



# THoT Technologies, Inc.

## Model 4238 Spindle & Shaft Tester



The Model 4238 Spindle & Shaft Tester provides “point & shoot” software capability with Laser Doppler accuracy to the measurement of spindles, shafts, ball, races or assemblies. The tester is capable of making repeatable as well as non-repeatable measurements of axial and radial runout, velocity and acceleration in a single beam configuration or interaction between axis with a dual beam system. An optional roundness measurement capability is available.

The Model 4238 Spindle & Shaft Tester is a desk top or bench top version intended for general laboratory or shop floor use. The system can use an optional tripod mounted laser.

### Features:

- Axial (face) and radial runout and error motion measurements.
- ARE, AAE, SRE and SAE measurement capabilities.
- Measurements with accuracy of better than 0.25 nm (= 0.00000001 inch).
- Simultaneous two axis testing of spindles, bearings, shafts or rotating bodies with optional second channel.
- Selectable “mechanical finish” and surface finish analysis.
- FFT & DFT, amplitude & power spectral density, on-line analysis.
- Selectable output electronic and software filters for vibration analysis.
- Index and encoder inputs for measurement sample triggering.
- Windows 2K operating system.
- Desk top laser controller and signal processing unit with tripod mounted laser.
- Soak Test capabilities to examine repetitive start/stop cycles.
- Multiple display windows for profile comparisons.

## Model 4238 Spindle & Shaft Tester (continued)

### Available Options:

- Second high-speed laser beam system. This option adds a second 250kHz bandpass laser system with tripod mount. It can be used to measure axial axis and radial axis or one axis and work-piece vibration simultaneously. This option can be added at the user site.
- Second channel option. This option adds a second data channel to the system. The second channel is normally used to acquire simultaneous axial and radial data. It can also be used to examine simultaneous structure motion and axial or radial data. Consult the factory concerning concentricity testing and dual plane balance testing.
- Extended range laser system controller. This option adds a velocity range 8X greater (1000mm/s/v) than the highest range of the standard system (125mm/s/v). Option also increases bandwidth up to 1.5MHz.
- Low speed test option. This option allows the user to measure spindle and roundness characteristics at low rotational speeds down to six seconds per revolution.
- Extended range laser system controller with low speed test option. This option combines the higher velocity ranges (measurement range) with the low rotational speed capability.
- Roundness test option. This option allows the user to capture and display roundness information. It can be used with any of the laser options as a single point system to measure roundness down to as little as 1.0 nm (0.04  $\mu$ -inch).
- Workstation analysis software option. This is a standalone software package that allows a properly configured PC to analyze data from THôT spindle testers. This program also allows a PC to write test programs and turns a desk top or portable PC into a data analysis station.
- Industrial tripod with professional gearhead. This tripod is designed for heavy-duty applications with a fully adjustable gear driven mounting head with locking mechanisms.
- Laptop computer option. The option replaces the mini-tower computer system with a laptop computer system. While the laser and electronics modules still require AC power, this option is intended to make the more portable for use in the field or on the factory floor. This replaces the mini-tower computer, keyboard, mouse, monitor, data acquisition and digital I/O with a laptop computer, PCMCIA data acquisition and PCMCIA digital I/O.



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