

# HOSPITAL AND SURGICAL SUPPLIES

Instron® - A Total Solution Provider



Reliability



Expertise



FDA Compliance



Small-Footprint

Instron is the leading, global supplier of mechanical testing systems, suitable for tension, compression, flexure, peel, tear, friction, torsion, and fatigue tests. Hospital and surgical products are often consumable and designed for one-time patient use. Items such as catheters, guidewires, intravenous lines, tubing, and an assortment of wound closure products such as bandages, sutures, and staples all fall within this category. Mechanical testing of these products is especially important to guarantee properties such as adequate tensile strength, low frictional forces, and sufficient elongation are appropriately matched to the application. If these mechanical characteristics are inappropriately matched for the product, patient, or surgical application, this could have disastrous effects to the patient. For example, a curved needle poorly designed for suturing a wound could damage a patient's surrounding tissues, and inhibit a surgeon's ability to properly close the wound.



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## Reliability

For over 75 years, Instron has designed and manufactured dependable materials testing systems. Instron's professional services team offers calibration and preventive maintenance to keep systems running for years. Despite test system robustness, Instron systems maintain the precision to measure micron-size displacements and gram-level forces.



## Expertise

Instron's Application Modules built into Bluehill Universal software provide pre-configured test methods for some of the most common ASTM and ISO testing standards. Example pre-configured test methods include needle penetration forces for curved needle testing to ASTM F3014 and measurement of peel properties to ASTM F88.



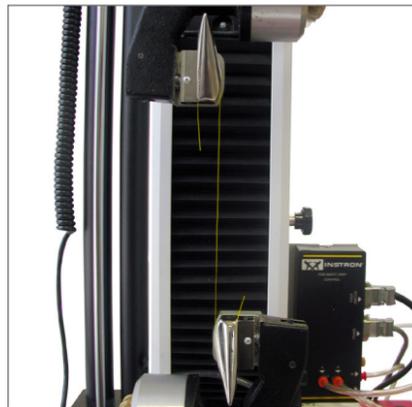
## FDA Compliance

Instron offers validation assistance to laboratories that are required to meet U.S. Food and Drug Administration (FDA) guidelines, including installation qualification (IQ) and operational qualification (OQ). For over 10 years, Instron has partnered with Xybion Corporation, FDA compliance experts, to offer ComplianceBuilder software for meeting 21 CFR Part 11 compliance.

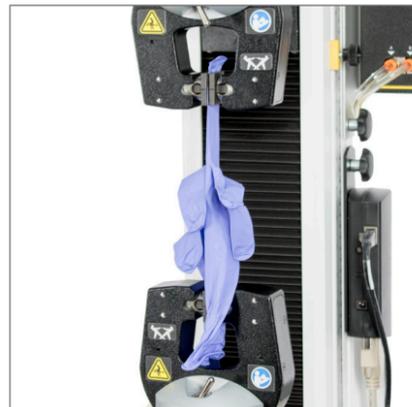


## Small-Footprint

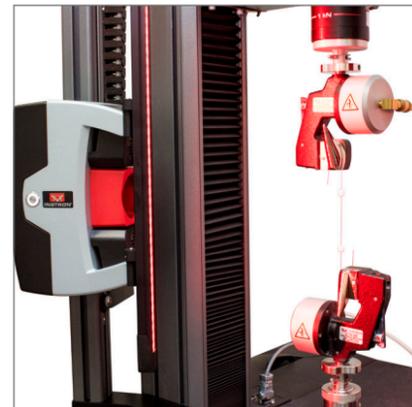
The small physical footprint of Instron's tabletop systems enable laboratories to save space, stay organized, and keep the laboratory clean. The small machine footprint includes both the test system and necessary software control, ideal for optimizing benchtop space in clean rooms in both research and quality laboratories.



Evaluating suture tensile properties using cord and yarn grips.



The tensile strength of medical gloves is evaluated to ASTM D6319 using rubber coated jaw faces.



Tensile testing of surgical guide wire made of Nitinol to ASTM F2516.



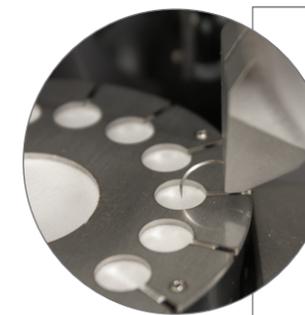
90 degree pull out testing is performed on a blood bag by securing the bag to a tapped test plate. This test quantifies the maximum pull out force that could be exerted by a patient, doctor, or nurse.



Compression testing on Intravenous (I.V.) tubing is done at a connecting joint where the nurse or doctor would press during patient application.



Millions of surgeries are performed each year around the globe and suture material is one of the most widely used means for wound closure. To increase testing productivity, some suture manufacturers perform tensile strength testing using an automation system.



Curved needle test system for testing curved surgical needles to ASTM F3014-14.

The Instron® BioBox enclosure heats the test space to a body temperature of 37 °C and allows for using a wide range of grips and test fixtures.



Manufacturers of catheters and guidewires used in cardiovascular surgery evaluate the frictional properties of these products as they are pushed through a tortuous path to mimic conditions in the human body.

Instron's instruments and technologies are used for various types of tests across many diverse medical sectors. The flexibility of Instron systems to adapt to numerous applications make our systems truly universal.

Designed from the ground up for touch, Instron's static testing software, Bluehill Universal, is easy-to-use, increases testing efficiency, and contains modular features that enable users to run the most complex tests.

With ISO 9001 accreditation, our goal is to provide the best ownership experience by delivering the highest quality products, expert support, and world-class service. Instron Connect provides users with a powerful communication platform via a secure connection between the Instron system at your facility and Instron's global technical support engineers. With Instron Connect, users receive faster remote technical support, reduce risk with schedule verification and preventive maintenance reminders, and are effortlessly able to keep up to date with the latest software features.



## Medical Sectors

Visit our website to learn more about the different medical sectors we support: [go.instron.com/bio](http://go.instron.com/bio)



**BIOMATERIALS & TISSUE ENGINEERING**

**ORTHOPAEDICS**

**DENTISTRY & DENTAL MATERIALS**

**IMPLANTABLE DEVICES**

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