

rail industry

5-axis CNC machining centers for the railway 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 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, originating from substantial investments in research and development and take-overs of premium companies, have enabled constant growth in the various sectors of reference.

rail industry



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 investments in research and development have allowed the brand to always be on the forefront of cutting-edge 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.

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The background image shows a sleek, blue, aerodynamic train flying through a city at night. The city is filled with tall, modern skyscrapers, some of which are illuminated. The scene is set against a dark blue sky with wispy clouds. Overlaid on the image are several technical diagrams in a light blue color. These include a circular diagram with an 'X' and a 'D' inside, a circular diagram with a '+' and 'B2' inside, and a larger circular diagram with a grid of concentric circles and radial lines, with numbers -2, -1, 1, 2, 3 along its horizontal axis. The overall aesthetic is futuristic and technological.

CMS: TRAVELING BY INNOVATION

CMS FOR THE RAILWAY INDUSTRY

Due to its **tradition** and **experience in advanced material processing**, CMS Advanced Materials Technology is the ideal partner for those looking for innovative solutions capable of guaranteeing:

- **the best performance on the market**
- **maximum reliability**
- **top quality technological features**
- **drilling, routing, window openings, and fast, accurate blade cutting and roughing**

CMS offers the **best solution to satisfy a client's specific** requirements and machinery designed to meet the increasingly demanding needs of a continuously evolving sector.

Just as modern trains allow us to increase efficiency by more than 31% compared to previous generations, CMS solutions and machines guarantee an excellent return on investment with a saving of up to 35% compared to the usage of old-style machines. Also, because of the experience acquired in the aerospace industry, CMS is contributing to the production of the first train in composite material.



WHY CHOOSE CMS MACHINING CENTERS?

- CMS's technology completes the expected processing cycle in full compliance with the strict quality parameters required but at a highly competitive purchase price.
- CMS's machines can follow a completely automatic continuous cycle, by optimizing processing times and cutting operating costs for the production of each individual piece.
- CMS has a wide range of operating units, with multiple or independent tool change, and plenty of flexibility in configuring the work area.
- The entire system is programmed and controlled by numerical control technologies. Guaranteeing the reliability of the entire cycle, integration with company IT structures and a highly intuitive interface for the operator.
- Furthermore, CMS machining centers guarantee excellent operating times due to three factors that interact in correspondence with one another:
 - 1) single setup, thanks to the loading table functions;
 - 2) tool operating speed and full, interruption-free automatism: from the window opening stage to the subsequent window opening-polishing stage.
 - 3) automatic collection and removal of waste.

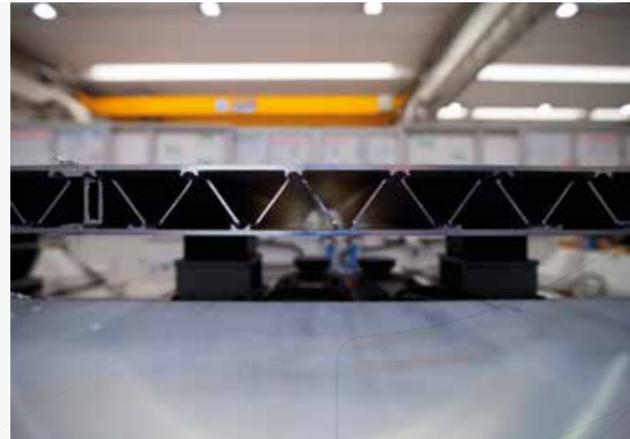
MACHINING CENTERS

TO PROCESS ALUMINUM STRUCTURAL COMPONENTS AND PARTS FOR THE RAILROAD INDUSTRY

5-AXIS MACHINING CENTERS FOR HIGH SPEED PROCESSING

The CMS machining centers for the railroad industry are the result of experience acquired in the automotive and nautical industries. The structure and technical solutions adopted, together with the selected components, ensure a high level of finishing, high processing speeds, reliability, structural rigidity, flexibility of use and excellent productivity.

- The extensive size of the work area makes processing middle and large-sized pieces easy.
- Powerful operations, geometrical precision and reliability even with more complex processings.
- Modular, highly versatile structure that easily adapts to the needs of clients who work in very demanding industries.



KEY BUYER BENEFITS

- + **-55% machining times:** cycle time reduction due to high speeds (up to 85 m/min) and the single and double gantry machine configurations installable at a later date
- + **ZERO down times:** possibility of pendulum processing by resetting the piece set-up and locking times, thanks to configurations with 2 or more work areas
- + Specifically designed locking solutions
- + 5-axis machining units with outstanding performance levels, available in different configurations
- + Machines with configurable work zones in X up to more than 40 meters
- + Safe to use, due to the generous junctions in Z, of BLADES with a diameter of up to 700/800 mm

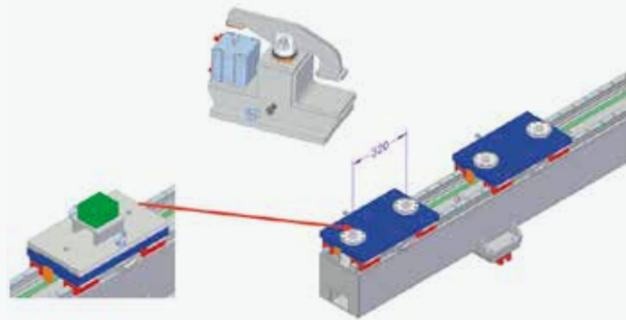
WORK AREAS

CUSTOMIZED WORK TABLES

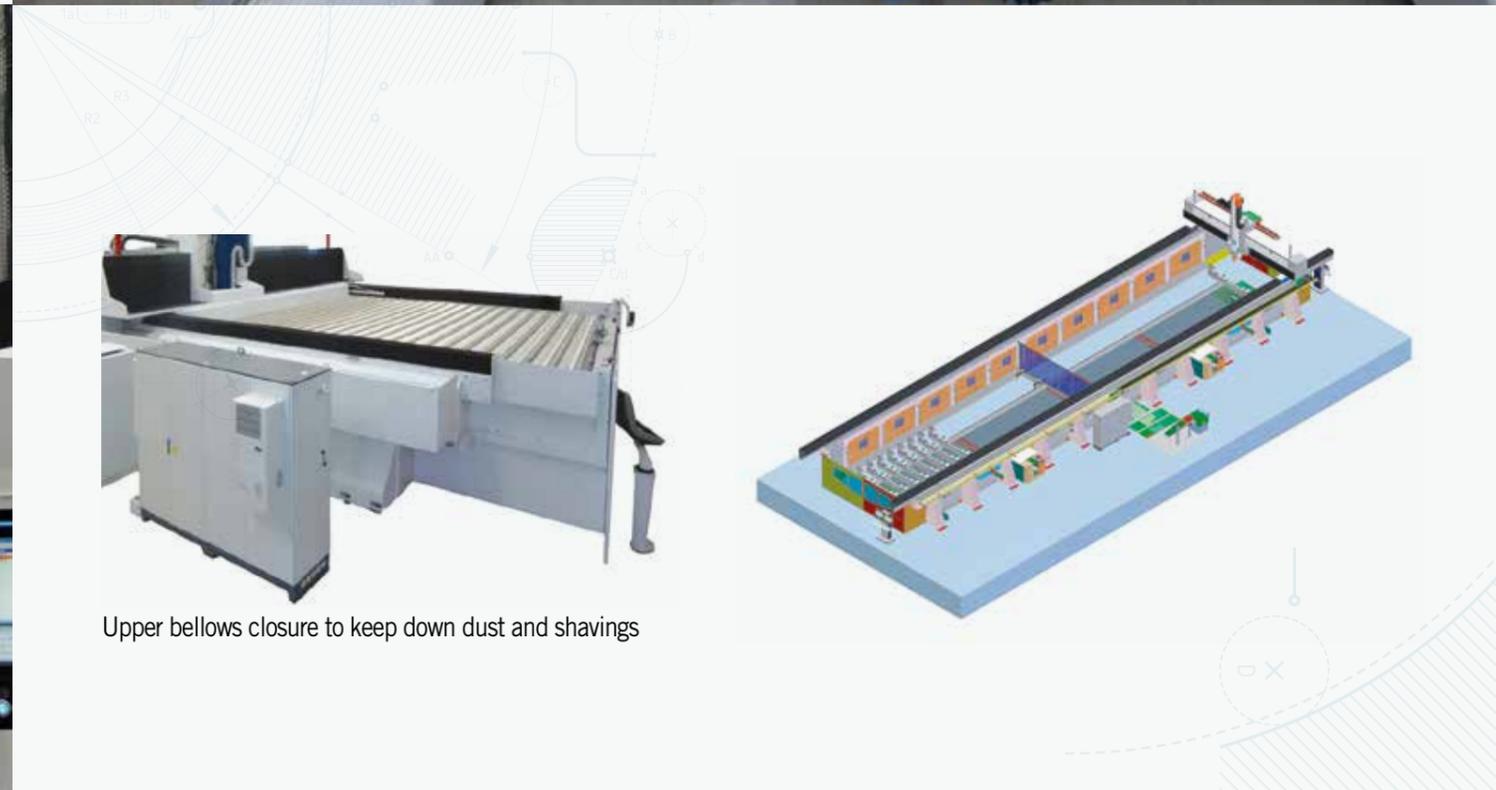
Due to its on-going collaboration with the best partners in the railroad industry, CMS offers:

- a wide range of customized locking systems (suction cups, pressers and zero points....)
- cast iron work tables
- mobile crossbars (CN automatic or manual)

CMS can also fit the machines with sophisticated piece detection systems for specific processings with the highest precision and reduced times.



Zero-point for fast, accurate installation of inter-changeable components



Upper bellows closure to keep down dust and shavings

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. 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

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, 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 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;

GANTRY CNC MACHINING CENTERS FOR LARGE-SCALE WORK AREAS



MX5



CONCEPT



ETHOS

FIXED AND MOBILE GANTRY CNC MACHINING CENTERS



POSEIDON GT



POSEIDON

FIXED AND MOBILE GANTRY CNC MACHINING CENTERS



MBB



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

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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.

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



INDUSTRIAL 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



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