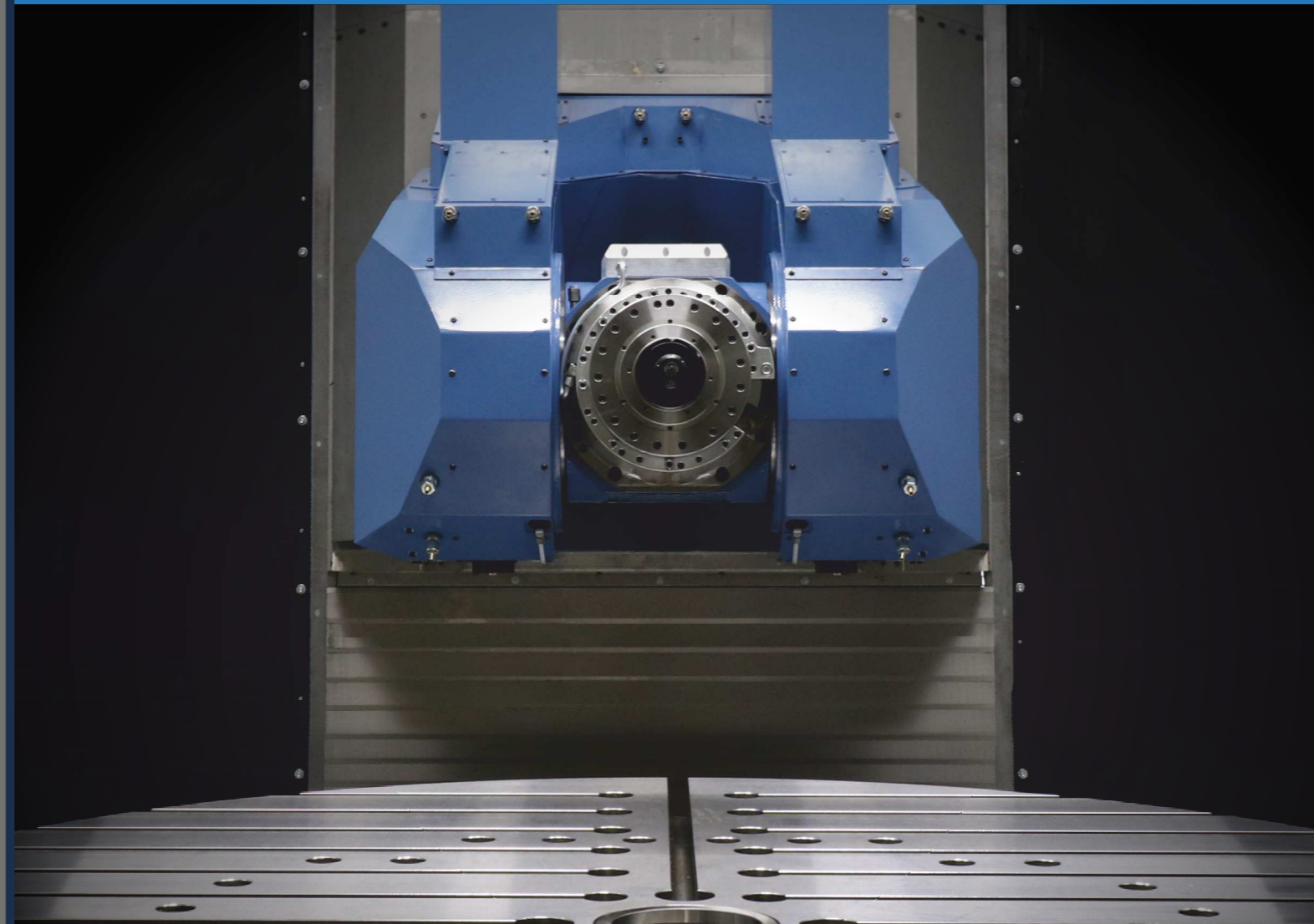




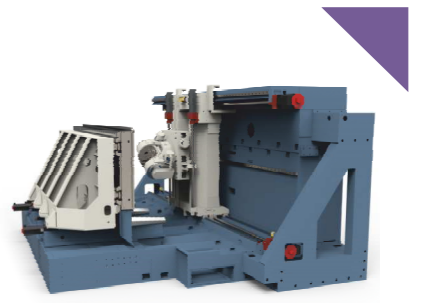
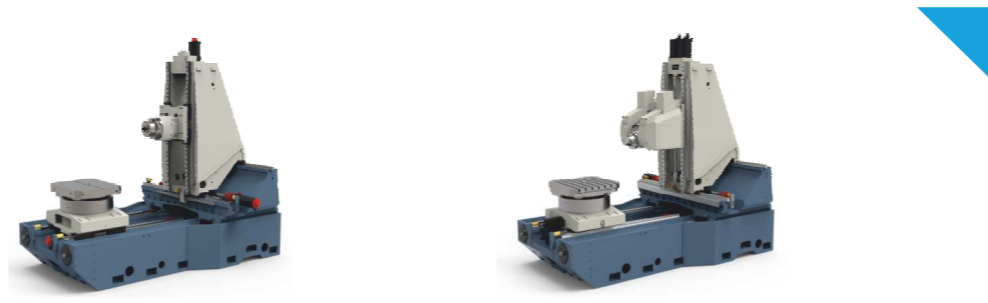
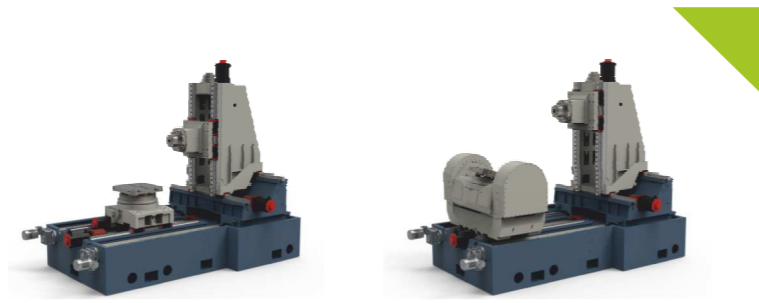
evolving together



INTEGRATED PRODUCTION PROGRAM



MACHINING CENTERS



			CLOCK 800 EVO	CLOCK 1000 EVO	CLOCK 1200 EVO	TANK 1300	TANK 1600	TANK 1900	TANK.G 1600	TANK.G 2000	TANK.G 2600	TANK.G 3000
Process Technology			Milling / Turning ¹ / Grinding ¹			Milling / Turning ¹ / Grinding ¹			Milling / Turning ¹ / Grinding ¹			
Working Area	X-Axis Stroke [mm]		800	1.000	1.200	1.300	1.600	1.900	1.600	2.000	2.600	3.000
	Y-Axis Stroke [mm]		800	1.100	1.100	1.400	1.400	1.400	1.500	1.800	2.000	2.500
	Z-Axis Stroke [mm]		800	1.000	1.000	1.400	1.600	1.960	2.000	2.000	2.500	2.500
	X/Y/Z-Axis Thrust [kN]		8	10	13	20	20	20	20	30	30	30
	X/Y/Z-Axis Rapid Feed [m/min]		75	75	75	50	50	50	50	45	40	40 / 40 / 32
Pallet	Option 1 [mm]		500 x 500	500 x 630	630 x 630	630 x 800	800 x 1.000	1.000 x 1.000	1.000 x 1.000	1.000 x 1.000	1.000 x 1.250	1.250 x 1.600
	Option 2 [mm]		500 x 630	630 x 630	630 x 800	800 x 800	1.000 x 1.000	1.250 x 1.250	1.250 x 1.250	1.250 x 1.250	1.250 x 1.250	1.600 x 1.600
	Option 3 ² [mm]		Ø 630	Ø 800	Ø 860	Ø 860 / Ø 1.000	Ø 1.000 / Ø 1.250	Ø 1.250 / Ø 1.400	Ø 1.000 / Ø 1.250	Ø 1.000 / Ø 1.250	Ø 1.250 / Ø 1.400	-
Rotary Table (B-axis)	Max. Rotation Speed [RPM]		60 / 1.200 ³	60 / 650 ³	60 / 650 ³	20 / 40 ¹ / 500 ³	20 / 40 ¹ / 500 ³	20 / 40 ¹ / 500 ³	20 / 400 ³	20 / 200 ³	20 / 200 ³	8 / 15 ¹
	Type		Tilting Table	Tilting Table	Tilting Table	Tilting Head	Tilting Head	Tilting Head	Tilting Head	Tilting Head	Tilting Head	Tilting Head
5th Axis (A-axis)	Max. Tilting Speed [RPM]		40	40	40	20 / 40 ¹	20 / 40 ¹	20 / 40 ¹	20 / 35 ¹ / 40 ¹	20 / 35 ¹ / 40 ¹	20 / 35 ¹ / 40 ¹	20 / 40 ¹
	Tilting Angle [degrees]		140 (+35/-105)	140 (+20/-120)	140 (+20/-120)	175 (+80/-95)	175 (+80/-95)	175 (+80/-95)	175 (+80/-95)	175 (+80/-95)	175 (+80/-95)	175 (+80/-95)
Accuracy	<i>Linear Axes</i>											
	A/M/R as per ISO 230-2 [µm]		4 / 2 / 3	4 / 3 / 3	4 / 3 / 3	5 / 3 / 4	5 / 3 / 4	5 / 3 / 4	5 / 3 / 4	5 / 3 / 4	5 / 3 / 4	5 / 3 / 4
	<i>Circular Axes</i>											
	A/M/R as per ISO 230-2 [arcsec]		4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3	4 / 2 / 3
Spindle Unit	<i>Tool-Taper</i>		HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO	HSK / ISO / CAPTO
	Speed Range [RPM]		from 8.000 to 30.000	from 8.000 to 30.000	from 8.000 to 30.000	from 6.000 to 30.000	from 6.000 to 30.000	from 6.000 to 30.000	from 6.000 to 30.000	from 6.000 to 30.000	from 6.000 to 30.000	from 6.000 to 30.000
	Max. Power (up to) [kW]		65	65	65	115	115	115	115	115	115	115
	Max. Torque (up to) [Nm]		690	690	690	1.300	1.300	1.300	1.300	1.300	1.300	1.300
Tool-Magazine	Capacity (up to) ¹ [No.]		80 (500)	80 (500)	80 (500)	80 (999)	80 (999)	80 (999)	80 (999)	80 (999)	80 (999)	80 (999)
	Tool Mass (up to) [kg]		25	30	30	35	35	35	35	35	35	35
	Max. Length (up to) [mm]		500	500	600	600	600	600	700	700	700	700
	Max. Diameter (up to) ⁴ [mm]		300	300	340	325	325	325	325	325	325	325
Machine Data	Indicative Footprint Area [m ²]		36	50	73	74	95	115	104	115	124	171
	Indicative Weight [kg]		19.000	25.000	29.500	42.000	45.500	50.000	48.000	52.000	55.500	59.000
Available Configurations			Single-Pallet / Twin-Pallet / Multi-Pallet / FMS			Single-Pallet / Twin-Pallet / Multi-Pallet / FMS			Single-Pallet / Twin-Pallet / Multi-Pallet / FMS			

JET FIVE

Highlights
from 3.000 to 12.000
from 1.500 to 2.500
from 600 to 3.000
40
40 / 70 (linear motors)
1.600 x 2.000
3.000 x 2.000
6.000 x 2.000
Bi-Rotary Head
12
±110 (A) ±360 (C)
5 / 3 / 4
4 / 2 / 3
HSK / ISO
from 4.000 to 30.000
up to 120
up to 10.000
199 (450)

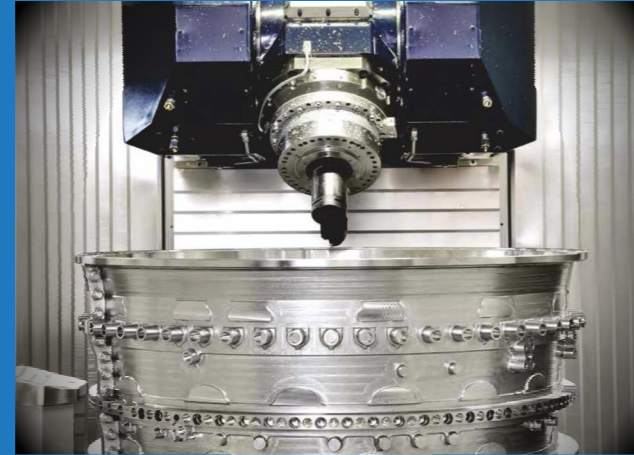


Machining of large components | Excellent material removal capabilities | Open configuration to better match customer needs | High Dynamic Machining version with Linear Motors for axes motion | High Rigidity and Stiffness version with Ball Screws system for axes motion | Twin-pallet, Multi-pallet, FMS configurations | Wide range of options for customisation.

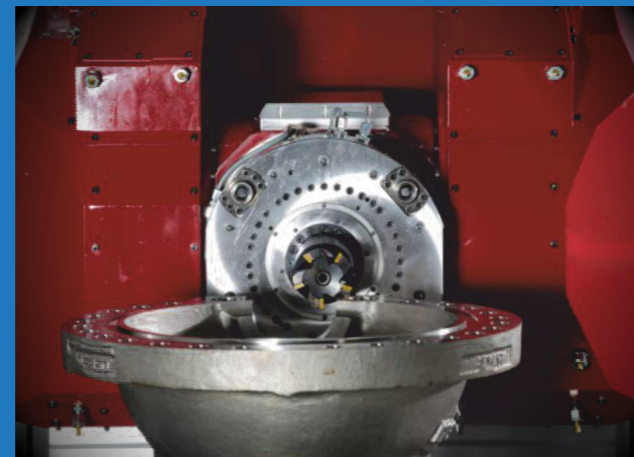
Notes _ The data reported in this table are referred to a 5-axis machining center in twin-pallet configuration
¹ Available as an option
² Further Options Available
³ Available for Multitasking machining centers only, turning max. speed depends on mass of component+fixture
⁴ Free adjacent tool places

MCM FIELDS OF APPLICATION

AEROSPACE



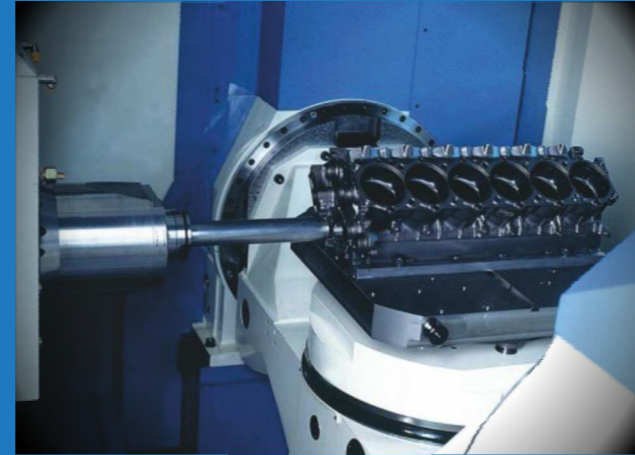
HEAVY EQUIPMENT AGRICULTURAL MACHINERY



MACHINERY, TOOLING, DEFENCE



AUTOMOTIVE



ENERGY, OIL & GAS



INDUSTRIAL COMPONENTS



COMPANY PROFILE / MISSION

MCM designs and manufactures high-performance horizontal machining centers, flexible manufacturing systems and customised solutions for the main sectors of precision mechanics (aerospace, automotive, energy, oil & gas, industrial components). Three production sites located in the area of Piacenza, subsidiaries in France, Germany, USA and China and operating partnerships in Spain, Russia, UK, Poland, Czech Republic and Middle East confirm the image of solid international company that MCM created throughout its long history.

MCM machines guarantee maximum performance in terms of precision, productivity and reliability. Three lines of horizontal machining centers: Clock, Tank and Jet Five, covering machining volumes up to 12 meters and configurable in 4 or 5 axes with milling, turning and grinding capacity.

MCM machining centers are available in single-, twin- and multi-pallet version or connected one to each other in FMS. The Software Solutions provided by MCE, the IT Division of MCM, are crucial and exclusive tools for production management.

The professional skills and the overall know-how of the MCM people are the main added value of the company. "Evolving together" is the motto that MCM follows and shares with customers, stakeholders and suppliers.

It is a common statement to define MCM as the right partner for all the customer needs: from the study of the production process to the technological solution including turnkey project and industrialisation, up to the after sales services all over the world.

INTEGRATED PRODUCTION PROGRAM

MACHINING CENTERS

A high performance complete line of horizontal machining centers



FLEXIBLE AUTOMATION

Systems and solutions for FMS and manufacturing lines automation



SYSTEM INTEGRATION

A single partner to integrate machines and machining accessory technologies



SOFTWARE SOLUTIONS

jFMX, the exclusive MCM supervision software and the jFRX platform represent the state of the art of the system information, monitoring and control solution



MANUFACTURING TECHNOLOGY

MCM supports the customers in design and development of manufacturing processes



SERVICE

MCM provides an extensive technical service network through its branches and local partners in Europe, USA and Far East, centrally coordinated by the parent company



SOFTWARE SOLUTIONS



The jFMX platform, the exclusive MCM supervision software, has an architecture organised in different levels in order to manage all the complexities of systems and information, with the possibility to become the coordination and management control center of an entire workshop.

High autonomy, optimal flexibility and reduction of human activities around the machine are just some of the advantages integrated in the jFMX software packages.

The jFRX platform based on an IT device, integrated on all new MCM machines, allows to monitor and compare the machine performance and operativity with a predictive Service and Maintenance indications, when connected to the cloud computing services offered by MCM.

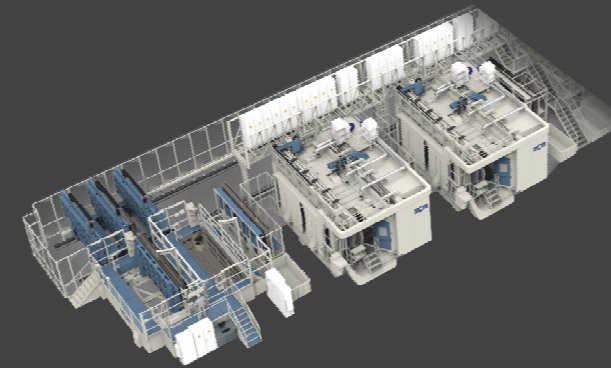


FMS



MCM designs and develops all the units that make up an FMS (Flexible Manufacturing System). The main customer benefit is to have a single partner for the realisation of entire projects.

- Layout engineered to optimize the use of the surface and the production flow
- Better performance, flexibility and autonomy
- Integration of third party machines (washing stations, EDM, storage units and CMMs)
- Software solutions engineered for the specific application covering all the FMS production units.

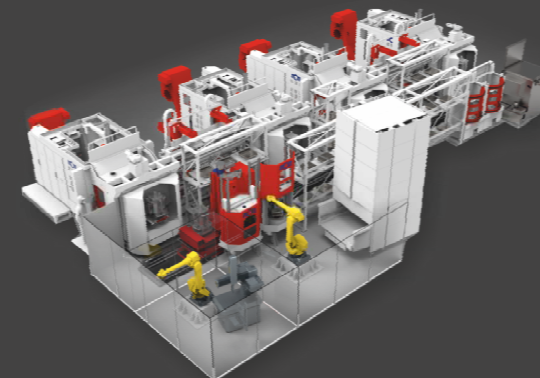


SYSTEM INTEGRATION MANUFACTURING TECHNOLOGY



The ability to integrate complementary and auxiliary technologies is the kernel of the MCM portfolio. Based on the long experience in turnkey solutions for the realization of complex parts in all major sectors of precision mechanics (aerospace, automotive, energy, oil & gas, industrial components), MCM is well known as a systems integrator able to solve all the problems related to a mechanical production within their FMS:

- Coordinate Measuring Machines (CMMs)
- Washing stations
- Robot
- Non-conventional technologies (e.g. EDM)
- Raw parts or W.I.P. storage units
- Programming and simulation of processes to analyse saturation and availability



www.mcmspa.it



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#evolvingtogether



SERVICE

Headquartered in Italy, MCM operates all over the world with service subsidiaries located in France, Germany, USA, China and a constantly growing network of local partners. The MCM network provides and guarantees a global and

efficient assistance service. Specialised teams of engineers present alongside customers and de-centralised spare parts stocks, strengthen the company mission to service its customers anywhere and at any time.

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