ADVANCED MATERIALS

ares

Monobloc cnc machining center for vertical milling

Cms
advanced materials technology

CMS is part of SCM Group, a technological world leader in processing a wide range of materials: wood, plastic, glass, stone, metal, and composites. The Group companies, operating throughout the world, are reliable partners of leading manufacturing industries in various market sectors, including the furniture, construction, automotive, aerospace, ship-building, and plastic processing industries. SCM Group coordinates, supports, and develops a system of industrial excellence in three large, highly specialized production centers employing more than 4,000 workers and operating in five continents. SCM Group: the most advanced skills and know-how in the fields of industrial machinery and components.

CMS SpA manufactures machinery and systems for the machining of composite materials, carbon fiber, aluminum, light alloys, plastic, glass, stone, and metals. It was established in 1969 by Mr Pietro Aceti with a vision of offering customized and state-of-the-art solutions, based on the in-depth understanding of the customer's production needs. Significant technological innovations, originatingfrom substantial investments in research and development and take-overs of premium companies, have enabled constant growth in the various sectors of reference.

Cms
advanced materials technology

CMS Advanced Materials Technology is a leader in the field of numerically controlled machining centers for the working of advanced materials: composites, carbon fiber, aluminum, and light alloys. Substantial investiments in research and development have allowed the brand to always be on the forefront of cuttingedge design, with machines that ensure best-in-class performance in terms of accuracy, speed of execution, and reliability; meeting the needs of customers operating in the most demanding divisions.

Since the early 2000's, **CMS Advanced Materials Technology** has established itself as a technology partner in areas of excellence such as aerospace, aviation, automotive, race boating, Formula 1, and the most advanced railway industry.

scm group | industrial machinery and components

Cms | your technology partner

ares

a company of scm group

APPLICATIONS



carbon fiber components | aluminum parts | F1 & motor sport




marine industry | defence | automotive | aeronautics




Unparalleled.

New.

Innovative.

Quality.

Ultra.

Effective solutions.

The UNIQUE cnc machines.

Monobloc cnc machining center for vertical milling

ARES

TECHNOLOGICAL ADVANTAGES

Integrated machining center for vertical milling, ideal for **composite materials, aluminum, light alloys and metals processing.** The advanced design of its structures and the result of CMS's continuous investments in R&D with the sophisticated technological solutions adopted, provide **rigidity** and **precision** over time, and **exceptional movement dynamics.** These features guarantee **quality finishing levels, unparalleled accuracy and a high productivity level.**

- **Very large working areas** for maximum productivity freedom, wide range of electrospindles, fully designed and manufactured within the SCM Group.
- **Wide configurability of the working** areas (single zone or pendular cycle).
- **Precision** suited to the most demanding applications **(aerospace, motor sports, etc.)**
- **CMS Adaptive Technology,** function integrated into the control that allows the operator to achieve **maximum removal parameters** of material on a specific surface by simply calling up the relevant mapping. CMS Adaptive Technology **significantly reduces cycle times** on complex surfaces without compromising the finishing quality and precisions.

PRODUCING MORE IS BETTER: TODAY AND TOMORROW
The advanced design of the structure, the work of CMS' research center and the technical solutions adopted, guarantee **rigidity and precision over time** to the point when top **quality finishing and accuracy of the pieces** become a fixed feature of your production over the years. The ares machine accuracy is the best-in-class in its industry category: **+23% machining precision and accuracy.**

NO LIMITS CONFIGURABILITY
Ares has **large working areas** to offer **maximum freedom** and **new production opportunities.** The extensive configurability of the working areas with the option of pendular working, as well as the possibility versions with extractable (APC) and rotating (TR) tables, make the ares machine the solution that can genuinely change every company.

THE POWER OF INNOVATION
All **the electrospindles are fully designed and manufactured within the group** and are the result of 30 years of experience and continuous innovation. The extensive range means our customers always have the electrospindle with the ideal torque, power and rpm features for their machinings, **maximising the machine's productivity.** In addition to the milling units, it is possible to add on an ultrasound cutting unit, combining the two technologies for an **exceptional synergy in machining core materials.**

KEY BUYER BENEFITS

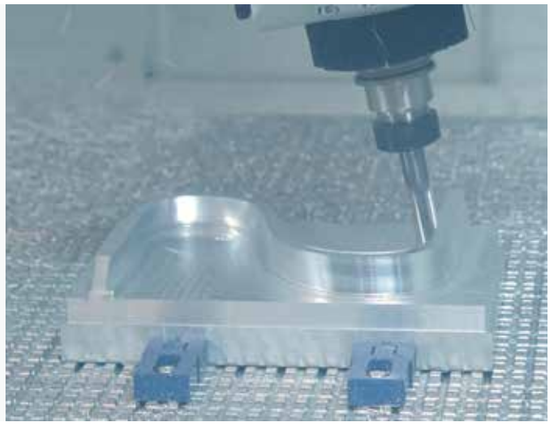
+ **55% higher vibrations absorption**
+ **21% more accurate**
+ **29% faster toolchanger**

CLEANING AND SAFETY: EFFICIENCY FOR SUCCESS
Designed for maximum efficiency in dealing with dust, it is fitted with the most advanced containment and suction systems to guarantee a **clean, safe work environment for operators as well as being fully reliable,** essential requirements for achieving the **highest levels of production efficiency.**

WHAT'S NEW WITH ARES

HDS
HIGH DAMPING STRUCTURE
by Cms

Structure with **excellent rigidity and** vibration **absorption**



The **highest precisions** of the sector

Safety and ergonomics to allow the operator to work efficiently and problem-free

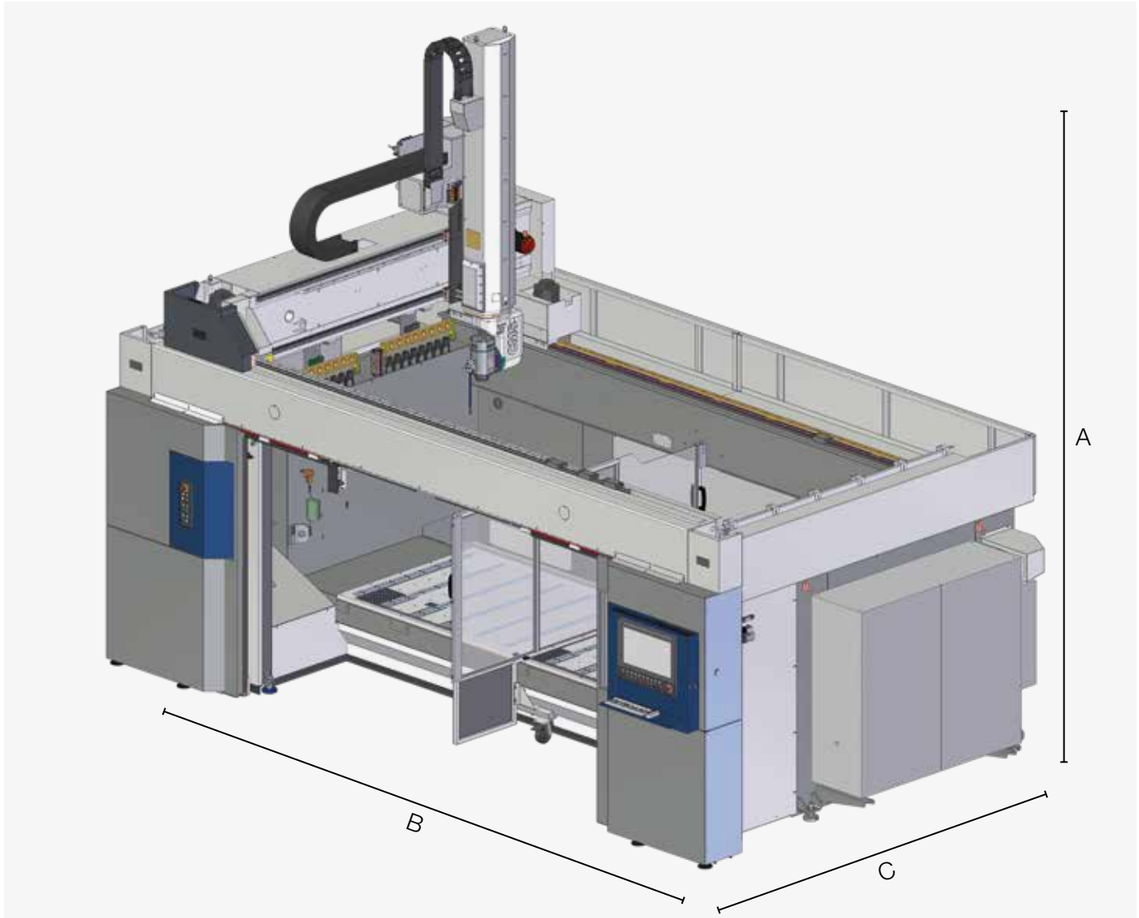
Fast tool changer, up to 66 stations

Dust and **chips management** with **integrated conveyor, new telescopic hood** with high efficiency fluidynamics

Perceived quality: **new design and optimised accessories layout**

Machine developed with **advanced industrialisation** concept to guarantee continuous performance across every model

ARES
OVERALL DIMENSIONS & TECHNICAL DATA



ARES: ENCUMBRANCE (mm)

A	Z AXIS STROKE		
	4450		
B	X AXIS STROKE		
	3600	4800	6000
	6400	7810	9610
C	Y AXIS STROKE		
	1800	2600	
	3675/6750	4525/8700	

ARES: WORKING PLANES

MODEL	DIMENSIONS X (mm)
ARES 3618	3640x1360
ARES 3618 TR	(2430x1100) x 2
ARES 4818	4870x1360
ARES/6018	6070x1360
ARES/3626	3640x2360
ARES/4826	4870x2360
ARES 6026	6070x2360

ARES: STROKES AND SPEEDS

MODEL	AXES STOKES					RAPIDS			
	(mm)			(°)		(m/min)		(°/min)	
	X	Y	Z	B	C	X/Y	Z	B	C
36/18	3600	1800	1200	±120	±270	80	70	9000	
48/18	4800								
60/18	6000								
36/26	3600	2600	1200	±120	±270	80	70	9000	
48/26	4800								
60/26	6000								

ARES APC: STROKES AND SPEEDS

MODEL	AXIS STROKES					RAPIDS			
	(mm)			(°)		(m/min)		(°/min)	
	X	Y	Z	B	C	X/Y	Z	B	C
36/18	3600	1800	1200	±120	±270	80	70	9000	
48/18	4800								
60/18	6000								
36/26	3600	2600	1200	±120	±270	80	70	9000	
48/26	4800								
60/26	6000								

ARES TR: STROKES AND SPEEDS

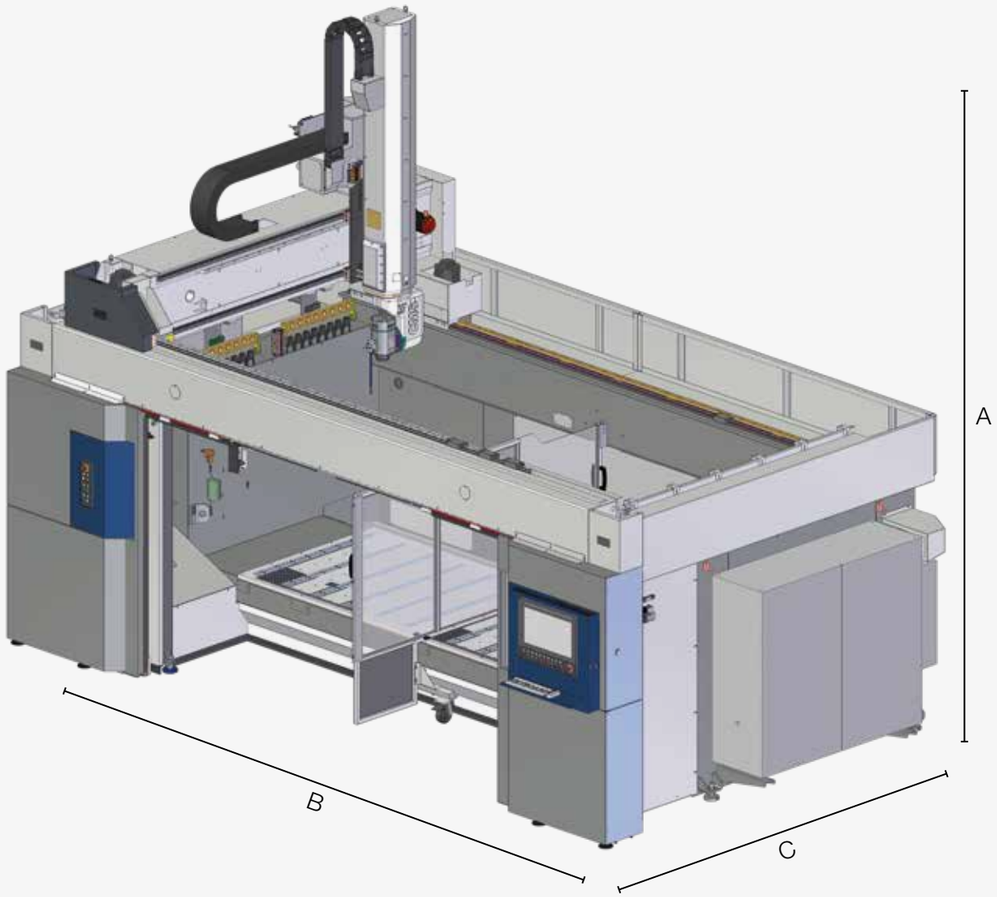
MODEL	AXES STROKES					RAPIDS			
	(mm)			(°)		(m/min)		(°/min)	
	X	Y	Z	B	C	X/Y	Z	B	C
ARES 36/18 TR	3600	1800	1200	±110	±270	80	70	9000	
ARES 48/18 TR	4800	1800	1200	±110	±270	80	70	9000	

PRECISIONS AND REPEATABILITY

LINEAR AXES*	Reference stroke	A	R
X/Y	2000 mm	0.022 mm	0.014 mm
Z	1200 mm	0.018 mm	0.012 mm
B	+/- 120°	26 arcsec	
C	360°	16 arcsec	

* Precision with linear scales and direct encoders on PX5 accuracy (A) and repeatability (R) on the basis of the ISO 230-2 regulations.

ARES
OVERALL DIMENSIONS & TECHNICAL DATA



ARES WORKING UNITS AND ED ELECTROSPINDLES						
	CX5 - 8_40	CX5 - 8,5_24	CX5 - 10_24	PX5/HX5 - 12_24	PX5/HX5 - 15_24	PX5/HX5 - 20_24 (sincronous)
B,C STROKES	B=+\- 110°, C=+\- 360°			B=+\- 120°, C=+\- 270°		
RAPIDV B,C	10800 °/min			9000°/min		
NOMINAL POWER (S1)	8 kW	8,5 kW	10 kW	12 kW	15 kW	20 kW
MAX POWER	9 kW	10 kW	12 kW	14 kW	17 kW	22,3 kW
MAX RPM	40.000 rpm	24.000 rpm	24.000 rpm	24.000 rpm	24.000 rpm	24.000 rpm
MAX TORQUE	6 Nm	8 Nm	9,5 Nm	11,1 Nm	13,8 Nm	20,1 Nm
TOOL CHANGER	AUTOMATIC					
TOOL HOLDER	HSK 32 E	HSK 63 F	HSK 63 F	HSK 63 F	HSK 63 F	HSK 63 A
COOLING	LIQUID					

ARES: TOOL CHANGER MAGAZINES						
	Standard for PX5	OPTIONS				
N. STATIONS	8 on board	Additional 8 on board (not compatible with central safety barrier)	12 on board	20 carousel	8 pick up	48 chain type with exchange lever
HOLDER INTERAXES (MM)	80	80	80	93	80	104
Ø MAX WITHOUT LIMITATION (MM)	70	70	70	85	70	100
Ø MAX WITH LIMITATIONI (MM)	400	400	400	200	400	250
MAX TOOL LENGHT (MM) *	265	165	265	465	465	435
MAX WEIGHT SINGLE TOOL	3 kg	3 kg	3 kg	6 kg	5 kg	6 kg

* Values from the spindle nose.

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 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.

SERVICE
OUR TECHICIANS BY YOUR SIDE ALL OVER THE WORLD

- Training
- Installation
- Remote Customer Care (RCC)
- On-site assistance
- Maintenance
- Changes & Retrofitting
- Spare Parts

A GLOBAL PRESENCE
FOR BEST-IN-CLASS SERVICE

- 36,000 different codes to serve machinery of all ages;
- 1 central warehouse at the headquarters in Zogno and 6 bases around the world fully integrated at IT level and controlled by a shipping optimisation software to reduce waiting times;
- 98% of orders available in stock;
- spare parts guaranteed thanks to a scrupulous control process and validation via our internal quality laboratory;
- availability to draw up recommended spare parts lists based on client needs, to reduce down time to a minimum;

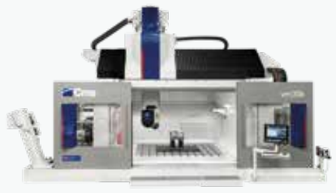
CMS ADVANCED MATERIALS TECHNOLOGY RANGE OF MACHINES

MONOBLOC CNC MACHINING CENTERS FOR VERTICAL MILLING

ARES

ANTARES

ANTARES K



VM 30

ETHOS K

GANTRY CNC MACHINING CENTERS FOR LARGE-SIZE WORK AREAS

MX5

POSEIDON

ETHOS

CONCEPT

HYBRID ADDITIVE MANUFACTURING AND MILLING SYSTEMS

KREATOR ARES

MONOBLOC CNC MACHINING CENTERS FOR HORIZONTAL MILLING

IKON

FOR COMPOSITE MATERIALS, ALUMINUM AND METAL PROCESSING

FIXED AND MOBILE BRIDGE CNC MACHINING CENTERS

FXB

AVANT

CNC MACHINING CENTER FOR THE EYEWEAR INDUSTRY

MONOFAST

WIND BLADE WORKING SYSTEMS

EOS

CNC MACHINING CENTERS FOR GUNSTOCKS PROCESSING

MULTILATHE

MONOFAST

KARAT

WATERJET CUTTING SYSTEMS

TECNOCUT PROLINE

TECNOCUT SMARTLINE

ACARESS-0422E

Technical data are not binding and may be changed by CMS without prior notice.

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