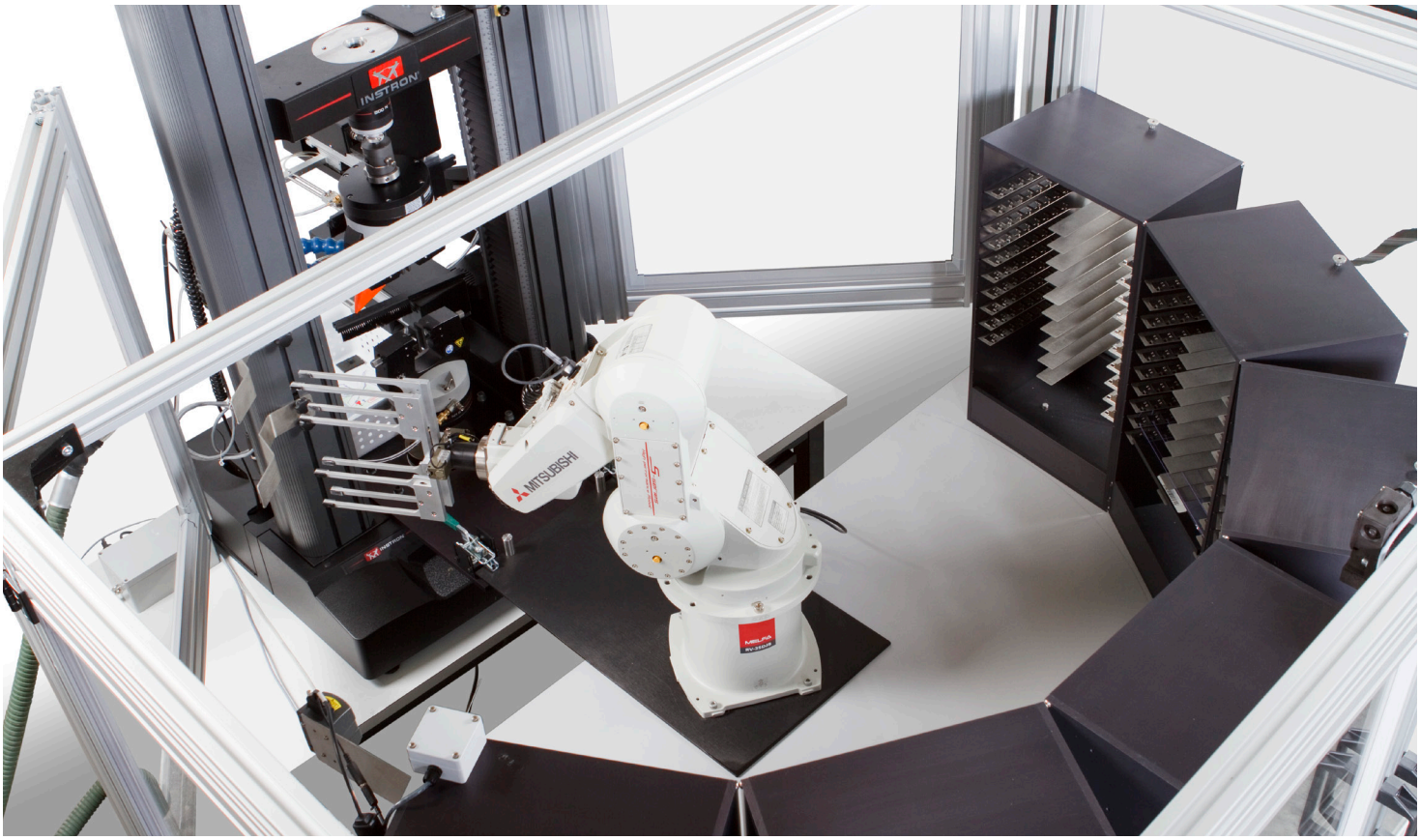
INSTRON®

The difference is measurable®

Automated Tensile Testing System | Suture Materials



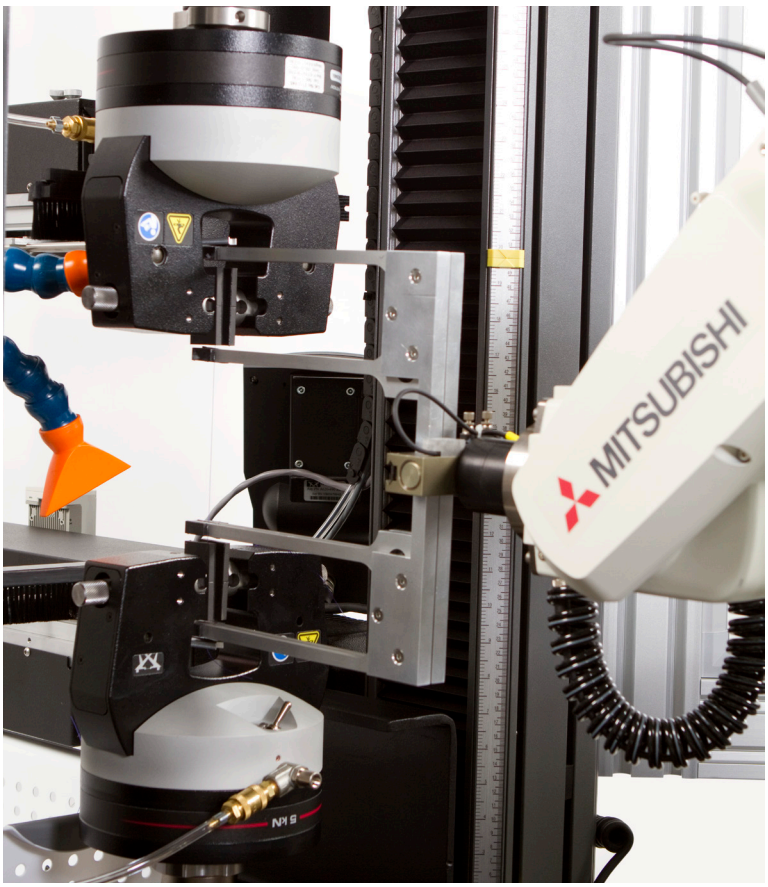
The Instron® Testmaster Automation System, configured to perform unattended tensile testing of biomedical cord and yarn specimens, provides an ideal solution for high-volume tests of medical sutures. Designed to accommodate specimens of varying lengths and thicknesses, the system utilizes barcode labels to pass specimen information and testing specifications to the Testmaster2 Automation Control Software.

A typical automated test sequence includes the following steps: The robot retrieves a batch separator with a barcode label affixed from a rack, scans the barcode, and downloads the specimen and testing information to the Testmaster2 Automation Control Software. The separator is then discarded into a bin and a specimen is retrieved from the racks and placed into the tensile frame and tested. After the test, the specimen is removed via a specimen removal device at the back of the frame, which utilizes a low-noise, industrial vacuum to aid in full removal of the tested sutures from the grips area. The robot then inserts the next specimen to be tested.

System Components

- Robotic system for handling sutures
- Instron 5965 universal frame with a 500 N load cell and 1 kN pneumatic grips
- Six specimen storage racks, each with 10 shelves designed to accommodate 8 sutures or batch separators with total capacity of 480 spaces
- Instron Bluehill® Materials Testing Software and Testmaster2 Automation Testing software
- Multi-axis, articulated arm RV-3SJ Mitsubishi robot
- Robot Table with positive locking and alignment to the test frame
- Omni-directional barcode reader
- High-suction, low-noise industrial vacuum
- Range of load cells for all applications
- Grips and fixtures to meet testing standards
- Software for test control, data acquisition, and reporting

Increase Throughput, Improve Repeatability, and Reduce



- The specimen storage racks contain removable shelves allowing for preloading of suture specimens, saving time and increasing throughput
- Consistent specimen loading and testing improves repeatability and reproducibility of results by minimizing human error
- Overall costs are lower due to a reduction in both training and injury-related expenses
- Operators are available to work on more value-added activities

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