

SCHMITT LAUNCH ULTRA SMALL IN-SPINDLE BALANCER

Schmitt have released one of the smallest In-Spindle balance heads available for automatic dynamic balancing of production grinding machines and high speed spindles. As part of their well known SBS (Schmitt Balance Systems) range, and at only 28mm diameter, the internal balance head is designed specifically for applications where space inside the grinding or machining spindle is very limited. Tool and cutter grinders with small spindles cutting using super-abrasive or diamond wheels are one application for this tiny head. These machines are often running direct drive spindles with grinding wheel surface speeds in excess of 100m/s. At this kind of velocity a perfectly balanced grinding wheel or tool-holder assembly is essential, as even very small amounts of unbalance result in high centrifugal forces on the spindle, and consequently, excessive machine vibration. This vibration can lead to poor surface finish on the part, bad geometry, decreased dresser life in grinding machines, and reduced spindle life. Excessive grinding wheel unbalance can also lead to accelerated wheel usage – not a favourable

centres with automatic tool changing based on HSK taper systems, where space inside the spindle is at a premium due to automated clamping assemblies, hydraulics

machine spindle. The whole balancing sequence is automatic, and the digital processing in Schmitt's SB-5500 and SB-1000 firmware means this takes only



or draw-bars.

The SBS balancing system is a permanent installation on a machine tool. A piezo-electric vibration sensor monitors spindle vibration due to grinding wheel or tool-holder unbalance. This information is fed to a digital

seconds, eliminating time consuming pre-balancing techniques. An auto-balance can be instigated by the machine's CNC through Profibus, Ethernet, USB or hardwire interface. HMI 'virtual keypad' software is available to run on any MS Windows based platform.

The SBS system is available to machine tool OEMs or as a retrofit package to end users from Schmitt Europe based in Coventry, UK. Schmitt will be exhibiting the 28mm In-Spindle balance head and other products at this years EMO exhibition in Hannover at Hall 005 Stand G26.

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characteristic when working with expensive CBN or diamond wheels. Other target applications are grinders or machining

gearboxes. These are used to drive tungsten or brass weights into a position that counteracts the unbalance present in the