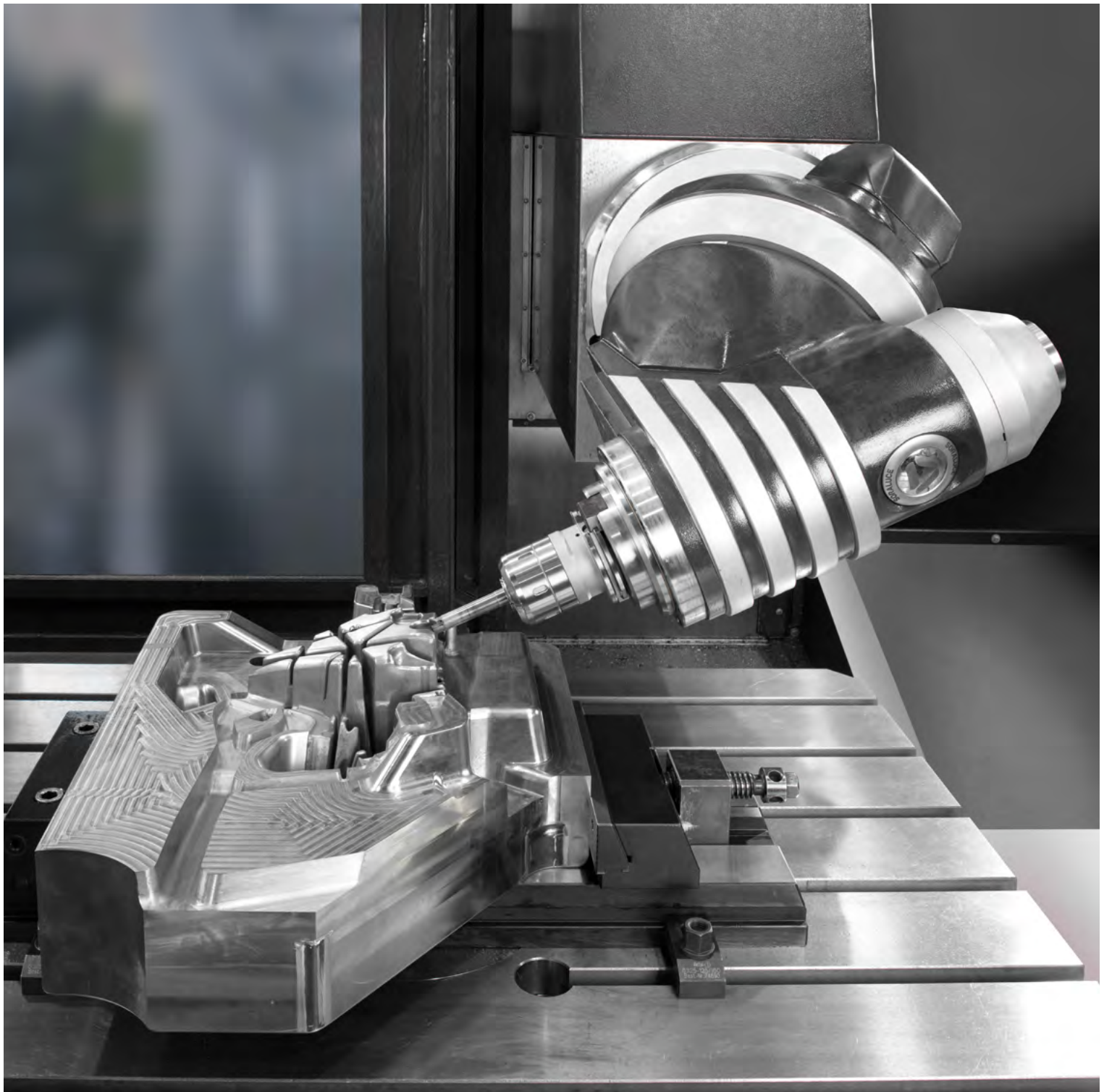




HIGH CAPACITY IN A COMPACT MACHINE

**BED TYPE MILLING
MACHINES › TA-A / TA-D / TA-M**






HIGH STOCK REMOVAL CAPACITY

The new generation of SORALUCE TA-A / TA-D / TA-M brings the customer important improvements in maintenance, ergonomics, high dynamics and safety in the work environment.

The SORALUCE TA-A / TA-D / TA-M range are bed type machines notable for their optimum stiffness and mechanical stability, providing high stock removal capacity. It stands out on account of its long-lasting precision, resulting from a strict design and assembly process.

The SORALUCE TA-A / TA-D / TA-M are high capacity machines designed in a compact and ergonomic format.

It is the ideal machine for high precision mould and die manufacturers and medium sized precision engineering workpieces, ensuring highest precisions and efficiency.



DANOBA

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

LONG LASTING PRECISION

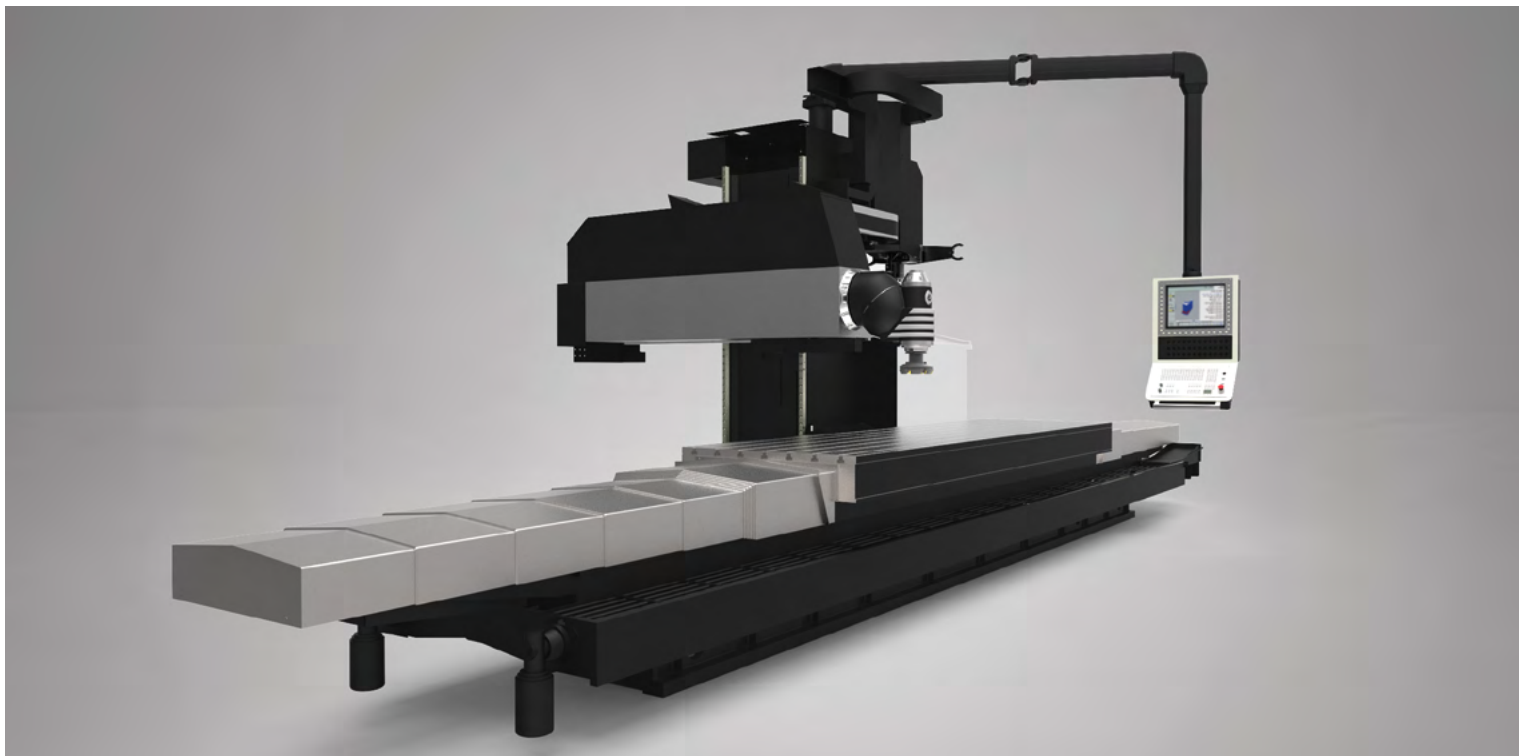
Full cast iron, enabling:

- › 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.

HEAVY DUTY MACHINE

A heavy machine compared to other bed type milling centres on the market, supports workpiece loads up to 7,800 kg.



LINEAR GUIDING SYSTEM

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

- › 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 and minimum maintenance
- › INA linear guiding system with recirculating cylindrical rollers on each axes (X-Y-Z) guarantees immense stability and high precision



HIGH ACCURACY

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



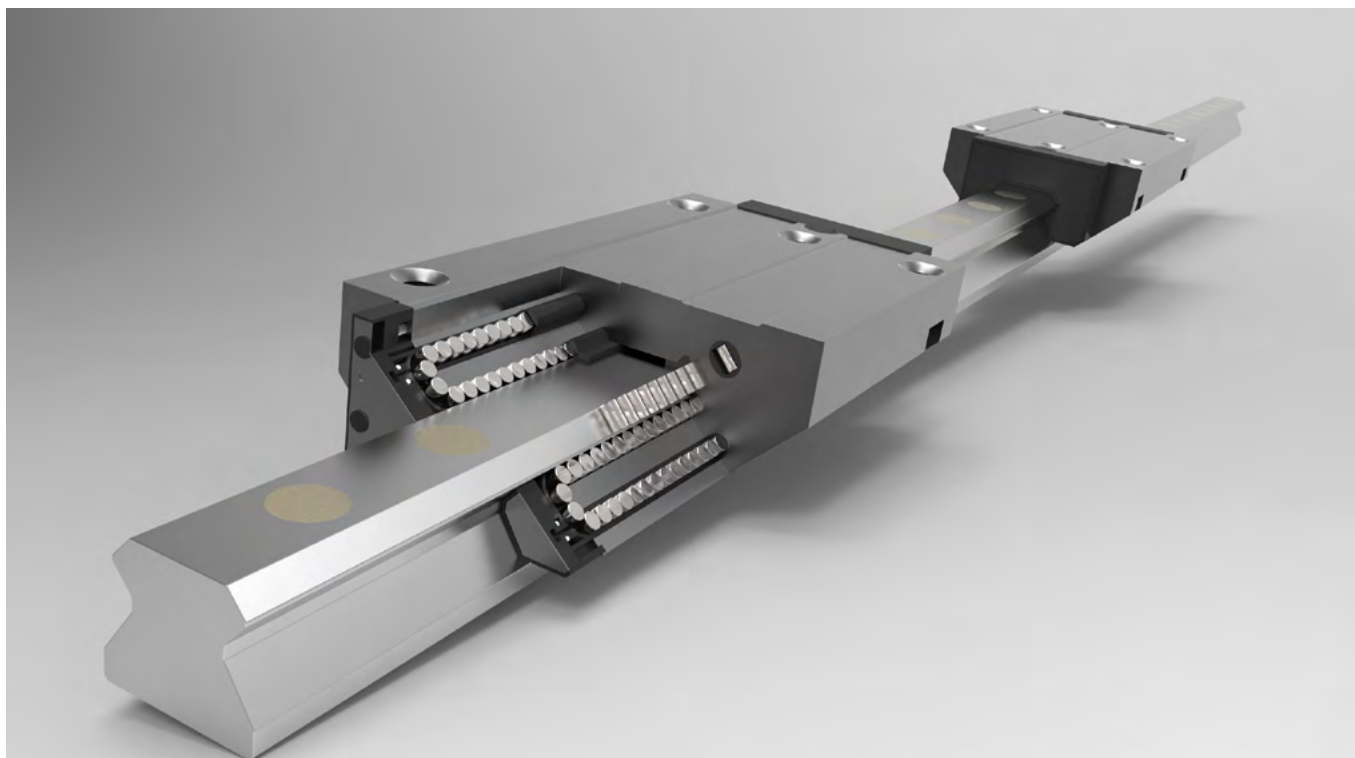
INCREASED PRODUCTIVITY

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 oil consumption



THE NEXT LEVEL OF INNOVATION

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



ADAPTIVE CONTROL



Optimum performance under control

Automatic adjustment of the defined cutting parameters depending on the real machining situation that is permanently monitored by the Adaptive Control Algorithm integrated into the CNC of the machine.

This way, when the real working load on the spindle is less than programmed (less material than expected), the machine can speed up the feed, shortening the machining time. By contrast, when the working load is higher than programmed (more material than expected), the machine automatically slows down the feed to protect the machine and the workpiece.

The technology that supports this development is based on processing the signals transmitted from the monitoring process system to the machine control unit.

This technology is indicated for roughing and semi-finishing process.

- › Optimum cycle time
- › Unattended machining
- › Increased machine and tool life

SSV



High performance in complex machining

Consists of a continuous variation of the spindle speed to distort chatter generation. Gap between surface undulations needs to be varied continuously.

- › Higher productivity
- › Downtime reduction
- › Longer tool life
- › Significant improvement of the machined surfaces

TOTAL MACHINE

THE COMPLETE WORKING AREA ANALYSED FOR AN OPTIMAL RESULT

The new SORALUCE TA-A / TA-D / TA-M generation is based on a complete revision of the machine from the user's point of view, focusing on improving operation efficiency and developing the 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 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.

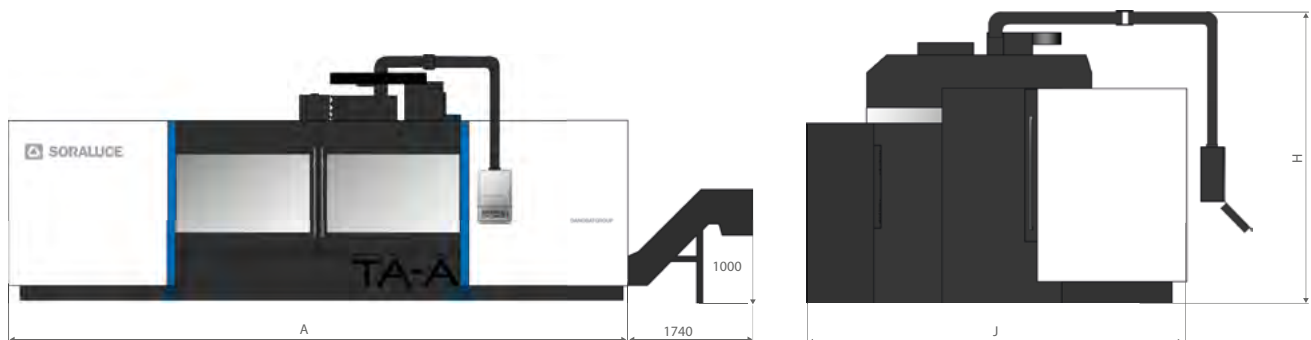
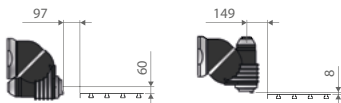
With this new design concept, SORALUCE has added to its equipment a large number of innovations, not only with the aim of facilitating work and making them a safer to use, but also to simplify maintenance and to minimise stoppage times, this increasing the productivity and profitability of the machine.



TECHNICAL SPECIFICATIONS AND LAYOUT **TA-A**

CHARACTERISTICS		TA-A 20	TA-A 25	TA-A 35
Table area	mm	2200 x 1000	2700 x 1000	3700 x 1000
T slots	mm	1 x 22H8 + 6 x 22H12		
Longitudinal traverse "X" axis	mm	2000	2500	3500
Vertical traverse "Z" axis	mm	1250		
Cross traverse "Y" axis	mm	1200		
Heads		Universal		
Spindle power	kW	22 / 24 / 28		
Spindle nose taper		ISO-50 / HSK-100		
Spindle speed range	min ⁻¹	4000 / 5000		
Rapid traverse	mm/min	25000		
CNC system		Heidenhain TNC 640 / Siemens 840 D SL		
Coolant system		External coolant system over a ring / Internal coolant system up to 70 bar		
Tool magazine	No. tools	20 / 40 / 60		
Maximum table capacity	kg	4675	5700	7800
Machine weight	kg	12500	15500	18500

UNIVERSAL HEAD



	X	Y	Z	A	H	J
TA-A 20	2000	1200	1250	5760	3530	4570
TA-A 25	2500	1200	1250	6760	3530	4570
TA-A 35	3500	1200	1250	8760	3530	4570

Dimensions in mm.

BED TYPE MILLING
MACHINES › **TA-A / TA-D / TA-M**



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TECHNICAL SPECIFICATIONS AND LAYOUT TA-D

CHARACTERISTICS		TA-D 20	TA-D 25
Table area	mm	1000 x 1000 / 1250 x 1250 / Ø 1400	
T slots	mm	1 x 22H7 + 6 x 22H10	
Heads		Electrospindle	
Spindle power	kW	16 / 25 / 74	
Spindle nose taper		HSK-63	
Spindle speed range	min ⁻¹	4000 / 5000 / 12000 / 18000 / 24000	

* Rest of features are same as TA-A

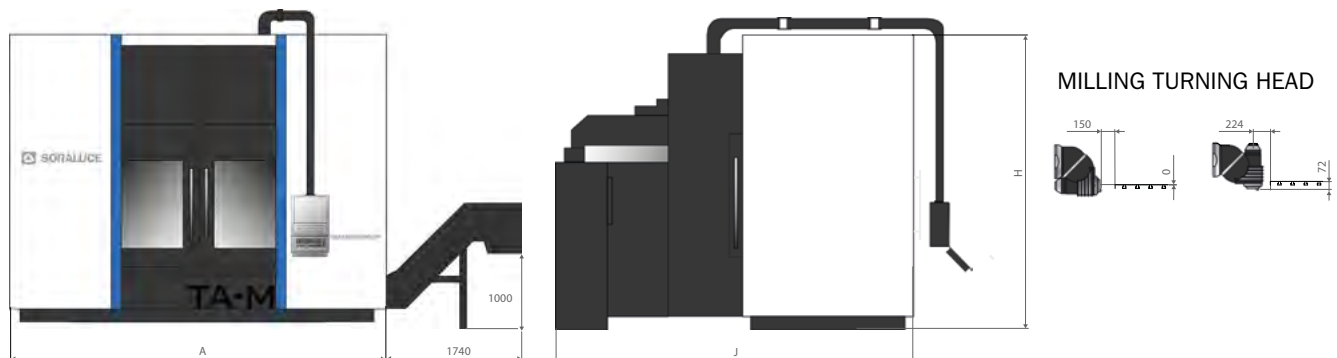


	X	Y	Z	A	H	J
TA-D 20	2000	1200	1250	4800	3640	4855
TA-D 25	2500	1200	1250	5800	3640	4855

TECHNICAL SPECIFICATIONS AND LAYOUT TA-M

CHARACTERISTICS		TA-M 20	TA-M 25
Table area	mm	Ø 1000 / Ø 1250	
Maximun table capacity	kg	8000 by milling / 2000 by turning	
Turning table spindle power	kW	79	
Table spindle speed range	rpm	6 ÷ 400	

* Rest of features are same as TA-A



	X	Y	Z	A	H	J
TA-M 20	2000	1200	1250	4800	4080	4950
TA-M 25	2500	1200	1250	5800	4080	4950

Dimensions in mm.

VERSATILITY HIGHLY CONFIGURABLE

WORK STATION

TA-D model includes an integrated rotary table aimed at general engineering and the mould and die industry.

Maintaining its compactness and ergonomics, the TA-D can also be equipped with vertical stepless positioning heads with high capacity electro spindles, for 5 axis continuous machining.

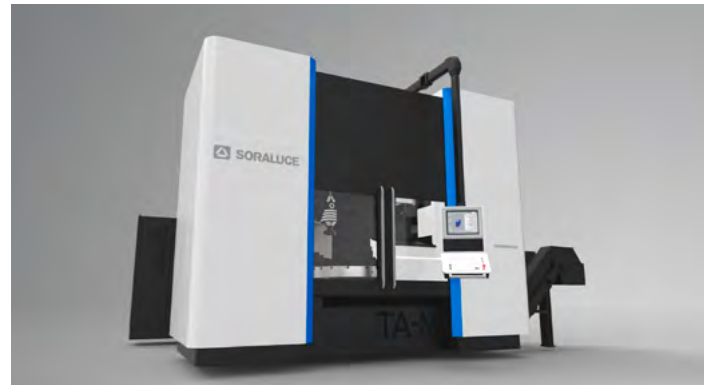
With a table load capacity of up to 7500 kg, the TA-D model is heavy duty 5 axis machine.



MULTITASKING

TA-A can be converted into the TA-M machine that integrates several cutting processes including turning, milling, boring, drilling, and tapping in one machine, offering increased capability and functionality.

TA-M is equipped with a turning table and milling turning head. This head positions and clamps the spindle at any angle for turning operations and enables turning operations in a diagonal direction (interpolation X/Z axes).



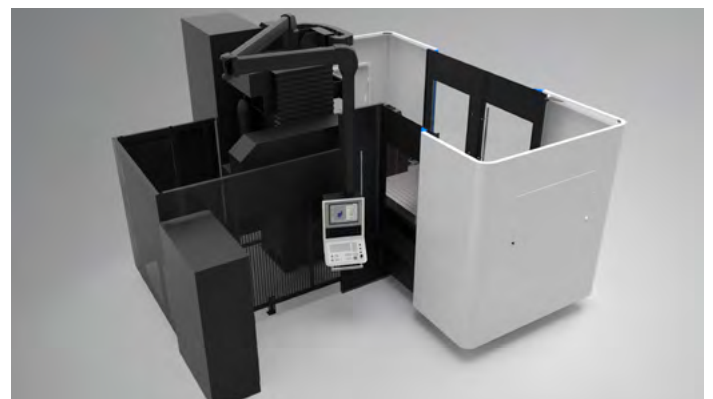
GUARDING SYSTEMS

The machine is equipped with a full peripheral enclosure with two sliding doors at the front and one at the back on the left, providing easy access to the work area from the front and rear. Optionally machine can be equipped with total enclosure.

The CNC control is placed in a pendant arm that can be positioned at the front or rear-side of the machine, depending on customers preference, to provide proper operational control.



TOTAL ENCLOSURE OPTION



WORKING FROM THE REAR SIDE

TOOL MAGAZINE

- › Tool magazine for 20 / 40 / 60 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 high-end control 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.

WORKING AREA

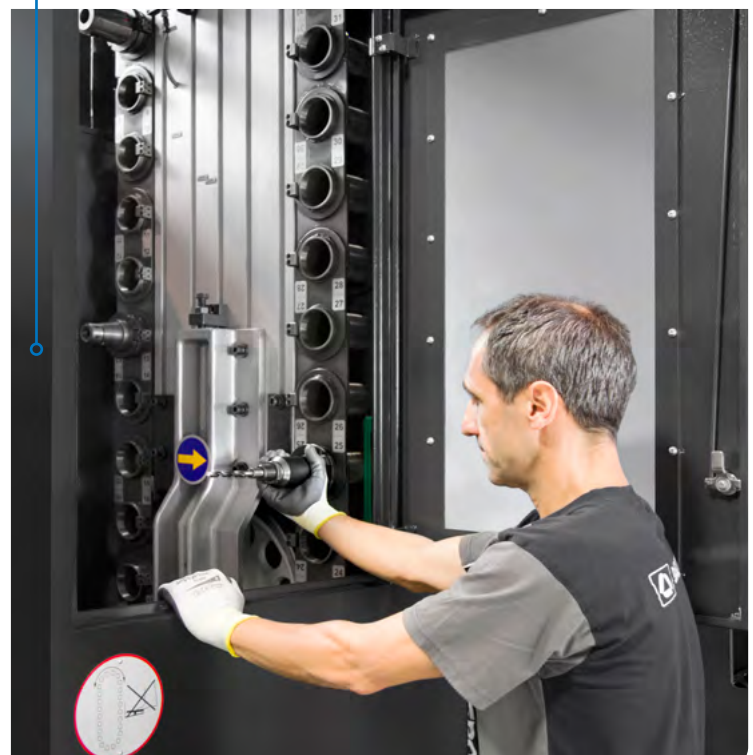
- › Better accessibility to the machine table area
- › Working area perfectly lightened
- › Signalling: better identification of elements
- › More flexible control panel arm; operator can fix the most suitable position
- › Enhanced visibility, ample glass surface
- › Integration of the hydraulic group inside the enclosure, affording clean machine environment

Accessible
table area

Work area
lightening



Easy tool
loading/unloading



TOOL MAGAZINE

- › Full visibility of tool magazine
- › Storage area's closure protecting sensitive items inside it from chips and coolant
- › Access door 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

Spacious
area for
maintenance

Critical areas
protection



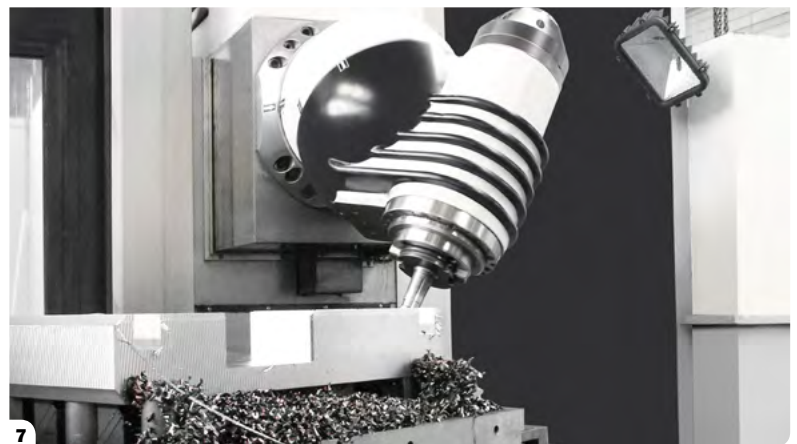
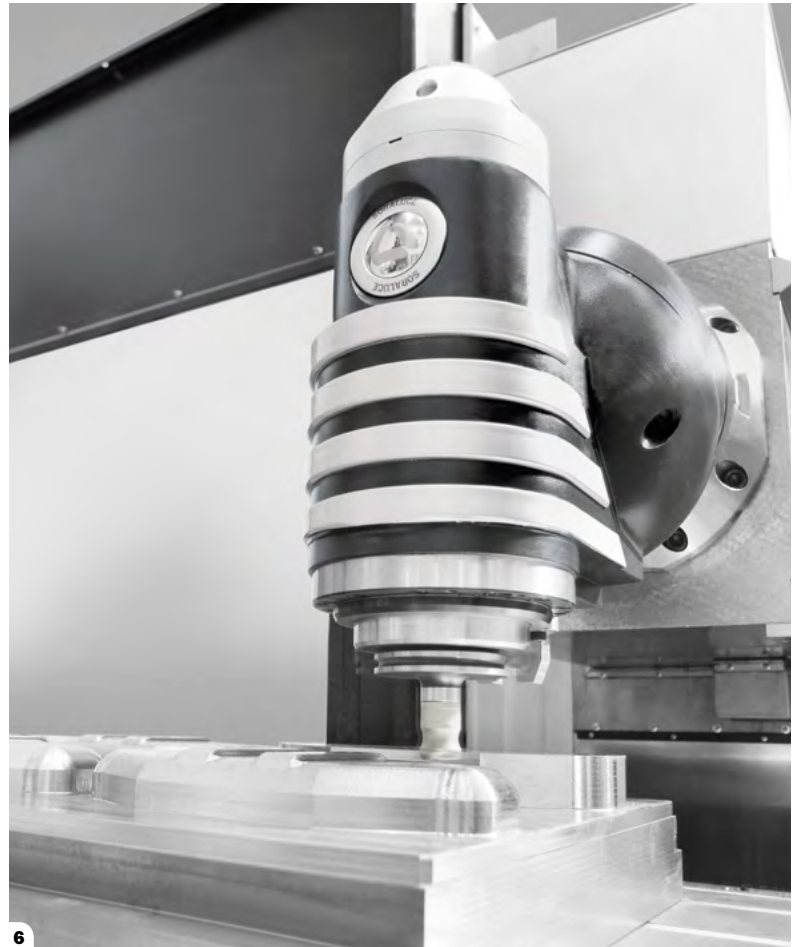
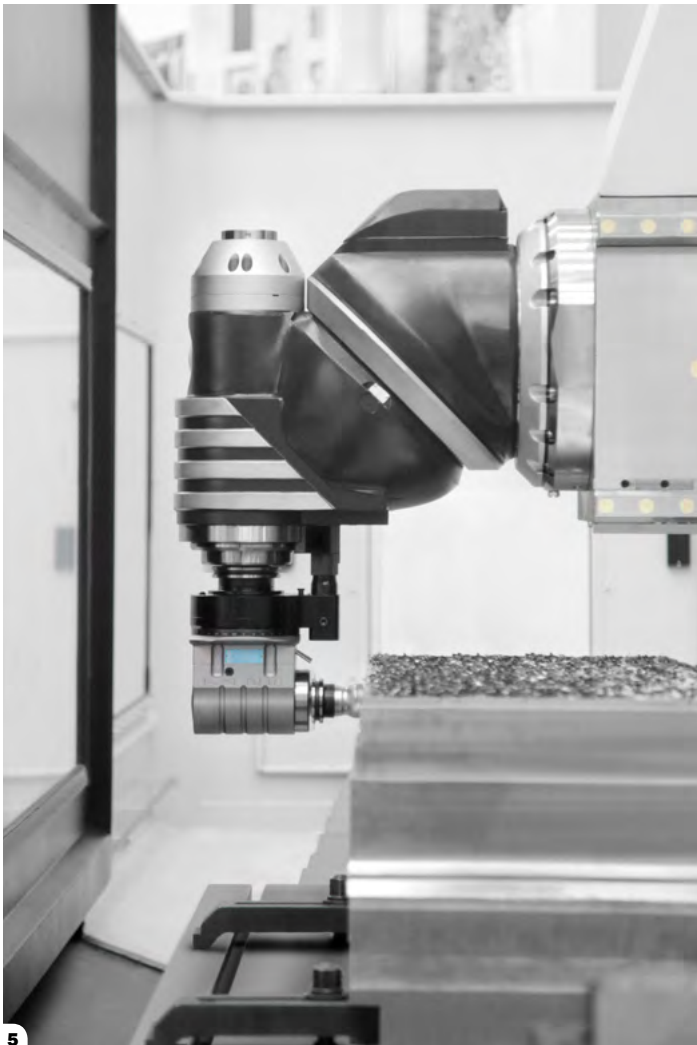
LEADING THE MOST DEMANDING INDUSTRIES

The SORALUCE TA-A / TA-D / TA-M milling centres are notable for their long-lasting precision provided by a strict design and assembly process and high stock removal capacity.

It is the ideal machine range for high precision mould and die manufacturers and medium sized workpiece subcontractors.



- [1] Mould measuring operation
- [2] High stock removal with milling disc, machining grooves and channels
- [3] 5 axis machining with stepless positioning vertical head and high capacity electro spindle
- [4] Rough and finish mould machining
- [5] Inverse milling operation with auxiliary head
- [6] Mould surface finishing operation
- [7] Extremely flexible machining with universal head and integrated rotary table option



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SORALUCE

Osintxu auzoa
P.O. Box 90
E-20570 BERGARA (Gipuzkoa) Spain

Tel.: +34 943 76 90 76
Fax: +34 943 76 51 28
soraluce@soraluce.com
www.soraluce.com

