

**DMG MORI**

UNIVERSAL TURNING NEW DEFINED

CLX 450 TC 2<sup>nd</sup> Generation

CLX 550 TC

**CLX TC**



**Machine and technology**

Machine configurator

Control and technology cycles

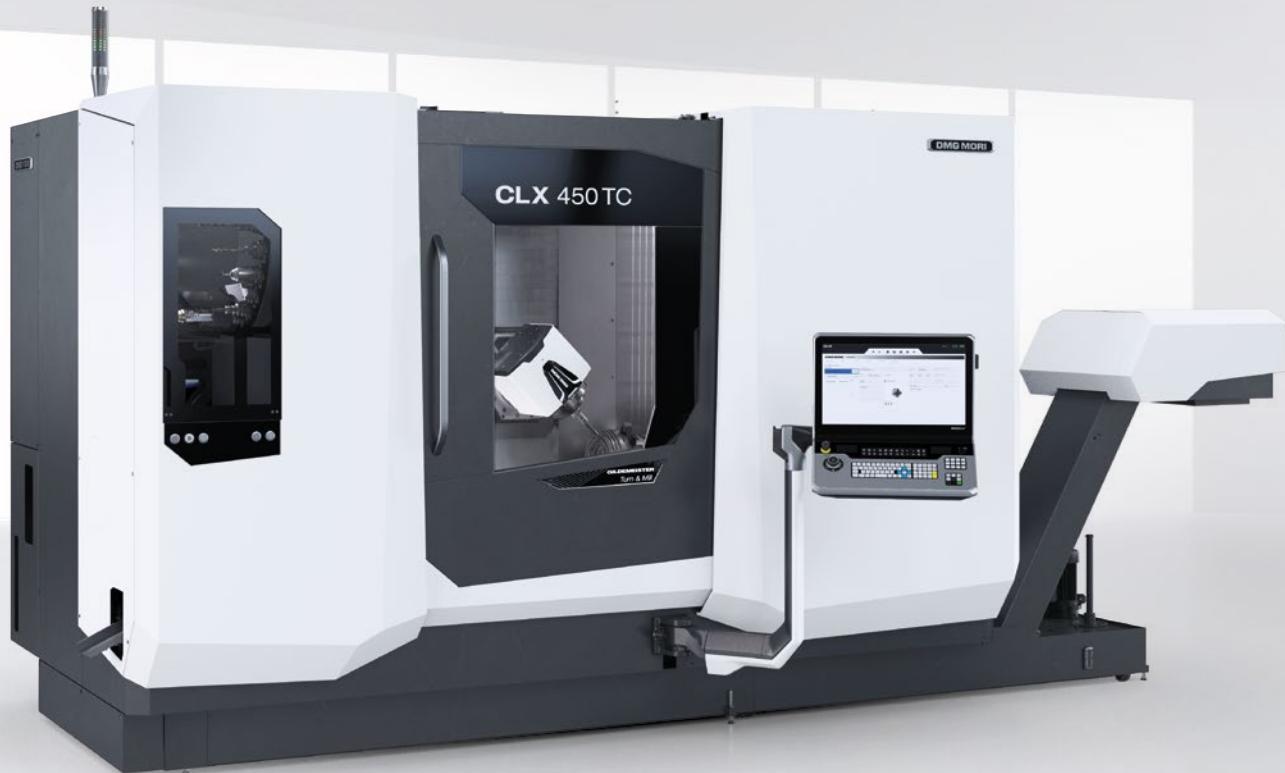
Automation

Applications

Floor plans/Working space/Technical data

CLX TC

## Success turned around further – The future of universal turning is now!



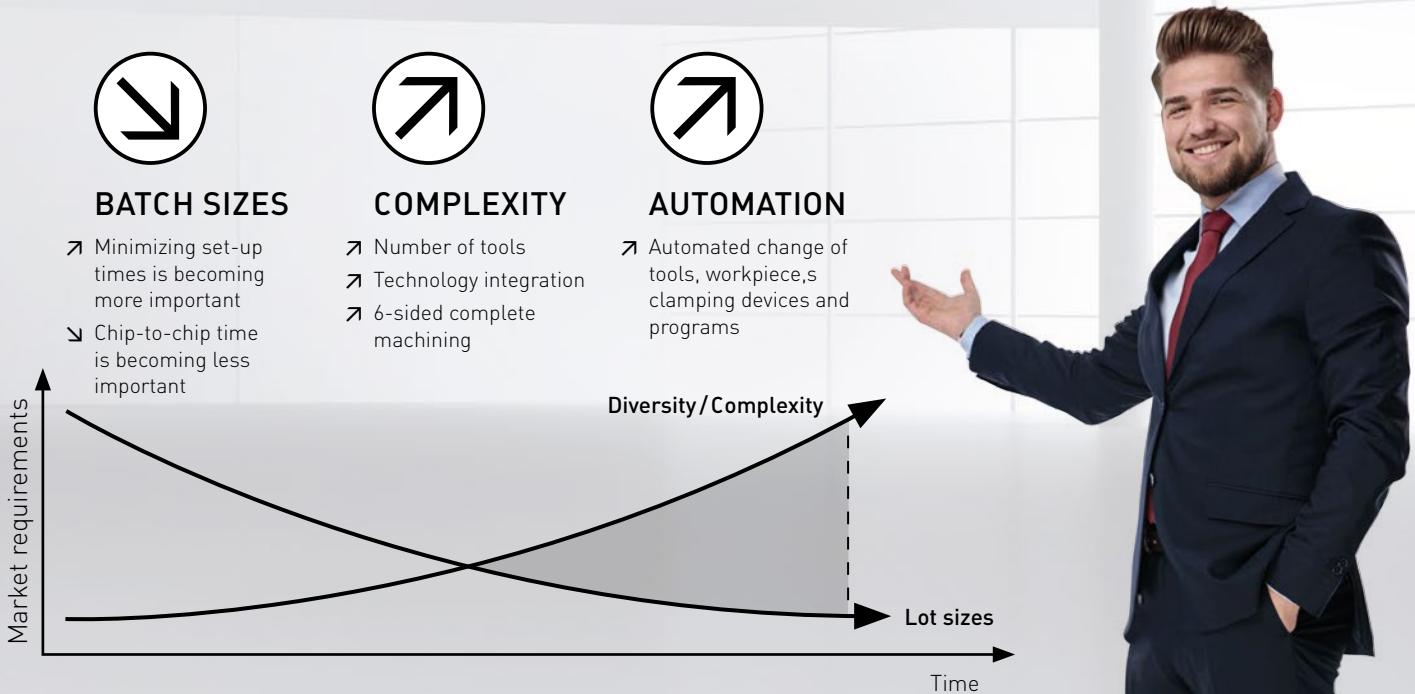
### CLX TC – TOOL CARRIER 2.0

- + Automatic tool change with 30 or 60 tools for maximum flexibility
- + Short setup and non-productive times, thanks to tool setup parallel to production time
- + Excentric turning and milling with the Y axis as standard
- + No angle tools required thanks to B-axis with 0.001° resolution in standard
- + Maximum usability of the working space with compactMASTER spindle
- + Highest safety – No unused tools in the work area and expandable with Machine Protection Control

# Modern production

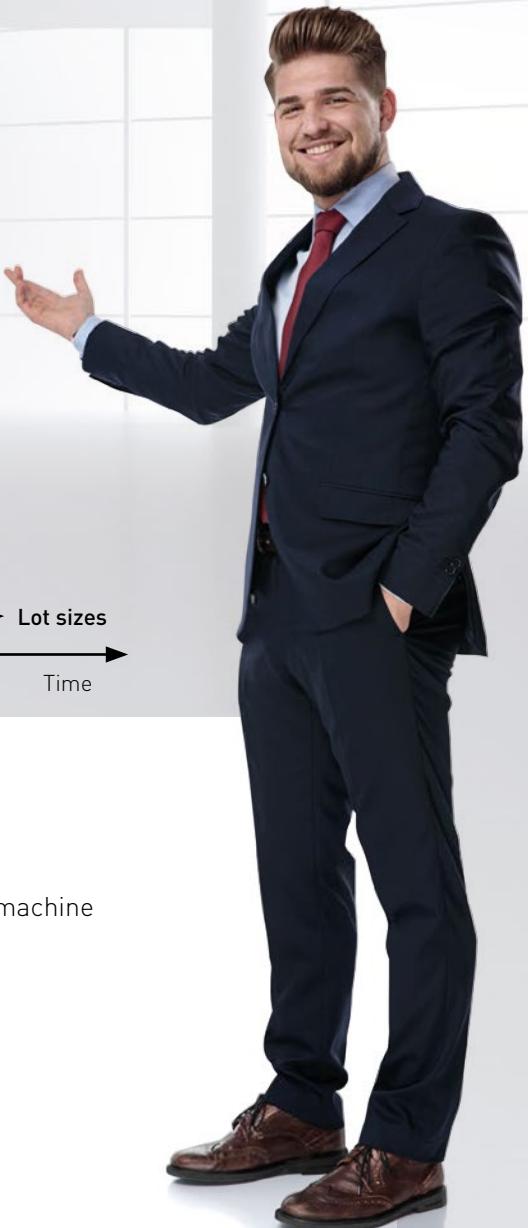
## High flexibility – short set-up times

**Falling batch sizes and increasing cost pressure** – these are the challenges facing many companies today. With the new CLX TC, you can easily master these challenges – and at an unbeatable price.



### THE NEW UNIVERSAL TURNING MACHINE FROM DMG MORI OFFERS YOU:

- + Full flexibility through perfect combination of turning and milling machine
- + Increased productivity by means of high machine availability and simple automation capability
- + High repeatability, thanks to a robust machine concept
- + Simple, intuitive operation and dialog-guided technology cycles
- + Easy planning of production due to complete machining of jobs
- + Short delivery times of standard machines
- + Fast service times thanks to global service presence and expert staff

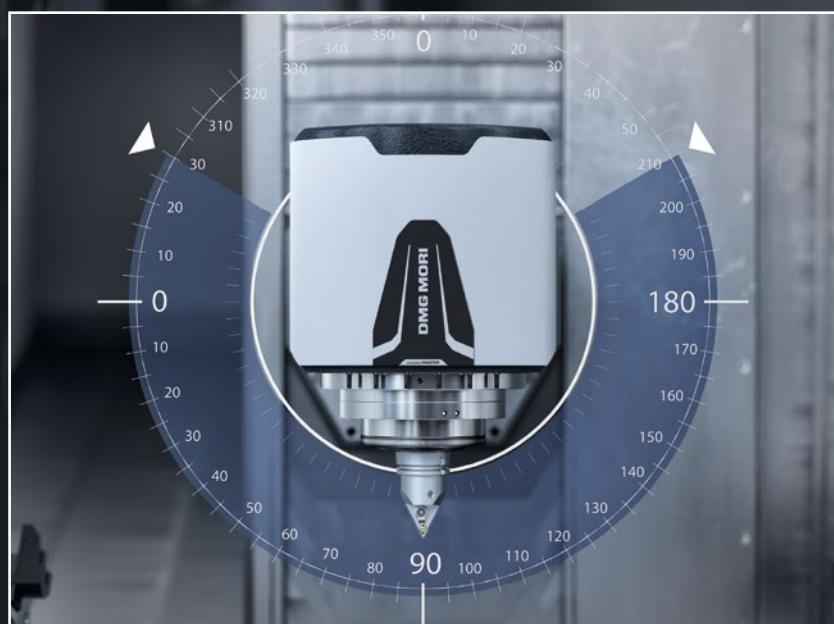


CLX TC

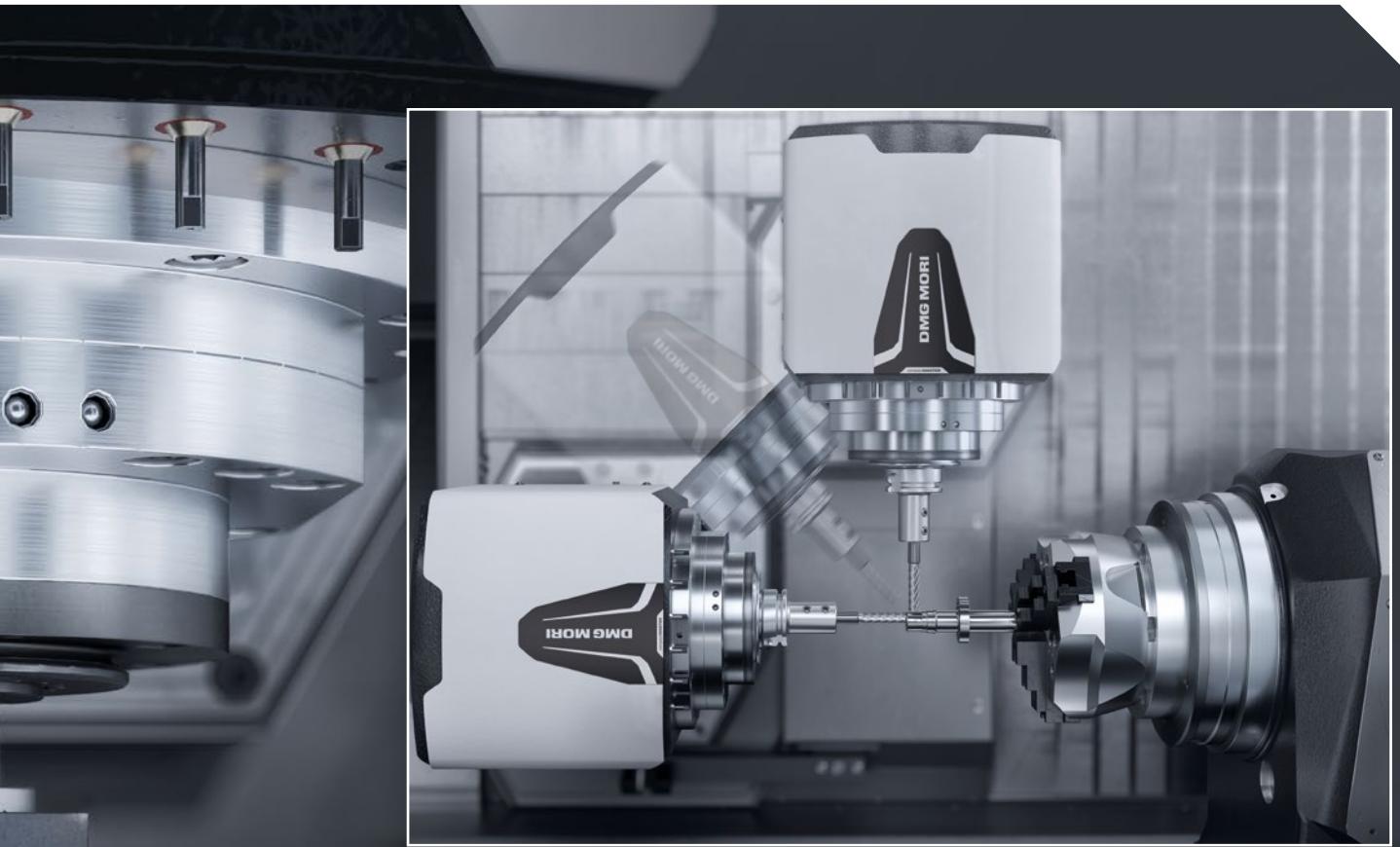
## The B-axis factor

### Added value compared to any turret lathe

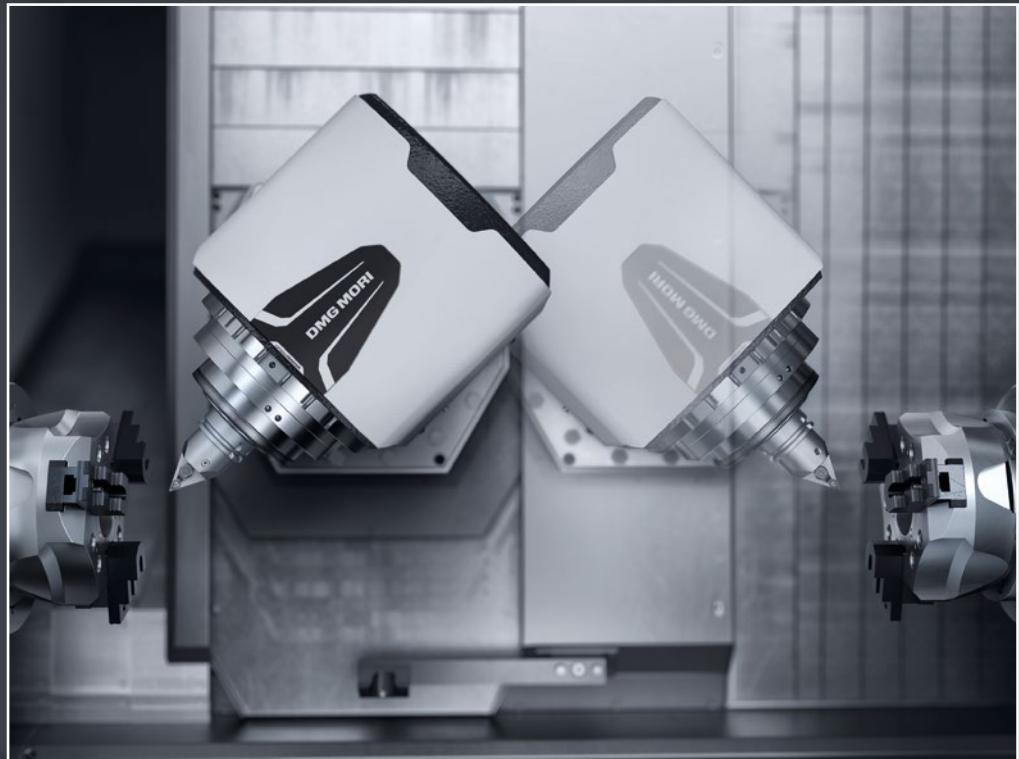
- + Highest flexibility in machining with 30 or 60-station tool magazine
- + Short set-up and non-productive times, thanks to automatic and fast tool changing



No need for costly angle tools thanks to the B-axis with 0,001° resolution as standard



**4 in 1 for full flexibility:**  
Radial and axial machining with one tool – on both spindles

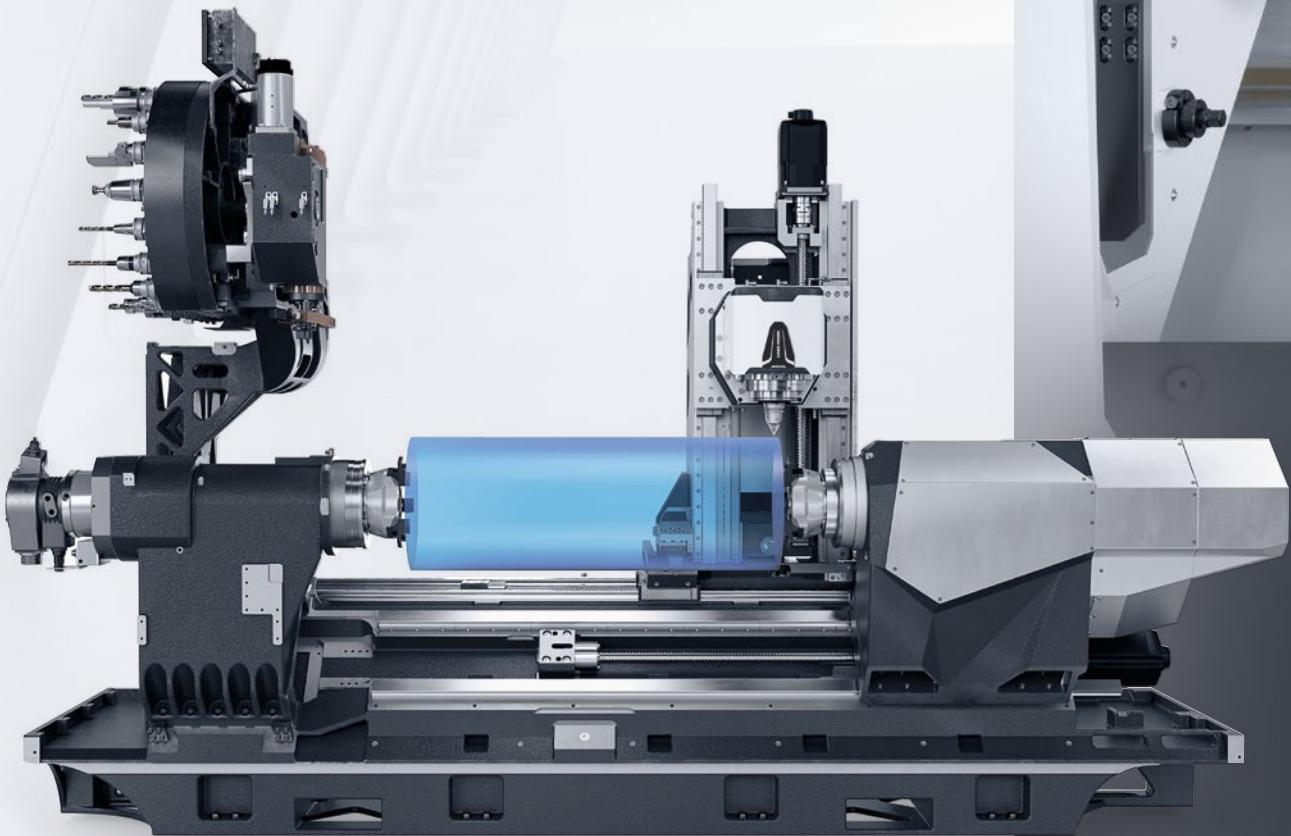


CLX TC

# compactMASTER

## Optimum use of the workspace

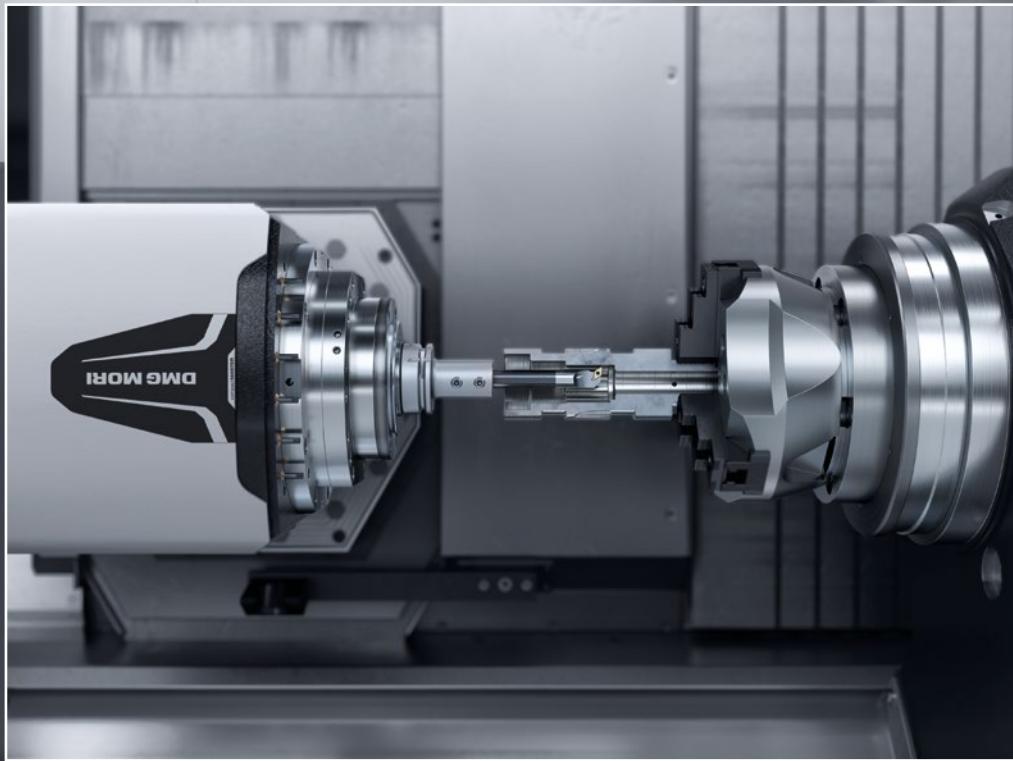
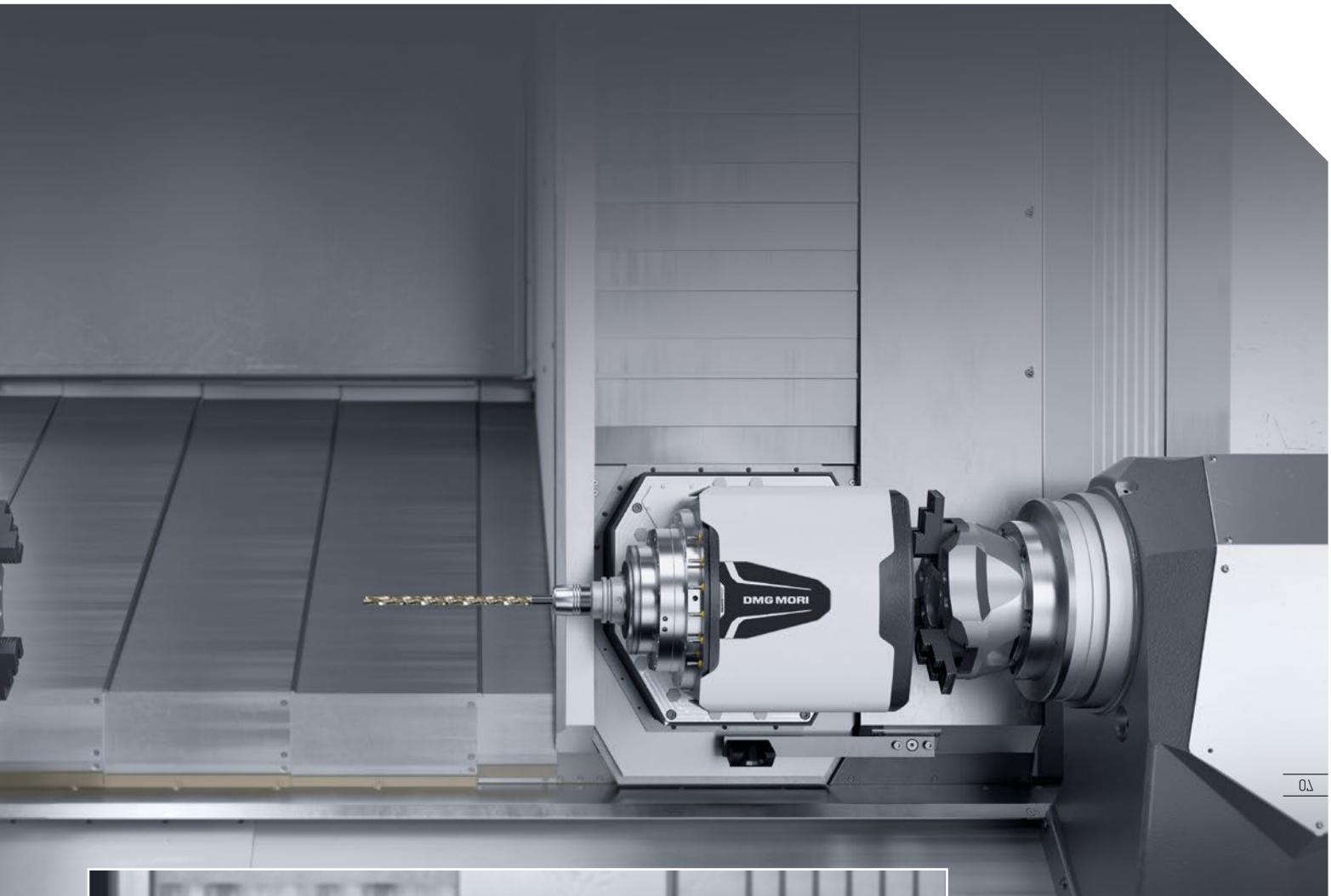
- + Maximum usability of the working area thanks to the 350 mm short compactMASTER spindle
- + Face drilling of workpieces up to 300 mm long



Universal working space:

CLX 450 TC – Ø 400 mm, 1,100 mm turning length

CLX 550 TC – Ø 550 mm, 1,600 mm turning length

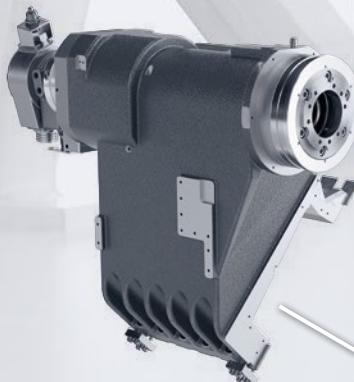


Collision-free  
working space for  
internal machining

CLX TC

# CLX 450 TC 2<sup>nd</sup> Generation – Modular, stable, accurate A well-coordinated team

High-quality and proven components from the  
DMG MORI Group – designed for every application



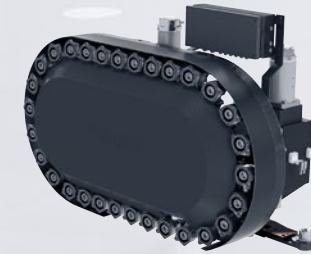
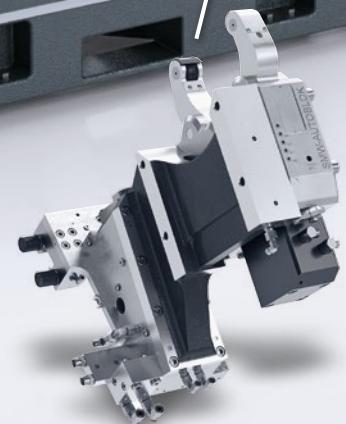
**ISM 65, ø 67 mm**  
5,000 rpm/345 Nm  
STANDARD



**24'' ERGOline X Panel**  
with Sinumerik ONE and CELOS X  
STANDARD



**Steady rest**  
SLU-X2/X3.1/X3.2  
OPTION



**30 tools**  
HSK-T63/Capto C6  
STANDARD



**3**



**7**

**OPTION**

**60 tools**  
HSK-T63/Capto C6



**STANDARD**

**B-axis with torque motor**  
 $\pm 120^\circ$  swivel range,  
0,001° angular resolution



**compactMASTER**  
12,000 rpm, 90 Nm,  
HSK-T63/Capto C6

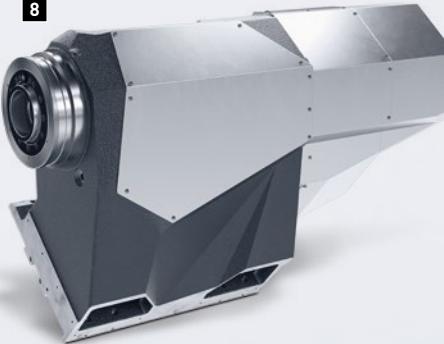


**OPTION**

**Tailstock MK 5**  
STANDARD



**ISM 65, ø 67 mm**  
5,000 rpm/345 Nm



**1 FEM-optimized cast bed**  
For optimum stiffness and optimized vibration behavior

**2 B-axis with Direct Drive**  
for highest precision and dynamics

**3 Constant rigidity**  
Due to robust guideways up to size 45 and ø 40 mm ball screwse

**4 Wide guideway distance**  
413/658/425 mm (X/Y/Z)

**5 Thermostability**  
Liquid cooling of all relevant components: spindle motors, X-/Y-/Z-axis drives

**6 Protected Z-axis guide**  
increases operational reliability and service life

**7 Optimized chip fall**  
45° bed and steep covers prevent temperature influence from hot chips

**8 Machining independently**  
Flexible machining strategies thanks to identical main and counter spindles

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CLX TC

# CLX 550 TC – Robust, versatile, powerful A strong foundation

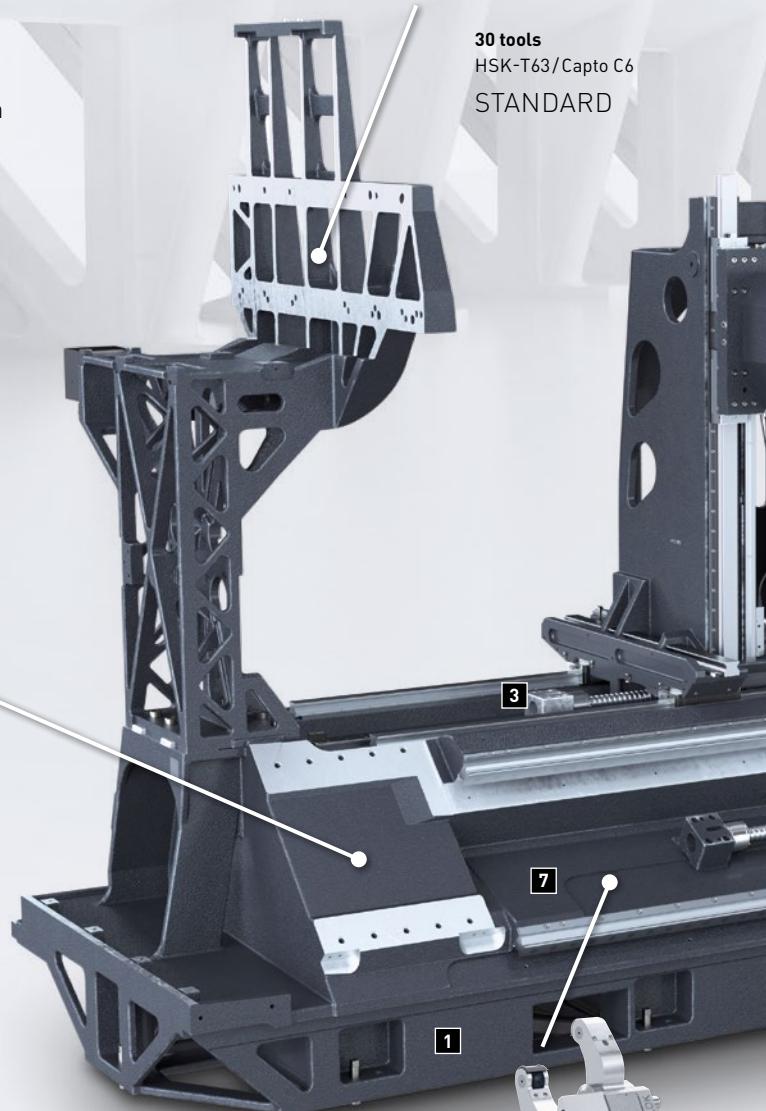
High-quality and proven components from the  
DMG MORI Group – designed for every application



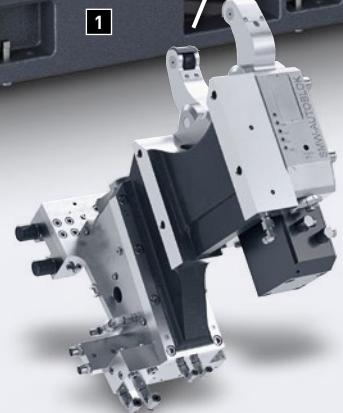
**ISM 102, ø 102 mm**  
4,000 rpm/720 Nm  
**STANDARD**



**24" ERGOline X Panel**  
with Sinumerik ONE and CELOS X  
**STANDARD**



**NC steady rest**  
SLU-X2, X3.1, X3.2, X4  
and ATLING AX8i  
**OPTION**



**60 tools**  
HSK-T63/Capto C6  
**OPTION**

**1 FEM-optimized cast bed**  
For optimum stiffness and optimized vibration behavior

**2 B-axis with Direct Drive**  
for highest precision and dynamics

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Liquid cooling of all relevant components: spindle motors, X-/Y-/Z-axis drives

**6 Protected Z-axis guide**  
increases operational reliability and service life

**7 Optimized chip fall**  
45° bed and steep covers prevent temperature influence from hot chips

**8 Machining independently**  
Flexible machining strategies thanks to identical main and counter spindles

**9 Suspended guide rails**  
Elimination of the lower telescope for fewer restrictions and more resistance

**Tailstock MK 5**  
**STANDARD**

**ISM 102,**  
Ø 102 mm  
4,000 rpm / 720 Nm  
**OPTION**

Machine and technology

Machine configurator

**Control and technology cycles**

Automation

Applications

Floor plans/Working space/Technical data

DX – DIGITAL TRANSFORMATION

# CELOS X – The future-proof solution for manufacturing

CELOS X platform offers a holistic solution for the digital transformation. Combined with the ERGOline X control panel, manufacturing companies will increase their competitiveness worldwide.

CELOS X consists of the two components **CELOS Xchange**, the open, secure and scalable data platform, and **CELOS Xperience**, which gives access to all applications and systems within the CELOS X ecosystem. This enables a comprehensive and seamless digital experience for the user with the goal of easy machine operation, extended spindle hours while maximizing energy efficiency. CELOS X is therefore the centerpiece of the digital transformation (DX) and a significant contribution to DMG MORI's Machining Transformation (MX) strategy.



Further information on  
CELOS X can be found at:  
<https://celos.dmgmori.com>

## HIGHLIGHT APPS



### Operator Workbook

Optimal order processing in the office and throughout the shopfloor.



### Application Connector

Operate IT-systems directly on the control panel.



### Monitoring

Increase planning reliability and productivity through digital transparency.



### Tool Master

Manage tools directly on the machine.



### Energy Saving

Optimize the machine's carbon footprint by managing and reducing energy consumption.



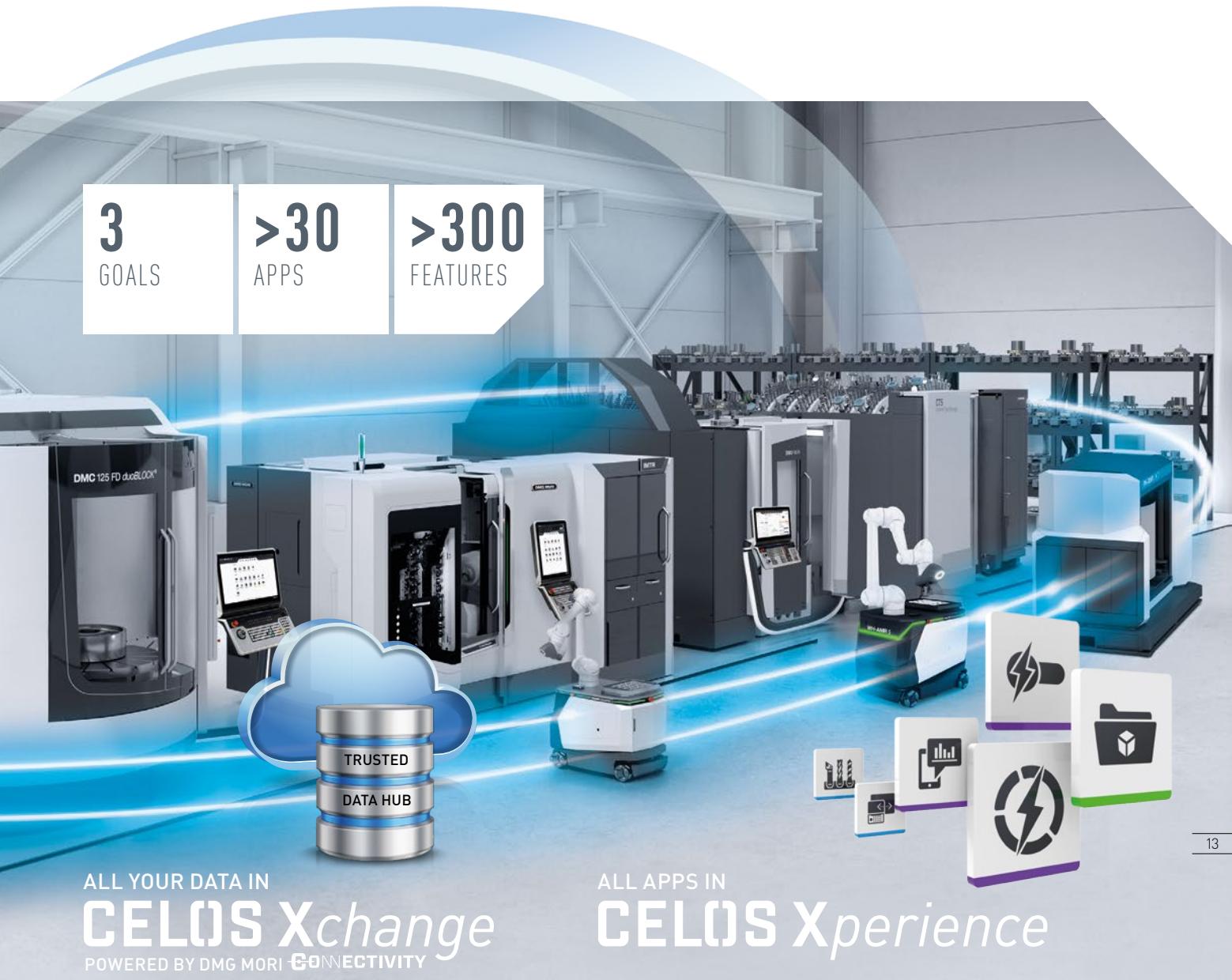
### Energy Monitoring

Track and monitor the energy consumption of the machine.

**3**  
GOALS

**>30**  
APPS

**>300**  
FEATURES



ALL YOUR DATA IN

## CELOS Xchange

POWERED BY DMG MORI CONNECTIVITY

ALL APPS IN

## CELOS Xperience

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### EASY OPERATION

In the manufacturing industry, the userfriendliness and ease of operation of machine tools plays a decisive role for the efficiency and productivity.

#### ADDED VALUE

- + Faster programming
- + Reduction of errors
- + Increased efficiency



### EXTENDED SPINDLE HOURS

In addition to easy operation, productivity is another crucial parameter, which requires a holistic view across all production processes.

#### ADDED VALUE

- + Optimization of set-up processes & capacity planning
- + Shorter processing times and order changes
- + Increased machine availability



### ENERGY EFFICIENCY

The energy efficiency of machine tools is of utmost importance to DMG MORI and CELOS X makes a valuable contribution to this, adding direct value to the customer.

#### ADDED VALUE

- + Real-time monitoring of energy consumption
- + Automated adaptation of energy requirements to machining processes
- + Optimized & demand-driven air and cooling lubricant supply

CONTROL TECHNOLOGY

## ERGOline X – Innovative control panel for easy operation

The ERGOline X control panel provides the machine operator with an even more intuitive user experience, whereby the ergonomics and the functionality in particular have been optimized. The ERGOline X control panel gives the user access to CELOS Xperience and the native NC controller.



**24" ERGOline X Panel**  
with Sinumerik ONE and CELOS X

### SMARTride

- + Integrated panic function to instantly reduce the feed rate/rapid traverse to 0
- + Integrated haptic feedback to recognize 0 % & 100 %
- + Feed rate, rapid traverse & NC-start combined in one control element

### CONNECTIVITY

by **DMG MORI**

- + Standard connectivity thanks to integrated IoTconnector
- + MDE (Machine Data Recording) possible
- + Automatic output of at least 17 standardized production status signals
- + Openness to third-party products
- + Communication in accordance with standard protocols:



## SMARTkey

- + Compact credit card format
- + Personalized access rights depending on user level
- + Independently customizable SMARTkeys

## SIEMENS SINUMERIK ONE

- + Maximum speed and shorter non-productive times
- + Familiar SIEMENS control interface
- + 3D Shopfloor Programming exclusively for DMG MORI
- + Feature-based programming in
- + Store Mill/Turn directly at the machine
- + Compatibility with SIEMENS 840D Solutionline and 828D

## HIGHLIGHT APPS



### 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.

## MACHINE SIGNALS VIA OPC-UA, MTCONNECT AND MQTT

### MACHINE DATA

1. Serial number of the machine
2. Operating hours
3. Machine on hours

### MACHINE STATUS

4. Status display
5. Number of alarms
6. Messages, alarms, warnings
7. Control mode
8. Machine version status

### PRODUCTIVITY

9. Workpiece counter, current
10. Workpiece counter, total
11. Target quantity
12. Current program runtime

### PROCESS DATA

13. Spindle speed correction
14. Fast speed correction
15. Infeed correction
16. Active tool
17. Name of the current NC program

### ADDITIONAL MACHINE SIGNALS

Machine-specific signals, e.g. spindle speed, coolant status etc.

Machine and technology

Machine configurator

**Control and technology cycles**

Automation

Applications

Floor plans/Working space/Technical data

CLX 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



### 3 DESIGN OPERATION PLAN

### 4 SEND TO THE NC

Machine and technology

Machine configurator

**Control and technology cycles**

Automation

Applications

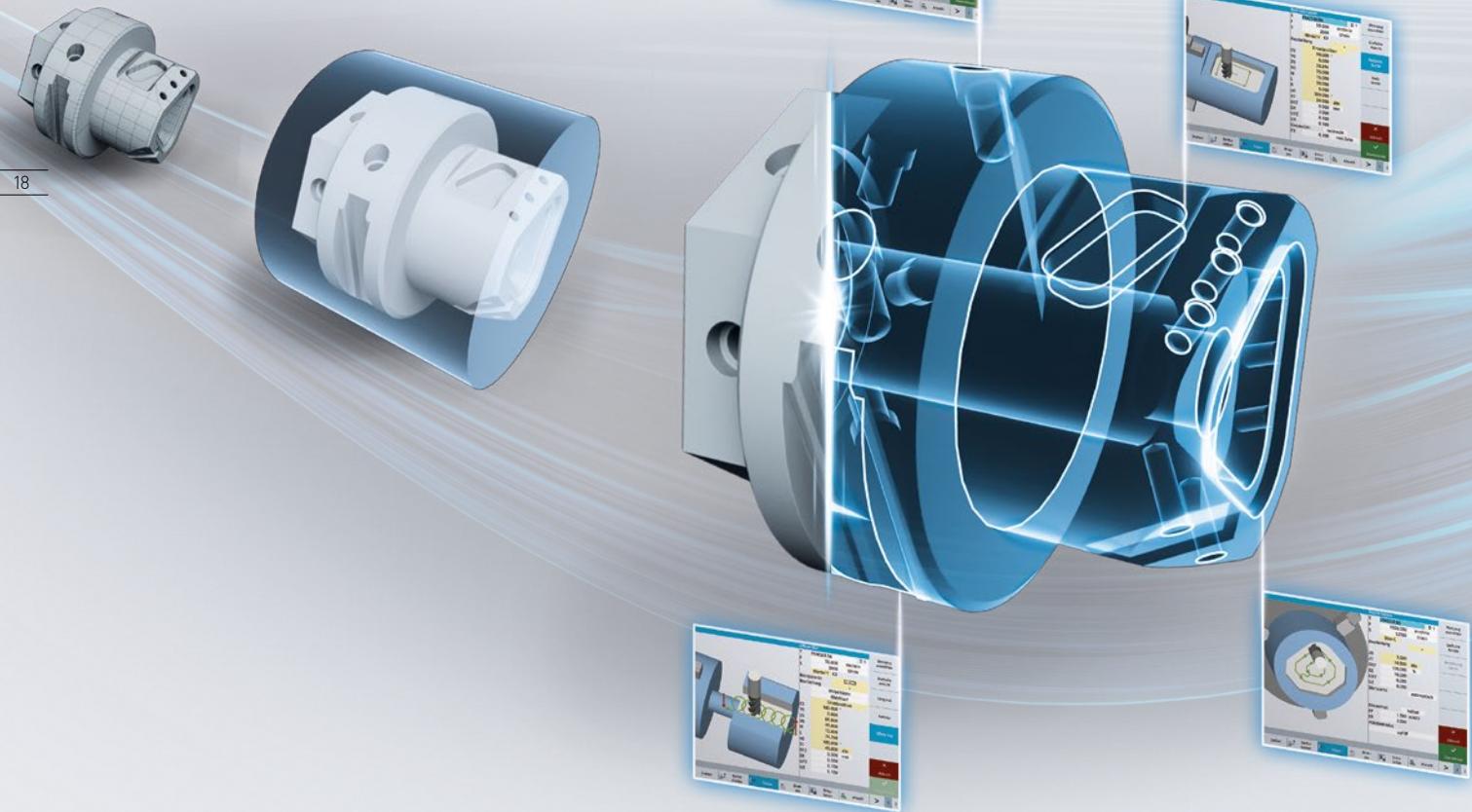
Floor plans/Working space/Technical data

**EXCLUSIVELY  
FROM DMG MORI  
AND AS STANDARD  
WITH THE CLX TC**

CLX 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.



**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**

Machine and technology

Machine configurator

Control and technology cycles

**Automation**

Applications

Floor plans/Working space/Technical data

CLX TC

# Non-stop production

## Maximum automation in focus



Unrestricted access for the machine operator



### compactMASTER WITH MULTITOOL HOLDER

Multifunctional holders for faster tool changes and even more space in the tool magazine



### SISTER TOOLS

Sister tools reduce machine downtime and ensure greater process reliability



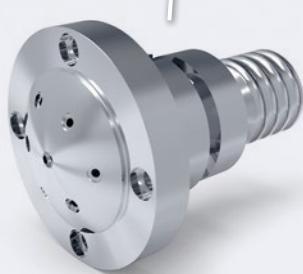
### INCREASE PROCESS RELIABILITY

Multi-directional workpiece measurement as well as tool measurement and drill breakage control



### MULTIJOB

No tool set-up when manufacturing different workpieces



Machine and technology

Machine configurator

Control and technology cycles

**Automation**

Applications

Floor plans/Working space/Technical data

## AUTOMATION

# Perfect automation capability

## Flexibility and productivity in harmony

### FLEXIBLE WORKPIECE HANDLING UP TO 35 kg LOAD CAPACITY

- + Three versions for all requirements:  
Robot payload 12/25/35 kg
- + Handling of shafts ø 20 – 170 mm, and chuck parts ø 20 – 175 mm
- + External and internal gripping as standard
- + Customized workpiece trays and parallel use with bar feeder possible
- + Workpiece stacking
- + Free CE for the entire system



### AUTOMATION THOUGHT BIGGER: Robo2Go MAX FOR THE CLX 550 TC

- + Strongest version with 210 kg load capacity and up to 115 kg workpiece weight
- + Handling of workpieces ø 40 to ø 400 mm as standard
- + Fast infeed and outfeed of raw and finished parts using a pallet or workpiece trolley
- + Free accessibility to the control panel and to the tool magazine



### MACHINE, AUTOMATION AND CONTROL – FROM A SINGLE SOURCE

- + Operation integrated in the machine control system
- + New software for dialog-driven, intuitive operability
- + No robot programming knowledge, as well as adaptation of the NC program necessary
- + Multijob function: Different jobs on one workpiece tray. Ideal for small and medium batch sizes
- + Creation of the process using predefined program modules via drag & drop
- + Easy creation of individual workpiece trays

# The perfect combination

## Easy loading and unloading

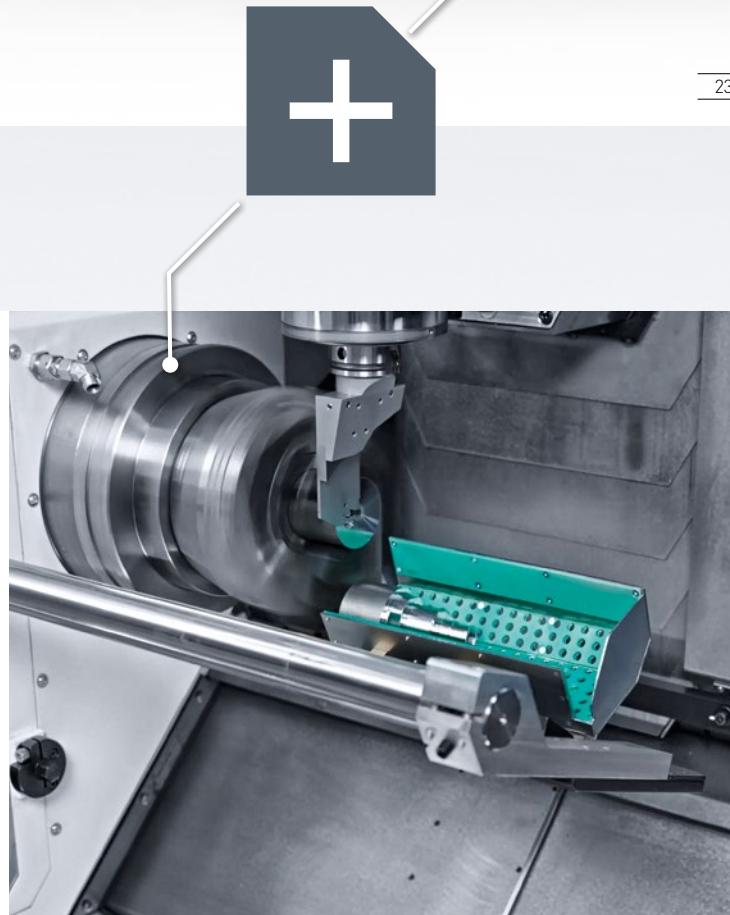
### SHORT BAR LOADER – THE SIMPLE SOLUTION FOR LOADING BAR MATERIAL

- + Quick adjustment of the diameter
- + Process-reliable feeding of rotationally symmetrical profile material
- + Optimum material guidance right into the clamping device
- + User-friendly, mobile control for secure communication with the machine



### INTEGRATED PICK-UP DEVICE THE SIMPLE SOLUTION FOR UNLOADING WORKPIECES

- + Easy removal of the finished part on the left side of the machine
- + Unique: Conveyor belt behind the machine hood
- + Complete chip protection: workpiece catcher is swiveled in from outside the working area
- + Unloading of workpieces up to CLX 450 TC: ø 80 × 220 mm and 6 kg  
CLX 550 TC: ø 100 × 300 mm and 12 kg



CONFIGURATOR

# Lines and packages

## Secure your special prices

- + Convince yourself of the great equipment quality and configure your machine freely according to your needs
- + Take advantage of our pre-specified equipment lines and option packages at special prices



## OPTIONAL PACKAGES

### EQUIPMENT LINES

#### BASIC

Basic equipment with maximum freedom of configuration

#### COMPLETE

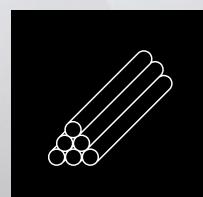
Complete machining with the most important options

#### COMPLETE *plus*

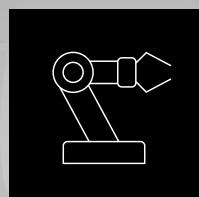
Complete machining for maximum flexibility



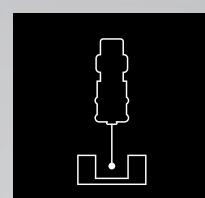
24/7



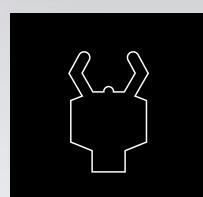
Bar feeder



Automation



Measure



Steady rest

CONFIGURATOR

## Guidepost

Harvesting success with  
the right equipment

- + Take it into your own hands and use the new DMG MORI machine configurator
- + Make the specification of your future machine your own experience
- + Choose your desired equipment line based on your requirements

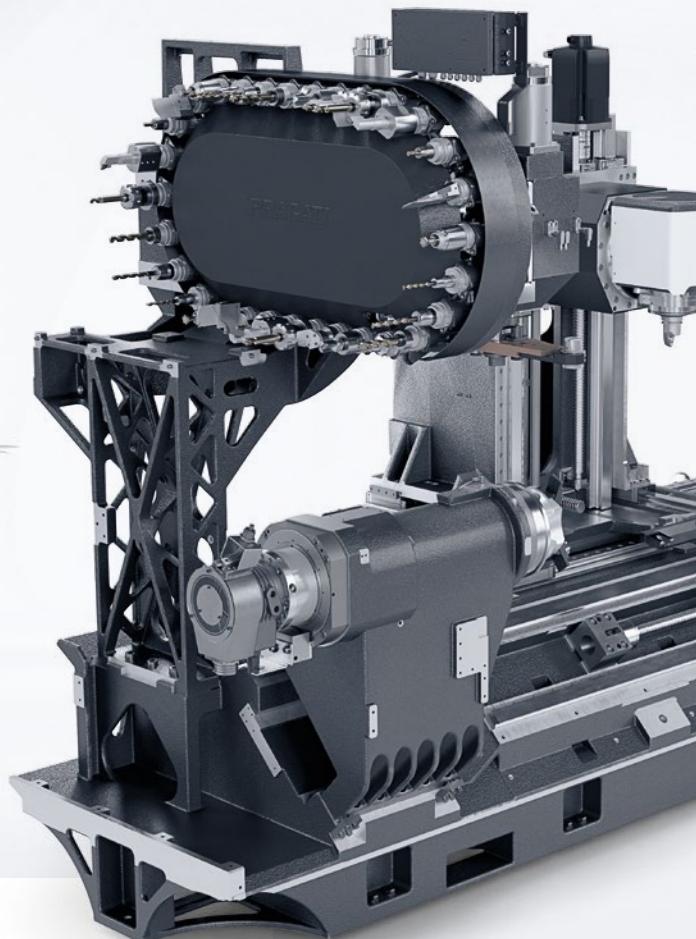
**BASIC**

### Functional entry

The basic variant contains basic equipment that lets you get started right away.

#### EQUIPMENT

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>+ Main spindle ISM</li><li>+ Hollow clamping / partial hollow clamping device</li><li>+ compactMASTER turn-mill spindle</li><li>+ Movable tailstock</li><li>+ 30-station chain magazine</li></ul> | <ul style="list-style-type: none"><li>+ Chip tray</li><li>+ Duplex filter</li><li>+ Direct measuring systems in X and Y axis</li><li>+ Electronic handwheel</li><li>+ DMG MORI IoTconnector</li></ul> |
|---|---|



## Simply attractive

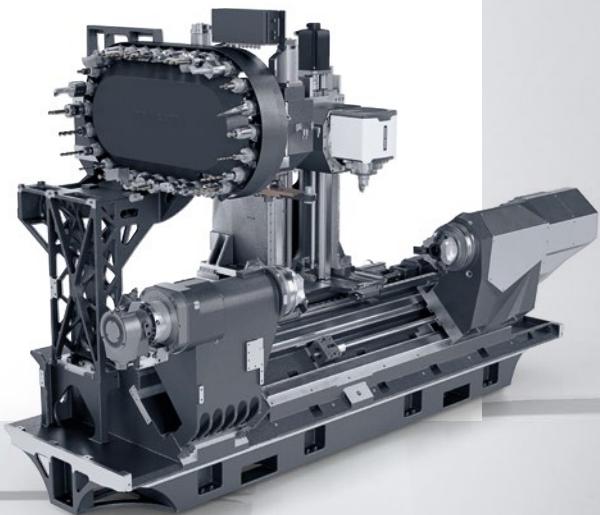
The equipment line Complete provides the perfect entry into complete machining thanks to counter spindle and other important options.

**COMPLETE**

### EQUIPMENT

#### IN ADDITION TO BASIC

- + Counter spindle ISM
- + Chip conveyor
- + Safety glass cleaning
- + Chuck flushing device for main and counter spindle
- + Coolant spray gun
- + Technology cycle:
  - Alternating speed



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## Fascinatingly complete

With COMPLETE *plus* no wishes remain unfulfilled. More tools, more technology, more options for maximum flexibility at the most attractive price.

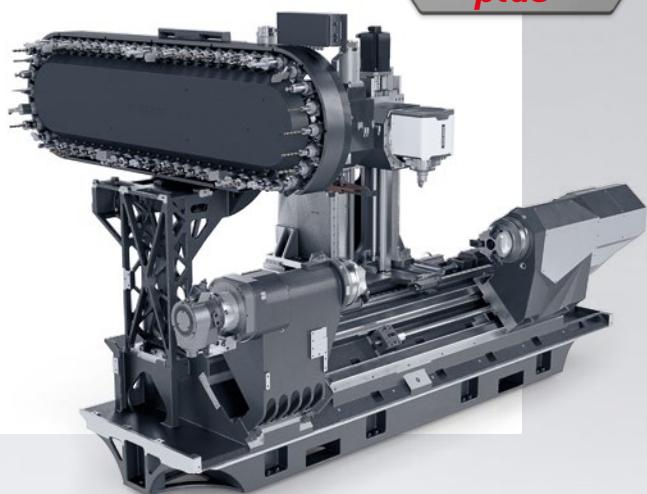
**COMPLETE**

*plus*

### EQUIPMENT

#### IN ADDITION TO COMPLETE

- + 60-station chain magazine
- + Tailstock function for the counter spindle
- + Tropical Package
- + BDE interface
- + Technology cycles:
  - Excentric turning and milling
  - Multi threading 2.0

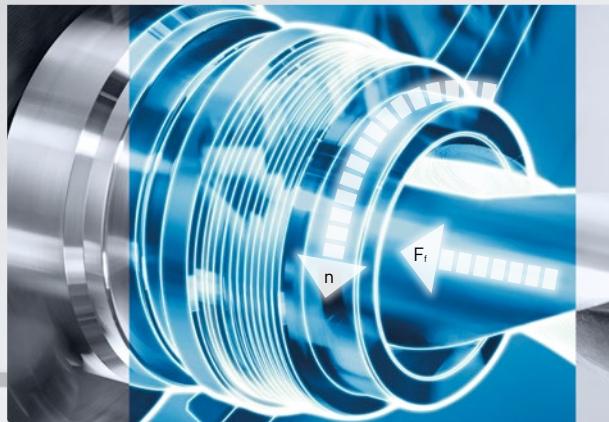


CONFIGURATOR

# Variety

## Discover your possibilities

Customize your machine to your needs with attractive option packages



**PACKAGE**

**24/7**



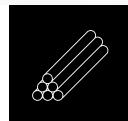
**WITHOUT BREAK. EXACTLY. SAFE.**

980l coolant tank incl. band filter system and temperature control, oil mist separator and Easy Tool Monitor 2.0.



**PACKAGE**

**BAR FEEDER**



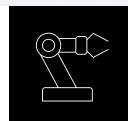
**STAYING WITH THE BAR.**

Rely on the combination of short bar loading magazine, workpiece pickup device, Y-axis grooving and collet chuck.



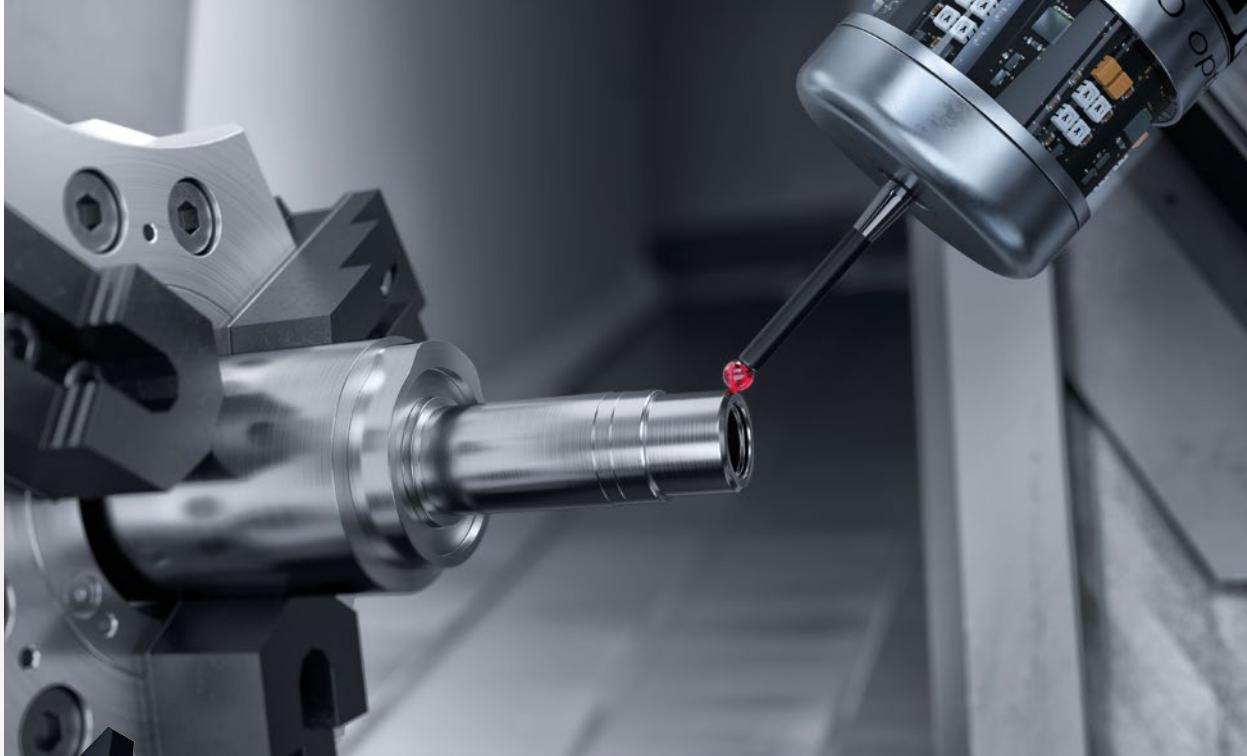
**PACKAGE**

**AUTOMATION**



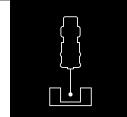
**AUTOMATICALLY INTO THE FUTURE.**

Additional coolant feeds, Robo2Go interface, signal light and electric machine door point the uncompromising way to a common, automated future.



**Magnescale**

**PACKAGE  
MEASURE**

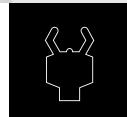


**PRECISE TO THE POINT.**

Integrated tool measurement, tool touch probe and direct measuring system in all axes for highest machine accuracy and unmatched workpiece control.



**PACKAGE  
STEADY REST**



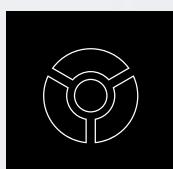
**EVERYTHING UNDER  
CONTROL AT ALL TIMES.**

Material sagging? Take remedial action with automatically positionable steady rest slides, quick-change system and steady rest.

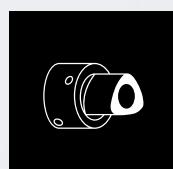
**Not enough yet?**

Then customize and finalize your machine with individual options to meet your needs 100 %.

For example:



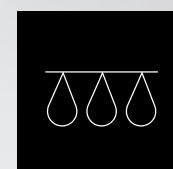
Power chuck



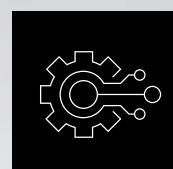
Capto C6



Finest chip package



Oil mist separator



Technology cycles

Machine and technology

Machine configurator

**Control and technology cycles**

Automation

Applications

Floor plans/Working space/Technical data

DMG MORI TECHNOLOGY CYCLES

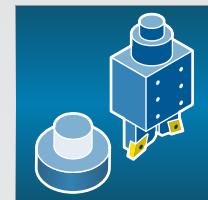
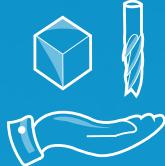
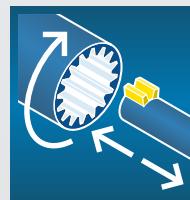
# Exclusive technology cycles

## Complex machining simply realized

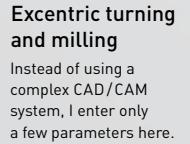
DMG MORI exclusive technology cycles are the true assistants of the production-oriented programming to increase productivity and safety as well as to extend machine capability.

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

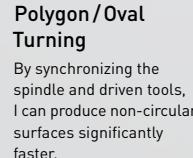


**Handling****Machining****Gear hobbing**

Thanks to dialog-based programming I'm up to 50% faster.

**Excentric turning and milling**

Instead of using a complex CAD/CAM system, I enter only a few parameters here.

**Polygon/Oval Turning**

By synchronizing the spindle and driven tools, I can produce non-circular surfaces significantly faster.

**Y-Axis Parting**

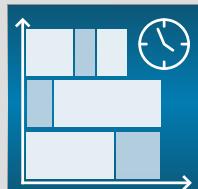
The new highly productive cut-off method via the Y-axis is amazingly easy and safe to operate with the technology cycle.

**Monitoring****PROTECTION PACKAGE****Machine Protection Control**

Since using MPC, I have had no spindle or machine damage due to overload or collision.

**Easy Tool Monitor**

Finally a simplified system, to save money for unnecessary machine repairs and tool costs.

**Runtime monitor**

I save a lot of machining time, because thanks to the graphical monitoring I can now optimize my programs very easily and quickly.

APPLICATIONS

# Reinvented the wheel?

## Chain wheel machining simply productive

- + Highly productive and simple machining of complex operations with the help of exclusive DMG MORI technology cycles
- + Thanks to an innovative machining solution, several chain wheels can be machined in a simple way in one clamping operation

**Y-AXIS PARTING**

The new highly productive cut-off method via the Y-axis is amazingly easy to operate with the technology cycle

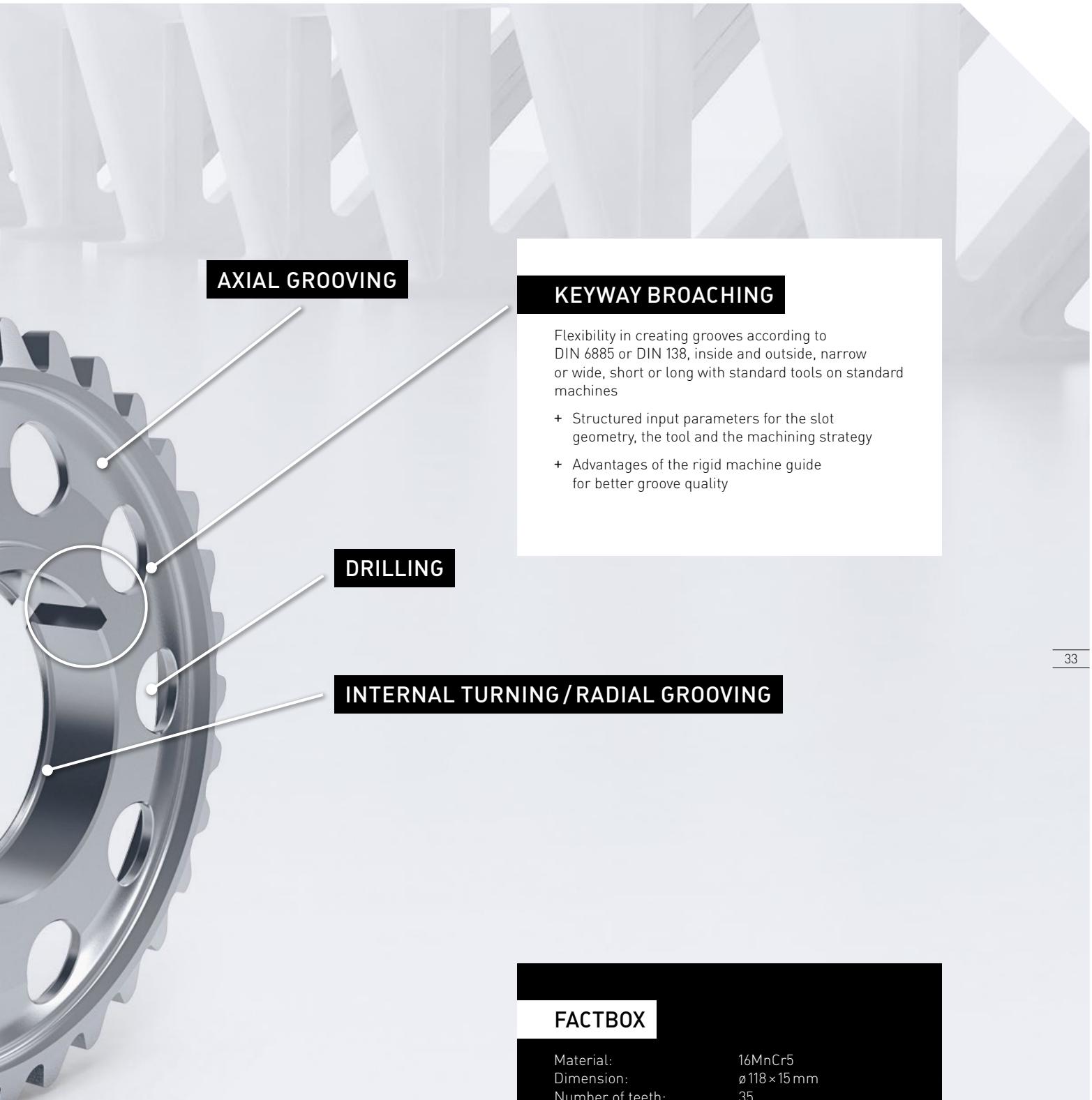
- + Compatible with the standard CYCLE92 cycle (Part off cycle), allowing the operator to program as usual (ShopTurn und DIN/ISO)
- + Up to three times higher productivity possible (3-times feed rate) with improved chip control at the same time

**GEAR HOBBING**

Programming of the gear parameters of spur, helical, curved and worm gears via dialog input.

- + Tooth profile modifications easily manageable
- + Consider the use of reground tools
- + Error prevention through monitoring (e.g. incorrect axis cross angle or incorrect speed or direction of rotation)





FACTBOX	
Material:	16MnCr5
Dimension:	ø 118 × 15 mm
Number of teeth:	35
Module:	2
Machining time:	14.8 Min.
Number of tools: [CLX TC vs. turret]	11 vs. 15

APPLICATIONS

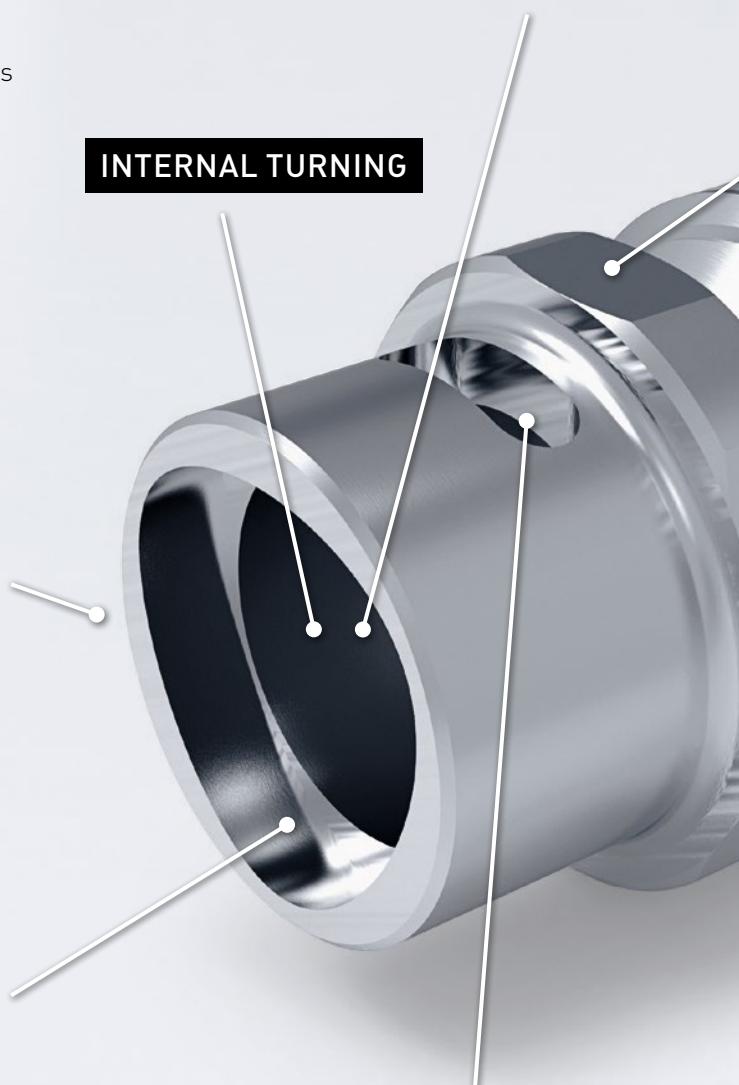
# Unmatched universality

## No limits in head piece machining

- + Benefit from universality for components with complex structures and a wide variety of operations
- + With the help of SIEMENS ShopTurn 3G and the exclusive DMGMORI technology cycles, workpieces can be programmed in a dialogue-guided manner thanks to graphic support

**DRILLING**

**INTERNAL TURNING**



### EASY TOOL MONITOR 2.0

Drive load monitoring of the tools during the machining process to prevent damage to the machine and operating equipment.

- + Saving the monitoring limits for each tool and cutting edge in the program
- + NEW: Powerful algorithm for efficient monitoring after the first workpiece

### POLYGON-/OVAL-TURNING

Programming and fine adjustment of the required shape, polygon or oval, can be realized in a few steps

- + Easy editing of non-circular parts with the help of the intuitive user interface
- + Production of the required geometries with simple possibilities of fine corrections
- + Machining inside and outside, as well as on main or counter spindle combinable

**GROOVE MILLING**

**MILLING**

**FACTBOX**

Material:	16MnCr5
Dimensions:	ø100×186 mm
Wrench size:	96
Thread pitch:	3.5 mm
Machining time:	40.6 Min.
Number of tools:	11 vs. 14 (CLX TC vs. turret)

**DRILLING**

**MULTI-THREADING 2.0**

Creation of large movement- or special threads that cannot be produced by simple thread chasing

- + Trapezoidal, buttress- and round threads easily programmable on the machine
- + Screw conveyor with any profile geometry
- + Free definition of contours, gradients and gears possible
- + NEW: On-Point Threading – Position-oriented thread generation

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APPLICATIONS

## Out of round? Still runs round!

Camshaft machining  
without restriction

- + Thanks to the stable machine design,  
even imbalances can be handled
- + The capability of axis simultaneity allows  
parts with free-form surfaces, such as cams,  
to be completely manufactured in a  
universal machine.

### SIMULTANEOUS MILLING

Simultaneous interpolation of up to four  
axes (here: X, Z and C axis)

### AXIAL GROOVING

### FACTBOX

Material:

16MnCr5

Dimensions:

ø 60 × 136 mm

Excentricity:

3.5 mm

Machining time:

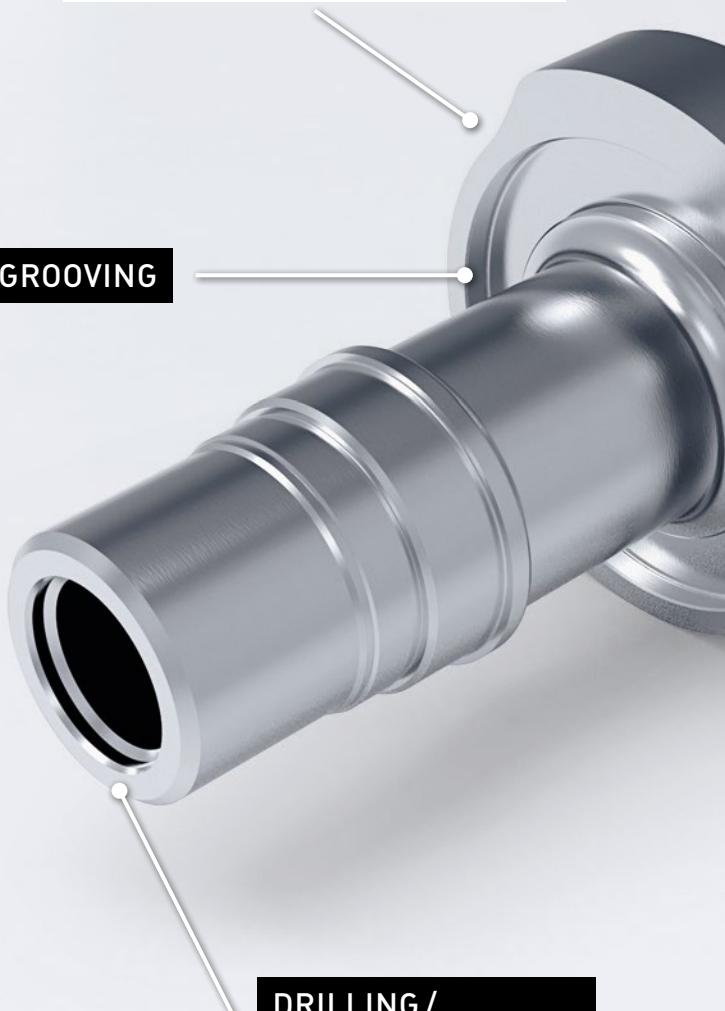
8.7 Min.

Number of tools:

7 vs. 11

(CLX TC vs. turret)

### DRILLING / INTERNAL TURNING





### RADIAL GROOVING/EXTERNAL TURNING

### INTERNAL TURNING

### COUNTER SPINDLE TIP

Cycle for automatically changing a tailstock center into the chuck of the main or counter spindle via the tool carrier

- + Support of long and slim workpieces in the main spindle by synchronously running counter spindle tip
- + Perfect combination for 6-sided complete machining and tailstock function

### ALTERNATING SPEED

Changing the spindle speed to avoid vibration of tools during machining

- + Easy to operate with three parameters and without additional sensors
- + No manual intervention by the operator
- + Identical repeatability for all components
- + Increased process reliability for special application by avoiding vibrations

DMG MORI

# For the sake of the environment

## Energy efficiency and CO<sub>2</sub> neutrality



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### Energy efficiency measures

- 1** Frequency controlled hydraulic power unit
- 2** Cooling unit with precision control
- 3** Controlled switch cabinet cooler
- 4** Clocked chip conveyor
- 5** Regulated cooling lubricant pumps
- 6** Brake energy recovery from spindles and feed drives
- 7** Direct drive with synchronous motor
- 8** LED workspace lighting
- 9** DMG MORI AUTOshutdown for the shutdown after program end

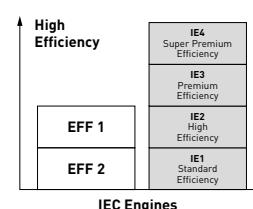
#### Construction

FEM-optimized design with high static and low moving masses



#### Servo technology / frequency control

Frequency-controlled coolant and hydraulic pumps, instead of fixed displacement pumps with throttle technology



**Motor** – use of state-of-the-art drive motors with efficiencies of up to 93%

**Cooling\*** – Inverter-controlled systems for demand-oriented cooling capacity

\*Option



- + Sustainable and holistically strong for the environment: DMG MORI will manufacture all machines completely climate-neutral from 2021 – from raw material to delivery
- + Key role in the production of green technologies: DMG MORI's machines and manufacturing solutions also operate with maximum energy efficiency in the customer's plant
- + DMG MORI bundles its holistic climate neutrality initiatives into three areas:

## 100 % CLIMATE-NEUTRAL MACHINE PRODUCTION

SUPPLIER + **DMG MORI**



### NEUTRAL CO<sub>2</sub> FOOTPRINT OF ALL DMG MORI MACHINES – FROM RAW MATERIAL TO DELIVERY

#### 1. NEUTRAL PRODUCT CARBON FOOTPRINT



All machines delivered from January 2021 onwards will be manufactured in a climate-neutral manner.

#### 2. NEUTRAL COMPANY CARBON FOOTPRINT



DMG MORI has already been climate-neutral in its own value creation since May 2020.

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### MACHINE USAGE



### CUSTOMER



### ENERGY- AND EMISSION-EFFICIENT MACHINE OPERATION



### TECHNOLOGY EXCELLENCE FOR GREEN TECHNOLOGIES

1. Up to 30 % energy savings compared to the previous machine
2. Provides access to many government funding programs – contact us!

1. Green technologies such as wind power and electromobility are the most important lever against the Climate change
2. DMG MORI is the innovation driver for the production of green technologies

DMG MORI

## One step more digital – with the IoTConnector as standard

### IoTConnector

- + DMG MORI NETservice and MESSENGER pre-installed
- + Quick and easy installation in the control cabinet via LAN cable
- + Preconfigured specifically for your machine before delivery
- + Standard interfaces enable fast and efficient data exchange
- + Integrated firewall with automatic updates guarantees maximum protection for your machine

### NETservice

- + Shorter waiting times, thanks to routing directly to the next available employee
- + Higher resolution rate through access to IPC and NC
- + Maximum data security
- + Optional connection of the SERVICEcamera: More efficient problem solving thanks to live stream (video/audio/image) from the machine directly to the DMG MORI hotline
- + Multi-user conference = interconnection of various DMG MORI specialists for joint, faster problem solving
- + Also for existing machines thanks to retrofit kit

### IoTConnector

IN THE STANDARD –  
READY FOR DIGITIZED  
PRODUCTION  
PROCESSES



# DMG MORI Finance – Into the future with in-house financing

With our in-house financing solutions, we offer our customers unique opportunities – even when banks and other leasing companies scale back their activities in economically challenging times.

- + Repayment-free period of up to six months
- + Full flexibility through staggered rates depending on utilization
- + Low monthly charges due to high residual values
- + Financing of overhauls, training and full service
- + Flexible contract adjustments even during the fixed term
- + Attractive follow-up financing after the agreed term
- + Sale-and-lease-back transactions for more cash flow



## LEASING

- + Full amortization, partial amortization or operating lease with individual installment scales
- + Maximum investment scope thanks to high residual value and low rates



## RENTAL PURCHASING

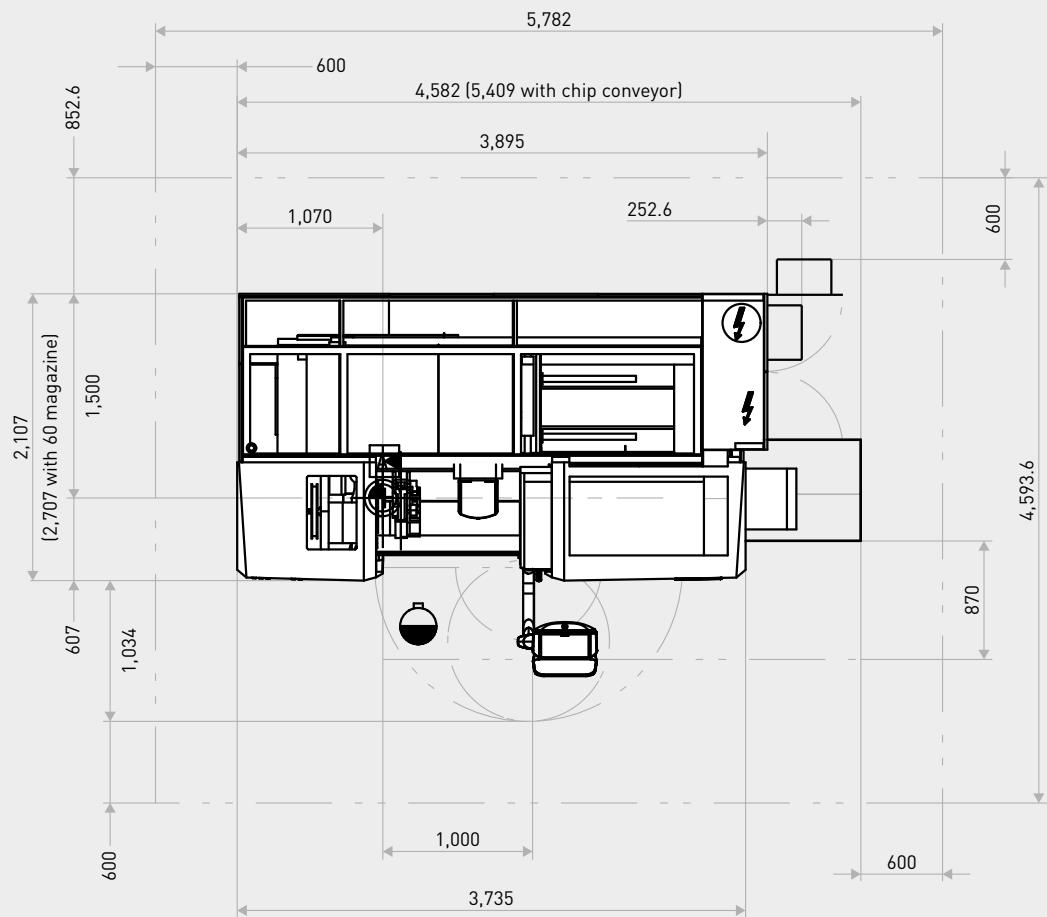
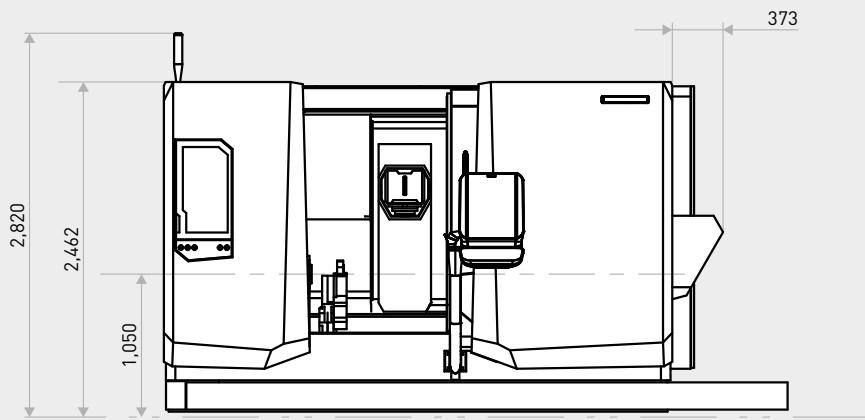
- + Reduced initial rates protect liquidity in the first 6 – 12 months
- + Unscheduled repayment once a year free of charge
- + DMG MORI Finance grants you sufficient time for payment of the VAT portion due immediately
- + Consideration of subsidies in the drafting of contracts

## MIETE

- + Terms from 12 months
- + Return, extension or purchase at the end of the term

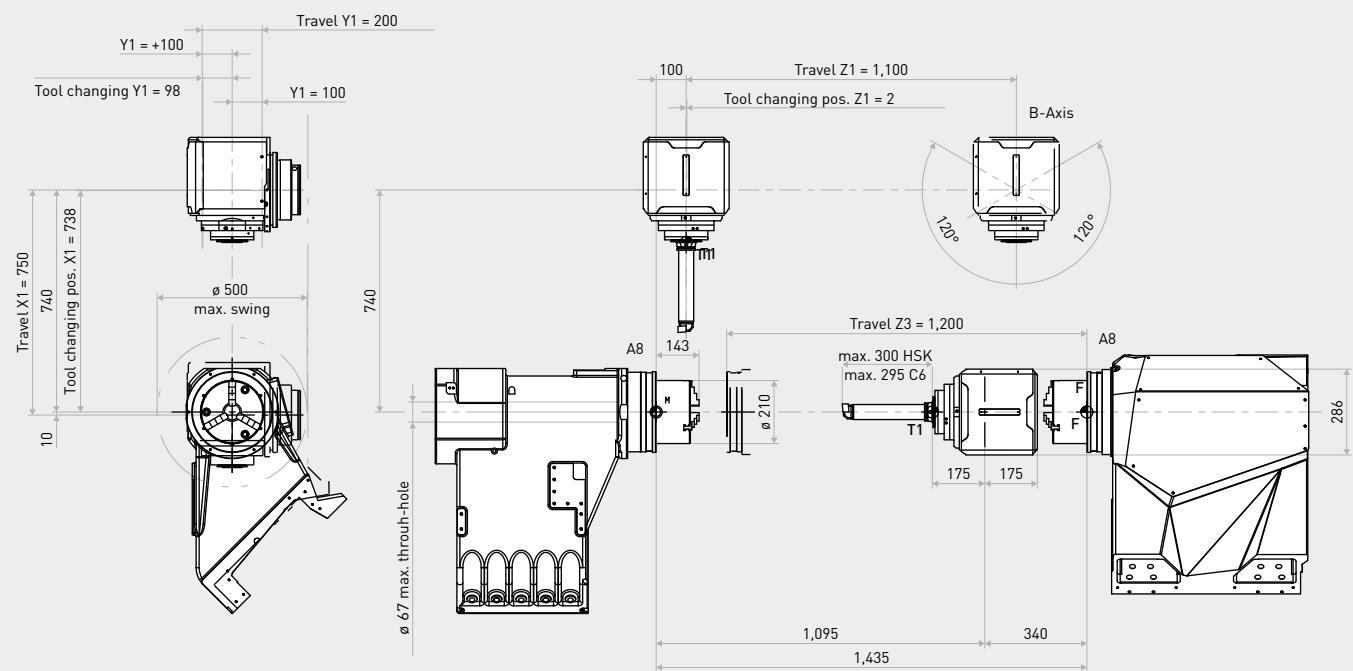
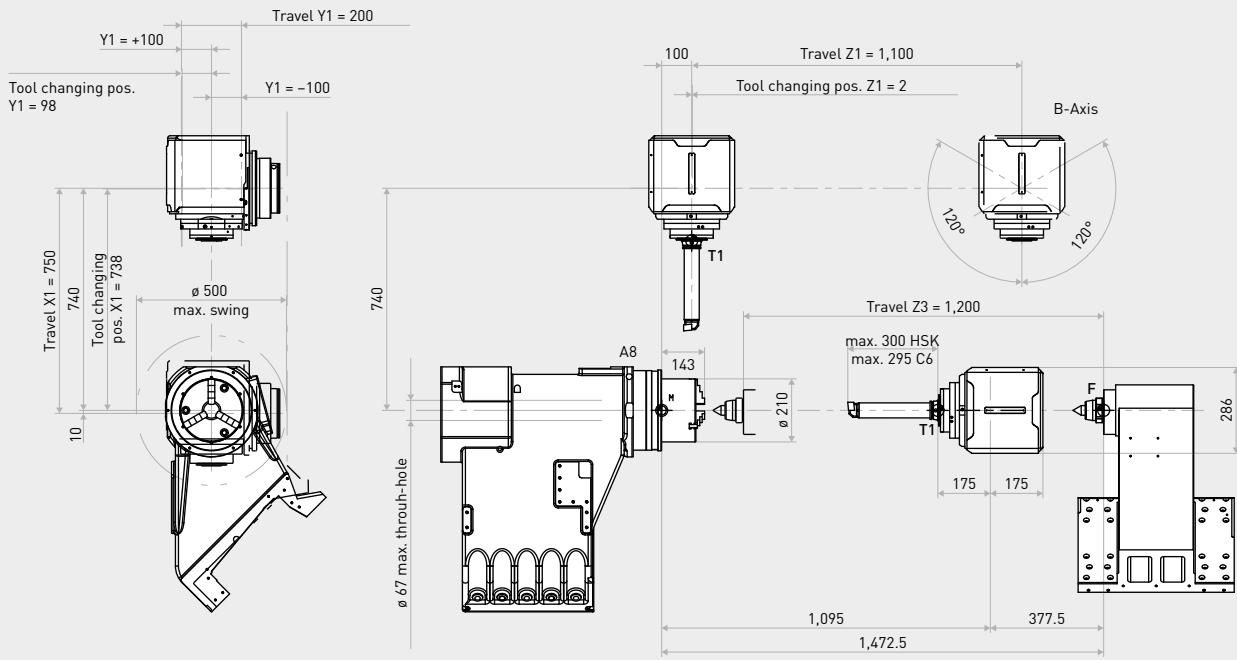
CLX 450 TC

# Floor plan



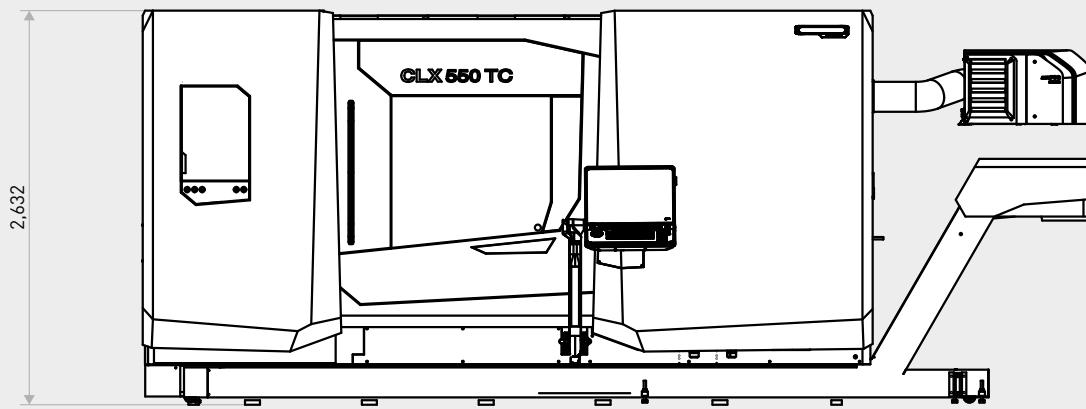
CLX 450 TC

# Work area

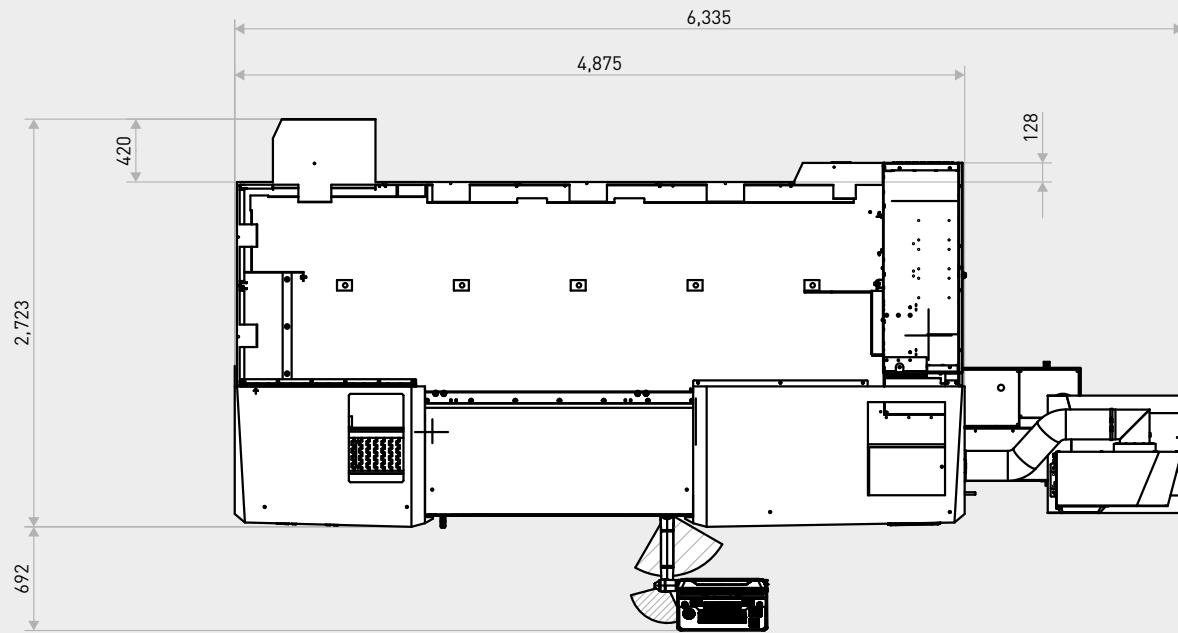


CLX 550 TC

## Power diagrams

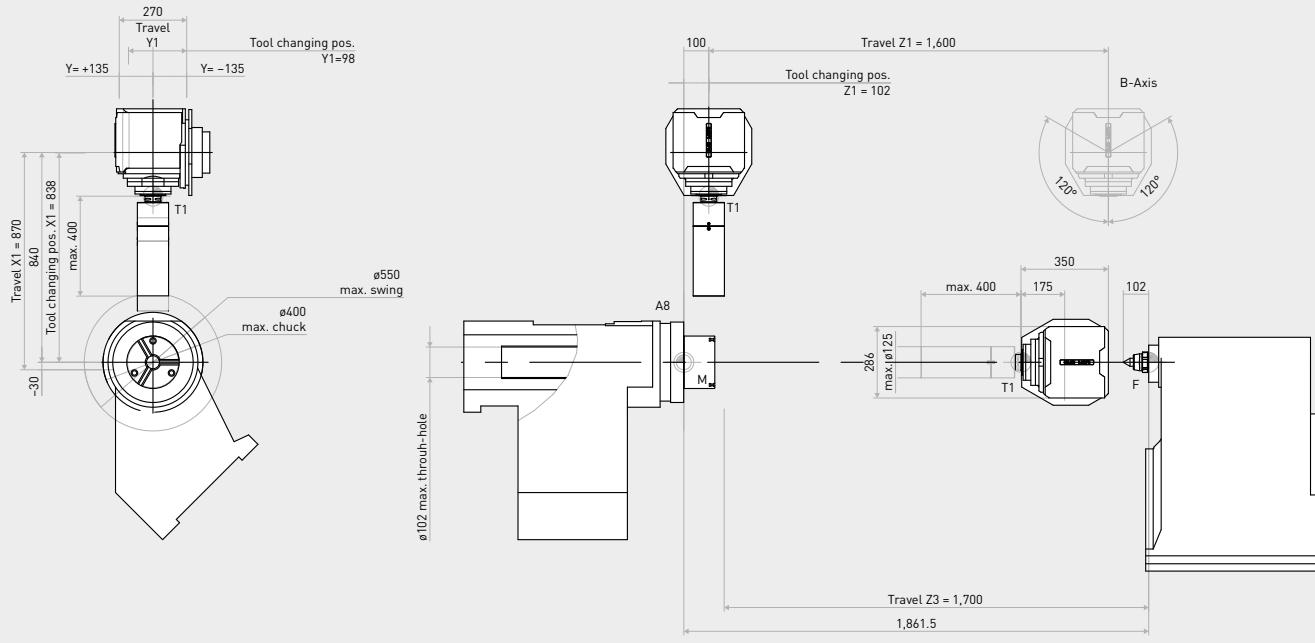


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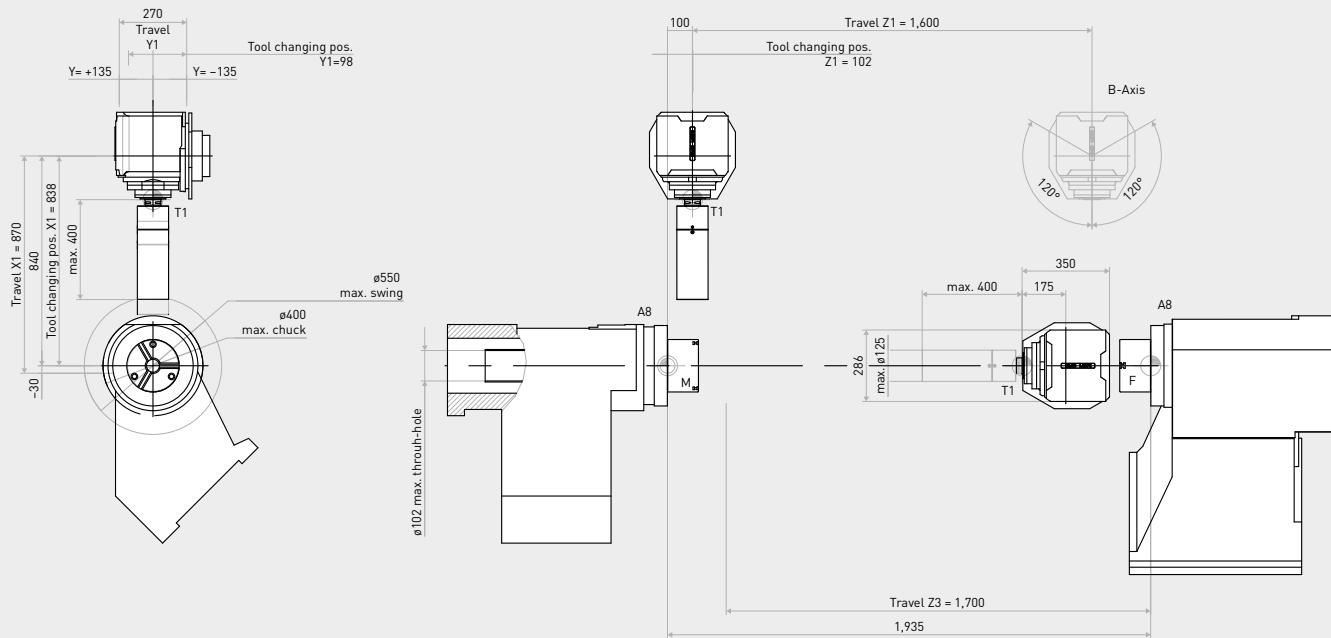


CLX 550 TC

# Work area



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Machine and technology

Machine configurator

Control and technology cycles

Automation

Applications

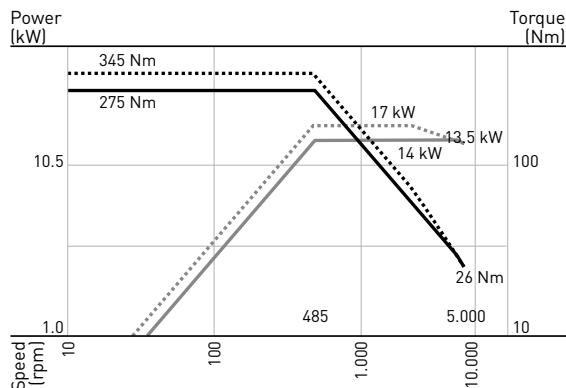
Floor plans/Working space/Technical data

CLX TC

## Power diagrams

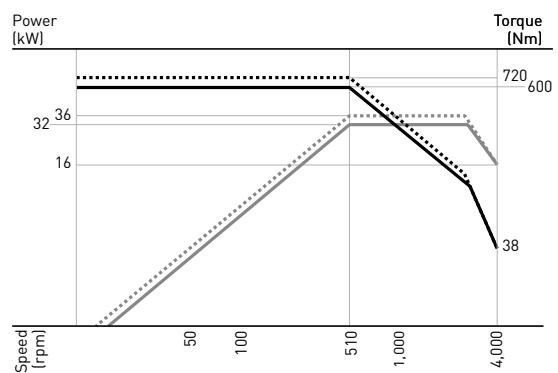
**CLX 450 TC / Main and counter spindle ISM 65**

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



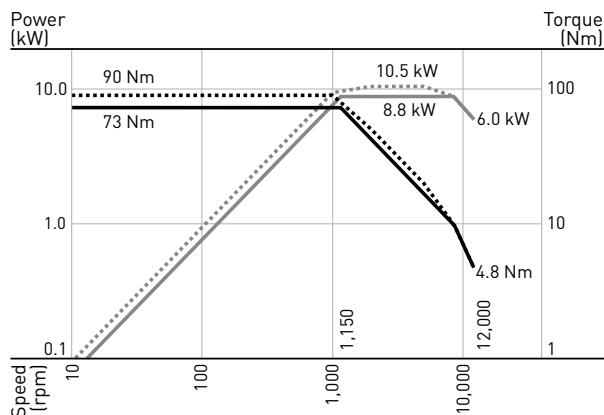
**CLX 550 TC / Main and counter spindle ISM 102**

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



**compactMASTER – Standard**

12,000 rpm/10.5 kW/90 Nm (40% ED)



# Technical data

		CLX 450 TC	CLX 550 TC
<b>Workspace</b>			
Max. swing diameter	mm	500	580
Max. turning diameter	mm	400	550
Distance main spindle to tailstock (without chuck)	mm	1,473	1,861
Distance main spindle to counter spindle (without chuck)	mm	1,435	1,935
Max. turning length	mm	1,100	1,600
<b>Main and counter spindle</b>			
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	67	104
Spindle nose (short taper)		A8	A8
Max. chuck diameter	mm	325	400
<b>B-axis with turn-mill spindle</b>			
Tool holder		HSK-T 63 [Capto C6]	HSK-T 63 [Capto C6]
Number of tool stations		30 (60)	30 (60)
Spindle speed	rpm	12,000	12,000
Drive power/torque (40 % ED)	kW/Nm	10.5/90	10.5/90
Swivel range B-axis	°	±120	±120
Rapid traverse B-axis	rpm	70	70
<b>Slide for B-axis</b>			
Travel X/Y/Z	mm	750/±100/1,100	870/±135/1,600
Rapid traverse rate X/Y/Z	m/min	40/40/40	40/40/45
Feed force X/Y/Z (S3 – 40 %)	kN	9.5/7.5/10	9.5/9/14
<b>Slide for counter spindle</b>			
Travel Z	mm	1,200	1,700
Rapid traverse rate Z	m/min	40	40
Feed force Z (S3 – 40 %)	kN	10	14
<b>Tailstock</b>			
Stroke	mm	1,200	1,700
Quill Power	kN	8	13
Tailstock centre	MK	5	5
<b>Machine</b>			
Footprint	m <sup>2</sup>	7.1	11.9
Discharge height chip conveyor	mm	995	1,200
Machine height	mm	2,820	2,990
Machine weight	kg	9,000	14,000

# YOUR ONLINE SERVICE MANAGER

**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!**



YOUR HISTORY



YOUR MACHINES

**myDMG MORI**  
CUSTOMER PORTAL



YOUR DOCUMENTS



YOUR SERVICE REQUESTS

All countries in which myDMG MORI is available  
can be found at: [myDMGMORI.com](http://myDMGMORI.com)



You too can benefit!  
Register now for free:  
[myDMGMORI.com](http://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](http://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:** Machines and products from DMG MORI may be subject to export restrictions. Therefore, prior export control authorization from competent authorities may be required. To prevent the illegal diversion of the equipment to individuals or nations that threaten international security, every DMG MORI machine is 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 a machine and shall have no liability as a result thereof.