

aerospace

Machines for the aerospace sector



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 centers employing more than 4,000 workers and operating in all 5 continents. SCM Group can offer the most advanced expertise worldwide in the design and construction of machinery and components for industrial processing.

CMS SpA manufactures machinery and systems for processing composite materials, carbon fiber, aluminum, light alloys, plastic, glass, stone, and metals. It was established in 1969 by Pietro Aceti, with the aim of offering customized and state-of-the-art solutions based on an in-depth understanding of customers' production needs. Significant technological innovations originating from substantial investments in research and development and take-overs of premium companies have led to constant growth in the various sectors.

aerospace

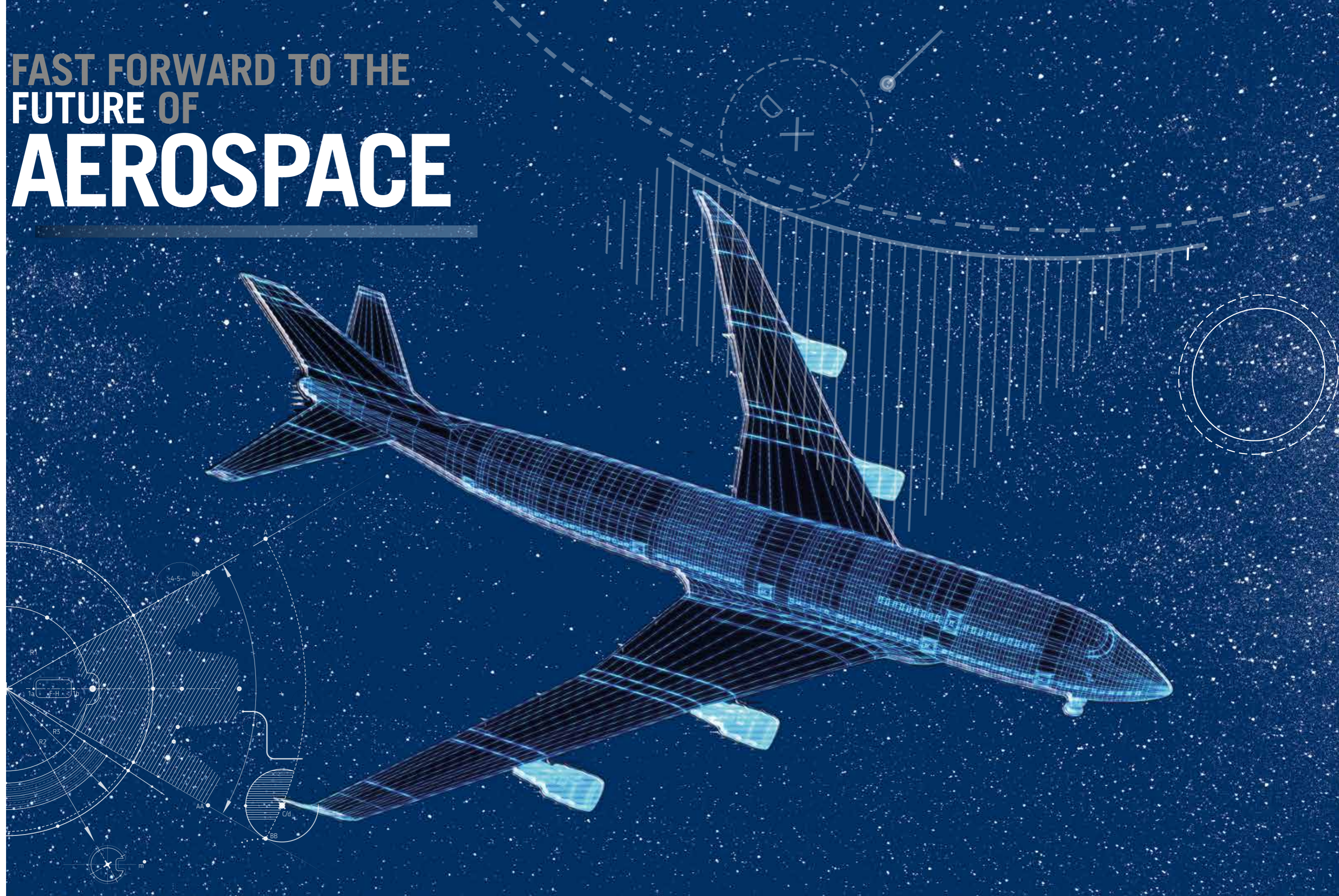
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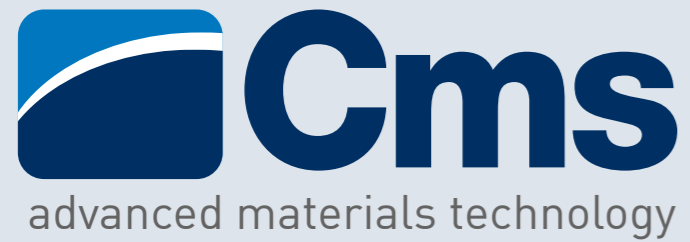
scmgroup | industrial machinery
and components

Cms | your
technology
partner



FAST FORWARD TO THE FUTURE OF AEROSPACE





High speed 5-axis CNC machines for composites, aluminum, metal and systems for additive manufacturing and milling

CMS Advanced Materials Technology is the leader in the field of numerically controlled machining centers for advanced materials processing: **composites, carbon fiber, aluminum, light alloys, metal and systems for additive manufacturing and milling.** Substantial investments in research and development have allowed the brand to always be at the forefront of cutting edge design, with machines that ensure best-in-class performance in terms of accuracy, execution speed and reliability to 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, racing boats, Formula 1, and the most advanced railway industry.**



The unique supplier of the best machines for plastic processing since 1973

CMS Plastic Technology produces CNC machining centers, panel saws and thermoforming machines for processing plastic materials, offering technologically advanced solutions. The brand was established thanks to the winning synergy between the technical and industrial experience in thermoforming of the long-standing company Villa, founded in 1973, and the well-established know-how of CMS in milling. Thanks to constant investments in research and innovation, CMS Plastic Technology is recognized as a single partner for the entire process: from thermoforming to trimming, up to the production of models and molds, to guarantee maximum productivity. **CMS Plastic Technology is a leader in several sectors such as automotive, aerospace, earthmoving machines, caravans, buses, railway industry, signing and production of bathtubs.**

CMS FOR THE AEROSPACE SECTOR

Thanks to tradition and experience, CMS is the ideal partner for those searching for innovative technologies that guarantee:

- **the best performance on the market;**
- **excellent reliability;**
- **extremely high precision;**
- **technological features of the highest level;**

CMS is able to offer the most suitable solutions to the customer's specific requirements, **with machinery able to meet the increasingly demanding needs of a sector in continuous evolution.**

For over 30 years CMS has been producing machines for fabricating **structural parts in aluminum, nesting systems for aluminum panels, milling-drilling-trimming of parts made of composite materials, machining of resin models, parts in reinforced composite, core materials and sandwich panels**, using also **ultrasound** technology. Thanks to a vast range of highly innovative solutions and extremely evolved **digital services**, as well as the latest technologies presented on the market - **Additive Manufacturing** for large formats, CMS guarantees excellence and tailored solutions for all production needs.



Courtesy of  DAHER-SOCATA



WHY CHOOSE CMS MACHINING CENTERS?

- **EXPERIENCE:** over 30 years of experience and continuous technological development in the production of machines for the aerospace sector.
- **RELIABILITY AND EFFICIENCY:** with over 100 machines installed and operating worldwide, CMS, with Ethos, Ares, Antares, Poseidon and now Vm30 machining centers, is a point of **reference** for the aerospace industry and other sectors. CMS offers successful applications for all customers looking for **automation, productivity** and exceptional reliability.
- **MAXIMUM CONFIGURABILITY:** over the years, CMS has developed a **wide range of operating units** with specific features for every type of application and production requirement. The CMS operating units can also be coupled to **reduce the lead time of many processes by 53%.**

MONOBLOC MACHINING CENTERS FOR THE PRODUCTION OF AEROSPACE PARTS

The 3- and 5-axis high-speed monobloc machining centers are the ideal solution for producing parts for the aerospace sector.

CMS machines, according to the configuration chosen, enable the following to be produced:

- Resin and aluminum models
- Trimming of carbon fiber parts
- Machining of parts made of composite and honeycomb materials



ARES

Ideal for machining **composite materials, aluminum, light alloys and metals.**

Rigidity, precision over time and extraordinary motion dynamics guarantee an exceptional finish, unbeatable precision and high productivity.

ANTARES - ANTARES K

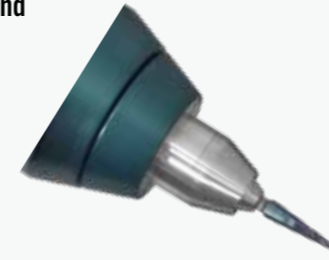
Compact, it can be integrated into any production environment, ensuring high production volumes.

Ideal for machining models made of composite, resin, aluminum and light alloys.



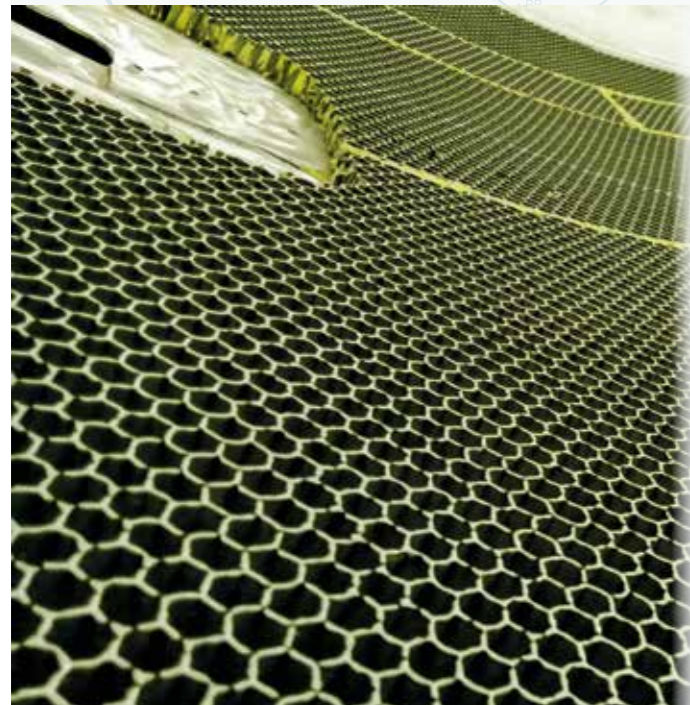
ULTRASOUND CUTTING SYSTEM

The CMS 6-axis ultrasound cutting system is **especially designed for the high-speed cutting of core materials.** The CMS Router/Ultrasound System combination offers solutions that no one else on the market can guarantee.



ATHENA

Machining centers with maximum flexibility for the **high-speed trimming of thermoformed parts.**



Processing of core materials



Parts for UAV ground control stations



Canopies



Molds for the production of seats

MONOBLOC MACHINING CENTERS FOR THE PRODUCTION OF AEROSPACE PARTS

MBB - FXB

Ideal for the **surface milling of aluminum skins** and **STACK machining of aluminum sheets**. Rigidity, precision and excellent working range compared to the dimensions make this machine a benchmark even when **tandem machining**.



Stack machining of aluminum sheets



Surface milling of aluminum skins

CNC MACHINING CENTERS FOR LARGE WORK AREAS FOR PRODUCING PARTS FOR THE AEROSPACE SECTOR

Our 5-axis high-speed and best-in-class precision machining centers are the ideal solutions for fabricating large- and medium-sized parts for the aerospace sector.

Thanks to an exceptional finish, high machining speed, reliability, flexibility of use and high productivity, they are particularly suited for producing:

- Resin or aluminum models
- Trimming of carbon fiber parts
- Machining of parts made of structural composites, light alloys and aluminum.



ETHOS

A machine that guarantees maximum precision and maximum rigidity, ideal for **processing carbon fiber shells, structural parts**, and other components. This machine is also the perfect solution for machining aluminum with coolant.



POSEIDON

Ideal for machining **composite materials, aluminum, light alloys and metal parts of large dimensions**.

Rigidity, precision over time and extraordinary motion dynamics guarantee an exceptional finish, unbeatable precision and high productivity even with large work volumes (Stroke Y up to 10m).



VM 30

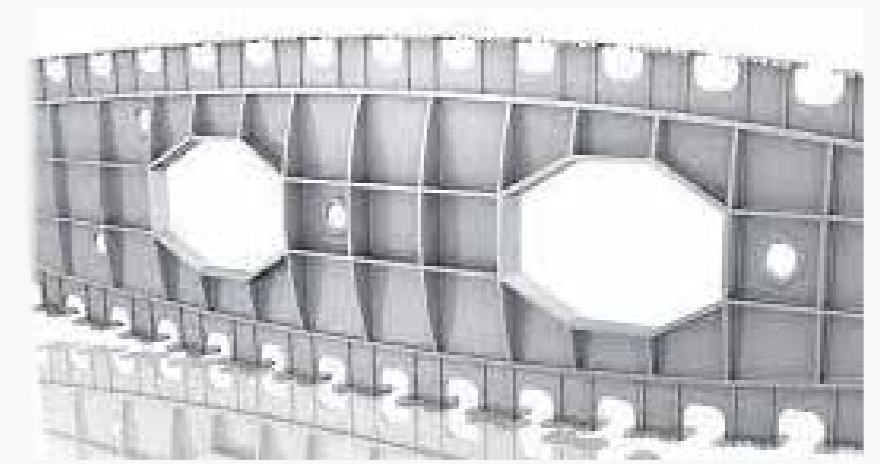
The newcomer from CMS, the most robust, precise and powerful. **Ideal for rough-machining and for finishing steel and aluminum dies.**

UHF: CMS'S UNIVERSAL SYSTEM FOR AUTOMATIC WORKPIECE CLAMPING* (*PATENTED)

CMS has developed a **universal automatic clamping system** that is able in an instant to be reconfigured to follow even **extremely complex shapes of each new workpiece**. No downtime: a revolution in efficiency and production management.



Structural parts made of composite materials



Ribs

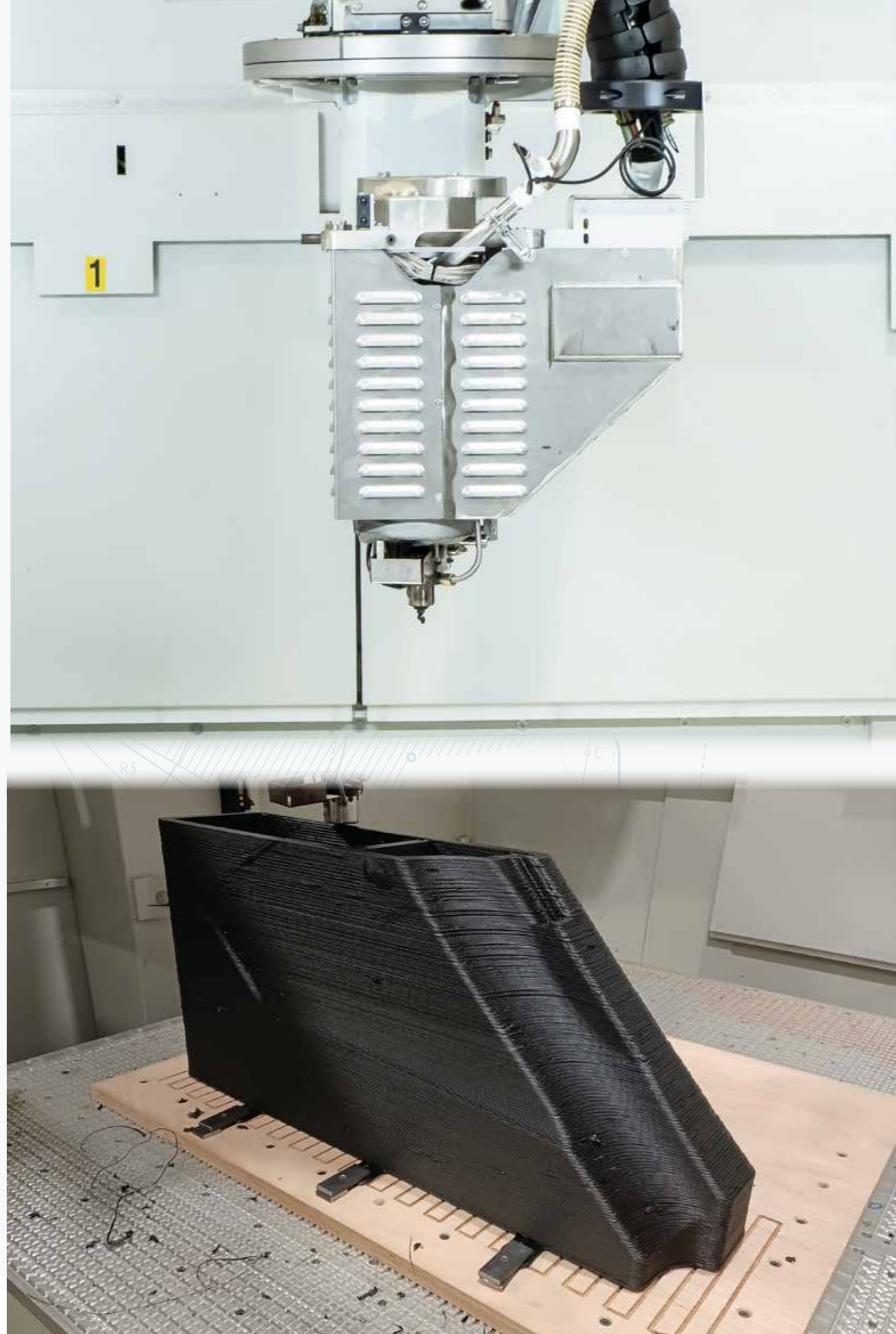
KREATOR HYBRID SYSTEM FOR ADDITIVE MANUFACTURING AND MILLING

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

In 2018, CMS Advanced Materials Technology, leader in the sector of CNC machines for working composite materials began, in collaboration with the prestigious German institution, Fraunhofer Institut, to develop a unique LFAM (Large Format Additive Manufacturing) solution to increase the competitiveness of machining composites and for other sectors.

CMS Kreator can be used to produce lamination dies and / or direct molds for:

- Fairings
- Nacelles
- Other parts made of CFRP.



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:** Above 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.

VACUUM AND HIGH-PRESSURE THERMOFORMING MACHINES FOR AEROSPACE PARTS

CMS's range of vacuum and high-pressure thermoforming machines is the **ideal solution for producing thermoformed components for interior parts used in the aerospace sector.**

These machines are **available in both a single-station version and with an automatic loading/unloading system** in various configurations and feature an **innovative software for maximum usability of the product and maximum simplicity of use.** The over forty years of experience of CMS in the thermoforming sector are a guarantee of **reliability** and **exceptional performance.**

With these machines, thermoformed parts can be produced, guaranteeing maximum quality in the production of:

- **Parts for seats ABS, PC, Kydex**
- **Components for bathrooms in ABS, PC, Kydex**

The performance of these thermoforming machines enables **parts to be produced by mechanical or pressure forming for in-mold graining (IMG).**

All process parameters are integrated with exclusive **CMS software for controlling the thermoforming process.** The high technological content not only guarantees maximum performance but also allows for perfect integration in accordance with the standards of Industry 4.0.



CMS connect is the IoT platform for perfect integration with the latest generation of CMS machines

CMS Connect offers customized 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 data collected by the machines in real time can be used to **increase machine productivity, reduce operating and maintenance costs and cut energy costs.**



CMS active: revolutionary interaction with your CMS machine

CMS active is our new interface. An operator can easily control different machines as the CMS Active interfaces maintain the same look&feel, icons and approach to interaction.



APPLICATIONS

SMART MACHINE: continuous monitoring of machine operation, with information on:

Status: machine status overviews. These can be used to verify machine availability and identify possible bottlenecks in the production flow;

Monitoring: real-time live display of the operation of the machine, its components, running programs and potentiometers;

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

Alarms: active and logged warnings.

SMART MAINTENANCE

This section provides an **initial approach to predictive maintenance** by sending notifications when machine components indicate a potentially critical state on reaching a specific threshold. This makes it possible **to take action and schedule maintenance work without any production downtime.**

SMART MANAGEMENT

Section that presents the KPIs for all machines connected to the platform.

The indicators provided can be used to assess machine

availability, productivity and efficiency, as well as product quality.

UTMOST SECURITY

CMS Connect uses the standard OPCUA communication protocol, which guarantees data encryption at the Edge interface level. The Cloud and DataLake levels meet all of the latest cyber-security requirements. Customer data is encrypted and authenticated to ensure full protection of sensitive information.

BENEFITS

- ✓ Production performance optimization
- ✓ Diagnostics to support component warranty optimization
- ✓ Productivity increase and machine downtime reduction
- ✓ Improvement of quality control
- ✓ Lower maintenance costs

EASE OF USE

The new interface has been specially designed and optimized for immediate use via a touch screen. Graphics and icons have been redesigned to make navigation simple and comfortable.

ADVANCED PRODUCTION ORGANIZATION

Cms active can configure different users with different roles and responsibilities depending on how they use the machine (e.g. operator, maintenance technician, administrator, ...).

It is also possible to define work shifts on the machine and then measure the activities, productivity and events that occurred during each shift.

ABSOLUTE FINISHED PART QUALITY








With Cms active, the quality of the finished part is no longer jeopardized by worn tools. The new Tool Life Determination System in Cms active sends notification messages as the end of tool service life approaches, and recommends replacement at the most opportune time.

TOOLING? NO PROBLEM!

Cms active guides the operator through tool magazine set-up, taking the programs to be executed into account.



CUSTOMER SERVICE OUR TECHNICIANS BY YOUR SIDE AROUND THE WORLD

-  Training
-  Installation
-  Remote Customer Care (RCC)
-  On-site support
-  Check-up, preventive maintenance and calibrations
-  Changes and retrofitting
-  Spare parts

WORLDWIDE PRESENCE AND DEDICATED WAREHOUSES AT THE SERVICE OF EVERY CUSTOMER

- 36.000 different codes to serve machines of all ages;
- 1 central warehouse in Zogno and other 6 fully equipped warehouses in the world, in order to ensure shipping optimization and cut waiting times
- 98% of the order available in stock
- spare parts guaranteed by a scrupulous control process and validated by our in-house quality laboratory
- availability to prepare lists of recommended spare parts based on customer's needs, in order to minimize downtime risk

THE CMS RANGE

CMS FOR THE AEROSPACE SECTOR

MONOBLOC CNC MACHINING CENTERS FOR VERTICAL MILLING



ARES



ANTARES



ATHENA



ANTARES K

HYBRID ADDITIVE MANUFACTURING AND MILLING SYSTEMS



VM 30K



KREATOR ARES

MACHINING CENTRES FOR LARGE AREAS



ETHOS



POSEIDON



MBB



FXB

THERMOFORMING MACHINES



EIDOS



MASTERFORM



THE MOST ADVANCED SKILLS AND KNOW-HOW IN THE FIELDS OF MACHINERY AND INDUSTRIAL COMPONENTS

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.

INDUSTRIAL MACHINES

Standalone machines, integrated systems and services designed for processing a wide range of materials.



Technologies for wood processing



Technologies for composites, carbon fiber, aluminum, light alloys, plastic, glass, stone and metal processing
Carpentry and mechanical machining



INDUSTRIAL COMPONENTS

Technological components for machines and systems of the Group, third parties and the mechanical industry.



Electrospindles and technological components



Electrical panels



Carpentry and mechanical machining



Iron castings

SCM GROUP IN A NUTSHELL

+700

MILLION/EUR of consolidated turnover

+4000

employees in Italy and abroad

3 main productions centers

5 continents with direct and widespread presence

7% OF TURNOVER INVESTED IN R&D



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