emco group

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[E[M]CONOMY means:]

Perfect milling solutions for every need.

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Creating and using synergies. The Emco Group

The Emco Group is a network of prestige suppliers from the machine tool manufacturers' sector. This Group, which bundles the strengths and competences of various European manufacturers, creates highly efficient synergies for the companies engaged in metal removal activities.
The result consists of highly economical milling solutions for innovative high tecnology machines, from very small to very large sizes to satisfy any requirement.

[MECOF]

Mecof is one of the leading manufacturers of high speed and high precision milling and boring machining centres.
With many years of experience and an extensive know how, Mecof successfully develops perfect turnkey solutions for the tecnology needs of small businesses as well as of large-scale OEM groups in the automotive and aerospace sector.

[FAMUP]

Famup is the Italian market leader for CNC machining centres.
The product range includes CNC milling centres with X travel from 350 to 2000 mm, with and without pallet changer. These machining centres stand out for their long service life, power and cost optimization.

[EMCO]

Emco is the most important machine tools manufacturer in Austria.
With innovative solutions in the field of turning, milling and complete machinings as well as with a world's leading training program, Emco has earned an international reputation.
Production facilities are located in Austria, Germany and Italy.

Quality from a single supplier MECOF high-speed milling machines

Unlike other suppliers, EMCO Mecof develops and produces the machinery components specific to get maximum precision and speed in house.

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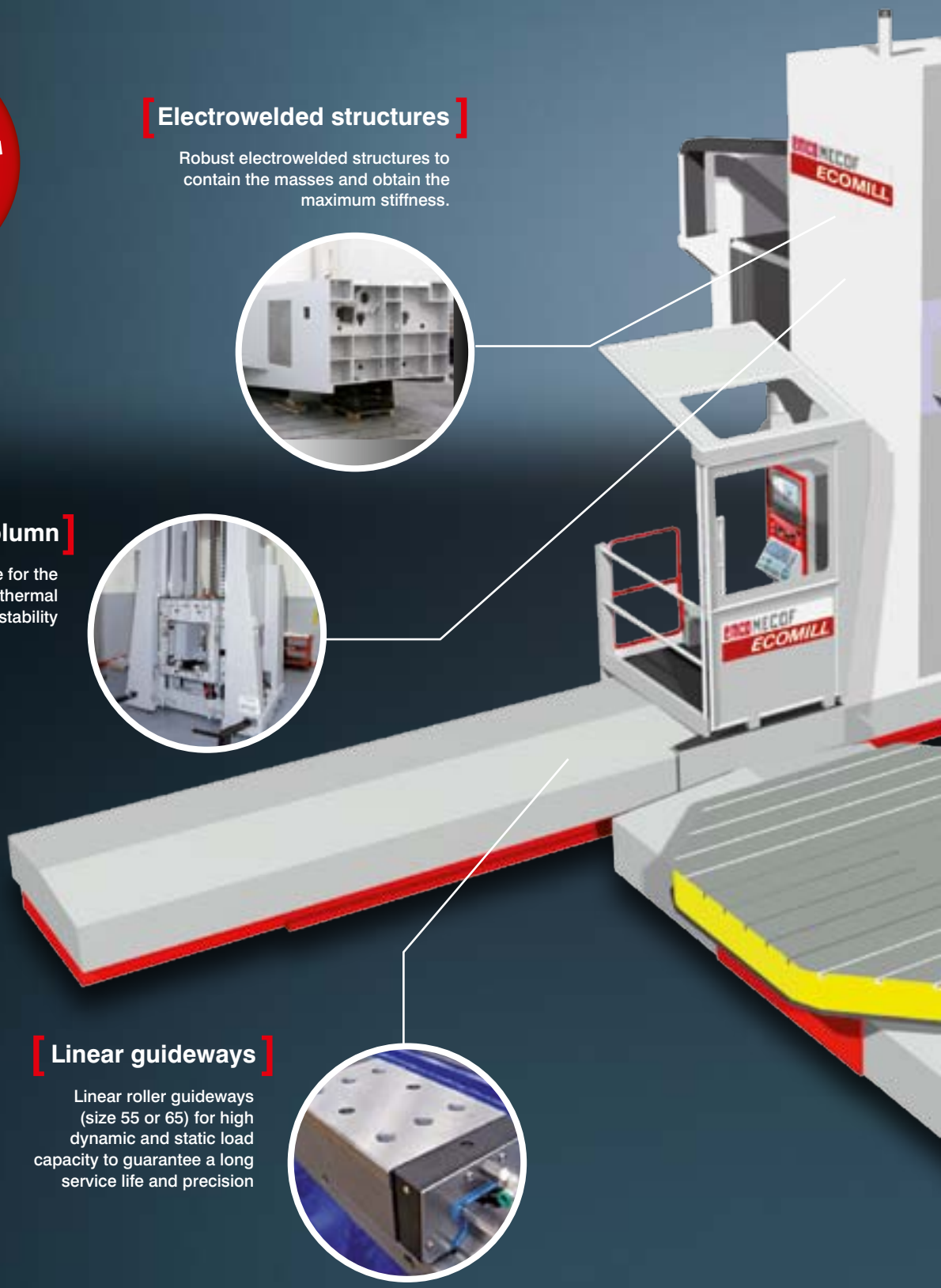
Electrowelded structures

Robust electrowelded structures to contain the masses and obtain the maximum stiffness.

Column

Box- in-box structure for the highest geometric and thermal stability



Linear guideways

Linear roller guideways (size 55 or 65) for high dynamic and static load capacity to guarantee a long service life and precision

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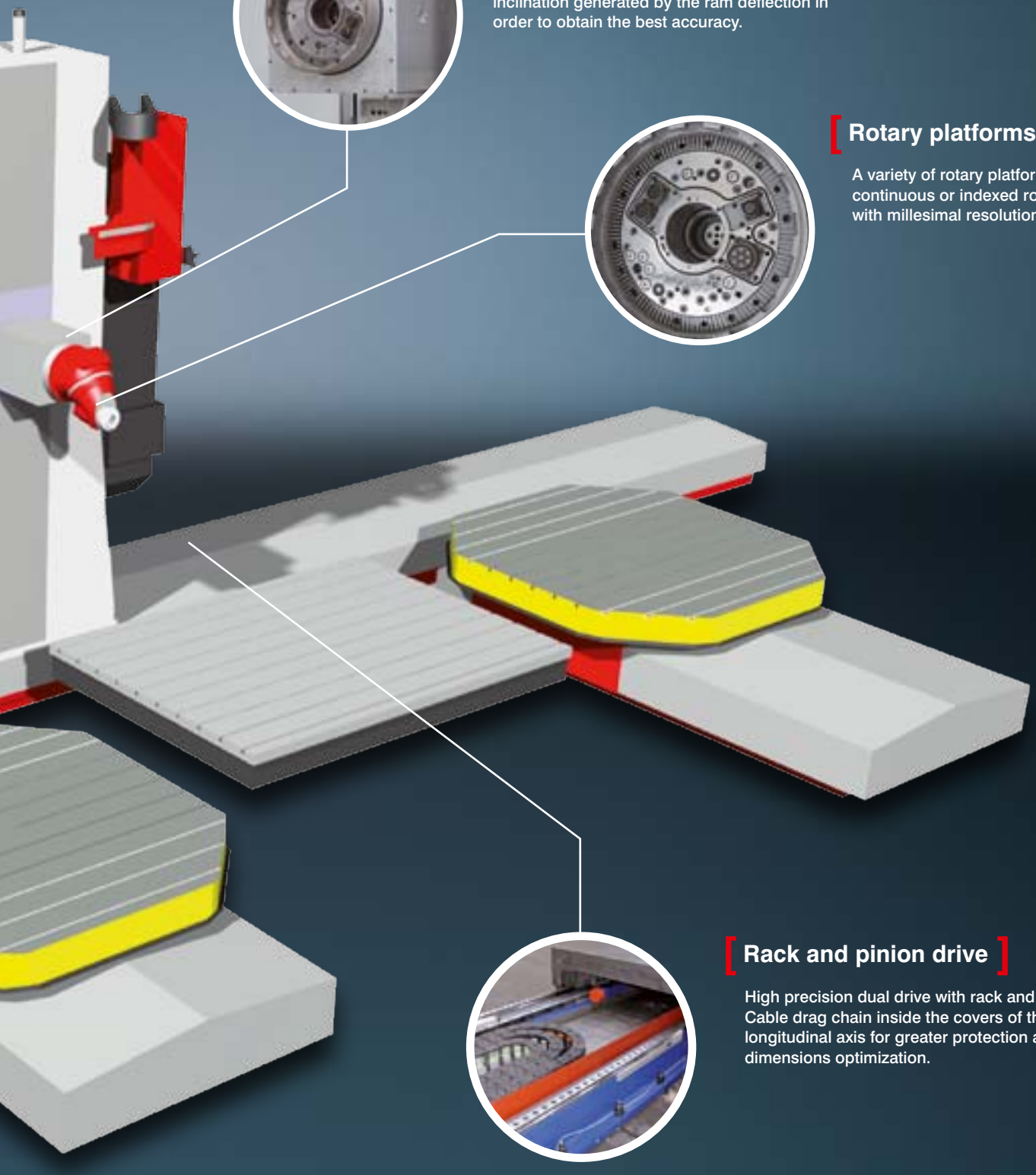
Guideways

Ram with 8 ground and hardened guideways and a patented system to counterbalance the inclination generated by the ram deflection in order to obtain the best accuracy.

Rotary platforms

A variety of rotary platforms with continuous or indexed rotation with millesimal resolution



Rack and pinion drive

High precision dual drive with rack and pinion. Cable drag chain inside the covers of the longitudinal axis for greater protection and overall dimensions optimization.

Machines with horizontal spindles

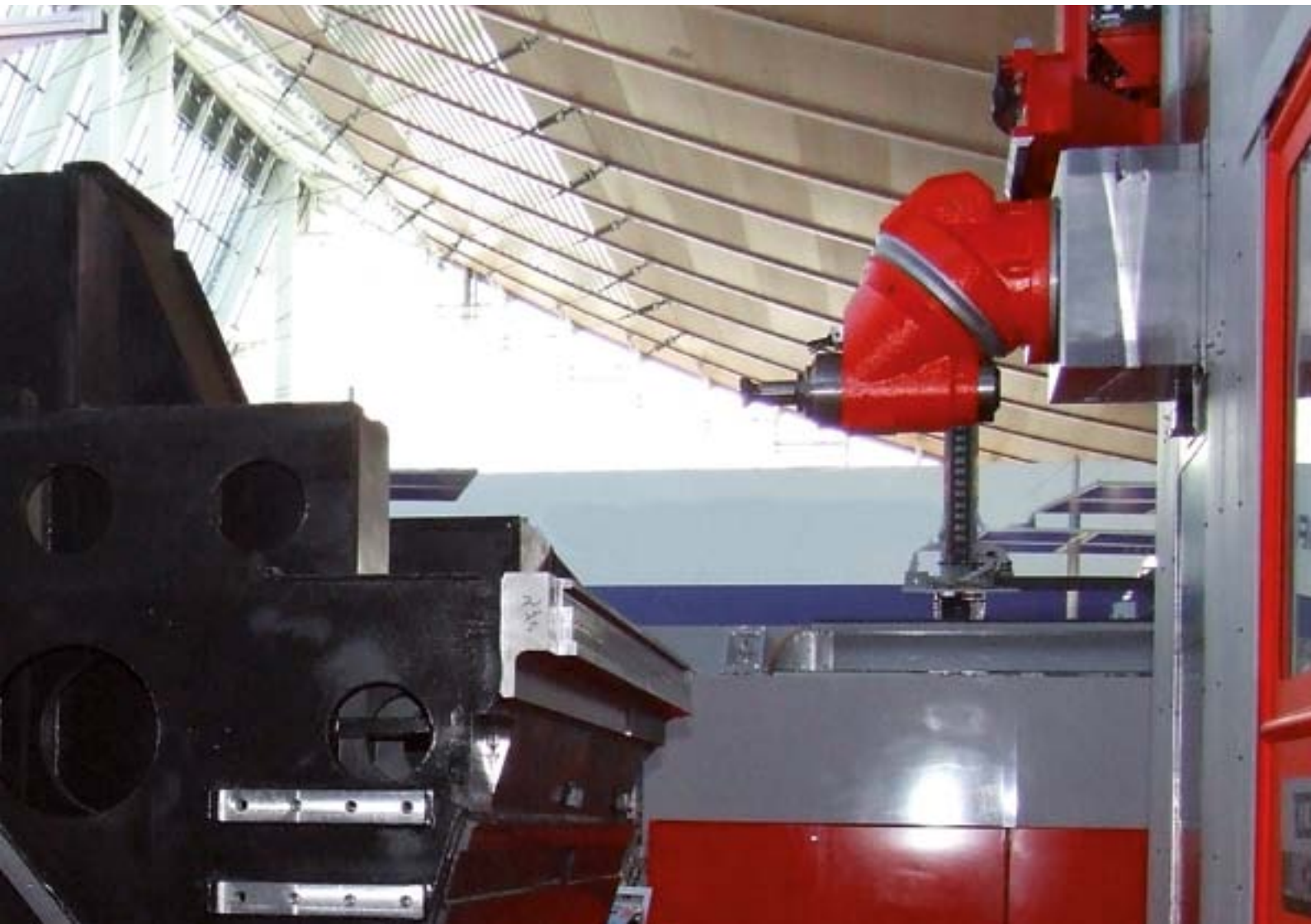
Milling machines with moving column, horizontal ram and integrated platform

[Design]

- Machine column with a large number of ribs for the highest flexural and torsional resistance
- Box-in-box structure for the highest geometric and thermal stability
- Axes movements by precision recirculating ball screws and preloaded nuts or by precision pinion and rack drives
- Rapid feeds up to 30 m/min (linear axes)
- Large monolithic structure (optimized FEM)

[Fields of application]

- Mould manufacturing (steel,aluminium, plastic, prototypes, styling), general precision engineering, machine tools, printing machines, earth moving machinery, energy technologies, aeronautics



[ECOMILL]

Fields of application: General mechanical engineering	
X axis	6000 mm and beyond
Y axis	1300 mm
Z axis	2500 mm
Feed speed	30 m/min
Mechanical milling heads	Up to: 38 kW / 600 Nm / 6000 rpm

[MECMILL]

Fields of application: General precision mechanical engineering	
X axis	6000 mm and beyond
Y axis	1300 – 1600 mm
Z axis	3000 mm
Feed speed	30 m/min
Mechanical milling heads 3 + 2 axes	Up to: 38 kW / 1000 Nm / 6000 rpm

[MASTERMILL]

Fields of application: Toolmaking (mould and die) prototype, aerospace	
X axis	4000 mm and beyond
Y axis	1300 – 1600 mm
Z axis	2200 – 3000 mm
Feed speed	30 m/min
Mechanical milling heads 3 + 2 and/or 5 axes	Up to: 38 kW / 1000 Nm / 6000 rpm
Heads with electric spindles	Up to: 42 kW / 120 Nm / 26000 rpm

[MECMILL PLUS]

Fields of application: General precision engineering, aerospace industry and energy technology	
X axis	6000 mm and beyond
Y axis	1600 – 1800 mm
Z axis	4000 – 5000 mm
Feed speed	25 m/min
Mechanical milling heads 3,+2 and/or 5 axes	Up to: 38 kW / 1000 Nm / 6000 rpm
Heads with electric spindles	Up to: 25 kW / 120 Nm / 12000 rpm
Boring spindle	Diameter 130mm W axis stroke 700 mm / up to 45 kW 2000 Nm / 2000 rpm

Machines with vertical spindles

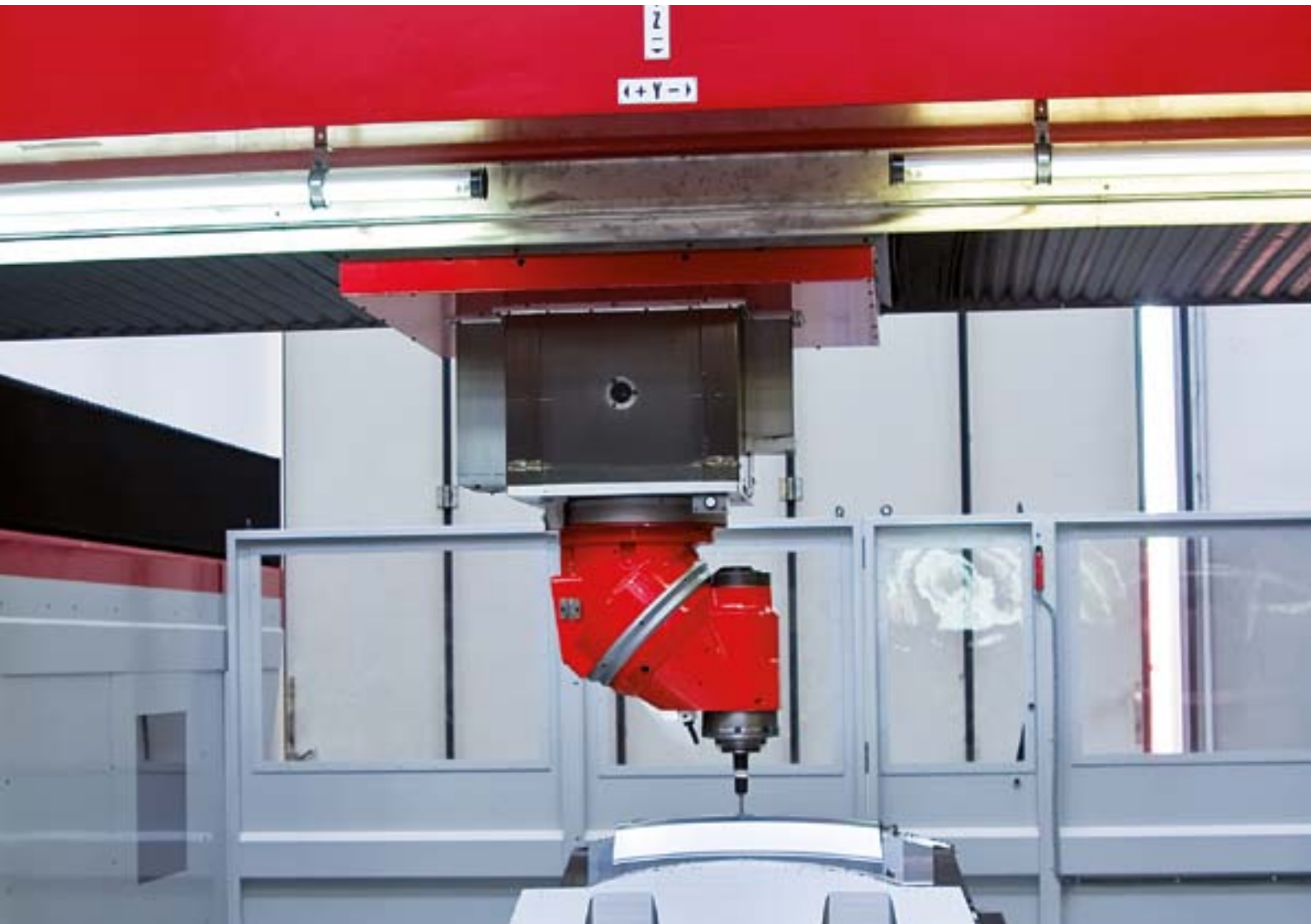
Portal and gantry milling machines

[Design]

- Robust electrowelded structures to contain the masses and obtain the best rigidity
- High dynamics and high precision in milling thanks to the box-in-box structure of the crossbeam-ram
- Spindles with high-level performances and universal mechanical heads up to 1200 Nm and 38 kW
- Big size recirculating roller linear guideways in all axes
- Rapid feeds up to 100 m/min
- Axes movements with dual drive and anti-backlash electronic system, preloaded nut or linear motors of the latest generation.
- Structural analysis of the components FED optimized

[Fields of application]

- Aerospace, mould and dies (plastic, sheet), general engineering, styling



[LINEARMILL 2200]

Fields of application: Toolmaking (mould and die) prototype, aerospace	
X axis	2500 mm and beyond
Y axis	1650 – 2200 mm
Z axis	800 – 1000 mm
Feed speed	100 m/min
Heads with electric spindles	Up to: 40.5 kW / 35.4 Nm / 26000 rpm

[DYNAMILL RP]

Fields of application: Toolmaking (mould and die) prototype, aerospace	
X axis	4550 mm and beyond
Y axis	2750 – 3250 – 3750 mm
Z axis	1250 – 1500 – 2000 – 2250 mm
Feed speed	50 m/min
Mechanical milling heads 3 + 2 and/or 5 axes	Up to: 38 kW / 600 Nm / 6000 rpm
Heads with electric spindles	Up to: 42 kW / 120 Nm / 26000 rpm

[MEGAMILL]

Fields of application: General precision engineering, toolmaking, aerospace industry, energy technology	
X axis	7500 mm and beyond
Y axis	4000 – 5000 mm
Z axis	1500 – 2000 mm
Feed speed	30 m/min
Mechanical milling heads 3 + 2 and/or 5 axes	Up to: 38 kW / 1000 Nm / 6000 rpm
Heads with electric spindles	Up to: 42 kW / 120 Nm / 26000 rpm

[POWERMILL]

Fields of application: General precision engineering, toolmaking, aerospace industry, energy technology	
X axis	6000 mm and beyond
Y axis	3000 – 4000 – 5000 mm
Z axis	1500 – 2000 mm
Feed speed	25 m/min
Mechanical milling heads 3 + 2 and/or 5 axes	Up to: 38 kW / 1000 Nm / 6000 rpm

Emco Mecof: Customer specific solutions and options

EMCO MECOF milling centres can be specifically customized for the various application fields

[Accessories]

Tool magazines
Automatic tool magazine up to 120 pockets fixed on the column

Equipment for head change
4-pocket head carriage magazine

Enclosures
Protective covers for the machining area in front of the machine consisting of modular steel plates (height approx. 2500 mm)

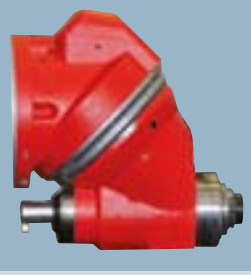
Operator platform
Motorized operator platform with vertical and horizontal movement

Rotary tables
Translating rotary table with a load capacity up to 60000 Kg

[Spindles]

MECHANICAL MILLING HEADS

AUTOMATIC UNIVERSAL MILLING HEAD



up to: 38 kW / 1000 Nm / 6000 rpm

AUTOMATIC UNIVERSAL MILLING HEAD WITH CONTINUOUS AXES

up to: 38 kW / 750 Nm / 6000 rpm

BORING SPINDLE

45 kW / 2000 Nm / 2000 rpm

MILLING HEAD WITH OFFSET SPINDLE

up to: 38 kW / 1300 Nm / 3000 rpm

MILLING HEAD WITH HORIZONTAL SPINDLE

up to: 38 kW / 1000 Nm / 4000 rpm

HIGH SPEED MILLING HEADS WITH ELECTROSPINDLE

SPAZIO 13 MILLING HEAD FORK TYPE FULL FIVE AXIS

up to: 40.5 kW / 35.4 Nm / 26000 rpm

SPAZIO 16 MILLING HEAD FORK TYPE FULL FIVE AXIS

up to: 42 kW / 120 Nm / 24000 rpm

VERTICAL ELECTROSPINDLE

up to: 35 kW / 110 Nm / 18000 rpm

MILLING HEAD WITH TWO INDEXED AXIS

up to: 42 kW / 67 Nm / 24000 rpm

MILLING HEAD HOLDER ELECTROSPINDLE

up to: 22 kW / 30 Nm / 20000 rpm

[Applications]

Aerospace sector
Machining a titanium structure

Aerospace sector
Machining of a frame

Aerospace sector
Machining an aircraft wing

Energy sector
Machining of a hydraulic shovel

Energy sector
Machining of a wind turbine component

Energy sector
Machining of a wind turbine component

General engineering
Machining a housing for an electric motor

General engineering
Machining of the structure of a paper processing machine

General engineering
Machining of a large-dimensioned column for a machine tool

MECOF high speed milling centres with horizontal and vertical spindles meet the requirements of modern production and offer high-level performances with a very attractive price-performance ratio.

[Applications]

Automotive sector
Injection mould for plastic bumpers

Automotive sector
Machining of a forging mould

Automotive sector
Machining of a car mould

Automotive sector
Machining of an injection mould for bumper matrices

Automotive sector
Machining of an injection mould for bumper matrices

Automotive sector
Machining of an injection mould for bumper punch

Automotive sector
Machining of a scale 1:1 car model

Automotive sector
Realization of a model of a car

Automotive sector
Machining of a car component (racing sector)

With their large range of milling heads the MECOF machines are able to meet a wide variety of production requirements. With a single machine can be carried out both heavy rough and precise superfinish machinings.

Long lifetime and efficiency EMCO FAMUP milling centres

An EMCO Famup machining centre is a vertical milling solution with high-level performances that thanks to its lasting quality and the cost optimized construction offers a high productivity.

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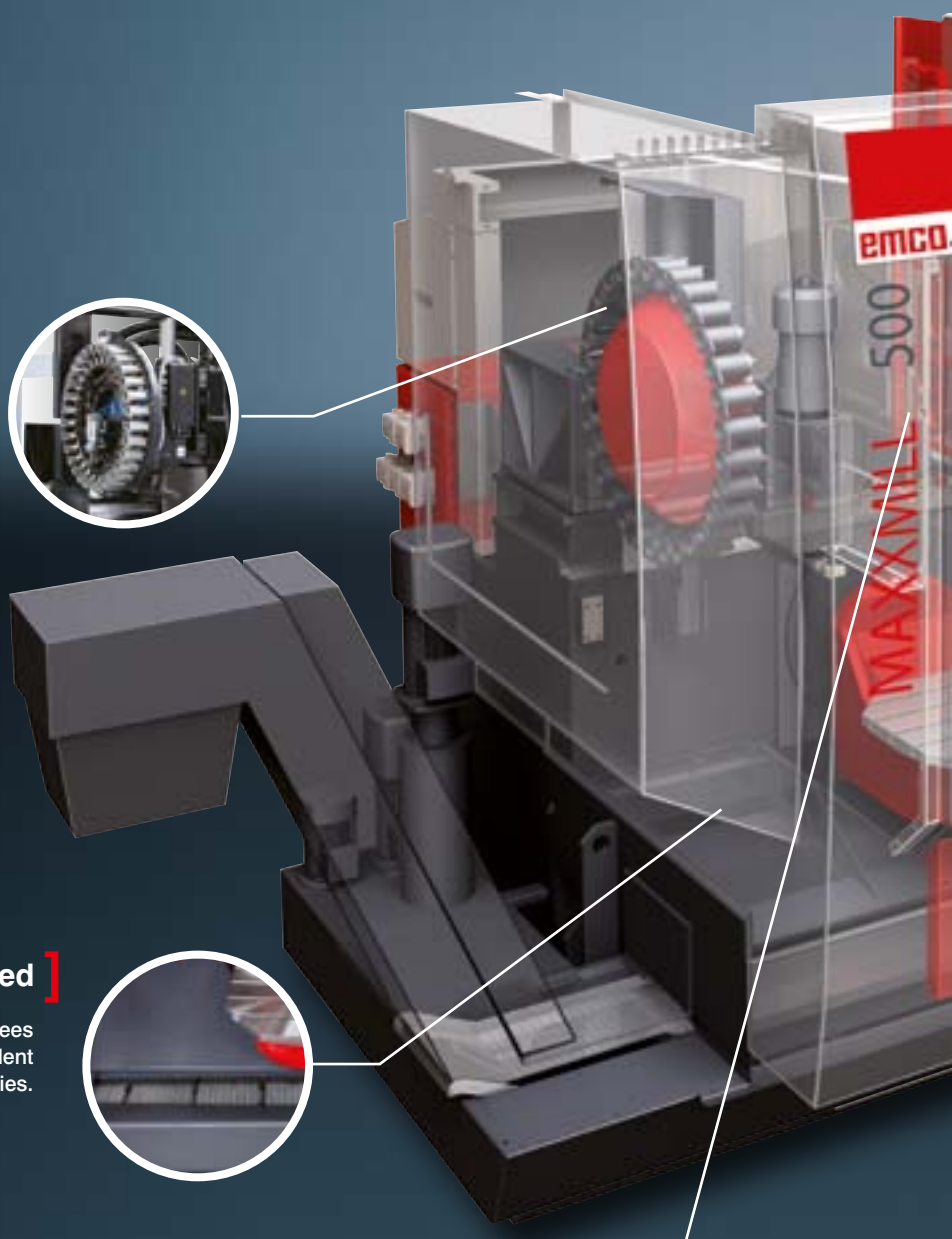
[Tool magazine]

The drum tool magazine achieves extremely short tool change times – thus reducing non productive times. The drum magazine is completely mechanical so that the most common sources of problems (such as hydraulic or electronic components) can be avoided.



[Polymer concrete machine bed]

The polymer concrete bed guarantees a high degree of stability and excellent vibration damping properties.

[Guideways]

Size 45 roller guideways guarantee the necessary stability in the axis system.

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Spindle

Depending on the application field, two spindle versions are available. In the speed range up to 10000 rpm is used a mechanical spindle, driven by a synchronous coaxial motor. In the higher speed range of 15000 rpm an electrospindle with high power and torque is used. This allows to obtain high volumes of chip removal.

Numerical control of the latest generation

The numerical control is ergonomically housed in a rotating/sweveling panel and the operator can position it according to his machining requirements.

Table

The axes of the rotary/sweveling table in the 5 faces version are driven by worm wheel transmission and worm screw. In the version with 5 continuous axes they are driven by torque motors with no backlash and direct measuring system so that particularly accurate machining precisions can be obtained.

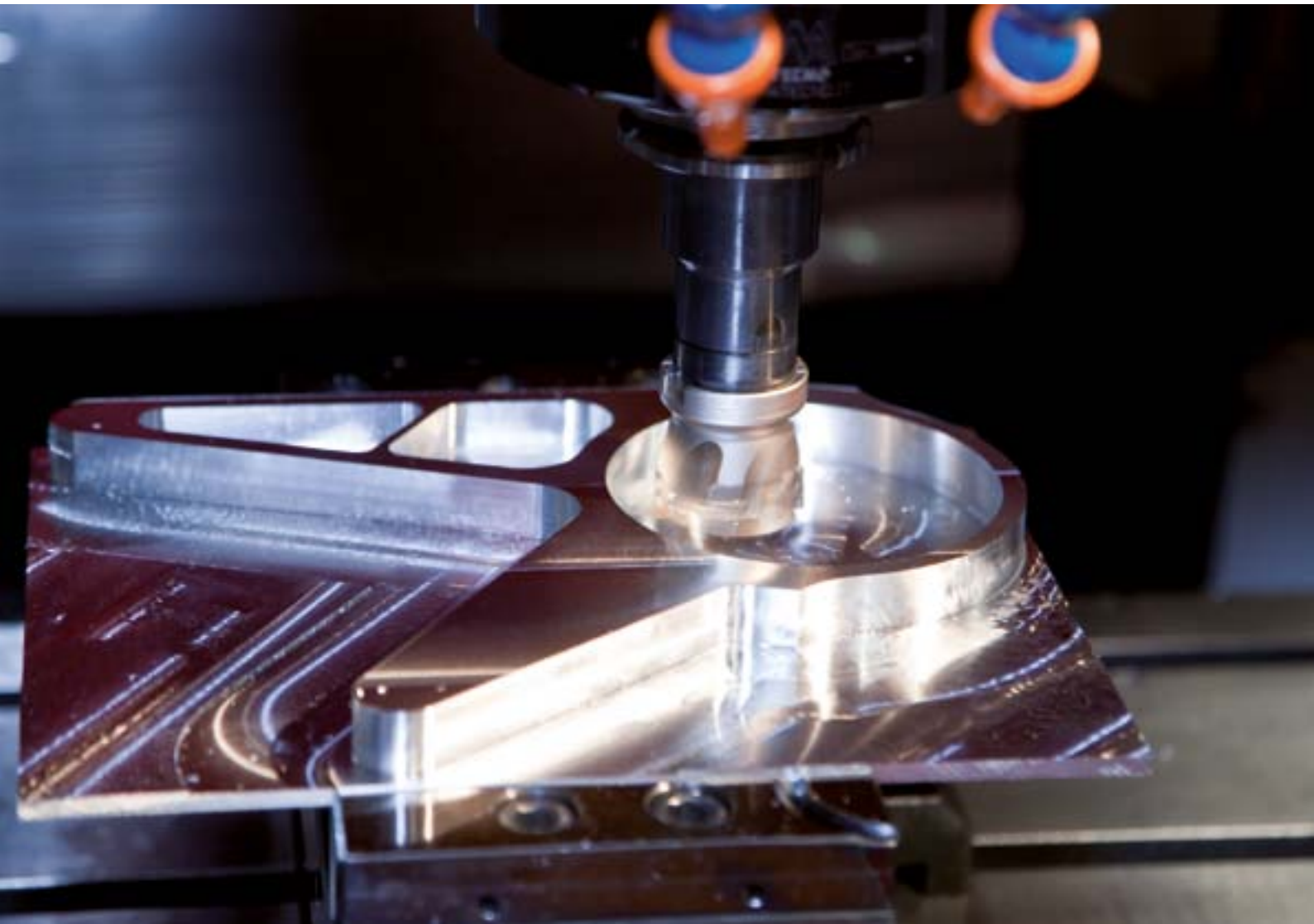
Machining centres by EMCO FAMUP

[Highlights]

- Stable machine architecture
- Ergonomic design for the operator and for the maintenance
- Drives with high-level performances for a high chip removal capacity and a large volume of removed material
- A variety of options
- Customized basic equipment (basic variants)
- Ideal for small and medium sizes thanks to short setup times
- Machine options for the machining of small and large workpieces

[Basic data]

- Polymer concrete machine beds for a high vibration damping or realized in stabilized cast iron
- High thermal stability
- Linear and roller guideways
- High dynamics on the axes, mainly thanks to the ball recirculating systems and to the direct drive linear motors
- Recirculating-ball guideways ISO 3 quality
- Automatic central lubrication
- Spindles can be realized as mechanical spindles for high chip removal capacity and as electrospindles with very good performances
- High positioning and repeteability accuracy
- Numerical controls of the latest generation Siemens, Fanuc and Heidenhain



[EMCO MAXXMILL 500]

Block valve

- Bar segment
- Material: steel S235JR
- Dimensions 60 x 60 x 60 mm

Fields of application: 5-axis machining for industrial companies (e.g. automotive industry), toolmaking, general engineering		
Stroke in X / Y / Z	mm	650 / 550 / 500
Rapid feeds in X / Y / Z	m/min	30 / 30 / 30
Tool magazine	slots	30 (40)
Clamping surface	mm	600 x 600
Table load	kg	250
Speed range	rpm	50 – 10,000 / 15,000
Drive power	kW	11 / 34.5
Tool holder		ISO40, BT40, HSK63A

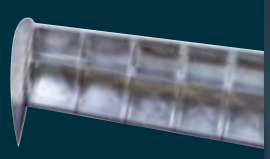
[LINEARMILL 600]

Fan

- Bar segment
- Material: alloy steel ZN 180-81
- Dimensions 300 x 300 mm

Fields of application: 5-axis machining for precision general engineering, toolmaking, aerospace technology, third-party machining		
Stroke in X / Y / Z	mm	600 / 500 / 500
Rapid feeds in X / Y / Z	m/min	60 / 60 / 60
Tool magazine	slots	40
Clamping surface	mm	Ø 600
Table load	kg	800
Speed range	rpm	50 – 15000
Drive power	kW	34.5
Tool holder		HSK 63 A

[EMCO MMV 2000]



Part of a structure

- Casting
- Material: aluminium alloy AlMg4,5 Mn
- Dimensions: 200 x 70 x 1000 mm

Fields of application: industrial companies (e.g. automotive industry), aircaft industry, general mechanical processes		
Stroke in X / Y / Z	mm	2000 / 800 /750
Rapid feeds in X / Y / Z	m/min	50 / 50 / 50
Clamping surface	mm	2400 x 950
Table load	kg	2200
Speed range	rpm	50 – 10000 (15000)
Drive power	kW	34
Tool magazine	slots	30 (40, 60)
Tool holder		ISO40 (BT40)

[EMCOMILL E350]

Tool

- Turned workpiece
- Material: steel St37B
- Dimensions: 40 x 55 mm

Fields of application: production of small parts for the clock/watch industry and medical technology, general mechanical processes		
Stroke in X / Y / Z	mm	350 / 250 / 300
Rapid feeds in X / Y / Z	m/min	24 / 24 / 24
Clamping surface	mm	520 x 300
Table load	kg	100
Speed range	rpm	50 – 10000
Drive power	kW	8.5 kW
Tool magazine	slots	20
Tool holder		SK 30 DIN 69871

[EMCOMILL E600]

Pump housing

- Casting
- Material: aluminium
- Dimensions: 200 x 200 x 200 mm

Fields of application: general mechanical processes, general engineering, industrial companies		
Stroke in X / Y / Z	mm	600 / 500 / 500
Rapid feeds in X / Y / Z	m/min	24 / 24 / 24
Clamping surface	mm	700 x 520
Table load	kg	500
Speed range	rpm	50 – 12000
Drive power	kW	13
Tool magazine	slots	20 (30)
Tool holder		ISO40 (BT40)

[EMCOMILL E900]

Pressure distributor

- Casting
- Material: Aluminium
- Dimension: 100 x 100 x 80 mm

Fields of application: general mechanical processes, general engineering, industrial companies		
Stroke in X / Y / Z	mm	900 / 500 / 500
Rapid feeds in X / Y / Z	m/min	24 / 24 / 24
Clamping surface	mm	1000 x 520
Table load	kg	800
Speed range	rpm	50 – 12000
Drive power	kW	13
Tool magazine	slots	20 (30)
Tool holder		ISO40 (BT40)

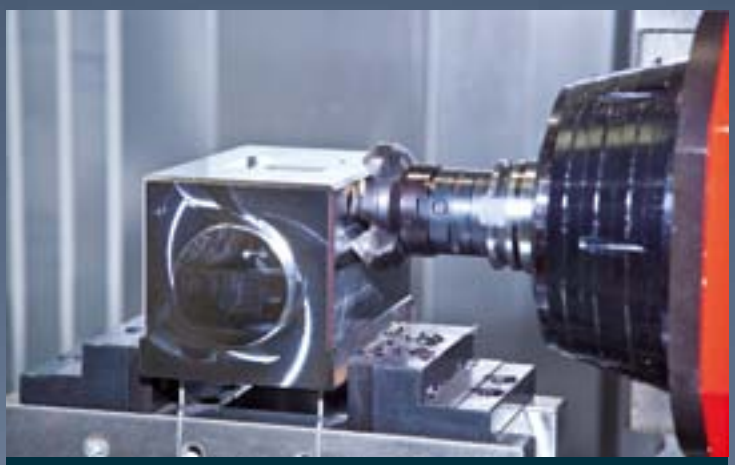
[EMCOMILL E1200]

Contours machining

- Bar segment
- Material: aluminium
- Dimensions: 400 x 400 x 50 mm

Fields of application: general mechanical processes, engineering, industrial companies		
Stroke in X / Y / Z	mm	1200 / 550 / 500
Rapid feeds in X / Y / Z	m/min	24 / 24 / 24
Clamping surface	mm	1300 x 570
Table load	kg	1000
Speed range	rpm	50 – 12000
Drive power	kW	13
Tool magazine	slots	20 (30)
Tool holder		ISO40 (BT40)

[Machining]

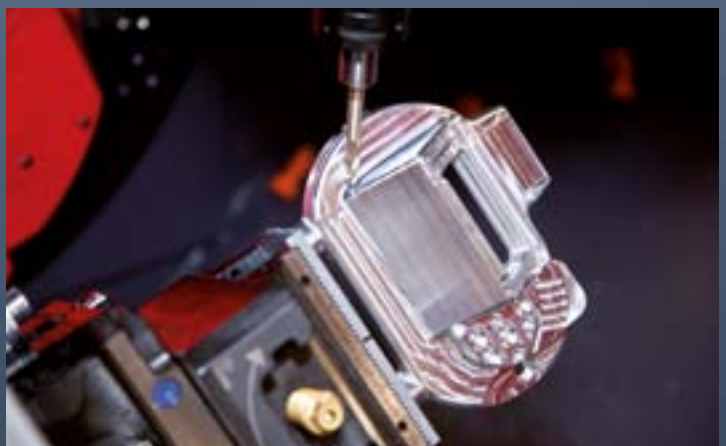


5-axis machining with swivel head and rotary table (MMV 2000)

5-axis machining with a swiveling rotary table inclined on one side and driven by worm screw (Maxxmill 500)

4-axis machining by means of a rotary table (E-series)

3-axis machining of a differential housing (E-series)



5-axis simultaneous machining of a housing on a swiveling rotary table inclined on one side with torque motors for rotary axes management (MAXXmill 500)

5-axis machining of a fan with rotary/tilting table, oscillating arms inclined on two sides (LM 600)

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