



SPECHT® 500 DUO



A Step Forward in Component Manufacturing



SPECHT® 500 DUO+ for the component market

The SPECHT® 500 DUO+ focuses on the market for components suppliers. It is based on a dual spindle model, successfully used in the automotive industry, and optimally suited for this market segment thanks to its added pallet changer, increased A-axis torque and a 100 mm larger Y-travel (730 mm).

Featuring one of the fastest tool magazines on the market (L-chain + 2 discs) and compensation in all axes for "single spindle precision on DUO centers", this compact CNC machining center from MAG will both meet existing customers' wishes and attract new customers in the ,component market.

Shortest down times

- ▶ Fastest tool changer on the market
- ▶ Chip-to-chip time less than 2.8 s
- ▶ Easy magazine loading on floor level

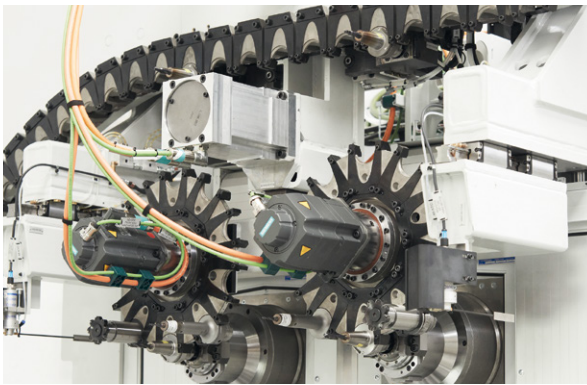
Most precise dual spindle in its class

- ▶ Unique "Dynamic Axial Compensation" (X/Y/Z) brings solo spindle precision to DUO centers
- ▶ Spindles can be adjusted to the workpieces independently of each other
- ▶ Highest quality through process traceability
- ▶ Temperature compensation down to the workpiece
- ▶ Integrated taper cleaning for lasting tool precision



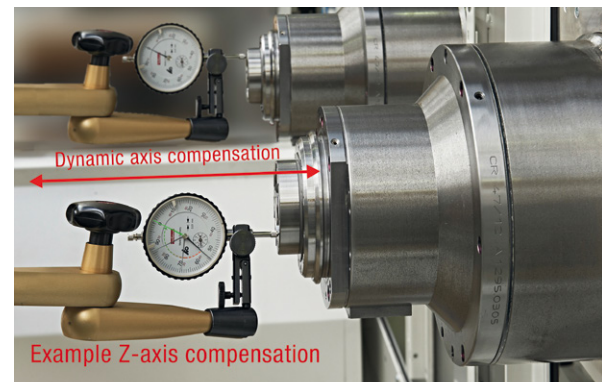
Highest Cost-Effectiveness

- ▶ By combining the fast and patented tool magazine and the fastest tool changer on the market, chip-to-chip time drops to below 2.8 s
- ▶ Easy magazine loading on floor level
- ▶ Energy Efficiency Package for lower energy consumption
- ▶ Workpiece clamping with zero point clamping system or adapter plates – reduction of clamping elements, permanently high accuracy and fast changeover



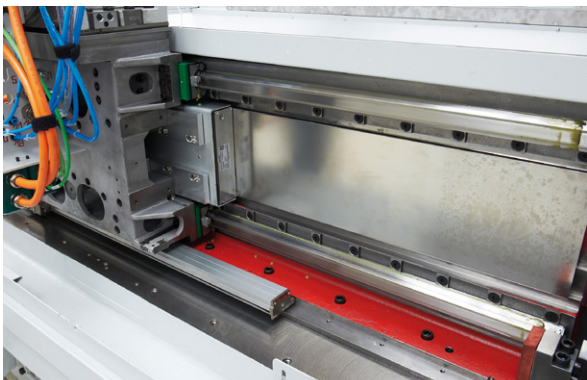
Highest Precision

- ▶ Thanks to the unique “Dynamic Axial Compensation” in (X/Y/Z), spindles can be adjusted to the workpieces independently of each other
- ▶ Process traceability allowing for solo spindle precision on a DUO center
- ▶ Thermal compensation in machine, fixture and work-piece will ensure consistent quality in your production
- ▶ Integrated taper cleaning for lasting tool precision



Efficient and Economical Manufacturing

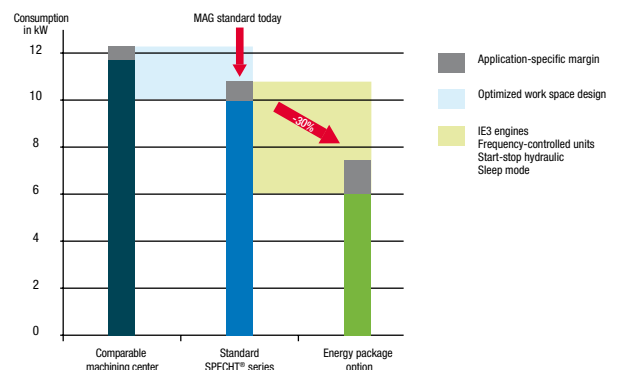
- ▶ Wet machining also possible when technologically required, as well as dual-channel minimum quantity lubrication with finest dosing for environmentally friendly production
- ▶ Optimum chip flow (no chip packing) in dry or MQL machining thanks to straight walls in both machine bed and chip tray
- ▶ Axis drives as linear motor for even more efficiency in your production



Energy Efficiency

- ▶ Low energy consumption through working environment and energy management as standard
- ▶ Customized energy efficiency package, automatically adapted to the existing machine upon request
- ▶ Package includes features like e.g. controlled high-pressure pump for coolants with auto start-stop control, energy monitor, compressor for closed-circuit cooling units etc.

BLUECOMPETENCE
Alliance Member

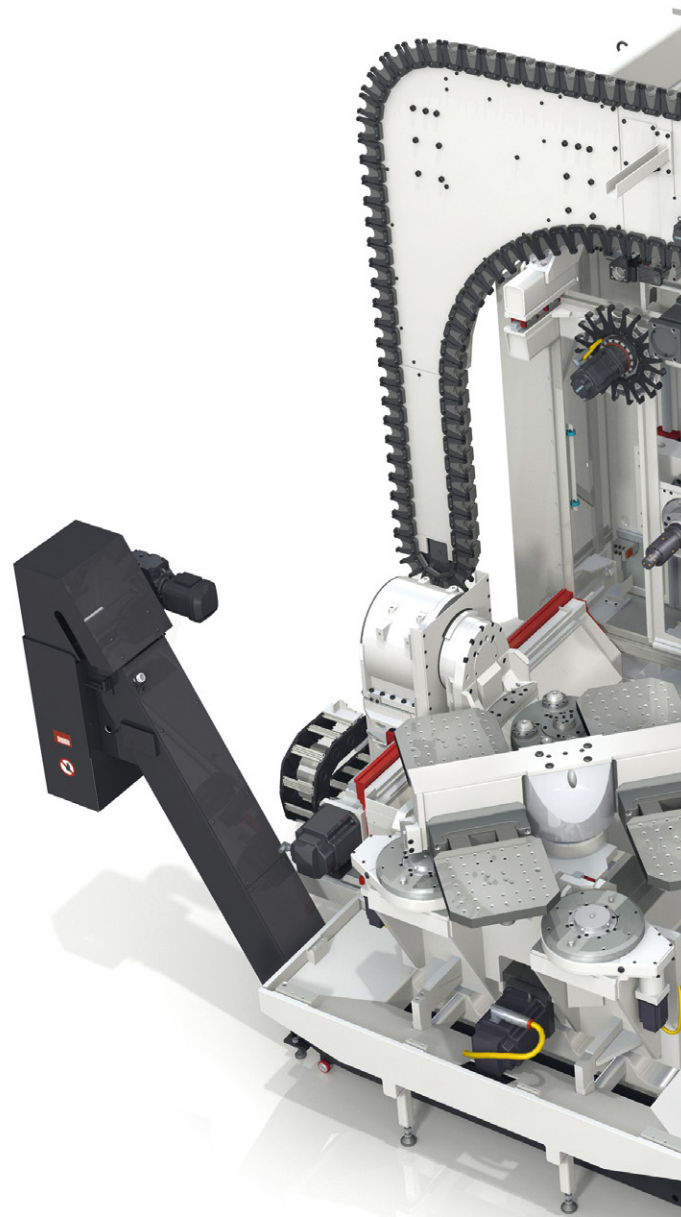


SPECHT® 500 DUO+

A New Direction in Component Manufacturing

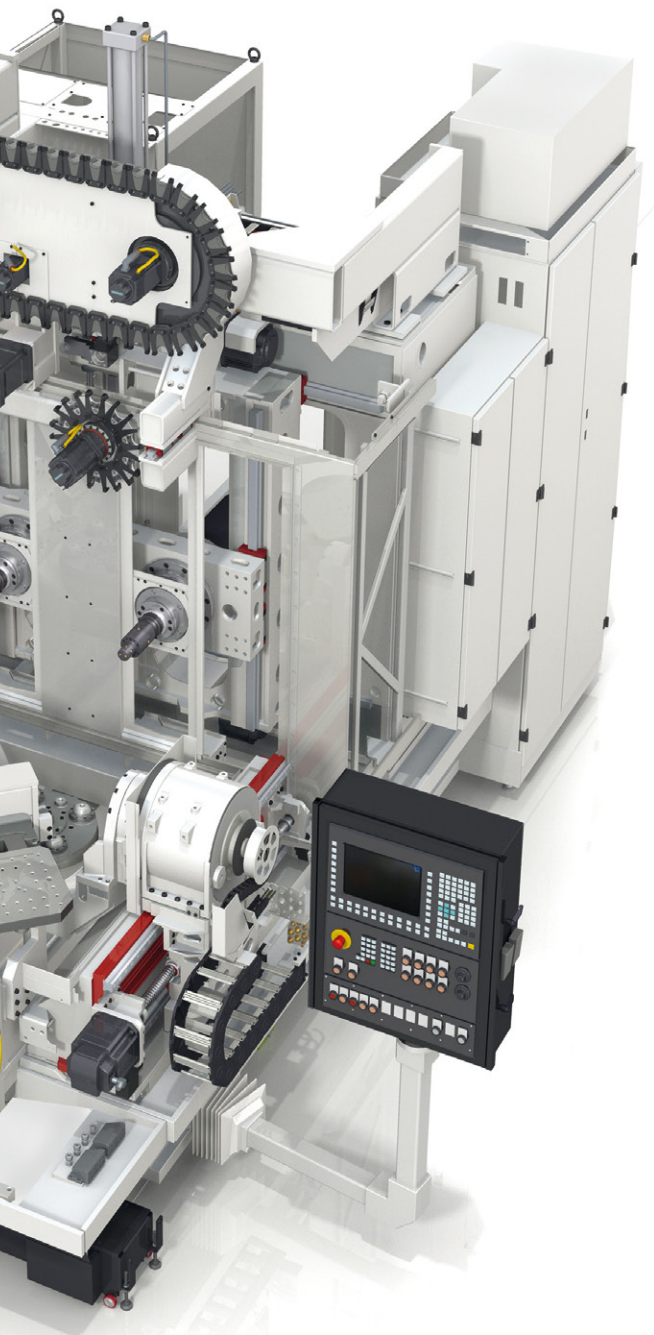
Flexibility and Productivity

- ▶ Large working area and large spindle distance for convenient machining of multiple setups
- ▶ Manual or automatic loading of workpieces
- ▶ Excellent system integration through preparation for different automation concepts
- ▶ Cycle-time concurrent setup at the NC-rotatable workpiece setup station with its wide opening
- ▶ CNC Control SIEMENS 840S solutionline or FANUC 35i B
 - Process monitoring and remote diagnosis
 - Main spindle condition monitoring
 - Warm-up and holding programs
 - Controlled shutdown of axes after power failure



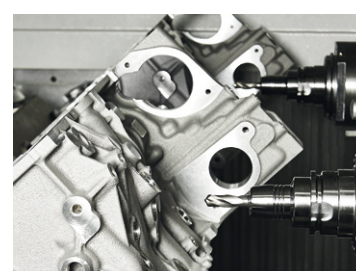
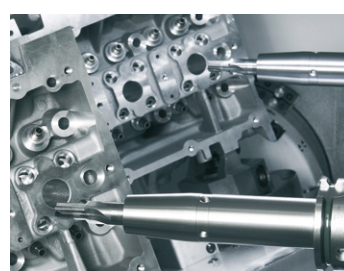
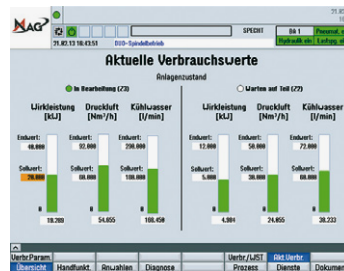
SPECHT® DUO

With its Unique Components – The Most Precise Dual Spindle Model in its Class



Various standards and options

- ▶ Modular system for best configurability according to workpiece and the respective machining requirements (e.g. in X-, Y- and Z-axis, linear motors)
- ▶ Wet machining or minimum quantity lubrication (dual-channel) with finest dosing for an environmentally friendly production
- ▶ Straight walls in the machine bed and chip tray ensure excellent chip flow in dry and MQL machining
- ▶ Workpiece clamping with zero-point clamping system or adapter plate for consistently high precision and fast changeover
- ▶ Automatic tool breakage monitoring for maximum process reliability
- ▶ 3D infrared measuring probe

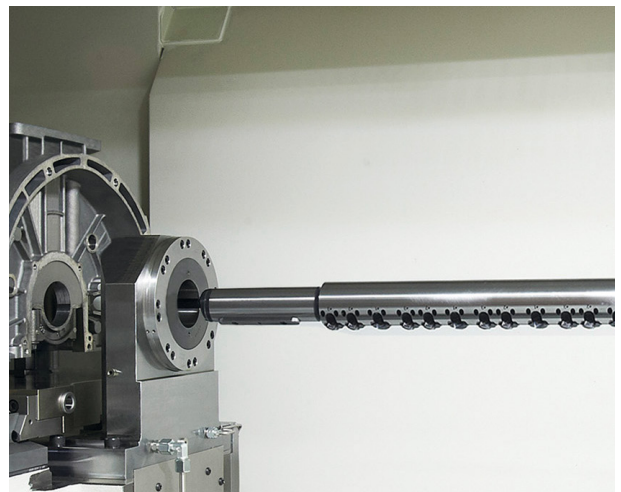
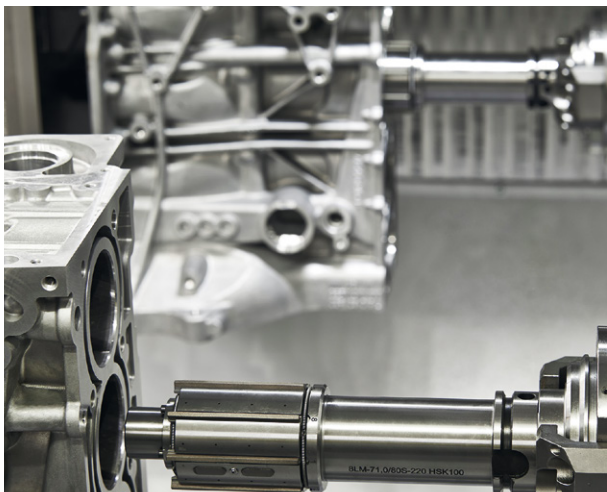


SPECHT® 500 DUO+

MAG Expertise in Finish Machining (Including Honing) on a Dual-Spindle Machine

Motor spindle featuring a fully integrated, dynamic U-axis

- ▶ Draw-bar spindle as a full-fledged digital NC-axis without port in the working area – can be used for any number of adjustable tools
- ▶ Highly flexible, dual-spindle honing, also suitable for applications beyond the cylinder block
- ▶ Applications for defined actuation of the draw-bar spindle
 - Honing on dual spindle center including air and power measurement
 - Air measurement via integrated channels
 - Wear compensation, e.g. in fine boring
 - Face turning on the machining center
 - Machining of flange bearings



Technical Data

Machine type		SPECHT® 500 DUO+	
Axis drive		Ball screw drive	Linear motor
Linear axes			
Spindle distance	mm	720	
Working range X	mm	630	
Working range Y	mm	730	
Working range Z	mm	860 (A-axis) / 900 (B-axis)	
Axis speed max.	m/min	60	120
Axis acceleration X / Y / Z	m/min	6	10
Rotary axes			
A-axis interference circle ø max.	mm	1100	
Tool / fixture width max.	mm	1520	
Load max.	kg	2 x 365	
B-axis interference circle ø max.	mm	2 x 710	
Workpiece height max.	mm	875	
B-axis table Ø	mm	2 x 500	
Load max.	kg	2 x 400	
A/B-axis interference circle ø max.	mm	A 1100 / B 710	
Workpiece height max.	mm	640	
B-axis table Ø	mm	2 x 450	
Load max.	kg	2 x 290	
Motor spindle (HSK-A63)	rpm	18 000 / 16 000 / 10 000	
Spindle power (40% duty)	kW	42 / 52 / 39	
Spindle torque (40% duty)	Nm	67 / 123 / 180	
Motor spindle (HSK-A100)	rpm	8000 / 10 000	
Spindle power (40% duty)	kW	38 / 52	
Spindle torque (40% duty)	Nm	378 / 250	
Motor spindle – draw-bar spindle (HSK-A100)	rpm	6000	
Spindle power (40% duty)	kW	52	
Spindle torque (40% duty)	Nm	250	
Tool magazine		L-chain with 96 positions + 2 discs with 8 positions each	
Storage capacity (HSK-A63)		112	
Tool-ø max. – full / empty	mm	125 / 230	
Tool length max. (workpiece loading)	mm	550	
Tool weight max.	kg	12	
Chip-to-chip time (tool < 4 kg)	s	< 3.3	< 2.8
Tool magazine		L-chain with 60 positions + 2 discs with 6 positions each	
Storage capacity (HSK-A100)		72	
Tool-ø max. – full / empty	mm	75 / 230	
Tool length max. (workpiece loading)	mm	550	
Tool weight max.	kg	18	
Chip-to-chip time (tool < 4 kg)	s	< 3.5	< 3.0
Machine dimensions			
Machine width	mm	3560 (A-axis) 3410 (B-axis)	
Machine length	mm	5250 / 5650	
Machine height	mm	3800	
Machine weight	kg	23 000 - 26 000	
Connection load	KVA	40	70

Subject to change without notice



VDF BOEHRINGER



DIGITAL
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MORARA

Pfiffner



TACCHELLA

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About FFG Europe & Americas

FFG Europe & Americas unite major players from the German, Italian, Swiss and American machine tool industry with a broad range of milling, turning, grinding, and gear manufacturing technology, and the knowhow of the renowned machine tool brands VDF Boehringer, Corcom, Digital Factory, Hessapp, IMAS, Jobs, MAG, Modul, Morara, Pfiffner, Rambaudi, Sachman, Sigma, SMS, Tacchella and Witzig & Frank. Since 1798, these brands have substantially contributed to the progress in industrial manufacturing and are well known as reliable and innovative equipment and systems solutions suppliers for the automotive and truck, aerospace, machine building, general machining, railway industry, energy and heavy engineering industries. While being an independent group, these entities benefit from the strengths and opportunities of the global Fair Friend Group. They stand for premium technology within FFG.



Clean and clear service for SPECHT® machines

- ▶ Compact design, oriented towards service and function
- ▶ Compact electric control cabinet which is clearly laid out
- ▶ Compact fluid cabinet with centrally located hydraulic and pneumatic control elements
- ▶ Excellent spindle service as central pillar of the MAG Group
- ▶ Simple and quick replacement of SPECHT® motor spindles



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All illustrations are examples only. The actual design and composition of machines may differ and depends on the ordered features. MA2401(03DE)en/0/09.23

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