PLASTIC

athena

High-speed 5-axis machining center









Cms
plastic technology

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

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.

scm group
Industrial Machinery and Components

Cms | your technology partner



athena

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a company of scm group

APPLICATIONS









mass transportation | electromedical and beauty | earth moving machines | caravans | trains









healthcare items | marketing and distribution | automotive | refrigeration









ATHENA
TECHNOLOGICAL ADVANTAGES

HIGH SPEED 5-AXIS MACHINING CENTER
Mobile gantry machining center designed for high speed machining of plastic and composite materials capable of offering exceptional dynamic movement to ensure excellent productivity. In addition to reducing the vibrations generated by machining (thanks to its cross beams) and offering excellent finish quality, the new base structure helps the operator when preparing the work, thanks to:

- Large access area with door opening and closing system based on electric motors, pinion and rack for faster, smoother, more fluid movement.
- Possibility of managing the work areas as a single area, or divided in two by a central partition for a much faster machining process
- New "support surface" for jigs, with fine pitch fastening holes to facilitate jig positioning.
- Smart4Cut programming system is dedicated to the optimization of the trimming path. Interactive software, a portable keypad with joystick and touch screen provide the operator the ability to easily manage all the CNC functions. Cutting programs canbe created by starting from the 3d model or directly from the sample piece fitted on the machine,automatically eliminating all unnecessary movements and reducing the cycle time to a minimum.





Operator panel:
PC Panel Console entirely developed internally, with IP53 protection rating and fanless cooling system. 21.5” multi touch screen. Numeric control with option of choosing between CNC OSAI or GE FANUC



Rigid and compact, with spindles from 8 kW up to 10 kW in 24,000 and 40,000 rpm versions for machining workpieces continuously with 5 axes.



Shavings collection system with frontal extraction wheeled tanks. The removable tanks, even with doors closed, are the most ergonomic, functional and rapid solution for keeping the area clean and efficient.

KEY BUYER BENEFITS

+ **Shorter cycle times, responsiveness and speed where and when needed: A macro provides dedicated dynamics during both acceleration and braking in order to handle the different stages of the cutting cycle with the same machine. The macro and the CMS S4C programming software can reduce overall processing times by 13%, thanks to a reduction in repositioning spaces.**
+ **Optimization and use of work volumes with non-configurability limitations:** Minimum space taken up and maximum use of factory space in proportion to workable cubic space for all versions.
The rigid, compact structure has been designed to follow the working travel as closely as possible. Extensive configuration options, the possibility of pendulum operation and the availability of versions with extractable (APC) and rotary (TR) worktables make Athena the ideal solution for trimming plastics
+ **Safety always comes first: This machine is designed in accordance with the latest safety regulations to ensure not only maximum operational reliability, but also a safe, protected working environment for the operator**

ATHENA APC
ECHNOLOGICAL ADVANTAGES

All the potential of the Athena machine with the advantages of the APC (Automatic Pallet Change) extractable work tables that permit loading and unloading outside the work area for maximum accessibility to the tables and in an area protected against dust and noise. The APC system's operating modes are as follows:

- with tables in pendulum: the tables enter the work area independently or alternating
- with paired tables: the two tables are paired to create a single, extensive working zone

KEY BUYER BENEFITS

+ **Greater scope for your efficiency: The APC (Automatic Pallet Change) solution ensures easy loading and unloading outside the work area, allowing a 20% reduction in handling times. Moreover, heavy loads can be handled easily with the aid of external machinery or equipment.**



ATHENA TR
TECHNOLOGICAL ADVANTAGES

Athena is also available in the rotating table version (TR) that simplifies the loading and unloading outside of the machine and allows for the pendulum cycle using the whole work area.

- easy insertion of the machine in the company production layout
- reduced loading/unloading times
- opportunity to automate loading and unloading function

The rotating table (TR) is controlled by a numeric control axis to guarantee speed, accuracy, repeatability of the positioning and reliability.

KEY BUYER BENEFITS

+ **Greater volume to your productivity:** The TR version combines the productivity of the pendulum cycle and the ease of loading and unloading outside the work area, making full use of Athena's exclusive workable cubic space
+ **Automatic workpiece loading/unloading cycle: This machine model adapts easily to an automatic workpiece loading and unloading cycle, with the aid of robots. Having a single loading and unloading point simplifies robot programming.**



ACCESSORIES



A compact and effective cold air blower provides targeted cooling on the tool during cutting. Compressed air alone can be blown, depending on specific cutting needs



8-station tool storage that allows tools with a significant weight to be handled while simultaneously providing pressurized protection to the tool holder

Minimal lubrication fitted with control unit and capacious tank



Re-alignment system of rotating axes with laser to measure tool length and diameter





The 3-position conveyor bulkhead is the ideal solution for maximizing the workable volumes in the pendulum cycle



Contact sensor for checking and restoring rotary axes

ACCESSORIES



Dust extraction system for effective air change and dust abatement within the work area



Integral cabin to contain dust and reduce noise



Probe device fitted on the tool holder with transmission via radio signal.



Suction and reference blocks for maximum flexibility in locking the piece

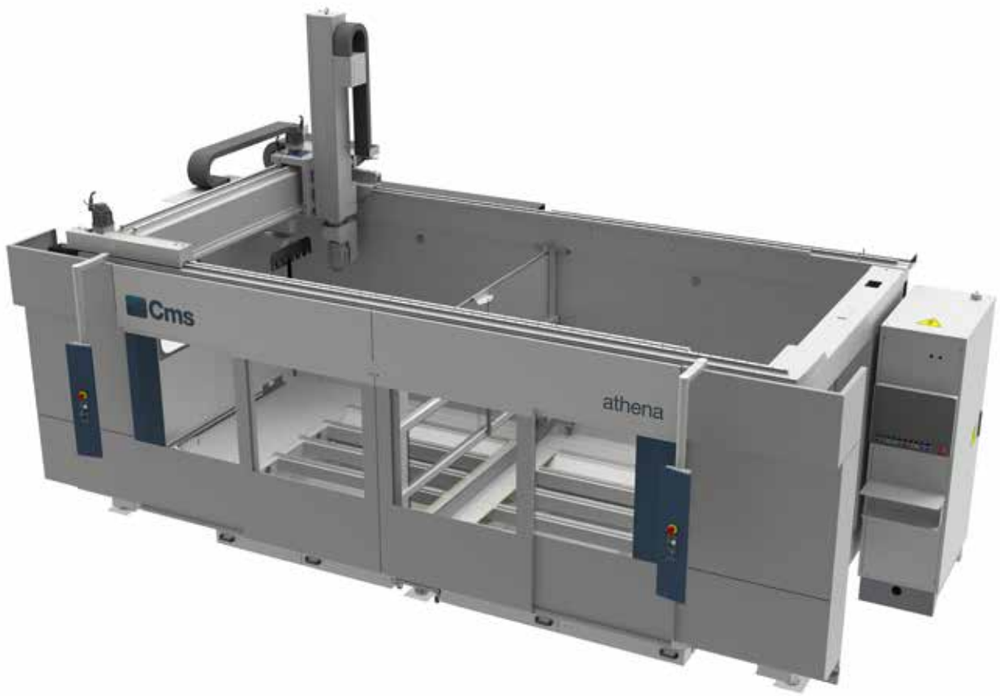


Air/vacuum distributors capable of supplying compressed and vacuum air both directly and commanded by M code



Conveyor belt under the table for chip removal

ATHENA
TECHNICAL DATA



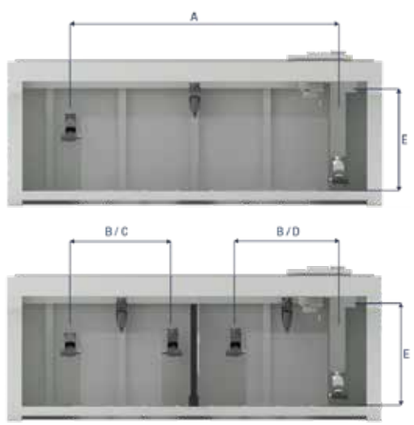
MACHINING UNIT AND ELECTRO-SPINDLE

MODEL	NOMINAL POWER *(S1)*	MAXIMUM POWER *(S6)*	MAXIMUM RPMs	TORQUE *(S1)*	TOOL CHANGE	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	

WORKABLE CUBIC SPACE

MODEL	NO BULKHEAD	WITH BULKHEAD	WITH CONVEYOR BULKHEAD	
X	A *(mm)*	B *(mm)*	C *(mm)*	D *mm)*
2000	2012			
3000	3012	1175	1390	1450
4000	4012	1675	1890	1950
5000	5012	2175	2390	2450
Y	*(mm)*			
1500	1142			
2000	1642			
Z	E *(mm)*			
800	621			
1200	1021			

Figures refer to clamp threading with ER/ETS32 tool holder (length 65 mm) on CX5 (pivot 114 mm)



ATHENA: STROKES AND SPEED

MODEL	AXES STROKES					RAPIDS				
	(mm)			*(°)*		*(m/min)*			*(°/min)*	
	X	**Y**	**Z**	**B**	**C**	**X**	**Y**	**Z**	**B**	**C**
2015	2200	1500	900 / 1200	±120	± 370	90	90	60	14000	
3015	3200									
4015	4200									
5015	5200									
3020	3200	2000	900 / 1200	±120	± 370	90	90	60	14000	
4020	4200									
5020	5200									

ATHENA APC: STROKES AND SPEED

MODEL	AXES STROKES					RAPIDS		
	(mm)			(°)		(m/min)		
	X	**Y**	**Z**	**B**	**C**	**X**	**Y**	**Z**
4025	4370	2500	1200	± 120	± 370	90	60	40
5025	5370							

ATHENA TR: STROKES AND SPEED

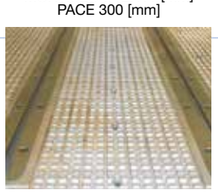
MODEL	AXES STROKES					RAPIDS				
	(mm)			(°)		(m/min)			(°/min)	
	X	**Y**	**Z**	**B**	**C**	**X**	**Y**	**Z**	**B**	**C**
2015	2200	1500	900	±120	± 370	90	90	60	14000	
3015	3200	1500	900	± 120	± 370	90	90	60	14000	
4020	4200	2000	900	± 120	± 370	90	90	60	14000	

TOOL CHANGE STORAGES

	STANDARD	OPTIONAL		
NO. OF STATIONS	6	12	8*	16*
STATION INTERAXIS (mm)	100	100	80	80
Ø MAX WITHOUT LIMITATIONS (mm)	90	90	70	70
Ø MAX WITH LIMITATIONS (mm)	250	250	200	200
MAXIMUM TOOL LENGTH (mm)	300	300	300	300
MAXIMUM WEIGHT OF INDIVIDUAL TOOL (Kg)	3	3	5	5

* With pressurised protection

WORKTABLES

STANDARD	MULTI-LAYER SUCTION	ALUMINIUM SUCTION	AL + T-MORTISES SUCTION	ALUMINIUM WITH BUSHES
STEEL FRAME SECTION TABLE WITH 50X20 ALUMINIUM STRIPS MACHINED IN M10 THREADED HOLE MACHINE	PHENOLIC MULTI-LAYER SQUARING 30 / 30 [mm]	ALUMINIUM QUARING / 30 [mm] FASTENINGS / M8 PACE / 150 [mm]	ALUMINIUM SQUARING / 30 [mm] FASTENINGS / M8 PACE / 150 [mm] MORTISES w12H11 [mm] PACE 300 [mm]	SMOOTH ALUMINIUM WITH THREADING PACE HOLES (to be defined) M THREAD (to be defined)
				

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 poten- tially critical state associated with reaching a certain threshold. In this way, it is possible to take action and schedule maintenance ser- vices, 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. 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-theart 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

EASY 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, maintainance 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

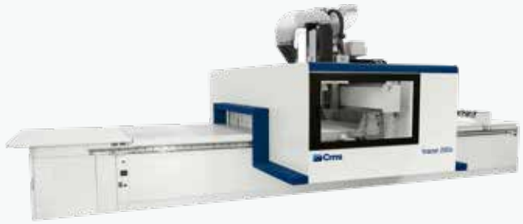
With CMS aActive the quality of the finished workpiece is no longer jeopardized by worn-out tools. The new Tool Life Determination system of CMS Active sends warning messages when the tool life is running out and recommends its replacement at the most appropriate time.

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

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

FOR PLASTIC PROCESSING

BEAM SAWS



HELIX

SAWS



T-MAXI

THERMOFORMING MACHINES



EIDOS



EIDOS SE



BR5 SPECIAL SPA



MASTERFORM

WATERJET CUTTING SYSTEMS



TECNOCUT PROLINE



TECNOCUT SMARTLINE

PCATHENA-1124E

The technical specifications are not binding and can be changed by CMS without prior warning.
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