

ECO - Spindle

2SP1 Motorspindle

WEISS Spindeltechnologie
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| 2SP1 - ECO Spindle

Compact and ,all-inclusive' in the spindle box

Increasing requirements for higher metal removal rates with higher speeds in combination with a more compact design have resulted in the increased use of motorized spindles.

With the 2SP1 series, WEISS provides motorized spindles for milling machines with an extremely attractive price/ performance ratio,

Compact with all necessary spindle functions

The motor spindle's performance is optimized to provide a viable alternative to a conventional belt-driven solution. It also consumes much less space and can be installed quickly and easily thanks to its cartridge-type design. All the important components of a motorized spindle are available.

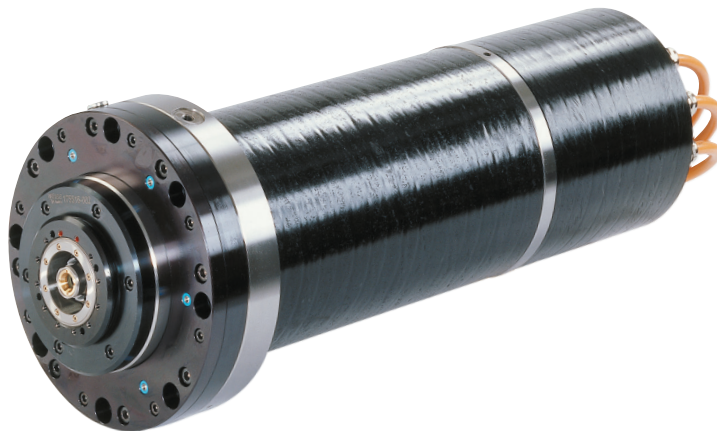
These include:

- Different types of tool interfaces
- Pneumatic or hydraulic tool clamping and releasing mechanisms
- Rugged spindle bearings in maintenance-free greased design to absorb the machining forces
- Water-cooled drive motors in synchronous or asynchronous design
- Enclosed spindle housing with mounting flange
- Sensors for indexing and monitoring tool change

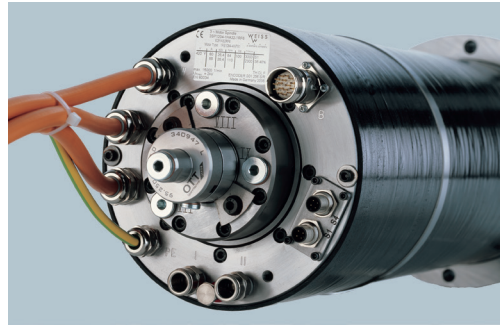
High torque output and universal application

The 2SP1-ECO spindle is designed for different torque levels and can therefore be used for both roughing and precise finishing.

The motor spindle features a particularly robust design. Different torque and speed classes are available depending on the torque and speed requirements.

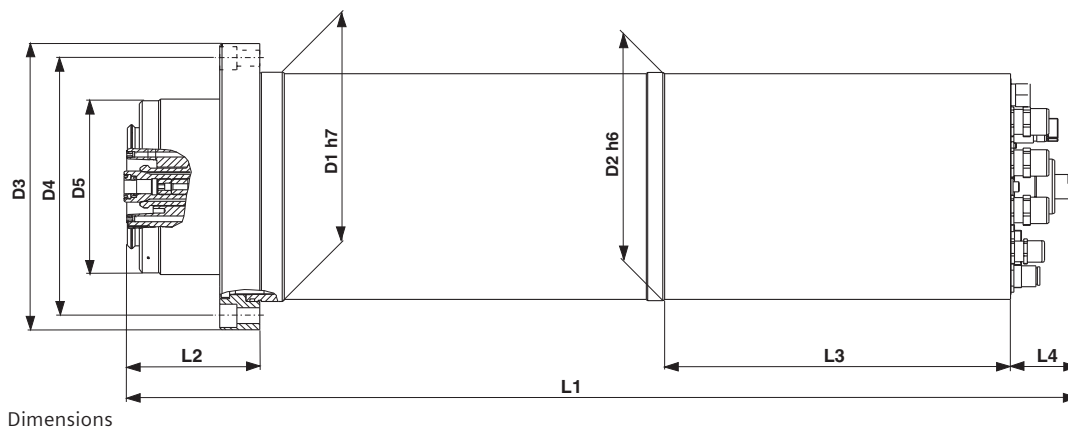


Economical standard solution with a number of advantages



The 2SP1-ECO spindle is the ideal drive solution for main spindles in standard milling machines and machining centers and offers the customer significant advantages in comparison with conventional belt-driven solutions:

- The complete solution is comparable with belt-driven solutions and more economical than the classical customized motorized spindle designs
- Hydraulic or pneumatic tool clamping and releasing mechanisms depending on customer preference
- Thanks to the pneumatic tool clamping and releasing mechanisms, a hydraulic unit is not required
- Integrated sensors (for indexing and monitoring tool change)
- Higher max. speed and shorter acceleration time compared to conventional solutions
- Drive train with greater rigidity
- More compact solution
- Fewer parts and easier installation
- Extreme short tool change times with 2SP120 by a 2-channel system and an optional retaining collet



	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	D5 [mm]	L1 ¹⁾ [mm]	L2 [mm]	L3 [mm]	L4 [mm]
2SP1202	200	199	250	225	150	735 ²⁾	115,5	309 ²⁾	58 ²⁾
2SP1204	200	199	250	225	150	835 ²⁾	115,5	309 ²⁾	58 ²⁾

¹⁾ Without rotary feedthrough unit, the spindle length is shorted by approx. 43 mm

²⁾ With hydraulic tool clamping device, the spindle length L1 is approx. 118 mm shorter, L3 is approx. 147 mm shorter and L4 is approx. 30 mm longer

Technical Data

Order No.	Maximum speed	Rated speed	Rated power	Rated torque	Rated current	Rated power	Rated torque	Maximum current
	[rpm]	[rpm]	S1 [kW]	S1 [Nm]	S1 [A]	S6-40% [kW]	S6-40% [Nm]	[A]
Synchronous								
2SP1202-1HA ■■■-1 D ■■	15,000	2,700	12.0	42	30	12.0	55	60
2SP1202-1HB ■■■-2 D ■■	18,000	3,500	15.5	42	42	15.5	55	84
2SP1204-1HA ■■■-1 D ■■	15,000	3,000	26.4	84	60	26.4	110	120
2SP1204-1HB ■■■-2 D ■■	18,000	4,300	35.0	78	79	35.0	110	160

Options

Electronical connections

- 2: power via 1.5 m cable without connector, signal connectors for the sensors
- 6: power via 1.5 m cable and connector size 1.5 (only 2SP1202) or size 3 (only 2SP1204), signal connectors for the sensors

Sensors

- J: Analog sensor: M+SMI24
- K: Digital sensors: Draw-bar in release position/ tool clamped/ clamped without tool
- Digital sensors: Position release piston
- L: Analog sensor: Draw-bar in release position/ tool clamped/ clamped without tool
- Digital sensors: position release piston
- M: L + Bearing temperature sensor PT100
- N: K + Bearing temperature sensor PT100

Tool interfaces

- D: HSK A 63 tool interface
- R: HSK A63 tool interface with retaining collet

Cooling

- 1: closed cooling jacket
- 2: 3 with 80 bar
- 3: closed cooling jacket and coolant through tool (50 bar)
- 4: closed cooling jacket and ring for external tool cooling
- 5: 3 + ring for external tool cooling

Tool clamping- and -releasing device

- 2: pneumatic
- 3: hydraulic

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