



Video inspection has a key bearing on success at Westwind



Vital QC tolerance checks on components destined for use in high performance air bearings that used to take up to 25 minutes, are now being completed in less than 30 seconds following investment by Westwind Air Bearings in a Nikon Nexiv VMR 3020 video measuring system.

According to Malcolm Thurlby, who controls the quality of the company's PCB drilling spindles, "We can now take 'first off' items from our production line, check their dimensions and give the green light for complete batch manufacturing within minutes. This has allowed us to cut out a previous bottleneck and push more production volume through our sophisticated CNC drilling machines." Westwind is a world leader in the production of air bearing spindles. The Nexiv VMR 3020 is used to check components for spindles designed for PCB drilling systems.

As the density of components on PCBs increases, there is a growing need for smaller diameter drills, which may need to rotate in excess of 250,000 rpm. By rigorously controlling the specifications of its components, Westwind can ensure its spindles achieve the expected high standard of quality.

On a typical component, the system will automatically measure the position of around 20 separate apertures, and check the diameter of each at 60 different points. It can also measure the depths and profiles. Any misalignment of the apertures could cause a spindle to exceed its tightly-defined runout tolerance.

Malcolm, who led the project to find a new metrology system, selected the Nexiv VMR 3020 for a number of reasons. "For a start, I did not want to invest in another stylus-based system as video measurement offered considerable advantages in terms of its speed and flexibility. In our evaluation we found this system to be the fastest and most accurate video measuring system. We also liked the format of its graphics and the contents of its reports. The on-screen colour coding, in which out of specification measurements are highlighted in red, compared with green for passes, has proved extremely useful."

Westwind also sees it as a distinct marketing advantage to be able to supply its spindles accompanied by such comprehensive batch QC data.

Although the system has only been in use for six months, it has already been programmed to measure more than 100 different components, but this should eventually more than double. "As well as playing a pivotal role in our QC procedures, we are using it to check the specification of incoming goods. We can now load up a statistically meaningful number of samples, using specially constructed jigs, and leave the Nexiv VMR 3020 to perform all the necessary measurements. This would have been incredibly time consuming using our previous systems, and subject to unavoidable operator variance." The system is also playing a useful role as an evaluation tool – helping Westwind learn more about its production methods and investigate the causes of failures. "After all," says Malcolm, "it's a very high performance camera, so we can examine components at very high magnifications. Just try doing that with a stylus system!"