  - › Improved cycle time
  - › Better finishing quality
  - › Minimum manipulation
- 
- › Full advantage of machine travel
  - › No need for additional work piece support fixtures
  - › Close to table head spindle accessibility for both front and lateral milling



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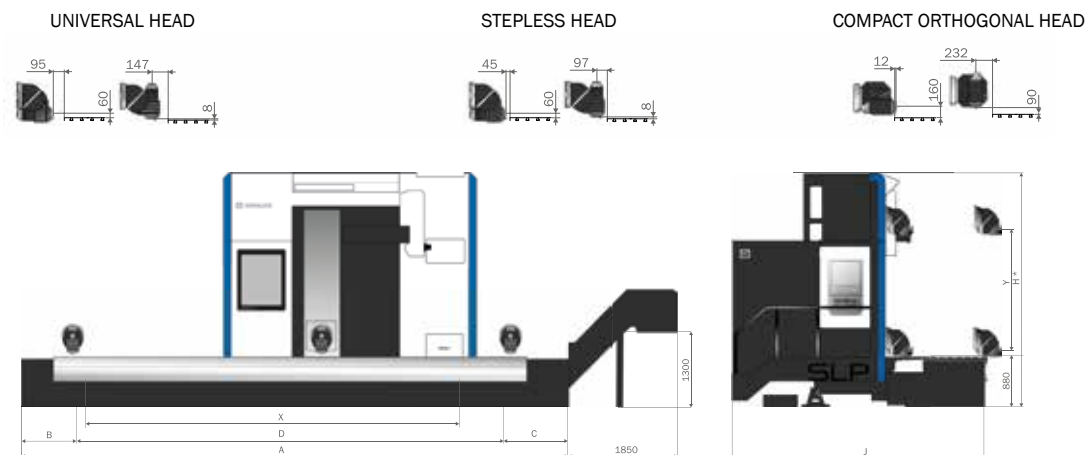




## TECHNICAL SPECIFICATIONS AND LAYOUT SLP

| CHARACTERISTICS                 |                   | SLP-5000   | SLP-6000      | SLP-8000      | SLP-10000     |
|---------------------------------|-------------------|--|---------------|---------------|---------------|
| Longitudinal traverse "X" axis* | mm                | 3500   | 4500          | 6500          | 8500          |
| Vertical traverse "Y" axis      | mm                | 1800   |               |               |               |
| Cross traverse "Z" axis         | mm                | 1300 / 1500  |               |               |               |
| Length of table                 | mm                | 5000   | 6000          | 6500          | 8500          |
| Width of table                  | mm                | 1100   | 1100 / 1350   |               |               |
| T slots                         |                   | 6 x 22H12 + 1 x 22H7 (two front T slots 22H12) /<br>8 x 22H12 + 1 x 22H7 (two front T slots 22H12) |               |               |               |
| Loading capacity on the table   | kg                | 13750  | 16000 / 20250 | 16000 / 20250 | 27500 / 33750 |
| Heads                           |                   | Universal / Orthogonal   |               |               |               |
| Spindle motor                   | kW                | 43   |               |               |               |
| Spindle nose taper              | mm                | ISO-50 / HSK-100   |               |               |               |
| Spindle speed range             | min <sup>-1</sup> | 4000 / 5000 / 6000 / 7000  |               |               |               |
| Rapid traverse                  | mm/min            | 35000  |               |               |               |
| CNC system**                    | mm                | Heidenhain TNC 640 / Siemens 840 D SL  |               |               |               |
| Tool magazine                   | mm                | External coolant system over a ring / Internal coolant system up to 70 bar                         |               |               |               |
| Machine weight                  | No. tools         | 40 / 60 / 80   |               |               |               |
| Machine weight                  | kg                | 20800  | 24800         | 28800         | 36800         |

\* Other CNC systems under request | \*\* Other specifications under request



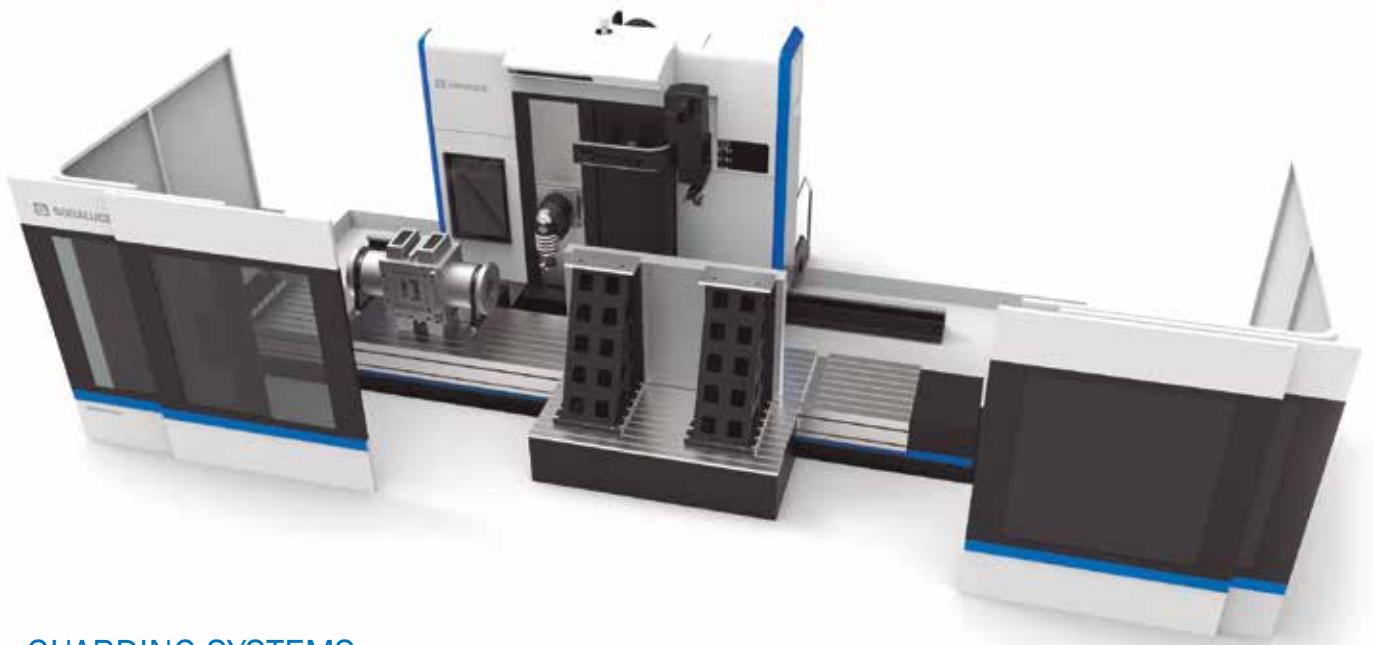
|           | X    | Y    | Z           | A     | B   | C   | D     | H    | J*  |
|-----------|------|------|-------------|-------|-----|-----|-------|------|---|
| SLP-5000  | 3500 | 1800 | 1300 / 1500 | 5970  | 400 | 570 | 5000  | 4150 | 4310 (Z= 1300) - 4510 (Z= 1500)               |
| SLP-6000  | 4500 | 1800 | 1300 / 1500 | 6970  | 400 | 570 | 6000  | 4150 | 4310 / 4560 (Z= 1300) - 4510 / 4760 (Z= 1500) |
| SLP-8000  | 6500 | 1800 | 1300 / 1500 | 9310  | 570 | 740 | 8000  | 4150 | 4310 / 4560 (Z= 1300) - 4510 / 4760 (Z= 1500) |
| SLP-10000 | 8500 | 1800 | 1300 / 1500 | 11670 | 750 | 920 | 10000 | 4150 | 4310 / 4560 (Z= 1300) - 4510 / 4760 (Z= 1500) |

Dimensions in mm. | J\*: 1100 / 1350 table width

# VERSATILITY HIGHLY CONFIGURABLE

## WORK STATIONS

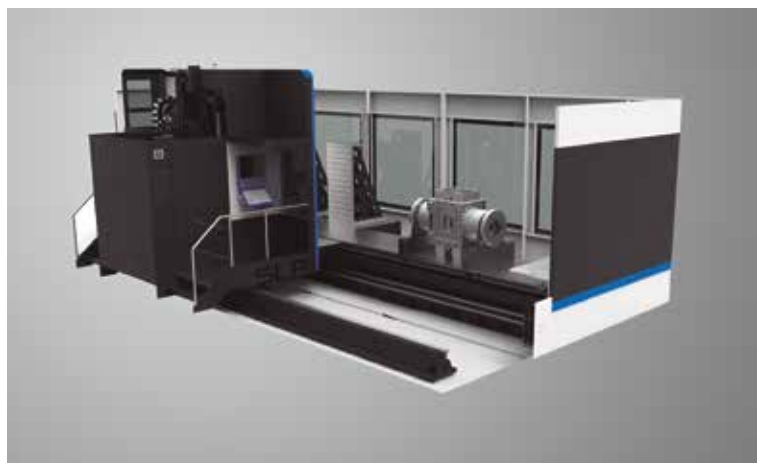
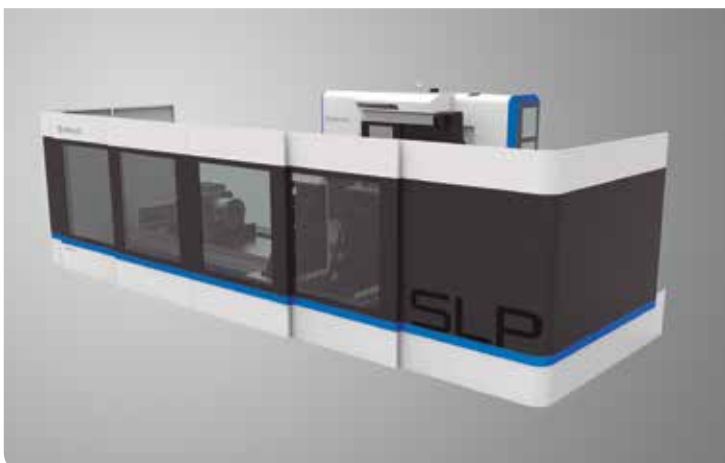
It is possible to configure the working area adding auxiliary tables, angle plates and pendulum options.



## GUARDING SYSTEMS

SORALUCE provides a wide variety of splash guarding systems against projections:

- › Front and both lateral sides of the machines table
- › Complete guarding system
- › Peripheral or complete guarding system allowing pendulum machining



## TOOL MAGAZINE

- › Tool magazine for 40 / 60 / 80 tools
- › The storage area is protected from chips and coolant
- › Simple and ergonomic tool loading/unloading system
- › Advanced tool management options available on request



## CNC UNITS

### Heidenhain TNC 640

The TNC 640 NC system by Heidenhain boasts the qualities demanded by highly technological machines now including multitasking capabilities.

- › Wide variety of milling and turning cycles
- › Time and cost saving
- › HEIDENHAIN conversational or DIN/ISO programming with the simple Klartext dialogue

### Siemens 840 D SL

The SINUMERIK 840D SL is a premium class CNC, with a superior system flexibility. It is the CNC of choice when opening up completely new technology fields.

- › Modular and scalable
- › Benchmark in open architecture
- › Communicative at all levels



# HUMAN MACHINE

## COMFORT, SAFE AND ERGONOMIC

SORALUCE has created a new range of machines that will revolutionise the market thanks to the creation of a more human and ergonomic environment, while also significantly increasing the safety and ergonomics parameters.

## OPERATOR'S PLATFORM

- › Enclosed operator's platform
- › Complete workbench with a panel to hang drawings and documents
- › CNC panel with smooth movements
- › Generous interior lighting by two led spotlights integrated in the ceiling
- › Sliding door allowing the operator's approach to the head to check the tool or the component
- › Enhanced visibility, ample glass surface
- › Support for special tools in the external platform
- › Floor with special anti-slip paint that minimizes the wear and tear

Access to  
working area



Non-slip floor with  
special anti-wear  
and anti-slip paint

Open operator  
platform with good  
lightning





## TOOL MAGAZINE

- › Full visibility of tool magazine
- › Storage area's closure protecting sensitive items inside it from chips and coolant
- › Sliding shutter to ease tool loading / unloading

## MAINTENANCE

- › The intervention areas are now more accessible
- › Sliding shutters and doors to avoid the disassembly of panels
- › Improved protection of the critical areas of the equipment
- › Gauges and levels visible from the outside the machine without removing panels
- › Ample areas to ease the maintenance tasks
- › Specific signals to indicate maintenance and service points

Full visibility of tool magazine

Sliding shutters to ease tool loading / unloading



Critical areas protection

Spacious area for maintenance



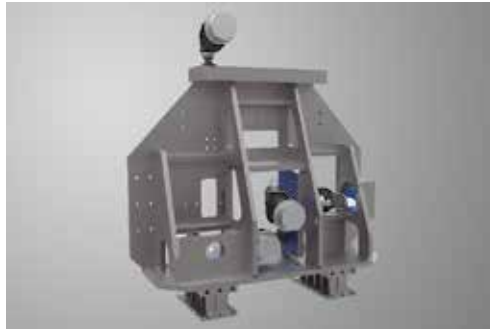
# LEADING THE MOST DEMANDING INDUSTRIES

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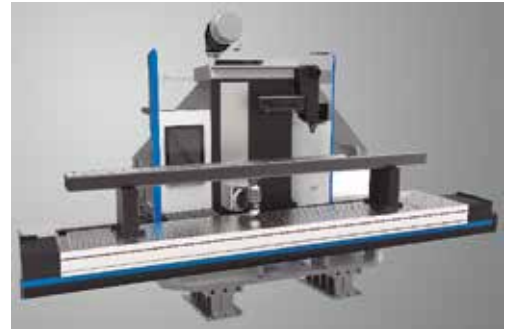
Precision machining



5 faces machining



Long parts machining



[1] Electric motor pole shoe machining, using the inverse machining possibility that enable machining in a single setup

[2] Cubes and specific clamping devices enable the machining of very large and heavy pieces

[3] Vertical die machining for easy chip evacuation and pendulum working for improved production and longer unmanned cycles

[4] High precision demanding components can be machined as this turbine casing

[5] Big sized frame machined in a single setup, with 5 side machining using a universal automatic head

[6] Flange machining in a 45° Tee pipe fitting using turning by interpolation cycle, specially developed by SORALUCE



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**DANOBATGROUP**

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