

DMG MORI

BETTER EQUIPPED - TODAY AND IN THE FUTURE

CTX beta 450 TC

CTX beta 450 TC



Machine

Best usability

Efficiency

Technology

Automation

Technical data

CTX beta 450 TC

CTX beta 450 TC – better equipped – today and in the future

The tool magazine extension for 120 tools, to expand your capacity to up to 200 tools, and the flexible Robo2Go can be easily retrofitted. So you are ready for the requirements of tomorrow.



b est usability

Latest control generation with innovative functions for easier and up to 80 % faster programming

e fficiency

Increased efficiency through consistent reduction of energy consumption, intelligent control and reduction of idle times



Video of the
CTX beta 450 TC:
youtu.be/Ij5iHa2n6_8

The CTX TC series has been offering premium quality and technology in the Turn & Mill segment for years. We are continuing history with the latest machine in the product family. The new CTX beta 450 TC stands for best usability, efficiency, technology and automation. This is how you equip yourself for today and the future.



03

t echnology

5-axis simultaneous machining
and 5-in-1 process integration for 6-sided
complete machining

a utomation

Comprehensive automation – with main-time
parallel tool loading, integrated gantry loader for
workpiece automation or our flexible Robo2Go

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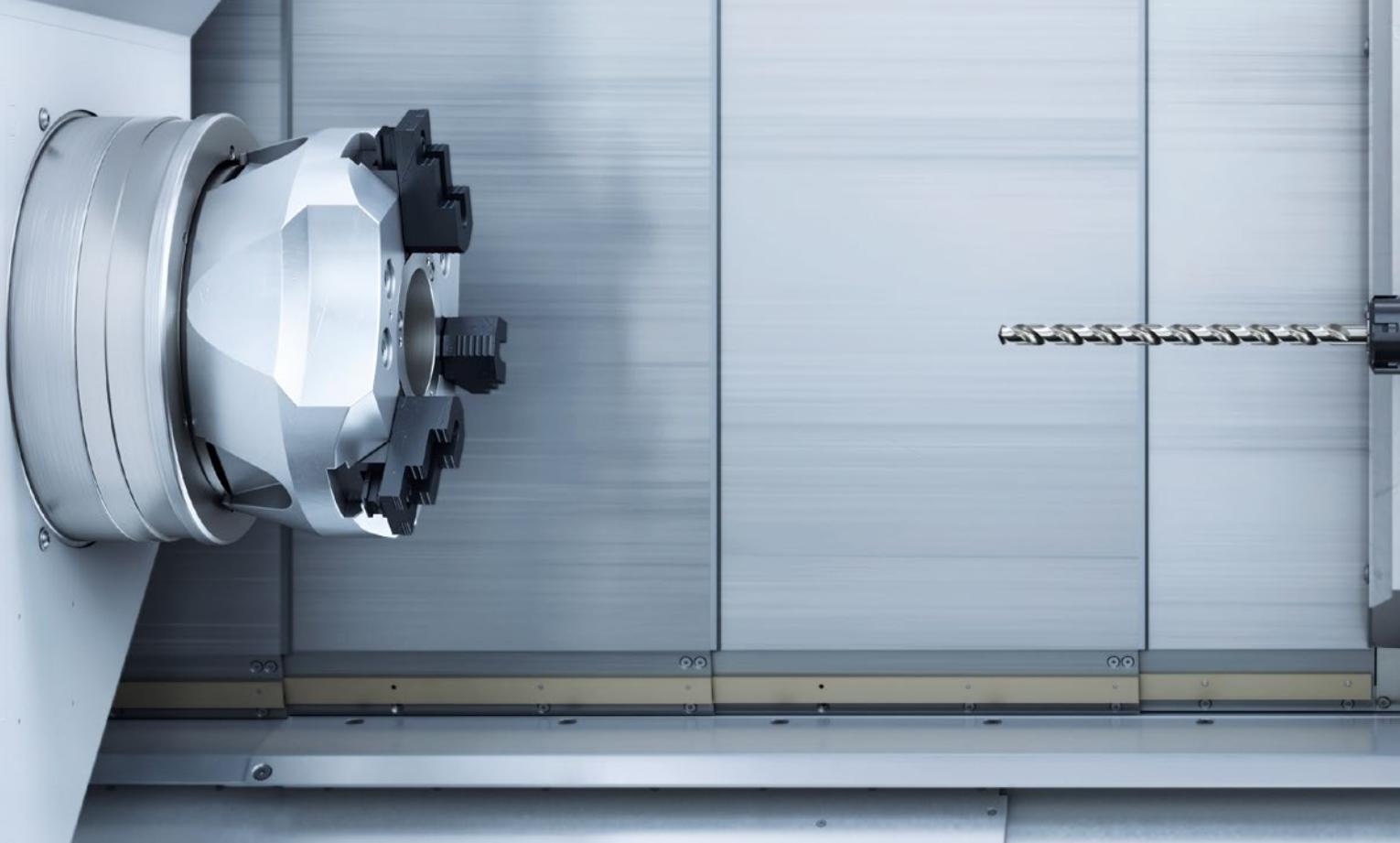
CTX beta 450 TC

Better equipped – with technology and higher precision

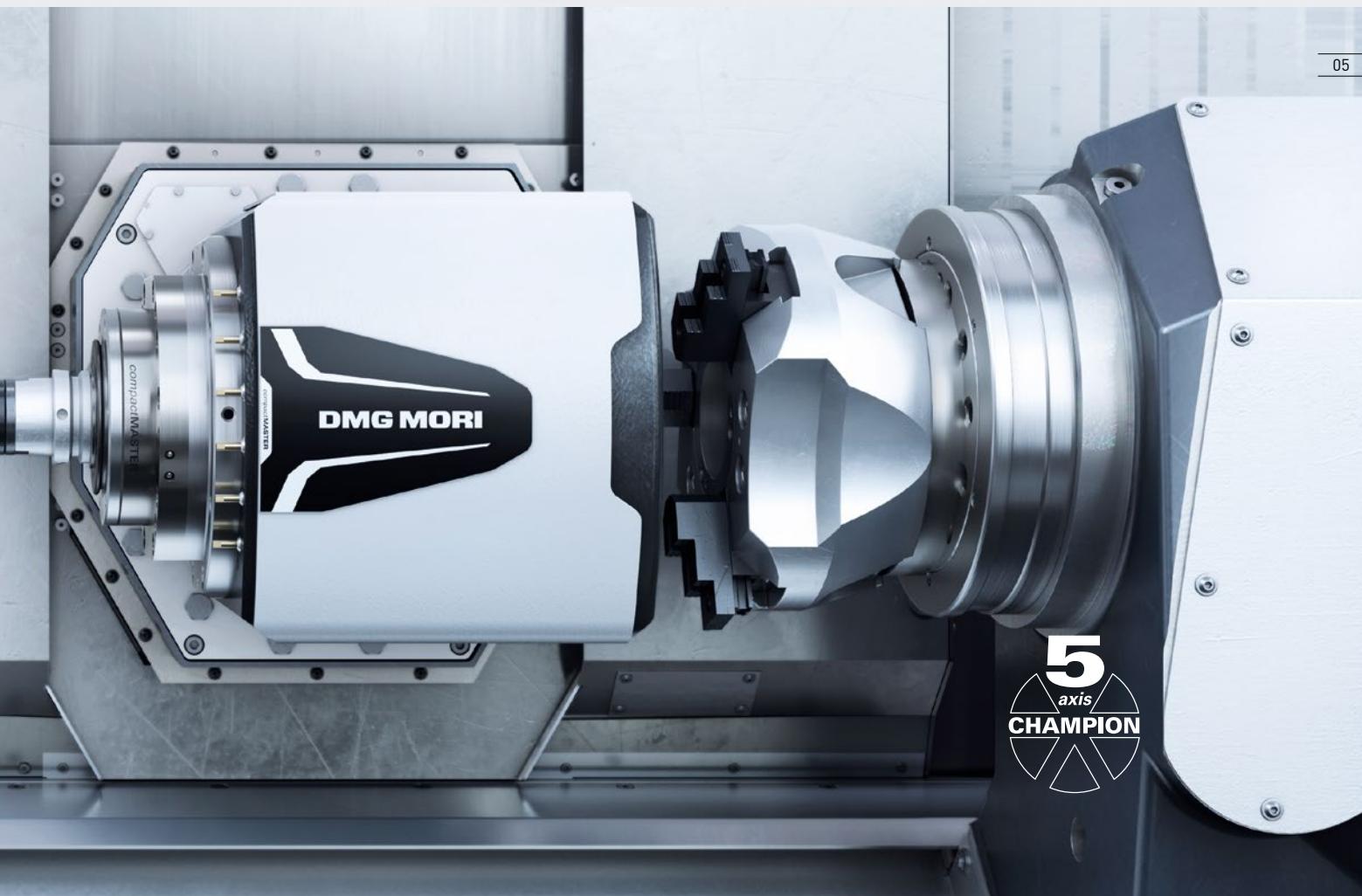
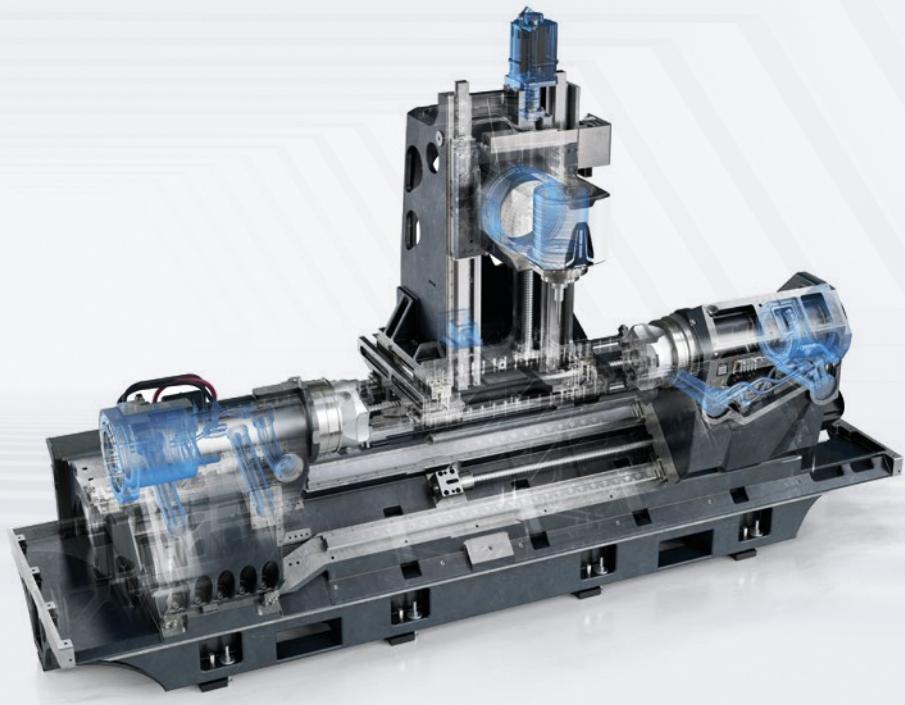
Maximum rigidity, comprehensive cooling measures as well as 5-axis simultaneous machining and process integration such as grinding or gear cutting. The CTX beta 450 TC offers complete 6-sided machining with highest precision and dynamics.

HIGHLIGHTS

- + **500 mm max. turning diameter, 1,100 mm turning length**
- + **only 350 mm long:** compactMASTER spindle with 15,000 rpm
- + **5-in-1 process integration:** turning, milling, grinding, gear cutting, measuring



- + Linear scales in all axes
- + Cooling of main and counter spindle as well as the drives of all axes



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CTX beta 450 TC

Better equipped – with premium components and individual equipment

For a machine configuration
as individual as your requirements.



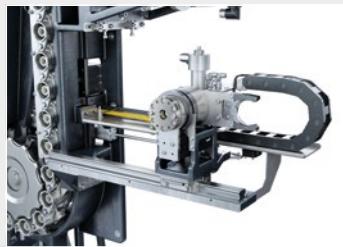
+120 tools
HSK 63/Capto C6



80 tools
HSK 63/Capto C6



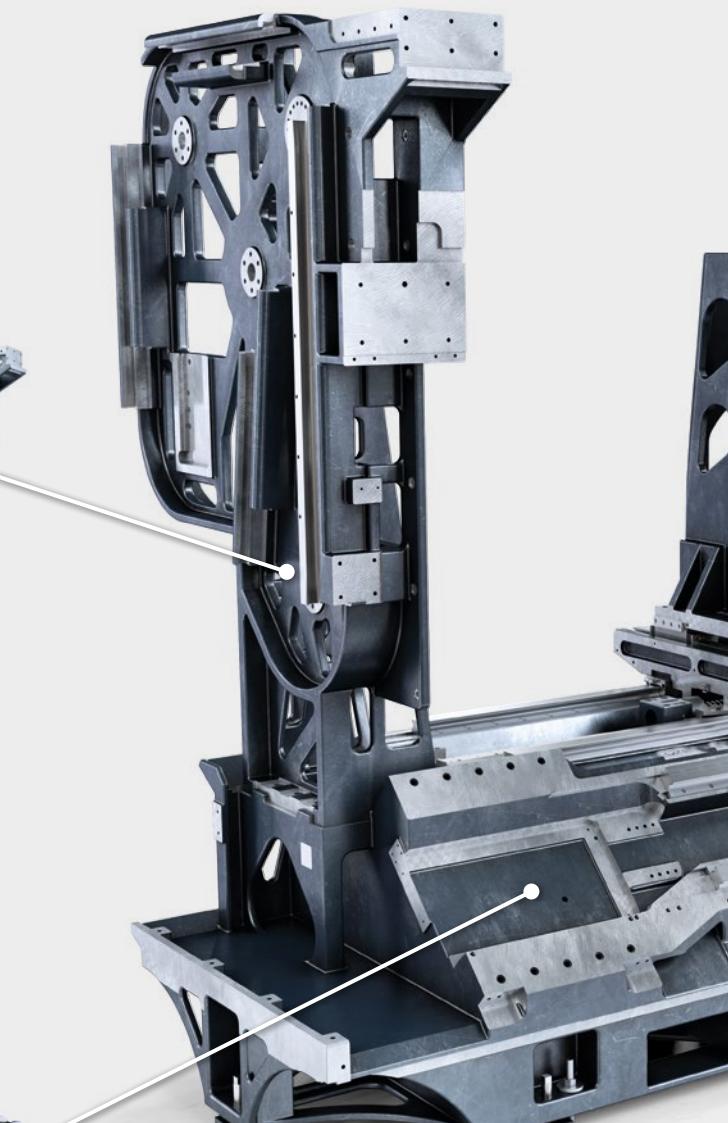
60 tools
HSK 63/Capto C6



Shuttle for main-time
parallel tool loading



ISM 102, ø104 mm
4,000 rpm/720 Nm



ISM 76, ø77 mm
5,000 rpm/345 Nm



optionally with integrated acoustic
emission sensor on main and/or counter
spindle for grinding

24" ERGOline X panel
with Sinumerik ONE
and CELOS X



B-axis
with torque motor
 $\pm 120^\circ$ swivel range,
0.001° angular resolution



compactMASTER
20,000 rpm,
120 Nm, HSK 63/Capto C6



compactMASTER
15,000 rpm,
120 Nm, HSK 63/Capto C6



Pick-up device right,
up to $\varnothing 102$ mm, 30 kg



Pick-up device left,
up to $\varnothing 80$ mm, 6 kg



Loading and unloading system right,
up to $\varnothing 200$ mm, 30 kg

Tailstock
MK 5

ISM 76, $\varnothing 77$ mm
5,000 rpm/345 Nm



ISM 102, $\varnothing 104$ mm
4,000 rpm/720 Nm



NC steady rest
SLU-X2/X3.1/X3.2



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CTX beta 450 TC

Best usability – faster, more intuitive and more structured

You can already see from the outside that the CTX beta 450 TC offers a new, innovative control. With CELOS X and Sinumerik ONE, it sets new standards in comfortable and particularly efficient operation.

CELOS X

CELOS X offers a holistic solution for the digital transformation of a company in CNC manufacturing.

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CELOS Xperience – PLATFORM-BASED END-TO-END WORKFLOWS

- + user-friendly and intuitive interface
- + Seamless integration of CELOS APPs into the production process

HIGHLIGHTS



Operator Workbook

CELOS APP for optimal order processing in the office and on the shop floor



Application Connector

Display and operate customer IT systems directly on the panel of the machine



OP Workbench

Simple design and process optimization of NC programs



24" ERGOline X panel

CTX beta 450 TC

Best usability – OP Workbench:

This is how programming works today!

- + Simple design of program processes via drag & drop, regardless of the complexity of the processes
- + Clear operation plan for more transparency and an easier to understand program flow



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1 Select project template

2 Enter clamping parameters



OP Workbench is available for all CTX TC machines with CELOS and SIEMENS.

3 Design operation plan

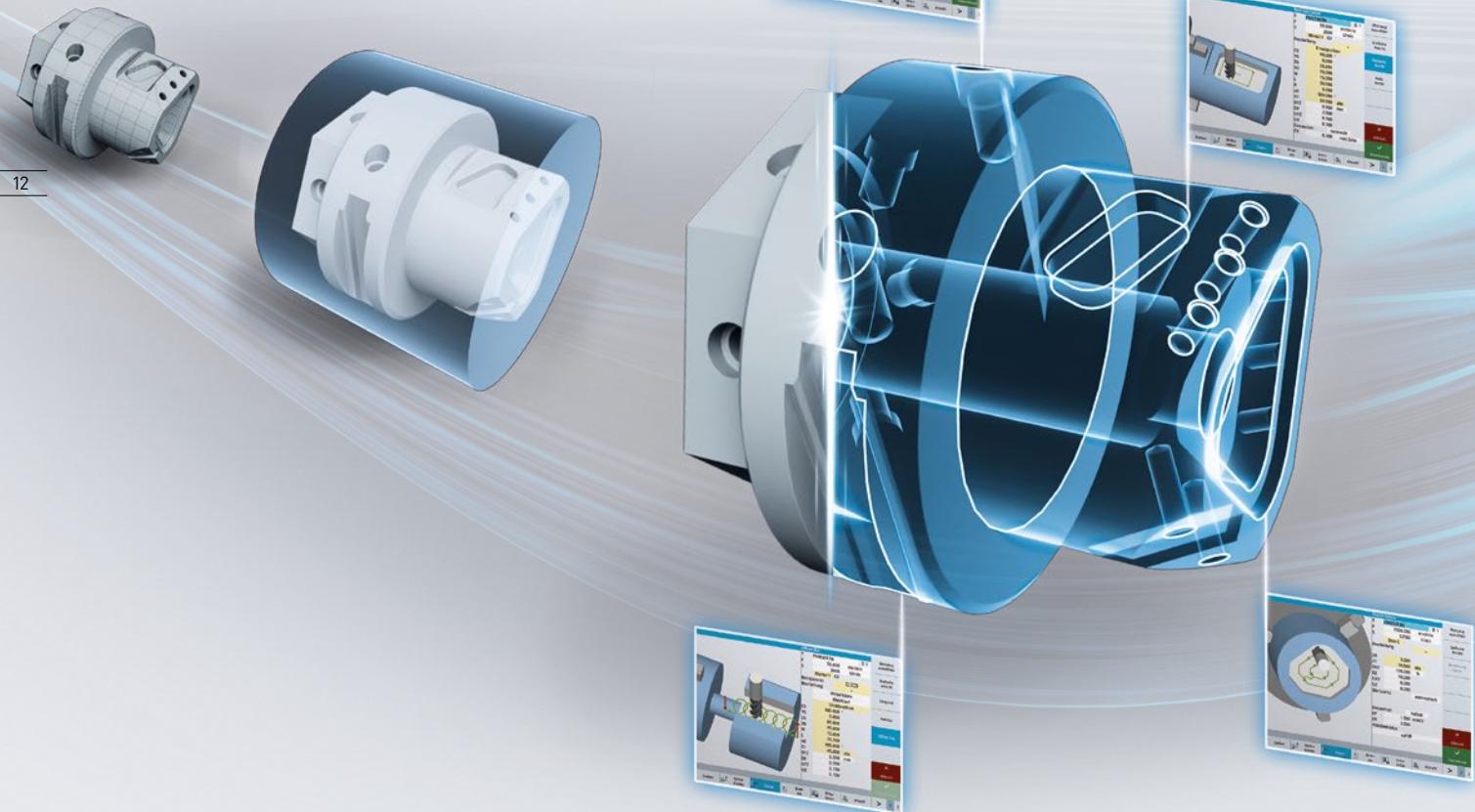
4 Send to the NC

CTX beta 450 TC

Best usability – 3D Shopfloor Programming: up to 80 % faster workshop-oriented programming

Based on a 3D model of the workpiece, machining features are recognized and the ShopTurn cycles are prefilled automatically. This allows you to program faster and more efficiently on the control.

EXCLUSIVELY AT
DMG MORI AND
STANDARD ON THE
CTX beta 450 TC



1 Load 3D model

2 Define raw
material

3 Set process
parameters

**Automated feature recognition for a new level
of workshop-oriented programming**



4 Simulate NC program

5 Run NC program

CTX beta 450 TC

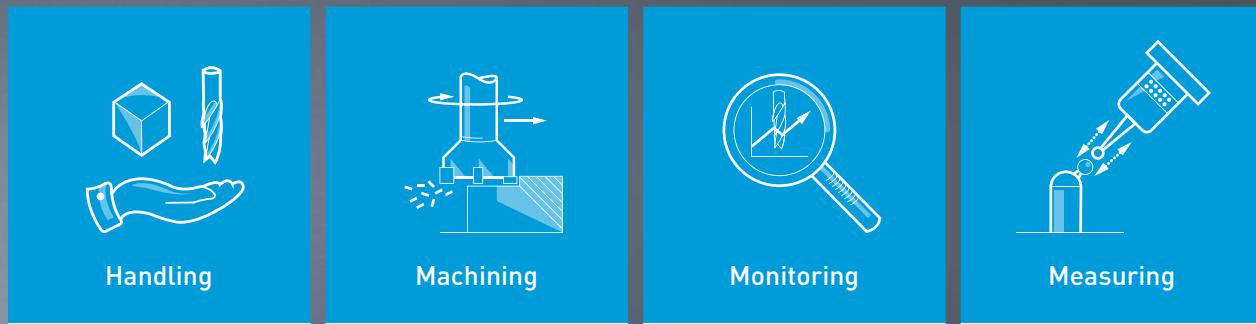
Best usability – Technology Cycles: Complex machining simply realized

DMG MORI exclusive technology cycles are the true assistants of the production-oriented programming to increase productivity and safety as well as to extend machine capability.

Technology carrier with 36 exclusive Technology Cycles



- + Proper program structure
- + Program up to 60 % faster
- + Error minimization by dialog-guided programming
- + Technology know-how stored in the program



Tool sort cycle for chain magazines	5-axis simultaneous machining – STANDARD	Runtime Monitor	3D quickSET
Counter spindle tip	Multi Threading 2.0	MPC 2.0 – Machine Protection Control	Measuring Pro
Control of program status	Polygon-/ Oval-Turning	Easy Tool Monitoring 2.0	
Application Tuning Cycle	gearSKIVING 2.0	iJAW	
Alternating speed	DMG MORI gearMILL	Tool Balance Assistant	
safeRETREAT	Grinding		
AAC – Automatic Approaching Cycle	Interpolation turning 2.0		
autoCHUCK 2.0	Excentric Machining		
cCLAMP	Y-Axis Parting		
	Keyway Broaching		
	crownHOBBING		
	gearHOBBING		
	gearBROACHING		
	gearSHAPING		
	Polygon-/ Oval-Grinding		
	Excentric Grinding		
	gearHONING		
	FreeTurn		
	Polygon/Oval Milling		
	gearSKIVING AI		

Further information
can be found in the brochure
about our exclusive DMG MORI
Technology Cycles.

CTX beta 450 TC

Efficiency – the key to sustainability

With **GREENMODE**, DMG MORI is redefining energy efficiency in manufacturing. Thanks to innovative hardware and software components, DMG MORI is able to reduce energy consumption by about 30 %. In this way, DMG MORI supports you on your way to energy-efficient production.



GREENMODE
PURE EFFICIENCY

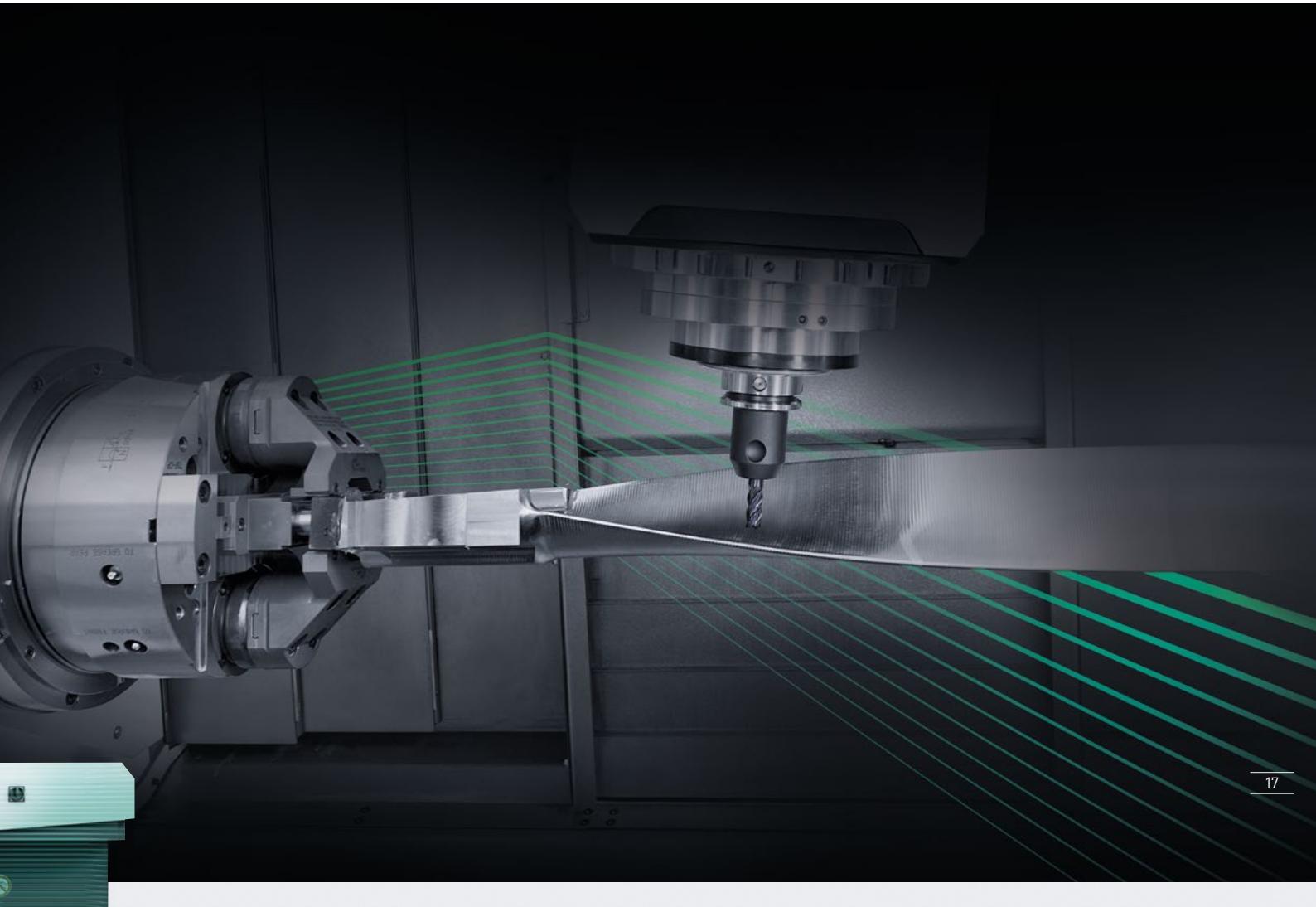
CTX beta 450 TC
ENERGY DEMAND

-29%

in comparison to a reference machine of similar design



The effectiveness of our energy efficiency measures and our calculation methods has also been confirmed by the renowned TÜV SÜD Industrie Service GmbH: DMG MORI **GREENMODE** was awarded the TÜV SÜD EME certificate in January 2023 as the first machine tool manufacturer in Germany.



The **GREEN**MODE Measures
for more energy efficiency include:

- + **Braking Energy Recovery**
- + **LED Lights**
- + **Highly Efficient Chillers**
- + **Advanced Auto Shutdown**
Automatic standby & wake-up
- + **Advanced Energy Monitoring**
Workpiece-specific energy measurements
- + **Frequency-Controlled Pumps**
Efficient coolant supply
- + **zeroFOG Mist Collector**
Compact & energy efficient unit

CTX beta 450 TC

Technology – six sides. one solution.

The CTX beta 450 TC takes process integration to a new level – for maximum productivity and technology on the workpiece.

+ **5-in-1 process-integration:**

Turning, milling, grinding with integrated acoustic emission sensor, gearing and measuring

+ **5-axis-simultaneous machining in standard**

+ **maximum flexibility with tools:**

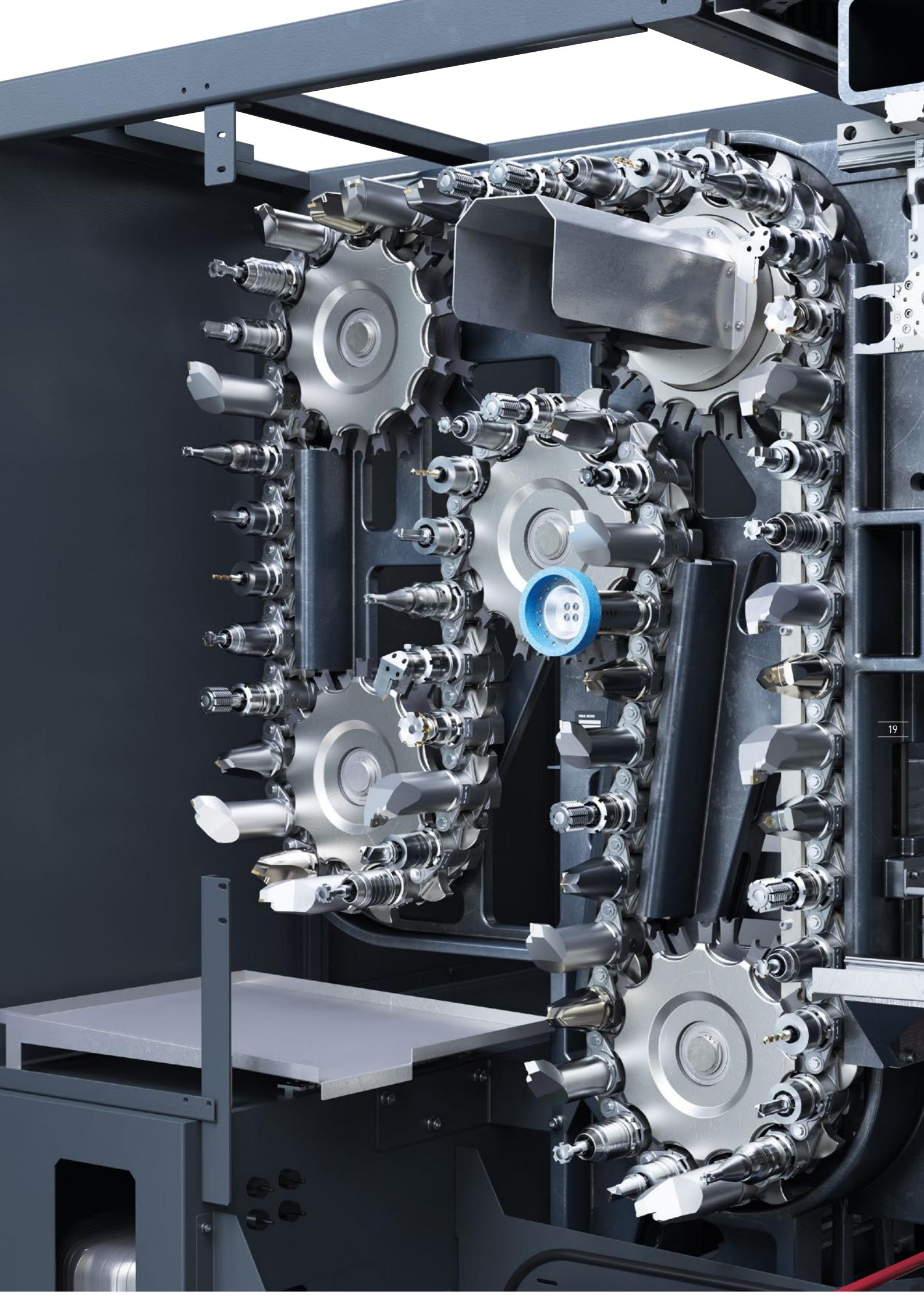
- up to 200 tools – magazine capacity that can also be expanded later
- maint-time parallel loading – tools can be set up at any time including integrated tool identification
- tools up to 140 mm in diameter, 400 mm in length and up to a weight of 12 kg

+ **identical main and counter spindle for maximum flexibility in the machining strategy**

with up to 5,000 rpm and a maximum of 36 kW/720 Nm

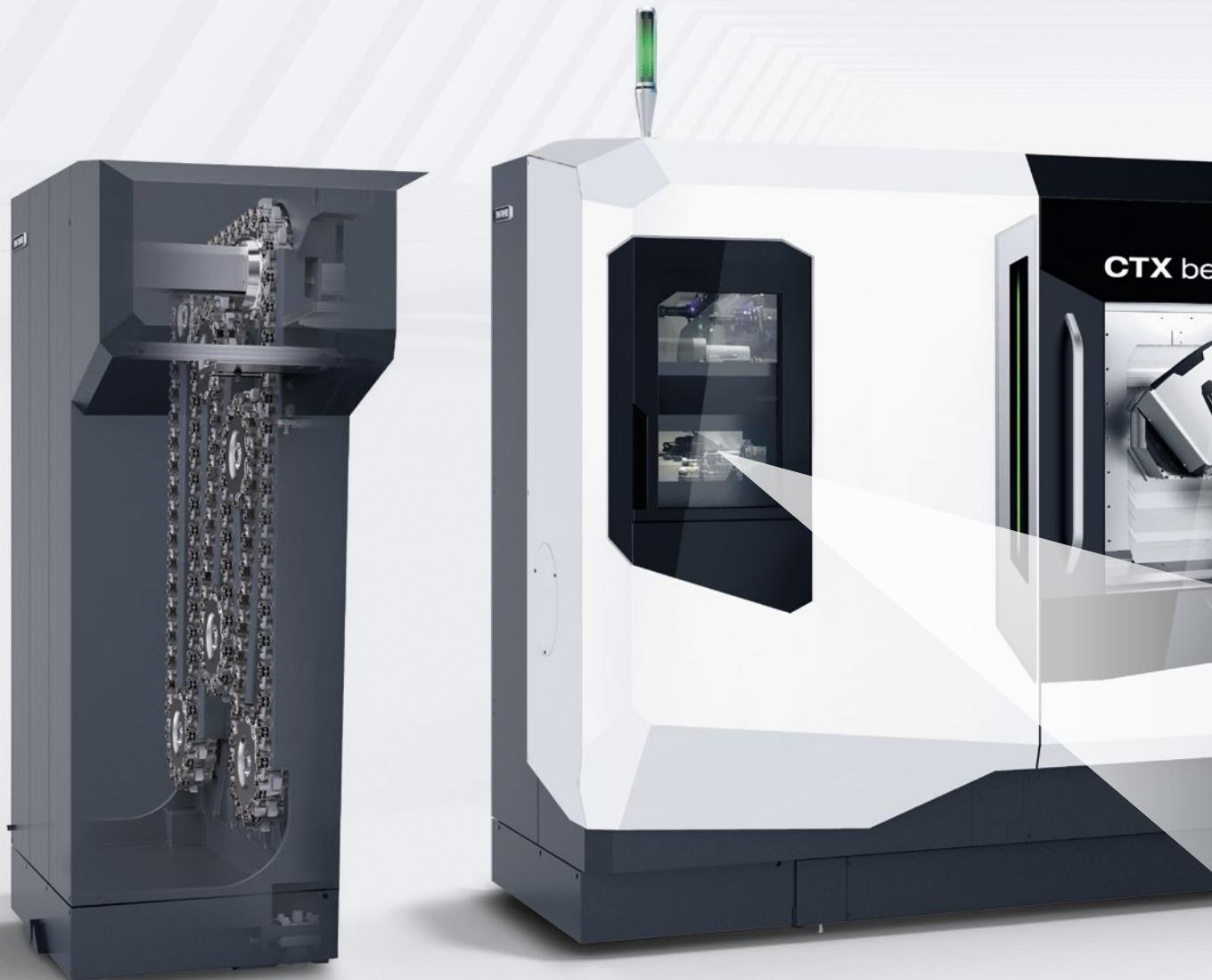


Perfect process integration – including turning, milling and grinding – with integrated acoustic emission sensor



CTX beta 450 TC

Automation – for higher productivity and resource efficiency



Magazine extension
with 120 tools for up to 200 tools
in the machine

Whether tool or workpiece handling – the CTX beta 450 TC offers fully comprehensive automation for optimized process flows and resource-saving added value.

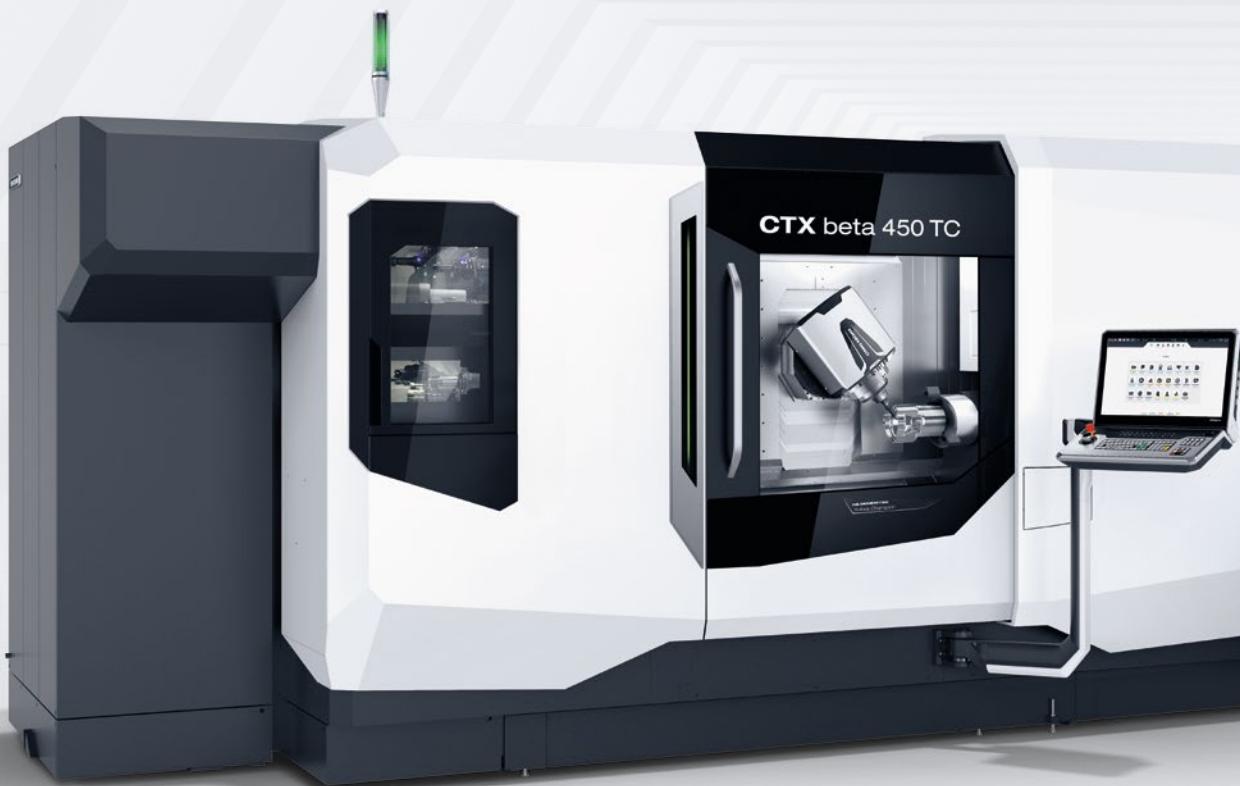
- + **main-time parallel tool loading**
- + **impact-free unloading** for workpieces up to 2×15 kg
- + **integrated gantry loader** for loading and unloading workpieces up to 2×15 kg
- + **Robo2Go** for small and medium batch sizes with intuitive operation



Tool shuttle for main-time parallel tool loading – at any time

CTX beta 450 TC

Automation – for higher productivity and resource efficiency



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Integrated pick-up device

- + for workpieces up to Ø 80 mm, 6 kg
- + easy removal of the finished part at the left side of the machine



Workpiece pick-up device

- + for workpieces up to Ø 102 x 600 mm, 30 kg
- + collision-free storage

Integrated workpiece automation, or universal robot automation with Robo2Go. We offer the right solution for you. Machine, automation and control from a single source!

Robo2Go and Robo2Go Max:

- + Robots with load capacities up to 35 or 210 kg
- + proven intuitive usability



Robo2Go Max



Loading and unloading system right,

- + for workpieces up to
Ø 200 × 200 mm, 2 × 15 kg



Robo2Go
with drawer storage

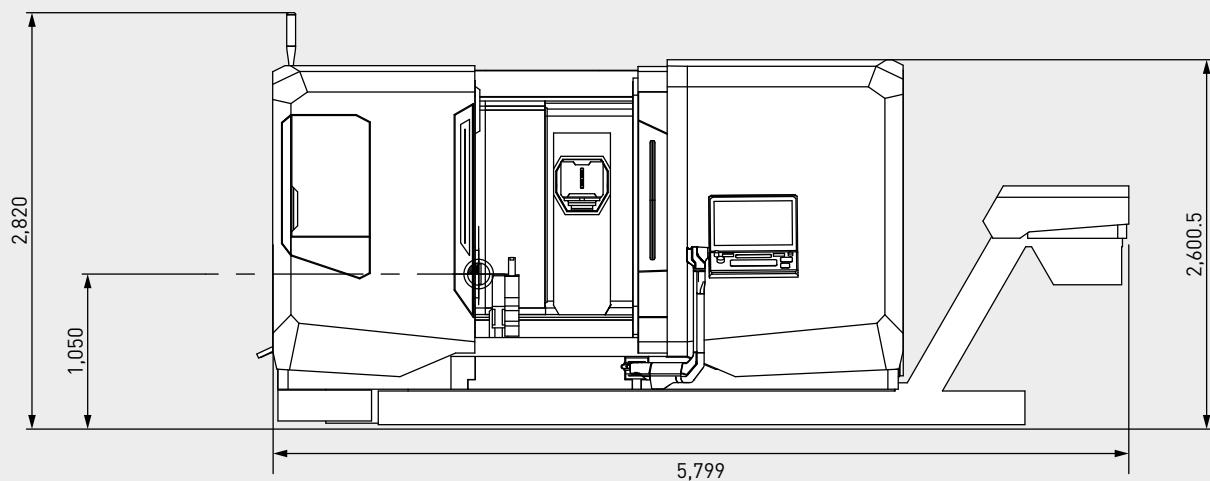


Robo2Go with
CTX beta 450 TC

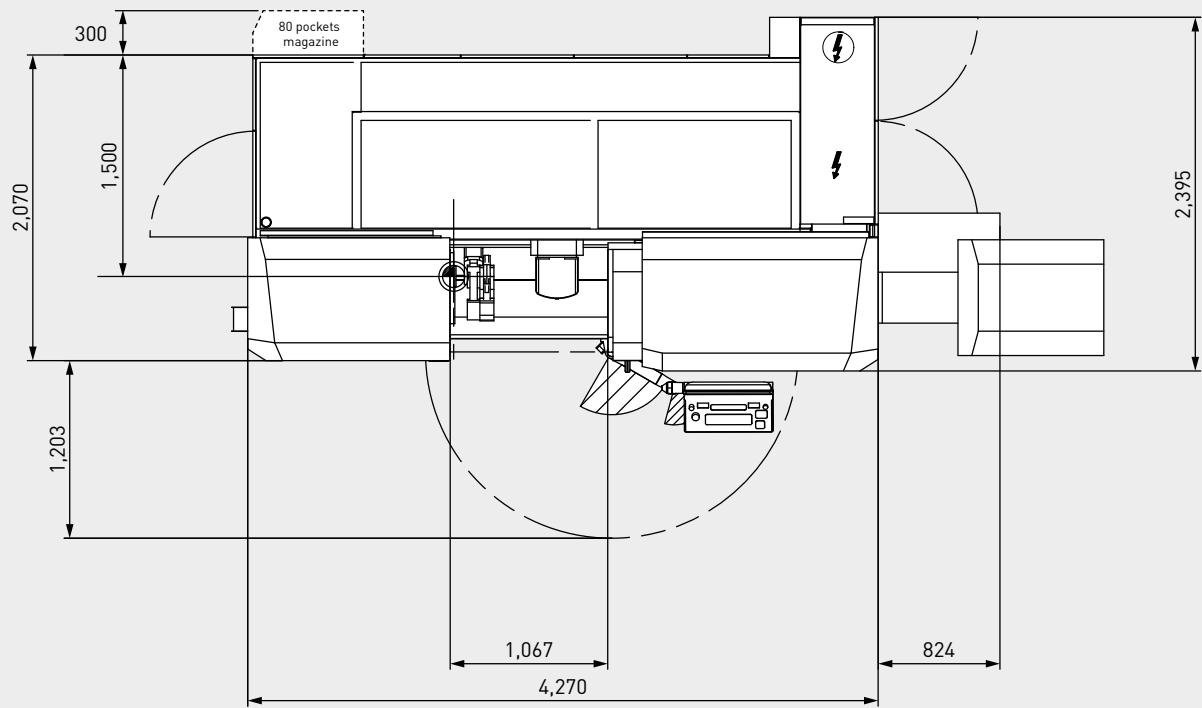
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Floor plan

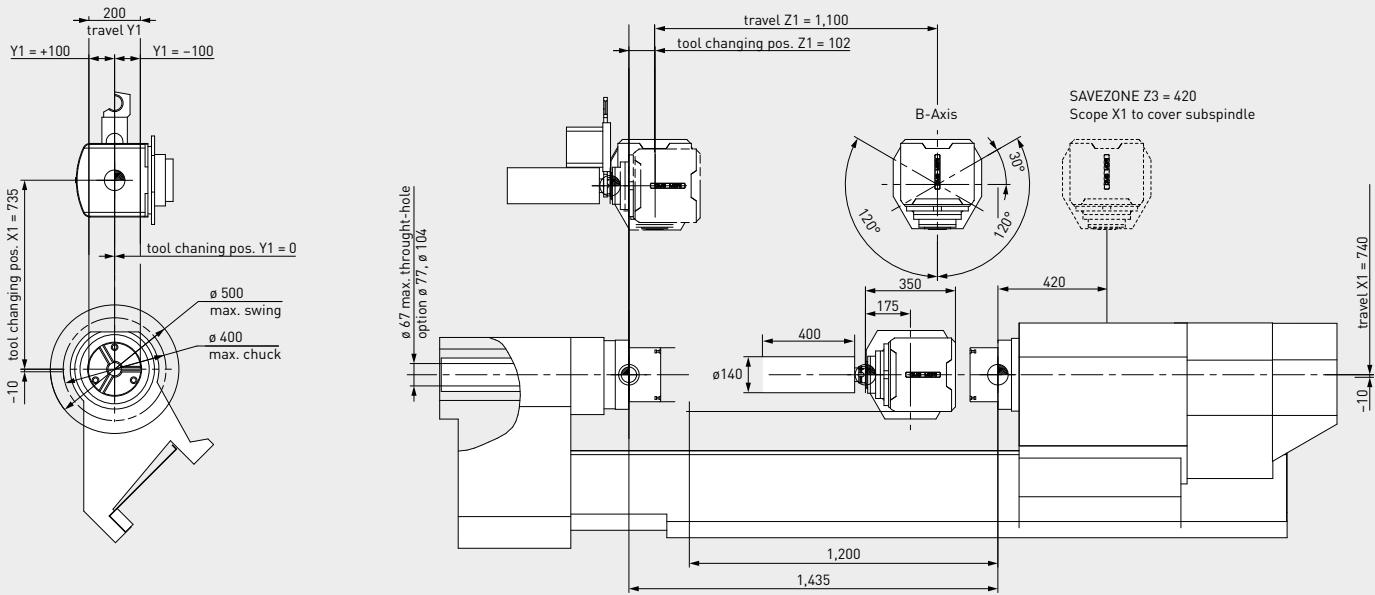
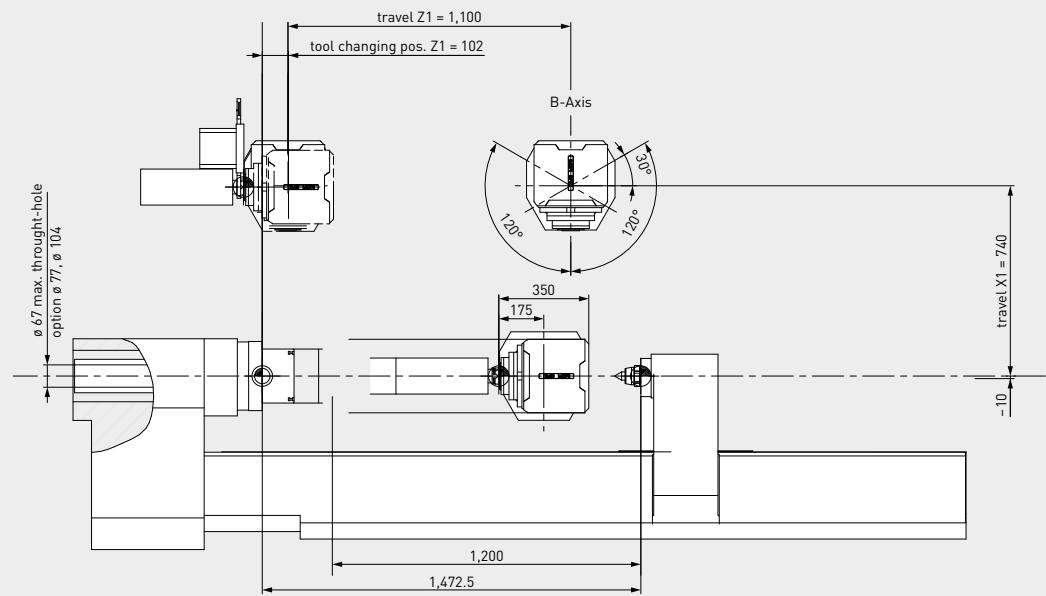


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Work area

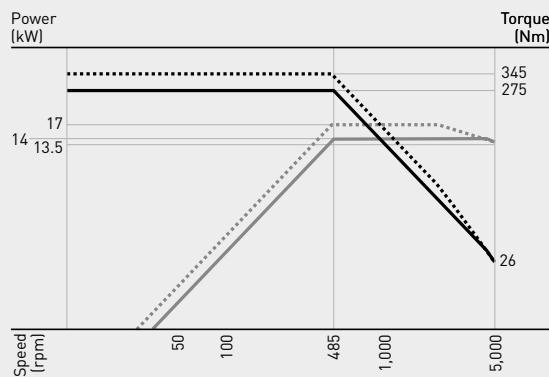


CTX beta 450 TC

Power diagrams

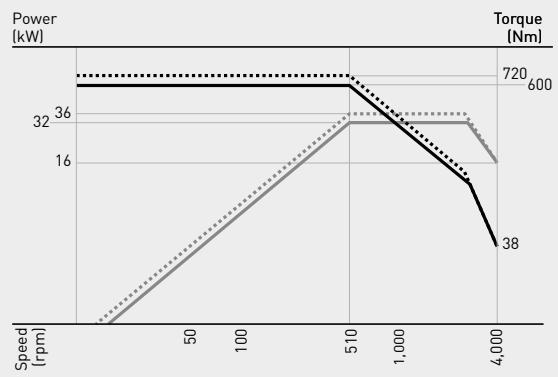
main and counter spindle ISM 76

5,000 rpm / 17 kW / 345 Nm (40 % ED)



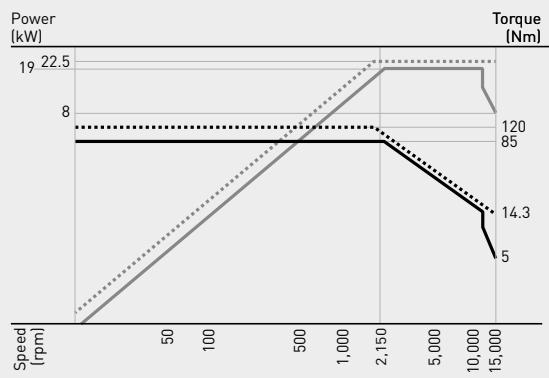
main and counter spindle ISM 102

4,000 rpm / 36 kW / 720 Nm (40 % ED)



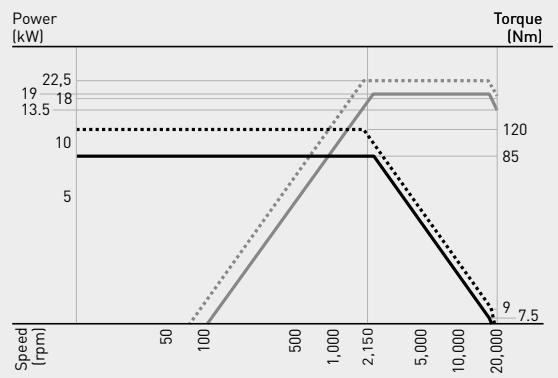
compactMASTER – Standard

15,000 rpm / 22.5 kW / 120 Nm (40 % ED)



compactMASTER – Option

20,000 rpm / 22.5 kW / 120 Nm (40 % ED)



..... M S3 (40 % DC)
 P S3 (40 % DC)
 ——— M S1 (100 % DC)
 ——— P S1 (100 % DC)

CTX beta 450 TC

Technical data

CTX beta 450 TC		
Workspace		
Max. swing diameter	mm	500
Max. turning diameter	mm	500
Distance main spindle to tailstock (without chuck)	mm	1,473
Distance main spindle to counter spindle (without chuck)	mm	1,420
Max. turning length	mm	1,100
Main and counter spindle ISM 76 102		
Max. speed	rpm	5,000 4,000
Drive power / torque (40 % ED)	kW/Nm	17/345 36/720
Diameter in front bearing	mm	130 160
Clamping tube inner diameter	mm	76 102
Spindle nose (short taper)		A8 (A6*)
Max. chuck diameter	mm	325 400
B-axis with turn-mill spindle		
Tool holder		HSK 63 (Capto C6)
Spindle speed	rpm	15,000 20,000
Drive power / torque (40 % ED, 2 min.)	kW/Nm	22.5/120 22.5/120
Swivel range B-axis	°	±120
Rapid traverse B-axis	rpm	70
Slide for B-axis		
Travel X/Y/Z	mm	750/±100/1,100
Rapid traverse rate X/Y/Z	m/min	48/40/50
Feed force X/Y/Z (S3 – 40 %)	kN	9.5/8.0/14.2
Slide for counter spindle		
Travel Z	mm	1,200
Rapid traverse rate Z	m/min	40
Feed force Z (S3 – 40 %)	kN	11.6
Tool magazine		
Number of tool stations		60 (80/180/200)
Max. tool diameter	mm	80
Max. tool diameter w. o. adjacent tool	mm	140
Max. tool length	mm	400
Max. weight per tool	kg	12
Tailstock		
Stroke (hydraulic)	mm	1,200
Quill Power	kN	8.8
Tailstock centre	MK	MK5
Machine		
Footprint	m ²	12
Discharge height chip conveyor	mm	940
Machine height	mm	2,820
Machine weight (min.)	kg	10,000

*for ISM76 with integrated acoustic emission sensor

YOUR ONLINE SERVICE MANAGER

The image shows the myDMG MORI Customer Portal interface across three devices: a desktop monitor, a tablet, and a smartphone. The portal features a dark blue background with a grid pattern. At the top, there are four circular icons with text: 'YOUR HISTORY' (document icon), 'YOUR MACHINES' (gear icon), 'YOUR DOCUMENTS' (file icon), and 'YOUR SERVICE REQUESTS' (camera icon). The main title 'myDMG MORI' is prominently displayed in large white letters, with 'CUSTOMER PORTAL' in smaller letters below it. On the left, a sidebar shows a user profile and navigation links: Homepage, New Service Requests, Your Documents, Your Machines, Your Training, User Settings, and Administration. The central area displays a grid of machine models with small preview images and service request details.

my DMG MORI

The customer portal
for service optimization

MORE SERVICE

Fast support and live status
of your service requests

MORE KNOWLEDGE

All relevant documents can be
called up digitally

MORE AVAILABILITY

The direct line to a service expert
with guaranteed prioritized processing,
registration in < 3 minutes

Every customer benefits –
at no extra charge!

All countries in which myDMG MORI is available can be found at:
myDMGMORI.com



You too can benefit!
Register now for free:
myDMGMORI.com

Customer First – Our service promise!

Top quality at fair prices. It's a promise!



Best Price Guarantee for Original Spare Parts.

Should you get a spare part offered by us at least 20 % cheaper elsewhere, we will refund the price difference up to 100%.*

*All information and price advantages for Customer First are available at: customer-first.dmgmori.com



Spindle service at best prices.

The highest level of competence from the manufacturer at new and attractive prices – DMG MORI spindle service!

Export Control: To prevent the illegal diversion of the equipment to individuals or nations that threaten international security, from 01/01/2023, every DMG MORI machine may be equipped with an RMS function (Relocation Machine Security). The RMS automatically deactivates the machine when the machine is moved or disassembled. Such deactivation does not take place during regular operation or maintenance.

If the equipment is so-disabled, it can only be re-activated by DMG MORI or some authorized representatives. Reactivation can be ordered via DMG MORI Service.

If the machine is deactivated due to a substantial repair activity, this service is free of charge.

DMG MORI may refuse to re-activate the machine if it determines that doing so would be an unauthorized export of technology or otherwise violate applicable export restrictions.

DMG MORI shall have no obligation to re-activate such machine and shall have no liability as a result thereof.