

**DMG MORI**

DMP 35

DMP 70

VERTICAL HIGH SPEED MACHINING CENTERS

## DMP 70-Series



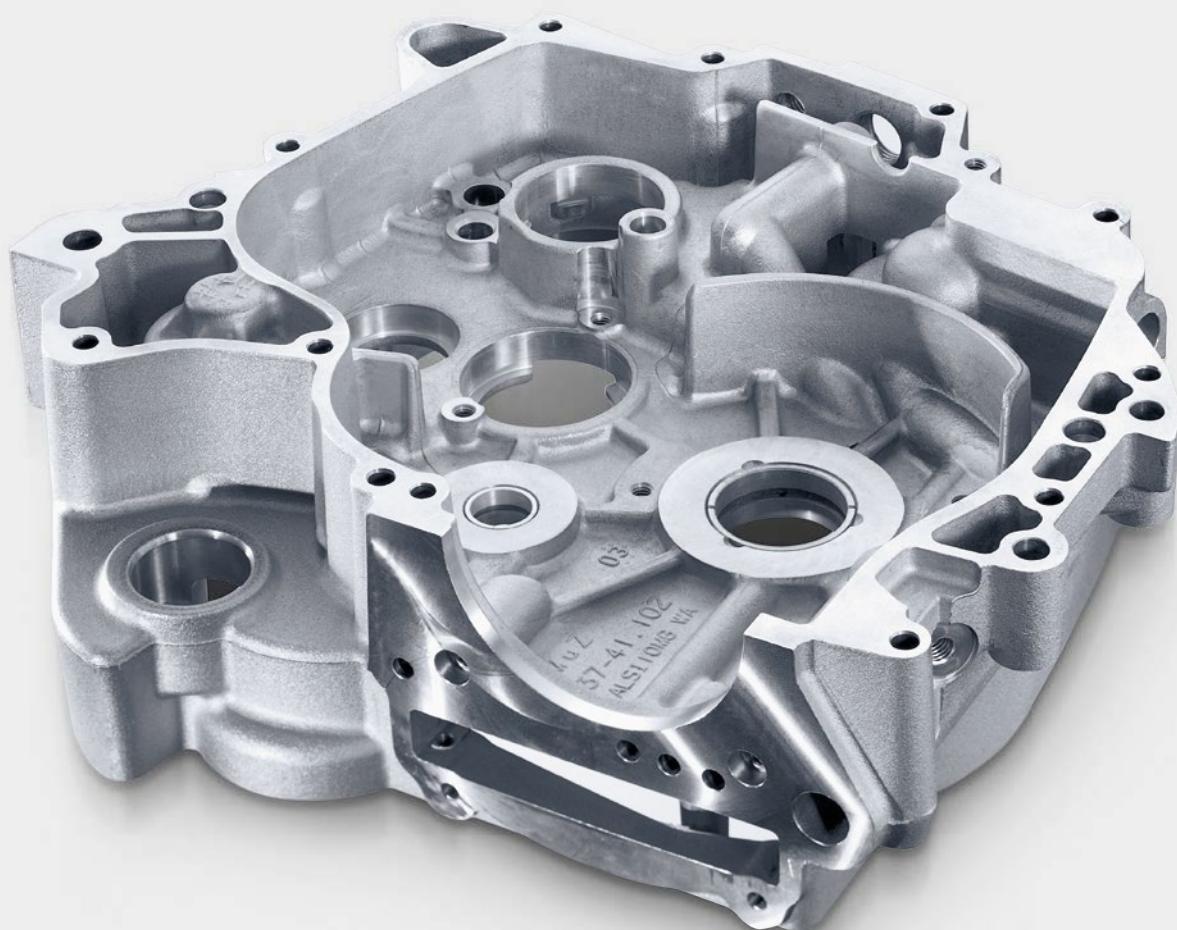
DMP-SERIES

## Highest precision and productivity

The DMP-Series is the optimal answer to the requirements and needs of 3-axis as well as 5-axis machining for production-oriented sectors.

At the same time, the machine impresses with a single piece machine bed made of cast iron, a highly dynamic tool changer, direct absolute path measuring systems, optimal chip transportation, a minimal footprint and an optimal automation capacity.

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### AUTOMOTIVE

Motor housing made  
of aluminum casting



## PRODUCTION

Valve housing made of aluminum



## PRODUCTION

Pump housing made of  
aluminum casting



## MEDICAL

Bone plates made of titanium



## JOB SHOP

Holder made of steel



## MEDICAL

Transtibial prosthesis  
made of titanium



## AEROSPACE

Blade made of aluminum

## AEROSPACE

Impeller made of titanium



TECHNOLOGY EXCELLENCE

# Flexible machine for production-oriented fields of application

The most impressive feature of the DMP-Series is its perfectly coordinated machine concept, which makes it the perfect solution for production-oriented fields of application. Moreover, the machines are equipped with a comprehensive portfolio of options for various sectors in the 3-axis, 4-axis and 5-axis area.

## HIGHLIGHTS FOR THE PRODUCTION SECTOR

- + **Stealth Design** with inner machine doors
- + **Efficient spindle** thanks to spring preload as well as a robust design
- + **Highly dynamic tool changer** (chip-to-chip time of only 1.5 seconds)
- + **Minimal footprint** of only 3.2 m<sup>2</sup> (4.2 m<sup>2</sup>\*)
- + **Best-possible chip flow** thanks to steep covers in the working area
- + **Optimal integration of automation systems** from right, left and the front\*\*
- + **Central maintenance access to the machine** from the rear side at the DMP 70



## PRODUCTION

Manifold made of aluminum

## MEDICAL EXCELLENCE CENTER

- + **Machining of the entire material range:**  
From high-strength plastic to stainless steel, from titanium right up to CoCr
- + **Compact machine footprint**
- + Standardized and customized automation solutions
- + **Exclusive DMG MORI technology cycles,**  
for example ATC for optimal surfaces

## HIGHLIGHTS FOR THE MEDICAL TECHNOLOGY INDUSTRY (OPTIONAL)

- + **Inline spindle** with 24,000 rpm (6 kW/12 Nm at 40% DC)
- + **Swivel rotary table** for 5-axis simultaneous machining incl. DMG MORI technology cycle 3D quickSET and ATC – Application Tuning Cycle
- + **toolSTAR** magazine with 25 pockets
- + **Chip conveyor** and space-saving **40 bar internal coolant supply system**
- + **Tool measuring system** and **measuring probe**
- + **Package for oil applications** available with fire-extinguishing system

Bone plates  
made of titanium



DMP-SERIES

# Highly dynamic machine concept

The machine concept of the DMP-Series unites the highest precision, enormous stability as well as maximum flexibility in one machine, which offers an answer to the different requirements for the 3-axis and the 5-axis sector. At the same time, the machines feature solid basic equipment and a comprehensive portfolio of options.

The DMP-Series impresses with enormous dynamics and flexibility, making the machine optimal for low quantities in the job shop area as well as for automated large-scale manufacturing in the production sector.

## CONVINCING MACHINE DESIGN

- + **Single piece machine bed** made of cast iron with a broad positioning for maximum stability
- + **Excellent visibility** into the working area of the machine
- + **Extremely robust spindle and tool magazine**
- + **Best chip transport** due to steep slopes in the machine bed

## HIGHEST PRECISION AND DYNAMICS

- + **Extensive cooling measures and direct absolute path measuring systems** in basic machine as well as high-precision manufactured machine components ensuring the highest accuracy
- + **High degree of rigidity and cutting performance** with rapid traverses of 60 m/min in all axes and up to 2g acceleration





## OPTIMAL MACHINE DESIGN FOR PRODUCTION

- + **DMG MORI Stealth Design** with inner doors to avoid chips falling outside of the machine
- + **Highly dynamic tool changer with 15 pockets** with a chip-to-chip time of 1.5 seconds
- + **Optimal ergonomics in the working area** and the **tool changer ensure** perfect handling for the operator

## SOLID BASIC EQUIPMENT

- + **Travel X/Y/Z:**  
DMP 35: 350/420/380 mm  
DMP 70: 700/420/380 mm
- + **High torque inline spindle** with 15,000 rpm [8.5 kW/48 Nm at 40 % DC)
- + **Solid tool magazine** with 25 pockets (DMP 35 with 15 pockets as standard)
- + **60 m/min rapid traverse** in all axes and up to 2g acceleration
- + **Direct absolute path measuring systems** in all axes
- + **Fully enclosed cabin** with inner machine doors
- + **DMG MORI SLIMline multi-touch panel** with SIEMENS 840D solutionline

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## BEST-POSSIBLE AUTOMATION CAPACITY

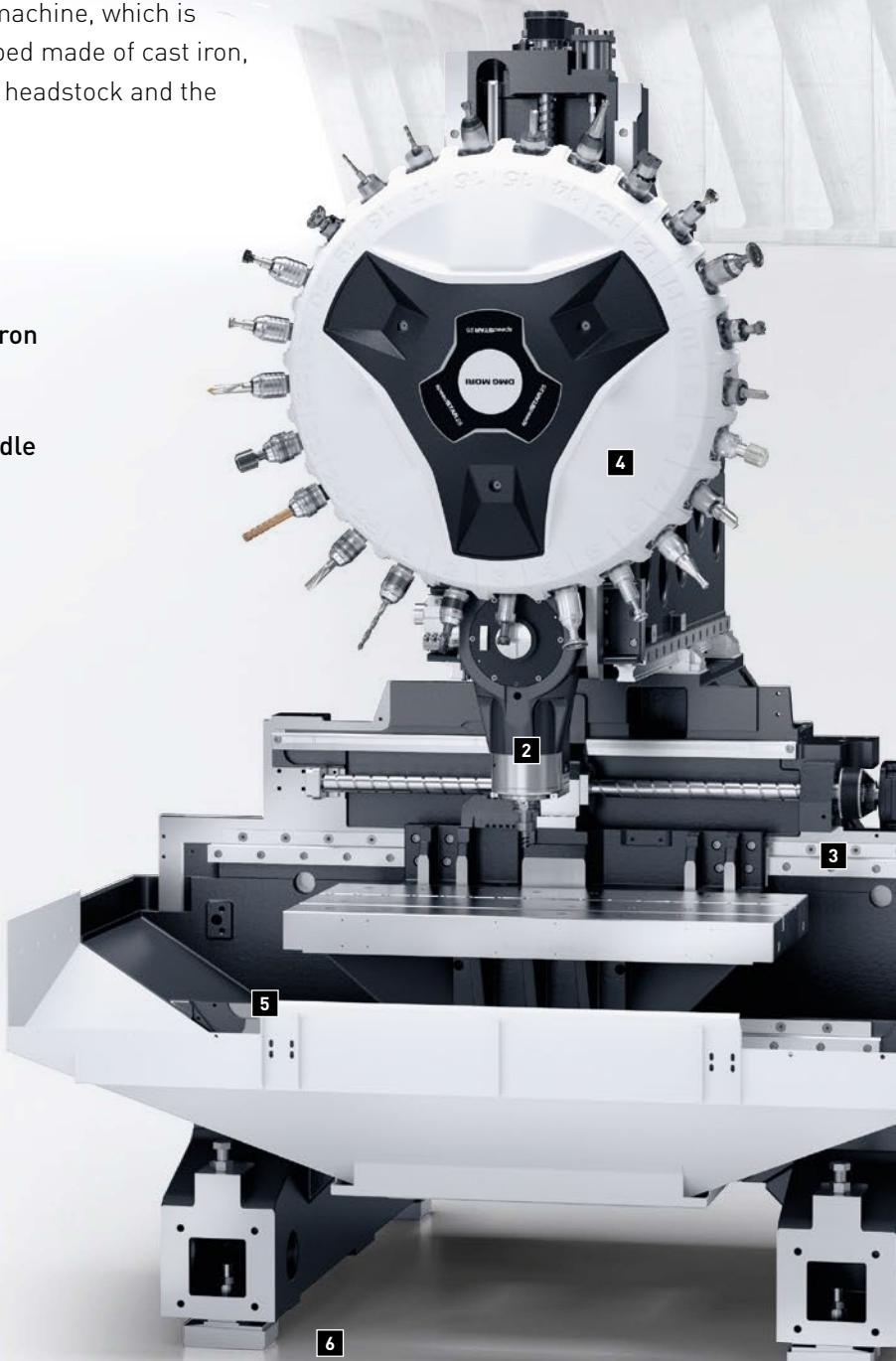
- + **Highest flexibility** thanks to optimal automation connection from right, left or from the front
- + **Minimal space requirement** with automation – e.g. DMP 35 with WH 3 Cell only 4.3 m<sup>2</sup>

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# Impressive machine design

The basis for the excellent milling accuracy of the DMP-Series is the high stability and rigidity of the machine, which is achieved by the single piece machine bed made of cast iron, the thermo-symmetrical design of the headstock and the wide linear guides.

- 1** Wide machine bed made of cast iron
- 2** Thermo-symmetrical headstock with extremely robust inline spindle  
15,000 rpm in basic machine
- 3** Wide linear guides (Size 35)  
with the highest accuracy in all axes
- 4** Solid tool magazine  
for up to 25 tools
- 5** Efficient chip transportation  
with steep slopes in the machine bed
- 6** Symmetric positioning  
4 position elements

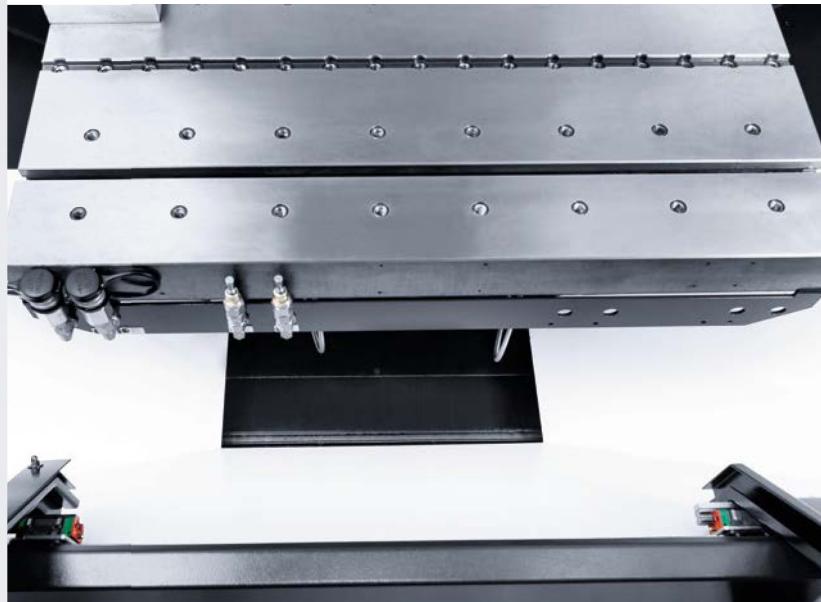




## MORE EFFICIENT TOOL CHANGER

Robust tool magazine with highly dynamic tool changer  
(chip-to-chip time of 1.5 seconds)

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## BEST CHIP FLOW

Steep covers in the working area  
for excellent chip flow

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# Highest precision and dynamics

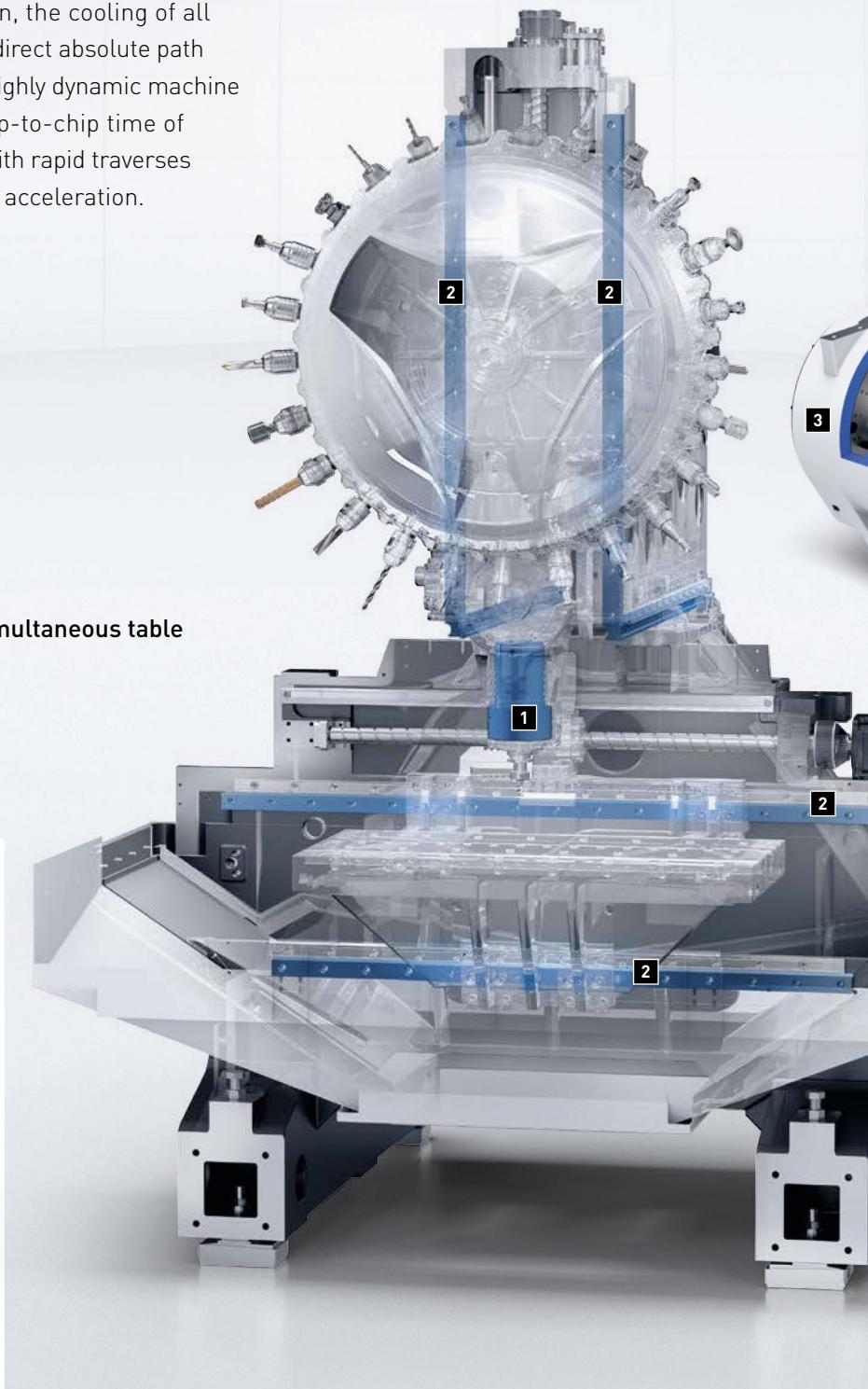
The DMP-Series achieves excellent accuracy and precision, thanks to the stable machine design, the cooling of all relevant components as well as the direct absolute path measuring systems. Moreover, the highly dynamic machine concept offers short idle times (chip-to-chip time of 1.5 seconds) and highest dynamics with rapid traverses of 60 m/min in all axes and up to 2g acceleration.

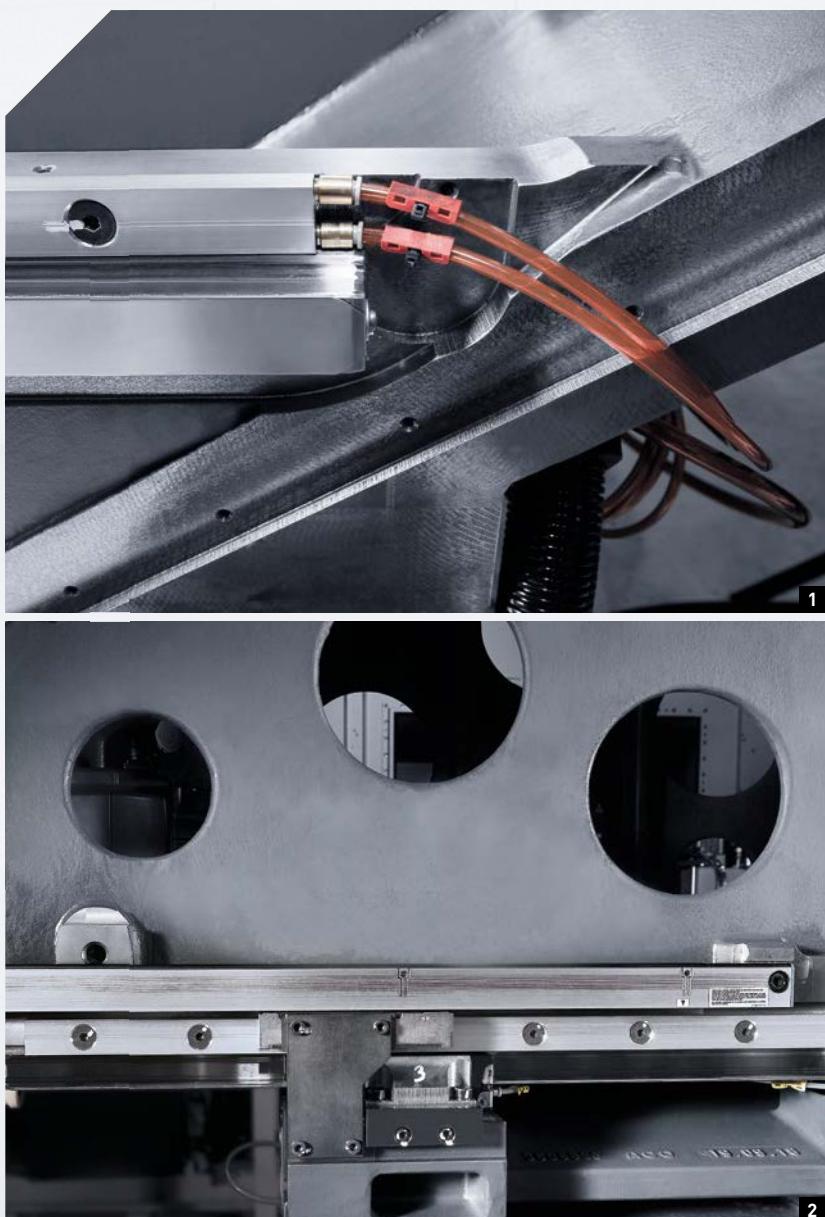
## COOLING MEASURES

- 1 Milling spindle**  
Cooling of motor and spindle flange
- 2 Cooling of linear guides**  
in the X/Y/Zaxes
- 3 Jacket cooling of the 5-axis simultaneous table**  
Cooling of direct drives

## HIGHLIGHTS FOR HIGHEST PRECISION AND ACCURACY

- + Highest rigidity and stability due to a single piece machine bed made of cast iron
- + Cooling of the motor spindle and the linear guides
- + Direct absolute path measuring systems in all axes





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**1.** Cooling of the linear guides in the X-axis

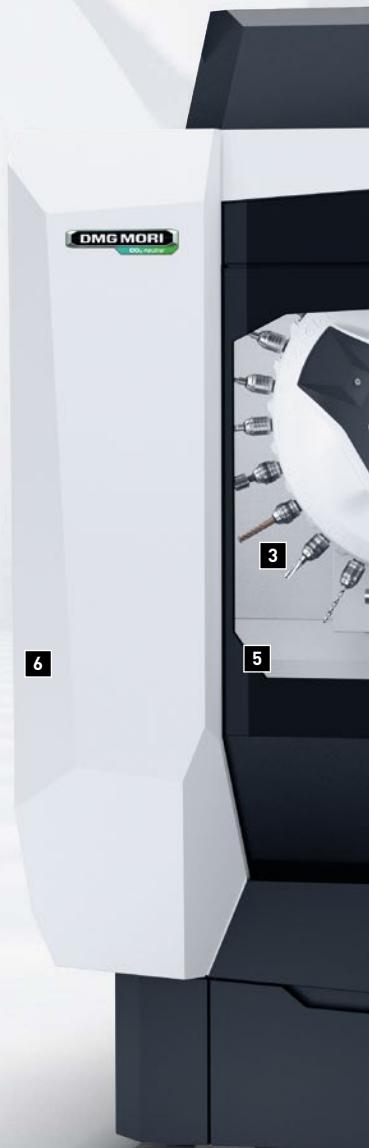
**2.** Rapid traverses with 60 m/min and direct absolute path measuring systems in all axes for highest accuracy

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# Optimal machine design for production processes

The outstanding design of the DMP-Series will convince you with its innovative features such as the inner machine doors and the highly dynamic tool magazine with easy loading from the front. Moreover, the machines are equipped with the new 19" DMG MORI SLIMline multi-touch panel. These features ensure maximum ergonomics and user-friendliness. With a footprint of just 3.2m<sup>2</sup>, the DMP 35 is also one of the most compact machines in the market. For this reason and also due to the option of central maintenance access at the rear side of the machine, production spaces can be optimally utilized. To sum up, the DMP-Series fulfills all the criteria that make it a tool machine ideally suited for production.

- 1 DMG MORI SLIMline multi-touch panel**  
for the highest machine efficiency and reliability
- 2 Inner machine doors**  
ensure smaller footprints and completely avoid any chips falling outside of the working area
- 3 Optimal view into the working area**  
large windows for the best view in the working area
- 4 Optimal access as well as simple loading of the tool magazine**
- 5 Ergonomic machine loading**  
large door opening with optimal access to the working area
- 6 Long-life surfaces**





## PERFECT 3D MULTI-TOUCH CONTROL TECHNOLOGY

- + **19" DMG MORI SLIMline**  
Multi-touch panel with SIEMENS

DMP-SERIES

# Best-possible automation capacity

The DMP 70 offers ideal conditions for connecting automation systems. The machine can be directly loaded from the left side, the right side and also from the front.\* The machine also convinces here with its minimal footprint. This makes the machines of the DMP-Series perfect for series production in the 3-axis, 4-axis and 5-axis sector.

**1**  
**OPTION**  
DOOR OPENING  
FROM THE LEFT

**2**  
**OPTION**  
DOOR OPENING  
AT THE FRONT\*

**3**  
**OPTION**  
DOOR OPENING  
FROM THE RIGHT



\*Automatic front door only for DMP 70

\*\*DMP 35: only from the right (left automation door on request)

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## OPTIONAL WH 3 Cell



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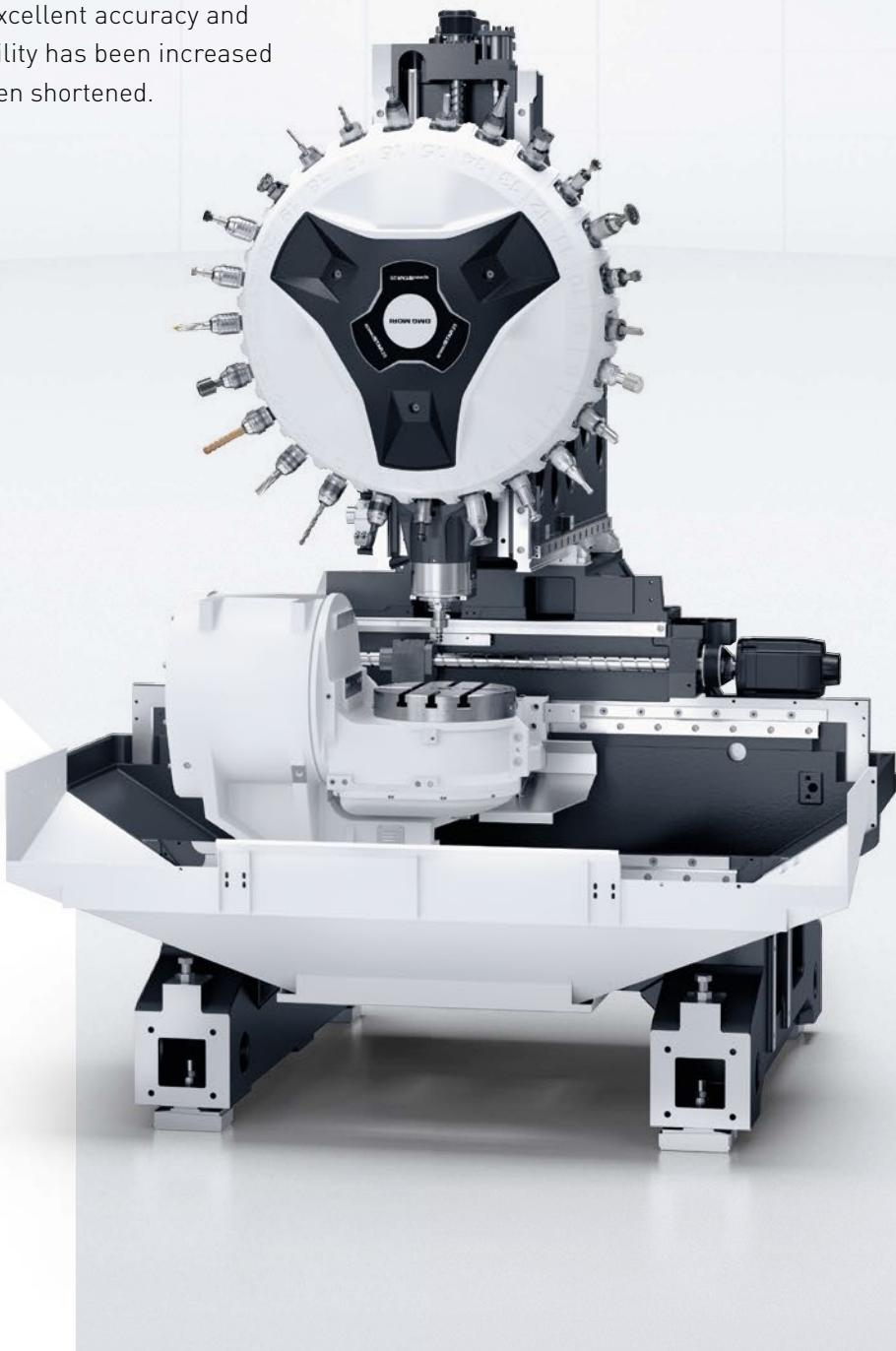
### HIGHLIGHTS

- + **Highest flexibility** thanks to the connection options from the left, right and from the front of the machine\*\*
- + **Horizontally moveable automation door**
- + **Optionally automatable front door** with enclosed pneumatic cylinder at the top (only for DMP 70)
- + **Compact automation solution** with the standard automation system WH 3 Cell

DMP-SERIES

# Efficient 5-axis complete machining

By means of the integrated swivel rotary table with a swivel range of  $-100^\circ$  to  $+120^\circ$  (A-axis), the DMP-Series offers the possibility of machining workpieces of up to 100 kg completely in one single setup. At the same time, the machine features excellent accuracy and dynamics, whereby the flexibility has been increased and machining times have been shortened.



## ADVANTAGES OF 5-AXIS MACHINING

- + Machining of complex components in one single setup with highest accuracy
- + High dynamics and flexibility for short machining times and more efficiency
- + Optimal possibilities for automation connection for all axes variations



## **INTEGRATED SWIVEL ROTARY TABLE FOR 5-AXIS SIMULTANEOUS MACHINING**

- + Max. table load: 100 kg
- + Clamping area with T-slots ø 290 mm
- + Swivel range from -100° to +120° (A-axis)
- + Table optimized for a large range of standard clamping devices

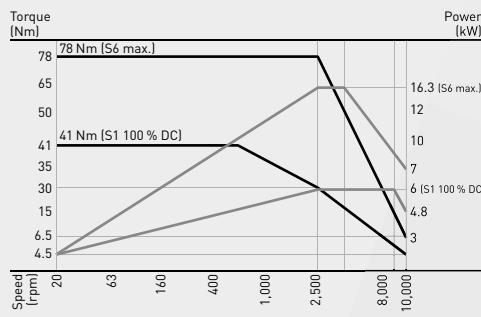


DMP-SERIES

# Comprehensive spindle range for maximum productivity

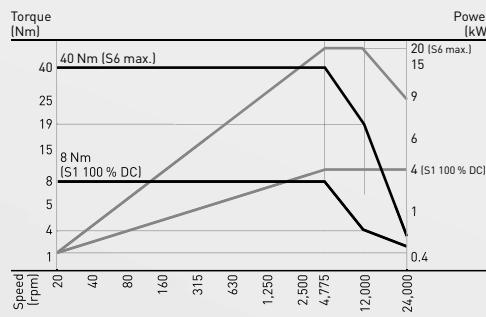
**Inline spindle (standard)**

15,000 rpm / 16.3 kW / 78 Nm (S6 max.)



**Inline spindle (optional)**

24,000 rpm / 20 kW / 40 Nm (S6 max.)



Extremely high load-bearing capacity, resistance to wear resistance and temperature stability



**Inline spindle**

**Inline spindle**

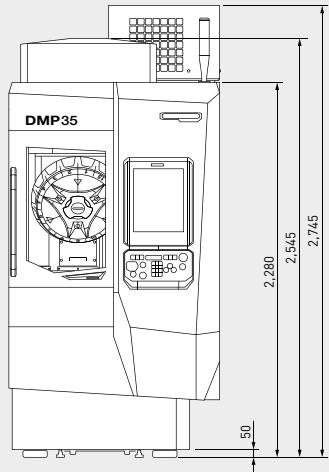
Main drive	Standard	Option
Speed range	15,000 rpm	24,000 rpm
Drive power (40/100 % DC)	8.5/6.0 kW	6.0/4.0 kW
Torque (40/100 % DC)	48/41 Nm	12/8 Nm

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## Minimal footprint of only 3.2 m<sup>2</sup> (4.2 m<sup>2</sup>\*)

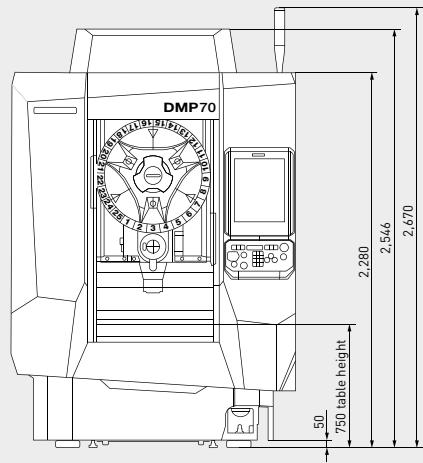
**DMP 35**

**Front view**

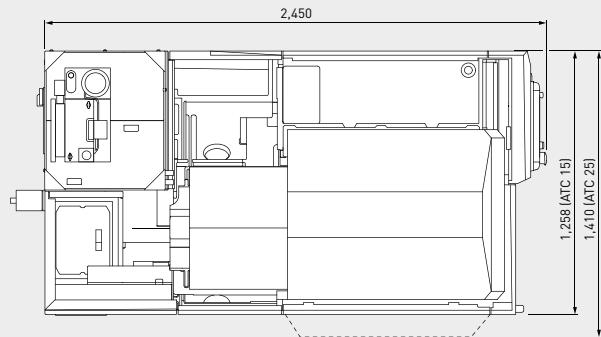


**DMP 70**

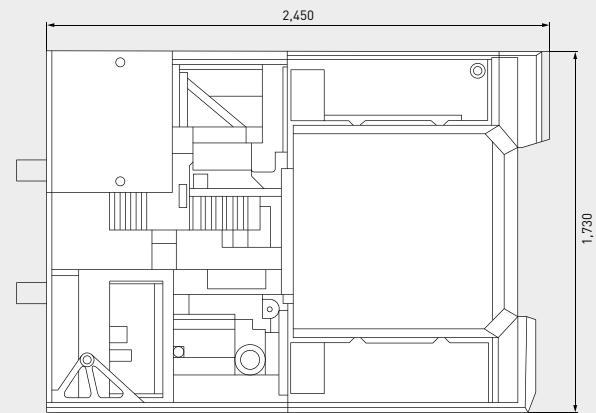
**Front view**



**Top view**



**Top view**



DMP-SERIES

# DMG MORI SLIMline multi-touch panel for maximum efficiency and reliability

The new DMG MORI SLIMline multi-touch panel with Operate 4.8 on SIEMENS and the 3D control technology are a decisive innovation step towards a modern operator interface, whereby the compatibility to earlier operating versions remains intact. The practical and ergonomic 19" multi-touch screen with its high resolution offers advantages to the user.

Thanks to the 3D technology, it is possible to simulate the machining process beforehand. Moreover, the control offers generous extended storage capacity with 6 GB and an additional 8 GB storage space on the DMG MORI SMARTkey.

## INTUITIVE OPERATION FOR FAST AND SIMPLE USE



**Tap with a finger**

Selection of window/object



**Tap and hold**

Open window/object



**Pinch closed**

Zoom out on a graphic e.g. simulation, viewing a mold



**Tapping with two fingers**

Context menu, e.g. copying/inserting



**Swiping**

For a list/scrolling through files, e.g. programs or tools/NC programs



**Pinch open**

Zoom in a graphic e.g. simulation, viewing a mold



## MORE EFFECTIVE OPERATION

- + **Fast and convenient "zoom" function**
- + **Fast and easy access** to parameters and user data
- + **Extended storage capacity of 6 GB**
- + **Program selection:**  
Extension to local drive/USB/network
- + **Multi-tasking processing:** Extension of the drilling cycle/through-drilling; program navigation with new deep-hole boring technology
- + **Execution from external storage:**  
Display and storage of additional file formats such as HTML/PDF/JPEG/DXF also on the NC control
- + **Extended simulation:**  
Workpiece definition through clamps; simultaneous recording
- + **DMG MORI SMARTkey:**  
Personalized authorization and additional USB storage (8 GB)

## MORE USER COMFORT

- + **Better overview due to 19"-screen:**  
higher resolution and innovative, intuitive and easy-to-use operating convenience with unique functionality
- + **3D control technology:**  
Simulation of workpiece and machining via touch operation
- + **Flexible screen keyboard**  
integrated into multi-touch screen
- + **Effective and secure machining**  
with content access keys on the operating field
- + **Optimized ergonomics and design and simplified processes**
- + **Reliable touch control** with the proven operator interface SINUMERIK Operate
- + **Optimization of the elements**  
on the screen
- + **Reliable and scratch-proof operating surface**

## DMP-SERIES

# Operate 4.8 on SIEMENS 840D solutionline – simple and efficient programming

Intelligent control of the machine is necessary to guarantee maximum process efficiency, the highest accuracy for the component and optimal user-friendliness. The modular universal control Operate 4.8 from the SIEMENS 840D solutionline is a highly dynamic control concept, which corresponds precisely to the requirements placed on an intelligent control system.



## SLIMline MULTI-TOUCH PANEL

The new DMG MORI SLIMline multi-touch panel offers a high degree of user-friendliness combined with efficient handling. Moreover, several software solutions, such as the DMG MORI Virtual Machine and the DMG MORI process chain, increase the quality of the workpiece and productivity.

## EXCLUSIVE, OPTIONALLY AVAILABLE DMG MORI TECHNOLOGY CYCLES



### 3D QUICKSET

#### Achieving the highest level of accuracy quickly and easily

- + Toolkit for checking and correcting the kinematic accuracy of 4 and 5-axis machine configurations
- + All head variants and each table axis



### ATC – APPLICATION TUNING CYCLE

#### Process optimization at the touch of a button

- + Process-oriented tuning of the feed-drives
- + Minimization of machining time while maximizing the relevant component quality, even when dependent on workpiece weight



### INTERPOLATION TURNING

#### Manufacturing sealing surfaces and cut depths without the FD table

- + Machining takes place in circular movements around or within the workpiece
- + The spindle aligns itself at right angles to the direction of travel

## DMP-SERIES

# Technical data

		DMP 35	DMP 70
<b>Working area</b>			
Travel X/Y/Z	mm	350/420/380	700/420/380
Distance between spindle nose and table	mm	200 – 580	200 – 580
<b>Main drive (standard)</b>			
Speed range	rpm	15,000	15,000
Drive power (40/100 % DC)	kW	8.5/6.0	8.5/6.0
Torque (40/100 % DC)	Nm	48/41	48/41
Tool holder DIN 69871/DIN 69893		BT 30/BBT30*/SK30*/SK30 BIG+*	BT 30/BBT30*/SK30*/SK30 BIG+*
<b>Main drive (optional)</b>			
Speed range	rpm	24,000	24,000
Drive power (40/100 % DC)	kW	6/4	6/4
Torque (40/100 % DC)	Nm	12/8	12/8
Tool holder DIN 69871/DIN 69893		BT 30/BBT30*/SK30*/SK30 BIG+*	BT 30/BBT30*/SK30*/SK30 BIG+*
<b>Feed</b>			
Feed force	kN	5	5
Rapid traverse	m/min	60	60
Acceleration (X/Y/Z)	m/s <sup>2</sup>	10/10/18	10/10/18
<b>Accuracy values</b>			
Positioning accuracy (P <sub>max</sub> ) according to ISO 230	µm	5	5
Accuracy of bidirectional axes (A) according to ISO 230	µm	4	4
Repeatability of bidirectional axes (R) according to ISO 230	µm	3.5	3.5
<b>Tool magazine</b>			
Selection of the tools (BT 30/BBT30/SK30/SK30 BIG+/HSK-A40)		15 (25*)	25 (15*)
Max. tool diameter	mm	80	80
Max. tool length	mm	150	250
Chip-to chip time (15 tools/25 tools)	seconds	1.5/1.6	1.5/1.6
<b>Fixed table</b>			
Clamping area	mm	740 × 420	840 × 420
Table load	kg	400	400
<b>NC swiveling rotary table</b>			
Clamping area	mm	Ø 290	Ø 290
Table load	kg	100	100
Swivel range A-axis	Degree	+120 / -100	+120 / -100
Rotation range C-axis	Degree	360	360
Speed A-/C-axis	rpm	50/100	50/100
<b>Dimensions</b>			
Footprint	mm	1,285 × 2,450 (ATC 15) 1,410 × 2,450 (ATC 25)	1,730 × 2,450
Height	mm	2,745	2,670
<b>Control</b>			
19" DMG MORI SLIMline multi-touch panel with SIEMENS 840D solutionline			

\* option



Available for you around the clock:

[service-hotline.dmgmori.com](http://service-hotline.dmgmori.com)



## DMG MORI Service – fast and reliable!

"Our service commitment will meet your expectations with the highest quality of service!"

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



**Spare Parts:** 96% global availability



**Spindle Service** with Fair Price Guarantee



**Training:** Professional training at highest standards



**Service Products:** Our protective shield for your DMG MORI machine

For further information please contact your local DMG MORI office.

**DMG MORI**