

### **Mitutoyo America Corporation**

958 Corporate Blvd. • Aurora, IL 60502  
phone: (630) 820-9666 • fax: (630) 978-5394  
www.mitutoyo.com

Editorial Contact:  
Shawn Lawrence

### **Mitutoyo robotic metrology cell enhances measurement integrity, productivity**

(Aurora, IL) Mitutoyo America Corporation announces the development of robotic tending for its CMMs as well as for a full range of its CNC-driven metrology instruments. Rapid and extremely precise automated loading and unloading (repeatability of  $\pm 20\mu\text{m}$ ) makes the technology ideal for manufacturers seeking to fully automate manufacturing processes, end-to-end.

In developing the automated instrument-tending technology, Mitutoyo America exploited recent advances in robotic end-of-arm devices including: highly sensitive collision detection enabling high-dexterity picking of delicate parts and precise fitting to instrument fixturing, force-sensitive grippers that enhance precision and enable intelligent parts placement, and 2D/3D vision systems that enable the robot to detect and pick randomly positioned workpieces therefore eliminating need for special feeders or alignment fixturing.

Mitutoyo's robotic instrument loading can provide dramatic improvements in measurement-and-inspection performance and economics. Automated loading typically increases part cycling speed by at least 20%. Human error is eliminated, simplifying trouble shooting and reducing scrap while extremely accurate parts placement enhances measurement equipment R&R (repeatability & reproducibility) ultimately translating to improved process capability (Cpk). Additionally, staff can be transferred from operating measurement-and-inspection to higher value tasks. Overall, measuring costs can be reduced 335% with total system ROI (payback time) may be as little as one year. These factors together

(more)

with potential depreciation and capital equipment tax benefits make Mitutoyo's robotically loaded metrology cell economically viable for even relatively small processors.

Mitutoyo robotic loading supports the full line of Mitutoyo CNC-driven metrology instruments. Facilitated by Mitutoyo's proprietary Eio (Extended I/O) control, implementation of Mitutoyo CNC equipment is plug-and-play. External PCs recognize hardware components without physical device configuration, resource conflicts are eliminated and user intervention is unnecessary – whether one or a number of measurement instruments are integrated into a cell. The cell employs a Fanuc® robot (**model with some details**) and instruments capable of integration include:

- Mitutoyo CNC CMMs running MCOSMOS®
- Mitutoyo CNC QuickVision® vision systems running QVPak
- Mitutoyo CNC Roundtest® roundness systems running RoundPak
- Mitutoyo CNC Contracer® form and Surfctest® surface/finish systems running Form TracePak
- Mitutoyo Laserscan Micrometer

Offline robot programming supports 3D graphic representation of Mitutoyo instruments with animated teaching support and simulated cycle time and verification.

---

Mitutoyo Corporation is the world's largest provider of measurement and inspection solutions offering the most complete selection of machines, sensors, systems and services with a line encompassing CMMs (Coordinate Measuring Machines), vision, form and finish measuring machines as well as precision tools and instruments, and metrology data management software.

(more)

Mitutoyo Robotic Loaded  
Metrology Cell, Pg. 3 of 3

Mitutoyo's nationwide network of Metrology Centers and support operations provides application, calibration, service, repair and educational programs to ensure that our 6,000+ metrology products will deliver measurement solutions for our customers throughout their lifetime. Contact Mitutoyo America Corporation, 965 Corporate Boulevard, Aurora, IL 60502. Phone: (630) 820-9666 Fax: (630) 978-5394 E-mail: [info@mitutoyo.com](mailto:info@mitutoyo.com) Or visit our website at [www.mitutoyo.com](http://www.mitutoyo.com)

# # #

