

Displacement sensors in Grinding Machines

Position measuring systems are used to supervise the motion axes of all fully automatic CNC grinding machines. Using the magnetostrictive position transducers brings a bundle of advantages for manufacturer of grinding machines and its customers.

In the machine, there is a pusher driven by a hydraulic cylinder which integrated magnetostrictive linear position sensor, stroke from 80 to 3000mm depending on the cylinder size. The linear position sensor monitors the material feed and ensures highly accurate positioning of the blank in front of the grinding wheel, whereby the position is programmable freely and individually as required. A second magnetostrictive linear position sensor is integrated into the hydraulic cylinder of the grinding saddle and measures the horizontal displacement of the grinding head precisely.

For direct stroke measurement in the cylinder, the pressure-resistant sensor rod containing the sensing element immerses into the open piston rod. The sensor head, an rugged aluminum housing, accommodates the complete electronics for active signal conditioning. A ring-shaped permanent magnet mounted on the bottom of the piston travels non-contact along the sensor pipe and transmits the measuring point to the sensing element using magnetomechanical effects.



The magnetostrictive sensor operating principle ensures a long life cycle without wear of the sensing elements. Since the position is detected through the sealed sensor housing without contact, the ingress of dust is prevented. Cost-intensive maintenance and regular cleaning of the position measuring system are not necessary. Not only the maintenance expenditure, but also the downtimes of the

grinding machines have decreased.