

CNC universal milling machines

DMU 50

DMU 70

DMU 50/70 series



DMU 50/70 series

Compact universal milling machine for 5-axis simultaneous machining.

The DMU 50/70 are ushering in a new era for workshops, training, laboratories and tool, fixture and mould making. These CNC universal milling machines are characterised by innovative mechanical engineering technology. Highlights such as digital drives in all axes and on the main spindle, rapid traverse up to 30 m/min, acceleration of 5 m/s² and motor spindles rated at up to 18,000 rpm increase the dynamics of the DMU 50 and DMU 70. In addition to the rigid table which is supplied as standard, other table options are available which add two additional machining axes, such as a motorised swivelling rotary table with hydraulic clamping and a simultaneous table. The modern cross-slide design with its inherently stable ribbed cast-iron frame allows for noticeably more precision.

The latest control technology with *ERGOline*[®] Control with a 21.5" multi-touch screen and *CELOS*[®] guarantees maximum user-friendliness, precision and reliability. In the DMU 50/70, DMG MORI is providing the ideal cost-effective entry into the world of 5-sided and even 5-axis simultaneous machining.

**1****2**

1: Hydraulic component / motorport

2: Magazine plate / mechanical engineering



3



4



5



6

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



DMU 50/70 universal milling machines:

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

Workpiece:

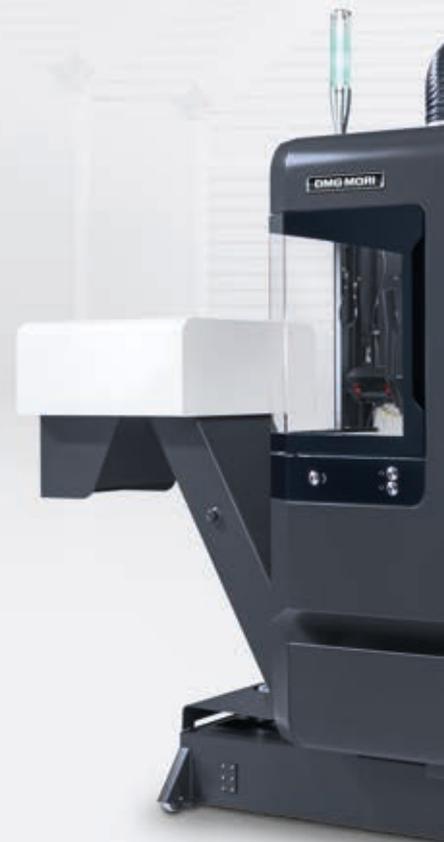
Motorcycle frame components.



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

DMU 50/70 series:

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



DMU 50/70 series

New design, CELOS[®], digital drives and speeds up to 18,000 rpm.

The machine concept of the DMU 50/70 universal milling machines is ideal for machining individual parts and even small series. In addition to the digital drives supplied as standard, speeds of between 10,000 rpm and 18,000 rpm are available. The machine is made even more flexible by the high-performance tool change system with 16, 30 or 60 magazine pockets. The new machine design with improved functionality, maximised user-friendliness, value retention and ERGOline[®] Control with a 21.5" multi-touch monitor and CELOS[®] improves their ergonomics and underlines the universality of these compact machines.



DMU 50/70 series

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

The swivelling rotary table opens up new options in the manufacturing of complex workpieces in up to two set-ups. The lack of expensive equipment 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 outside the working area.

DMU 50/70 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.





1: Digital drives, linear guideways and linear scales (optional) for maximum precision 2: Fixed table
 3: Swivelling rotary table with digital drives 4: Swivelling rotary table for 5-axis simultaneous machining



■ **Maximum flexibility**

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

■ **Heavy workpieces**

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

■ **Optimal use of available space**

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

■ **Tool magazine loading during machining***

Tool magazine with 16, 30 or 60 tool pockets

■ **Digital drives and linear scales***

for maximum precision and surface quality

■ **Powerful motor spindle**

rated at up to 18,000 rpm*, 130 Nm and 35 kW (at 40 % DC)

■ **Maximum precision**

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

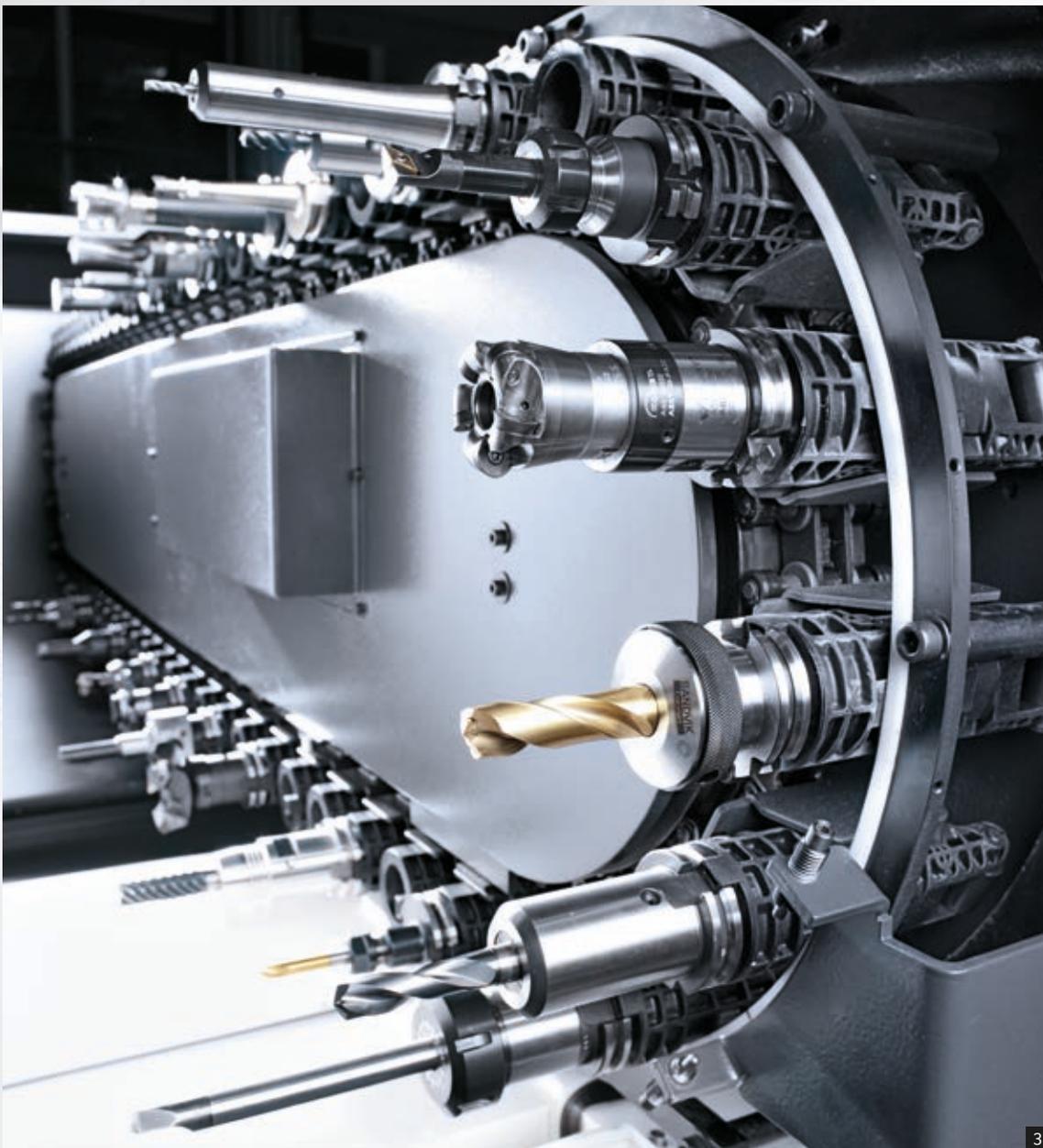
* Optional





Outstanding milling performance

The range of spindles provides excellent milling performance and the highest standards for a wide range of applications.



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

DMU 50/70 series

The best options for every application.

The high-performance, reliable, optional tool change systems of the DMU 50/70, 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 entry-level DMU 50/70 can be automated for unmanned machining and increased productivity. As the handling system is set up to the side of the machine, the working area remains easily accessible.



DMU 70 with automation PH 15018: Pallet handling with eight pallets and a workpiece weight of up to 150 kg.

Simplified machine operation.
The holistic integration of the machine
into the company organisation.

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.

Continuous

Consistent administration, 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 privileges
to the control system and
the machine.

DMU 50/70 series

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. 16 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 automatically generating a loading list
- + Generation of an unloading list through automatic detection of all tools not required for subsequent jobs





SIEMENS 840D solutionline

- + SINUMERIK Operate 4.5
- + 3D simulation
- + Processing from the hard drive
- + Quick editing of large programs
- + Simple, graphically supported set-up
- + Comprehensive tool management
- + 19" monitor

Advantages

- + Easy interactive programming
- + Programming without additional documentation
- + Wide range of cycles
- + Safety thanks to advanced simulations
- + Sophisticated tool handling



HEIDENHAIN iTNC 530 HSCI

- + smarT.NC or conventional TNC plain text user interface
- + 3D simulation
- + Easy to edit large programs
- + Coordinate transformation
- + Tool management with a context-based help system
- + 19" monitor

Advantages

- + Familiar and proven HEIDENHAIN user interface
- + For the fastest programming
- + Graphical programming support
- + Convenient, thanks to the comprehensive selection of cycles

Availability

DMU 50

- + 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

DMU 70

- + ERGOline® Control with a 19.5" screen and SIEMENS 840D solutionline
- + ERGOline® Control with a 19.5" screen and iTNC 530



Uniform.
Continuous.
Compatible.

CELIOS®

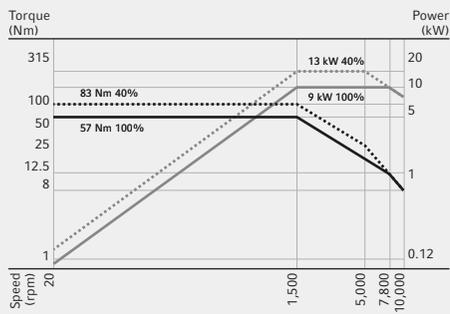
Holistic user interface with
intuitive touch operation.

DMU 50/70 series

Performance diagrams

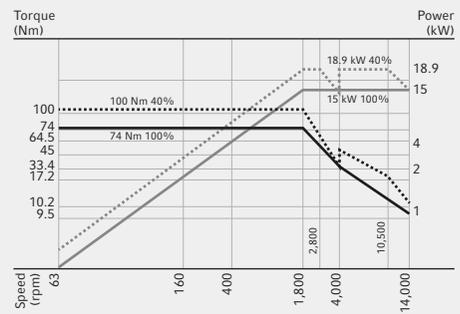
SK40 motor spindle (DMU 70)

10,000 rpm / 13 kW / 83 Nm



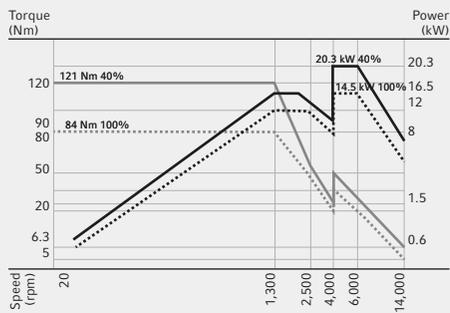
SK40 / HSK-A63* motor spindle (DMU 70)

14,000 rpm / 19 kW / 100 Nm



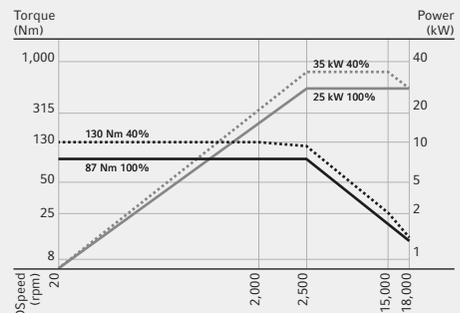
SK40 inline spindle (DMU 50)

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



SK40 / HSK-A63* motor spindle (DMU 50/70)

18,000 rpm / 35 kW / 130 Nm



* Optional

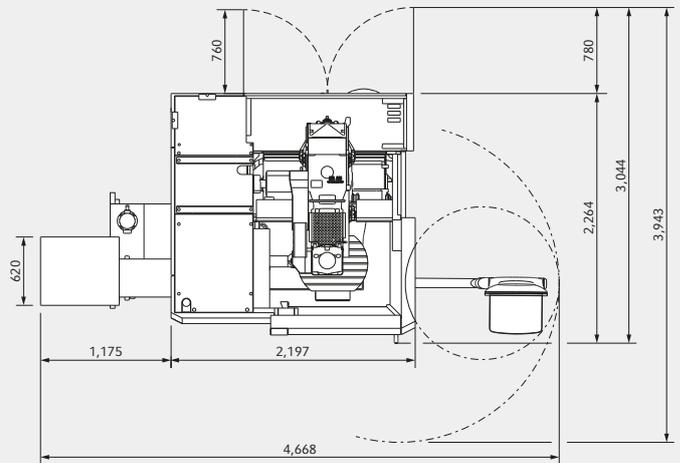
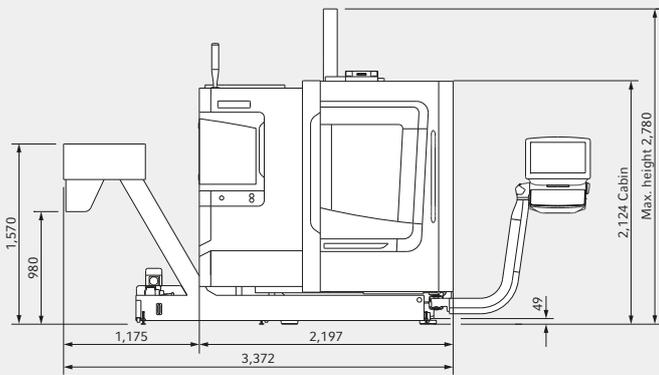
DMU 50/70 series

Floor plans

DMU 50

Front view with 30 tools

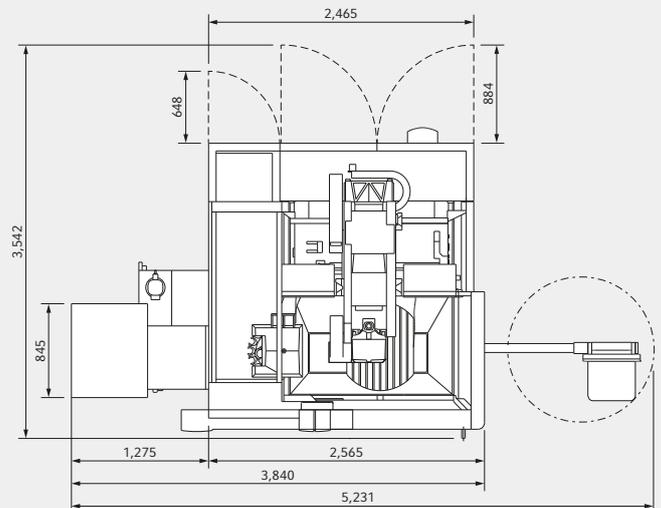
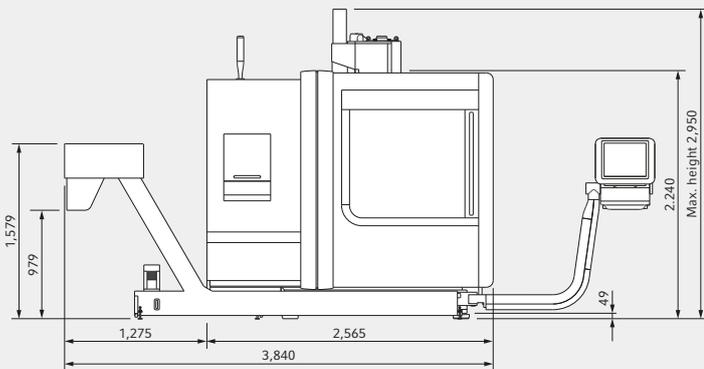
Plan view with 30 tools



DMU 70

Front view with 16 / 30 tools

Plan view with 16 / 30 tools

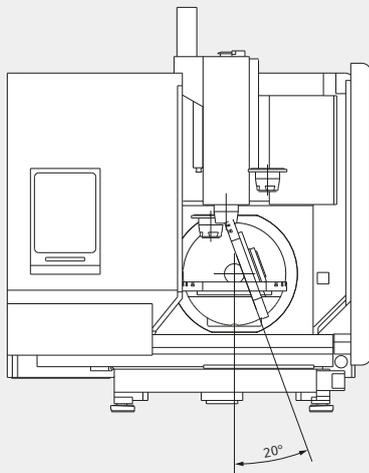


DMU 50/70 series

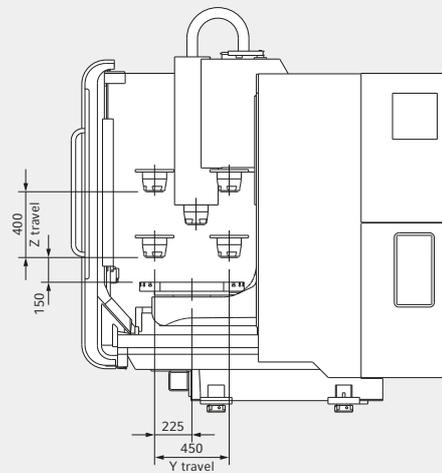
Working areas

DMU 50

Front view

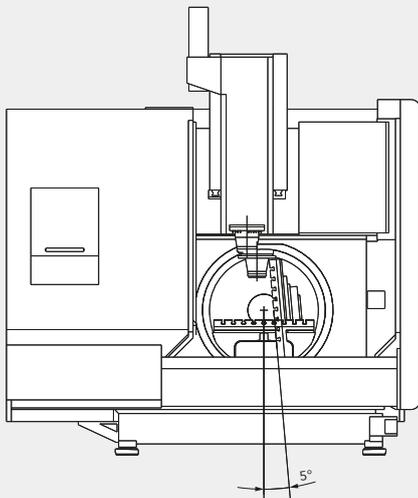


Side view

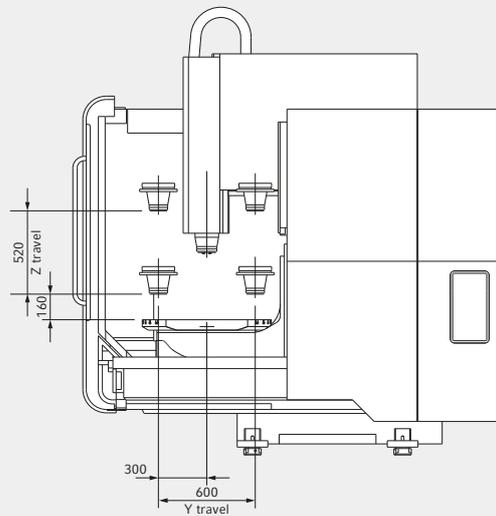


DMU 70

Front view



Side view



Technical data

		DMU 50	DMU 70
Working area			
Travel X / Y / Z	mm	500 / 450 / 400	750 / 600 / 520
Main drive (standard)			
Speed range	rpm	20–14,000	20–10,000
Drive power (100 / 40 % DC)	kW	14.5 / 20.3	9 / 13
Torque (40 % DC)	Nm	121	83
Main drive (optional)			
Speed range	rpm	–	20–14,000
Drive power (100 / 40 % DC)	kW	–	14 / 18.9
Torque (40 % DC)	Nm	–	100
Main drive (optional)			
Speed range	rpm	20–18,000	20–18,000
Drive power (100 / 40 % DC)	kW	25 / 35	25 / 35
Torque (40 % DC)	Nm	130	130
Feed			
Rapid traverse X / Y / Z	m/min	30	24
Maximum thrust force X / Y / Z	kN	4.8	6 / 6 / 3
Fixed table			
Clamping area	mm	700 × 500	1,000 × 620
Maximum load	kg	500	800
Integrated swivelling rotary table*			
Clamping area	mm	∅ 630 × 500	∅ 800 × 620
Maximum load	kg	200 / 300	350 / 400
Swivel range	Degrees	–5 / +110	–10 / +95
Optional pick-up tool change system			
Storage positions	Number	16	16
Tool weight	kg	6	6
Maximum tool length	mm	300	300
Maximum tool diameter	mm	80 / 130	80 / 130
Optional tool change system with chain and double gripper			
Storage positions	Number	30 / 60	30 / 60
Maximum tool length	mm	300	300
Maximum tool diameter	mm	80 / 130	80 / 130
Tool weight	kg	6	6
Machine weight / connected values			
Weight	kg	4,480	6,600
Power	kW	21	25
Maximum current rating	A	31	37

Options

Swivelling rotary table as either a positioning or simultaneous table; 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

Control

ERGOline® Control with a 21.5" multi-touch screen, CELOS® and SIEMENS 840D solutionline
 ERGOline® Control with a 19.5" screen and SIEMENS 840D solutionline
 ERGOline® Control with a 19.5" screen and HEIDENHAIN iTNC 530

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* Optional

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