

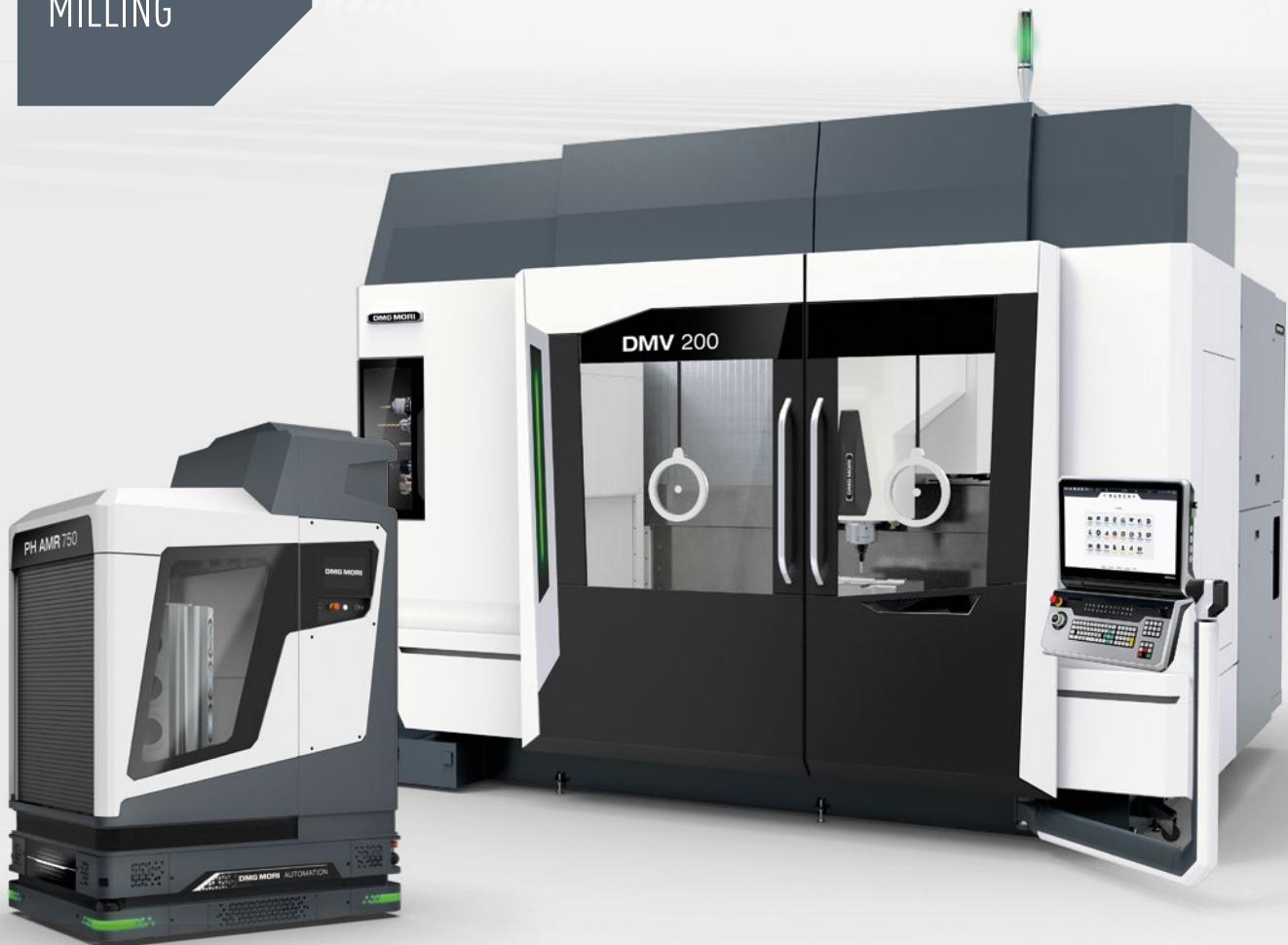
DMG MORI

VERTICAL MILLING CENTER

DMV 200

DMV 200

**BEST
PERFORMER
IN VERTICAL
MILLING**



Highlights

Performance

Application

Machine and options

Ergonomics

Automation

Control technology

Technical data

EXPLORE THE WORLD OF

MX MACHINING TRANSFORMATION

02

Machining Transformation (MX) by means of process integration, automation, digitalization and sustainability.

- + Workpieces are efficiently manufactured on a single technology-integrated machine
- + Better utilization of a complete machining center rather than partial utilization of several simple machines
- + Additional low-manpower or unmanned night and weekend shifts thanks to automated manufacturing solutions
- + Digital solutions create competitive advantages by improving work processes and generating new ways of improving efficiency and reducing power consumption

PROCESS INTEGRATION

- + Integrated 5-axis simultaneous machining (4th/5th axis)



GX – GREEN TRANSFORMATION

AUTOMATION

- + PH-AMR 750
- + PH 150
- + PH Cell 300

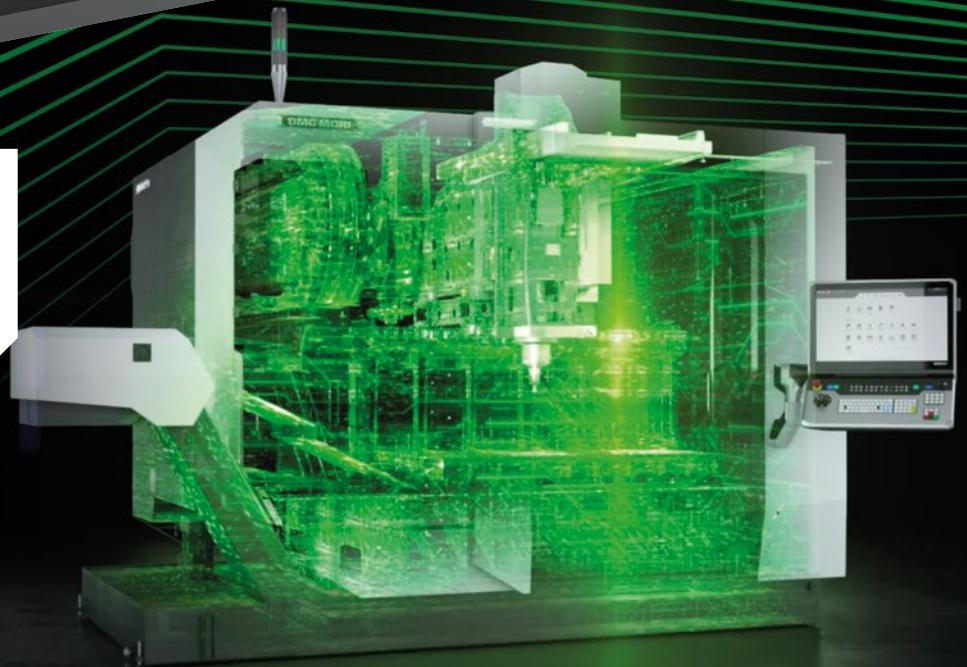


DX – DIGITAL TRANSFORMATION

- + ERGOline X & CELOS X
- + Exclusive DMG MORI Technology Cycles



ENERGY MONITORING



Highlights

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EFFICIENT
MACHINING
OF PARTS UP TO
3,000 kg
AND UP TO 2,000 mm

inlineMASTER

HIGHLIGHTS

- + High rigidity thanks to **improved monolithic machine bed & massive castings**
- + X-axis stroke = 2,000 mm and max. **table load up to 3,000 kg!**
- + **Improved thermal stability** thanks to active cooling system for selected components
- + Highly dynamic with **rapid traverse 42 m/min**
- + Outstanding performance with **powerMASTER 12,000 rpm and torque 430 Nm!**
- + **Direct measuring system as standard in all axes**
- + **Direct drive transmission in all axes**
- + Effective & intuitive operation thanks to ergonomic control panel **ERGOline X 24"** with modern user environment of **CELOS X**
- + Efficient control options with graphical programming support: **SINUMERIK ONE** or **HEIDENHAIN TNC 7**

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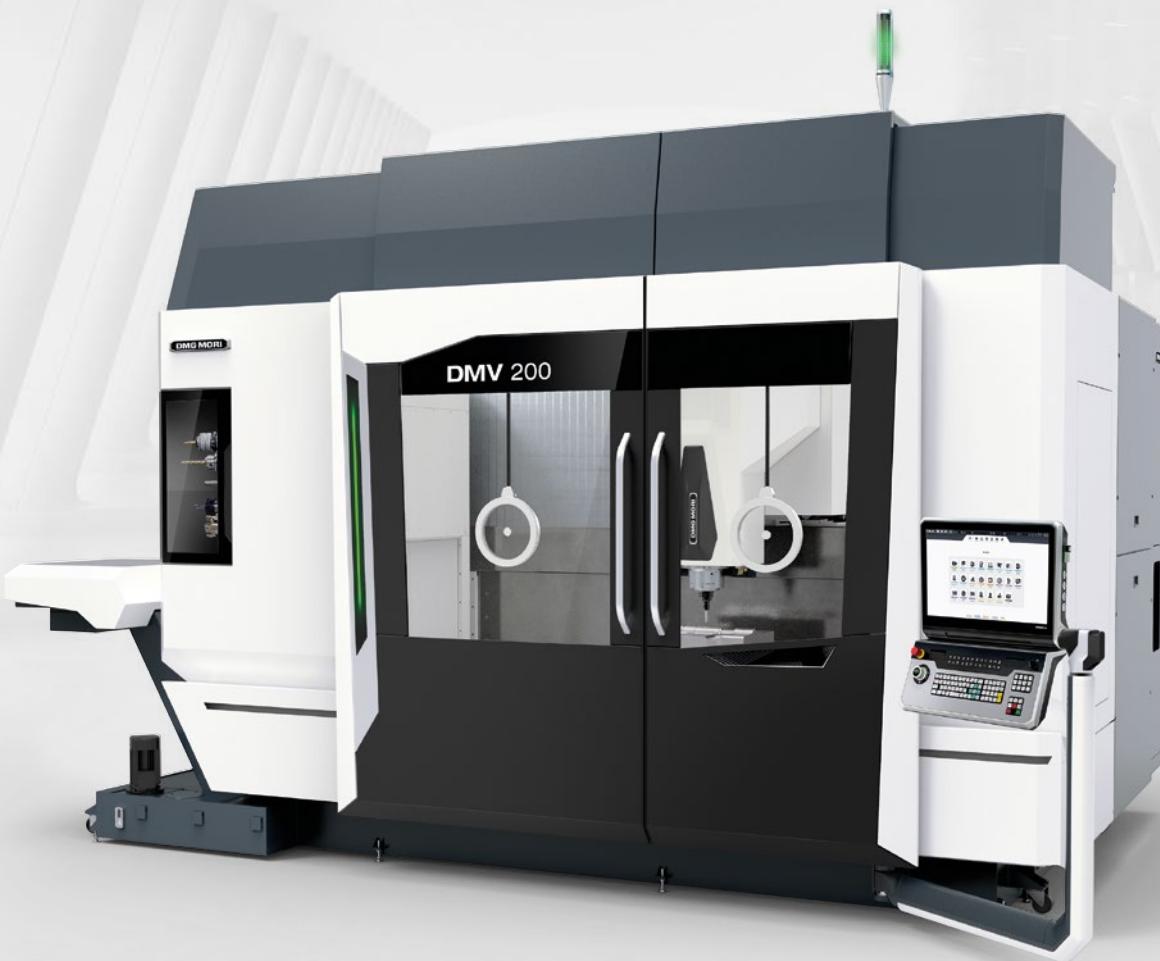
DMV 200

Best performer in vertical milling!

In the new DMV 200, DMG MORI combines the strengths of earlier 3-axis machining centers with pioneering innovations that meet the increasing requirements in manufacturing. The development of the DMV 200 has thus been closely aligned with the Machining Transformation (MX).

Based on the four pillars of Process Integration, Automation, Digital Transformation (DX) and Green Transformation (GX), DMG MORI is shaping the future of manufacturing with this concept.

06



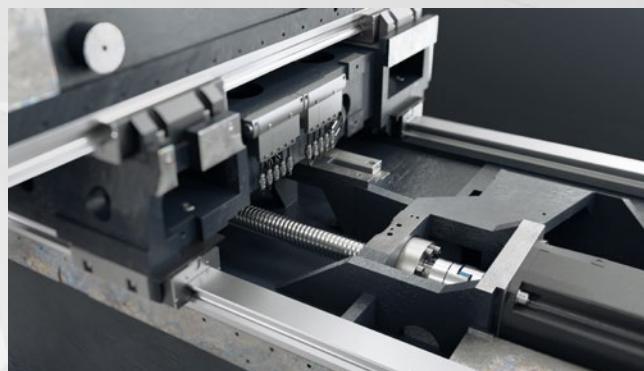
**CELOS X
& ERGOline X**

Outstanding rigidity and maximum precision

The new DMV line stands out from the typical vertical milling centers by outstanding rigidity, great performance and highest precision. Unique design based on monolithic machine bed in combination with massive castings and wide roller guideways result in remarkable rigidity. With the direct measuring system in all axes, direct drive transmission, improved accuracy of circular interpolation and advanced thermal compensation even the most demanding workpieces can be manufactured.



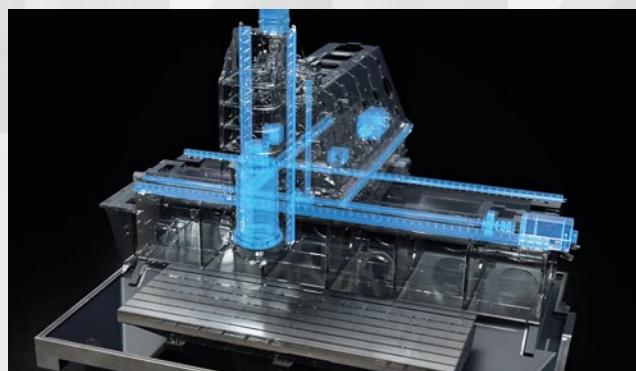
Direct measuring system in all axes



Direct drive transmission in all axes



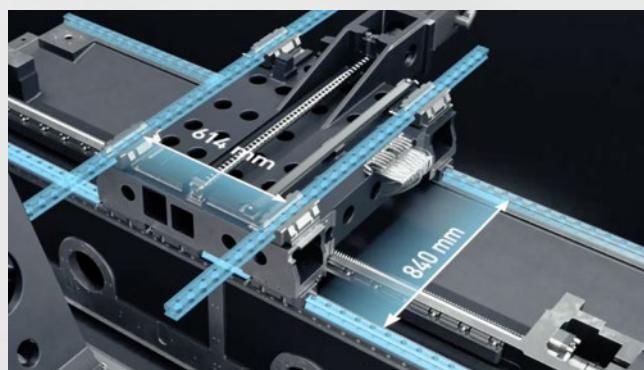
Ball bar <6µm



Active cooling system for selected components



Monolithic machine bed and fixed table



Large distances between roller guideways

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DMV 200

**Full range
of spindles from
15,000 rpm up
to 20,000 rpm**

36
MONTHS
WARRANTY

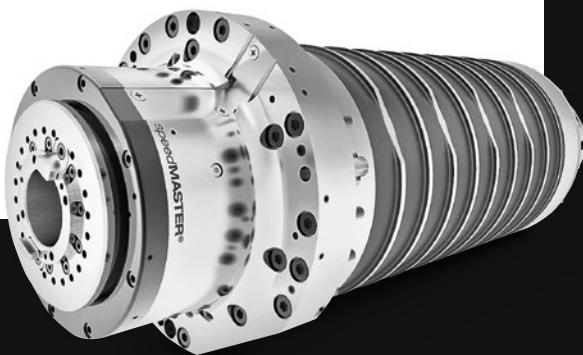
inlineMASTER 15,000 rpm

- + Outstanding rigidity and excellent thermal stability
- + Vacrodur bearings with high load capacity & remarkable wear resistance
- + Oil/air lubrication of the spindle bearing and improved labyrinth structure for a long time service life
- + Liquid cooling for optimal thermal stability



speedMASTER HT 15,000 rpm

- + Reduced to the minimum spindle run-out for the highest machining precision
- + Great rigidity and stability
- + Even over 200 % higher performance in rough cutting for the highest productivity
- + Liquid cooling for the highest thermal stability



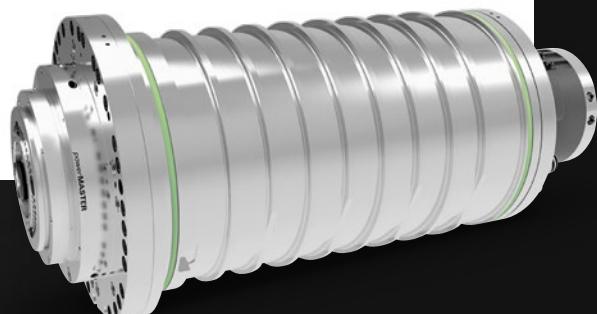
speedMASTER 20,000 rpm

- + Reduced to the minimum spindle run-out for the highest machining precision
- + Outstanding dynamic and reduced acceleration/ deceleration time for the best machine performance
- + Perfect solution for die & mold application
- + Liquid cooling for the highest thermal stability



powerMASTER 12,000 rpm

- + Best performer with torque 430 Nm!
- + Even up to 300 % higher chip removal rate in the rough cutting
- + Great rigidity and stability with tool interface SK 50 either HSK-A100
- + Liquid cooling for the highest thermal stability

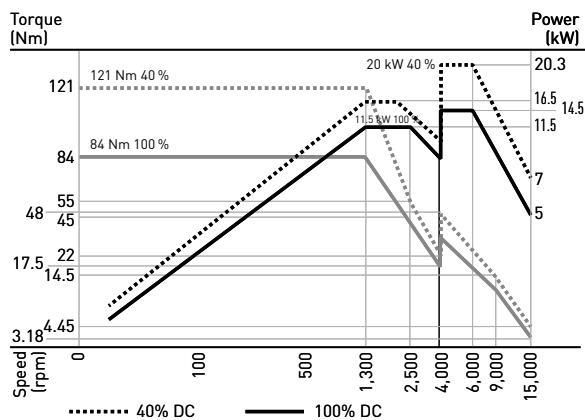


DMV 200

Spindle power diagrams

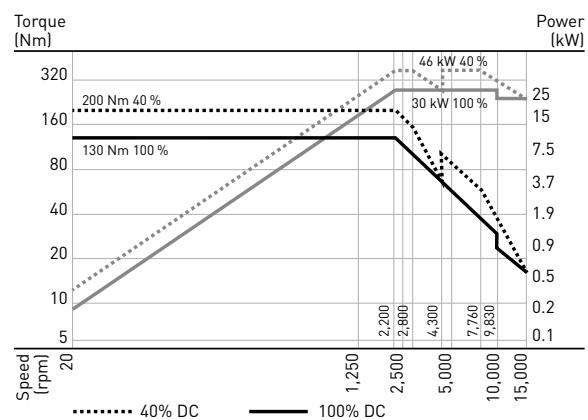
inlineMASTER 15,000 rpm

Speed range	15,000 rpm
Drive output	20/11.5 kW (40/100 % DC)
Torque	121/84 Nm (40/100 % DC)
Tool holder	SK 40/BT 40/CAT 40/HSK-A63



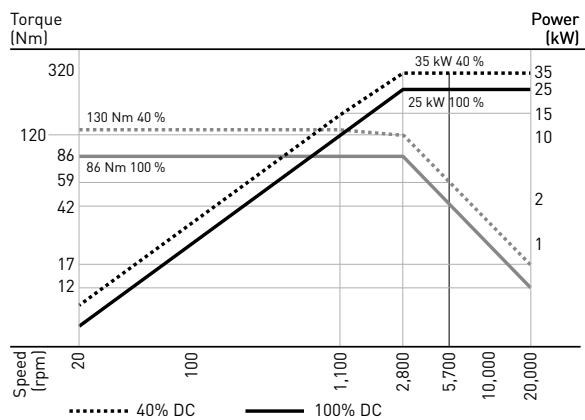
speedMASTER 15,000 rpm High Torque (option)

Speed range	15,000 rpm
Drive output	46/30 kW (40/100 % DC)
Torque	200/130 Nm (40/100 % DC)
Tool holder	SK 40/BT 40/CAT 40/HSK-A63



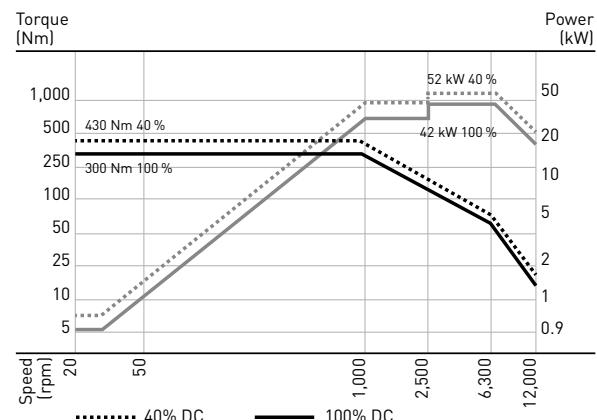
speedMASTER 20,000 rpm (option)

Speed range	20,000 rpm
Drive output	35/25 kW (40/100 % DC)
Torque	130/86 Nm (40/100 % DC)
Tool holder	SK 40/BT 40/CAT 40/HSK-A63



powerMASTER 12,000 rpm (option)

Speed range	12,000 rpm
Drive output	52/42 kW (40/100 % DC)
Torque	430/300 Nm (40/100 % DC)
Tool holder	SK 50/HSK-A100



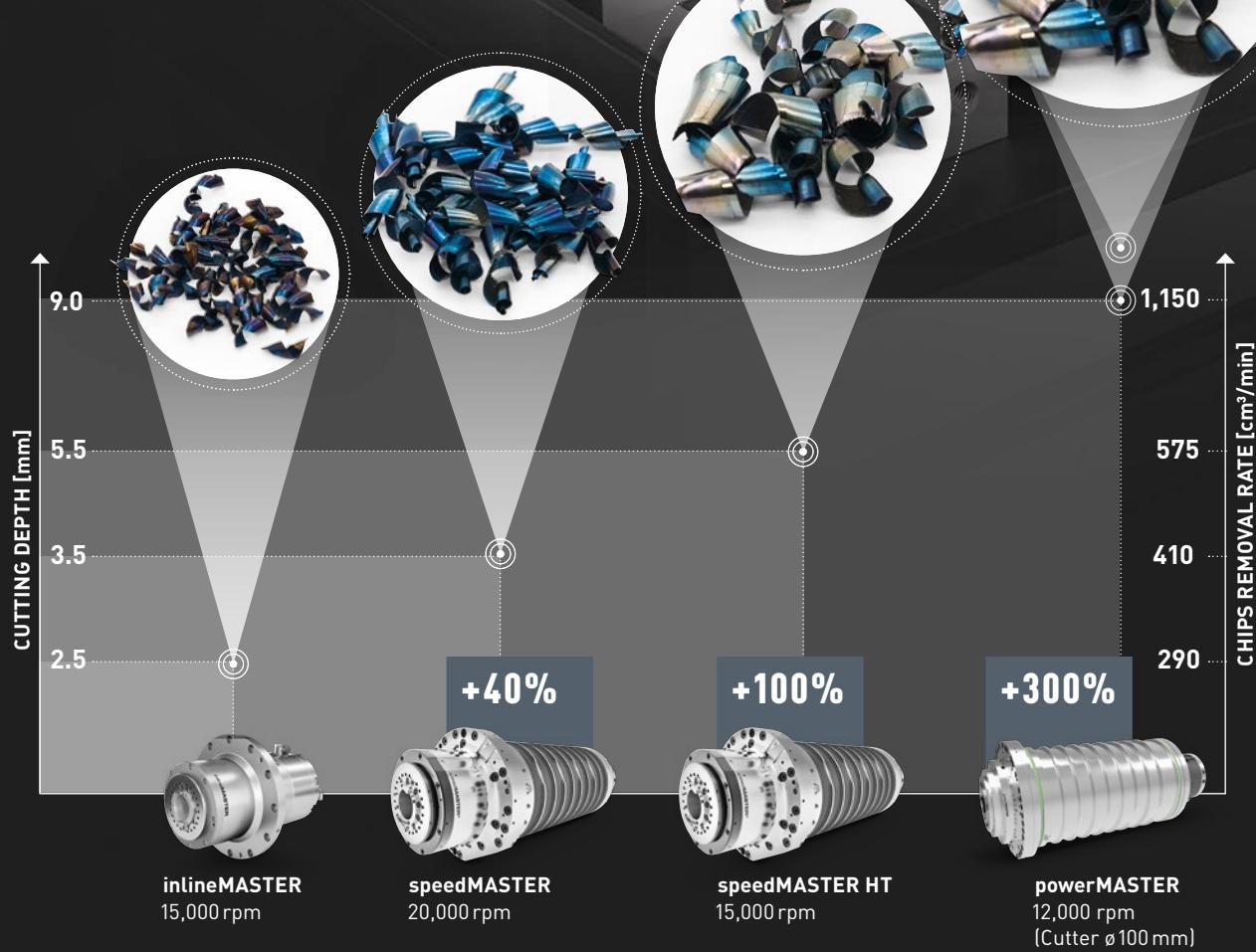


DMV 200

The highest cutting performance in its class!

ROUGH MILLING

Cutting speed: 270 m/min
Cutter: ø 80 mm / ø 100 mm*
Feed : 0.2 mm/tooth
Feed rate: 1,930 mm/min
Cutting width: 60 mm (75%)
Material: steel C45

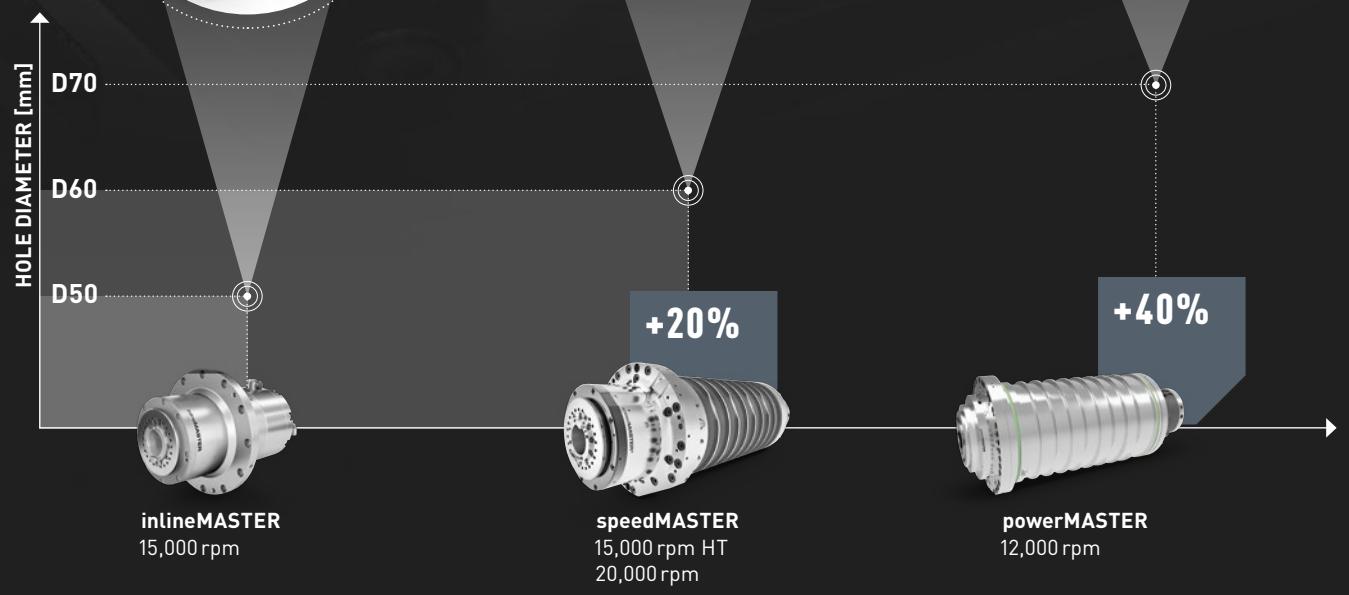


DRILLING

Cutting speed: 160 m/min

Feed: 0.12 mm/rev.

Material: steel C45



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DMV 200

The highest dynamics and surface quality!

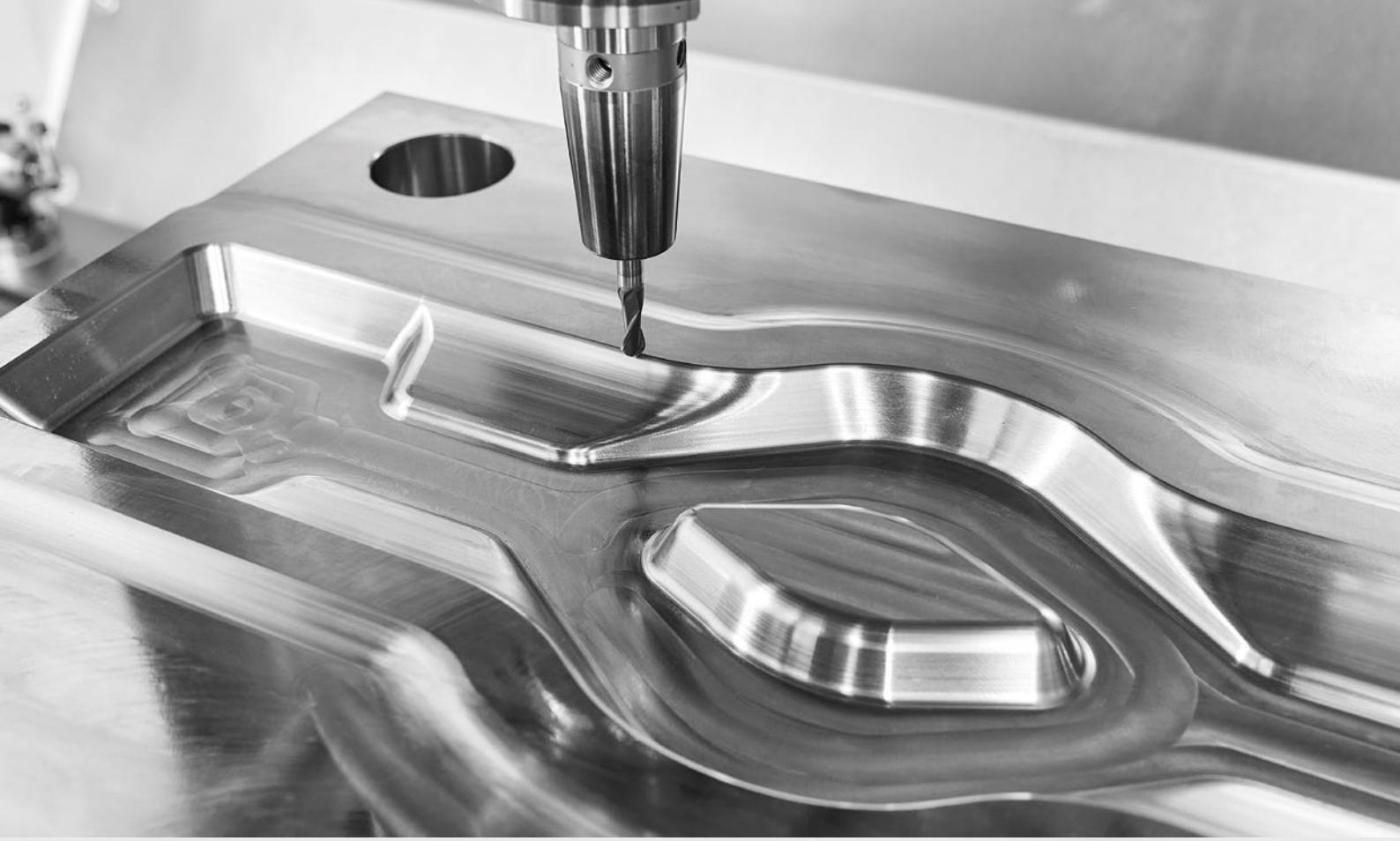
As 3-axis machines, the DMV 200 occupies an important position in numerous industries – wherever high performance machining of precise workpieces is required.

In this way, they are proving to be a valuable building block in a competitive production environment, including the die & mold, medical, automotive and aerospace sectors, among others, where productive machining of the most common materials, from aluminum and stainless steel to titanium alloys, is crucial.

DIE & MOLD

Mold for foot mat
made from tool steel





DIE & MOLD

Die made from cast iron



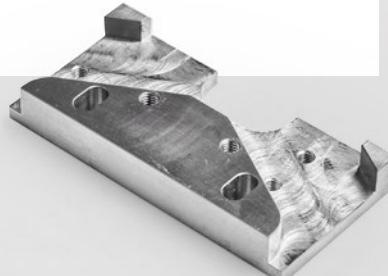
MACHINERY

Motor adapter made
of stainless steel



MACHINERY

Connecting plate
made of carbon steel



ENERGY

Housing made
of aluminium alloy



AEROSPACE

Structural frame made
from aluminum



MECHANICAL ENGINEERING

Assembly device made
from aluminum



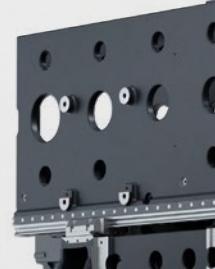
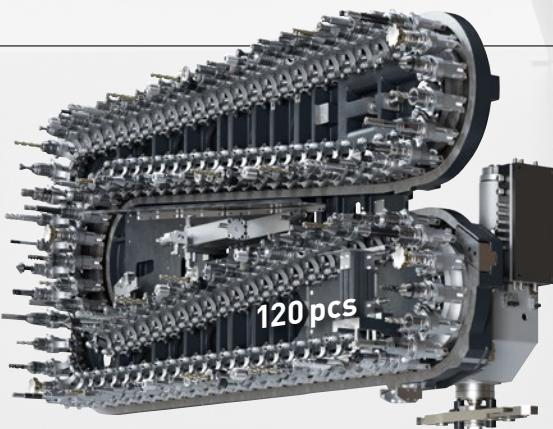
DMV 200

Modular concept

Full range of options and customized solutions!

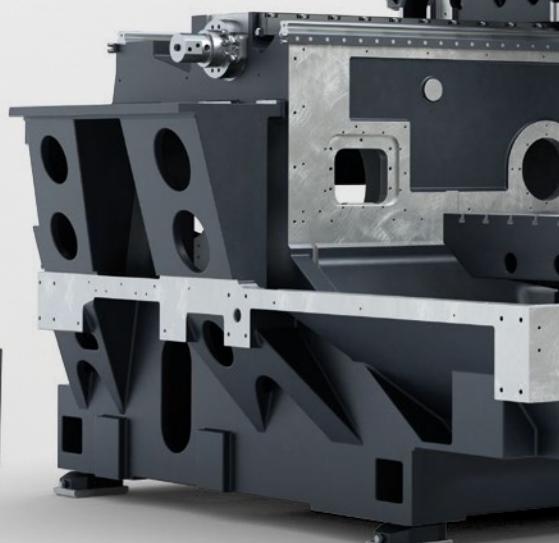
TOOL MAGAZINE

- + 30 pcs.
- + 40 pcs (for SK50; HSK-A100)
- + 60 pcs.
- + 120 pcs.



CHIP REMOVAL AND COOLANT SUPPLY

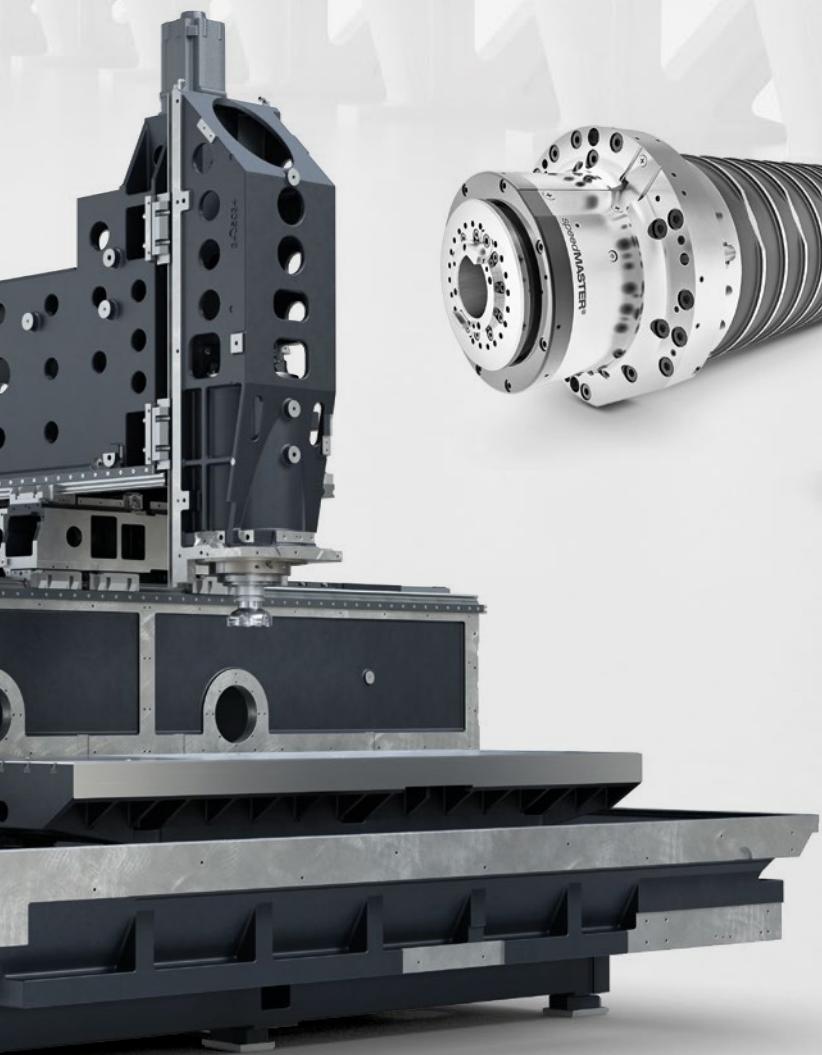
- + Chip tank
- + Chip conveyor
- + Chip conveyor for small chips
- + Paper-type filtration system with 600l tank
- + Through spindle coolant supply (ICS)



SPINDLES

- + inlineMASTER 15,000 rpm
- + speedMASTER 15,000 rpm High Torque
- + speedMASTER 20,000 rpm
- + powerMASTER 12,000 rpm

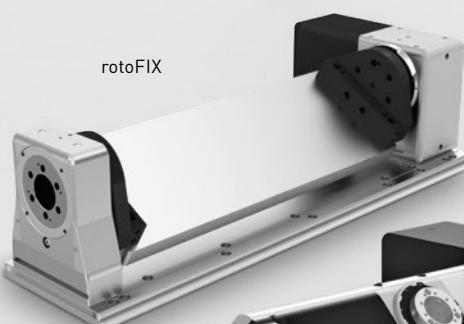
UP TO
430 Nm



17

ROTARY TABLES

rotoFIX



4th axis



4th and 5th axis



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DMV 200

Selected options

	DMV 200
Control	
SINUMERIK One	Standard
HEIDENHAIN TNC 7	•
Preparation for CELOS X	Standard
CELOS X	•
Spindles	
inlineMASTER 15,000 rpm	Standard
speedMASTER 15,000 rpm High Torque	•
speedMASTER 20,000 rpm	•
powerMASTER 12,000 rpm	•
Tool clamping system	
SK 40	Standard
BT 40	•
CAT 40	•
SK40 for pull-studs ISO	•
HSK-A63	•
SK 50 (for powerMASTER)	•
HSK-A100 (for powerMASTER)	•
Tool magazine / tool handling	
30-pocket tool magazine	Standard
40-pocket tool magazine (for powerMASTER 12,000 rpm)	•
60-pocket tool magazine	•
120-pocket tool magazine	•
Tool (un-) loading through magazine door	•
Coolant supply / chip removal	
Air Coolant Internal (through spindle centre) switchable via M-Function	•
Coolant spray gun for swarf removal	•
Oil- and emulsion mist separator	•
Special chip conveyor dedicated for thin chips	•
Bed flushing via M-function	•
Roto clear for window cleaning	•
Internal coolant supply with high pressure and frequency controlled	•
Tempering unit for coolant	on request
Options for table / clamping device	
Hydraulic/pneumatic preparation with 4 channels on the machine table	•
1 pneumatic clamping circuit for clamping device mounted on the machine table	•
2 pneumatic clamping circuits for clamping devices mounted on the machine table	•
Pneumatic/hydraulic clamping device	on request
Automation	
Automation package with PROFINET interface and right-side shutter	•
Automation package with PROFINET interface and loading through the front door	•
Preparation for PH 150/PH Cell 300 with EROWA tooling	•
Preparation for PH 150/PH Cell 300 with SCHUNK tooling	•
Measuring / Monitoring	
Renishaw Touch Probe-Kit including PP40 & TS27R	•
Touch probe HEIDENHAIN TS 460 for workpiece	•
Touch probe HEIDENHAIN TT160 for tools	•
Laser probe BLUM LC50-DIGILOG for tools	•
Laser probe RENISHAW NC4 blue for tools	•

	DMV 200
Rotary table	
Rotary table LEHMANN EA-510.L	•
Rotary table LEHMANN EA-520.L	•
Rotary table LEHMANN EA-510.L rotoFIX with counter bearing and bridge	on request
Rotary table LEHMANN T1-510520.LL TAP2 as the A and C axis (4/5 th axis)	on request
Others	
Tropical package	•
Multilayer window with tempered glass	•
Automatic front door	•
Signal lamp with 4 colours	•
External electronic Handwheel	•
Safety Package for Power Failure	•
Cabin roof	•
Software	
3D shopfloor programming	•
ACM (for SIEMENS)	•
Service Agent	•
Advanced Electrical Energy Monitoring	•
Technology cycle ATC	•
Technology cycle MPC 2.0	•
DXF import	•
10 free M-codes	•

• Option

Useful packages for constant and efficient production process

	Workshop Package	Chip Removal Package	Production Package 20 bar	Production Package 40 bar	Production Package 80 bar	Production Package 80 bar with frequency control
Scope of package						
Scraper chip conveyor with left discharge	X	X	X	X	X	X
Paper-type filter with 600 l. tank				X	X	
Paper-type filter with 980 l. tank						X
Internal coolant supply 20 bar	X		X			
Internal coolant supply 40 bar				X		
Internal coolant supply 80 bar					X	X
Frequency controlled coolant pressure						X
Double-cartridge filter for internal coolant supply	X		X	X	X	X
Bed flushing via M-function	X		X	X	X	X
Coolant spray gun for swarf removal	X	X	X	X	X	X
External electronic handwheel			X	X	X	X
Cabin roof	X		X	X	X	X
Signal lamp with 4 colours		X	X	X	X	X
Mechanical preparation for oil-mist extractor	X					
Renishaw Touch Probe-Kit including PP60 & TS27R	X					

DMV 200

Unique ergonomics and easy operation

DMV series is one of the most powerful vertical machining centers with a high workpiece loading weight. The DMV 200 also impresses with user-friendly ergonomics, which are underlined by perfect accessibility and visibility into the working area. Thanks to the excellent accessibility to the machine, set-ups can be carried out in a quick and very ergonomic way.

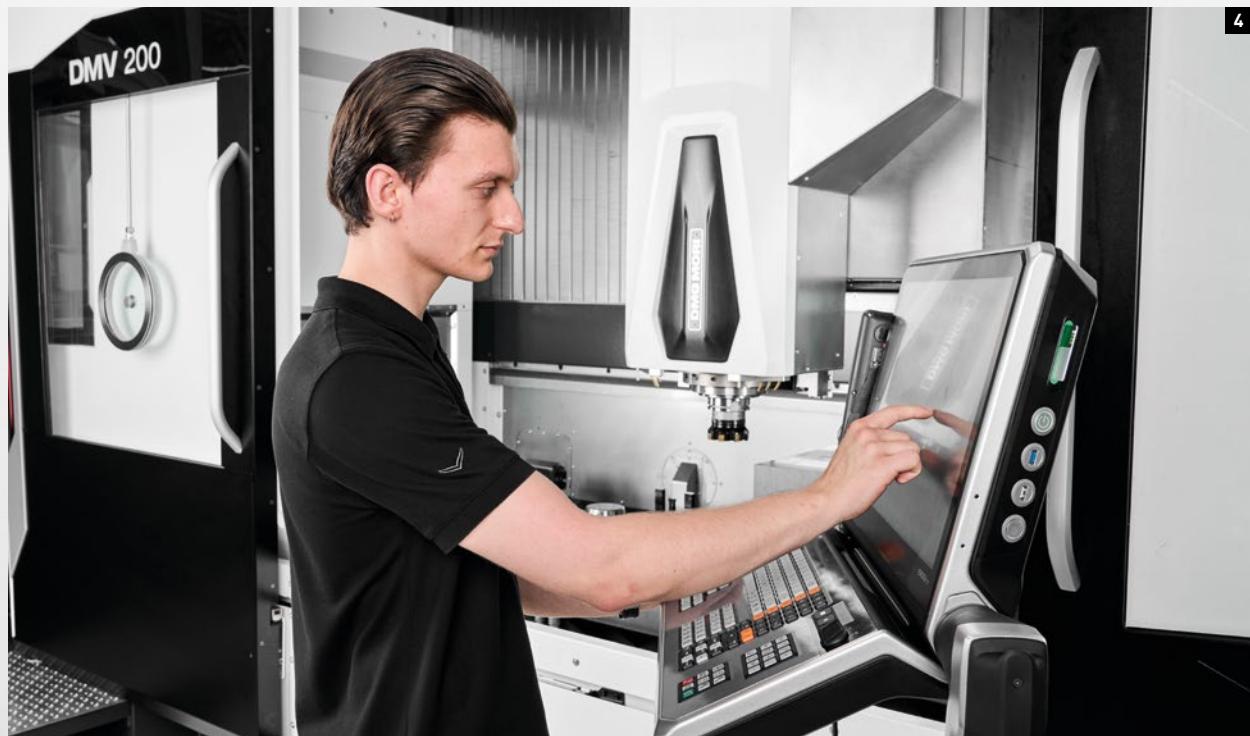
HIGHLIGHTS

- 1** Excellent access to the table and a wide door opening, setup operations such as fixture adjustment can be done smoothly. The position of the lower end of the front door has been lowered to offer better access to the spindle and table.
- 2** Crane loading from above by opening the machine roof with the working area door.
- 3** Side door for quick and easy magazine set-up without machine down time*
- 4** Modern control panel ERGOline X with 24" multi-touch screen and CELOS X*
- 5** Optimal chip fall and chip disposal thanks to bed flushing system*

*option



3



4



DMV 200 WITH PH-AMR 750

Flexible automation without limits with unrestricted accessibility

HIGHLIGHTS

- + **Maximum accessibility and visibility** into the workspace at all times
- + Flexible integration into existing production and **easy expansion with additional modules or AMRs**
- + Collaborative design enables **safe human-machine interaction** without the need for safety housing, thanks to laser scanners
- + **Modular and customizable layout** allows free positioning of components to suit any production setup
- + Space-efficient design features omnidirectional AMRs with **zero turning radius and no fixed floor installations**
- + **Quick integration of machines with automation interfaces** allowing fast and seamless system expansion.



PH-AMR 750

CONTROL TECHNOLOGY

ERGOline X – user-oriented platform for all DMG MORI machines

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 optional CELOS Xperience and the native NC controller.

HEIDENHAIN TNC 7

- + Increased flexibility and efficiency
- + Select and arrange work spaces in a task-oriented way
- + 3D simulation, accurate to the last detail
- + Tabs for opening up to 9 programs in parallel
- + Compatibility with previous TNC 620/640 controller
- + Graphically assisted measurement of both clamping materials and components



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:

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

CELOS X

Optional, user interface, independent of the CNC control

SMARTkey

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

SIEMENS SINUMERIK ONE

- + Maximum speed and shorter idle times
- + Standard SIEMENS control interface
- + Intuitive and simple programming directly on the machine thanks to ShopMill
- + Compatibility with SINUMERIK 828D/840D
- + Advanced 3D simulation for collision avoidance
- + 3D Shopfloor programming available as option

24" ERGOline X Panel
with SINUMERIK ONE
and CELOS X

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.

DMV 200

DMG MORI Technology Cycles

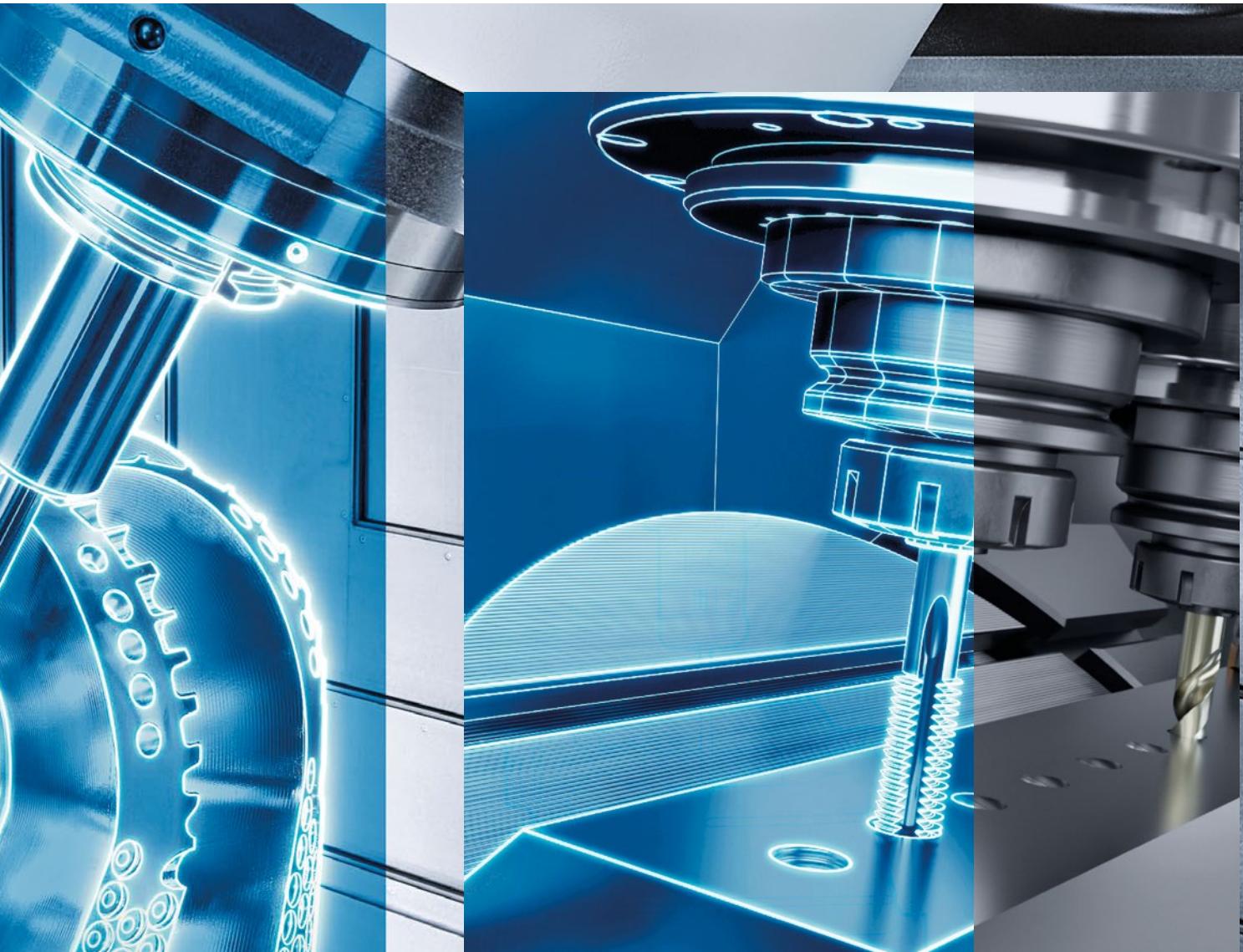
ATC – APPLICATION TUNING CYCLE

- + Process-oriented adjustment of feed speed in relation to table loading of milling machines
- + Minimum machining time combined with maximum relevant component quality

CUSTOMER BENEFIT

- + Simple operation for adjusting machine dynamics with drive parameters from DMG MORI
- + Time saving during roughing
- + High surface quality during finishing





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MPC 2.0 – MACHINE PROTECTION CONTROL

- + In-process vibration monitoring
- + Rapid machine shutdown in the event of a crash
- + Manual free travel even on a tilted working plane

CUSTOMER BENEFIT

- + Prevention of tool breakage
- + Increase in machine availability
- + Damage reduction

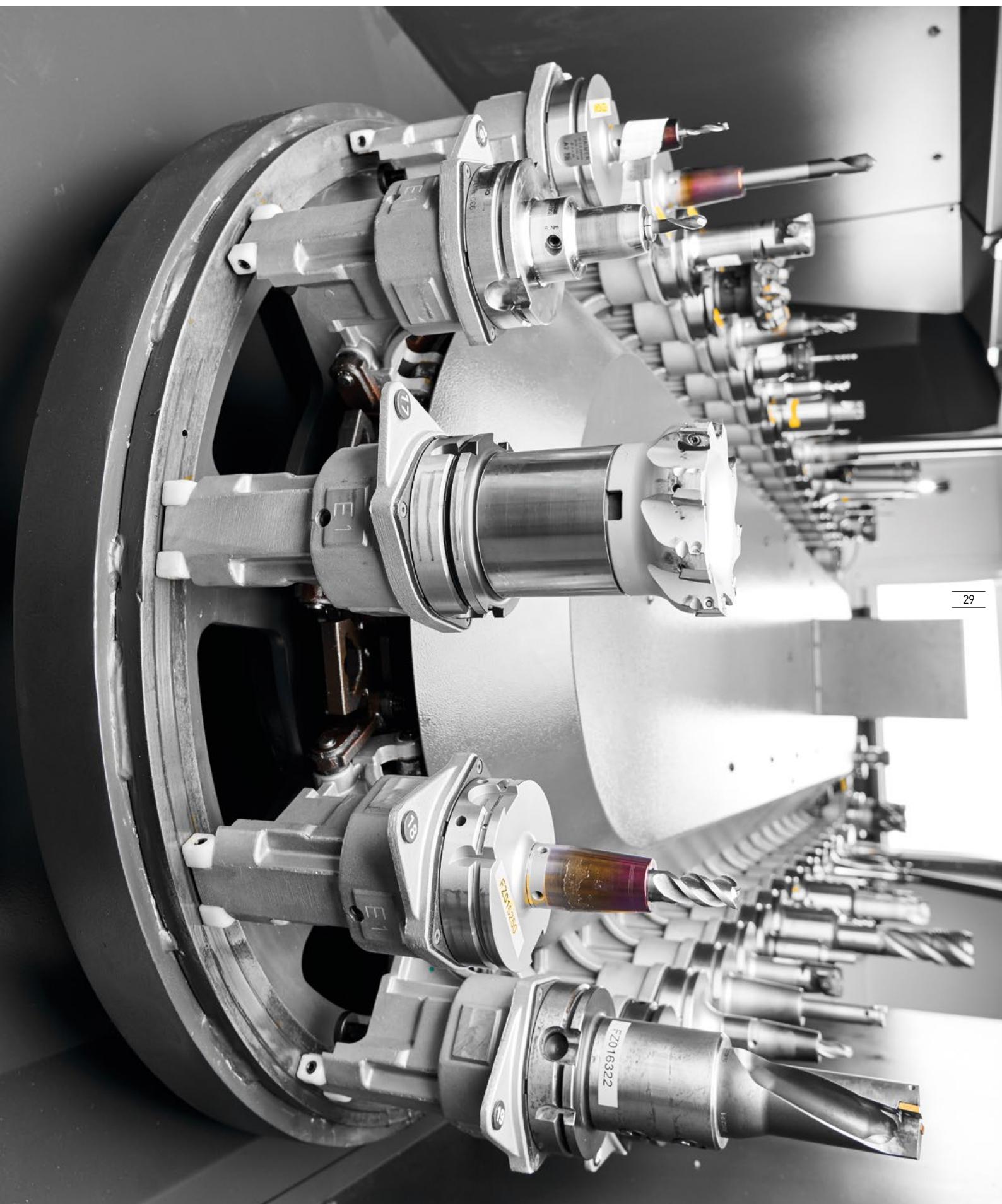
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Technical Data

DMV 200		
Control		
Type		SIEMENS SINUMERIK ONE / HEIDENHAIN TNC 7*
Control panel		ERGOline X with 24" multi touch control panel & CELOS X*
Working area		
Travel in X/Y/Z-axis	mm	2,000/700/550
inlineMASTER spindle 15,000 rpm		
Max. spindle speed	rpm	15,000
Power (100/40 % DC)	kW	14.5/20
Torque (100/40 % DC)	Nm	84/121
speedMASTER spindle 15,000 rpm High Torque*		
Max. spindle speed	rpm	15,000
Power (100/40 % DC)	kW	30/46
Torque (100/40 % DC)	Nm	130/200
speedMASTER spindle 20,000 rpm*		
Max. spindle speed	rpm	20,000
Power (100/40 % DC)	kW	25/35
Torque (100/40 % DC)	Nm	86/130
powerMASTER 12,000 rpm*		
Max. spindle speed	rpm	12,000
Power (100/40 % DC)	kW	42/52
Torque (100/40 % DC)	Nm	300/430
Linear axes		
Rapid traverse X/Y/Z	m/min	42/42/42
Type of guideways X/Y/Z	typ	Roller guideways
Size of guideways X/Y/Z	mm	45/45/45
Tool magazine		
Tool taper		SK 40/BT 40°/CAT 40°/HSK-A63*
Number of tool stations	pcs.	30 (60/120)
Max. tool weight	kg	8
Max. tool diameter × length	mm	Ø 130 × 400
Tool change time (tool-to-tool)	s	2.2
Machine table		
Table size	mm	2,160 × 750
Max. workpiece weight	kg	3,000
Machine dimensions		
Machine with chip tank L × W × H/footprint	m/m ²	4.9 × 3.1 × 3.0 / 13.4
Machine with chip conveyor L × W × H/footprint	m/m ²	5.4 × 3.1 × 3.0 / 14.4
Machine weight	kg	14,500

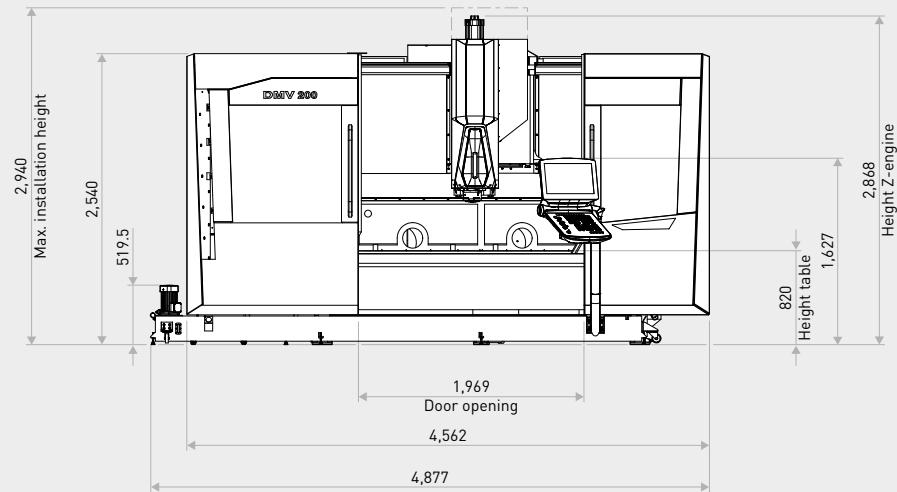
*option **with free adjacent pockets



DMV 200

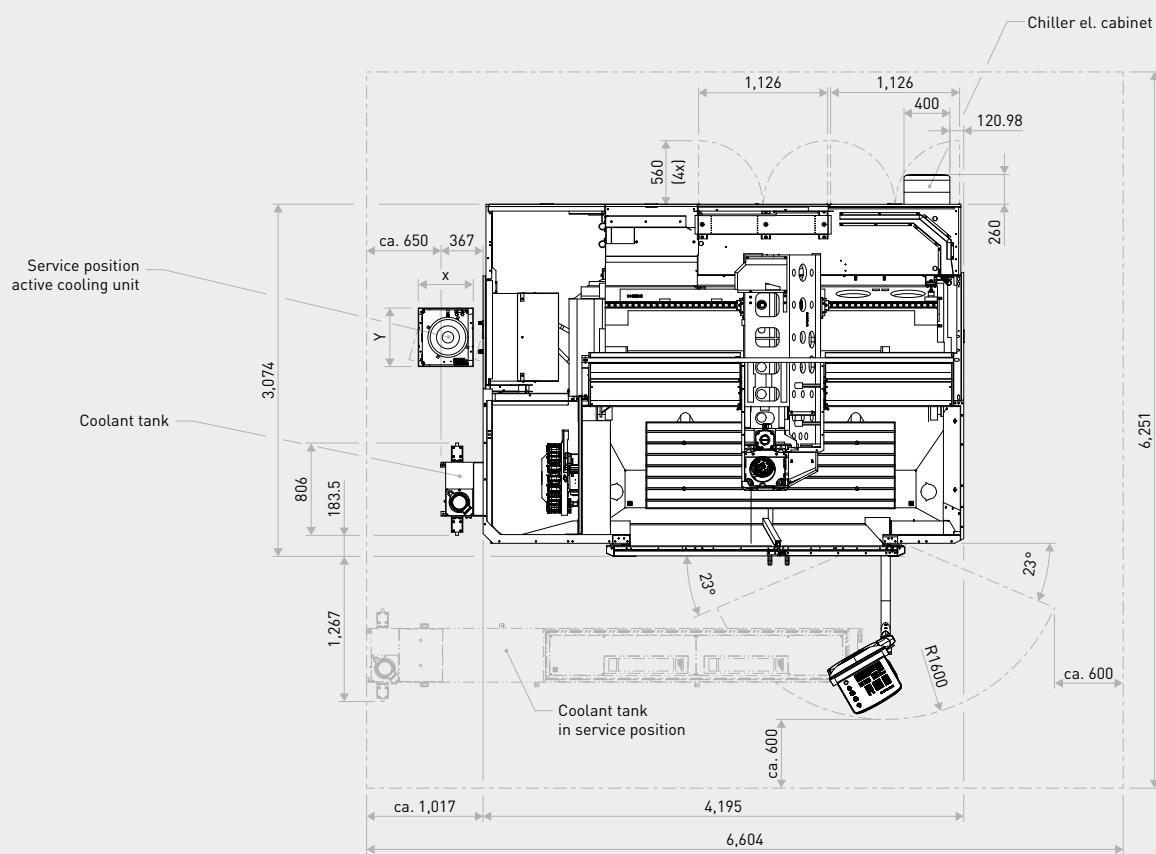
Floor Plans

DMV 200 with chip tank // Front view

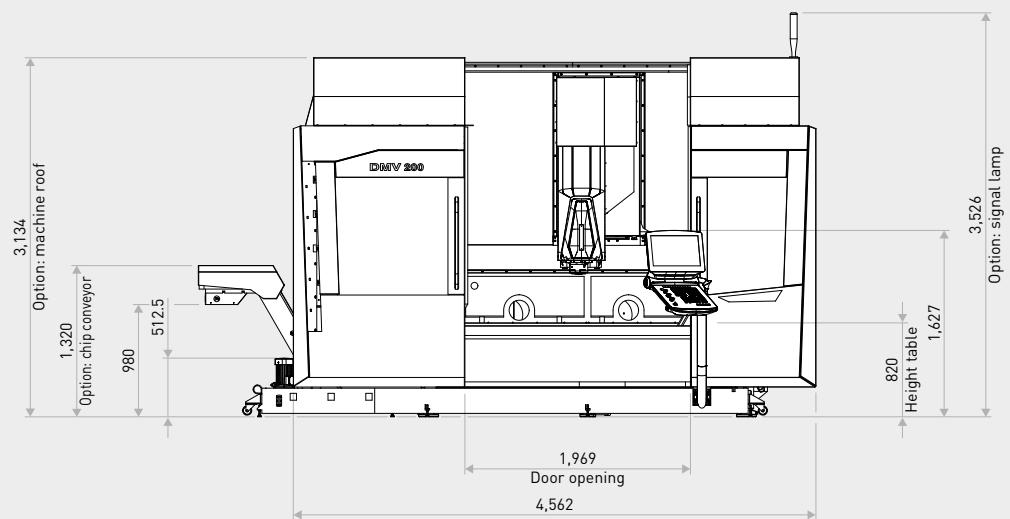


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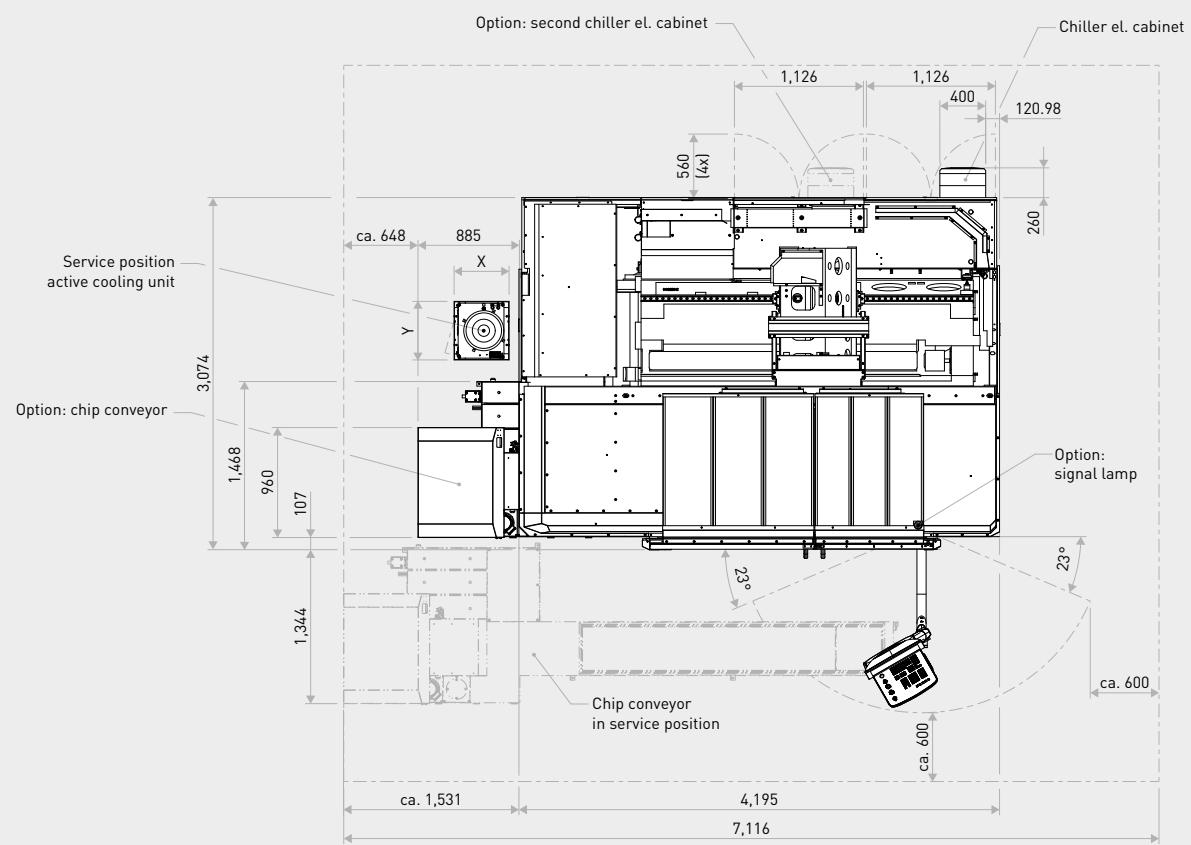
DMV 200 with chip tank // Top view



DMV 200 with chip conveyor // Front view



DMV 200 with chip conveyor // Top view



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



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: 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.