



Features of Hydrostatic Lathe Spindles

- Very low friction will heat the spindle only slightly. Nearly all motor power gets to the workpiece.
- Heat that is generated is moved immediately out of the spindle area with the oil and cooled in the chiller.
- No vibration from roller bearings for extremely smooth operation.
- Excellent damping of vibration during grinding process, resulting in superior surface finish and workpiece accuracy. In addition, grinding wheels will stay sharp longer.
- Very high axial and radial stiffness, allowing required dimensions to be reached faster and more precisely. Excellent roundness of grinding diameters.
- High load capacity.
- Speed and stiffness are independent and full load turning from 0 to maximum speed is possible.
- Wear-free because there is no contact between moving parts when in operation.
- No loss of accuracy, even under full load at maximum speed.
- Less sensitive to chips and other debris because the bearings are cleaned continuously with hydrostatic oil.
- Gap is sealed with a compressor air lock which keeps the oil in the spindle and keeps machining coolant and chips out.
- The spindle is supplied with a properly sized hydraulic power unit with chiller. The system is designed to protect the internal bearings should electrical power fail.
- The spindle can be driven by belt, direct drive, or as a motor spindle.
- Static and dynamic bearing forces from the cutting force or unbalance of the workpiece can be detected by measuring the pocket pressure.
- The hydrostatic lathe spindle is especially well suited to horizontal or vertical turning machines or for mill/turning machines.
- The hydrostatic spindle can be adapted to specific machining force and torque requirements.

Technical Data of the Main Spindle, Size A8

Features			
Working speed range	0-4000 rpm		
Friction power at 4000 rpm	1.24 kW		
Max. pump power	0.6 kW		
Pump pressure	63 bar		
Max. oil flow	12 l/min		
Max. heating of oil at 4000 rpm	8° C		
Spindle head	DIN55026 A8		
	80 mm		
	radial front	radial rear	axial front
Bearing diameter	120 mm	110 mm	125/160 mm
Number of pockets	4	4	2
Loadability	Fr = 10000 N	Fr = 8000 N	Fa = +3750/-2400 N
Load reserve	>100%	100%	100%
Stiffness	Cr > 900 N/μm	Cr > 800 N/μm	Ca > 800 N/μm

Higher speed, load, and other sizes are available.