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ULTRASONIC MOSCOW GOLD FOR NORBAR



The USM-3 ultrasonic bolt meter, manufactured by Norbar Torque Tools has won a gold medal* at the recent MetroExpo show in Moscow. This is a leading event for metrology, the science of measurement, and the award was presented “for high quality accuracy of measurement, ease of use, storage and retrieval of data.”

The portable USM-3 provides precise measurements for the elongation and load in threaded fasteners. This is an invaluable tool for specialised applications where the exact measure of fastener tension is essential to ensure the integrity of a mechanical joint, such as applications in the aerospace industry. The instrument is also incredibly versatile, since bolt measurement can be undertaken for fasteners measuring from 25mm to over 15m long.

Ultrasonic measurement performed by the USM-3 works on a “time-of-flight” principle, with a small transducer placed on the head or stud end of the fastener sending an ultrasonic sound wave through the length of the bolt. The time taken for receiving the returning echo signal is converted by the USM-3 into a precise length, taking account of the material properties of the fastener plus the transducer diameter and frequency.

Calculations are shown on the USM-3 LCD display, giving easy to interpret results on load, elongation and waveform. These measurements accommodate the effects of stress and temperature variations on sound velocity, giving an accuracy that far exceeds standard strain gauges.

Other features include:

- The ability to shut off torque tools when a predetermined bolt stretch or load has been reached
- Onboard flash memory to store measurements for up to 80 bolts
- RS232 interface for uploading data to a PC, where Norbar's Windows-based Sonic Bolt software can carry out long-term joint integrity analysis

Philip Brodey of Norbar comments: *"We are delighted to have received this award for the USM-3, which recognises its value in precision measurement to industry internationally".*

* The gold medal for the USM-3 was one of two awarded to Norbar at this year's MetroExpo, the second being for the company's T-Box™ torque and angle instrument, an easy-to-use measurement, calibration and data archiving solution.