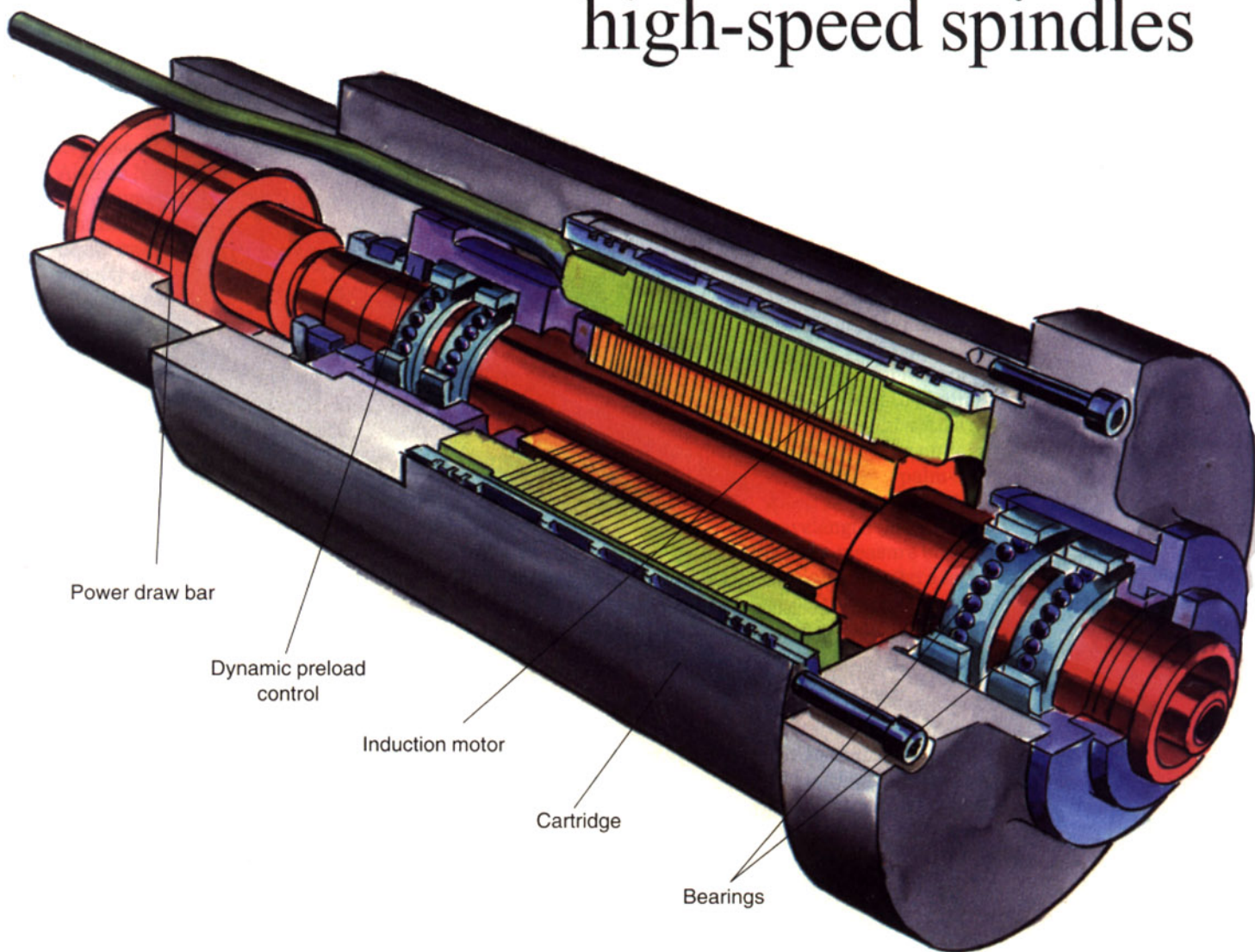


Adjustable preload, high-speed spindles



New GHS motorized spindles from Russell T. Gilman Inc., Grafton, Wis., have "Dynamic Preload Control" that lets users vary spindle stiffness while machining.

This comes in handy for machining different materials, such as aluminum and cast iron, that require different speeds. Typically, for high-speed aluminum milling, bearings need to

have light preload. On the other hand, a slower pace and stiffer spindle is needed for machining cast iron, so the bearings need to be stiffer. Springs have been used to adjust bearing preload but often do not provide enough control to machine both cast iron and aluminum with the same spindle. The GHS motorized spindle can do both.

Hydraulic fluid is used to

preload the bearing set. Pressure is applied to the bearings which, in turn, increases the preload. Operational adjustments are always maintained within the bearing parameters. Dynamic preload control also eliminates natural frequency harmonics and chatter typically found in machining processes.

The spindles are powered by three-phase, four-

pole induction motors rated for 380 V. An automatic power draw bar lets coolant and air pass through the spindle shaft and features three sensing switches that provide tool change feedback to the control.

Spindle sizes range from 120-mm cartridge diameter, 7 kW, 36,000 rpm, to 230-mm cartridge diameter, 36 kW, 18,000 rpm.

Circle 401