

MX3 / MX5

gantry CNC Gantry CNC machining centers
for large-size working areas



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.



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 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.



MX3 / MX5

APPLICATIONS	4-5
MX-MB (MONOBLOC) MODEL	6-7
MX-OF (OPEN FRAME) MODEL	8-9
MX-GT (GROUND RAIL) MODEL	10-11
MX-MX5 MODEL	
OVERALL DIMENSIONS AND TECHNICAL DATA	12
WORKING UNITS AND TOOL CHANGERS	12-13
OPTIONAL	14-15
CMS CONNECT	16
CMS ACTIVE	17
THE RANGE	18-19

APPLICATIONS



automotive | transportation | marine



home & industrial appliances | sanitary



MX-MB (MONOBLOC) MODEL

MX5 - 3 AND 5-AXIS HIGH SPEED OPEN FRAME MACHINING CENTERS

This is the most compact version of the series. Its monobloc structure assures high performances in terms of stability, precision and quality finish, even during heavy machining. Its compact size permits an easy integration into any production environment, while providing a large work envelope.

- Motors and drives are of the most recent generation, combined with larger cross section slide ways and an aeronautical type design of the moving parts, guarantee an excellent dynamic (speed and acceleration), precision and reliability over time even when working the most challenging materials.
- Symmetrical design of the structure guarantees both thermal and mechanical stability.
- Maximum view and accessibility to the working area to guarantee operator and working environment security.
- Maximum configurability in terms of axes strokes, working units, work planes and accessories for personalized solutions.



Monobloc structure ensures accuracy and lifelong reliability



3 and 5-axis operating units



Compact design for an excellent "factory space/working area" ratio

PROCESSING



KEY BUYER BENEFITS

- + **The right size.** The 5-axis version of mx5 covers a wide range of configurations. More than 80 sizes, configurable according to your needs. Possibility to use high performance spindles with power up to 32 kW. Best in class for price/performance ratio.
- + **The ideal environment for safe production.** In Open Frame configuration, mx5 can also be equipped with built-in bellows cover and suction inlets to maintain a clean and safe environment.
- + **100% tailor-made.** The GT version is characterized by easy access on all sides of the machining centre, allowing workpiece loading/unloading even on the longer side of large workpieces. CMS also develops clamping solutions to suit your specific needs..

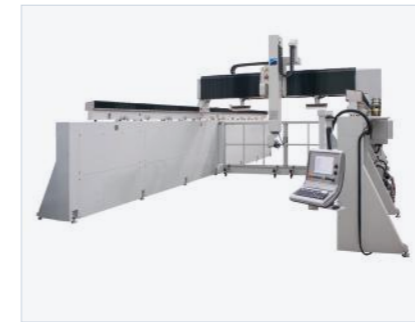


MX-OF (OPEN FRAME) MODEL

3 AND 5-AXIS HIGH SPEED OPEN FRAME MACHINING CENTRES

High Speed Machining centres with moving bridge.

- This configuration makes it possible to obtain large work areas while maintaining maximum rigidity and dynamic.
- The open frame design offers total accessibility to the work area, even for loading and unloading of parts with large dimensions.
- The characteristics of robustness and reliability, typical of CMS machines, are associated with high levels of security, precision, speed and ease of use in the execution of any type of milling, shaping, finishing, drilling and 3D machining, utilizing up to 5 simultaneously interpolated axes.



Large working areas



Easy access for loading and unloading operations



Several working table configurations available



PROCESSING



KEY BUYER BENEFITS

- + **The right size.** The 5-axis version of mx5 covers a wide range of configurations. More than 80 sizes, configurable according to your needs. Possibility to use high performance spindles with power up to 32 kW. Best in class for price/performance ratio.
- + **The ideal environment for safe production.** In Open Frame configuration, mx5 can also be equipped with built-in bellows cover and suction inlets to maintain a clean and safe environment.
- + **100% tailor-made.** The GT version is characterized by easy access on all sides of the machining centre, allowing workpiece loading/unloading even on the longer side of large workpieces. CMS also develops clamping solutions to suit your specific needs.

MX-GT (GROUND RAIL) MODEL

3 AND 5-AXIS HIGH SPEED GUIDES ON GROUND MACHINING CENTRES

The design of this machine assures versatility and a large and easily accessible work area. Ideal for machining heavy panels and structural parts of large dimensions and thickness (applications in building, transportation, etc.). Possibility of a pendular cycle or of configurations "in line".



Up to 64 stations tools changer

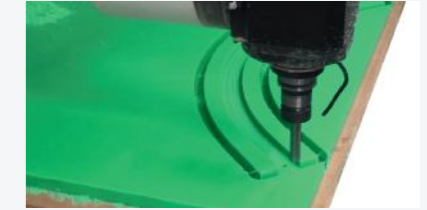
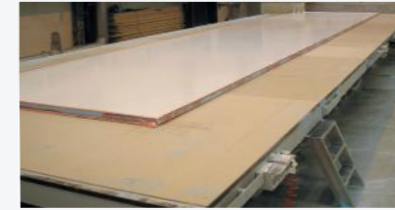


Customized blocking systems



Several working table configurations available

PROCESSING



KEY BUYER BENEFITS

- + **The right size.** The 5-axis version of mx5 covers a wide range of configurations. More than 80 sizes, configurable according to your needs. Possibility to use high performance spindles with power up to 32 kW. Best in class for price/performance ratio.
- + **The ideal environment for safe production.** In Open Frame configuration, mx5 can also be equipped with built-in bellows cover and suction inlets to maintain a clean and safe environment.
- + **100% tailor-made.** The GT version is characterized by easy access on all sides of the machining centre, allowing workpiece loading/unloading even on the longer side of large workpieces. CMS also develops clamping solutions to suit your specific needs.



MX3-MX5

OVERALL DIMENSIONS AND TECHNICAL DATA

MX-MB: STROKES AND SPEEDS

AXES STROKES		RAPIDS
Y axes (mm)	3600	up to 72 m/min
X axes (mm)	2610 - 3200 - 4610 - 5200 - 6550	up to 38 m/min
X axes (mm)	420 - 600 - 900	up to 15 m/min
A axes (°)	± 120° (CX5) / ± 120° (PX5) / ± 110° (KX5)	9000°/min
C axes (°)	± 360° (CX5) / ± 270° (PX5) / ± 300° (KX5)	9000°/min

MX-OF: STROKES AND SPEEDS

AXES STROKES		RAPIDS
Y axes (mm)	3600 - 4250	up to 72 m/min
X axes (mm)	2350 - 3000 - 4350 - 5000 - 7000 - 8500 - 10500 - 12500 - 14500 - 16500 - 18500	up to 38 m/min
X axes (mm)	900 - 1400 - 2000 - 2500	up to 44 m/min
A axes (°)	± 120° (CX5) / ± 120° (PX5) / ± 110° (KX5)	9000°/min
C axes (°)	± 360° (CX5) / ± 270° (PX5) / ± 300° (KX5)	9000°/min

MX-GT: STROKES AND SPEEDS

AXES STROKES		RAPIDS
Y axes (mm)	4250	up to 72 m/min
X axes (mm)	2350 - 3000 - 4350 - 5000 - 7000 - 8500 - 10500 - 12500 - 14500 - 16500 - 18500	up to 38 m/min
X axes (mm)	900 - 1400 - 2000 - 2500	up to 44 m/min
A axes (°)	± 120° (CX5) / ± 120° (PX5) / ± 110° (KX5)	9000°/min
C axes (°)	± 360° (CX5) / ± 270° (PX5) / ± 300° (KX5)	9000°/min

WORKING UNITS AND TOOL CHANGERS

MX3: WORKING UNITS AND ELECTROSPINDLES

	PX3/12	PX3/15	PX3/20 (synchronous)	KX3/13.5	KX3/32 (synchronous)
Nominal power (s1)	12 kW	15 kW	20 kW	13,5 kW	32 kW
Max power (s6)	14 kW	17 kW	22.3 kW	21 kW	32 kW
Max rpm	24.000 rpm	24.000 rpm	24.000 rpm	17.000 rpm	24.000 rpm
Max torque	12,2 Nm	13,8 Nm	20 Nm	22,6 Nm	100 Nm
Toolholder	HSK63F	HSK63F	HSK63A	ISO40	HSK63A
Cooling	Liquid	Liquid	Liquid	Liquid	Liquid

MX5: WORKING UNITS AND ELECTROSPINDLES

	CX5/8.5	PX5/12	PX5/15	PX3/20 (synchronous)	KX5/18	KX3/32 (synchronous)
Nominal power (s1)	8,5 kW	12 kW	15 kW	20 kW	18 kW	32 kW
Max power (s6)	10 kW	14 kW	17 kW	22.3 kW	22,5 kW	32 kW
Max rpm	24.000 rpm	24.000 rpm	24.000 rpm	24.000 rpm	24.000 rpm	24.000 rpm
Max torque	8 Nm	12,2 Nm	13,8 Nm	20 Nm	18,2 Nm	100 Nm
Toolholder	HSK63F	HSK63F	HSK63F	HSK63A	HSK63E	HSK63A
Cooling	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid

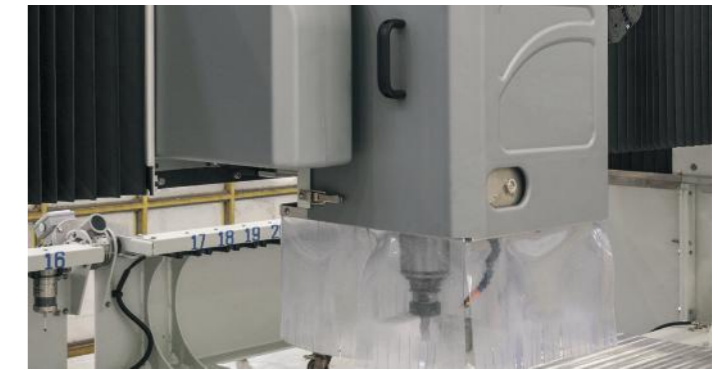
MX: TOOL CHANGER MAGAZINES

	standard	optionals
N. Stations	16*	30*
Ø max without limitation	100 mm	80 mm
Ø max with limitation	300 mm	300 mm
Max tools length	500 mm (Z 1300) 700 mm (Z 2000)	400 mm
Max weight single tool	5	8

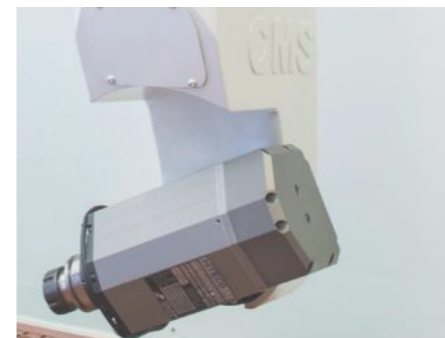
* multiple configurations available



MX3



MX5



MX5/Revolvers 2-3-4 spindles



PX5



KX5

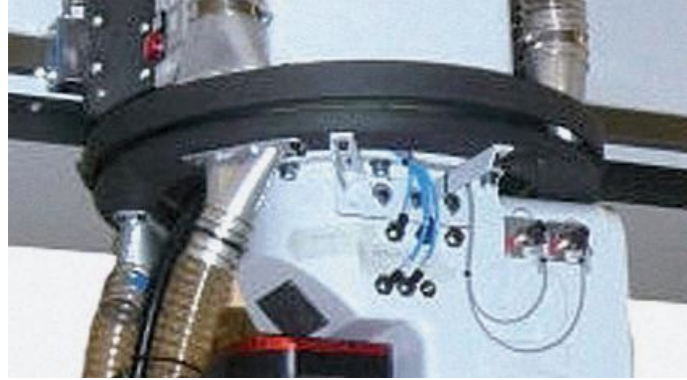


16 stations tool changer magazine



30 stations tool changer magazine internal and exterior view

OPTIONALS



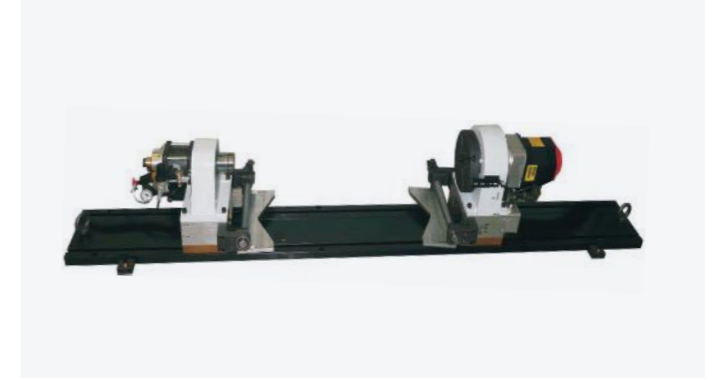
Rotating suction manifold



Dust suction hood



Vacuum/air connections



NC controlled - rotary head and tailstock group



Bellows-type roof for dust and chips control"



Electronic touch probe



Aluminum vacuum plane



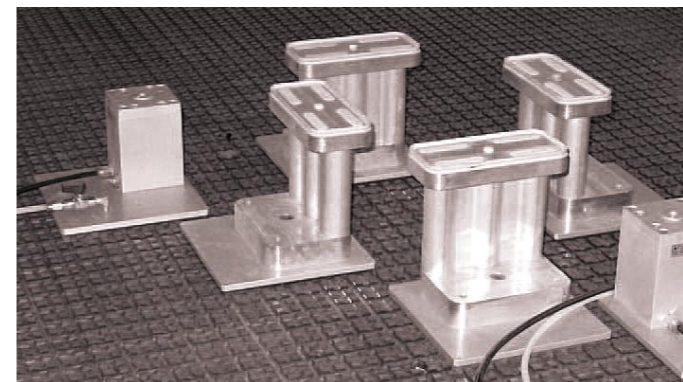
Cast iron working tables



Oil mist



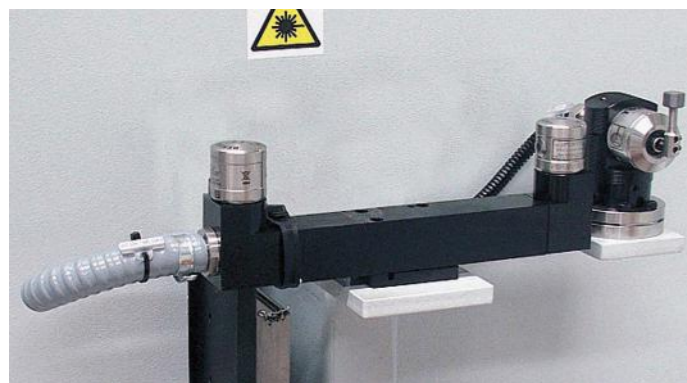
Cold air gun



Pods and reference stops



Flood cooling system



Rotary axes laser alignment device for tool length and diameter measurement



Vacuum pumps



Chips conveyor



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.

CMS ADVANCED MATERIALS TECHNOLOGY RANGE OF MACHINES

FOR COMPOSITE MATERIALS, ALUMINUM AND METAL PROCESSING

MONOBLOC CNC MACHINING CENTERS FOR VERTICAL MILLING



ARES



ANTARES



ANTARES K



ATHENA



POSEIDON K



ETHOS K

GANTRY CNC MACHINING CENTERS FOR LARGE-SIZE WORK AREAS



MX5



POSEIDON



CONCEPT



CRONUS



ETHOS



IKON

MONOBLOC CNC MACHINING CENTERS FOR HORIZONTAL MILLING

FIXED AND MOBILE BRIDGE CNC MACHINING CENTERS



FXB



AVANT



MBB

CNC MACHINING CENTER FOR THE EYEWEAR INDUSTRY



MONOFAST

CNC MACHINING CENTERS FOR GUNSTOCKS PROCESSING



MULTILATHE



MONOFAST



KARAT

WIND BLADE WORKING SYSTEMS



EOS



C.M.S. SPA
via A. Locatelli, 123 - 24019 Zogno (BG) - IT
Tel. +39 0345 64111
info@cms.it
cms.it

a company of **scm**group