emco

THE NEW LOOK OF PERFORMANCE

BEST PROSPECTS FOR NEW PERSPECTIVES

The world of EMCO is made up of many worlds. What do these worlds have in common? High standards, openness to innovation and the willingness to go the extra mile for exceptional solutions. The combination of these values makes it possible to get better and to continuously improve.

/ EXTREMELY WELL-ROUNDED AND HIGHLY AMBITIOUS

/ Mag. Horst Rettenbacher
CFO EMCO

''Stability is a good basis for progress. Combining the continuity of a family business and the ambition of a global player, EMCO is the perfect partner in the sometimes choppy waters of the market. In the medium and long term, it's worth being independent of the capital market and retaining that human touch''.

''I can offer the best combination from a large portfolio of possibilities. When I see the level of commitment and detail we put into finding individual customer solutions, it motivates me even more. Because I know how much care and thought has gone into each of these technical solutions''.

/ Christian Brötzner
Technical Sales Manager Training

beyond

''As an innovative company, we are always in search of new ideas which can help our customers grow sustainably. Our goal is not just to meet expectations, but to exceed them.''

/ Dr. Ing. Stefan Hansch
CEO EMCO

''The best is always the sum of a lot of good things. This also applies to automation at EMCO. The goal: To find the smartest combination of standard solutions using expertise from many areas. Our openness to new ideas helps''.

/ Mirela Delibegovic
R&D Automation EMCO

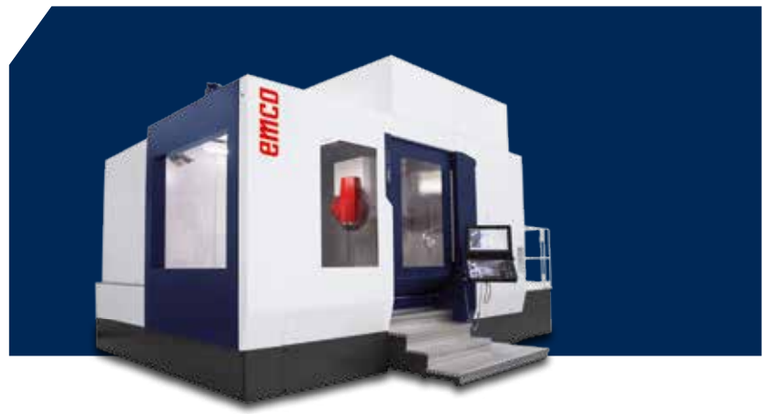
standard /

''Anyone who wants to be among the leaders on the machining market today has to offer the highest level of quality in all areas. With MECOF, EMCO has strengthened its position in the field of milling and has put itself in the best strategic position for the future. This creates new opportunities''.

/ Walter Voit
Managing Director EMCO Germany

''A central element of our success is our service. The first step is setting up a functioning machine. This is followed by regular training, adaptations and optimisations. Our customers can always count on quick and competent support''.

/ Michael Schmelz
Head of Global Service



FORM THAT WORKS

Functionality and aesthetics are optimally combined with a new design concept.

/ p. 7 – 10

DIGITAL AND INDIVIDUAL

With EMCONNECT, you have the key to networked intelligent digitisation in your hands.

/ p. 18

READY FOR EVERY APPLICATION

Hyperturn meets all the requirements for flexibility and precision. Even in large dimensions.

/ p. 28

MAKING THE NEW COMPLETE

At EVVA, aspirations and opportunities combine to create an exciting vision. EMCO has the perfect all-round solution.

/ p. 26

CNC TURNING–MILLING CENTRES WITH POWERFUL MILLING SPINDLE AND TOOL MAGAZINE

HYPERTURN POWERMILL

HYPERTURN 200 PM

HYPERTURN 100 PM

HYPERTURN 65 PM

CNC HIGH-PERFORMANCE TURNING CENTRES WITH TURRETS INCLUDING MILLING DRIVE AND Y-AXIS

HYPERTURN

HYPERTURN 110

HYPERTURN 95

HYPERTURN 65 TT

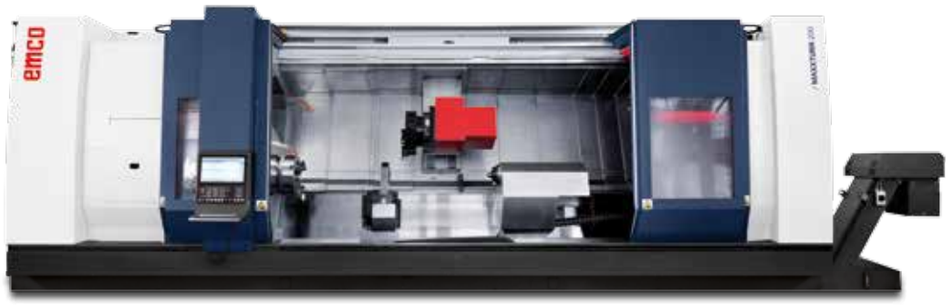
HYPERTURN 65 DT

HYPERTURN 45 G3

Available in a new design/ colour from 1 January 2020

CNC UNIVERSAL TURNING CENTRES WITH MILLING DRIVE AND Y-AXIS

MAXXTURN



MAXXTURN 200

MAXXTURN 110

MAXXTURN 95

MAXXTURN 65

MAXXTURN 45

MAXXTURN 25

CNC VERTICAL TURNING CENTRES

EMCO VERTICAL

EMCO VERTICAL VT 400

EMCO VERTICAL VT 260

EMCO VERTICAL VT 160

CNC TURNING MACHINES WITH MILLING DRIVE

EMCOTURN

EMCOTURN E65

EMCOTURN E45

EMCOTURN E25

UNIVERSAL MACHINING CENTRES FOR 5-AXIS SIMULTANEOUS MACHINING

UMILL

UMILL 1800

UMILL 1500

UMILL 750

UMILL 630

EMCO MMV

MMV 3200

MMV 2000

HIGH-PERFORMANCE MILLING CENTRES FOR LARGE-VOLUME PARTS

VERTICAL

DYNAMILL G5

DYNAMILL

MEGAMILL

POWERMILL

HIGH-PERFORMANCE MILLING CENTRES FOR LARGE-VOLUME PARTS

HORIZONTAL

ECOMILL

ECOMILL PLUS

MECMILL

MECMILL PLUS

MILLING

VERTICAL MACHINING CENTRES

MAXXMILL


MAXXMILL 750


MAXXMILL 630

EMCOMILL


EMCOMILL 1200


EMCOMILL 750


EMCOMILL E350

TURNING & MILLING

CONVENTIONAL AND CYCLE-CONTROLLED UNIVERSAL TURNING-MILLING MACHINES

EMCOMAT


EMCOMAT E-300 -400


EMCOMAT E-200 MC


EMCOMAT -20 D


EMCOMAT -17 D


EMCOMAT -14 D


EMCOMAT FB-600 MC


EMCOMAT FB-450 MC


EMCOMAT FB-600


EMCOMAT FB-450


EMCOMAT FB-3 L

TRAINING

TRAINING MACHINES

CONCEPT TURN


CONCEPT TURN 460


CONCEPT TURN 260


CONCEPT TURN 105


CONCEPT TURN 60

CONCEPT MILL


CONCEPT MILL 260


CONCEPT MILL 105


CONCEPT MILL 55

BRINGING STRENGTHS INTO THE FUTURE

The mix of experience and innovative spirit brings new turning solutions for digital times.

/ p. 36

THE WAY TO AUTOMATIC EFFICIENCY

The EMCO project for TYROLIT shows how robots, precision measurements and resource conservation can be combined into an automated whole.

/ p. 62

CULTIVATING DIVERSITY

In agriculture, fast adaptation and a good ideas are needed. These are the things that have brought EMCO and BAUER together.

/ p. 46

HANDING ON KNOWLEDGE

Good machines are important. Training employees to use them properly is even more important.

/ p. 68

THE BEST SOLUTIONS CONSIST OF HIGH-QUALITY COMPONENTS AND PERFECT SUPPORT

It is a good feeling to have someone who takes care of solutions, and alongside whom you can get closer to what is called perfection.
We want to convey this feeling to our customers from the very first discussion.
Because quality is not just the functioning of machines. It also manifests itself in a willingness to invest more time, passion and knowledge.
We show this every day and with every order.

With every new project, we abide by our guiding principle – that all our knowledge and commitment must be condensed into the best solution for this one customer.

The possibilities for and the routes to the optimal machine solution are manifold and challenging. Luckily, alongside 70 years of experience in turning and milling, we always have the drive to go beyond expectations.

Our portfolio of innovations and opportunities, in combination with the expertise and dedication of our employees, are important elements here.

What quality means to us can be defined quite concretely: Planning has to impress with surprising ideas. Training on new machines must be efficient and clear. Individual needs of customers are always at the heart of all our actions and considerations. And the level of personal support should far exceed the level that is common in the industry.

All of our departments and partner companies are always in lively exchange. Supporting one another and seeing tasks from other perspectives is not an optional extra, it is part of our everyday corporate culture. This approach helps us discover new methods and inspire each other. This, in turn, benefits our customers.

THINGS THAT LAST A LONG TIME MAKE THE WORLD BETTER

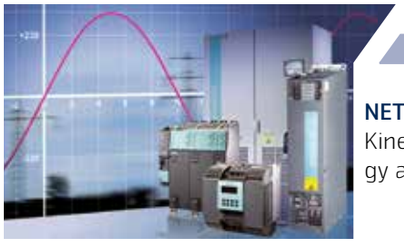
The fact that long-term investments are common in our industry is the very reason we also think in larger time horizons. Therefore, we pay attention to maximum durability and the sustainable use of resources in production and raw materials.

When it comes to energy consumption, our machines are very efficient thanks to their economical drives, intelligent standby solutions and lightweight construction methods. All of these features are further optimised by our developers to find continuously better solutions.
In this way, economic operation and ecological awareness can be combined sustainably.

/ Dr. Ing. Stefan Hansch
CEO EMCO

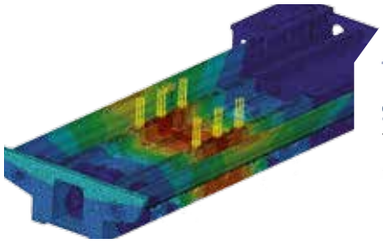
''At EMCO, responsibility starts with the selection of components and materials. The fact that a machine lasts a long time is not only a question of quality, but also of sustainability. This also applies to energy consumption and the use of resources. Anyone who saves resources intelligently also takes their environmental impact into account''.

SUSTAINABLE PRODUCTION



Saving of up to 10%

NETWORK FEEDBACK DRIVE SYSTEM
Kinetic energy is converted into electrical energy and fed back into the grid.



Saving of up to 10%

STRUCTURE-OPTIMISED MECHANICS
The FEM analysis makes relevant components stiffer and lighter.

Saving of up to 10%

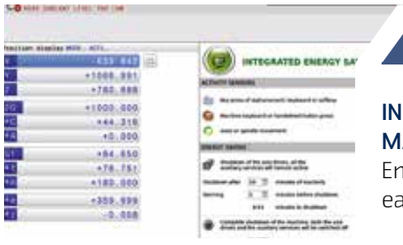
HIGHLY EFFICIENT ENGINES
In the field of coolant preparation, highly efficient motors (IE2) are used.

Saving of up to 50%

LOW-FRICTION ROLLER GUIDES
Reduced rolling friction increases dynamics and minimises lubricant consumption.

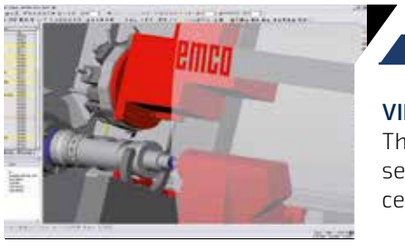
Saving of up to 50%

INTELLIGENT STANDBY CONCEPTS
On the control panel, you can program breaks for non-required lights and auxiliary equipment.



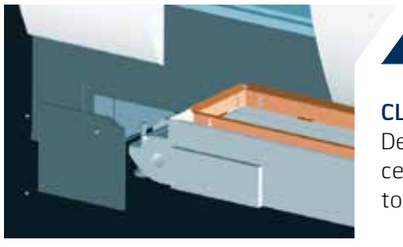
Saving of up to 70%

INTELLIGENT ENERGY SAVINGS MANAGEMENT
Energy-saving functions can be activated easily and conveniently in an input mask.



Saving of up to 85%

VIRTUAL MACHINE SIMULATION
The simulation software helps to shorten set-up and entry times and to improve process planning.



Saving of up to 95%

CLOCKED CHIP CONVEYOR
Depending on the status of the cutting process, the chip conveyor can be programmed to go into Pause mode when it is not needed.

QUALITY DEMANDS THE PERFECT INTERACTION OF ALL PARTS

Our solutions must always meet the highest standards.

At the beginning is the planning and the question of what works and what is suitable. Then follow the design and production of the perfect machine. Parts from Europe guarantee reliability, durability and precision. After delivery to our customers, we provide thought-through, customised training and services to ensure that the strengths of our machines are fully utilised and new production standards are made possible. For us, quality is something that must be reflected in every part, every step and every action. If everything works together perfectly, we have achieved our goal.

We keep looking until we find the perfect components. Then we implement what our customers have been looking for.

1 **MACHINE BEDS/CARRIAGES**
Highly stable, high shock absorbency and thermo-neutral

3 **TOOL TURRETS**
Fast switching, adjustable swivel speed and milling drive

5 **HYDRAULIC SYSTEMS**
Compact, quiet and highly energy efficient

2 **HEADSTOCKS**
In-house precision, robustness and rigidity

4 **TOOL HOLDERS**
Quick and accurate tool changes for increased efficiency

6 **CLAMPING CYLINDER/ CHUCK**
Accurate and easy clamping thanks to hydraulics and sensors

OUR MACHINES HAVE THE BEST OF EVERYTHING

When it comes to our suppliers, we are strict and picky. They too must be prepared to deliver innovation and quality beyond the usual standards. That's what we and our customers expect.

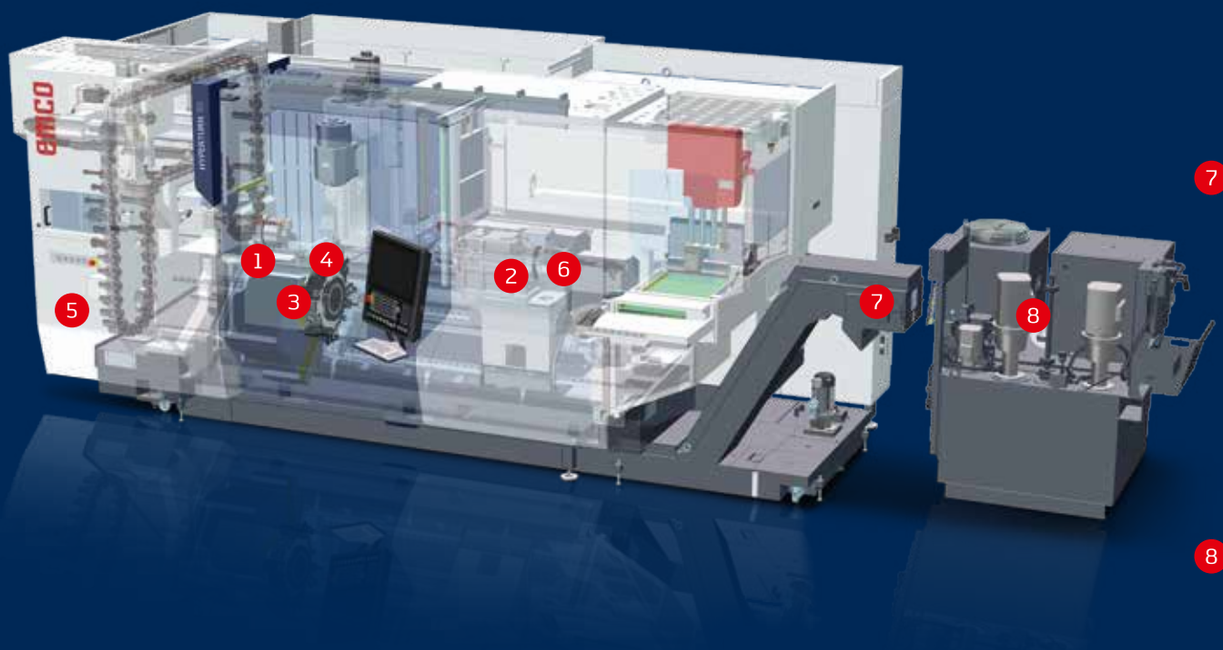
/ Günther Höfelsauer
Head of Quality Management EMCO

''Stopping a machine costs time, money and patience. At EMCO, we know that the quality is genuine and is sustainable in every part''.

/ Thomas Katz
Head of Purchasing and Logistics EMCO

''Our suppliers must meet our high standards. Because a machine is only reliable if the parts used are too.''

COMPONENTS



7 Chip conveyors
Flexible and safe delivery with overload protection

8 Coolant pumps
Low-maintenance immersion pumps for high pressure and fast chip transport

EVERY NETWORK IS ONE OF A KIND. SO ARE OUR SOLUTIONS.

EMCONNECT

Staying connected is not just important to people. Humans and machines also need to be networked efficiently and securely in the production process. With EMCONNECT, you have the key to optimised connectivity on your control panel and a direct line to us. Individually configured and always up-to-date, you can create optimal work processes, prevent downtimes and increase your productivity.

Reach machines better

With EMCONNECT, machines can be seamlessly integrated into the operating environment. You can have access to all computers in a network, for example to use CAD/CAM programs or emails. A web browser for access to IT systems such as ERP is also available, as is an integrated option for remote diagnostics and maintenance of the system.

Everything in view at all times

With a multitude of apps and additional functions, the functionality of EMCONNECT can be adapted to machines and requirements. This gives you a clear overview of the machine status and the relevant production data. The Documents-On-Board function makes paperless work on the machine possible.

''Our goal is a unified networking standard that opens up opportunities and facilitates integration.''

/ Günter Pumberger
Product Owner Digitalisation EMCO

Monitoring against downtime

Because our service does not end with delivery and we always focus on quality, machine data can be analysed via sensors and downtimes avoided. We then know when repairs are needed. Before the machine has a defect.

Simple and clear

The EMCONNECT user interface has been designed to be as simple and intuitive as a smartphone. The arrangement of functions and apps can be adapted to the requirements. Updates and upgrades are quick and keep applications up-to-date.

Individually configured

Solutions are always individual. That's why EMCONNECT is designed as an open platform. Functionality and networking are configured to optimally connect your individual production environment. And because requirements also change, the system is modularly expandable and can be adapted quickly.

Mobile Interface

EMCONNECT HIGHLIGHTS AND FEATURES

/ Fully networked
Connected to all applications via remote access to office computers and web browsers

/ Structured
Clear monitoring of machine status and production data

/ Customised
Open platform for the modular integration of customer-specific applications

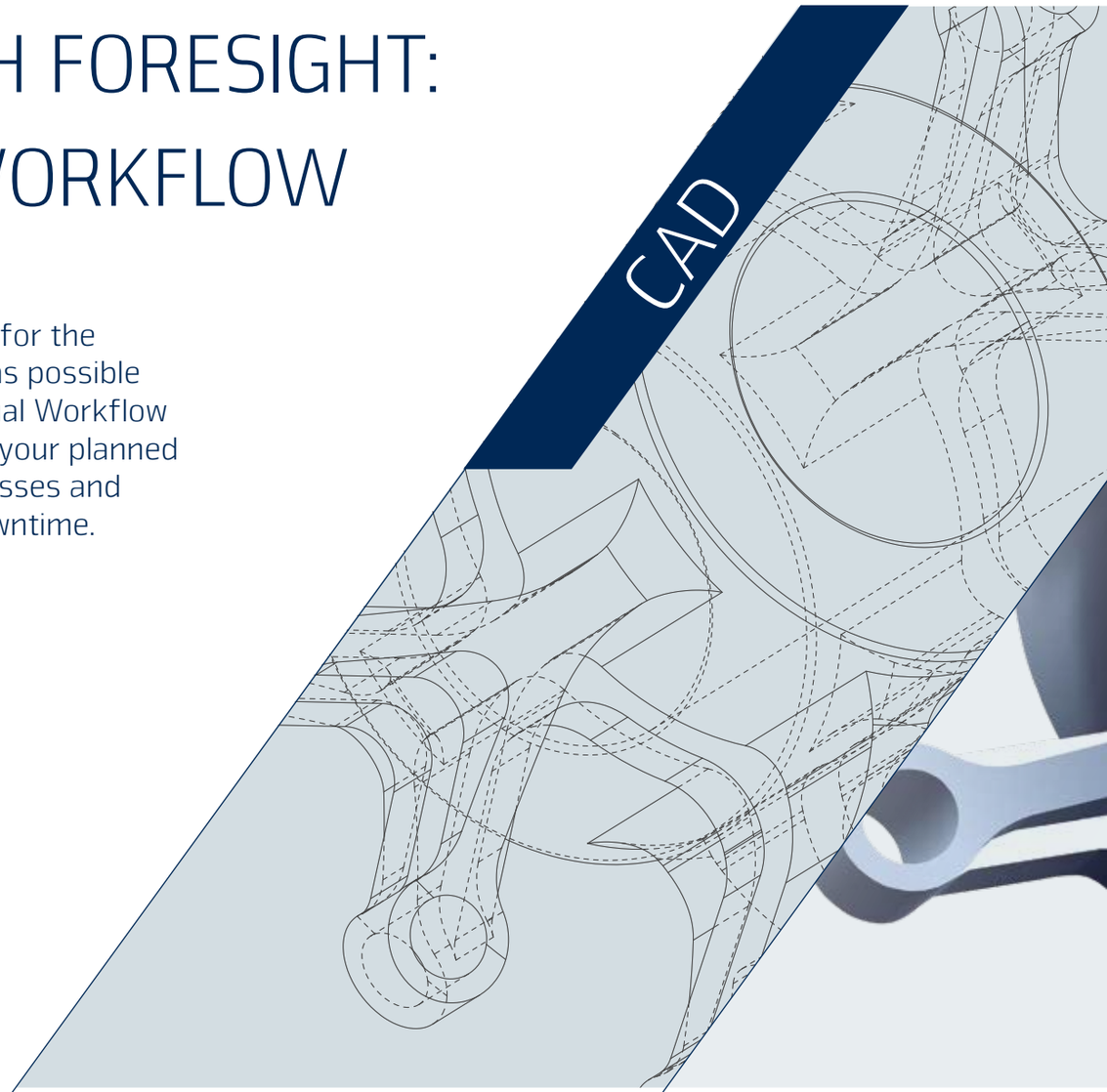
/ Compatible
Interface for seamless integration into the operating environment

/ Easy to use
Intuitive and production-optimised touch operation

/ Future-proof
Regular extensions as well as the simplest updates and upgrades

PRODUCTION WITH FORESIGHT: THE VIRTUAL WORKFLOW

Whoever wants to design scenarios for the future, needs as much information as possible from different sources. EMCO's Virtual Workflow allows you to simulate and optimise your planned processes. This helps you test processes and train skilled workers without any downtime.

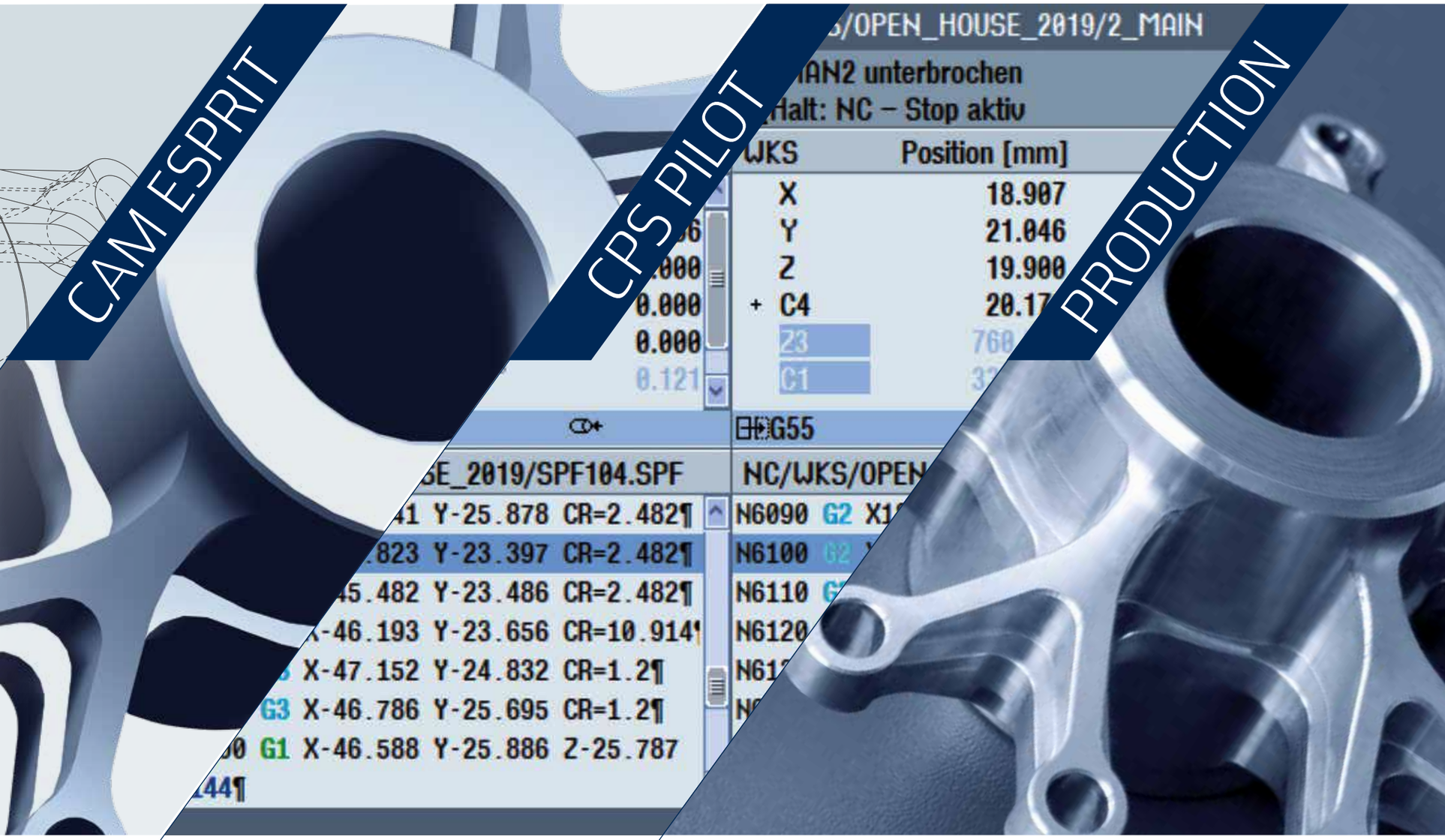


Really virtual

With direct data importing, CAD programs of different origins can be used and integrated. From AutoCAD (DWG), Parasolid, Solid Edge, Solid Works and ACIS, to optional interfaces such as CATIA, Pro/ENGINEER, STEP, STL and more.

See what is coming

By integrating CAM ESPRIT into the Virtual Workflow, scrap and load can be optimised. You can display turning processes from 2 to 22 axes; for milling, you can display 2 to 5 axes. A 3D engine room simulation makes things realistic.



Draw from all sources

With the EMCO CPS Pilot, machines and processes can be portrayed as if they were real. Collision detection identifies risks and avoids unexpected interruptions.

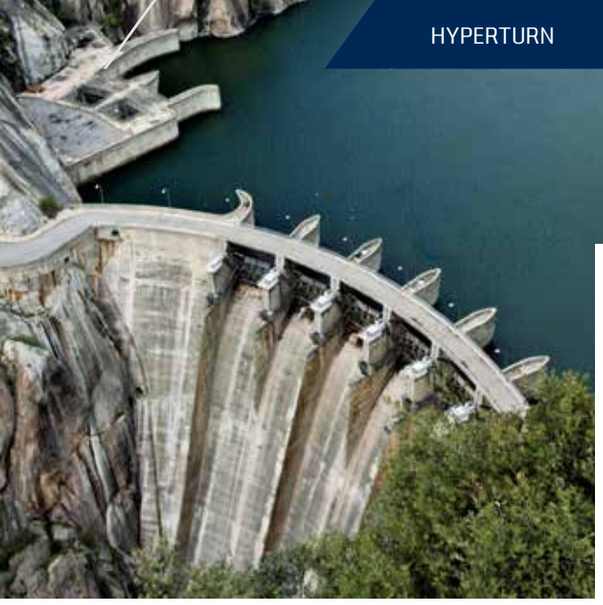
Efficiency in focus

Virtual process planning has many real benefits: Set-up costs, downtimes and repair costs can be considerably reduced in production. In addition, through a simulated manufacturing chain, machine utilisation can be adjusted to improve and increase output.

THE ALL-ROUNDER FOR DEMANDING TASKS

Requirements and demands are different in every production process. Compact all-rounders, which can do many tasks in one, increase flexibility. With the Hyperturn series, complex turning and milling operations are possible in one single operation. This facilitates planning and helps you to use people and machines efficiently.

HYPERTURN 65 PM



Energy technology

Energy technology

Transport technology

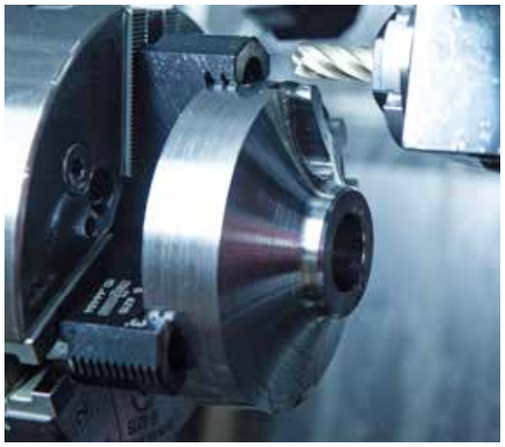
VERSATILE AND RELIABLE: THE HYPERTURN MAKES THE WORLD GO ROUND

The world is on the move, and the Hyperturn often plays an important role. In energy production, for example, when power plants require extra-large and durable components. Or in the broad field of agriculture and forestry, where economy and reliability must go hand in hand with every machine. Medical technology benefits from the precision and innovative spirit inherent in the Hyperturn. Mobility and transport, on the other hand, require flexible solutions that can be produced quickly and efficiently. Across all these areas of application, the Hyperturn proves that more perfection is possible in every dimension and with every material.

Medical technology

Transport technology

Conveyor technology



Perfectly equipped

With their state-of-the-art Y-axis and B-axis control and drive technology, Hyperturn machines set the highest standards on the market.

Can be put into various combinations

Each Hyperturn is configured to fit your precise needs. Thanks to innovative automation solutions, the possibilities are almost endless.

Reliably productive

Productivity is really important, especially when it comes to machining complex workpieces. With the Hyperturn, combined turning and milling processes, large workspaces and rapid service complement each other to create maximum efficiency.

''We developed the Hyperturn to combine our extensive experience in turning with the latest developments in milling. The high acceptance of the machines among customers has convinced us that we are on the right track!''

/ Gerhard Meisl
Head of Product Management

COMPLETE MACHINING AND DIGITISATION AS THE KEY TO SUCCESS

Special projects require special partners. With EVVA and EMCO, two companies have found each other who can get a lot out of working together. For example, when it comes to reacting quickly and flexibly to customer requirements and having the right machinery and machining processes available. Additionally, you also enter innovative new territory in automation and digitisation.

The task was as clear as it was demanding: The requirement was to dry machine brass components with small holes (d 1.8) with the shortest set-up times possible, a complex parts spectrum and connection to a future fully digitised production environment.
Anyone who has visions needs machines that can implement them. At EVVA, the next step in the company's history, steeped in innovation, is: The digitisation of production processes from shop floor to ERP. Deciding who you want to have by your side in taking this step is very important.

EVVA
access to security

For more than 100 years, EVVA has been established as a family company in Vienna for safety technology. Thinking ahead and driving innovation are in the name itself: EVVA is the abbreviation for the German phrase "Erfindungs-Versuchs-Verwertungs-Anstalt" - Invention Experiment Utilisation Institute.

CDP

Cooperation with the Austrian Center for Digital Production has achieved good results.

EMCONNECT as the best platform

After a rigorous selection process, it soon became clear that EMCO could best meet the criteria for collaboration. The reasons for this are varied: EMCO and EVVA have long maintained a very trusting relationship regarding the equipment of the shop floor. In addition: Thanks to the flexible EMCONNECT software platform, EMCO's new generation of machines is particularly suitable for the upcoming projects at EVVA.

Joint research projects

In addition, the relationship has been strengthened by the companies' research collaboration at the Vienna University of Technology: The Austrian Center for Digital Production (CDP) is a laboratory in which companies and scientists work together on solutions in the field of automation and cyber-physical production systems. EVVA and EMCO participate in this project and benefit from the knowledge gained there.

Complete machining with a modular system

Ideal conditions, therefore, to move forward together. The first milestone of the new production philosophy is the creation of a flexible production system that enables automated complete machining for low batch sizes as well as medium-volume production series. EMCO basic solutions provide the basis for this; thanks to the high variation possibilities, these solutions are combined into an optimally suitable unit. The overarching idea is to be able to manage all digitised production from a modular set of standard elements.

/ Ing. Leopold Zerz
Sales Director Austria, EMCO

''We are happy to announce that, after years of excellent cooperation, EVVA will accompany us in the next important development step in production. Our digitisation expertise has helped us deliver the most impressive concept to this customer.''

Hyperturn Powermill as a base

After extensive joint analyses and testing, the chosen modular solution was a Hyperturn 65 Powermill equipped with a spindle with 18,000 rpm, a BMT turret and an 80-station chain magazine. For this purpose, an individual EMCONNECT control interface was compiled, which met the requirements exactly. Integrated glass scales in all axes ensure maximum precision and an EMCO short bar loader optimises loading and unloading time and costs.

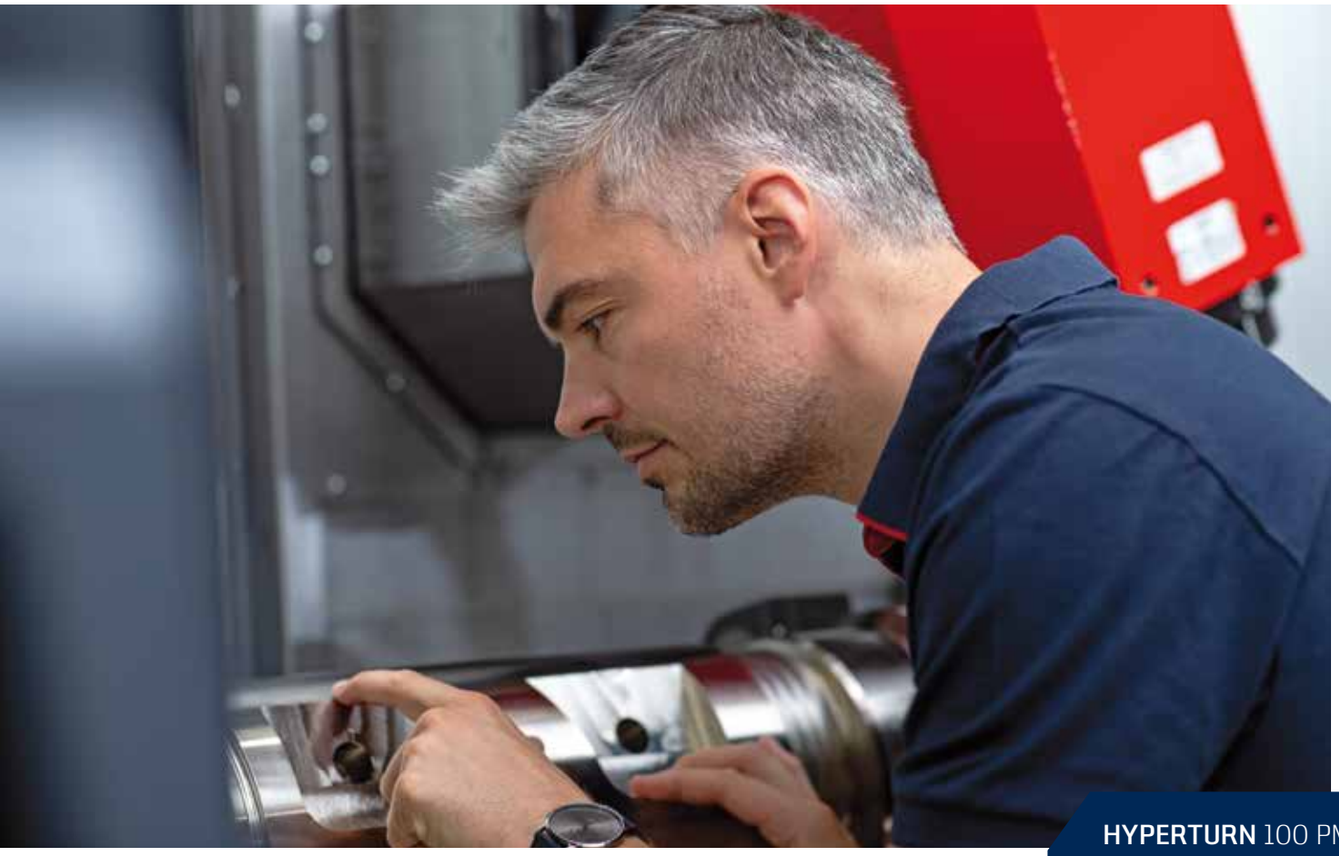
Innovative and interacting robot

A special feature is the use of a Cobot. This collaborative robot can interact with human colleagues and is integrated as an extension with a specially designed interface. It ensures efficient processing of special orders and thanks to its lightweight and innovative design, is easy and quick to use. At peak times, it can also handle less complex standard jobs.

Focus on sustainability and clean production

Sustainable and environmentally friendly use of resources was also an essential part of the system planning. Thanks to dry processing, coolants and lubricants can be reduced or completely done without altogether. The parts no longer need to be washed because this type of processing uses no aggressive agents which can affect the material. All in all, a reduction in the many fluids and work processes involved, and important for the consistent implementation of a clean production strategy at EVVA.

FLEXIBLE POWER IS THE POWERMILL FORTÉ: HYPERTURN POWERMILL



The Powermill family combines maximum flexibility with power and precision. As a turning and milling centre for small to medium-sized production series, the Powermill meets all the requirements for the production of highly complex high-precision workpieces.

HYPERTURN 100 PM

MORE SPACE

The Powermill offers comfortably dimensioned working spaces that enable 5-axis simultaneous machining, even for large workpieces. The easier access facilitates efficient processes. In addition, all maintenance units can be accessed separately.

HYPERTURN 200 PM

MORE POWER

Because power and productivity go hand in hand, the Powermill has power in its very name. The powerful and precise milling spindle proves its strength in every situation.

The EMCO main spindle and counter spindle concept achieves impressive performance thanks to two synchronous servomotors, which also act as a C-axis.

MORE POSSIBILITIES

Turning operations with the milling spindle and an infinitely pivotable B-axis for main spindle and counter spindle machining ensure a variety of application variations. The tool magazine, which can be used with a variety of tools, also helps: up to 200 different positions can be filled. There is also a wide range of automation concepts for loading and unloading.

HIGHLIGHTS AT A GLANCE

- / Powerful main spindle and counter spindle
- / Milling spindle with direct drive
- / 40/80/120-station or 50/100/200-station tool magazine (depending on model)
- / NC steady rest
- / 12-station tool revolver with 12 driven tool positions
- / Linear guides in all axes
- / EMCO automation

SOLVE COMPLEX TASKS WITH EASE

Impressive performance and flexibility: The Hyperturn Powermill range offers powerful multi-tasking machines for all-round machining of complex components.

/ HYPERTURN 200 PM

Max. turning diameter	1050 mm
Swing Ø over bed	1050 mm
Chuck size	500 / 800 mm
Travel in X / Y / Z	915 / 600 / 3100 – 6100 mm
Rapid motion speed in X / Y / Z	30 / 30 / 30 m/min
Speed range	10 – 1800 rpm
Max. drive power	84 kW
Max. torque	6400 Nm
Tool magazine	50 / 100 / 200

/ HYPERTURN 100 PM
(A2-8'' // A2-11'')

Max. turning diameter	720 mm
Swing Ø over bed	750 mm
Chuck size	315 / 400 // 400 / 630 mm
Travel in X / Y / Z	780 / 420 / 1500 – 2200 – 3100 mm
Rapid motion speed in X / Y / Z	30 / 30 / 40 m/min
Speed range	10 – 3500 / 10 – 2000 rpm
Max. drive power	33 – 53 kW
Max. torque	800 – 4400 Nm
Tool magazine	50 / 100

/ HYPERTURN 65 PM

Bar capacity	65 (102) mm
Swing Ø over bed	500 mm
Chuck size	200 (250/315) mm
Travel in X / Y / Z	530 / 220 / 1170 mm
Rapid motion speed in X / Y / Z	30 / 12 / 30 m/min
Speed range	0 – 5000 rpm
Max. drive power	29 kW
Max. torque	250 Nm
Tool magazine	40 / 80 / 120

HIGH OUTPUT. EXTREMELY PRECISE.

Bars today, shafts tomorrow and cubic parts the day after tomorrow? This range of tasks poses no problem for Hyperturn high-performance turning centres, because they are made for multi-tasking. Medium and large production series are manufactured precisely and quickly. Automated loading and unloading is quick too, helping you save time and use resources optimally.

HYPER–PRODUCTIVE

The concept of Hyperturn has one goal: To further increase productivity. With its many possible layouts, it can cover an impressive range of machining tasks, optimising costs and benefits at all times.

HYPERTURN 45

HYPER–FLEXIBLE

Flexibility and productivity are perfectly combined in the Hyperturn high-performance turning centres. The high-performance milling spindle impresses with its maximum flexibility and the tool magazine's size gives you the flexibility you need to make variable production economically viable.

HIGHLIGHTS AT A GLANCE

- / Powerful main and counter spindles
- / 2(3) x 12-station tool turrets
- / 2(3) x 12 driven tool positions
- / BMT-tool turret with direct drive motor (optional)
- / Linear guides in all axes
- / EMCO Automation

/ HYPERTURN 110

Bar capacity	**110 mm**
Swing Ø over bed	**720 mm**
Chuck size	**400 (630) mm**
Travel in X / Y / Z	**340 and 300 / 240 / 1340 – 1940 mm**
Rapid motion speed in X / Y / Z	**30 / 15 / 30 m/min**
Speed range	**0 – 2500 U/min**
Max. drive power	**52 kW**
Max. torque	**2480 Nm**
Driven tools	**2 x 12**

/ HYPERTURN 95

Bar capacity	**95 mm**
Swing Ø over bed	**720 mm**
Chuck size	**315 (400) mm**
Travel in X / Y / Z	**340 and 300 / 240 / 1340 – 1940 mm**
Rapid motion speed in X / Y / Z	**30 / 15 / 30 m/min**
Speed range	**0 – 3500 rpm**
Max. drive power	**33 kW**
Max. torque	**800 Nm**
Driven tools	**2 x 12**

/ HYPERTURN 65 TT

Bar capacity	65 (76,2 / 95) mm
Swing Ø over bed	650 mm
Chuck size	200 (250) mm
Travel in X / Y / Z	260 / 100 / 800 – 1050 mm
Rapid motion speed in X / Y / Z	30 / 12 / 30 m/min
Speed range	0 – 5000 (4000/3500) rpm
Max. drive power	29 (37) kW
Max. torque	250 (360) Nm
Driven tools	3 x 12

/ HYPERTURN 65 DT

Bar capacity	65 (76,2 / 95) mm
Swing Ø over bed	650 mm
Chuck size	200 (250) mm
Travel in X / Y / Z	260 / 100 / 800 – 1050 mm
Rapid motion speed in X / Y / Z	30 / 12 / 30 m/min
Speed range	0 – 5000 (4000/3500) rpm
Max. drive power	29 (37) kW
Max. torque	250 (360) Nm
Driven tools	2 x 12

/ HYPERTURN 45 G3

Bar capacity	45 (51 / 65) mm
Swing Ø over bed	430 mm
Chuck size	175 (200) mm
Travel in X / Y / Z	175 / 80 / 510 mm
Rapid motion speed in X / Y / Z	30 / 15 / 45 m/min
Speed range	0 – 7000 rpm
Max. drive power	15 kW
Max. torque	100 Nm
Driven tools	2 x 12 / 2 x 16

ANYTHING THAT LASTS A LONG TIME GETS BETTER ALL THE TIME

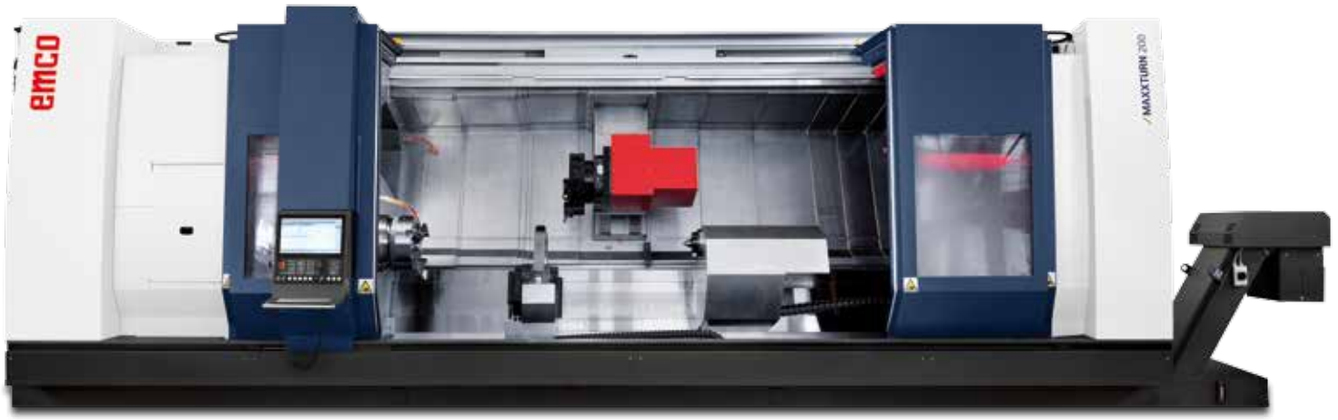
When it comes to turning, EMCO has a long and successful history. It is guided by its permanent drive to develop innovations from existing knowledge.

"The core competence of turning is an important cornerstone for innovation. Because it can access such a large pool of knowledge and experience, EMCO and its customers can open up additional paths to the best solution that others cannot."

A lot has changed since the first conventional EMCO lathe was brought onto the market in 1950. The range of developments that enabled EMCO to set milestones in the field of turning was and still is fascinating: After cycle control in the 60s came CNC in the mid-70s. Then came integrated milling functions, revolvers, more and more axes, a counter spindle and completely new possibilities in terms of the size and complexity of the components to be machined.

Today, intelligent and automated turning solutions have replaced the laborious manual working steps of old. The requirements for precision and productivity have increased immensely in the digital age and are perfectly fulfilled with EMCONNECT.

The challenges continue: All possibilities in the field of turning must be further optimised. Tradition obligates, but only innovation brings progress.



/ MAXXTURN 200

Spindle bore	185 mm
Swing Ø over bed	1050 mm
Chuck Ø	500–1000 mm
Travel in X / Y / Z	550 / 250 / 2050 – 4050 – 6050 mm
Rapid motion speed in X / Y / Z	30 / 15 / 30 m/min
Speed range	10 – 1800 (2500) rpm
Max. drive power	84 (52) kW
Max. torque	6410 (3400) Nm
Driven tools	12 (2 x 12 opt.)

/ MAXXTURN 110
(A2-8'' // A2-11'')

Bar capacity	95 / 110 mm
Swing Ø over bed	820 mm
Chuck Ø	315–630 mm
Travel in X / Y / Z	420 / 180 / 1560 – 2560 – 3560 mm
Rapid motion speed in X / Y / Z	24 / 12 / 30 m/min
Speed range	10 – 3500 / 2500 rpm
Max. drive power	33 / 53 kW
Max. torque	800 / 2480 Nm
Driven tools	12

/ MAXXTURN 95

Bar capacity	95 mm
Swing Ø over bed	700 mm
Chuck Ø	315 (400) mm
Travel in X / Y / Z	318 / 140 / 1360 mm
Rapid motion speed in X / Y / Z	24 / 12 / 30 m/min
Speed range	0 – 3500 (2500) rpm
Max. drive power	33 (42) kW
Max. torque	800 (1040) Nm
Driven tools	12

/ MAXXTURN 65

Bar capacity	65 / 76 / 95 mm
Swing Ø over bed	660 mm
Chuck Ø	200 (250) mm
Travel in X / Y / Z	260 / 100 / 800 mm
Rapid motion speed in X / Y / Z	30 / 12 / 30 m/min
Speed range	0 – (4000 / 3500) rpm
Max. drive power	29 (37) kW
Max. torque	250 (360) Nm
Driven tools	12

/ MAXXTURN 45

Bar capacity	65 / 76 / 95 mm
Swing Ø over bed	660 mm
Chuck Ø	200 (250) mm
Travel in X / Y / Z	260 / 100 / 800 mm
Rapid motion speed in X / Y / Z	30 / 12 / 30 m/min
Speed range	0 – (4000 / 3500) rpm
Max. drive power	29 (37) kW
Max. torque	250 (360) Nm
Driven tools	12

/ MAXXTURN 25

Bar capacity	25.4 mm
Swing Ø over bed	325 mm
Chuck Ø	95 mm
Travel in X / Y / Z	100 / 35 / 320 mm
Rapid motion speed in X / Y / Z	20 / 10 / 30 m/min
Speed range	0 – 8000 rpm
Max. drive power	6.5 kW
Max. torque	30 Nm
Driven tools	6

/ VERTICAL VT 400

Max. work piece length	200 mm
Max. work piece diameter	400 mm
Chuck size	400 mm
Travel in X / Y / Z	960 / +– 90 / 400 mm
Rapid motion speed in X / Y / Z	45 / 15 / 30 m/min
Speed range	0 – 4000 rpm
Max. drive power	36 kW
Max. torque	600 Nm
Driven tools	12

/ VERTICAL VT 260

Max. work piece length	180 mm
Max. work piece diameter	260 mm
Chuck size	260 mm
Travel in X / Y / Z	660 / +70 –90 / 310 mm
Rapid motion speed in X / Y / Z	60 / 15 / 30 m/min
Speed range	0 – 5000 rpm
Max. drive power	29 kW
Max. torque	280 Nm
Driven tools	12

/ VERTICAL VT 160

Max. work piece length	150 mm
Max. work piece diameter	160 mm
Chuck size	160 mm
Travel in X / Y / Z	620 / +– 65 / 310 mm
Rapid motion speed in X / Y / Z	60 / 15 / 30 m/min
Speed range	0 – 7000 rpm
Max. drive power	21 kW
Max. torque	150 Nm
Driven tools	12

/ EMCOTURN E65

Bar capacity	65 (95) mm
Swing Ø over bed	610 mm
Chuck size	200 / 250 mm
Travel in X / Y / Z	210 / +– 40 / 610 mm
Rapid motion speed in X / Y / Z	30 / 15 / 30 m/min
Speed range	0 – 5000 (3500) rpm
Max. drive power	22 kW
Max. torque	305 Nm
Driven tools	12

/ EMCOTURN E45

Bar capacity	45 (51) mm
Swing Ø over bed	430 mm
Chuck size	160 / 200 mm
Travel in X / Y / Z	160 /+ 40, – 30 / 510 mm
Rapid motion speed in X / Y / Z	24 / 10 / 30 m/min
Speed range	0 – 6300 (5000) rpm
Max. drive power	13 kW
Max. torque	78 Nm
Driven tools	12

/ EMCOTURN E25

Bar capacity	25.5 mm
Swing Ø over bed	250 mm
Chuck size	95 mm
Travel in X / Y / Z	100 / – / 300 mm
Rapid motion speed in X / Y / Z	15 / – / 24 m/min
Speed range	60 – 6300 rpm
Max. drive power	5.5 kW
Max. torque	35 Nm
Driven tools	12

FRESH POWER THROUGH MORE KNOWLEDGE

Planning and putting together the perfect solution for every individual need works best if you have a lot of components that you can use. By integrating Mecof under the EMCO umbrella, we have succeeded in completing the milling and turning portfolio in a way that provides the best options for maximum flexibility.

The expansion of the machine range was the first step in this direction. The Hyperturn 200 proved that the combination of EMCO and Mecof modules in one machine would create a powerful new generation that brings together the knowledge and expertise of two agile players.

All customers are already benefiting from this; they can find something that meets their precise needs and requirements from a comprehensive range of machining centres and turning-milling centres. They can often find something which exceeds their expectations.

/ Dirk Schuhmacher
Product Manager Milling

''We are currently discovering how inspiring it is to have this new know-how in the team. This opens up perspectives that make us stronger as a company and bring a lot of remarkable solutions to our customers.''

GAINING NEW STRENGTHS, QUICKLY AND WITH PRECISION

Milling is precision and speed. So it's a good thing that all the machine parts involved in this are manufactured at our own production sites, meaning that consistent quality is guaranteed.
This is another reason why customers with specific requirements from different industries make use of the individual strengths of EMCO's various milling solutions.

The breadth of applications is impressive, ranging from resin mould making in the automotive industry, titanium structures in the aerospace industry, to propulsion units for wind turbines. In any case, the high-speed milling centres combine state-of-the-art technology with tailor-made solutions and perfect EMCO service.

Milling heads

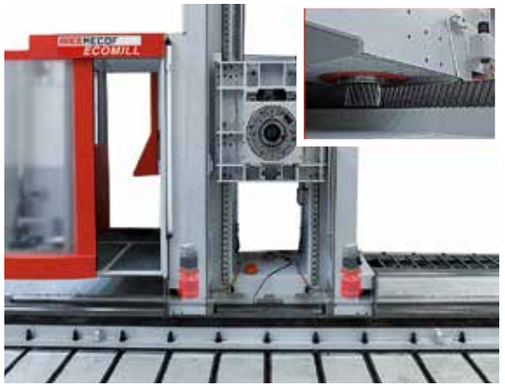
Due to the large selection of milling heads, EMCO machines are able to fulfil a wide variety of production requirements. This means that both heavy roughing and precise superfinishing processes can be performed with just one machine.

Dual Drive transmission

More precision, higher speeds and optimised backward movements: Dual Drive transmission makes this possible. In addition, it makes components last longer and makes them more reliable.

Torque motors

The powerful and reliabe torque motors of the 5-axis milling heads allow performances at the highest level.



NEW WAYS TO MORE FLEXIBILITY

People who are looking for innovations sometimes find the unexpected. The family business BAUER have already found this out for themselves. A modern and flexible machining centre was on their shopping list. With EMCO, a great deal of design and testing led to the discovery of other solutions that surpassed even the highest expectations. A collaboration where everyone has learned a lot. The main lesson here: unusual thinking leads to better solutions.

At BAUER in Voitsberg, they make equipment for irrigation, separation and manure technology. Population growth and climate change are creating challenges that require a flexible response and having the right solutions for the market.

Modern and efficient machinery is therefore the top priority. Above all, because a high level of vertical integration in the company makes many further developments possible.
This requires cleverly thought-out device concepts.

''Right from the beginning, we knew that the customer trusted us and could sense our desire to find the perfect solution. When we successfully tested the crucial processes, it was a real ''eureka'' moment.''

/ Andreas Pichler
Sales Technician EMCO

BAUER IMPRESSES CUSTOMERS ALL OVER THE WORLD WITH ITS INTELLIGENT PRODUCTS. THANKS TO EMCO, MORE INNOVATION IS POSSIBLE.

BAUER enjoys an excellent reputation in the industry and regularly sets new technological standards. BAUER employs 600 people worldwide. 240 people are employed at the Voitsberg site.

EMCO Technology Center meeting point

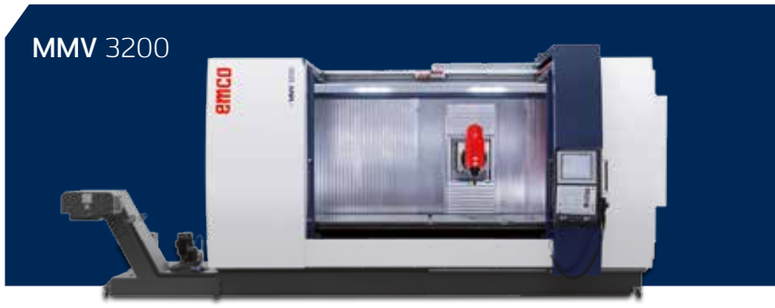
EMCO's in-house exhibition inspired attendees to turn wishes and possibilities into solutions. As should be clear, this is a real step.
From the original idea of a turning-machining centre, the talks quickly turned to the subject of EMCO's high milling competence. The experts started to tinker. They highlighted ways that BAUER had never thought of before. Plans were deepened and samples of concrete workpieces – a turbine part and a housing – were outlined.

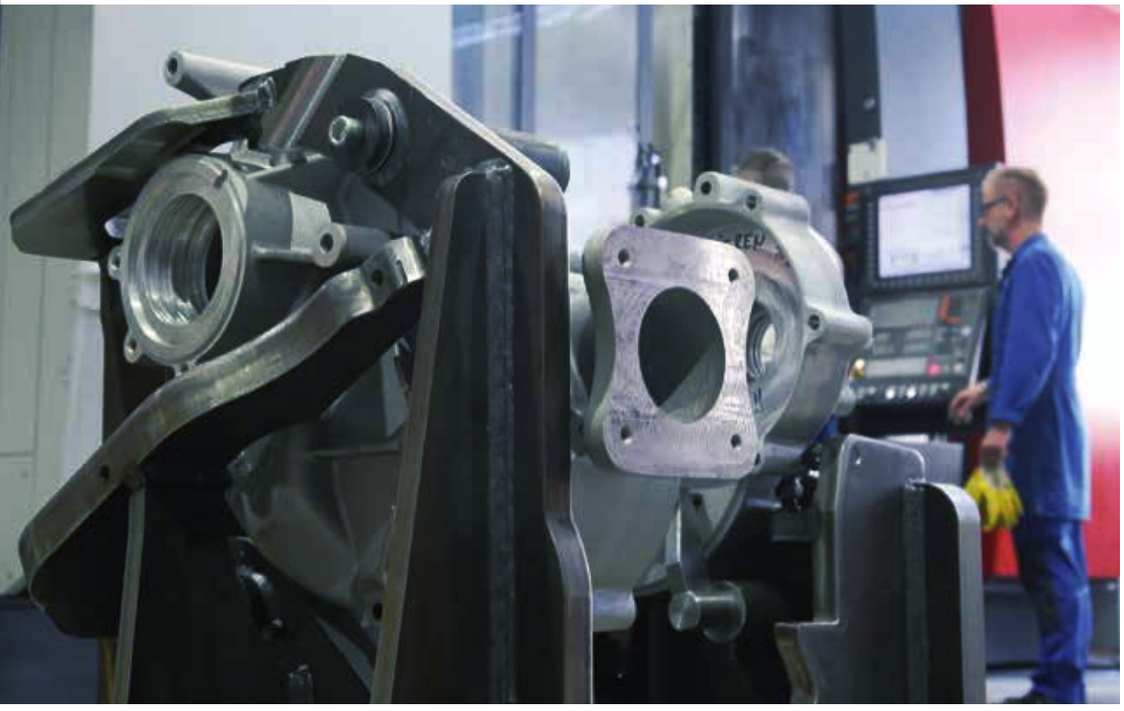
Tinkering, testing, solving

During process consulting, the goals were set high for the EMCO sales engineers. The proposed solution was possible, but a perfect solution had not yet been achieved.

For this reason, a very individual test arrangement was designed for the customer, in which the parts were milled instead of being spindled. The thrifty strategy: Up to 30% time savings without compromise on precision should be possible with the new processes. In the end, it was clear that everything worked as planned. The high level of commitment on both sides had paid off.

The consensus was that the mixture of a desire for a new, better solution with full commitment and maximum flexibility made a big difference and helped everyone involved. Even more than initially thought.





/ Daniel Stangl
Head of Mechanical Manufacturing BAUER GmbH

''In total, we were able to save up to 30% of the time per component. And achieve substantially better precision and surface quality.''

Important components, such as various housing parts, are machined on two EMCO travelling-column machining centres.

PRECISION, PRODUCTIVITY AND INNOVATION: ALL GOALS ACHIEVED

BAUER believe that good solutions go beyond the existing standard. With EMCO, BAUER has found a partner which shares this approach. At the beginning, the question was to clarify how the capabilities of flexible machine elements could be used optimally. This was followed by a phase of intensive cooperation in planning and development. Now, EMCO and BAUER are exactly where they wanted to be: further ahead.

Rethink and implement

In this project, the willingness to think of new ideas and to break new ground was substantial on all sides. After all, the method for making such parts was new territory for EMCO. Never before had such components been produced on an EMCO travelling-column machine. Without the courage to innovate, which was always evident with BAUER, this new ground would never have been broken. Therefore, a lot of time and effort was spent designing the test phase to tailor it exactly to the needs of the customer.

Two MMV machining centres work in one clamping position

The result of this process is superb. The system build is well thought-through and optimised to the customer's requirements.

40 years ago, BAUER revolutionised irrigation with the Rainstar drum system.

The machines have an integrated rotary table and an attached rotary axis. Coolant can be sent through the spindle at high pressure to ensure easy removal of chips from holes and pockets.

MMV 2000

At the heart of the system are two MMV travelling-column machining centres for large and heavy workpieces. They work in one clamping position and on five sides. Two separable workspaces make planning and processes easier.

Thanks to the clever installation and use of space, efficient multi-machine operation can be performed by just one person. Because the design and spindle performance are identical, components can also be swapped between the machines quickly and flexibly.

Ready to go, long-term peace of mind

In order to optimally use the capabilities offered by the two new milling machines, EMCO offers its customers a comprehensive training and service concept. Production can start immediately after commissioning. The fast, competent assistance that EMCO offers when customers have questions or problems ensures smooth and predictable production cycles over the long term. This passion for solutions was an important reason for BAUER choosing to work with EMCO.

Casing parts, shafts and various other components are manufactured with the MMV travelling-column machining centres. Due to the identical design of the two milling machines, a large number of the parts can be processed flexibly on both models.

/ Franz Peter Roll
Marketing Director at the BAUER Group

''Our high level of vertical integration and innovative strength are key success factors in a highly competitive market environment. It is our aim to continuously set global technology standards.''

Real endurance

/ Box-in-box concept for high stability with workpiece weights of up to 2000 kg (rotary table), up to 5000 kg (rigid table)

/ Machine bed made of a stress-relieved annealed and structurally reinforced welded steel construction for optimum vibration damping

Powerful

/ Liquid-cooled motor spindle (HSK A63 version) suitable for heavy machining

/ Spindle speed 18,000 rpm, power 46 kW, torque 170 Nm

Gets a lot out

/ Two tool magazines in drum version
MMV 2000: 40 tool spaces
MMV 3200: 60 tool spaces

/ Additional pick-up magazine for one (MMV 2000) or four (MMV 3200) further tools up to max. 500 mm in length and 300 mm in diameter

/ DYNAMILL G5

X-axis	2500 – 4000 – 6000 – 8000 mm
Y-axis	2200 – 3500 mm
Z-axis	1500 mm
Spindle motor	51 kW, 330 Nm
Axes feed rate	40 m/min
Power milling heads	3+2 axes a up to 38 kW / 300 Nm / 6000 rpm
Milling head with high-speed spindle	5 axes heads up to 70 kW 300 Nm / 24000 rpm

/ DYNAMILL

X-axis	from 4550 mm and over (in steps of 2500 mm)
Y-axis	3000 – 4000 mm
Z-axis	1500 – 2000 mm
Spindle motor	60 kW / 600 Nm
Axes feed rate	40 m/min
Power milling heads	3+2 axes and/or 5 axes up to 38 kW / 600 Nm / 6000 rpm
Milling head with high-speed spindle	5 axes heads up to 70 kW 300 Nm / 24000 rpm

/ MEGAMILL

X-axis	**from 7500 mm and over**
Y-axis	**4000 – 5000 – 6000 mm**
Z-axis	**1500 – 2000 mm**
Spindle motor	**40 kW / 1200 Nm**
Axes feed rate	**30 m/min**
Power milling heads	**3+2 axes and/or 5 axes up to 38 kW / 1000 Nm / 6000 rpm**
Milling head with high-speed spindle	**5 axes heads up to 70 kW 300 Nm / 24000 rpm**

/ POWERMILL

X axis	**from 6000 mm and over**
Y axis	**4000 – 5000 – 6000 mm**
Z axis	**1500 – 2000 mm**
Spindle motor	**40 kW / 1200 Nm**
Axes feed rate	**30 m/min**
Power milling heads	**3+2 axes and/or 5 axes up to 38 kW / 1000 Nm / 6000 rpm**
Milling head with high-speed spindle	**5 axes heads up to 70 kW 300 Nm / 24000 rpm**

/ ECOMILL

X-axis	**from 6000 mm and over**
Y-axis	**1300 mm**
Z-axis	**2500 mm**
Spindle motor	**60 kW / 600 Nm**
Axes feed rate	**30 m/min**
Power milling heads	**3+2 axes up to 38 kW / 600 Nm / 6000 rpm**
High speed spindle with special support	**40,5 kW / 35,4 Nm / 18000 rpm**

/ ECOMILL PLUS

X-axis	**from 6000 mm and over**
Y-axis	**1600 mm**
Z-axis	**3000 mm**
Spindle motor	**Standard 60 kW / 600 Nm Option 40 kW / 1200 Nm**
Axes feed rate	**30 m/min**
Power milling heads	**3+2 axes up to 38 kW / 1000 Nm / 6000 rpm**
Milling head with high-speed spindle	**5 axes heads up to 50 kW 120 Nm / 24000 rpm**

/ MECMILL

X-axis	from 6000 mm and over
Y-axis	1600 mm
Z-axis	3500 mm
Spindle motor	40 kW / 1200 Nm
Axes feed rate	30 m/min
Power milling heads	3+2 axes and/or 5 axes up to 38 kW / 1000 Nm / 6000 rpm
Milling head with high-speed spindle	5 axes heads up to 42 kW 120 Nm / 24000 rpm

/ MECMILL PLUS

X-axis	from 6000 mm and over
Y-axis	1600 – 1800 mm
Z-axis	4000 – 5000 mm
Spindle motor	40 kW / 1200 Nm
Axes feed rate	25 m/min
Power milling heads	3+2 axes and/or 5 axes up to 38 kW / 1000 Nm / 6000 rpm
Milling head with high-speed spindle	5 axes heads up to 42 kW 120 Nm / 24000 rpm

/ UMILL 1800

Travel X-axis	**1800 mm**
Travel Y-axis	**2150 mm**
Travel Z-axis	**1250 mm**
Rapid motion speed X / Y / Z	**60 m/min**
Milling head with high-speed spindle	**45 kW 300 Nm 12000 rpm** **50 kW 100 Nm 20000 rpm** **46 kW 600 Nm 8000 rpm**
Undercut	**15°**
Rotary table for milling and turning	**ø 1800 mm, load capacity 5 t, 250 rpm**
Rotary table for milling	**ø 1700 x 1400 mm, load capacity 10 t, 10 rpm**

/ UMILL 750

Travel X / Y / Z	**750+50 / 610 / 500 mm**
Rapid motion speed X / Y / Z	**50 m/min**
Tool magazine	**40 / 60 / 90 spaces**
Table diameter	**750 x 600 mm**
Table load	**400 kg**
Speed range	**50 – 15000 rpm**
Drive power	**26 kW**
Swivel range B-axis	**+/– 100°**

/ UMILL 1500

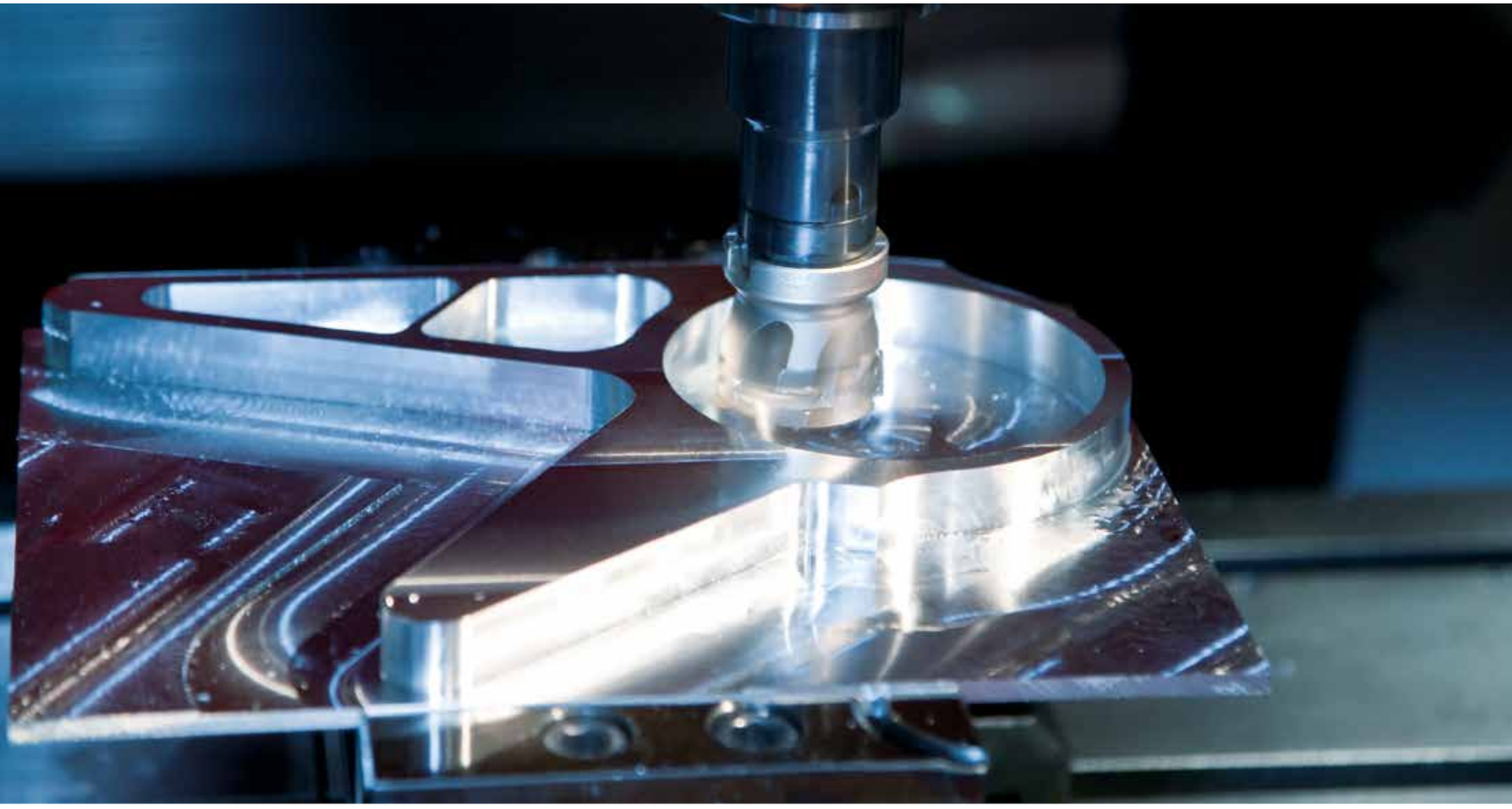
Travel X-axis	1500 mm
Travel Y-axis	1500 mm
Travel Z-axis	1100 mm
Rapid motion speed X / Y / Z	60 m/min
Milling head with high-speed spindle	45 KW / 300 Nm / 12000 rpm or 50 kW / 100 Nm / 20000 rpm
Undercut	15°
Rotary table for milling and turning	ø 1400 mm, load capacity 3.5 t, 400 rpm
Rotary table for milling	ø 1400 x 1200 mm, load capacity 4.5 t, 20 rpm

/ UMILL 630

Travel X / Y / Z	500+50 / 460 / 450 mm
Rapid motion speed X / Y / Z	50 m/min
Tool magazine	30 / 60 / 90 spaces
Table diameter	630 x 500 mm
Table load	200 kg
Speed range	50 – 15000 rpm
Drive power	26 kW
Swivel range B-axis	+/– 100°

POWERFUL AND VERSATILE IN USE

In the MMV series models, a platform with a range of options forms the basis for the definition of customer-specific machine concept solutions for heavy and precision machining. The user can define the appropriate machine concept according to the machining requirements. These variable machine solutions for 3-, 4- or 5-axis machining not only stand out due to their technical advantages but also with their economic ones too.



/ MMV 3200

Travel X / Y / Z	3200 / 1000 / 950 mm
Rapid motion speed X / Y / Z	50 / 40 / 40 m/min
Clamping area	3500 x 1050 mm
Table load	5000 kg
Speed range	50 – 15000 / 18000 rpm
Drive power	46 kW
Tool magazine	40 / 60 – 120 spaces
Tool holder	ISO40 (BT40 / HSK-A63)
Swivel range B-axis	+/– 120°

/ MMV 2000

Travel X / Y / Z	2000 / 800 / 750 mm
Rapid motion speed X / Y / Z	50 / 50 / 50 m/min
Clamping area	2400 x 950 mm
Table load	2200 kg
Speed range	50 – 15000 / 18000 rpm
Drive power	46 kW
Tool magazine	40 / 60 / 80 spaces
Tool holder	ISO40 (BT40 / HSK-A63)
Swivel range B-axis	+/– 120°

/ MAXXMILL 750

Travel X / Y / Z	750+50 / 610 / 500 mm
Rapid motion speed X / Y / Z	30 / 30 / 30 m/min
Tool magazine	30 / 40 / 60 / 90 spaces
Table diameter	750 x 600 mm
Table load	300 / 500 kg
Speed range	50 – 12000 / 15000 rpm
Drive power	15 / 20 kW
Tool holders	ISO40 (BT40, HSK-A63)
Swivel range B-axis	+/- 100°

/ MAXXMILL 630

Travel X / Y / Z	500+50 / 460 / 450 mm
Rapid motion speed X / Y / Z	30 / 30 / 30 m/min
Tool magazine	30 / 60 / 90 spaces
Table diameter	630 x 500 mm
Table load	200 kg
Speed range	50 – 12000 / 15000 rpm
Drive power	15 / 20 kW
Tool holders	ISO40 (BT40, HSK-A63)
Swivel range B-axis	+/- 100°

/ EMCOMILL 1200

Travel X / Y / Z	1200+50 / 610 / 500 mm
Rapid motion speed X / Y / Z	30 / 30 / 30 m/min
Clamping area	1300 x 650 mm
Table load	1500 kg
Speed range	50 – 12000 / 15000 rpm
Drive power	15 / 20 kW
Tool magazine	30 (40/60) stations
Tool holders	ISO40 (BT40, HSK-A63)

/ EMCOMILL 750

Travel X / Y / Z	750+50 / 610 / 500 mm
Rapid motion speed X / Y / Z	30 / 30 / 30 m/min
Clamping area	900 x 650 mm
Table load	800 kg
Speed range	50 – 12000 / 15000 rpm
Drive power	15 / 20 kW
Tool magazine	30 (40/60) stations
Tool holders	ISO40 (BT40, HSK-A63)

/ EMCOMILL 350

Travel X / Y / Z	350 / 250 / 300 mm
Rapid motion speed X / Y / Z	24 / 24 / 24 m/min
Clamping area	520 x 300 mm
Table load	100 kg
Speed range	50 – 10000 rpm
Drive power	7 kW
Tool magazine	20 stations
Tool holders	ISO30 (HSK40-A40)

THE OPPORTUNITIES AND POSSIBILITIES PRESENTED BY AUTOMATION ARE ENDLESS. THE KEY IS TO COMBINE THE APPROPRIATE MEANS FOR THE DEFINED GOAL.

AUTOMATICALLY GET BETTER

The subject of automation has many dimensions. With a combination of functional standard solutions and highly flexible elements from innovative cooperation partners, EMCO offers the right concept for all requirements, for greater efficiency and reliability.

Analysis comes first

The process starts with very basic questions: Which jobs do machines do better, faster and safer? And how many automated processes is it practical to integrate in the respective environment? After all, automation is also a question of space and the well thought-out set-up of devices that are necessary and helpful in achieving production goals.

Efficiency in the focus of our planning

All these aspects – and a few more – are incorporated in the individual planning for our customers. Because automation only makes sense if productivity is increased and personnel costs are optimised. In addition to the efficient deployment of employees, fluctuating demand cycles, storage facilities and production services are parameters that play a very important role in design. When the status quo is defined, the goal and the means and equipment needed to achieve it are defined thereafter.

Cooperation partners guarantee flexibility

EMCO has a wealth of options to help seek and implement the best solution. In addition to standard solutions, which can be adapted to the requirements at hand, there are also a large number of cooperation partners whose know-how perfectly complements the portfolio.
Robotics, camera technology or parts recognition are examples of areas in which EMCO collaborates with renowned and experienced partners to enable flexible automation at all levels.

/ Peter Koren
Product Sales Manager Automation EMCO

"Just-in-time processes demand new kinds of flexibility. We deliver autonomous, process-stable solutions from one piece."

WHERE THE WORLD AUTOMATICALLY ROTATES AROUND A DISK

Modern production companies rely on machines that work with a small number of manual work steps and with a minimum of human monitoring. Automation is a term for the optimal combination of high tech and efficiency. Thanks to an innovative solution from EMCO, the automation of grinding wheel production at TYROLIT has been expanded to a level which is technically remarkable.

TYROLIT has relied on Emco as a production partner for many years. The high level of cooperation and mutual trust was also crucial in taking another big step towards the modernisation of production.

TYROLIT is one of the world's leading manufacturers of grinding and dressing tools as well as a system provider for the construction industry. The family-run company based in Schwaz (Austria) merges the strengths of the dynamic Swarovski Group with more than 100 years of entrepreneurial and technological experience.

The task: Fully automate an established EMCO machine concept. The result: New possibilities and more output than calculated.

Efficiency meets resource conservation

The task at hand: the dressing or over-turning of ceramic bonded grinding wheels. This was a challenge on a whole range of levels. The focus was not just on a smooth and efficient production process. Innovative automation solutions and a highly sophisticated dust protection system were also required. In addition, all devices had to be able to communicate with each other to ensure that the complex chain of operations could function without errors.

Machine networking as a success factor

After a thorough and detailed planning process, a Hyperturn 45 with robot support, integrated measuring process and special dust protection concept was built for production. The goal of low-staff or unstaffed production was not only achieved, but even exceeded. Where loading, surveying, correction, labelling and unloading were previously done by hand, now interconnected machines are in place, which do their job thanks to optimal coordination, to the great pleasure of TYROLIT's managers.

A great deal of knowledge and pleasant experiences

The extensive know-how of EMCO in the project-relevant areas was evident right from the off. This encouraged the customer to put the responsibility for an important step forward in the production process in reliable hands. Fast communication channels, quick and pragmatic solutions and good all-round customer service were additional advantages that played an important role in TYROLIT choosing EMCO.

''Again, this was a very challenging task because the optimal coordination of various automation components was new territory. But with close cooperation and with a lot of know-how, the end result was once again successful. In the end, it was even better than first planned''.

/ Johannes Jäger
Maintenance, TYROLIT

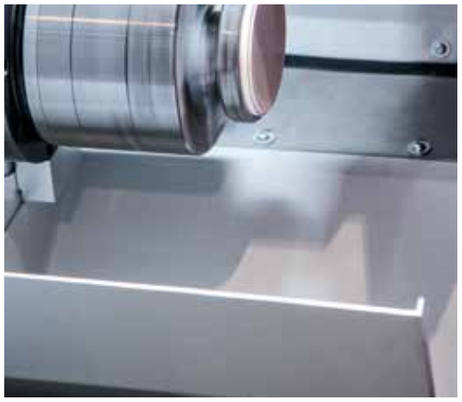
HYPERTURN 45 G3

MACHINES THAT HAVE SOMETHING TO SAY TO EACH OTHER

When people and machines communicate constructively with each other, good things happen. For example, an automation solution in which all parties involved in the planning have an eye on all the details and possibilities. Dust protection, robots and innovative connections between machines result in an all-round package that guarantees more quality with a lower use of resources. This is also due to the great experience of EMCO, a history of good cooperation and the well-organised coordination process.

Robots as reliable processors

At the beginning of production, the robot scans the barcode of the blank to be processed and the appropriate programs are loaded. Then the parts are automatically fed and processed. The finished parts are measured and adjusted. The robot also performs the shelving at the end of the process. The robot hardware is supplied by ABB and integrated into the overall concept with EMCO expertise.



Dust cover as a resource saver

The dust cover installed in the Hyperturn 45 was jointly developed by EMCO and TYROLIT. It is highly innovative and designed and built in such a way that the defined production processes are optimally supported by the machine sealing. The goal is to conserve resources by extracting potentially abrasive dust particles. The guides are protected, maintenance work is reduced and the overall lifetime is increased. In addition, a dust conveyor belt, a highly efficient extraction and air purge on the turret and spindle prevent particles from wearing on the machine.

Automation as a guarantor of quality

In order to comply with the specified cycle time, the various components work in perfect tandem with each other. Thanks to M2M communication, the production chain is always optimally adapted and inefficient breaks can be prevented.

SMOOTH WORK

Effective suction systems

/ Dust formation in the work area is reduced

Dust conveyor instead of chip conveyor

/ Part abrasion is avoided

GENTLE PRODUCTION

Air purge system

/ Machine components, control and control cabinet are spared

Encapsulated X-guides

/ Longer service life for linear guides and ball screws

AUTOMATED PRECISION

Optical measurements

/ High tech for high precision

ABB robot

/ Optimum use during loading and unloading

FULL CHARGE EFFICIENCY

The possibilities of automation technology are varied. These EMCO solutions make low-staff or unstaffed operation possible as required.

Gantry Loader

65 / 45 (Hyperturn, Maxxturn, Emcoturn)

	65	45
Traverse speed horizontal	120 m/min	120 m/min
Traverse speed vertical	60 m/min	60 m/min
Example		
Workpiece dimensions flanged parts (internal clamping) max.	220 mm	140 mm
Workpiece dimensions flanged parts (external clamping) max.	175 mm	110 mm
Workpiece dimensions flanged parts length max.	100 mm	100 mm
Workpiece dimensions flanged parts weight max.	10 kg	5 kg
Workpiece dimensions shaft parts (internal clamping) max.	80 mm	60 mm
Workpiece dimensions shaft parts (external clamping) max.	200 (700) mm	200 (400) mm
Workpiece dimensions shaft parts weight max.	10 (20) kg	10 kg

Swing Loader

Traverse speed horizontal	60 m/min
Swing movement	180°/sec
Parallel gripper with rotary module	
Diameter max.	approx. 60 mm
Length max.	approx. 100 mm
Weight max.	2 kg
2-finger toggle gripper	
Diameter max.	approx. 30 mm
Length max.	approx. 200 mm
Weight max.	2 kg
2-finger toggle gripper with rotary module	
Diameter max.	approx. 60 mm
Length max.	approx. 100 mm
Weight max.	2 kg

/ TURN/ MILL ASSIST

	TURN-ASSIST TA200	TURN-ASSIST TA270
Length	3613 mm	3613 mm
Width	2573 mm	2573 mm
Height	2408 mm	2408 mm
Weight	850 kg	1075 kg
Robot model	Fanuc	Fanuc
Robot payload	12 / 20 / 35 kg	20 / 35 / 50 kg
Workpiece diameter	25 – 200mm	25 – 270mm
Maximum stack height	2 x 350 mm	2 x 350 mm
Maximum stack weight	2 x 300 kg	2 x 450 kg
Machine tool interface	Profinet	Profinet

/ FLEXLOADER SC 3000

	IRB 1600-10/1.45	IRB 2600-12/1.65	IRB 2600-12/1.85
Length	3947 mm	3947 mm	3947 mm
Width	1010 mm	1010 mm	1010 mm
Height	2217 mm	2217 mm	2217 mm
Weight	2610 kg	2644 kg	2644 kg
Robot model	IRB 1600	IRB 2600	IRB 2600
Robot payload	10 kg	12 kg	20 kg
Robot reach	1450 mm	1650 mm	1850 mm
In-conveyor width and length	430 x 2000 mm	430 x 2000 mm	430 x 2000 mm
Out-conveyor width and length	430 x 2500 mm	430 x 2500 mm	430 x 2500 mm
Max object/ workpiece height	200 mm	200 mm	200 mm
Max belt load	100 kg	100 kg	100 kg
Machine tool interface	Profinet	Profinet	Profinet

/ BAR LOADER

	SL 1200
Bar diameter Ø	8 – 95 mm
Max. bar length	1200 mm
Min. bar length	150 mm
Material support	550 mm
Feed rate	0 – 60 m/min
Bar changing time	15 sec.
Dimensions (L x D)	1700 x 1250 mm
Weight	500 kg

''EMCO training tools are varied and make it easy to keep up with what you've learned. Whether it's theory or practice: people like to be there and look forward to the sessions.''

/ Helmut Brunauer
Apprentice Trainer, EMCO

TRAINING IS WHAT MAKES THE FUTURE POSSIBLE

For many, the gateway to the world of machining is an EMCO. But the demands on training concepts are becoming ever more varied and are changing with digitisation. That is why we also provide our customers with individual solutions in this area, which start as early as the planning phase and are designed precisely for the corresponding needs and possibilities. Our goal is to set new standards in consulting, training and education.

Thanks to its modular structure, the concept of EMCO Industrial Training is suitable for customer-specific consulting and optimally adapted CNC training.

Customised planning for training

The determination of the specific customer requirements for machines, CNC software and courseware are an important part of every order. With optimal training of the individual instructors at the machines, in the programming and in the didactic documents, EMCO Industrial Training supports customers in every phase of the project. In addition, there is guaranteed comprehensive support during the training process.

Extensive hardware and software package

EMCO Industrial Training can be optimally adapted to the various needs of individual companies and partners and, in addition to concept machines and software, also includes optimally coordinated instructional documents – the courseware. Special CAD/CAM programs and 3-D CNC simulators make it really easy to learn fundamentals and procedures.

Practical and varied training

WinTutorials for workshop instruction enable multimedia, machine and control-related knowledge transfer. CNC training becomes more efficient with realistic functional models and trainee motivation increases.

''Our good reputation in education and training is also a mission of ours. Only by finding modern and contemporary ways to pass on our knowledge can we meet the high standards that we and our customers expect.''

/ Christian Brötzner
Technical Sales Manager Training

TURNING

/ CONCEPT TURN 460

Swing Ø over bed	430 mm
Max. turning diameter	220 mm
Distance between centres	670 mm
Travel X / Z	160 / 510 mm
Rapid motion speed in X / Z	24 / 30 m/min
Main drive	13 kW
Speed range	0 – 6300 rpm
Tools/driven	12 / 6

/ CONCEPT TURN 260

Swing Ø over bed	250 mm
Max. turning diameter	85 mm
Distance between centres	405 mm
Travel X / Z	100 / 300 mm
Rapid motion speed in X / Z	15 / 24 m/min
Main drive	5.5 kW
Speed range	60 – 6300 rpm
Tools/driven	12 / 6

/ CONCEPT TURN 105

Swing Ø over bed	180 mm
Max. turning diameter	75 mm
Distance between centres	236 mm
Travel X / Z	55 / 172 mm
Rapid motion speed in X / Z	5 m/min
Main drive	1.9 kW
Speed range	150 – 4000 rpm
Tools/driven	8 / 0

/ CONCEPT TURN 60

Swing Ø over bed	130 mm
Max. turning diameter	60 mm
Distance between centres	335 mm
Travel X / Z	60 / 280 mm
Rapid motion speed in X / Z	3 m/min
Main drive	1.1 kW
Speed range	300 – 4200 rpm
Tools/driven	8 / 0

MILLING

/ CONCEPT MILL 260

Travel X / Y / Z	350 / 250 / 300 mm
Rapid motion speed X / Y / Z	24 m/min
Main drive	6.8 kW
Speed range (option)*	150 – 10000 rpm
Number of tools	20

/ CONCEPT MILL 105

Travel X / Y / Z	200 / 150 / 250 mm
Rapid motion speed X / Y / Z	5 m/min
Main drive	1.1 kW
Speed range (option)*	150 – 5000 (20000) rpm
Number of tools	10

/ CONCEPT MILL 55

Travel X / Y / Z	190 / 140 / 260 mm
Rapid motion speed X / Y / Z	2 m/min
Main drive	0.75 kW
Speed range (option)*	150 – 3500 (14000) rpm
Number of tools	8

THE COMPACT MODELS FOR PROFESSIONALS

The best and most economical choice for one-off and small series production: With the EMCOMAT turning machines and the FB milling machines, companies are perfectly positioned in terms of production and training. Conventional or cycle-controlled, they provide an easy entry into the world of precision machining. The user-friendly variety in a compact form can be individually planned and adapted and is the perfect introduction to the world of EMCO.

EMCOMAT E-200 MC

TURNING

/ EMCOMAT E-300 -400

Centre height	380 / 430 mm
Distance between centres	2000 / 4000 / 6000 mm
Spindle bore	153 mm
Chuck Ø	500 mm
Gear steps	2
Speed range	0 – 1200 rpm
Drive power	33 kW
Digital Readout	
Control	SIEMENS 840D sl FAGOR 8055i

/ EMCOMAT E-200 MC

Centre height	200 mm
Distance between centres	1000 mm
Spindle bore	53 / 50 mm
Chuck Ø	200 mm
Gear steps	1
Speed range	50 – 4000 rpm
Drive power	7.5 kW
Digital Readout	
Control	Sinumerik 828D

/ EMCOMAT 20 D

Centre height	200 mm
Distance between centres	1000 mm
Spindle bore	50 mm
Chuck Ø	200 mm
Gear steps	4
Speed range	40 – 3000 rpm
Drive power	5.3 kW
Digital Readout	EMCO

/ EMCOMAT 17 D

Centre height	170 mm
Distance between centres	700 mm
Spindle bore	50 mm
Chuck Ø	200 mm
Gear steps	4
Speed range	40 – 3000 rpm
Drive power	5.3 kW
Digital Readout	EMCO

/ EMCOMAT 14 D

Centre height	140 mm
Distance between centres	650 mm
Spindle bore	40 mm
Chuck Ø	140 mm
Gear steps	2
Speed range	60 – 4000 rpm
Drive power	7.5 kW
Digital Readout	EMCO

MILLING

/ EMCOMAT FB-3 L

Travel X	300 mm
Travel Y	200 mm
Travel Z	350 mm
Clamping area	600 x 200 mm
Gear steps/control	8 / mechanical
Speed range	80 – 2200 rpm
Drive power	1.4 kW
Position display	Heidenhain

/ EMCOMAT FB-600
with POSITION DISPLAY UNIT

Travel X	600 mm
Travel Y	400 mm
Travel Z	400 mm
Clamping area	800 x 400 mm
Gear steps/control	1
Speed range	10 – 5000 rpm
Drive power	10 / 13 kW
Control	Heidenhain Sinumerik 828D

/ EMCOMAT FB-450
with POSITION DISPLAY UNIT

Travel X	450 mm
Travel Y	350 / 400 mm
Travel Z	400 mm
Clamping area	800 x 400 mm
Gear steps/control	1
Speed range	10 – 5000 rpm
Drive power	10 / 13 kW
Control	Heidenhain Sinumerik 828D

/ EMCOMAT FB-600 MC

Travel X	600 mm
Travel Y	400 mm
Travel Z	400 mm
Clamping area	800 x 400 mm
Gear steps/control	1
Speed range	10 – 5000 rpm
Drive power	10 / 13 kW
Control	Heidenhain TNC620, Sinumerik 828D

/ EMCOMAT FB-450 MC

Travel X	450 mm
Travel Y	350 / 400 mm
Travel Z	400 mm
Clamping area	800 x 400 mm
Gear steps/control	1
Speed range	10 – 5000 rpm
Drive power	10 / 13 kW
Control	Heidenhain TNC620, Sinumerik 828D

SEE THE FUTURE, BE THE FUTURE.

The quest for innovation and the development of innovative technologies has always been part of EMCO's philosophy.
The chain of evidence is long and begins in 1947. Since then EMCO has shown time and again that it is possible to use impressive knowledge to make groundbreaking machines. And that is not going to change in the future.

Stefan Hansch, CEO EMCO

1947 Founding as tool and clamp manufacturer by Karl Maier

1950 Development of hardness testers

1953 Market launch of the EMCO UNIMAT multifunctional machine for metal and wood processing

1967 Presentation of the innovative EMCOMAT 7 multipurpose machine tool

1976 Entry into CNC technology

1977 Foundation of EMCO USA

1982 Development of independent products for the training sector

1984 Foundation of EMCO Germany

1987 Development of laser cutting systems

1992 German Innovation Award for the EMCOTURN 425 four-spindle system

1999 Acquisition of Padovani and foundation of EMCO Italia

2001 Market launch of HYPERTURN complete machining systems

2003 Integration into A-TEC INDUSTRIES AG

2004 Market launch of MAXXTURN CNC universal turning centres
Takeover of FAMUP

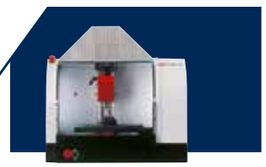
2005 Market launch of EMCOTURN Design Prize for HYPERTURN

2006 Opening of the Hallein Technology Centre (HQ)

EMCO Hallein near Salzburg

VMC-300

PCM 55



EMCOTURN 325

1947

10 EMPLOYEES

UNIMAT

EMCOTURN 425

HYPERTURN

1947

1947 First radial drilling machine

1960 First horizontal milling machine

1969 First CNC milling machine

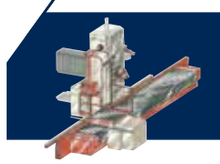
1974 First machining centre

1985 First machine with an automatic 5-axis head

1990 Introduction of linear guide technology WORK AREA

1993 Installation of the first DYNAMILL

1995 Introduction of the CS 500



from left to right: Günter Kuhn, Stefan Kuhn, Andreas Kuhn

Since 2011, EMCO has been part of the Kuhn Group. As a family entrepreneur, Günter Kuhn has been active in the field of construction machinery and charging technology since 1973. EMCO expanded the Group's extensive portfolio into the mechanical engineering segment and is now an important mainstay for a solid footing in a dynamic and globalised environment. The family-owned Kuhn Holding comprises 6 production sites and 52 branch offices with around 1600 employees, generating a total annual turnover of 649 million euros.

2007 1st place in the "Big Player" category at "Austria's Leading Companies"

2008 Presentation of the new EMCOMILL series (vertical machining centres)

2009 Introduction of the MAXXMILL 500 (vertical machining centre)

2010 Market launch of the vertical turning machines

2011 Integration into the family-run KUHN Holding

2014 Market launch of the MAXXMILL 350

HYPERTURN 200 POWERMILL

2015 Opening of the Taicang branch

2016 Market launch of UMILL 1800, MMV 3200, Universal Machining Centre

2017 Market launch UMILL 1500, Universal Machining Centre

Market launch of HYPERTURN 100 Powermill

2018 Branches opened in India, Switzerland and Poland

2018 Market launch of UMILL 750, redesign of the DYNAMILL G5, HYPERTURN 45 G3

THE NEW LOOK OF PERFORMANCE

emco

EMCOTURN 45

HYPERTURN 200 PM

HYPERTURN 65 PM

2020

140 LOCATIONS

800 EMPLOYEES

UMILL 1800

UMILL 1500

UMILL 750

MORE THAN A LOCATION

We believe in the power of specialists. That's why we focus on the individual orientation of our individual facilities, which all have one thing in common: Our ethos of never being satisfied with standard solutions.

EMCO World
Wendlingen
Competence Centre

The world of EMCO is constantly growing, and so are our locations.

You will soon see our milling expertise in the heart of the German metalworking industry. In Wendlingen, Baden-Württemberg, we are launching a new competence centre in which we will provide even more room for dialogue and service in the future.

EMCO GmbH & Co KG
Pleidelsheim Technology Centre

EMCO GmbH
Hallein-Taxach

EMCO Intos s.r.o
České Budějovice

EMCO Werkzeugmaschinen
Sp. z o. Warszawa

EMCO FAMUP S.r.l. San Quirino

EMCO ITALIA S.r.l. S. Giorgio su Legnano

EMCO MECOF, Mecof S.r.l.
Belforte Monferrato

EMCO-RUS GmbH
Ekaterinburg

EMCO Machinery Co., Ltd
TaiCang

EMCUT EMCO MACHINES
INDIA PVT LTD, Kharghar

EMCO Werkzeugmaschinen
AG Zürich

beyond standard

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