



MEDICAL NEEDLE TESTING EQUIPMENT

Medical Needle Testing Equipment | ISO 9626, ASTM F3014 & ASTM F1874 Mechanical Testing

Medical Needle Testing Equipment measures the puncture force, bending stiffness, toughness, and suture-needle penetration performance that determine whether a needle is sharp, strong, and safe enough for clinical use. Torontech's range is built around ISO 9626 for stainless steel needle tubing and ASTM F3014 and ASTM F1874 for surgical suture needles, alongside dedicated testers for hypodermic and ablation needles. Manufacturers, inspection institutes, and R&D labs use these instruments to confirm a needle resists bending and breakage while still penetrating tissue with the expected force.

The range covers five test methods spanning puncture force, tubing stiffness, tubing toughness, ablation needle mechanical properties, and suture needle penetration and bend resistance, so a lab can build out needle testing capability one failure mode at a time.

Why Choose Torontech for Your Medical Needle Testing

Torontech supplies testing and measurement equipment to laboratories and manufacturers across North America and worldwide, backed by responsive technical support and calibration service. The Needle Testing range is built for reliable, standards-driven results, so you can standardize on one supplier as your testing needs grow. Our team helps you match the right configuration to your samples, applicable standards, and throughput, then supports you through installation and beyond.

Request a Quote

Tell us which needle type and mechanical property you need to test, and we will recommend the right instrument from this range. [Contact the Torontech team](#) for pricing and lead times.

APPLICATIONS

Applications

Medical Needle Testing supports manufacturers and labs across hypodermic, surgical, and interventional needle production.

- Hypodermic and Injection Needle Manufacturing: validates puncture force and tubing stiffness and toughness for disposable, prefilled, and infusion needles.
- Surgical Suture Needle Production: confirms penetration force and bend resistance for curved and straight suture needles used in wound closure.
- Ablation and Interventional Needle Development: checks stiffness and toughness of ablation needles used in tumor and cardiac procedures.
- Regulatory and Contract Testing: provides independent ISO 9626 and ASTM F3014/F1874 compliance data for submissions and supplier audits.

TECHNICAL SPECIFICATIONS

Medical Needle Testing Equipment Range

The range covers five needle-specific test methods, each targeting a different mechanical property a needle must pass before clinical use.

Tester	Key Standard	What It Measures
Medical Needle Puncture Tester	ISO 7864, ISO 8871-5, USP <381>	Puncture force required for a needle or needle tube to penetrate artificial skin material.

Medical Needle Tubing Stiffness Tester	ISO 9626	Bending stiffness and rigidity of stainless steel needle tubing across regular to ultra-thin wall sizes.
Needle Tubing Breakage Resistance Tester	ISO 9626	Toughness and breakage resistance of stainless steel needle tubing under repeated bi-directional bending.
Ablation Needle Stiffness & Toughness Tester	Stiffness and toughness test method	Deflection and resistance of ablation needles under controlled load, in stiffness and toughness modes.
Suture Needle Penetration and Bend Tester	ASTM F3014, ASTM F1874	Penetration force and bend resistance of curved and straight surgical suture needles.

How to Choose the Right Medical Needle Testing

- For hypodermic and injection needle sharpness: choose the medical needle puncture tester to confirm penetration force against artificial skin.
- For stainless steel tubing rigidity: choose the needle tubing stiffness tester to measure bending resistance across wall thicknesses.
- For tubing breakage resistance: choose the needle tubing toughness tester to confirm tubing survives repeated bending cycles.
- For ablation and interventional needles: choose the ablation needle stiffness and toughness tester for dual-mode mechanical evaluation.
- For surgical suture needles: choose the suture needle penetration and bend tester to validate both penetration force and bend resistance in one system.



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