TOOLING SYSTEMS PROCESS OPTIMIZATION CONSULTING IM MILLING STRATEGIES

SPINDLE SYSTEMS

HSL 1, HSL 2, HSL 4, HSL 6.

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SPINDLE SYSTEMS

With modern Spindle systems to more efficent milling performance.

Many milling machines -both old and new- have low revolution supply. Lower revolutions have only some advantages for certain roughing operations, but are the biggest drawback for achieving efficient feed rates. Low revolutions also reduce efficient usage of current CNC-applications. Consequently, machining time is increasing and profitable machining results are given away.

Pokolm-Voha offers convincing solutions for these problematic evidences: modern High speed spindle systems for efficient machining results.

Improved surface finish and improved cycle time.

These advantages impress: higher surface speed and utilization of maximum feed rates - even for smallest end mills - through improved surface accuracy and a distinct reduction of EDM-ing. This results in substantial reduction of machining times and the full usage of the CNC-benefits.

For the individual adaptation to the existing machines, Pokolm-Voha offers various spindle systems. By milling with a setting angle of the A and C-axis of the swivel-device, you increase the application possibilities of your machine.

Obtain maximum speed from your machines by using Pokolm-Voha-Spindle systems. Using the smallest possible end mill at the highest possible no. of revolutions - this is our goal. It results in your time saving.

TECHNICAL DATA OVERVIEW

	HSL 1	HSL 2	HSL 4	HSL 6
Spindle housing	ø 37 mm	ø 61,9 mm	ø 126/105 mm	ø 126 mm
Revolutions:	up to 80.000 rpm	5.000 - 60.000 rpm	up to 40.000 rpm	up to 24.000 rpm
max. continuous rating: 100% continuous duty	0,3 kW	1,4 kW	3,5 kW (5,0 kW)	8,0 kW
maximum output:	0,5 kW	2,0 kW	6,0 kW (9,0 kW)	14,0 kW
type of motor	synchron	asynchron, 3-phases	asynchron, 3-phases	asynchron, 3-phases
Voltage:	48 V	220 V	380 V	380 V
strength of current:	4,8/5,5 A (max. 7,6 A)	7 A (max. 21 A)	10,5 A (max. 21 A)	15 A(max. 20 A)
Frequency:	up to 1333 Hz	up to 1000 Hz	up to 1333 Hz	up to 800 Hz
Spindle-bearings:	hybrid-ceramic bearings	hybrid-ceramic bearings	hybrid-ceramic bearings	hybrid-ceramic bearings
Bearing lubrication:	permanent lubrication	permanent lubrication	permanent lubrication	permanent lubrication
Cooling system:	labyrinth air cooling	circulation system	circulation system	circulation system
Rate of flow:	-	min. 0,8 l/min.	min. 0,8 l/min.	min. 0,6 l/min.
Temperature control:	-	PTC	PTC	PTC
Arbor system:	diam. 10	Collet Chuck	HSK 40 C	HSK 40 C
Collet capacity:	up to 7 mm	up to 6 mm	up to 12 mm (max. 16 mm)	up to 12 mm (max.16 mm)
Sealing by air + labyrinth	1 – 2 bar	0,5 - 0,8 bar	0,5 - 0,8 bar	0,5 - 0,8 bar
Weight:	approx 0,8 kg	approx 3,5 kg	approx 12 kg	approx 14 kg

Technical data of Service units				
Power connection:	115 V, 60 Hz	400/380 V, 50/60 Hz	380 V, 50/60 Hz	400 V, 50/60 Hz
Dimensions (widthx-heightxdepth)	290 × 107 × 295 mm	512 × 500 × 510 mm	512 × 720 × 510 mm	512 × 1070 × 510 mm
Weight:	6 kg	60 kg	80 kg	100 kg




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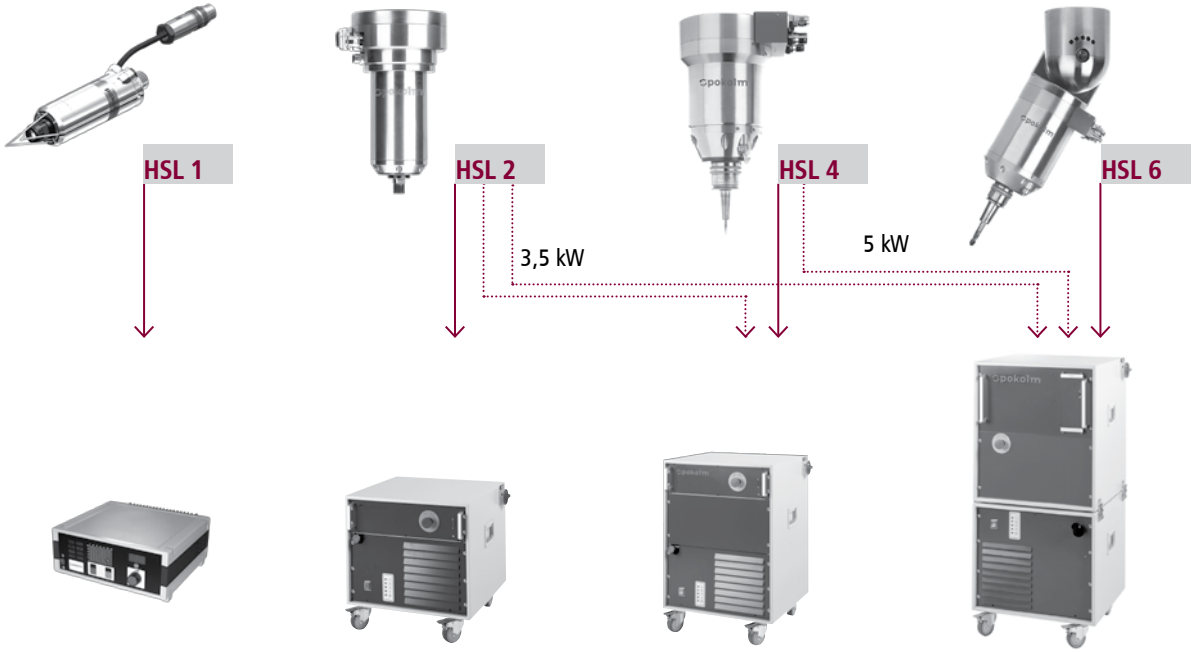
CHARACTERISTICS

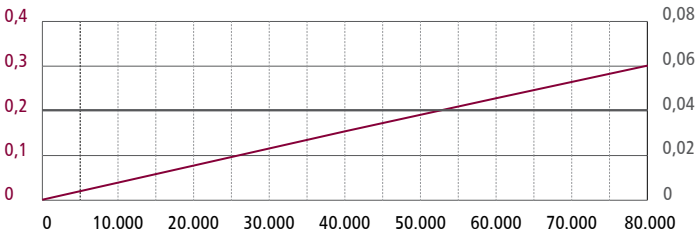
- short and slim shape
- tapered front area eases plunging into narrow sections of components
- free adjustable two-fluid nozzles
- high rigidity in all speed-ranges through hybrid-ceramic bearings
- high flexibility of the connection area for spindle serving by spherical thread joints
- fast and safe assembling and dismantling by rapid action coupling
- permanent lubrication of bearings
- liquid cooling results in no expansion of spindle interface to machine
- all available arbor-systems
- SK 40, SK 50, HSK
- Swivel device for tool-holding arbors
- HSK 40 C-interface for collet-shrinking- and screw-in arbor-systems

Combination possibilities spindles and service units



HIGH SPEED SPINDLES

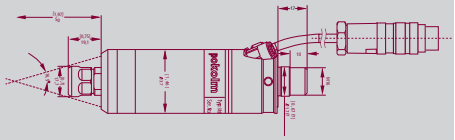
High speed spindle HSL1



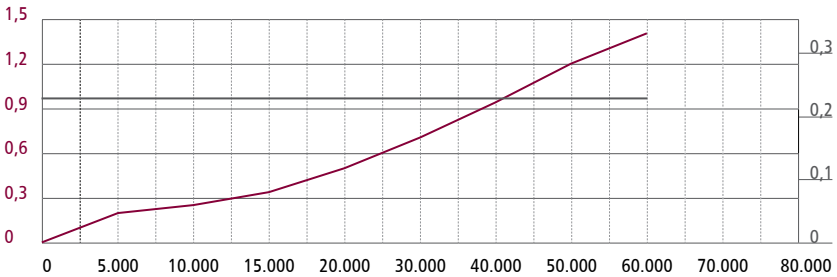
Capacity- and torque-characteristic curve HSL 1 up to 80000 rev/min.

Characteristics:

- maximum continuous rating: 0.3 KW, 100% continuous duty
- Revolutions: up to 80000 rev./min.
- also suitable for smallest engraving applications
- fits in every M 16 - arbor
- short and slim shape allows plunging into narrow moulds



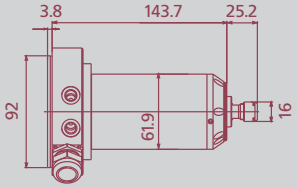
High speed spindle HSL2



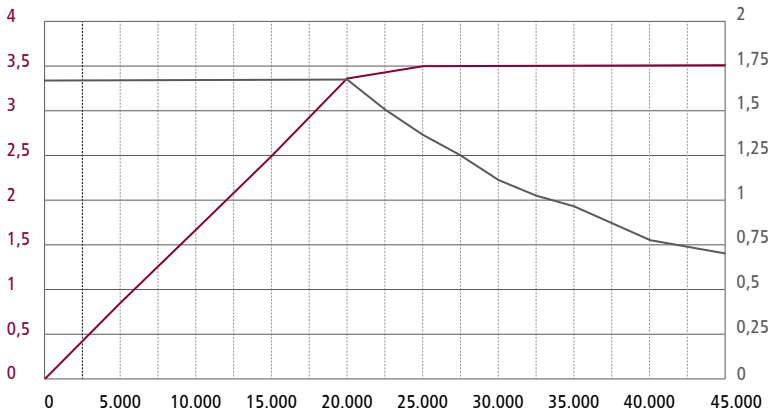
capacity- and torque-characteristic curve HSL 2 up to 60000 rev/min.

Characteristics

- maximum continuous rating: 14 KW, 100% continuous duty
- 5000 up to 60000 rev./min
- also suitable for smallest engraving applications
- short and slim shape allows plunging into narrow moulds



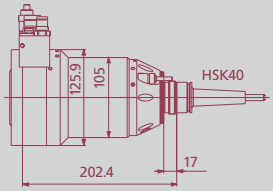
High speed spindle HSL4



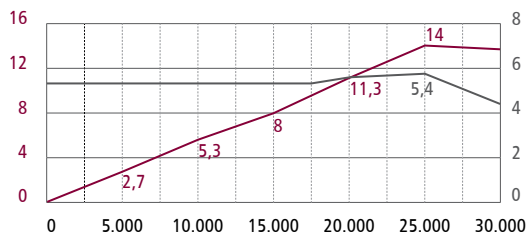
capacity- and torque-characteristic curve HSL 4 up to 40000 rev/min.

Characteristics

- maximum continuous rating: 3.5 KW, 100% continuous duty
- up to 40000 rev./min
- compact shape
- intigrated spray-mist unit
- easy changing of bearings through complete exchange of shaft unit. This ensures quick repair for immediate return to the job without further delay



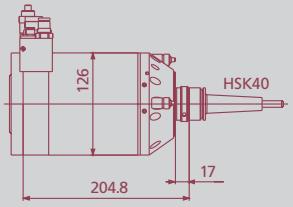
High speed spindle HSL6



capacity- and torque-characteristic curve HSL 6 up to 24000 rev/min.

Charcteristics

- maximum continuous rating: 8 KW, 100% continuous duty
- maximum output: 14 KW
- up to 24.000 rev./min
- short and extremely solid shape
- simple replacement of bearings by changing the complete shaft unit. This allows immediate continued working.
- integrated spray-mist unit



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SWIVEL DEVICE AND CNC-CONNECTION TO MACHINE

„By using these new High speed spindle systems from Pokolm, entirely new prospects in high-speed milling become accessible. With know-how and service from Pokolm, things start running smoothly." Andreas Fodor, managing director of B&A Fodor Donzdorf/ Germany

swivel device

With a Swivel device, our High speed spindle systems allow considerable increase in application possibilities.

- diversity through swivelling
- vectorial milling
- milling in smallest areas
- gaining space in swivelling through eccentric plate
- gaining of 2 additional axis (A + C)

CNC-connection to machine

The PLC-connection to your CNC-machine-control intigrates the spindle systems into the existing production equipment. It offers the possibility of monotoring the Spindle unit besides the complete control.

ANY REMAINING QUESTIONS?
WE WOULD LIKE TO CONSULT YOU!

With substantial knowledge to optimal results!
The successful use of our Spindle systems requires a perfect tuning to the existing machine tool- and application situation. At this point, Pokolm-Voha starts with their advice: with a comprehensive nominative-actual value comparison, we analyse your specific requirements and recommend individual solutions, which result in considerable improvements of your present milling operations. You, as our customer, gain profits from our extensive experiences and competence in developing High speed spindle systems.

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Training:
We train your operators direct on our milling machines in in our demonstration centre with pleasure.

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