

genesis

High-speed 5-axis machining center



CMS is part of the SCM Group, technological world leader in processing a wide variety of materials: wood, plastic, glass, stone, metal and composites. Across the globe, the Group's companies act as a solid, reliable partner to the main manufacturing industries in various product sectors: from furniture to construction, the automotive, aerospace and nautical industries to plastic machining. SCM Group supports and coordinates the development of a system of industrial excellence in three large, highly specialised production centers employing more than 4,000 workers and operating in all 5 continents. Globally, SCM Group represents the most advanced skills in the design and construction of machines and components for industrial machining.

CMS SpA produces machinery and systems for machining composites, carbon fibre, aluminium, light alloys, plastic, glass, stone and metal. It was founded in 1969 from an idea by Pietro Aceti with a view to providing custom-designed, state-of-the-art solutions based on an expert knowledge of the customer process. Important technological innovations, generated by significant investments in research and development as well as the purchase of premium companies, has ensured a steady growth in the various reference sectors.



CMS Plastic Technology produces numeric controlled machining centers and thermoforming machines to machine plastics and offer technologically advanced solutions. The brand stems from a winning synergy between technical-industrial experience in thermoforming at the historical Villa company, founded in 1973 and CMS' long-standing expertise in routing. Thanks to constant investments in research and innovation, CMS Plastic Technology is recognised as a unique partner for the entire process: from thermoforming to trimming, right up to the production of models and moulds, guaranteeing maximum productivity.

CMS Plastic Technology plays a key role in numerous sectors including the automotive, aerospace industries, earth moving machinery, caravans, buses, the railway industry, production of bath tubs, technical items, visual communication, mechanical components and packaging.

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APPLICATIONS



mass transport | electromedical and cosmetics | groundmoving machines | caravans | trains



sanitaryware | wellness | automotive | refrigeration



Unparalleled.
New.
Innovative.
Quality.
Ultra.
Effective solutions.

The **UNIQUE** cnc machines.

High-speed 5-axis machining center

GENESI

TECHNOLOGICAL BENEFITS

5-AXIS MACHINING CENTER FOR HIGH SPEED MACHINING

Machining center with fixed bridge and moving plates specifically designed for high-speed processing of plastics and composite materials, capable of offering exceptional movement dynamics to ensure high productivity even when dealing with large sized parts. The advanced structural design guarantees a reduction of the vibrations generated by the processing and a great finish quality.

- Large working areas for the greatest productivity freedom even in the case of high-drawing thermoformed parts.
- Working areas can be configured in a wide range of ways (pendular cycle or single zone with coupled plates).
- The design aimed at optimizing the number of machine components, obtained thanks to the most advanced design systems combined with the experience of CMS, guarantees reduced recommissioning times despite the abundant working dimensions of the machine.
- Smart4Cut programming system dedicated to the optimized generation of the trimming path. Based on interactive software and portable keyboard with joystick and touch screen for the management of all CNC functions. It allows the creation of the cutting program starting from the 3D model or directly from the sample piece mounted on the machine, it automatically eliminates all unnecessary movements, minimizing the cycle time.



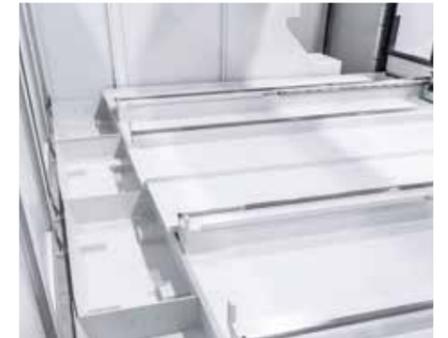
Operator panel

Panel PC console completely developed internally, with protection degree IP53 and fanless cooling system. 21.5" multi touch screen. Numerical control with possibility to choose between CNC OSAI and GE FANUC



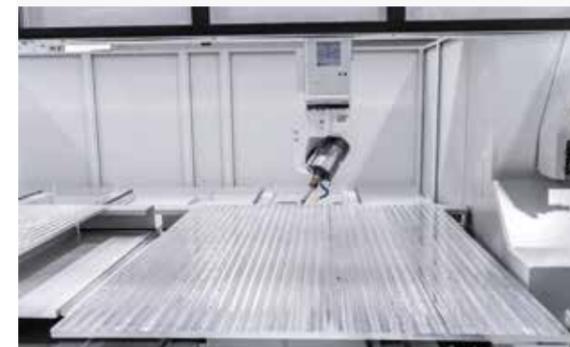
Operating Units

A complete range of 5-axis single-spindle operating units with tool changer and revolver to cover any processing need, guaranteeing optimized cycle times for every piece typology and in any cutting condition.



Chip and scraps collection

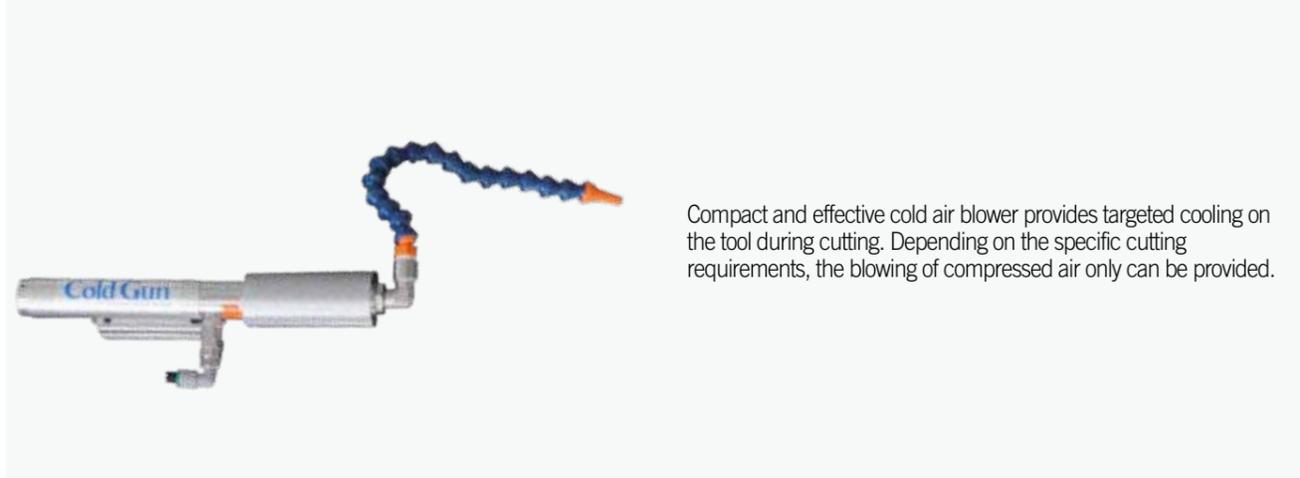
Chips collection system with removable wheeled rear tanks. Thanks to the movement of the plates that favors the collection of swarf from the cutting operation, they represent the most ergonomic, functional and fastest solution to keep the work area clean and efficient.



KEY BUYER BENEFITS

- + **Cycle time reduction:** maximum responsiveness and speed of the moving parts thanks to the stability of the fixed bridge: Dedicated dynamics, both in acceleration and braking, for trimming large parts.
- + **17% reduction of the overall machining time** also thanks to the mobile working plates characterized by the highest performances in the market both in the repositioning and interpolation phases.
- + **Optimization and exploitation** of volumes also for high-drawing parts: The rigid structure of the fixed bridge in a single block allows a great vertical excursion of the operating unit, guaranteeing minimum space requirements and, at all times, the best accuracy and cutting tolerances.
- + The mobile plates, which can be used in a pendular cycle or in a single zone with coupled plates, allow the cutting of pieces up to 6 meters wide, guaranteeing external dimensions as close as possible to the working strokes.
- + **Reduced programming and contouring times:** Avoids repositioning thanks to the CX5 operating unit, the operating unit with the most extended rotating axis in the XY plane on the market. 15% reduction in cutting and programming times for contouring cuts.

ACCESSORIES



Compact and effective cold air blower provides targeted cooling on the tool during cutting. Depending on the specific cutting requirements, the blowing of compressed air only can be provided.

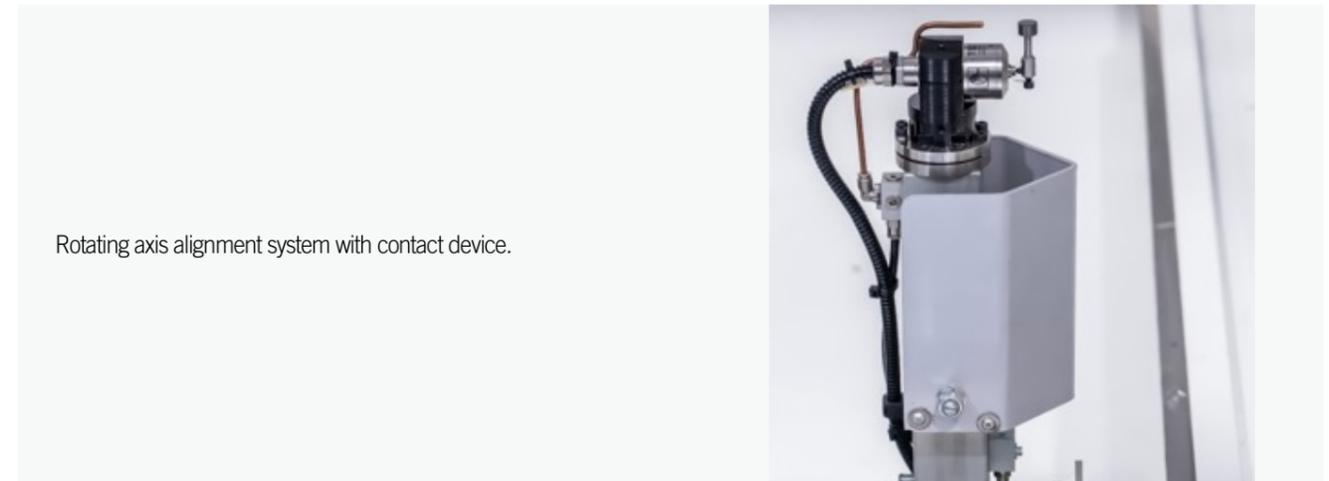


Rotating axis alignment system with laser for measuring tool diameter and length.



Fixed separation bulkhead, ideal solution for maximizing the volumes that can be processed in pendular cycle.

Removable for processing on coupled plates.



Rotating axis alignment system with contact device.



Additional 8-station toolholder magazine that permits the management of tools and blades characterized by heavy weight and large size, and at the same time provides protection of the toolholder body.



Dust evacuation system for an efficient air exchange and dust abatement within the work area.

ACCESSORIES



Probing device mounted on the toolholder with transmission of the signal via radio.



Suction cups and reference devices for maximum locking flexibility of the part.

Air/vacuum distributor able to provide compressed air and vacuum both directly and commanded by code M.



5-axis extraction hood for concentrated extraction in the cutting zone. Pneumatic opening for tool change and release.



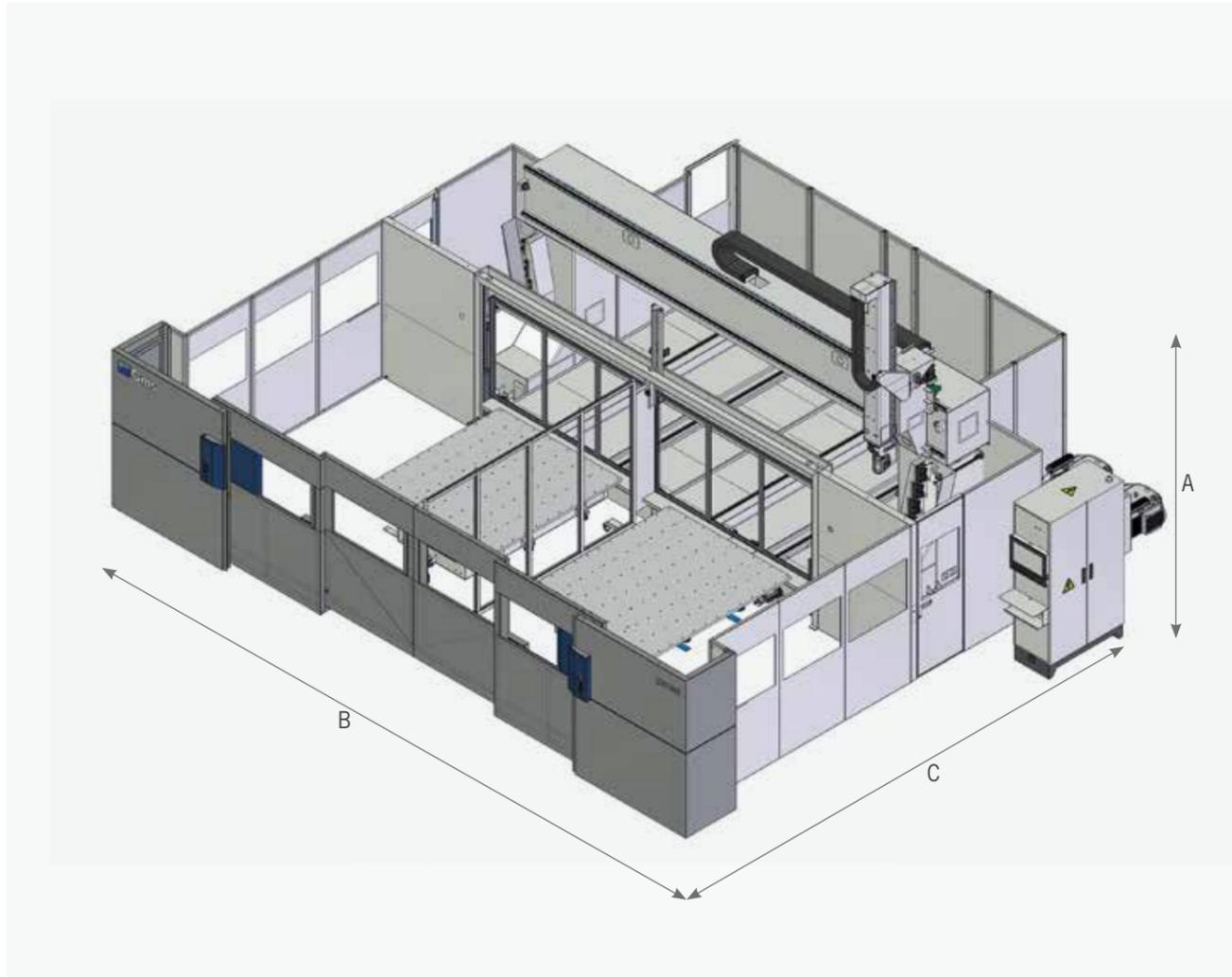
Integral cabin for restraining dust and reducing Noise.



Rear belt for evacuating chips.

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TECHNICAL INFORMATION



A (mm)	Z AXIS STROKE (mm) 1400	
	4750 4900 (with roof)	
B (mm)	X AXIS STROKE (mm)	
	4000	6000
	8000	10000
B (mm) with electrical cabinet	8600	10600
C (mm)	Y AXIS STROKE (mm)	
	8300	
C (mm) with control panel	2855	

STROKES AND SPEED

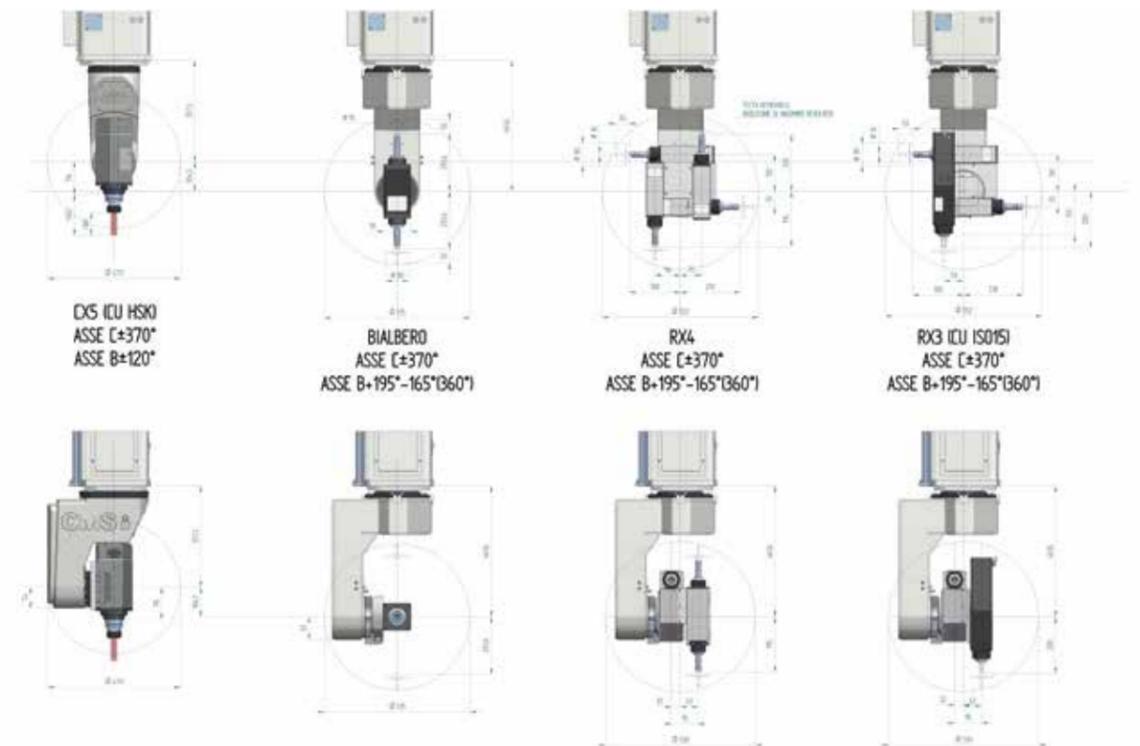
MODEL	AXIS STROKES					RAPID				
	(mm)			(°)		(m/min)			(°/min)	
	X	Y/W	Z	B	C	X	Y	Z	B	C
6035	6000	3500	1400	±120	± 370	90	90	70	B	C
4035	4000									

OPERATING UNIT AND ELECTROSPINDLES WITH TOOL CHANGER

MODEL	RATED POWER OUTPUT (S1)	MAXIMUM POWER OUTPUT (S6)	MAXIMUM RPMs	TORQUE (S1)	TOOL CHANGER	COOLING
	Kw S1	Kw S6	Rpm	Nm S1	Connection	
CX5	8,5	10	24000	6,8	HSK 63F	Liquid
CX5 10	10	12	24000	8	HSK 63F	
CX5 8	8	9	40000	5,2	HSK 32E	

REVOLVER-TYPE UNIT

MODEL	N°	RATED POWER OUTPUT (S1)	MAXIMUM POWER OUTPUT (S6)	MAXIMUM RPMs	TORQUE (S1)	TOOL	COOLING
		Kw S1	Kw S6	Rpm	Nm S1	Connection	
DS (Double Shaft)	1	2,2	3	24000	0,87	Max. Ø10mm	Compressed air
RX3	2	1,1	1,4	30000	0,31	Max. Ø10mm	fan
	1	0,7	1,1	40000	0,37	ISO 15	Compressed air
RX4	4	1,1	1,4	30000	0,31	Max. Ø10mm	fan



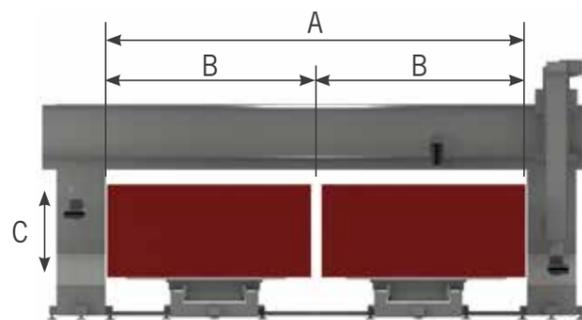
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TECHNICAL INFORMATION

TOOL CHANGER MAGAZINES		
	STANDARD	OPTIONAL
No. OF STATIONS	8	16
STATION DISTANCE BETWEEN CENTERS (mm)	100	100
MAXIMUM DIAMETER WITHOUT LIMITATIONS (mm)	90	90
MAXIMUM DIAMETER WITH LIMITATIONS (mm)	250	250
MAXIMUM TOOL LENGTH (mm)	300	300
SINGLE TOOL MAXIMUM WEIGHT (Kg)	3	3

WORKABLE CUBE		
MODEL	WITHOUT BULKHEAD	WITH BULKHEAD
X	A (mm)	B (mm)
6000	5200	2550
4000	3200	1550
Y	(mm)	
3500	2550	2550
Z	C (mm)	
1400	1080	1080

Dimensions referred to gripper wire with ER/ETS32 toolholder (tool length 65mm+80mm) on CX5 (pivot 114 mm)



WORKING TABLES

STANDARD

FLAT ALUMINUM TABLE WITH M10 THREADED HOLE, INTERAXEL SPACING 275X190 (MM)
 WORKING TABLE DIMENSIONS 1000X2350 PER LA GENESI 4035
 WORKING TABLE DIMENSIONS 2000X2350 FOR GENESI 6035



OPTIONAL

MULTIFUNCTION SUCTION TABLE WITH VACUUM GRIP PASS OF 120 MM AND GROOVE 40MM



CMS connect the IoT platform perfectly integrated with the latest-generation CMS machines

CMS Connect is able to offer customised micro services through the use of IoT Apps that support the daily activities of industry operators - improving the availability and use of machines or systems. The platform displays, analyses and monitors all data from connected machines. The data collected by the machines in real time become useful information increase machine productivity, reduce operating and maintenance costs and cut energy costs.



CMS active a revolutionary interaction with your CMS machine

Cms active is our new interface. The same operator can easily control different machines as the "CMS Active interfaces maintain the same look&feel, icons and iteration approach.



APPLICATIONS

SMART MACHINE: Section designed for the continuous monitoring of machine operation, with information on:

Status: machine status overviews. The representations provided allow machine availability to be checked - to identify possible bottlenecks in the production flow;

Monitoring: instantaneous, live display of the operation of the machine and its components, of currently running programs and potentiometers;

Production: list of machine programs run within a given timeframe with best time and average running time;

Alarms: active and historical warnings.

SMART MAINTENANCE

This section provides a first approach to predictive maintenance by sending notifications when machine components indicate a potentially critical state associated with reaching a certain threshold. In this way, it is possible to take action and schedule maintenance services, without any down-time.

SMART MANAGEMENT

Section designed for KPI presentation for all the machines connected to the platform. The indicators provided assess of the availability, productivity and efficiency of the machine and the quality of

the product.

MAXIMISED SECURITY

CMS Connect uses the standard OPC-UA communication protocol, which guarantees the encryption of data at Edge interface level. CMS Connect's Cloud and DataLake levels meet all state-of-the-art cyber-security requirements. Customer data are encrypted and authenticated to ensure total protection of sensitive information.

ADVANTAGES

- ✓ Optimisation of production performance
- ✓ Diagnostics to support components warranty optimisation
- ✓ Productivity increase and downtime reduction
- ✓ Improvement of quality control
- ✓ Maintenance costs down

EASE OF USE

The new interface has been especially developed and optimized to be immediately used via touch screen. Graphics and icons have been redesigned for user-friendly and comfortable navigation.

ADVANCED ORGANIZATION OF PRODUCTION

Cms Active enables configuring different users with different roles and responsibilities according to the operation mode of the machining centre (e.g.: operator, maintenance man, administrator, ...).

It is also possible to define the work shifts on the machining centre and then survey activities, productivity and events that have occurred in each shift.

ABSOLUTE QUALITY OF THE FINISHED WORKPIECE

With CMS Active the quality of the finished workpiece is no longer jeopardized by worn-out tools. The new Tool Life Determination system of CMS Active sends warning messages when the tool life is running out and recommends its replacement at the most appropriate time.

TOOL SET-UP? NO PROBLEM!

CMS Active guides the operator during the tool magazine set-up phase, also allowing for the programs to be run.

THE RANGE OF CMS PLASTIC TECHNOLOGY

FOR PLASTIC PROCESSING

3/5-AXIS CNC MACHINING CENTERS (passage in Z up to 500 mm)



TRACER



TIME



EVOTECH

5-AXIS CNC MACHINING CENTERS (passage in Z from 500 mm)



ATHENA



ANTARES



ARES



GENESI

BEAM SAWS



HELIX

SAWS



T-MAXI

THERMOFORMING MACHINES



EIDOS



BR5 CS



BR5 S



BR5 SPECIAL SPA



MASTERFORM

WATERJET CUTTING SYSTEMS



TECNOCUT PROLINE



TECNOCUT SMARTLINE



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