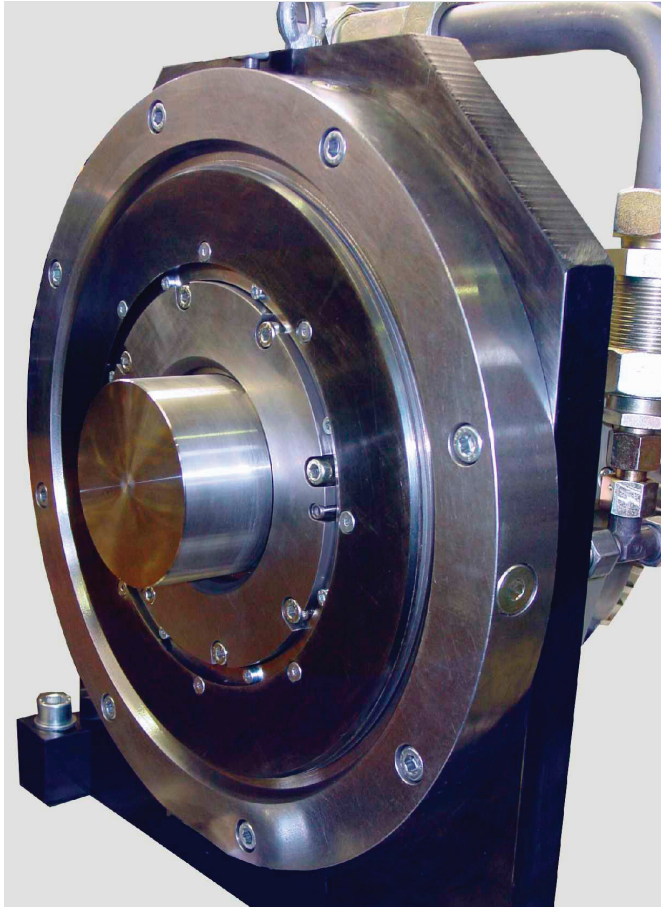**HYPRUSIANK**

Hydrostatic Center Bearings for Turning Machines

Construction and attributes of hydrostatic center bearings

• Only one radial bearing
• Moment and axial forces are carried by an axial bearing
• Integrated clamping piston and rotating oil union for a hydraulic collet. The clamping piston is driven with hydrostatic oil and released with springs.
• Extremely minimal friction (results in minimal warming during continuous operation, and more of the motor drive force applied to the workpiece).
• Any minimal heat buildup is immediately carried out of the spindle via oil and is cooled at the hydraulic unit.
• No vibration (as can result from balls in bearings) provides for extremely silent operation.
• Excellent damping of oscillations created by machining operations, resulting in very good surface finish, improved cutter life (especially beneficial when turning hard materials).
• Very high axial and radial stiffness (high dimensional accuracy when finishing; inaccuracies from pre-machining are quickly equalized; excellent roundness of finished diameters even with interrupted cuts).
• RPM-independant stiffness and loadability (workpiece speeds of 0 to max. RPM are possible).
• Wear-free because there is no contact between surfaces.
• No loss of accuracy under maximum loads.
• No sensitivity to dirt because the bearings are continuously cleaned.
• Gap seals are backed up with purge air to protect the hydrostatic system from cutting fluids.
• The spindle is supplied with a customized hydraulic power unit with oil cooling capability and integrated bearing protection in the event of power failure.
• Can be driven by belt or gear drive.
• Static and dynamic bearing forces from cutting or unbalance can be monitored by measuring pressure in the hydrostatic pockets.

Technical details

Working speed	0-3000 RPM
Duty at 3000 RPM	approx. 3.0 kW
Max. pump duty	3.5 kW
Pump pressure	63 bar
Max. oil flow, bearing	18 l/min
Max. oil flow, clamping cylinder	8 l/min
Max. oil temp. increase at 3000 RPM	12 deg. C
Spindle passage	115 mm

	Radial Bearing	Axial Bearing
Bearing diameter (radial bearing)	215 mm	220/188 mm
Number of pockets	6	6
Loadability	Fr = 5000 N	Fr = 5000 N
Load reserve	250%	160%
Stiffness	Cr > 1200 N/µm	Ca > 1500 N/µm

Other speeds, loads, and sizes are possible. Contact us for further information.