



This is an example of a hydrostatic spindle designed for high speed grinding with CBN grinding wheels. The small bearing diameter in combination with high surface speed allows the use of CBN wheels even for undercuts in a camshaft application.

The hydrostatic spindles “float” on hydrostatic oil pads, resulting in an interface that is wear-free. As a result, the extremely good run-out and high stiffness characteristics of the spindle do not deteriorate over the life of the machine, regardless of the operating forces and speeds. The excellent damping and smooth operation of the roller-free bearing can be seen in the better workpiece finish quality and also because grinding wheels will stay sharp longer. Since the friction of the hydrostatic bearing is so low, over 95% of the motor power goes to the workpiece and the spindle temperature will increase less than 10°C, even at maximum force and speed. In addition, bearing pre-stress, unbalance, and cutting force can be directly measured by monitoring the hydrostatic pocket pressure.

The hydrostatic lathe and grinding machine spindles are suitable for applications on horizontal or vertical machines. They are available for belt-drive, direct drive, or as a motor spindle.

