

# DMG MORI

CNC UNIVERSAL MILLING MACHINE

## DMU 50

DMU 50



DMGMORI.COM

DMU 50

## Compact universal milling machine for 5-axis simultaneous machining.

The DMU 50 signals the beginning of a new era for workshops, training and laboratories as well as tool, jig and mould making. This CNC universal milling machine is characterised by innovative machine construction technology. Highlights such as digital drives in all axes, rapid traverse of up to 30 m/min | 1,181 ipm, acceleration 5 m/s<sup>2</sup> | 0,5g and spindle speeds of up to 18,000 rpm increase the dynamics of the DMU 50.

In addition to the standard fixed table, a swivelling rotary table for 5-axis simultaneous machining is also available, which brings another two machining axes into play. The modern cross-slide design with its inherently stable, ribbed cast-iron frame provides the basis for noticeably more precision.

State-of-the-art control technology with an ERGOline® control with a 21.5"-multi-touch screen and CELOS® guarantees maximum user-friendliness, precision and reliability. With its DMU 50 DMG MORI offers the ideal, cost-effective entry into the world of 5-sided to 5-axis simultaneous machining.



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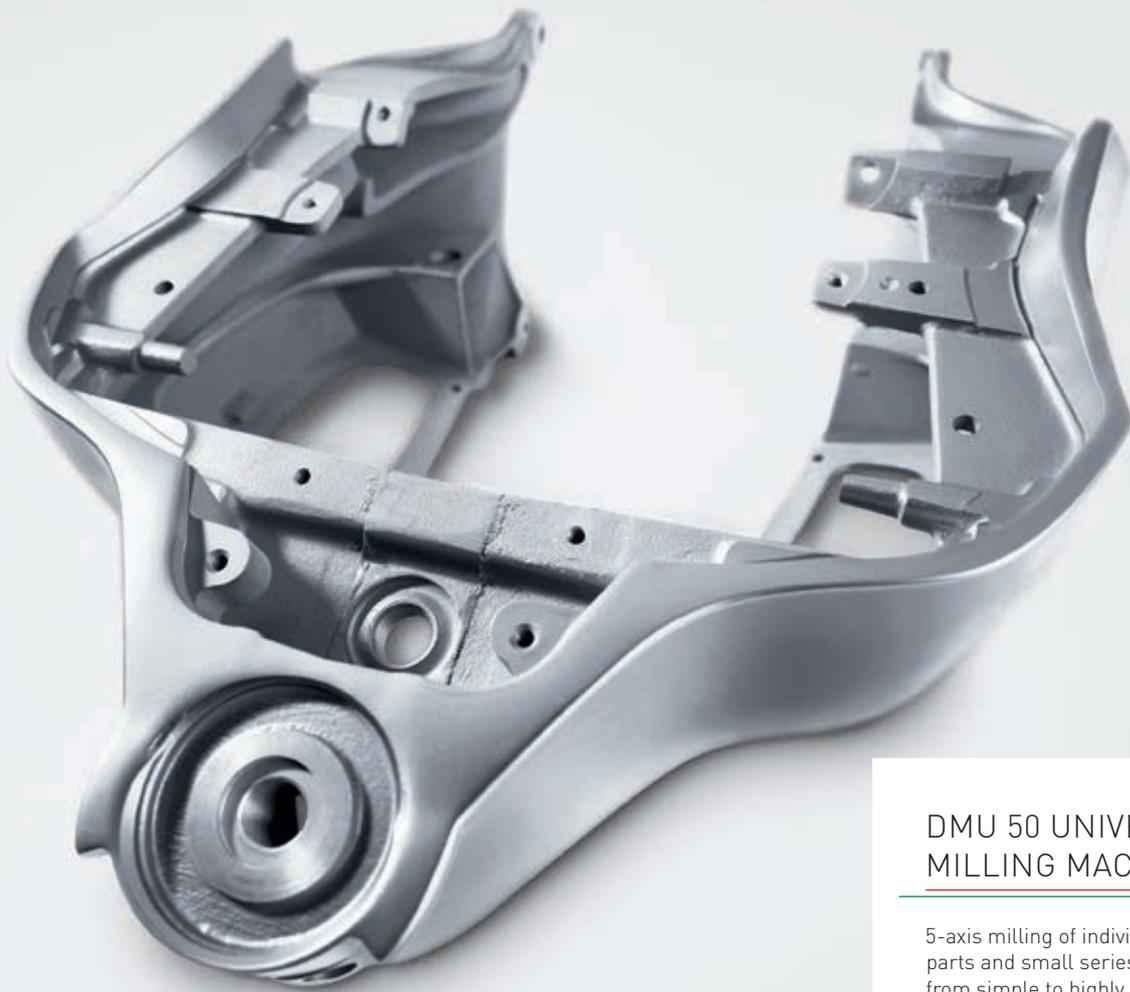


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6

3: Valve block / mechanical engineering 4: Pump housing / fluid technology 5: Aluminium housing / lighting 6: Toothed gear / automotive industry



## DMU 50 UNIVERSAL MILLING MACHINES

5-axis milling of individual parts and small series ranging from simple to highly complex.

### WORKPIECE

Motorcycle frame components.



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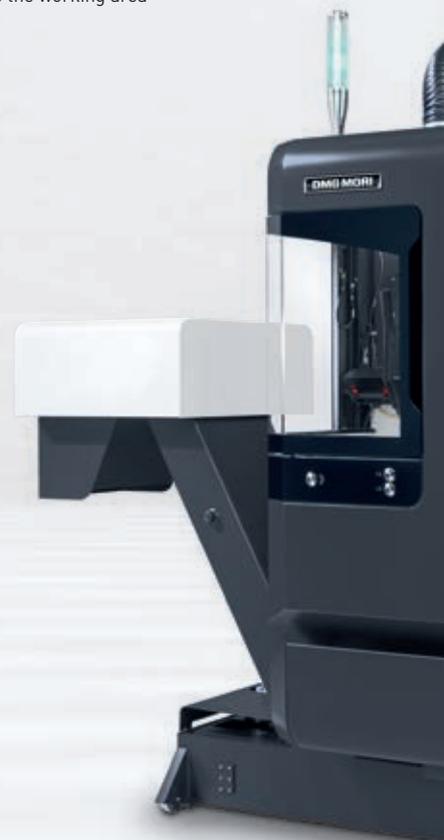


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1: Flexible machining from three to five axes 2: Unobstructed view into the working area with optional tool magazine 3: Simultaneous table

## DMU 50

The universal compact machines with the new design – high-tech components, outstanding milling performance and the latest control technology with CELOS® from DMG MORI at an unbeatable price!



DMU 50

## CELOS<sup>®</sup>, digital drives and speeds up to 18,000 rpm.

The machine concept of the DMU 50 is ideal for machining individual parts and even small series. In addition to the digital drives supplied as standard, spindle speeds of 14,000 rpm and 18,000 rpm are available. The machine is made even more flexible by the tool change system with 16, 30 or 60 magazine pockets.

The new machine design with improved functionality, maximised user-friendliness, value retention and ERGOLine<sup>®</sup> Control with a 21.5" multi-touch monitor and CELOS<sup>®</sup> improves ergonomics and emphasises the universality of these compact machines.



DMU 50

## The latest technology with a compact footprint – from three to five axes.

The swivelling rotary table opens up new options for the manufacturing of complex workpieces in up to two set-ups. Expensive fixtures can be dispensed which saves money and dramatically increases the precision of the parts. The large swivel range of up to 115° (-5° / +110°) makes it possible to produce undercuts up to 20°. Guideways, drives, measurement systems and tools are safely located outside the working area.



### DMU 50 WITH CROSS- SLIDE DESIGN

In combination with the mineral cast machine bed, the cross-slide design with inherently stable ribbed cast iron components provides maximum stability for unrivalled precision and surface quality.



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**1 Maximum flexibility**

Various table options, from a rigid table to a swivelling rotary table for 5-axis simultaneous machining

**2 Heavy workpieces**

and maximum precision with the integrated swivelling rotary table with large bearing diameters in both rotary axes

**3 Optimal use of available space**

Outstanding accessibility of the working area, unobstructed chip flow and steep walls, large working area in spite of small machine dimensions

**4 Tool magazine loading during machining \***

Tool magazine with 16, 30 or 60 tool pockets

**5 Digital drives and linear scales \***

for maximum precision and surface quality

**6 Powerful motor spindle**

rated at up to 18,000 rpm\*, 130 Nm | 95.9 ft-lbs and 35 kW | 46.9 hp (at 40% DC)

**7 Maximum precision**

Digital drives, mineral cast machine bed, integrated swivelling rotary table\*, and advanced, widely spaced roller guideways

\* Optional

**1:** Digital drives, linear guideways and linear scales (optional) for maximum precision

**2:** Fixed table

**3:** Swivelling rotary table for 5-axis simultaneous machining

DMU 50

## The best options for every application.

The high-performance, reliable, optional tool changers of the DMU 50, with 16 positions in a pick-up tool magazine or 30 or 60 magazine positions with a rapid double gripper, make it possible to load tools during machining. This, combined with short chip-to-chip times, saves time throughout the production process. Additionally, as the tools are stored outside the working area, they cannot be contaminated by chips.

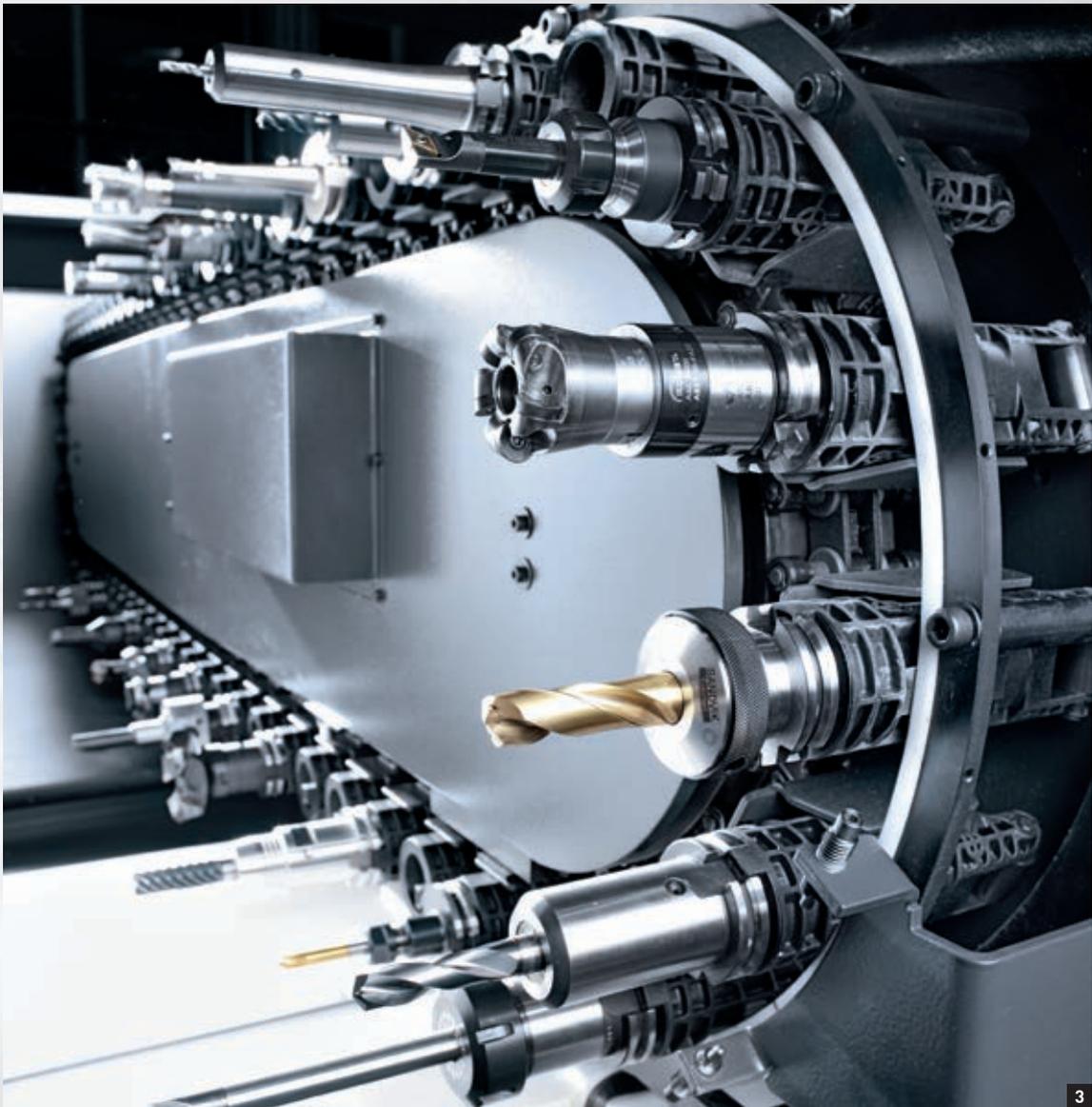
The DMU 50 can be automated for unmanned machining and increased productivity. As the handling system is set up at the side of the machine, the working area remains easily accessible.

08



### DMU 50 WITH AUTOMATION

Pallet Handling for workpieces weighing up to 150 kg | 330.7 lbs.



1: Tool magazine with 16 pockets and pick-up change system 2: Working area with pallet handling  
3: Tool magazine for 30 or 60 pockets with set-up support

## CELOS®

Similar to a smartphone, operators can use the APP MENU to directly access all available applications.

### APP MENU

Like on a smartphone, the operator has direct access to all available applications through the APP MENU.



## ERGOline® CONTROL WITH A 21.5" MULTI-TOUCH-SCREEN AND SIEMENS.

### Simple

User-friendly machine operation for all new high-tech machines from DMG MORI.

### Consistent

Consistent management, documentation and visualisation of order, process and machine data.

### Compatible

Compatible with PPS and ERP systems.  
Can be networked with CAD / CAM products  
Open to trendsetting CELOS® APP extensions.

### SMARTkey®

Personalised user authorisation: Individually adapted access rights for the control system and the machine.

DMU 50

# CELOS® – From the idea to the finished product.

CELOS® features a standard user interface for all new high-tech machines from DMG MORI. CELOS® APPs enable the consistent administration, documentation and visualisation of order, process and machine data. They also simplify, standardise and automate the operation of the machine. 26 standard APPs help the machine operator prepare, optimise and systematically process production jobs.

## CELOS® APPS – 3 EXAMPLES



### JOB MANAGER

**Systematic planning, administration and preparation of orders.**

- + Machine-related creation and configuration of new orders
- + Structured storage of all production-related data and documents
- + Easy visualisation of orders, including NC program, equipment etc.



### JOB ASSISTANT

**Process-defined orders**

- + Menu-guided set-up of the machine and processing of production orders
- + Reliable error prevention thanks to work instructions with mandatory acceptance function



### TOOL HANDLING

**Shorter tool setup times through assessments of the magazine configuration for subsequent orders.**

- + Displays all tools required for a job, including automatic generation of a loading list
- + Generation of an unloading list through automatic detection of all tools not required for subsequent jobs



# High-end CNCs for reliable processes and maximum precision.



## SIEMENS 840D SOLUTIONLINE OPERATE

- + Simplest interactive programming thanks to identical "look & feel" for turning & milling
- + New SINUMERIK Operate user interface
- + ATC\*, 3D quickSET\*\*
- + Powerful 32-BIT multiprocessor system and controller, 1 GB RAM
- + Fast block processing time of approx. 0.6 ms
- + Look-ahead function for up to 150 NC-blocks (capable of parameterisation)
- + Graphic simulation of the machining process with plan view, triple-plane display and 3D display, synchronised display during machining
- + DECKEL MAHO package MDynamics for improved surface quality with faster machining for surface smoothing etc.

\* Option

## HEIDENHAIN iTNC 530

- + Shopfloor or DIN-ISO programming
- + 3D-Simulation
- + Easy editing of large programs
- + Coordinate transformation
- + Tool management with a context-based help system
- + Hardware: Pentium 2-based
- + 19" screen
- + Familiar and proven HEIDENHAIN programming interface
- + Fastest programming
- + Graphical programming support
- + Convenient thanks to comprehensive selection of cycles

# Exclusive, optionally available DMG MORI Technology Cycles.

Complex machining operations are realised with ease thanks to dialogue-assisted programming instead of classical DIN programming!

## Highlights

- + Up to 60% faster
- + Visualised, interactive and user-friendly
- + Machining functions are generated automatically



## 3D quickSET®

**Maximum precision achieved quickly and easily**

- + Tool kit for checking and correcting the kinematic accuracy of 5-axis machine configurations
- + All head variants and table axes

**3D quickSET**

DMU 50

# Technical data

		<b>DMU 50</b>
<b>Working area</b>		
Travel X / Y / Z	mm   in	500 / 450 / 400   19.7 / 17.7 / 15.7
<b>Main drive (standard)</b>		
Speed range	rpm	20 – 14.000
Drive power (100 / 40 % DC)	kW   hp	14,5 / 20,3   19.4 / 27.2
Torque (40 % DC)	Nm   ft-lbs	121   89.2
<b>Main drive (optional)</b>		
Speed range	rpm	20 – 18.000
Drive power (100 / 40 % DC)	kW   hp	25 / 35   33.5 / 46.9
Torque (40 % DC)	Nm   ft-lbs	130   95.9
<b>Feed</b>		
Rapid traverse X / Y / Z	m/min   ipm	30   1,181
Maximum thrust force X / Y / Z	kN   lbf	4,8   1,079
<b>Fixed table</b>		
Clamping area	mm   in	700 × 500   27.6 × 19.7
Maximum load	kg   lbs	500   1,102
<b>Integrated swivelling rotary table*</b>		
Clamping area	mm   in	∅ 630 × 500   ∅ 24.8 × 19.7
Maximum load	kg   lbs	300   661
Swivel range	Degrees	-5 / +110
<b>Optional pick-up tool change system</b>		
Capacity	pockets	16
Tool weight	kg   lbs	6   13.2
Maximum tool length	mm   in	300   11.8
Maximum tool diameter	mm   in	80 / 130   3.1 / 5.1
<b>Optional tool change system with chain and double gripper</b>		
Capacity	pockets	30 / 60
Tool weight	kg   lbs	6   13.2
Maximum tool length	mm   in	300   11.8
Maximum tool diameter	mm   in	80 / 130   3.1 / 5.1
<b>Machine weight / connected values</b>		
Weight	kg   lbs	4.480   9,880
Power	kW   hp	21   28.2
Maximum current rating	A	31
<b>Options</b>		
Swivelling rotary table for 5-axis simultaneous machining; laser tool measurement; chip conveyor; tool magazine with 16 / 30 / 60 pockets; linear scales in X / Y / Z; oil mist filter; air blast / coolant switch; air blast through the spindle centre; spray gun; chip conveyor; internal coolant supply at up to 40 bar   580 psi.		
<b>Control</b>		
ERGOline® Control with a 21.5" multi-touch screen, CELOS® and SIEMENS 840D solutionline		•
ERGOline® Control with a 19.5" screen and HEIDENHAIN iTNC 530		•

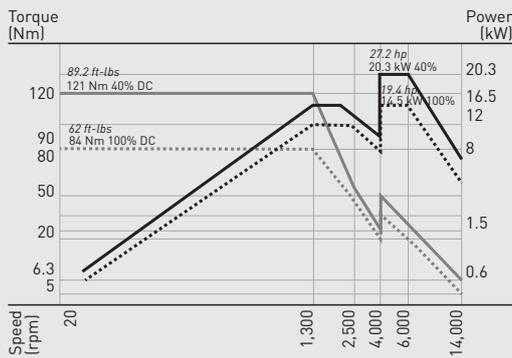
\* Optional

DMU 50

# Performance diagrams

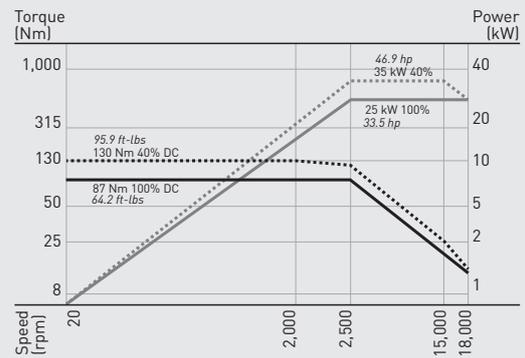
## Inline spindle SK40

14,000 rpm / 20,3 kW / 121 Nm



## Motor spindle SK40/HSK-A63\*

18,000 rpm / 35 kW / 130 Nm

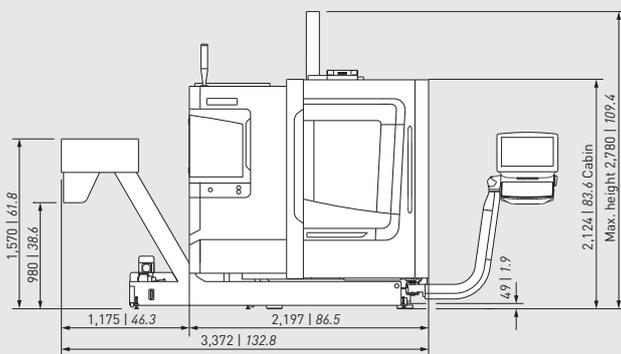


DMU 50

# Floor plans

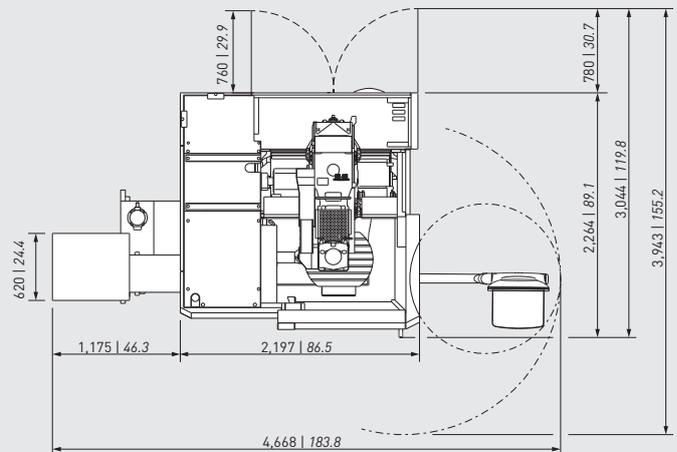
## Front view with 30 tools

(mm | in.)



## Plan view with 30 tools

(mm | in.)





Available for you around the clock:  
[service-hotline.dmgmori.com](http://service-hotline.dmgmori.com)

# Customer First – Our service promise!

“We have good news for you: Our service and spare parts prices have been completely revised. With our service commitments, we want to meet your high demands with the highest service quality.”

**Please contact us – your sales and service team is at your disposal!**

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%\*.



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



**Up to 50% lower service costs.** New Flat Call-Out Rate – without travel expenses or any additional costs!



**Our protective shield for your productivity.** Reduced operating costs, highest machine availability and maximum precision – DMG MORI Service *Plus!*



\* All information and price advantages for Customer First are available at: [customer-first.dmgmori.com](http://customer-first.dmgmori.com)