

# automotive

Machines for the automotive industry



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 3 large highly specialized production centres employing more than 4,000 workers and operating in all 5 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 fibre, aluminium, light alloys, plastic, glass, stone and metals. It was established in 1969 by Mr Pietro Aceti with the aim of offering customized and state-of-the-art solutions, based on the in-depth understanding of the customer's production needs. Significant technological innovations, originating from substantial investments in research and development and take-overs of premium companies, have enabled constant growth in the various sectors of reference.

# automotive

<b>CMS FOR THE AUTOMOTIVE INDUSTRY</b>	4-9
<b>MONOBLOC CNC MACHINING CENTERS</b>	10-13
<b>OPEN FRAME CNC MACHINING CENTERS</b>	14-15
<b>KREATOR ADDITIVE MANUFACTURING AND MILLING</b>	16-17
<b>EIDOS THERMOFORMING MACHINE</b>	18-19
<b>MAXIMA CNC MACHINING CENTER FOR GLASS</b>	20-21
<b>CMS CONNECT - CMS ACTIVE</b>	22-23
<b>THE SCM GROUP</b>	24-25
<b>THE RANGE</b>	26-27

**scmgroup** | industrial machinery  
and components

**Cms** | your  
technology  
partner



# THIS IS THE FUTURE OF THE AUTOMOTIVE INDUSTRY





### High speed 5-axis CNC machining centers for composites, aluminum, metal and solutions for additive manufacturing and milling

CMS Advanced Materials Technology is leader in the field of numerically controlled machining centres for the working of composites, carbon fibre, aluminium, light alloys, metal and solutions for additive manufacturing and milling. Substantial investments in research and development have allowed the brand to always be on the cutting-edge, with machines that ensure best-in-class performance in terms of accuracy, speed of execution and reliability and that meet the needs of customers operating in the most demanding sectors. 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.



### The unique supplier of best-in-class machines for plastic processing since 1973

CMS Plastic Technology produces numerically-controlled machining centres and thermoforming machines for the working of plastic materials, offering technologically advanced solutions. The brand originates from the winning synergy between the technical-industrial expertise in thermoforming of the historical company Villa, established in 1973, and CMS' historical know-how in milling. Thanks to constant investments in research and innovation, CMS Plastic Technology is recognized as unique partner for the whole process: from thermoforming to trimming to the realization of models and moulds, ensuring maximum productivity. CMS Plastic Technology is in the forefront of manifold sectors, such as: automotive, aerospace, earth-moving machinery, caravans, buses, railway industry and production of bathtubs.



### High performance CNC machines and unique integrated lines for glass processing

CMS Glass Technology is an industry leader in the field of curved and flat glass working, with technologically advanced solutions such as numerically controlled machining centers, cutting tables, and water-jet cutting systems. Credited to the tradition and experience, today CMS Glass Technology is an absolute protagonist in this division for the manufacturing of innovative solutions dedicated to architecture and interior decoration.

# CMS FOR THE AUTOMOTIVE INDUSTRY

Thanks to its **tradition and experience**, CMS is the ideal partner for those looking for advanced technologies capable of guaranteeing:

- **the best performance on the market**
- **maximum reliability**
- **top quality technological features**
- **maximum precision**

CMS is the ideal technological partner capable of offering the most suitable solution to each client's specific requirements with machinery designed to meet the increasingly demanding needs of a continually evolving sector.

Thanks to the continuous developments with the R&D department, CMS offers innovative machines, the best digital services right up to the most advanced large format Additive Manufacturing technology. Our added value is aiming to offer excellence through our machines.

The option to have a single processing partner in the automotive industry becomes a real option with CMS.



## WHY CHOOSE CMS MACHINING CENTERS?

- **EXPERIENCE:** more than 30 years of experience and continued technological development in the production of machinery for the automotive industry.
- **RELIABILITY AND EFFICIENCY:** with over 900 machines installed and operational all over the world, CMS and its machining centers are a benchmark for the automotive industry and that's not all. CMS offers successful applications even for clients looking for automation, productivity and maximum reliability.
- **MAXIMUM CONFIGURABILITY:** over the years, CMS has developed different machining units that can be used, even paired, to reduce the operating time of numerous processing by 53%.



# MONOBLOC CNC MACHINING CENTERS FOR THE PRODUCTION OF AUTOMOTIVE COMPONENTS

The range of high speed, best-in-class precision 5-axis machining centers are the ideal solution for creating components with high quality finishing in resin, carbon fiber, aluminum, light alloys, and composite and plastic materials with high quality finishing for the automotive industry.

The CMS machines, based on the selected configuration, allow for the creation of:

- Resin and aluminum models
- Bumpers, dashboards, interiors and door inserts
- Aluminum frame and compounds for batteries
- Alloy wheels
- Aerodynamic parts, roof railing, kick plates and platform coatings
- Carbon fiber and aluminum parts

## ARES

Perfect for processing composite materials, aluminum, light alloys and metals.

Rigidity, precision over time and exceptional movement dynamics guarantee excellent finishings, unparalleled accuracy and high productivity levels.

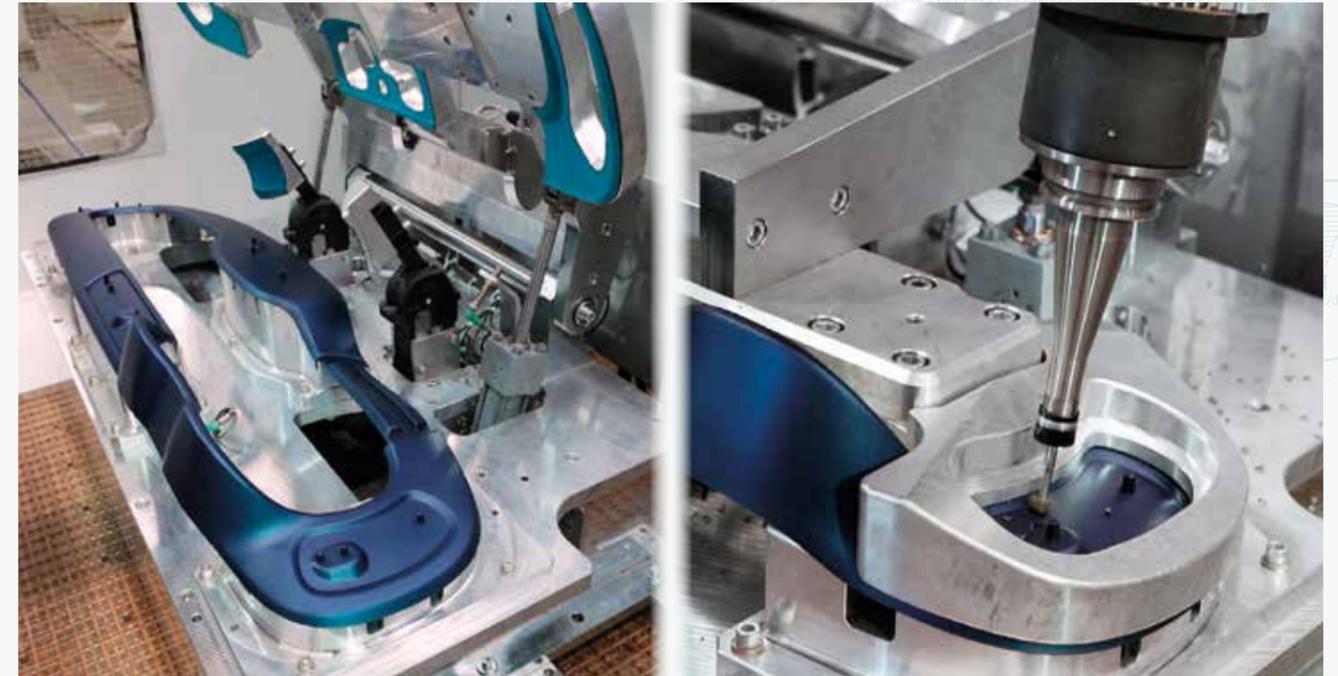


## ANTARES - ANTARES K

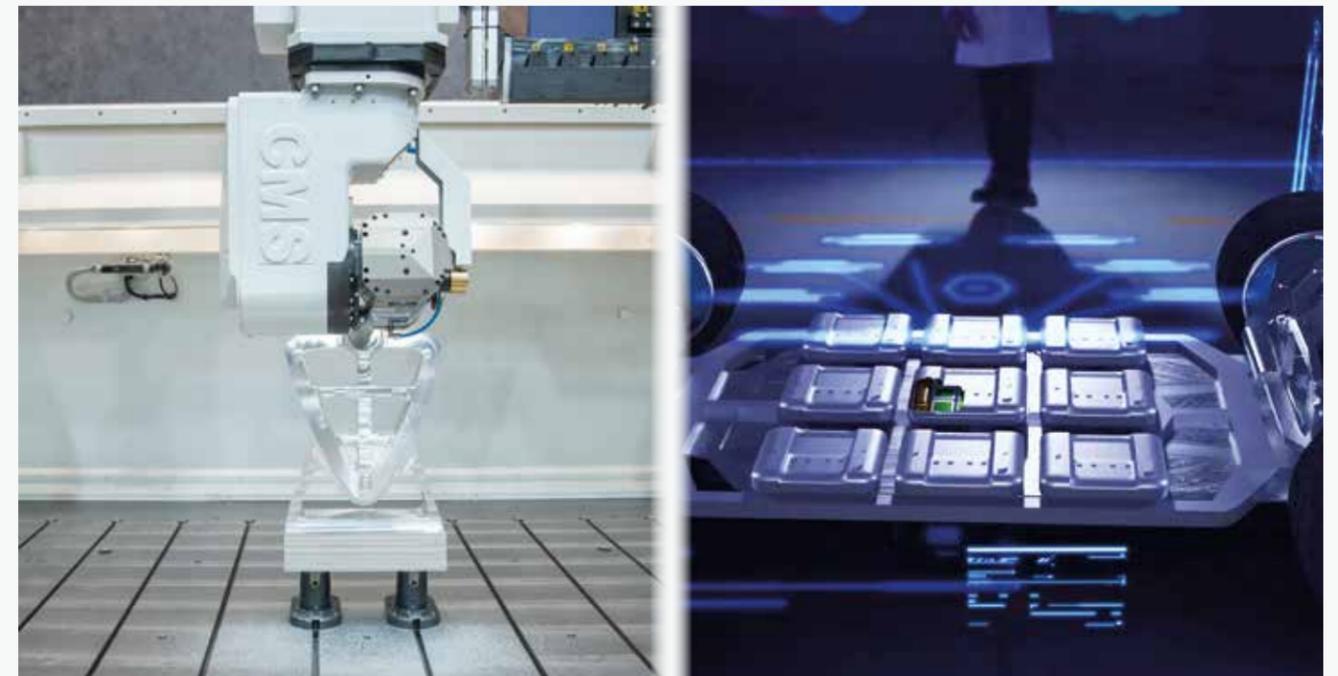
Compact, it fits easily into any production surroundings, guaranteeing an extensive volume of work. Ideal for processing models in composite material, resins, aluminum and light alloys.

## ATHENA

Machining center with maximum flexibility for high speed trimming of thermoformed parts.



Production of a dashboard



Aluminum radiator grille

Frame in composites and aluminum for batteries

# MONOBLOC CNC MACHINING CENTERS FOR THE PRODUCTION OF AUTOMOTIVE COMPONENTS

## ETHOS K

Stability, precision and high-quality processing even under considerable stress.

The wide range of machining units and electro-spindles mean it adapts well to client's needs.



Carbon fiber component for a sports car



## VM 30

The latest entry at CMS, the sturdiest, most precise, and most powerful. Ideal for roughing, and steel and aluminum mold finish.



Creation of a mold for a bumper

## IKON

5-axis machining center with vertical table structure to process components in composite material and aluminum.

Fitted with one or two machining units, it can guarantee high productivity levels.



Longitudinal templates for automobile roofs can be produced using CMS machines

# OPEN FRAME CNC MACHINING CENTER FOR LARGE AND MEDIUM SIZE COMPONENTS FOR THE AUTOMOTIVE INDUSTRY

The **high-speed, 5-axis gantry machining centers** are the ideal solution for creating **medium and large-size automotive components** in resin, clay, carbon, composite materials, plastics, aluminum, and light alloys.

Thanks to the exceptional level of finishing, high-speed processing, reliability, flexibility of use and high productivity levels, they are particularly well-suited to the production of:

- 1 / 1 style models in resin or clay
- Bumpers, aerodynamic elements, and carbon parts
- Structural components

## ETHOS

Machine that can guarantee maximum precision and rigidity. Ideal for processing automobile bodies and structural parts in carbon and not just those in aluminum and cutting fluid.



## CONCEPT

Machine that guarantees rigidity and excellent interpolated-axis dynamics.

Thanks to engines doubled on the axes, high levels of accuracy are guaranteed that are essential for producing models with excellent finishing.

## POSEIDON

Perfect for processing large-sized composite materials, aluminum, light alloys, and metals. Rigidity, precision over time and exceptional movement dynamics guarantee exceptional finishing levels, unparalleled accuracy, and high productivity levels despite the large volumes of work (Y stroke up to 10m).



## MX5

The highly flexible machining center for the high-speed trimming of thermoformed parts, aerodynamic elements, and for 1/1 scale models.



Structural component processing in carbon fiber.



Production of resin model for the automotive industry.

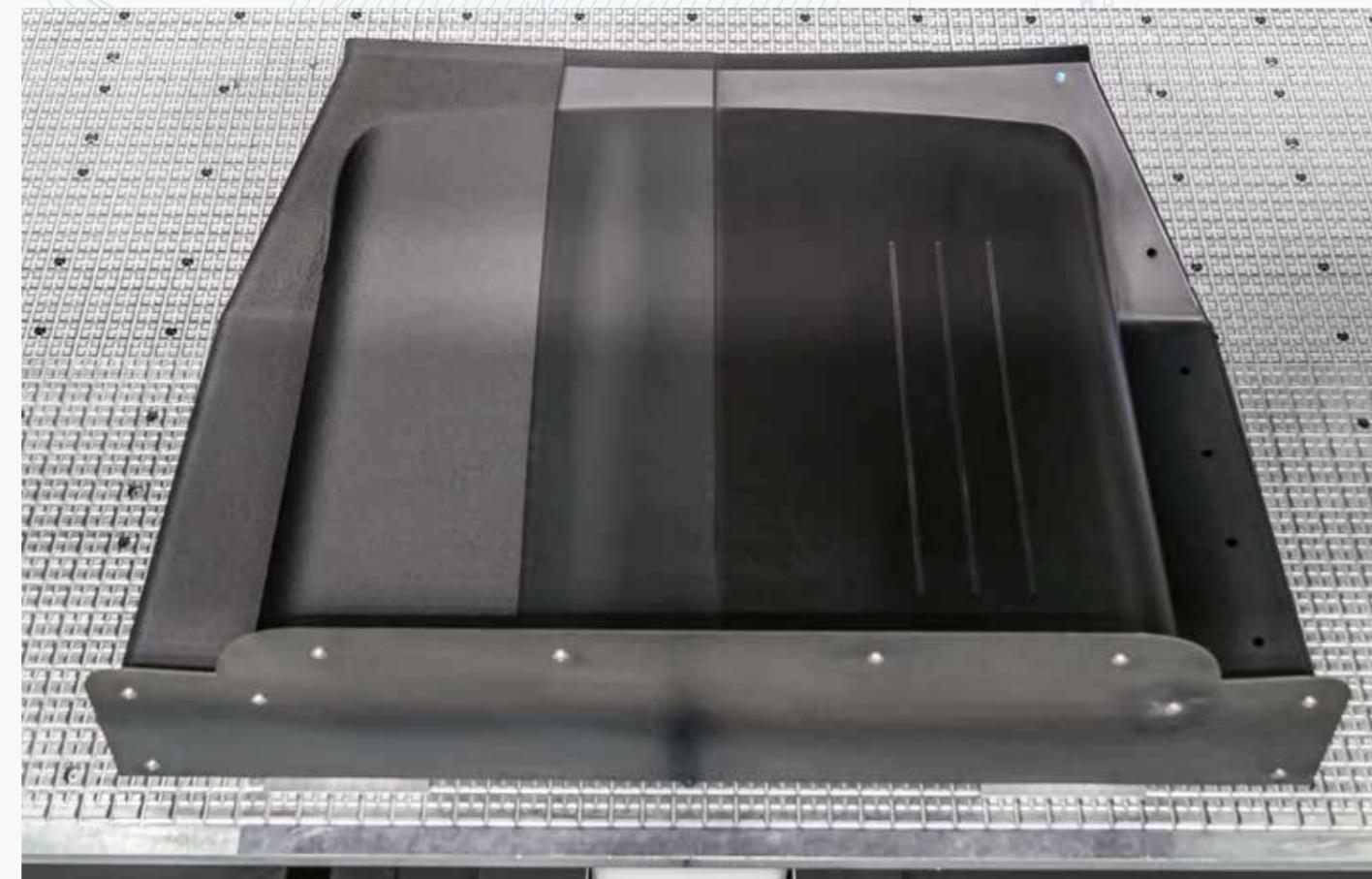
# KREATOR

## HYBRID SYSTEM FOR ADDITIVE MANUFACTURING AND MILLING FOR THE AUTOMOTIVE INDUSTRY

Kreator is a hybrid additive manufacturing and milling system developed by CMS.

**Kreator is an LFAM (Large Format Additive Manufacturing)** solution in a league of its own in boosting the competitiveness of composite processing and other sectors and can be used to produce lamination molds and/or direct molds for automobile bodies and internal parts in CFRP.

The use of Kreator, with standard, high-performance thermoplastics allows for a saving in material (up to 5 times compared to traditional methods) and a shortening of the production cycle, in the case of direct molds.



### KEY BUYER BENEFITS

- + **High Flexibility:** the CMS kreator technology allows for **45° and 90° printing**. This machine permits the use of different kinds of materials: **PA, PP, PESU, PEI, PET, ABS, AIRTECH DAHLTRAM**, and much more..
- + **Material saving:** at least **81% material saving** for manufacturing a part, **compared to current manufacturing technologies and competitors**
- + **Sustainable solution:** more printing speed than large sized FDM and competitors: **printing speed up to 16 m/min.**

# EIDOS

## VACUUM THERMOFORMING MACHINE FOR INTERNAL AND EXTERNAL CAR PARTS

**Eidos**, CMS' new thermoforming machine for vacuum forming is the result of 40 years of experience and development in thermoforming, and it is the **ideal solution for creating thermoformed components of external and internal car parts.**

Eidos, **available in both single station version and with automatic loading/unloading system in different configurations**, guarantees top performance and features an **innovative software for maximum product usability as well as being extremely easy to use.**

Vacuum thermoformed pieces can always be produced with Eidos, guaranteeing excellent quality in the production of:

- ABS bumpers
  - ABS and HPDE platform coatings
  - Aerodynamic elements in ABS and ABS/PMMA
  - TPO or PVC thermal-coated automobile interiors
  - Underbody panels
  - Elements for internal logistics in the assembly plants
- Eidos features:
- The exclusive counter-mold guided with 4 brushless motors that allows you to create details using mechanical molding or to transfer textures directly from the mold (IMG).
  - The new oscillating printer cooling System and high-efficiency heating panels that ensure short processing cycles with reduced energy consumption levels.
  - The high technological content not only guarantees maximum performance but also allows for perfect integrability in compliance with Industry 4.0 standards.

All the process parameters are integrated into the CMS ThermoActive software.



### KEY BUYER BENEFITS

- + **Maximum levels of machining precision:** the frame/counter-mold structure offers increased mechanical stability, guaranteeing the utmost in terms of processing precision.
- + **High productivity:** the new ventilation system, with programmable mobile nozzles, reduces the required cooling time of the formed piece by up to 31%. The "tilting" function allows a regular distribution of the cooling effect.
- + **Control and simplicity:** the new CMS Thermo Active software ensures a simplified, intuitive control of the entire thermoforming procedure. The new graphic representation of the cycle and dashboard for daily production reduce the possibility of errors to a minimum, guaranteeing learning times down 53% compared to previous solutions.
- + **CMS ThermoProphet patented system** for automatic management of heating powers via thermal vision.

# MAXIMA

## 5-AXIS CNC MACHINING CENTERS FOR WINDSHIELD AND CAR WINDOWS

Thanks to its 50 years of experience, CMS Glass Technology is a key player in machining windshields and windows for automobiles with the CMS maxima interpolated 5-axis machining center.

Maxima's automatic tool change to process flat glass sheets of any thickness or curve performs every kind of edge grinding and polishing, seaming, routing, cutting with disc, drilling, contouring, scoring, writing, beveling at various angles and special processing work.

It is the strongest machining center of its kind and is **ideal for processing glass for windshield and bullet proof glass.**

Thanks to its excellent configurability, Maxima is ideal for insertion in automatic plants and "large sheet" glass and more can also be processed.

Maxima features:

- Z-axis stroke from 460 to 900 mm for more complex armored glass processings for automobiles as well as military, naval, aeronautic and special armored glass.
- extensive C axes rotation (4° axis) and B (5° axis) to create bezels with a variable angle of between 0-90° and dynamic variation of the bezel depth. Diamond disc configuration for straight or inclined cuts is available.



Processing of a windshield and car glass.

### KEY BUYER BENEFITS

- + **Zero loading/unloading times:** by splitting the table into two work areas and setting up the machine for oscillating processing, loading and unloading is done while the machine is running.
- + **100% automatic correction of the project:** to guarantee excellent curved glass processing, the machine gages the piece, correcting any discrepancies in the drawing provided.
- + **Easy loading:** thanks to the automatic doors, the machine can be loaded and unloaded in fully automatic mode by a loader, while also guaranteeing complete processing safety for the operator.
- + **Limitless tool racks:** the extensive modularity of the tool racks means the table can be adapted to any need. The tool magazines can be installed at the rear, side or even under beams for a tool change in under 10 seconds.

# 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 to 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

- ✓ Optimization of production performances
- ✓ Diagnostics to support the optimization of component warranty
- ✓ Productivity increase and downtime reduction
- ✓ Improvement of quality control
- ✓ Maintenance costs cut 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 center (e.g.: operator, maintenance man, administrator, ...). It is also possible to define the work shifts on the machining center 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 MOST ADVANCED SKILLS AND KNOW-HOW IN THE FIELDS OF MACHINERY AND INDUSTRIAL COMPONENTS

A technological world leader in processing a wide variety of materials: wood, plastic, glass, stone, metal and composites. The Group companies, operating throughout the world, are reliable partners of leading companies in various market sectors, including the furniture, construction, automotive, aerospace, ship-building and plastic processing industries.

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### INDUSTRIAL MACHINERY

Standalone machines, integrated systems and services dedicated to the processing of a wide range of materials.



Woodworking technologies



Technologies for advanced materials, plastic, stone, glass and metals processing



### INDUSTRIALS PARTS

Technological components for Group and third party machines and plants and for the mechanical industry



Electro-spindles and technological components



Electrical panels



Metalworking and mechanical machining



Cast Iron

### SCM GROUP IN BRIEF

**+700**  
Million/Euro  
in consolidated  
turnover

**+4.000**  
people  
in Italy and abroad

**3** main  
production  
centres

**5** A presence  
on continents  
that is direct and  
widespread

**7%**  
of turnover  
invested in  
R&D

# THE CMS RANGE

# FOR THE AUTOMOTIVE INDUSTRY

## MONOBLOC CNC MACHINING CENTERS FOR VERTICAL MILLING



**ANTARES**



**ANTARES K**



**ARES**



**ATHENA**

## HYBRID ADDITIVE MANUFACTURING AND MILLING SYSTEMS



**VM 30K**



**KREATOR ARES**

## GANTRY CNC MACHINING CENTERS FOR LARGE-SIZE WORK AREAS



**ETHOS**



**MX5**



**CONCEPT**



**POSEIDON**

## THERMOFORMING MACHINES



**EIDOS**

## 5-AXIS CNC MACHINES FOR GLASS



**MAXIMA**



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