

# **Spindles for machining with robots**

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#### Robot

The MAX 150 Professional is a specialist for machining tasks in milling. With its accuracy, operating speed and load capacity, the MABI robot is ideally suited to the challenges of milling.

The MAX150 series achieves the highest possible absolute and path accuracies by integrating unique sensors and extensive compensation algorithms.

#### Spindle unit

Weiss Spindeltechnologie GmbH specialized in the development and production of high-precision motor spindle units. The company supplies a complete spectrum of standardized as well as individual solutions and realizes their embedding in complete electromechanical systems.

For use on robots, the spindles are designed especially for the high demands on the weight and on

Motor cooling: water Bearing lubrication: grease Tool change: pneumatic/ manual Connection spindle to robot: ISO9409-1

connection spinule to robot. ISO 9409-1					
	А	В	С	D	E
Power [kW]	4.4	4.4	6.6	14.4	16.5
Weight [kg]	7.2	8.9	25.7	31	62
Speed [rpm]	40,000	30,000	18,000	18,000	24,000
Torque [Nm]	1.4	1.4	4.5	11.0	20.0
Rated current [A]	10	10	12	24	29
Interface	HSK-C32	HSK-E25	HSK-A32	HSK-A32	HSK-A50

The robot control is carried out by the CNC SINUMERIK 840D sl from Siemens, which as a model of the premium class assures maximum dynamics and accuracy. The technological high-quality equipment provides flexibility and opens up alternative applications in milling. For this purpose, WEISS offers high-precision milling spindles.

the smallest possible number of different operating media. The optional available equipment of the spindle with the ISO 9409-1 standardized interface to the robot is another advantage of WEISS spindles.



### Digital interface (optional)

The WEISS spindle sensor module SMI24 simplifies the commissioning of the spindle, required hardware for integrating spindle signals into the controller and information about the spindle status displayed on the HMI.



Option SINUMERIK: Integrated Spindle Monitor ISM for example, display of speed and torque histograms

With the SINUMERIK "Integrated Spindle Monitor" ISM option, additional information on the spindle status and data on the use of the spindle can be called up via masks on the HMI.



Individual evaluation of spindle data such as e.g. run-time-related speed and torque ranges provide information about the spindle data and the spindle insert. From this, the wear behavior of the spindle and planning for preventive maintenance measures can be derived in a more targeted manner.

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