

SUTURE NEEDLE PENETRATION AND BEND TESTER



Suture Needle Penetration and Bend Tester | ASTM F3014, ASTM F1874

Suture Needle Penetration and Bend Tester – ToronMed™ SNPBT01H is designed to evaluate the penetration force and bend resistance of surgical suture needles. Suitable for both curved and straight needles, this tester provides accurate and repeatable results, ensuring that medical needles meet the highest standards of safety and performance.

Fully compliant with ASTM F3014 and ASTM F1874, it is the ideal solution for medical device manufacturers, R&D centers, and quality control laboratories.

Why Choose Suture Needle Penetration and Bend Tester – ToronMed™ SNPBT01H?

The Suture Needle Penetration and Bend Tester – ToronMed™ SNPBT01H combines precision, versatility, and compliance to provide a complete evaluation platform for surgical needles. With its 12-station penetration system, flexible bend testing, ASTM compliance, and intelligent software, this tester is trusted by medical device manufacturers and testing laboratories worldwide. It ensures that suture needles meet rigorous safety requirements, helping improve surgical outcomes and patient safety.

APPLICATIONS

- Surgical Suture Needles
 - 1/4 circle
 - 3/8 circle
 - 1/2 circle
 - 5/8 circle
 - Straight needles

- J-curved needles
- Custom Needle Types (optional upon request)



Standards Compliance

The ToronMed™ SNPBT01H Suture Needle Penetration and Bend Tester complies with:

- ASTM F3014 – Standard Test Method for Determining Penetration Force of Surgical Suture Needles
- ASTM F1874 – Standard Test Method for Bend Testing of Surgical Needles

FEATURES

- Multi-Station Design
Equipped with 12 workstations for penetration testing, increasing efficiency and throughput.
- Flexible Testing Capabilities
Interchangeable fixtures support both penetration and bend testing.
- Wide Needle Compatibility
Accommodates 1/4 circle, 3/8 circle, 1/2 circle, 5/8 circle, straight, and J-curved needles.
- Adjustable Test Parameters
Rotational angle and speed are fully adjustable to meet diverse testing requirements.
- Professional Software
Compliant with ASTM F3014 and ASTM F1874 standards, ensuring accurate and validated results.
- Portable Control Box
Allows flexible height and angle adjustments for ease of use.

THEORY & METHOD

Test Principle

The Suture Needle Penetration and Bend Tester measures:

- Penetration Force – Evaluates the force required for a suture needle to penetrate a standard medium.
- Bend Resistance – Measures the bending force applied to the needle until deformation occurs.

By combining these two tests, the system provides a complete assessment of needle performance and durability.

TECHNICAL SPECIFICATIONS

Specification	Value
Test Items	Penetration, Bend
Needle Compatibility	1/4, 3/8, 1/2, 5/8 circle, straight, J-curved (customizable)
Load Cell Capacity	50 N
Accuracy	0.1% FS
Test Speed (Straight)	0-500 mm/min (stepless)
Test Speed (Curved)	0-360°/s (settable)
Penetration Fixture	12 workstations
Bend Test Fixture	Two platforms

Specification	Value
Voltage	AC 220V 50Hz (110V is also available)
Control Box	Portable, adjustable height and angle

Standard Configuration

- Main instrument unit
- Penetration fixture
- Bend fixture
- Portable control box
- Professional software
- Communication cable

Optional Configuration: Computer, test medium



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