Modern machining operations require capable and dynamic spindle drives.

Our 910 series is a spindle concept that our technicians and engineers developed from customers’ applications in line with market demands. Building on many special versions, the spindle structure has been revised and standardized in order to achieve reasonable price structures. The latest techniques in the areas of bearings, motor and clamping technology, lubrication, sealing, sensor technology and materials were used in the 910 series, enabled through innovative product development and practical engineering.
### Chuck
- HSK chucks are available for the smaller sizes. Larger sizes are optionally equipped with HSK chucks on request. The larger versions are equipped with short taper according to DIN 55027. Manual tool clamping and releasing. The spindle is equipped with an integral rotary encoder.

### Bearing
- We only fit high precision, preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity, measured at the chuck, is $< 0.002$ mm. The spindles run as smoothly as they do thanks to their rigid construction and optimised balancing.

### Rotational direction
- Spindles can be operated clockwise or CCW.

### Lubrication
- Lifetime grease lubrication

### Motor
- It is driven by a liquid-cooled, variable induction motor. Power ratings from 14.5–120 kW are available. A frequency converter is used to operate the spindle up to its maximum speed. The system is controlled by an integral rotary encoder. The temperature is monitored by sensors in the motor winding.

### Cooling
- The motor is cooled by a separate integral cooling circuit near the motor windings.

### Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.
HSK

HSK clamping set

Power supply

Sealing air

Water in

Water out

Taper 1:10

Locking ring

910 series

Short taper

Power supply

Sealing air

Water in

Water out

Short taper DIN 55026

> 910 series

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<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Chuck</th>
<th>KW</th>
<th>Rated rpm</th>
<th>rpm max.</th>
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Voltage: 400 V