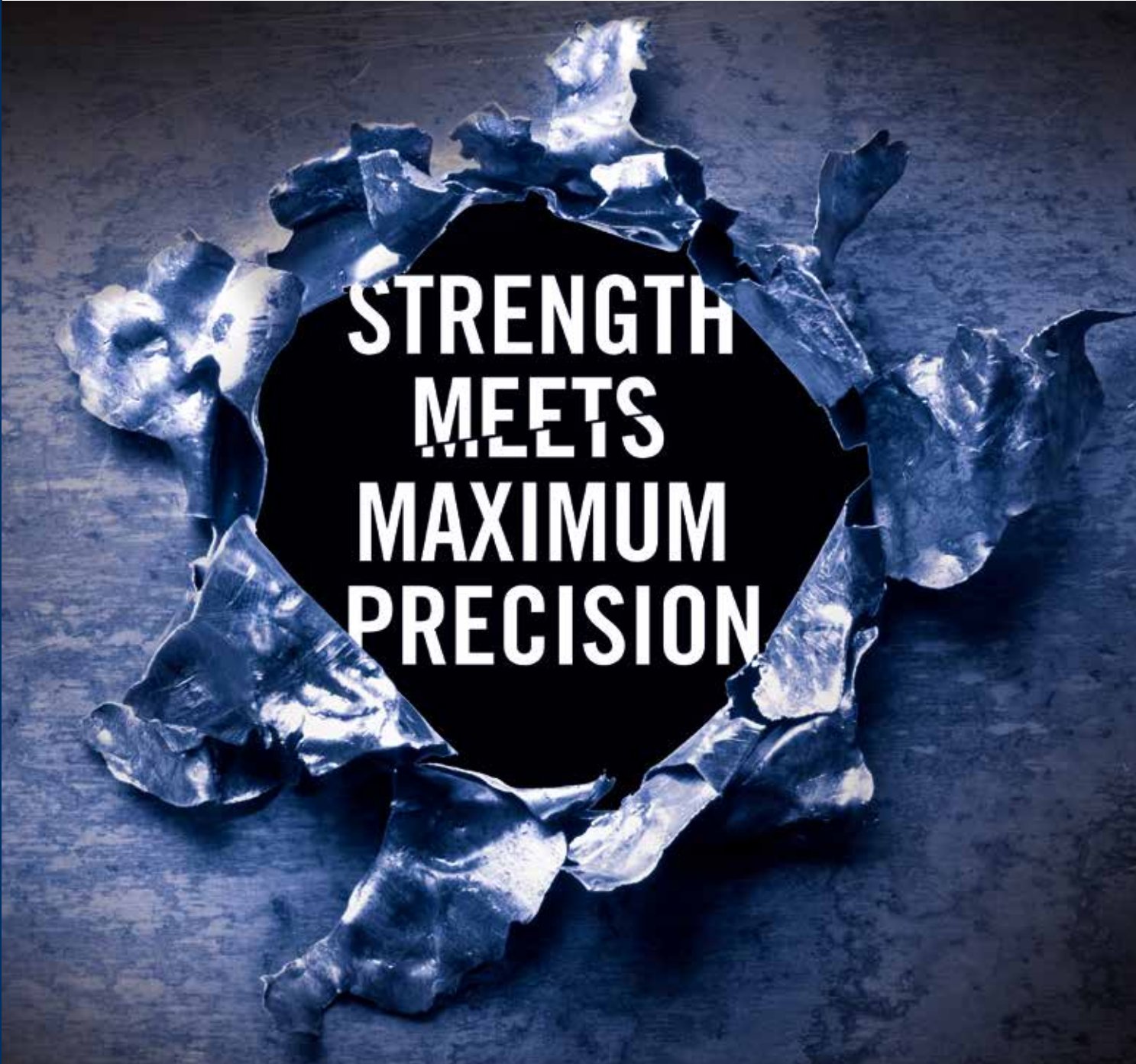


vm 30

CNC machining center for vertical milling



**STRENGTH
MEETS
MAXIMUM
PRECISION**

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.



CMS Advanced Materials Technology is leader in the field of numerically controlled machining centres for the working of advanced materials: composites, carbon fibre, aluminium and light alloys. 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.

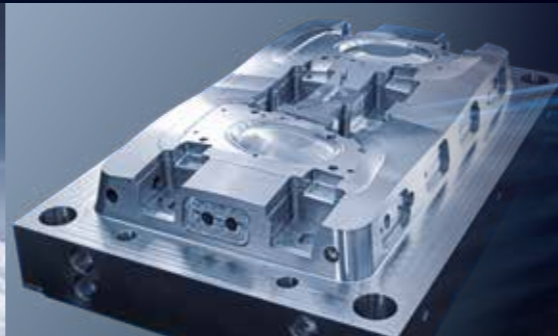
Since the early 2000's, **CMS Advanced Materials Technology** has established itself as a technology partner in areas of excellence such as aerospace, aviation, automotive, race boating, Formula 1 and the most advanced railway industry.

vm 30

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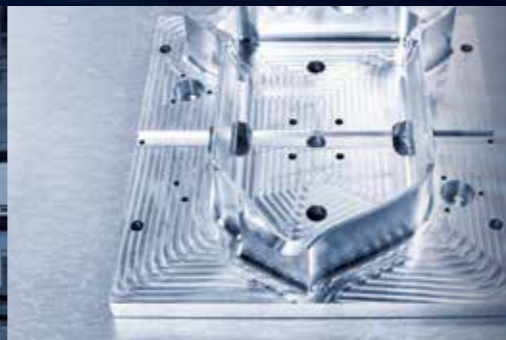
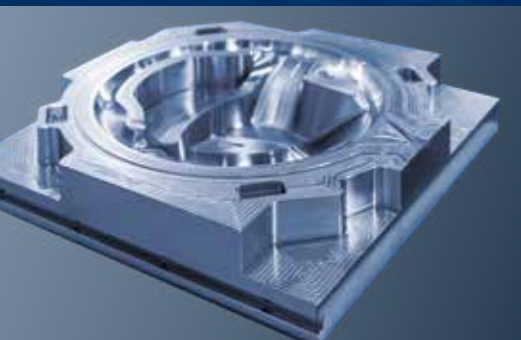
APPLICATIONS



aerospace | f1 & motor sport | automotive



models | aeronautics



Unparalleled.

New.

Innovative.

Quality.

Ultra.

Effective solutions.

UNIQUE cnc machines.

CNC machining center for vertical milling

VM 30

TECHNOLOGICAL ADVANTAGES

CNC MACHINING CENTERS FOR VERTICAL MILLING

The CMS vm 30 CNC machining center is the ideal solution for milling complex three-dimensional parts in steel, aluminum, light alloys and composite materials that require precision, repeatability and excellent finishing, with reduced cycle times. vm 30 was devised and designed to satisfy the needs of the aeronautical, automotive, mold and design industries, guaranteeing roughing, semi-finished and finished processing of medium-large components.

- All the structural components have been designed on the basis of careful analysis (structural, static, dynamic and thermal) thanks to the highest performing systems on the market. The aim is to achieve the best performance in terms of speed and precision while keeping cycle times down.
- High configuration based on one's own production needs thanks to an extensive range of machining units and electro-spindles
- Maximum dynamics thanks to the high acceleration, high speed and top-class rigidity
- Built-in careening that cordons off the work area to provide the operator with maximum safety
- Energy saving: led lights and automatic on/off system on the machine and motors

vm 30 is available in the monobloc version (vm 30 K) and open frame (vm 30), the latter with strokes up to 6 meters (higher than requested).

KEY BUYER BENEFITS

- + **Solution with built-in table;** 10,000 kg/m² loading table
- + **Cutting fluid internal** spindle passage up to 70 bar
- + **Top quality geometrical** precision for perfect machining and excellent finishing quality
- + **Nominal power** starting from 47 kW 15,000 revs/min HSK A 100



VM 30

TECHNOLOGICAL ADVANTAGES

MACHINING UNITS AND ELECTRO-SPINDLES

vm 30 available in a wide range of machining units (forked or single-shoulder) and electro-spindles.

MACHINING UNITS

CMS' machining units feature a structure designed to guarantee maximum performance in terms of rigidity. Four high-performance configurations are available: two single-shoulder and two forked. The single-shoulder configuration is the ideal solution for those looking to produce molds as it allows you to come closer to the piece to be processed and reach inaccessible points with a forked head.

All the heads are fitted with:

- Torque motors on the two axes
- Safety brakes
- Direct measuring systems

DUAL ROTATING HEAD

The forked dual rotating head in cast iron, equipped with torque motors, is fitted with encoders on both axes and a vibration detection sensor to guarantee a steady monitoring of the machine processes and real-time detection of collisions. This is essential in predicting tool breakages, overloading and to detect strong vibrations on the spindle.

VAST RANGE OF ELECTRO-SPINDLES

vm 30 can be fitted with an extensive range of electro-spindles (from 32 kW to 73 kW) depending on the kind of processing to be done (high-speed or high-torque electro-spindles).

The processing precision is always guaranteed thanks to the spindle's thermal stabilization and the software compensation of the natural thermal expansions of the electro-spindle when the operating conditions change.



CUTTING FLUID SYSTEM UP TO 70 BAR



Internal tool passage



External tool passage



VM 30

TECHNOLOGICAL ADVANTAGES

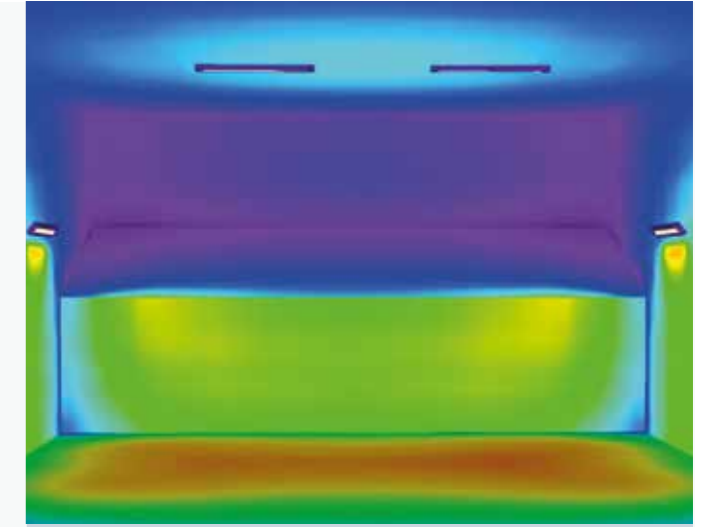


SIMPLE AND RELIABLE TOOL STORAGES

Depending on the configuration chosen, there is an availability of fixed shift wheel or chain storages, with rapid exchange key to reduce the tool change times. They are installed outside of the work area to guarantee protection against dirt and maximum reliability over time. The CMS storages can also be fitted with an automatic coding system of tool data with chip reading tool.

EXCELLENT LIGHTING IN THE WORK AREA

Spherical luminous flux: 13200 lm - Total power: 159.0 W



CEILING BELLOWS

The machine has a bellows cover that restricts the escape of fumes, dust and shavings into the work area. With the application of the WAVE SKY bellows, the suction power of the fumes is reduced when processing carbon fiber, composite material and vaporized cutting fluid. Consisting of a special transparent, static resistant fabric with excellent transversal rigidity, it guarantees plenty of light to the work area and excellent resistance to the oils, petroleum products and strong abrasion.



CUTTING FLUID AND SHAVINGS COLLECTION

vm 30 was developed to guarantee the removal of large amounts of cutting fluid and shavings as best as possible. Both the single-block model and the open frame model have a dredging conveyor to remove shavings and collect cutting fluid with a self-cleaning grate and 400 micron filtering.



CLEARLY VISIBLE FRONT DOORS

The front, sliding doors with large tempered glass and lexan windows combined in a sandwich structure, provide maximum visibility of the work area. They have electro-locks controlled by the machine's PLC and allow for safe loading and access to the work zone.

PRESETTING

Contactless tool presetting system that guarantees a high level of precision and speed when measuring and checking the tool's integrity, reducing the risks of excessive wear or breakage to a minimum (key factor when working with small, delicate tools).



VM 30

TECHNICAL DATA AND MACHINING UNITS



OVERALL BULK			
MODEL	A [mm]	B [mm]	C [mm]
vm 30 K	6820	9480	6025
vm 30 OF	6820-8620-10620	7200	5525

AXES STROKES			
MODEL	X [mm]	Y [mm]	Z [mm]
vm 30 K	2200	3000	1300
vm 30 OF	2200-4000-6000	3000	1300

MACHINE WEIGHT 32,000 KG

MACHINING UNITS AND ELECTRO-SPINDLES									
MACHINING UNITS	AXES ROTATION [°] C / A	TORQUE S1/S6 [Nm] C / A	BLOCKING TORQUE [Nm] C / A	AXES ROTATION PRECISION [arcsec] C - A	ELECTRO-SPINDLES				
					Power [kW]	Torque [Nm]	Speed [revs./min.]	Pivot Point	Attachment
TORQUE 5 	± 300 / ± 110	783 - 1300 / 521 - 868	1000 / 1000	± 6	32	68	24000	228	HSK 63A
					31	100	15000	228	HSK 63A
TILT G 	± 360 / ± 120	787 - 1560 / 504 - 998	3000 / 3000	± 2.5	42	34	24000	250	HSK 63A
					42	67	24000	250	HSK 63A
					30	95	22000	250	HSK 63A
TILT M 	± 360 / ± 120	787 - 1560 / 830 - 1472	4000 / 4000	± 2	42	34	24000	345	HSK 63A
					42	67	24000	345	HSK 63A
					30	95	22000	345	HSK 63A
					47	150	15000	345	HSK 100A
					73	70	28000	345	HSK 63A

Available CN: Fanuc, Siemens, Heidenhein

TOOL HOLDER STORAGES		
MODEL	HSK63A	HSK100A
DISC STORAGE	30	20
CHAIN STORAGE	60-100-168	48-80-120

CMS connect

is the IoT platform perfectly integrated with CMS' most modern machines

CMS Connect can offer personalized micro services through the use of the IoT Apps that support the everyday activities of the operators in the sector, improving the availability and use of the machines and systems. The data gathered by the machines in real time becomes useful information to increase the machines' productivity, reduce operating and maintenance costs as well as reduce 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: continuous monitoring of the machine's functioning.

SMART MAINTENANCE

This section provides an initial approach to prognostic maintenance by sending notifications when the machines parts indicate a state of potential criticality associated with the achievement of a specific threshold. This makes it possible to intervene and program maintenance work without halting production

SMART MANAGEMENT

Section dedicated to the presentation of KPI for all the machines linked to the platform. The indicators provided assess the machine's availability, productivity and efficiency, and product quality.

MAXIMUM SAFETY

Use of OPCUA standard communication protocol that guarantees the encryption of the data at interface Edge level. The Cloud and DataLake levels fully meet all the cyber-security requirements. The client's data is encoded and authenticated to ensure sensitive information is fully protected.

PROCESS SUPPORT

TEMPERATURE COMPENSATION

New machine precision compensation system for when temperature environmental conditions change. A series of sensors, positioned on different mechanical parts, and a state-of-the-art software mean the customer can process parts to ensure the best quality and precision.

COLLISION DETECTION

Solution to dealing with tool / spindle management with other parts of the machine. There are numerous advantages, including

- Possibility of limiting damages with instant axes stop in just a few milliseconds.
- Analysis of events by consulting a logbook.
- Machine reactivation and automatic control of the parts, with the "MECHANICAL STATUS MANAGER" application

TOOL VIBRATION WARNING

Minimizing tool damage is now possible: with the vibration monitor during processing, with different levels of warnings, based on the kind of tool being used.

PREDICTIVE MAINTENANCE

MECHANICAL STATUS MANAGER

CMS' know-how always available! An exact control of the condition of all the machine's moving parts, could help and advise the customer on actions to take regarding machine maintenance over long and short spells.

SPINDLE BALANCE MANAGER

Why not perform a checkup at the heart of the machine? With this completely new function, checking the status and condition of the spindle and all its parts will be no problem at all.

DEVICE STATUS MANAGER

Control, monitoring and prevention of the main actuators found on the machine. The operator will receive advanced warning of a possible deterioration, and if necessary, the worn part can be replaced.

ENERGY SAVING

Control and monitoring of the machine's main electrical and pneumatic consumption. The application sets the best configuration to minimize machine waste, thanks also to automatic suggestions calculated on the basis of the use of key components.

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.



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