

# DMG MORI

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DMC 650 V

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DMC 850 V

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DMC 1150 V

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DMC 1450 V

VERTICAL MACHINING CENTRES

## DMC V series



DMC V SERIES

## A new dimension in powerful vertical-spindle machining.

With the DMC 650 V, DMC 850 V, DMC 1150 V and DMC 1450 V, the successful vertical machining centre range from DECKEL MAHO has been comprehensively improved and extended in size to meet the 3-axis milling challenges of tomorrow. The foundation of these performance enhancements is the stable, mineral cast machine bed.

Compared to the previous machines, the rigid table not only features a larger clamping area, but it also accepts a higher maximum load. Now the machine can accommodate workpieces weighing up to 2,000 kg (DMC 1450 V). With 42 m/min rapid traverse, the DMC V Series is also 40 % faster.



**CELOS**

From the idea to the finished product.

### LARGE WORKING AREA

+ with a rigid table for workpieces weighing up to 2,000 kg.





DMC V SERIES

# 3<sup>rd</sup> generation DMC V with a new machine concept.

From the 20,000 rpm speedMASTER spindle with 130 Nm up to the SK50 or HSK-A100 version with 303 Nm – solutions can be provided for both precision and heavy-duty machining.

The tool magazine boasts short chip-to-chip times down to 5.4 seconds and can hold up to 20 tools in its basic configuration. The unrivalled ergonomics of the new DMC V series makes loading and unloading workpieces easy.

## HIGHLIGHTS

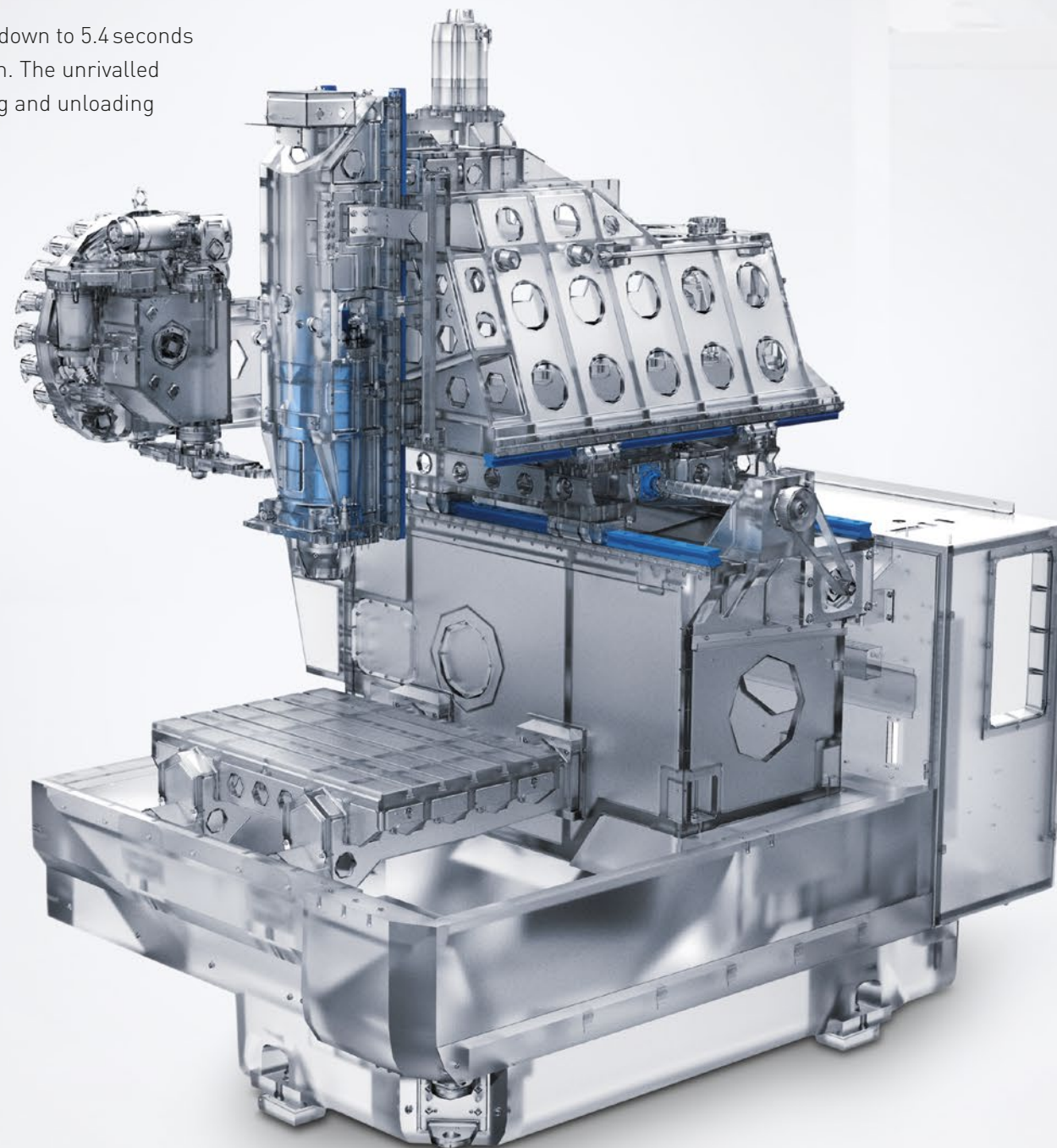
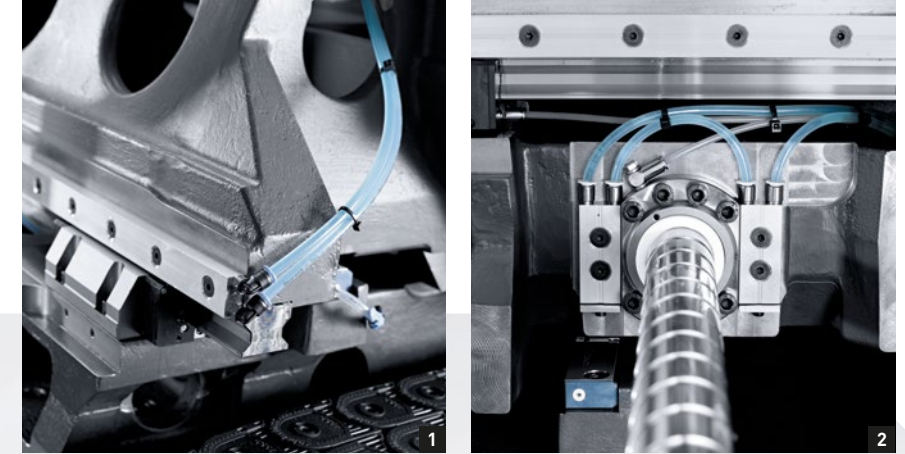
- + Powerful equipment as standard speedMASTER spindle: 20,000 rpm/130 Nm, 42 m/min rapid traverse rate
- + SK50 spindle rated at 303 Nm\*
- + Tool magazine with up to 120 pockets\*
- + Workpiece weight up to 2,000 kg
- + 30% higher precision thanks to cooled drives and guideways
- + Experience from more than 10,000 vertical machining centres supplied

\*Optional

### INNOVATIVE COOLING CONCEPT

Cooled main spindle, guideways and ball screw nuts for maximum precision

- 1+2: Cooling for effective heat dissipation and guaranteed accuracy
- 3: Laser tool measurement – extendable and retractable
- 4: Tool magazine with up to 120 pockets
- 5: CELOS – from the idea to the finished product; 21.5" multi-touch display



### OPTIMAL USER CONVENIENCE: ERGOline CONTROL PANEL AND HIGH-TECH CONTROL TECHNOLOGY

The DMC V series: available with 21.5" ERGOline with CELOS and SIEMENS 840 D solutionline Operate as well as 19" ERGOline with HEIDENHAIN TNC 640.



## DMC V SERIES

## Exclusive DMG MORI Tech- nology Cycles

Complex machining operations are completed with ease thanks to conversational programming instead of classical DIN programming!



More information about technology cycles at:  
[techcycles.dmgmori.com](http://techcycles.dmgmori.com)



### HIGHLIGHTS

- + Up to 60% faster
- + New applications
- + Visualized, interactive and user friendly



### SIEMENS 840D SL OPERATE

- + Highly simplified interactive programming with identical "look and feel" for turning and milling
- + SINUMERIK Operate new user interface
- + ATC\*, 3D quickSET\*
- + Powerful 32-bit multiprocessor system and controller, 1GB RAM
- + Fast block processing time of approx. 0.6ms
- + Look-ahead function for up to 150 NC blocks (capable of parameterisation)
- + Graphical simulation of the machining process with overhead view, triple-plane display and 3D display; synchronised display during the machining process
- + 3D machining, optional 3D tool correction via the surface normal vector
- + DECKEL MAHO Package MDynamics, optional optimisation of surface finish and speed for smoothing surface transitions

\* Option



### HEIDENHAIN TNC 640

- + Unique, highly detailed 3D simulation display
- + New optimised TNC user interface
- + HSCI – HEIDENHAIN Serial Controller Interface
- + Conversational or ISO programming
- + Rapid program generation with plain text programming
- + Graphical programming
- + Collision monitoring (DCM)
- + ATC\*, 3D quickSET\*
- + Powerful dual-core processor (Intel i7-3)
- + New optimised ADP (Advanced Dynamic Prediction) movement guide for improved surfaces and quicker machining (block processing time of just 0.5ms)
- + Dynamic look-ahead function with no path restrictions
- + Adaptive AFC feed controller as standard
- + Dynamic Efficiency with adaptive feed control AFC and trochoidal milling as standard (Active Chatter Control ACC optional)

\* Option

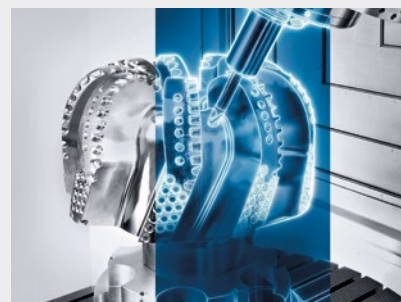


### MPC – MACHINE PROTECTION CONTROL

Protecting machines with an emergency shut-off function

- + NEW: Cutting force monitoring for drilling and tapping
- + Vibration sensors on the milling spindle
- + Emergency shut-off with teach function
- + Process monitoring by means of a bar graph
- + Milling spindle bearing diagnostics

**MPC** Machine Protection Control



### ATC – APPLICATION TUNING CYCLE

Process-oriented tuning of feed rate (Vf)

- + **Minimised processing time** with maximised component quality, also depends on the workpiece weight



### INTERPOLATION TURNING

Process optimisation at the touch of a button

**With interpolation turning,** the tool follows a circular movement, whereby the cutter is always orientated towards the centre of the circle

**Easy creation of simple sealing surfaces** and recesses on milling and turning machines

**May be used for external or internal machining**

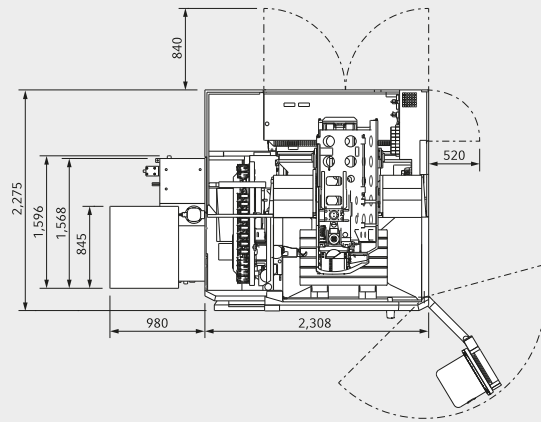
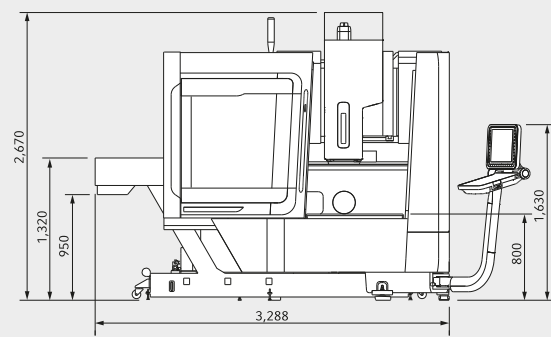
DMC V SERIES

# Floor Plans

## Floor plans DMC 650 V

Front view

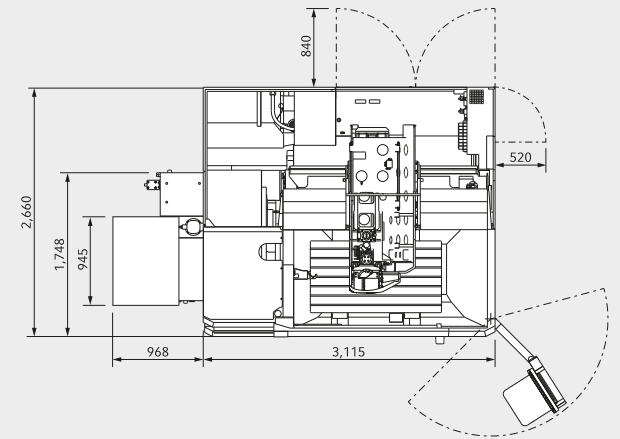
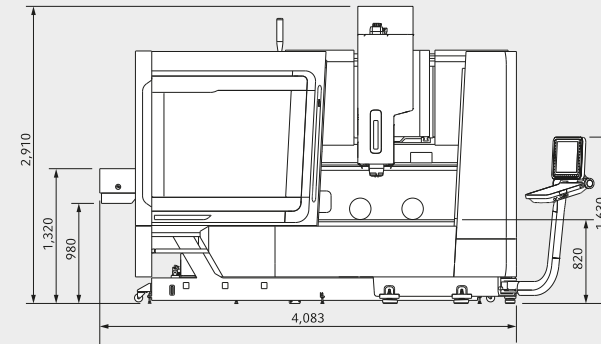
Plan view



## Floor plans DMC 1150 V

Front view

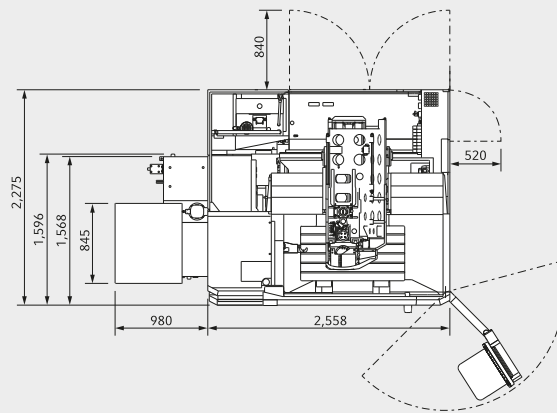
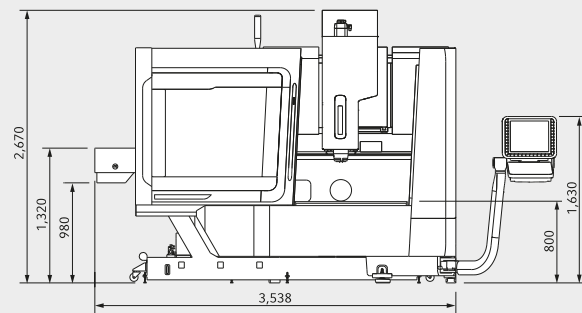
Plan view



## Floor plans DMC 850 V

Front view

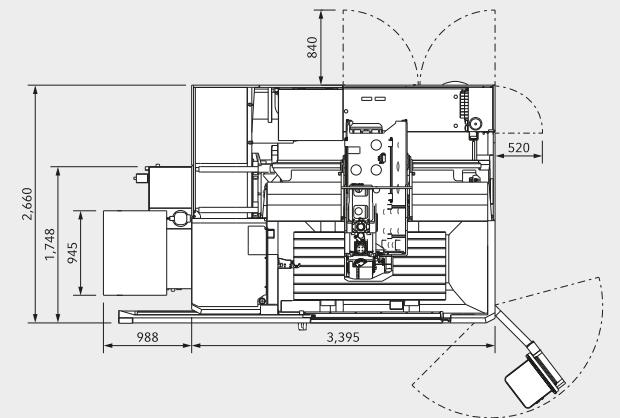
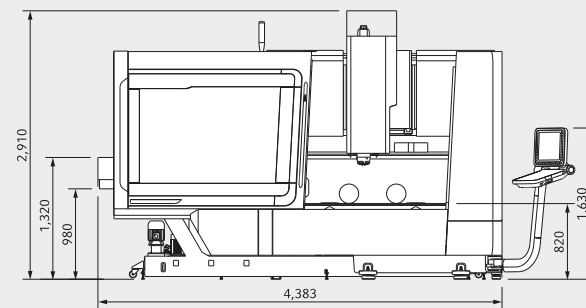
Plan view



## Floor plans DMC 1450 V

Front view

Plan view



## DMC V SERIES

## Technical Data

		DMC 650 V	DMC 850 V	DMC 1150 V	DMC 1450 V
<b>Working area</b>					
X-axis	mm	650	850	1,150	1,450
Y-axis	mm	520	520	700	700
Z-axis	mm	475	475	550	550
<b>Feed</b>					
Feed force	kN	6.5	6.5	6.5	6.5
Feed rate	mm/min	42,000	42,000	42,000	42,000
Rapid traverse	m/min	42	42	42	42
Acceleration	m/s <sup>2</sup>	5	5	5	5
<b>Positioning accuracy</b>					
P <sub>max</sub> according to VDI/GQ 3441	µm	6	6	6	6
<b>Tool magazine</b>					
Number of tools [SK40, HSK-A63]		20/30*/60*/120*	20/30*/60*/120*	20/30*/60*/120*	20/30*/60*/120*
Number of tools [SK50, HSK-A100]		20/40**	20/40**	20/40**	20/40**
Maximum tool diameter	mm	80/100**	80/100**	80/100**	80/100**
Max. tool diameter with vacant adjacent pockets	mm	130/160**	130/160**	130/160**	130/160**
Maximum tool length	mm	300/360**	300/360**	300/360**	300/360**
Chip-to-chip time [SK40, HSK-A63, 20/30 pockets]	sec.	5.4	5.7	6.7	7.5
<b>Table configuration</b>					
Clamping area	mm	960×570	1,160×570	1,460×750	1,760×750
Loading height (upper table edge)	mm	800	800	820	820
Table load	kg	800	1,000	1,500	2,000

**Controls**

DMG MORI ERGOline Control with 19" monitor	HEIDENHAIN TNC640
DMG MORI ERGOline Control with 21.5" monitor	CELOS with SIEMENS 840D solutionline Operate

Optional \*\*Optional for SK50/HSK-A100

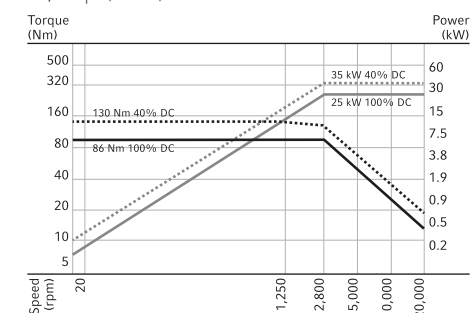
## DMC V SERIES

## Spindle Options

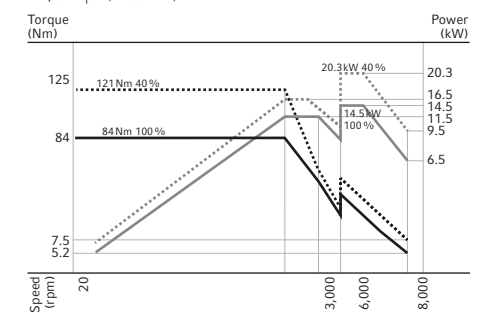
		DMC 650 V	DMC 850 V	DMC 1150 V	DMC 1450 V
<b>Spindle (standard)</b>					
Max. speed range	rpm	20,000	20,000	20,000	20,000
Drive power (40/100% DC)	kW	35/25	35/25	35/25	35/25
Torque (40/100% DC)	Nm	130/86	130/86	130/86	130/86
DIN 69871/DIN 69893 tool carrier		SK40/HSK-A63	SK40/HSK-A63	SK40/HSK-A63	SK40/HSK-A63
<b>Spindle (optional)</b>					
Max. speed range	rpm	12,000	12,000	12,000	12,000
Drive power (40/100% DC)	kW	20.3/14.5	20.3/14.5	20.3/14.5	20.3/14.5
Torque (40/100% DC)	Nm	121/84	121/84	121/84	121/84
DIN 69871/DIN 69893 tool carrier		SK40/HSK-A63	SK40/HSK-A63	SK40/HSK-A63	SK40/HSK-A63
<b>Spindle (optional)</b>					
Max. speed range	rpm	15,000	15,000	15,000	15,000
Drive power (40/100% DC)	kW	46/30	46/30	46/30	46/30
Torque (40/100% DC)	Nm	200/130	200/130	200/130	200/130
DIN 69871/DIN 69893 tool carrier		SK40/HSK-A63	SK40/HSK-A63	SK40/HSK-A63	SK40/HSK-A63
<b>Spindle (optional)</b>					
Max. speed range	rpm	10,000	10,000	10,000	10,000
Drive power (40/100% DC)	kW	44/32	44/32	44/32	44/32
Torque (40/100% DC)	Nm	303/190	303/190	303/190	303/190
DIN 69871/DIN 69893 tool carrier		SK50/HSK-A100	SK50/HSK-A100	SK50/HSK-A100	SK50/HSK-A100

**Motor spindle SK40/HSK-A63**

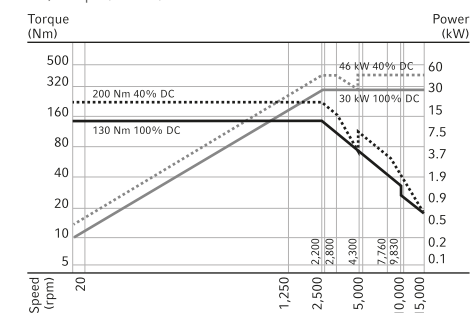
20,000 rpm / 35 kW / 130 Nm

**Inline spindle SK40/HSK-A63**

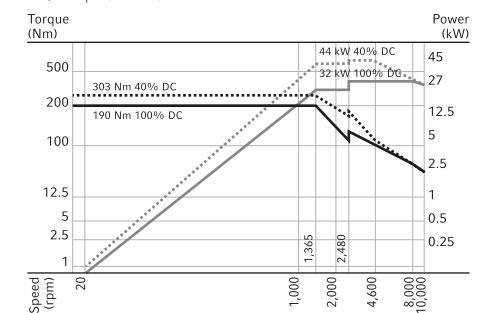
12,000 rpm / 20.3 kW / 121 Nm

**Motor spindle SK40/HSK-A63**

15,000 rpm / 46 kW / 200 Nm

**Motor spindle SK50/HSK-A100**

10,000 rpm / 44 kW / 303 Nm





# DMG MORI Service – fast and reliable!

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

Available for you around the clock:

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

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.