CMM Combines Speed and Accuracy

The new STRATO-Apex Coordinate Measuring Machine from Mitutoyo America Corporation combines an advanced structure with newly-developed high-performance control and scanning technologies. The result is faster drive speeds, higher acceleration, and a CMM that is a productivity leader in the 1µm class.
The extremely rigid STRATO-Apex CMM structure incorporates vibration-dampening, auto-leveling air springs and the newest compensation technology to support acceleration of 2,598mm/s2 (3D), 0.23g (3D) and measuring scan speeds up to 3mm/s.

The STRATO-Apex features digital servo system control loops for position, speed, and current. This makes it easy to implement various types of control algorithms. Additionally, the digital servo system has a wide dynamic range and is highly resistant to drift over time. The controller is located outside the main unit to mitigate the effect of generated heat.

The ultra-high accuracy measurement units installed on each axis of the STRATO-Apex consist of high-performance reflective linear encoders that utilize ultra-high precision crystallized glass scales which exhibit virtually no thermal expansion (coefficient of linear expansion of 0.01 x 10-5/°C).

The available software options enable the STRATO-Apex to tackle a wide variety of measurement applications. Software packages include GEOPAK, a high-functionality general-purpose measurement program which is at the heart of MCOSMOS (Mitutoyo Controlled Open System for Modular Operation Support) software. MCOSMOS supports virtually every CAD format while providing routines for in-line measurement, data feedback, and process management. Additional software supported includes: CAT1000S for freeform surface evaluation; CAT1000P, an offline

teaching program; SCANPAK, for contour measurement; and a wide variety of programs supporting laser and vision probes.

Additionally, STRATO-Apex supports MeasurLink STATMeasure Plus, Mitutoyo's proprietary statistical-processing and process-control program. MeasurLink STATMeasure Plus performs statistical analysis and provides real-time display of measurement results for SPC applications. The program can also be linked to a higher-level network environment for enterprise-wide functionality.

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