



MICROTURN GRIND

Hard turning and grinding center for precision machining



Mechanical Engineering

Made in Germany

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Our MICROTURN-GRIND is the first true combination of an ultra-precision hard turning machine and an internal and external grinding machine.

With the MICROTURN-GRIND, you can not only fine-turn your workpieces with high precision in the hard (heat-treated) condition, but also grind them using a 400mm external grinding wheel and up to two high-performance internal grinding spindles. By using such a machine, you minimise stock oversizes required for grinding, reduce cycle times and optimise accuracies.

Hard machining of threads, recesses and contours is also possible thanks to the machine's full turning functionality with up to 10,000 rpm on the workpiece spindle or grinding of non-circular polygon shapes thanks to high-precision C-axis interpolation of the workpiece at creep speed.

Automatic dressing of the grinding wheels and fine balancing takes place during the process.



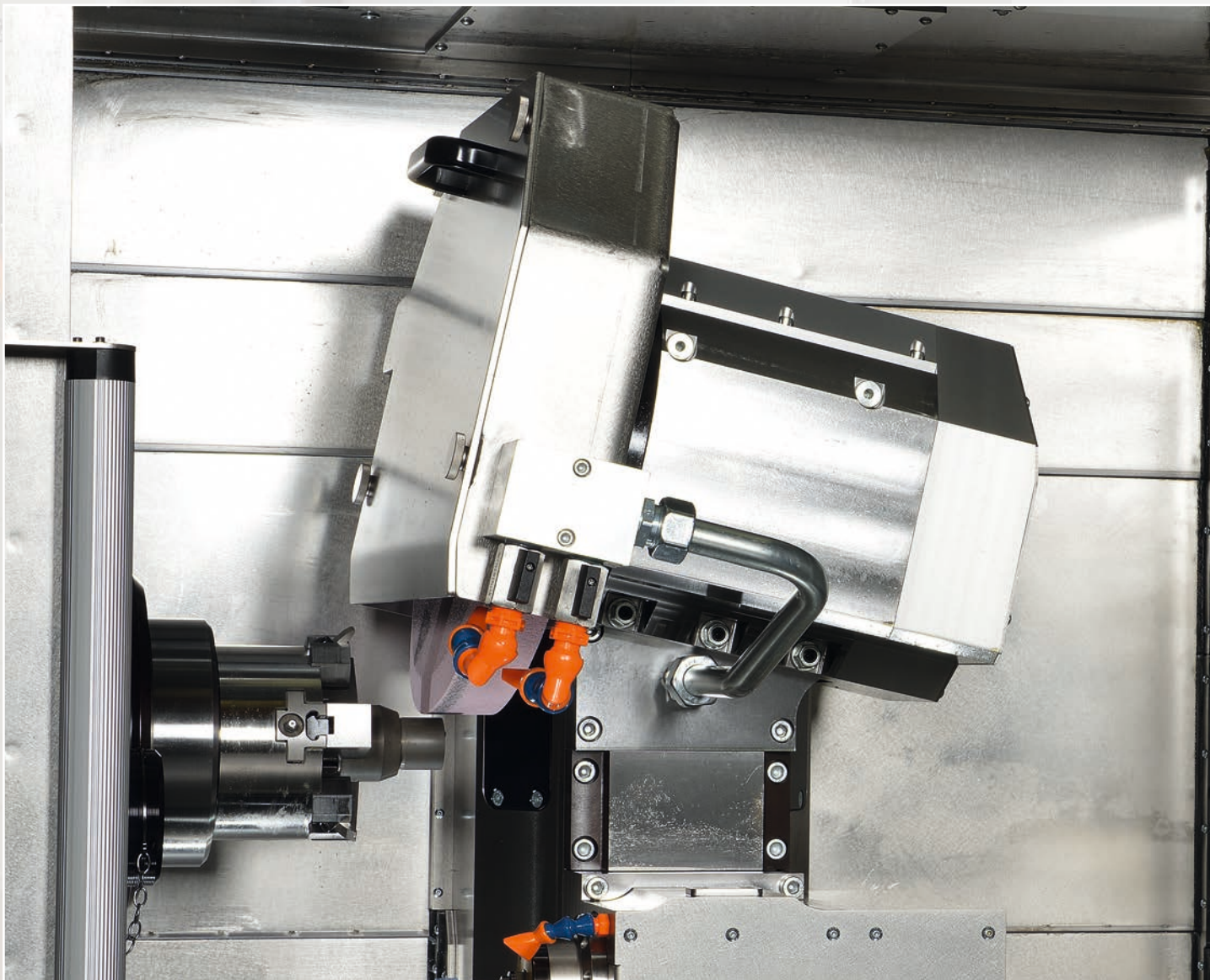
The indexing turret mounted at the bottom of the work area allows high-precision soft and hard turning of internal and external contours on both spindle 1 and spindle 2.

Milling operations with live tools and Y-axis are also possible, e.g. for soft and hard milling of surfaces, keyways and other contour elements – all during the same operation.

An optional, identical sub-spindle can take over the workpiece and finish it on the reverse side in parallel. This is made possible by two opposing high-precision workpiece spindles, each moving in the X/Z direction.

The slide system positions in the sub-micron range with direct measuring systems and 0.0001 mm resolution. The guideways are optimally protected against grinding dust and completely separated from the working area, which also makes the machine suitable for low-maintenance large-scale production.

External grinding

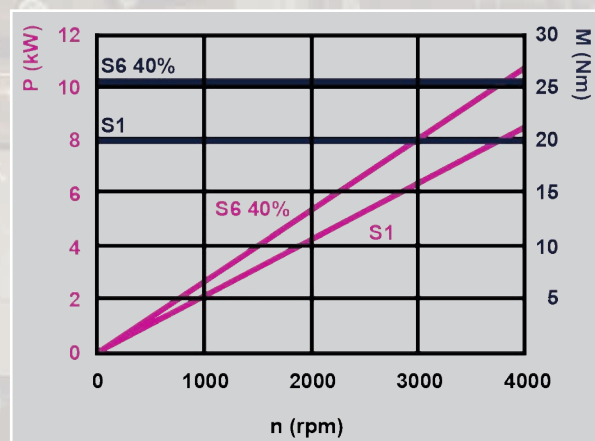


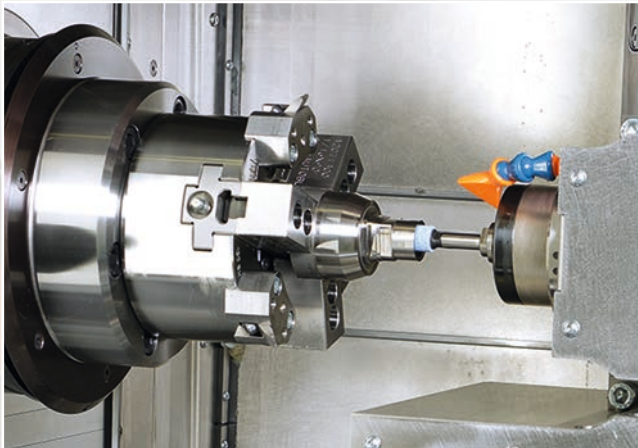
The external grinding spindle is designed as a built-in motor spindle with water cooling. The automatic fine balancing is optionally integrated in the grinding spindle shaft.

It is inclined by 12 degrees to the workpiece spindle. This enables angular infeed grinding and end-face machining with peripheral grinding. The maximum wheel diameter is 400 mm and allows stock removal rates and tool life comparable to those of classic cylindrical grinding machines, whereby pre-turning a minimal amount of grinding stock significantly simplifies the grinding processes.

The external grinding spindle for machining workpieces is mounted in spindle 1 at the top of the working area. The speed range is continuously programmable up to 4,000 rpm.

Performance 10,7 KW (S6 40%)
Torque 25,6 Nm (S6 40%)

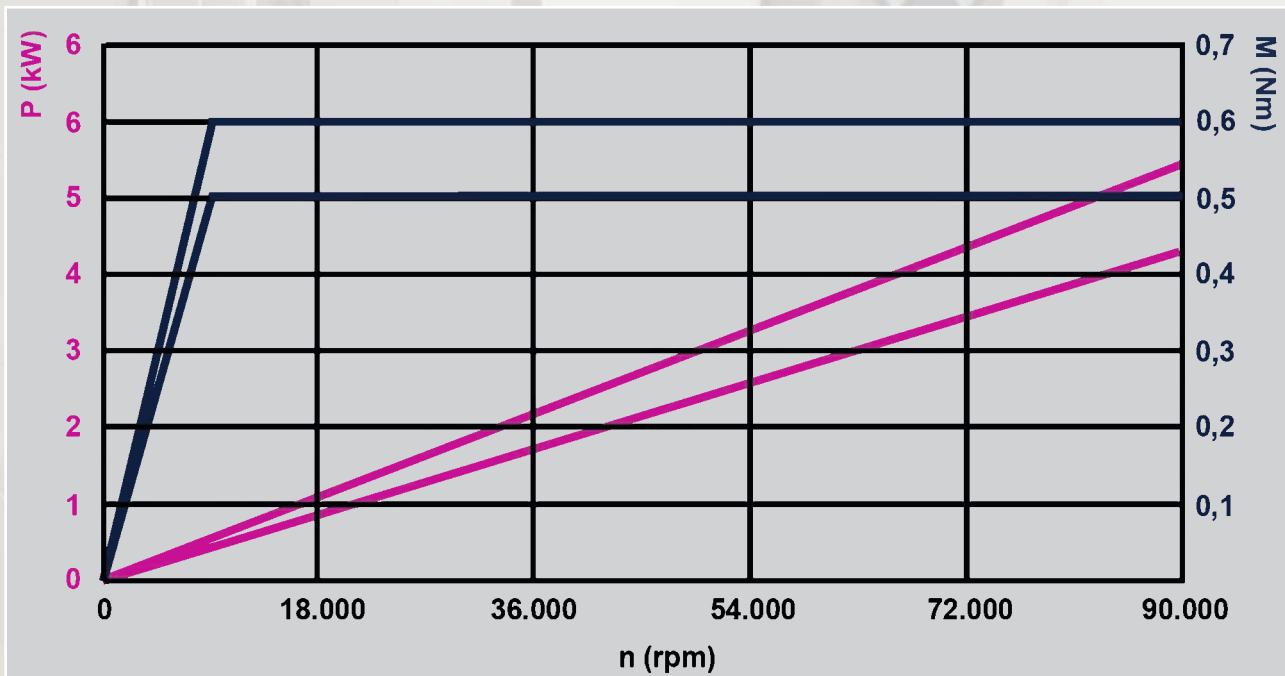




The grinding spindle on station 1 can be oriented either towards the left or right spindle.

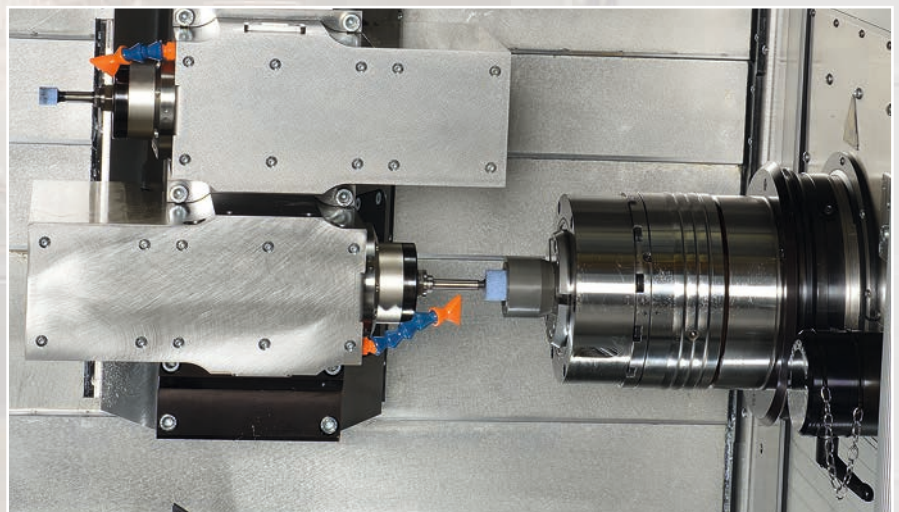
Its speed range is continuously programmable up to 90,000 rpm and thus also suitable for internal grinding of small bores. In the photo on the left, the grinding spindle points towards the main spindle.

Performance 5,4 kW (S6 60%)
Torque 0,62 Nm (S6 60%)



The grinding spindle on station 2 is identical to the spindle on station 1.

It can be oriented either towards the left or right spindle. In the photo on the right, the grinding spindle points in the direction of the sub-spindle.



Machine Highlights

Spindle 1 can be moved in direction X/Z

Stationary external grinding spindle

Monoblock machine bed with three-point support

Internal grinding spindles can be oriented either to the left or to the right

High-precision motor spindles for workpiece mounting

Turret with live tools and Y-axis

Spindle 2 can be moved in direction X/Z *)

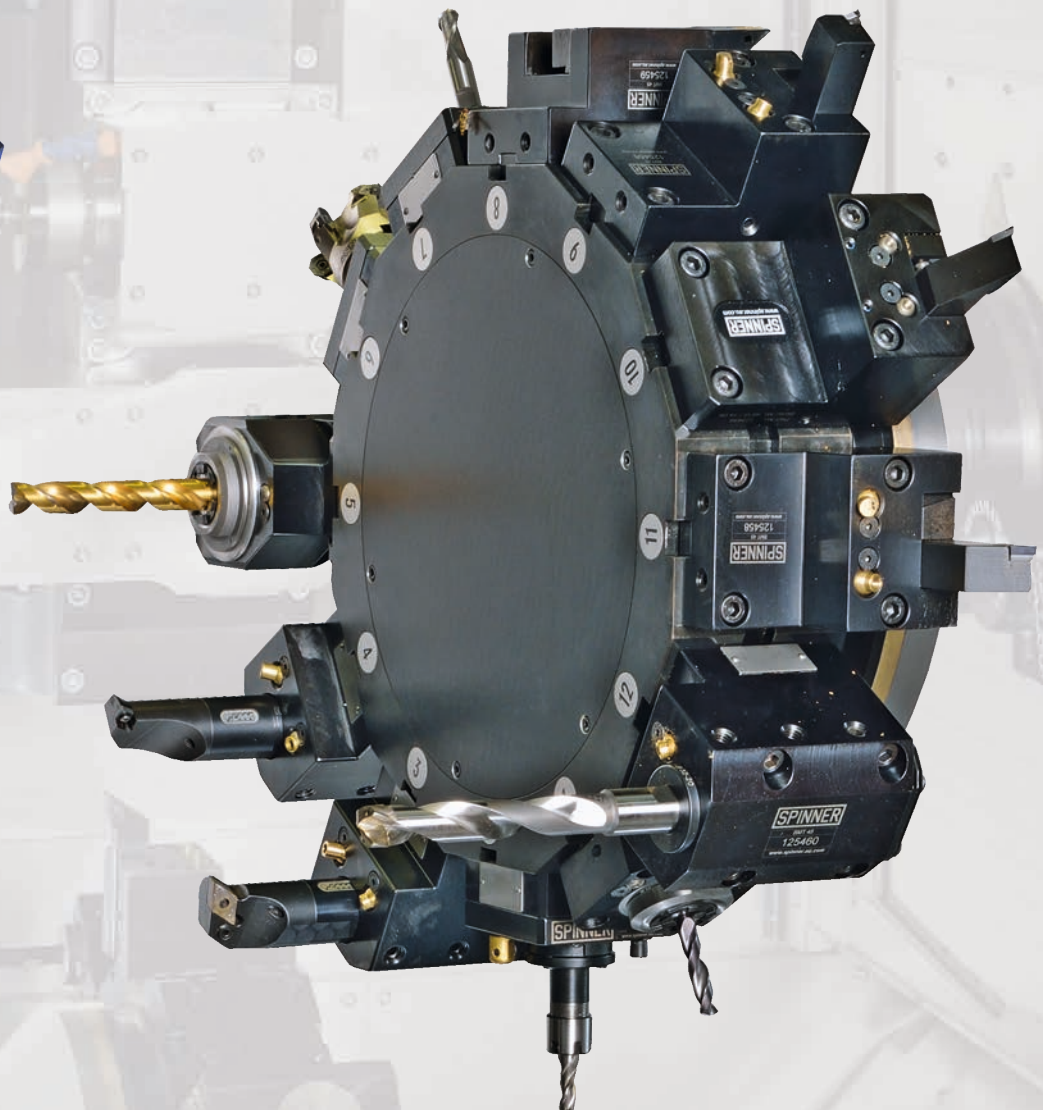
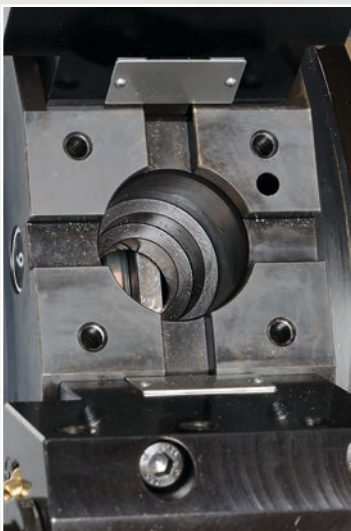
*) Machine also available as 1-spindle machine (without spindle 2)

Modern SPINNER Servo-Turret with up to 12 driven tool stations for powerful milling

Tool holder according to BMT45 as standard

Your advantages at one glance when using BMT45

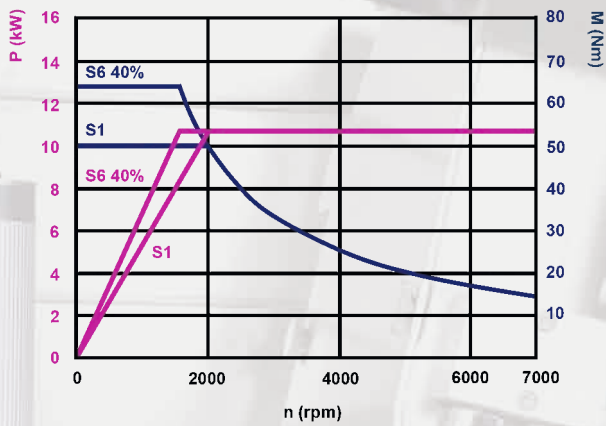
- ✔ High toolholder exchange precision
- ✔ No adjustment is required
- ✔ High stiffness
- ✔ Higher turning and milling performance



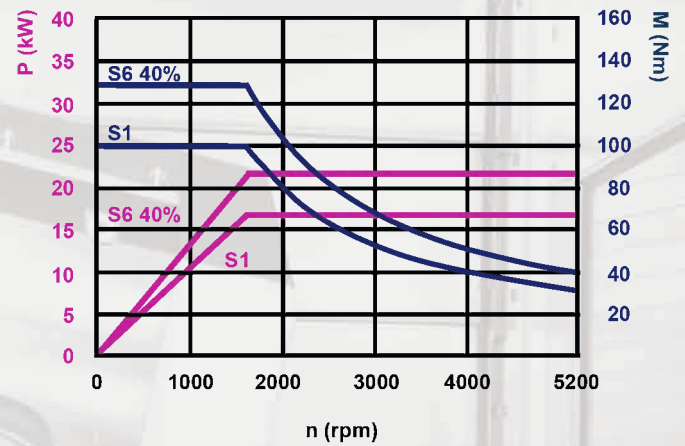
Working area	Microturn 36	Microturn 52
Swing diameter	608 mm (23.9")	
Max. turning diameter	~ 150 mm (~ 5.9")	
Max. turning length	~ 250 mm (~ 9.8")	
X / Z axis	600 / 350 mm (23.6" / 13.8")	
Y1 / Y2 axis	+50 / -50 mm (+1.9" / -1.9")	
Axes		
Rapide traverse X / Y / Z	24 / 15 / 24 m/min (944.9 IPM / 590.6 IPM / 944.9 IPM)	
Turning spindles		
Max. spindle speed	7,000 rpm ¹⁾ / 10,000 rpm ²⁾	5,200 rpm ¹⁾
Spindle nose	A5	A6
Spindle bore in the push tube	36 / 0 mm (1.4" / 0")	52 mm (2.0")
Chuck diameter	160 mm (6.3")	210 mm (8.3")
Performance	10.5 kW (S6 / 40%) ³⁾	22 kW (S6 / 40%) ⁴⁾
Torque	64 Nm (S6 / 40%) ³⁾	130 Nm (S6 / 40%) ⁴⁾
External grinding spindle		
Max. speed	0 - 4,000 rpm	
Grinding wheel diameter	400 mm (15.7")	
Performance	10.7 kW (S6 / 40% / 2 min)	
Torque	25.6 Nm (S6 / 40% / 2 min)	
Internal grinding spindle		
Max. speed	90,000 rpm	
Performance	5.4 kW (S6 / 60% / 2 min)	
Torque	0.6 Nm (S6 / 60% / 2 min)	
Turret		
Number of tool stations	12	
Number of driven tool stations (option)	all	
Tool holder	BMT45	
Max. speed of driven tools	8,000 rpm	
Performance	4.3 kW (S3 25%) ⁵⁾	
Torque	13.6 Nm (S3 25%) ⁵⁾	
General indications		
Dimensions (L x W x H) ⁶⁾	3,300 x 4,100 x 2,420 mm (129.9" x 161.4" x 95.3")	
Weight	approx. 7,100 kg ⁷⁾ (15,652.82 lbs)	

1) Optionally higher spindle speed with hybrid bearings; 2) Hydraulically operated closed-center cylinder without through-hole for bar material; 3) Rated speed 2,000 rpm; 4) Rated speed 1,600 rpm; 5) Rated speed 3,000 rpm; 6) See floorplan; 7) Net weight of the long machine version: with main spindle 52, with subspindle 52 and turret

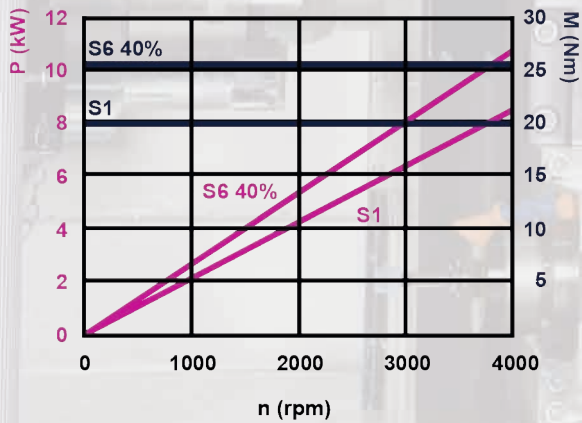
Turning spindle Microturn 36 7,000 rpm



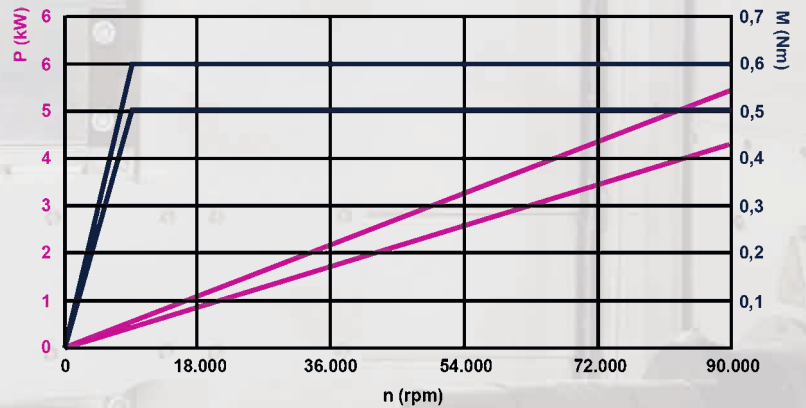
Turning spindle Microturn 52 5,200 rpm



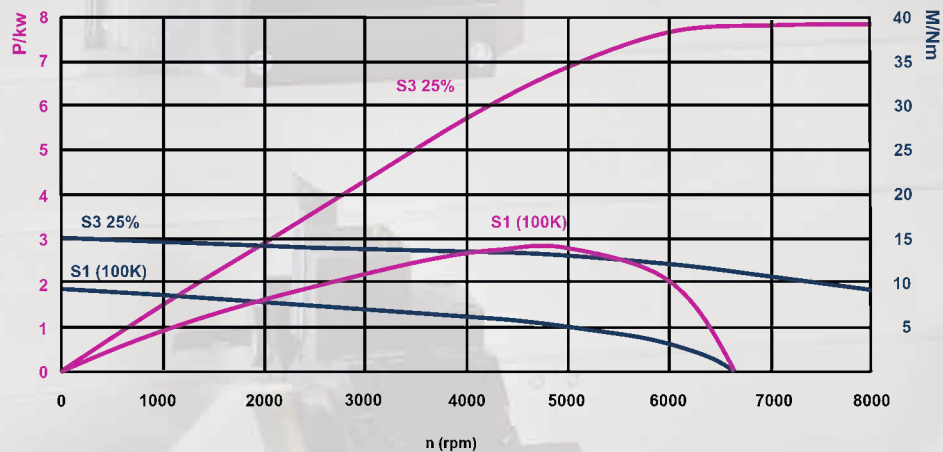
External grinding spindle 4,000 rpm

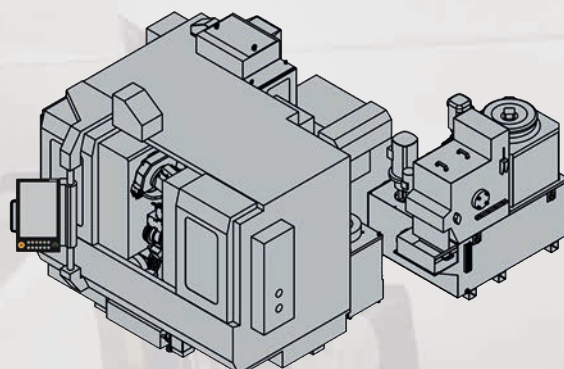
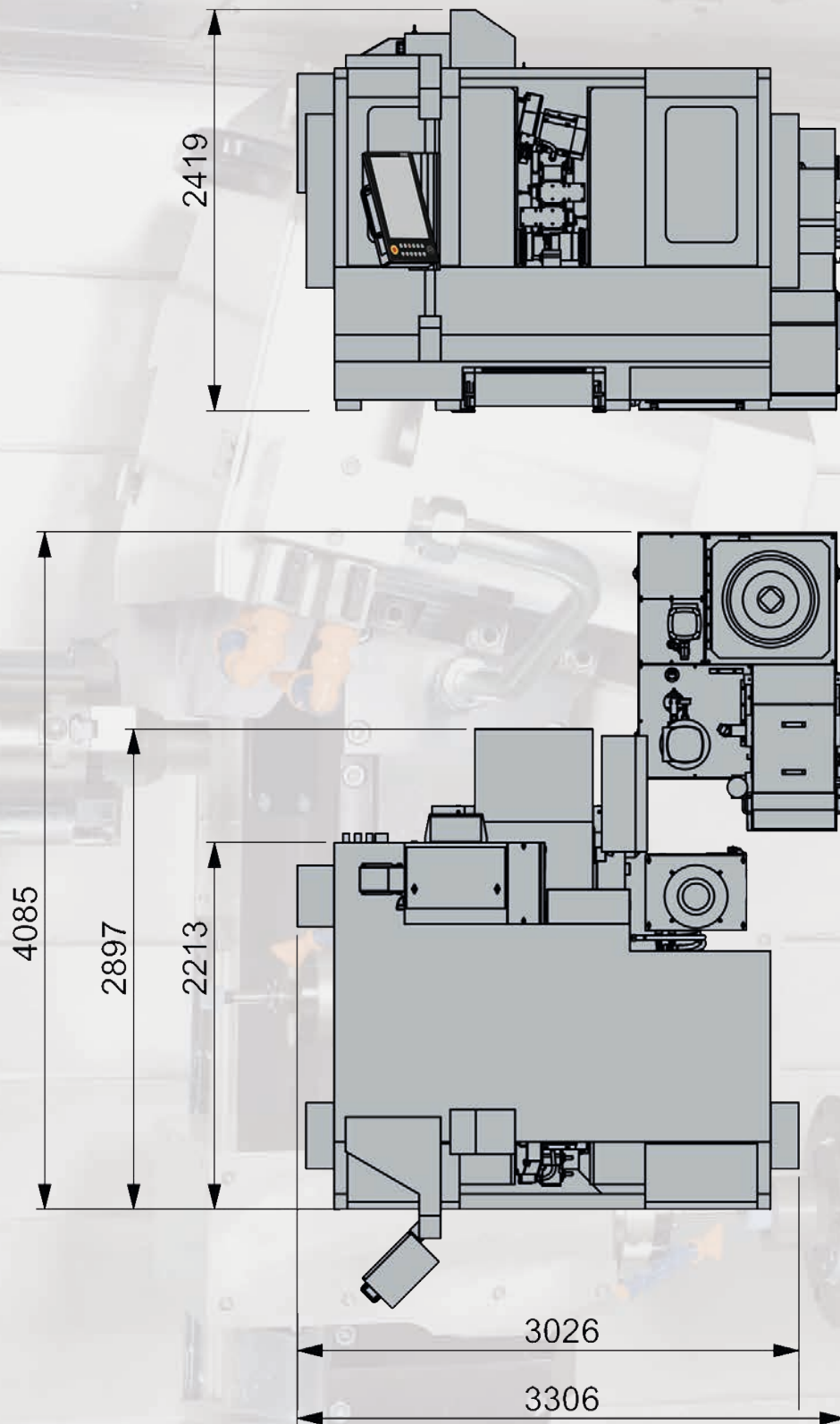


Internal grinding spindle 90,000 rpm



Driven tools (turret)







Werkzeugmaschinenfabrik GmbH



Spinner Machine-Tools are working successfully world wide with many well known clients in more than 60 countries on 6 continents. We have been fortunate enough to attract small component suppliers in addition to well known global groups in all metal machining industries.

We have designed and produced the most modern machine-tools since 1950. More than 20.000 delivered machines demonstrate their high efficiency, precision and reliability, everyday.

Although Spinner is a medium-sized enterprise we produce and sell more than 1.000 CNC machines a year. And the number is increasing every year. Our company combines the know-how of a global player with the flexibility and cost-effective structures of a family owned business.

Place your trust in our products as well and let us know what we can do for you.



Video

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Technical changes of specifications and pictures are subject to change without notice - Pictures can include options, accessories