WFL MILLTURN TECHNOLOGIES

For ***the most demanding*** machining tasks.

M20 **M20-G**

CLAMP ONCE – MACHINE COMPLETE

GROUP 1906 AUTANIA

SMART MACHINING with the new
M20 MILLTURN

The M20 MILLTURN is the latest addition to the MILLTURN range and the ideal solution for users who are looking for a powerful complete machining centre. Special features include the high stability of the machine as well as a holistic motor spindle concept, which encompasses practically every machining technology.

Decades of expertise in complete machining have gone into the development of a completely new machine. Both the design and the technology are highly advanced.

The range of applications covered by the M20 is almost infinite. The machine is capable of carrying out demanding and complex machining tasks found in the aviation, automotive, engineering and plastics industries. Thanks to its extreme flexibility, the machine is also ideal for contract manufacturers.

smart® MACHINING

Automatic tool change for
the upper and lower tool system
from a single magazine

Main spindle
Power (100% / S6-40%): 32 / 44 kW

Torque (100%/S6-40%): 610/838 Nm
Maximum speed: 4000 rpm

Control
Siemens 840D sl

Multitouch display, widescreen
front: 24 inch format,
16:9 and Full HD

Ergonomic tool setup from
the front during machining

Tool magazine
Chain magazine with up to 80 tool stations

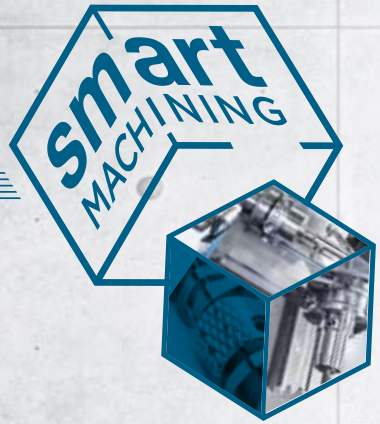
Tool weight: up to 10 kg
Tool Ø: 90/130 mm (adjacent/non-adjacent)
Tool accommodation: HSK-A63, CAPTO C6 (PSC63)

Turning-boring-milling unit
Power (100% / 40%): 20 / 25 kW

Maximum speed: 20,000 rpm
Torque (100%/40%): 85/110 Nm
80 bar coolant pressure

Working area

Swing Ø up to 500 mm workpiece
weight up to 1000 kg



B-axis
Hydraulic B-axis clamping for any angular position

Swivelling torque (100%/peak): 500/1030 Nm
Clamping holding torque: 1000 Nm
Tilt angle: ± 120°

Counter spindle
Power (100%/S6-40%): 32/44 kW

Torque (100%/S6-40%): 610/838 Nm
Maximum speed: 4000 rpm

Oil mist filter
Suction volume: 1600 m3/h
(can be adapted to suit customer-specific requirements)

Chip conveyor
Compact and easy to service

LED status light
Machine status display on the machine pedestal in the form of a row of LEDs

Individual tool carrier at the bottom
With B-axis and 90° tilt angle

Design
Integrated display of performance data

Machine highlights:

Design highlights

- New, innovative and modern design
- Machine frame made from spheroidal graphite for high stability and very good damping behaviour
- Powerful and high-torque water-cooled motor spindles
- Very small gaps in the lower slide systems, as there are no telescopic plates
- Optional individual tool carrier at the bottom
- Automatic workpiece transfer
- Production cell with integrated loading and unloading
- B-axis for turning-boring-milling unit with direct drive via water-cooled torque motor for excellent dynamics

Technological highlights

- Consistent 6-sided machining with counter spindle
- Two B-axis systems in one machine for simultaneous B-axis turning
- Perfect for gear skiving

Software highlights

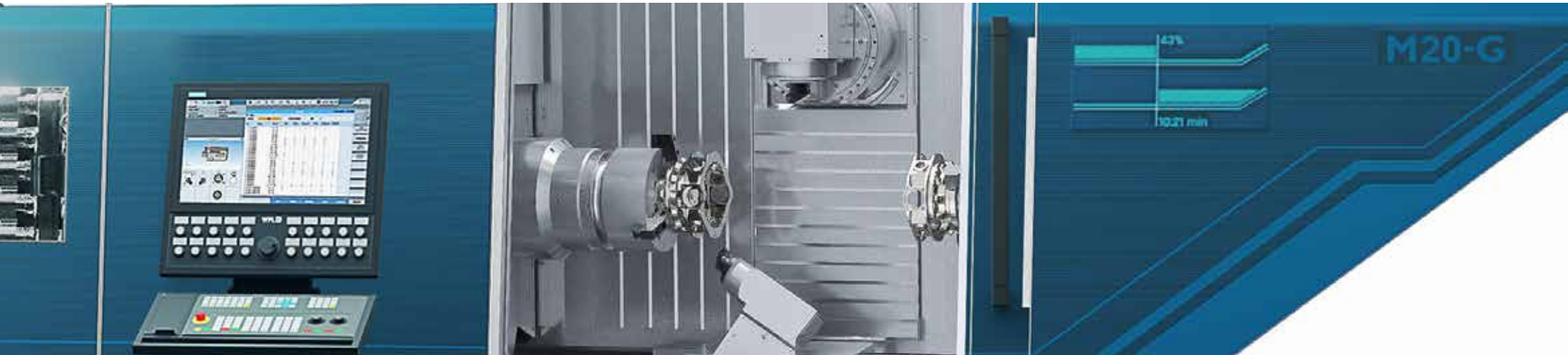
- Extensive sensor
- 24“ multitouch display
- Ergonomic operator panel
- Optional performance data cockpit

Smart Design

- Modern, ergonomic design with integrated display of performance data
- Ergonomic access to the working area
- State-of-the-art screens with fast response times for instantaneous screen updates
- Innovative multitouch design with widescreen front: 24 inch, 16:9 format and Full HD
- Operator panel with swivel arm, very large swivel range
- Display is tiltable up to 20°

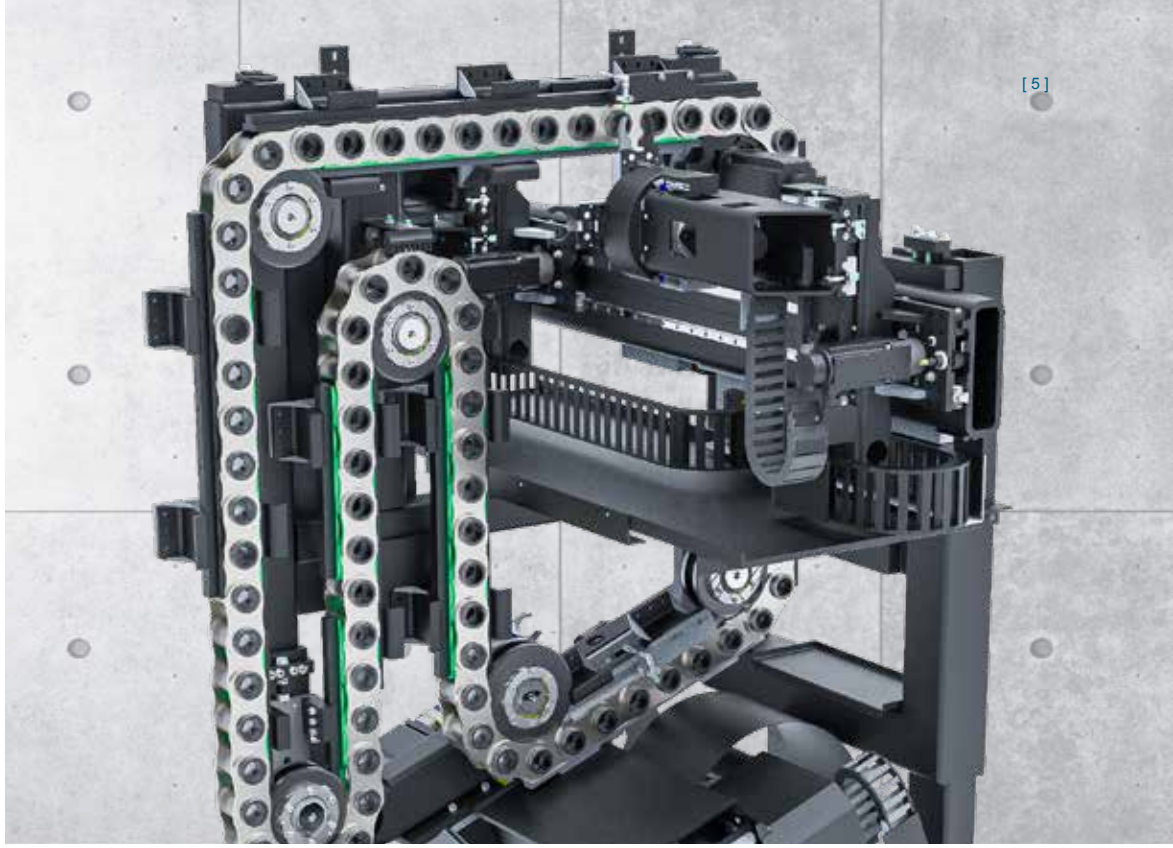
Connectivity

- The milling spindle has an optional monitoring system, which records temperature and vibration values and forwards data to external systems, if necessary.



Tool magazine

- Chain magazine with up to 80 tool stations
- Setting-up of tools from the front during machining
- Maximum tool weight: 10 kg
- Maximum tool diameter: 90 mm or 130 mm
- Tool accommodation: HSK A63, Capto C6 (PSC63)
- Tools can be changed over automatically from the tool magazine into the upper and lower tool system.
- Ergonomic direct access to the tool magazine through the sliding window on the front of the machine.



Bottom disc turret – fully equipped

- The lower tool system is supplied with a 12x or 24x tool turret.
- 12x design with driven tools
- 24x design with non-driven tools

Automated loading and unloading

- Integrated production cell
- Articulated robot
- Gantry loader
- Bar feeder

Shaft parts
- Diameter: max. 100 mm
- Length for double change process (individual change process): max. 300 (800) mm
- Weight for double change process (individual change process): 15 (30) kg

Chuck parts
- Diameter: max. 300 mm
- Length: max. 150 mm
- Weight: max. 15 kg

Technologies by WFL

- Turning

- Boring

- Milling

- In-process measuring

- Turn-milling

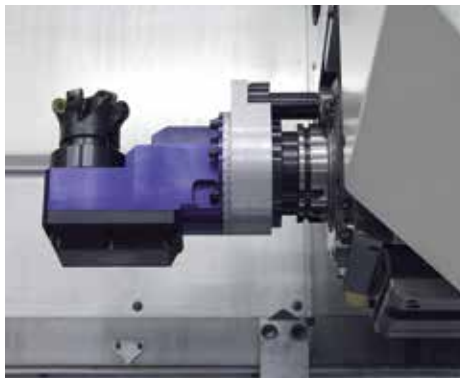
- 5-axis milling

- B-axis turning

- Shaping of external gear teeth (Flanx-Spline)

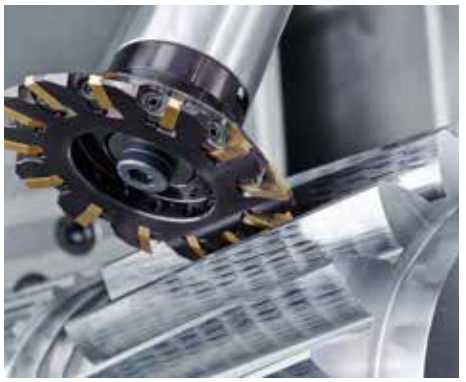
- Milling of external gear teeth (Flanx-LM)

☛ Special tool heads



☛ Deep hole drilling

☛ Milling of external gear teeth (Flanx-Invo)



☛ Gear skiving

☛ Hobbing of gear teeth (Flanx-Hob)

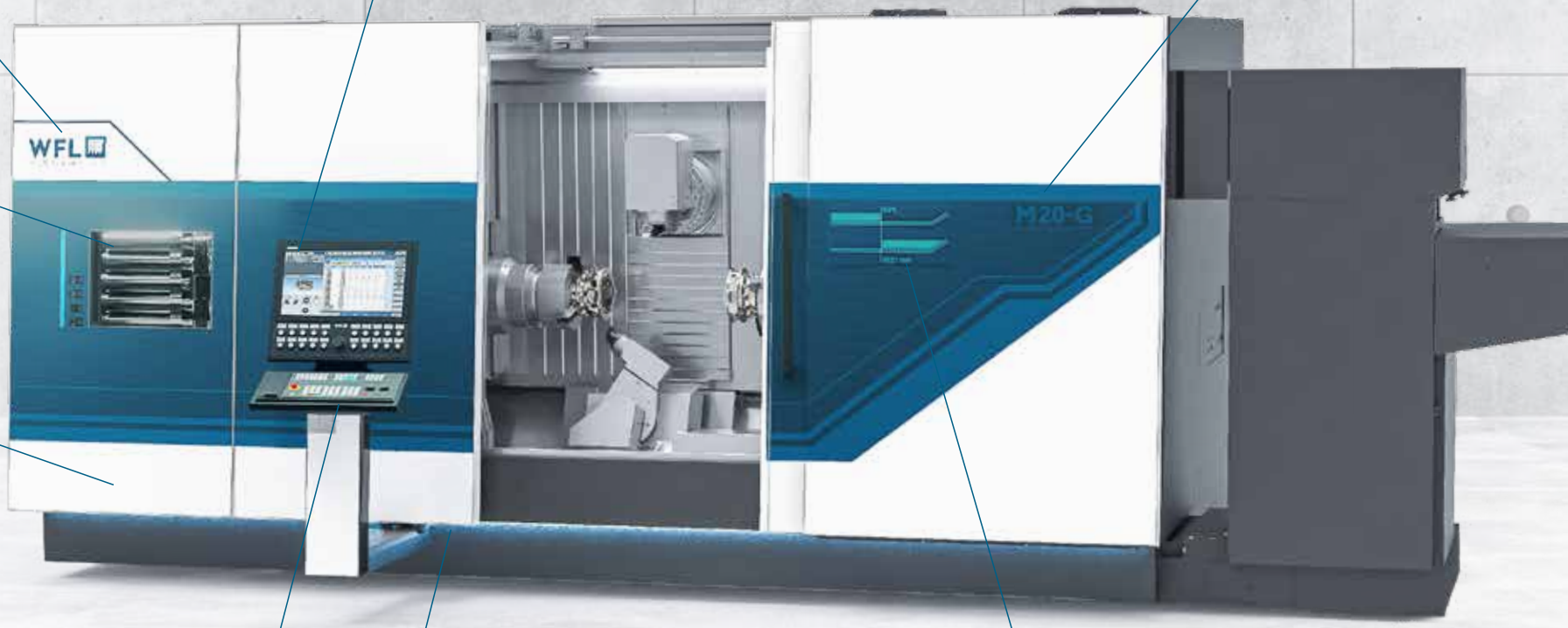
☛ Cam milling

☛ Milling of crankshaft pins

☛ Internal turning

Design

- State-of-the-art screens with fast response times for instantaneous screen updates
- Innovative multitouch design with widescreen front: 24 inch, 16:9 format and Full HD
- Operator panel with swivel arm, very wide swivel range
- Display is tiltable up to 20°



LED lighting

Ergonomic tool magazine setup through the sliding window

The entire front of the machine is covered with hardened glass and particularly easy to maintain.

LED lighting

Control: Siemens 840D sl with touchscreen

LED status light – machine status is displayed on the machine pedestal by means of a LED strip

Performance data cockpit for crucial productivity data

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Screen can be divided

Display of various programs on multiple sub-sites

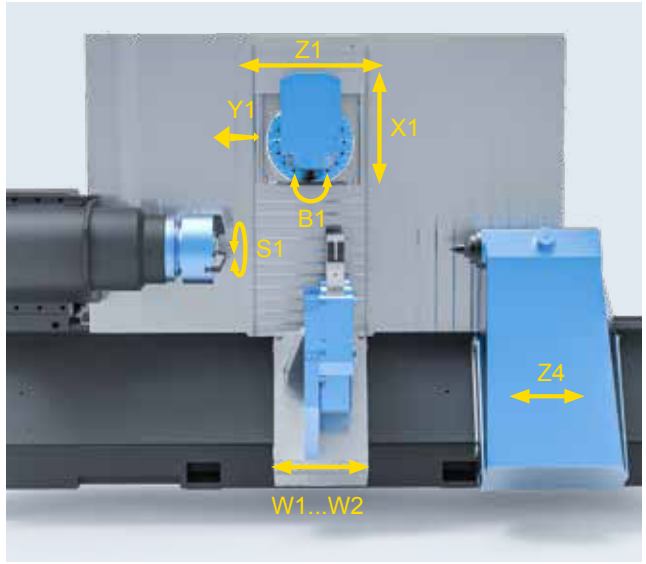
Functions such as iControl, graphics, programs, statistics and real-time data can be displayed simultaneously

Clear display of CrashGuard, CrashGuard Studio and Millturn PRO programs in the “header bar”

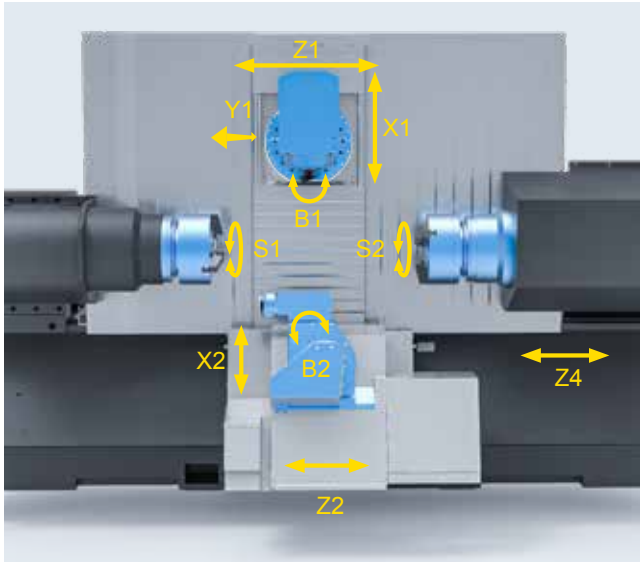
Information on axis loads, tools, CrashGuard Viewer, axis movements in real time in the windows below

Many number of options for monitoring the production process → iControl

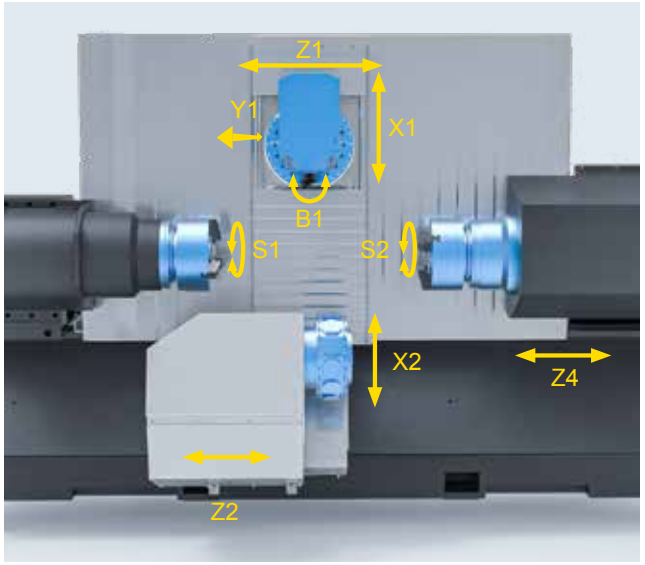
Options



M20 MILLTURN with tailstock and steady rest

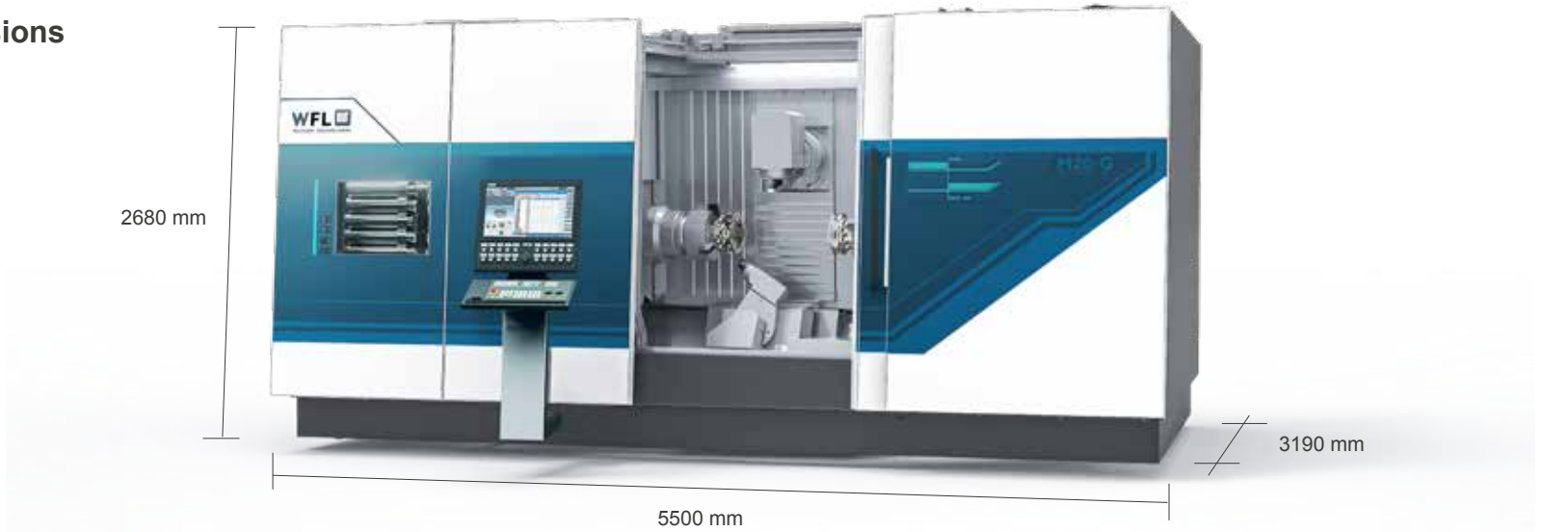


M20-G MILLTURN with individual tool carrier at the bottom



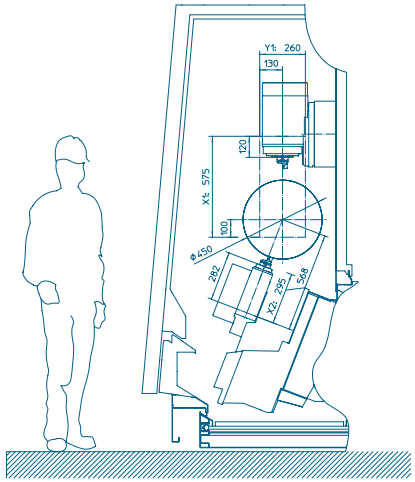
M20-G MILLTURN with bottom tool turret

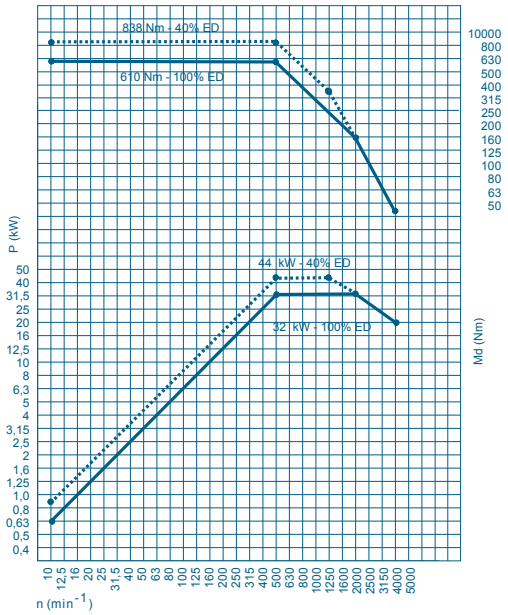
Dimensions



M20-G MILLTURN

with individual tool carrier at the bottom

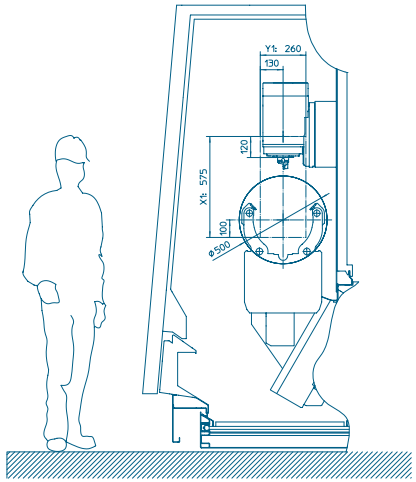


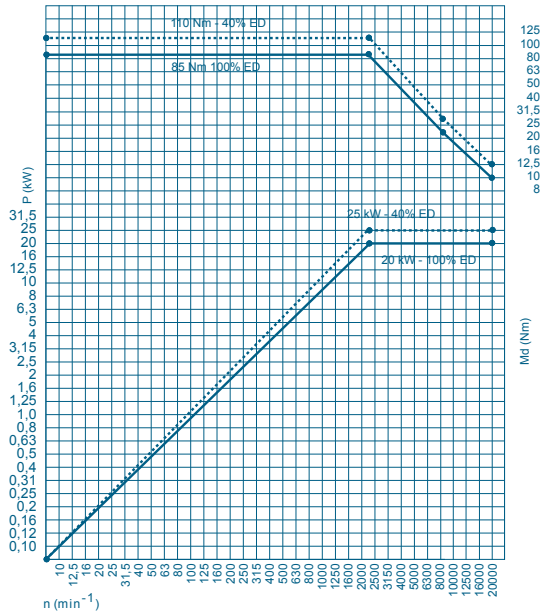


Main spindle - left/right 44 (32) kW - 4000 rpm

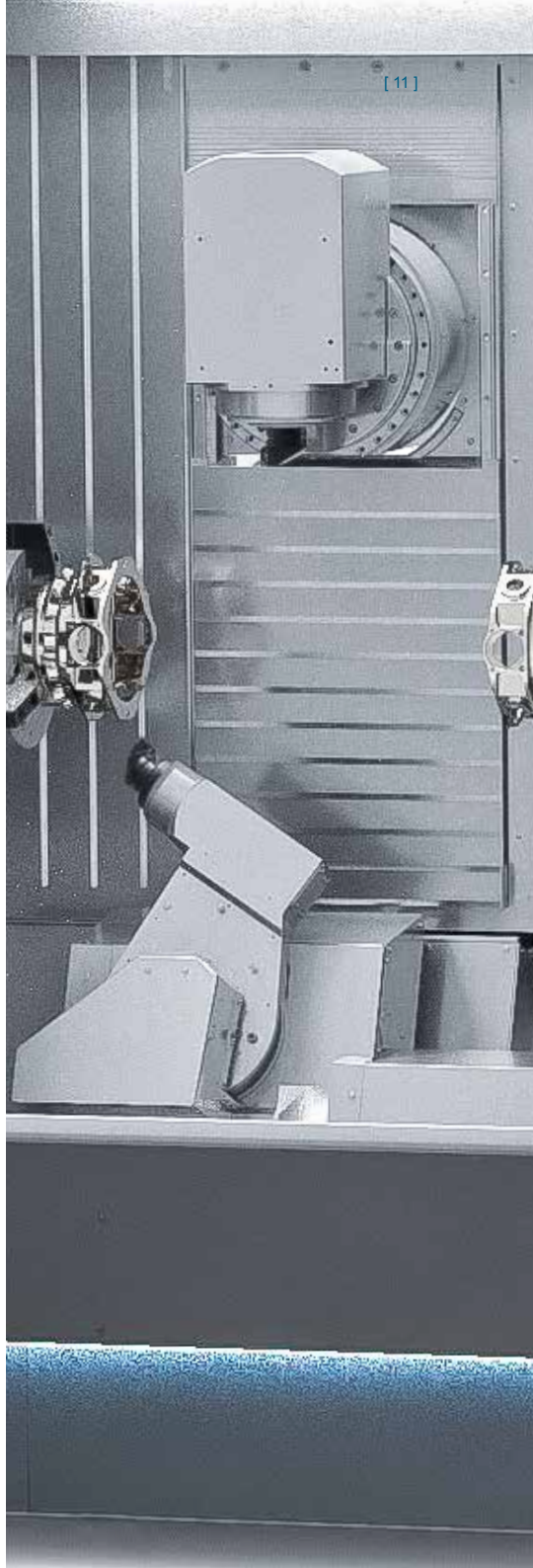
M20 MILLTURN

with steady rest





Milling spindle 25 (20) kW - 20,000 rpm



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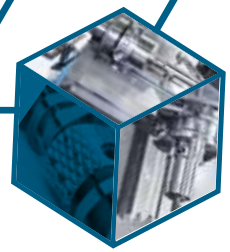

WORKING RANGE

		M20 MILLTURN	M20-G MILLTURN
Centre distance	mm	1000	1000
Maximum turning length	mm	1100	1000
Swing diameter of top compound slide	mm	500	500
Max. turning diameter between centres	mm	500	500
Max. power, main spindle 40% at (100%) duty cycle	kW	44 (32)	44 (32)
Max. torque, main spindle 40% at (100%) duty cycle	Nm	838 (610)	838 (610)
Max. speed, main spindle	rpm	4000	4000
C-axis torque	Nm	838 (610)	838 (610)
Max. power, milling spindle at 40% (100%) duty cycle	kW	25 (20)	25 (20)
Max. torque, milling spindle at 40% (100%) duty cycle	Nm	110 (85)	110 (85)
Max. speed, milling spindle	rpm	20000	20000
B-axis tilt angle	Degrees	±120	±120
Smallest programmable increment	Degrees	0,0001	0,0001
X-axis travel	mm	575 (-100 … +475)	575 (-100 … +475)
Y-axis travel	mm	260 (±130)	260 (±130)
Z-axis travel	mm	1100	1100
X/Y/Z rapid motion speed	m/min	45 / 45 / 45	45 / 45 / 45
Mechatronic tailstock	Type	MK5	-
Tool magazine	Number	80	80
SIEMENS control	Type	SINUMERIK 840D sl	SINUMERIK 840D sl

Subject to technical changes.

WFL MILLTURN TECHNOLOGIES

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