

G220

*Turn-mill center for a flexible
and powerful machining*

INDEX



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Turning-Milling or Milling-Turning the G220 gets your workpieces and unit costs in shape

The generous work area of the G220 forms the basis for equal implementation of milling and turning in one machine design. The configuration of the machine is designed to provide a maximum of flexibility independent of the primary use of the machine.

The dynamic and powerful motorized milling spindle allows the production of demanding workpieces – even using five-axis machining.

Moreover, the lower tool turret with a Y-axis and a powerful tool drive ensures the possibility of three-dimensional machining on the main and counter spindle.



The machine design

- Spindle clearance 65 mm, optional: Spindle clearance 90 mm, chuck $\varnothing=250$ mm
- Powerful motorized spindles
- Lower tool turret with Y-axis (100 mm) and 18 stations (VDI25) or 12 stations (VDI30)
- Tool drive for lower turret 7,200 rpm, up to 6 kW and 18 Nm
- Fast tool change
- Generous work area designed for turning/milling or milling/turning
- Simultaneous machining with two tool carriers possible
- High dynamics (up to 55 m/min rapid traverse)

The motorized milling spindles

Powerful and dynamic motorized milling spindles

HSK-T40

- max. 18,000 rpm
- 11 kW and 30 Nm
- 70 or 140 magazine stations

HSK-T63

- max. 12,000 rpm
- 17 kW and 90 Nm
- 50 or 100 magazine stations

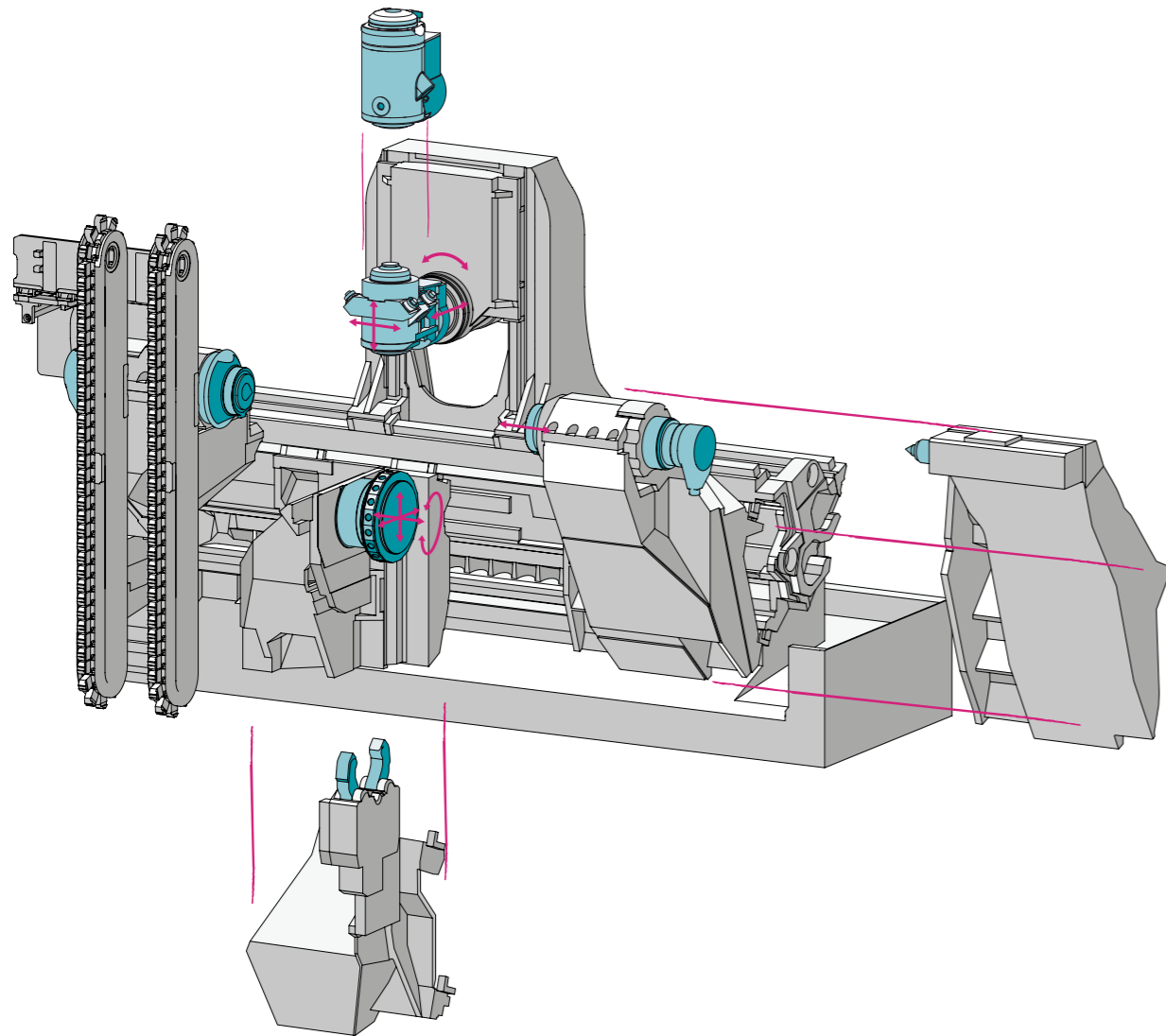
A fast tool change of approx. 6 s chip-to-chip time

Powerful milling and turning functionality

The G220 with its dynamic motorized milling spindle is ideal for machining of complex workpieces – up to five-axis machining.

With a high degree of rigidity, thermal and dynamic stability

and vibration damping – also thanks to the Y/B-axis running in hydrostatic bearings – workpieces can be completely machined from six sides with high productivity and precision.



Main and counter spindles

- D 65 mm
- 5,000 rpm
- 32 kW, 170 Nm (40%)
- optional: Spindle clearance
- D 90 mm
- 3,500 rpm

Main spindle

- 40 kW, 310 Nm (40%)

Counter spindle

- 40 kW, 207 Nm (40%)

Motorized milling spindles

- 18,000 rpm, 11 kW (100%), 30 Nm (25%) (HSK-T40)
- 12,000 rpm, 17 kW (100%), 90 Nm (25%) (HSK-T63)
- X-axis 355 mm
Rapid traverse rate 30 m/min
- Y-axis +/- 80 mm
Rapid traverse rate 15 m/min
- Z-axis 1040 mm
Rapid traverse rate 55 m/min
- B-axis -50° /+230°

Lower turret

- 7,200 rpm
- 6 kW, 18 Nm (25%)
- X-axis 185 mm
Rapid traverse rate 30 m/min
- Y-axis +/- 50 mm
Rapid traverse rate 15 m/min
- Z-axis 1000 mm
Rapid traverse rate 55 m/min

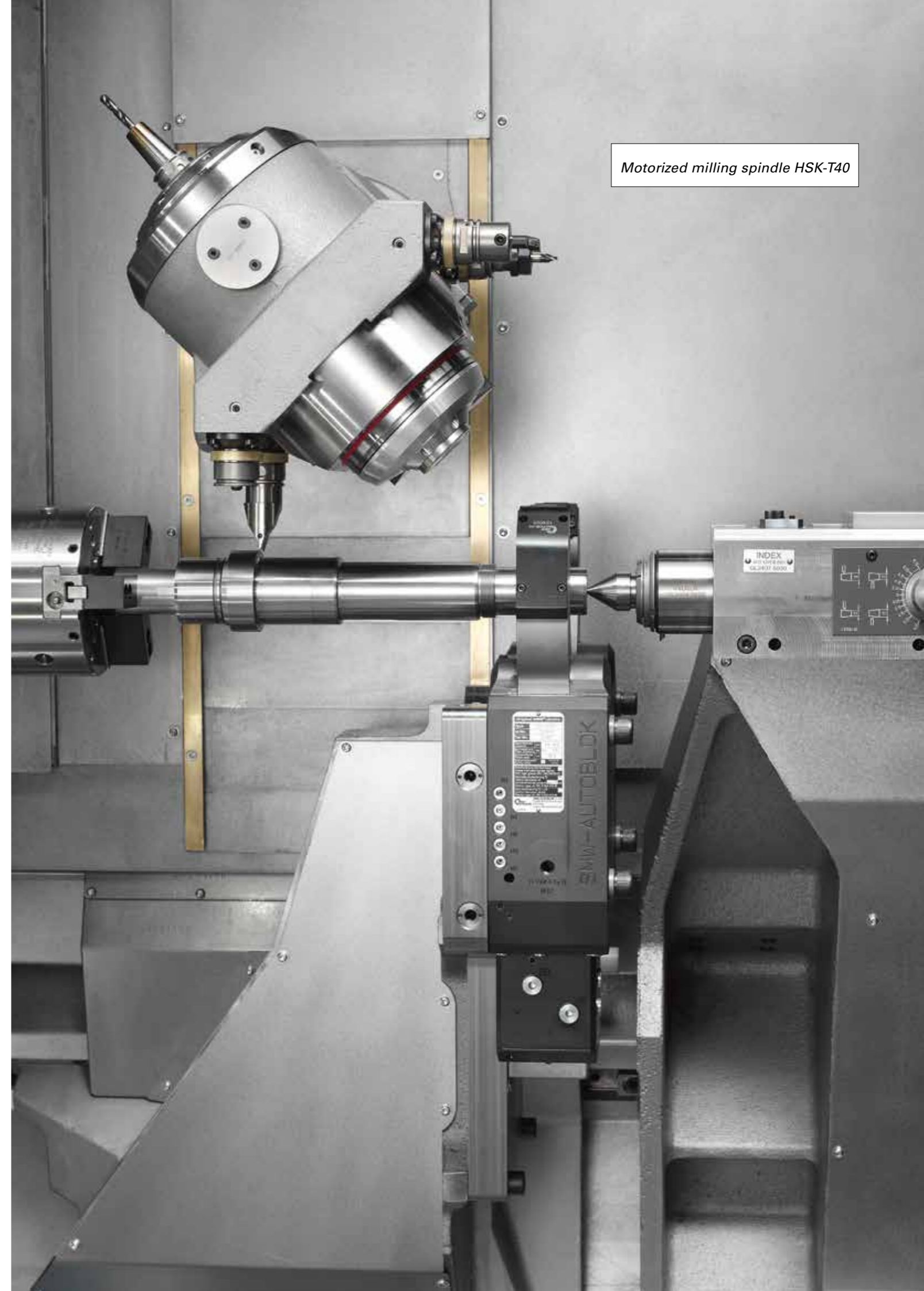
Tailstock

- Max. pressure force 8,000 N
- Tool holding fixture DIN 2079, SK 30
- Max. distance from spindle zero 1265 mm

Steady rest

- Clamping range 12-152 mm

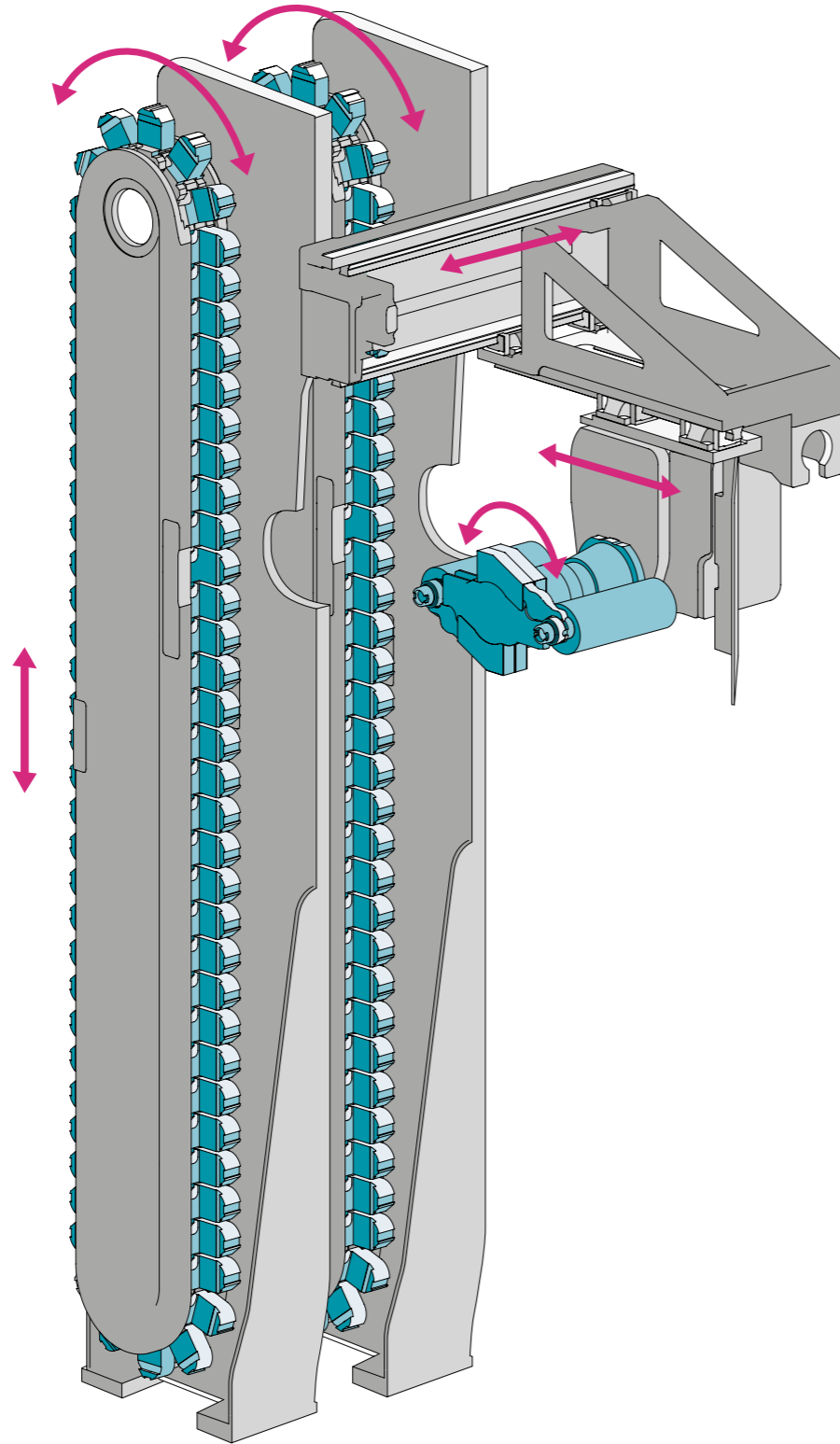
Motorized milling spindle HSK-T40



Fast tool change and large tool storage

A shuttle supplies the motorized milling spindle with the required tools from the tool magazine. With a choice of 70 or 140 tool stations (HSK-T40), 50 or 100 tool stations (HSK-T63), the G220 has a large stock of tools, contributing to reduced setup costs.

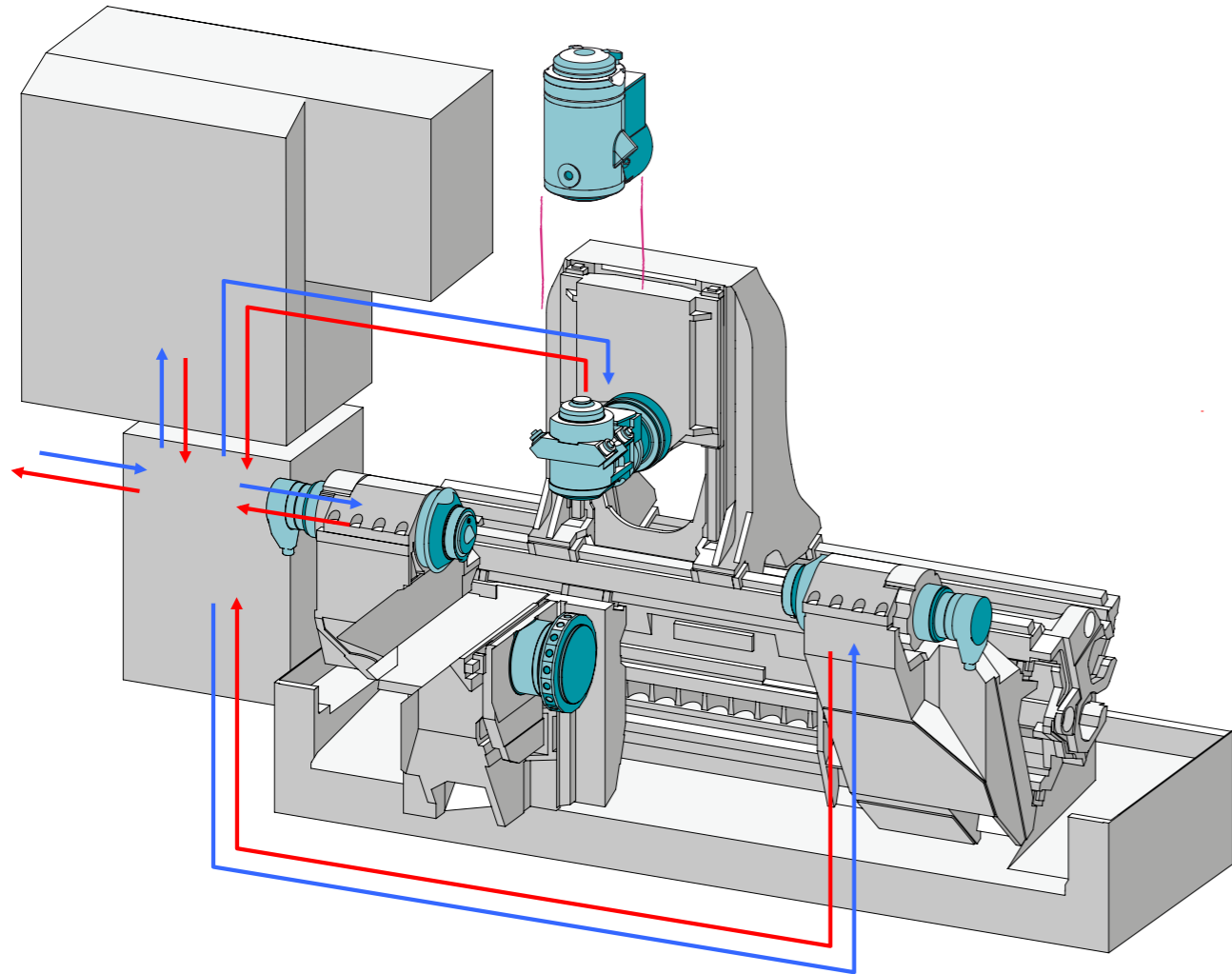
A chip-to-chip time of approx. 6 s ensures short downtimes and high productivity.



Motorized milling spindle HSK-T40



The cooling concept: efficient use of energy



Intelligent use of proven cooling principles:

- **Targeted heat dissipation**

All high-loss heat sources of the G220 are cooled directly with different cooling media via multiple fluid circuits. In addition to the cooling circuits for the main spindle, counter spindle, and motorized milling spindle, torque drive of the B-axis, the hydraulic system and control cabinet also have a separate cooling circuit. The lost heat

energy is absorbed directly in the fluid and removed from a central location of the machine.

- **Economic use of waste heat**

The INDEX "cold water interface" allows the heat loss energy stored in the cooling medium to be removed from a central location and conveyed for another use, if required, e.g., production hall heating, service water heating, or process heating for

other production steps. The recovery of machine waste heat enables a sustainable reduction of energy costs in the company.

- **Climate-neutral dissipation of heat**

The cold water interface provides the ability to dissipate heat in a climate-neutral manner, if the machine waste heat stored in the cooling medium cannot be used otherwise. The necessary cooling unit can be used with the help

of the water interface first on the outside of the production hall and secondly also centrally for several machines. This offers a considerable energy savings potential for production hall heating dissipation/climate control or increased efficiency as a result of centralized heat disposal.

Motorized milling spindle HSK-T63





The cockpit for easy integration of the machine in your business organization



Focus on production and control – Industry 4.0 included.

The iXpanel operating concept provides access to networked production. With iXpanel, your staff always has all relevant information for efficient production right at the machine. iXpanel is already included in the standard and can be individually extended. You can use iXpanel as you want it for your business organization – that's Industry 4.0 tailored to your needs.

Future-proof.

iXpanel integrates the latest control generation SIEMENS S840D sl. Use iXpanel intuitively through an 18.5" touch monitor.



Productive.

Maximum performance through comprehensive technology cycles and programming screens, e.g., for optimum turning, milling and drilling, especially when using several tools simultaneously.

Intelligent.

The machine always starts with the control home screen. Other functions can always be displayed on a second screen, and the operator enjoys direct, activity-related assistance already in the standard version, such as workpiece drawing, setup lists, programming tools, documentation, etc., right at the machine.

Virtual & open.

With the optional VPC box (industrial PC), iXpanel opens up the world of Virtual Machine with the 3 operating modes - CrashStop - RealTime mode - Independent simulation (VM on board) directly at the control. Thanks to the VPC box, the machine can be integrated into your IT structure without restrictions.

index-werke.de/ixpanel



18.5" TOUCHSCREEN

STANDARD included as standard – at no extra charge

OPTION

Industrie 4.0 - features

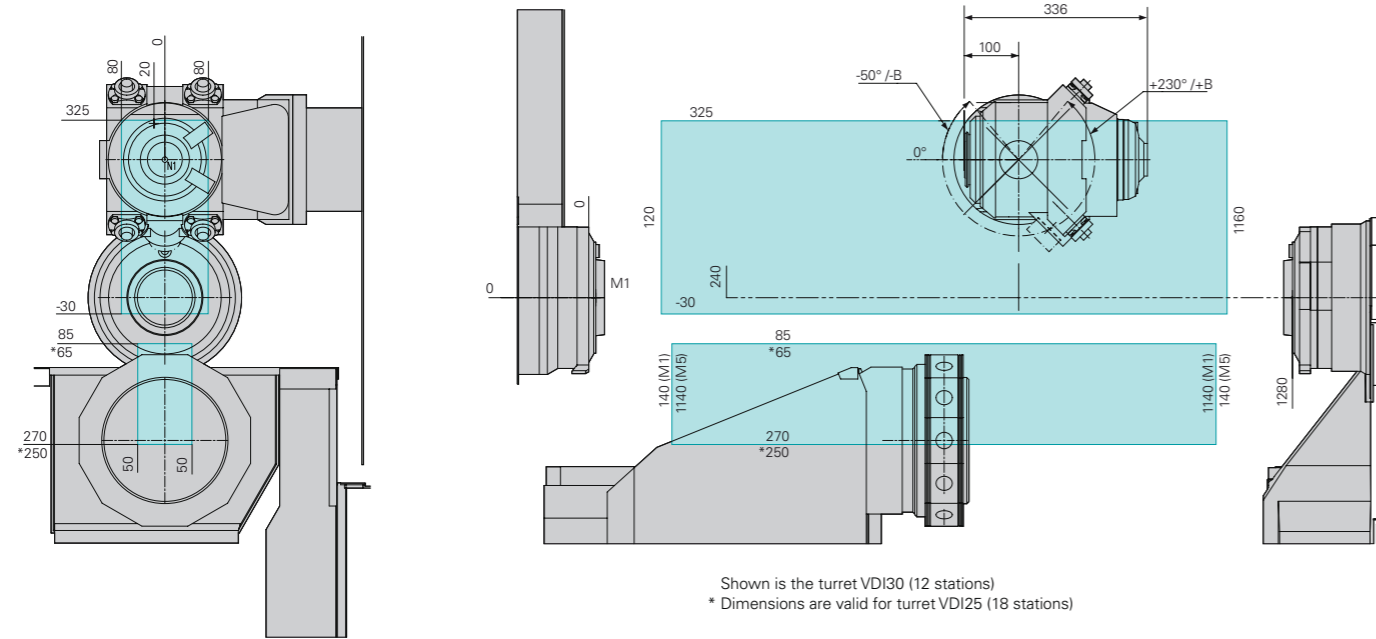
Order documents	Customer data	Workpiece counter	Production status	Drawings	Setup sheet
Notes	Information center	Maintenance & care	User management	Technology computer	Programming help

VPC Box	Virtual Machine 3D simulation
VirtualPro Programming Studio	Custom applications

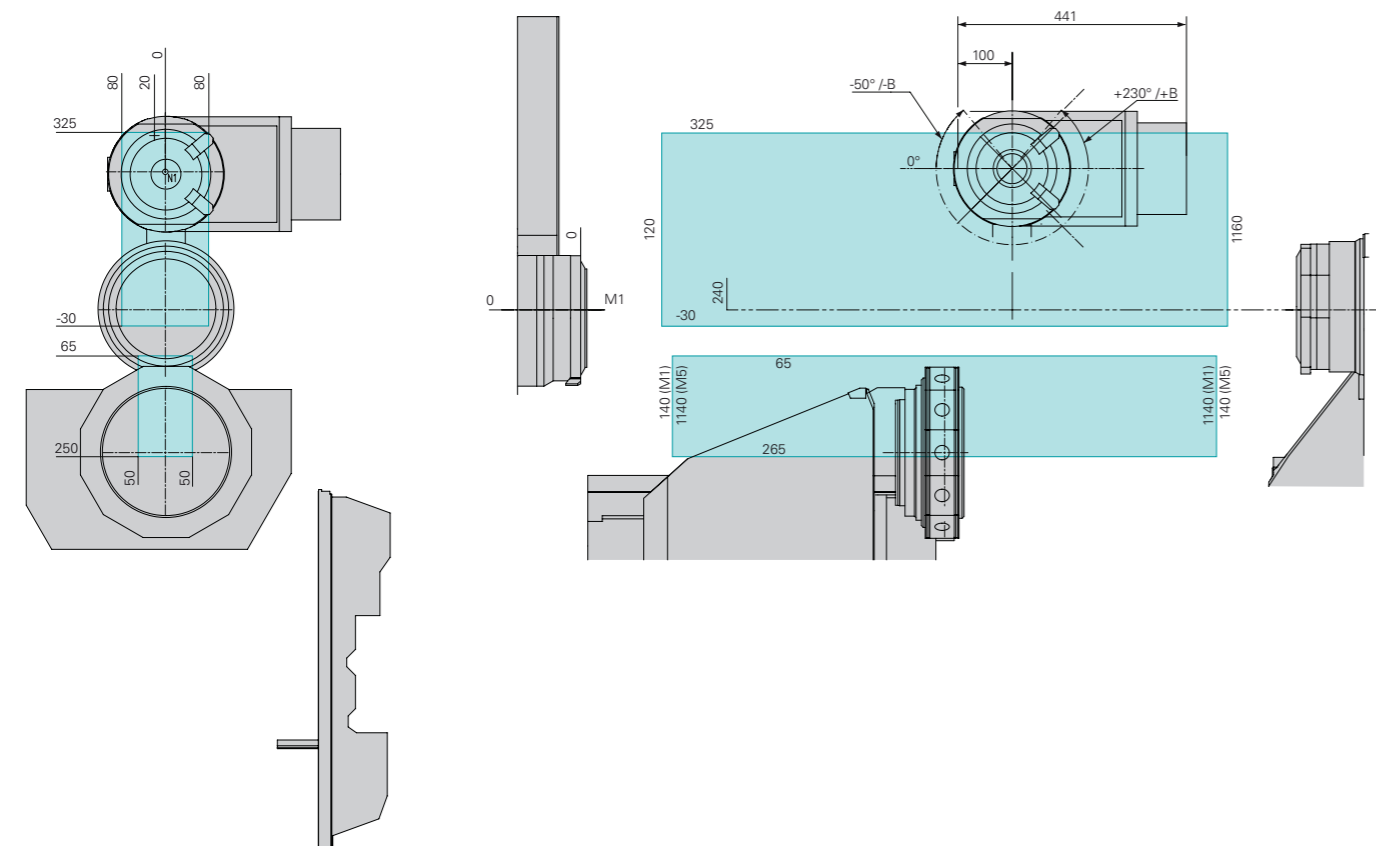
+ many more standard features

Work area
Dimensions

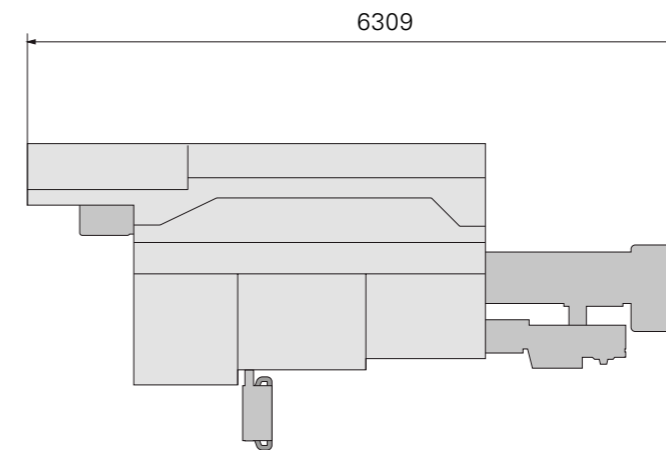
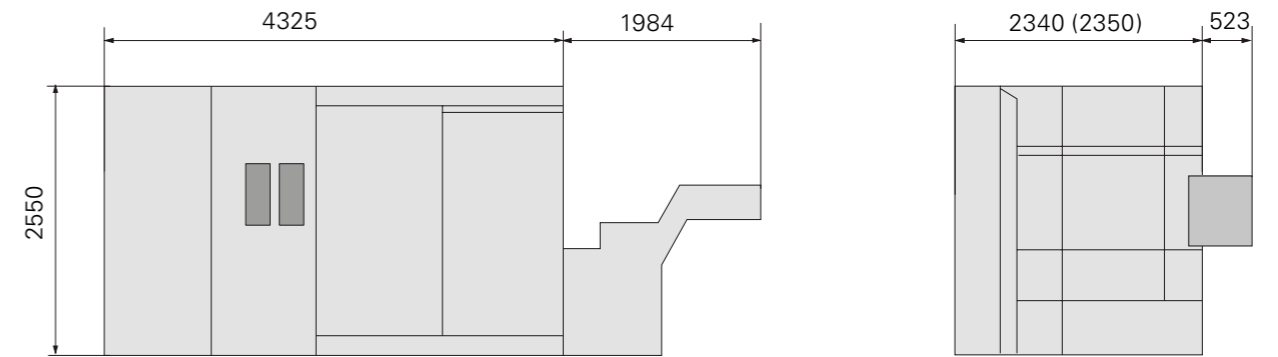
HSK-T40



HSK-T63



Installation Chart
Dimensions



Technical data

Working range			
Turning length	mm	1000	1000
Main spindle			
Spindle clearance	mm	65	90
Spindle nose ISO 702/1		Z140	A8
Max. speed	rpm	5,000	4,000
Drive power (100%/40%)	kW	31.5 / 32	40 / 40
Torque (100%/40%)	Nm	125 / 170	190 / 310
Chuck diameter	mm	210	250
C-axis resolution	Deg.	0.001	0.001
Counter spindle			
Spindle clearance	mm	65	90
Spindle nose ISO 702/1		Z140	A8
Max. speed	rpm	5,000	3,500
Drive power (100%/40%)	kW	31.5 / 32	29 / 40
Torque (100%/40%)	Nm	125 / 170	142 / 207
Chuck diameter	mm	210	250
C-axis resolution	Deg.	0.001	0.001
Slide travel Z, rapid traverse rate, feed force	mm / m/min / N	1040 / 55 / 6.400	
Tailstock			
Quill DIN 2079		SK30	
Slide travel Z	mm	1080	
Max pressure force	N	8,000	
Upper tool carrier		Motorized milling spindle	
Tooling system		HSK-T40	HSK-T63
Max. speed	rpm	18,000	12,000
Drive power (100%)	kW	11	17
Torque (100%/25%)	Nm	19 / 30	62 / 90
Slide travel X, rapid traverse rate, feed force	mm / m/min / N	355 / 30 / 9.050	
Slide travel Y, rapid traverse rate, feed force	mm / m/min / N	+/- 80 / 15 / 7.850	
Slide travel Z, rapid traverse rate, feed force	mm / m/min / N	1040 / 55 / 6.400	
Swivel range B	Deg.	-50/+230	
Fixed tool locations on MMS		4 x HSK-T40	-
Lower tool carrier			
Tooling system DIN ISO 10889		25 x 48	30 x 55
Number of stations		18	12
Max. speed	rpm	7,200	
Max. drive power, torque (25%)	kW / Nm	6 / 18	
Slide travel X, rapid traverse rate, feed force	mm / m/min / N	185 / 30 / 7.000	
Slide travel Y, rapid traverse rate, feed force	mm / m/min / N	+/- 50 / 15 / 7.850	
Slide travel Z, rapid traverse rate, feed force	mm / m/min / N	1000 / 55 / 6.400	
Steady rest with sep. slide			
Clamping range	mm	12 - 152	
Slide travel Z	mm	1000	
Gantry-type receiver unit with conveyor belt			
Workpiece weight / workpiece length max.	kg / mm	7.5 / 400	
Tool magazine			
Tooling system DIN69893		HSK-T40	HSK-T63
Tool magazine stations		70 (opt. 140)	50 (opt. 100)
Max. tool weight	kg	3	5
Chip-to-chip time	s	6	
Machine dimensions			
Length x width x height	mm	4325 x 2340 x 2550	4325 x 2350 x 2550
Weight	kg	14,000 *	
Connected power	kW	68	
Control			
		INDEX C200 sl (based on Siemens S840D sl)	

* incl. tool magazine



Motorized milling spindle HSK-T40

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