SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Torsion Testing Machine 300Nm (Manual) | FortiTestX - 10A

Category: Strength of Materials · **Order Code:** MACHINE 300 · **Country of Origin:** India

Product Overview

A CE-certified torsion testing machine for determining shear modulus, twist angle, and torsional rigidity of metal specimens, manufactured by Scientico India to ISO 9001:2015 standards. Supplied with calibration certificate, operation manual, and complete export documentation. Designed for Strength of Materials laboratories in engineering colleges and technical institutions.

View this product online: https://scienticoindia.com/product/torsion-testing-machine-300nm-manual-fortitestx-10a/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Technical Specifications

Field	Details
Product Name	Torsion Testing Machine FortiTestX 10A
Model Reference	FortiTestX, 10A
Product Category	Strength of Materials Lab Equipment
Apparatus Type	Manual benchtop torsion testing machine 300Nm
Maximum Test Torque	300 Nm
Torque Measuring Range	0 to 300 Nm
Maximum Test Rod Length	300 mm
Angle of Twist Range	0° to 360° (incremental)
Angle Resolution	0.1°
Torque Measurement	Strain gauge on measuring shaft
Angle Measurement	Incremental encoder
Display	Digital displays, microprocessor-based enclosure
Drive Mechanism	Worm gear, manually operated via handwheel
Test Rod Holder	19 mm AF hex socket

Field	Details
Test Rod Materials	Mild steel, aluminium, brass
Specimen Dimensions	95 mm length x 10 mm diameter (all materials)
Optional Software	FX-10A (LabVIEW-based DAQ, Windows compatible)
PC Connectivity	USB (optional)
Manufacturer	SCIENTICO, Ambala Cantt, India
Certifications	ISO 9001:2015, CE Marked

Technical Data, Test Specimens

Material	Length	Diameter	Quantity
Mild Steel	95 mm	10 mm	5
Aluminium	95 mm	10 mm	5
Brass	95 mm	10 mm	5

Technical Data, Measuring Ranges

Parameter	Range / Value
Test Torque	0 to 300 Nm (maximum)
Test Rod Length	Up to 300 mm
Angle of Twist	0° to 360° (incremental)
Angle Resolution	0.1°

Key Features

Key Features

- Complete torsion testing machine 300Nm unit: manual benchtop strength of materials apparatus for torsional testing to fracture, supplied with 15 calibrated specimens across three materials
- Maximum test torque: 300 Nm; maximum specimen length: 300 mm, making the FortiTestX 10A a full-capacity manual torsion testing machine 300Nm for engineering labs
- Manual torque application via handwheel and worm gear reduction mechanism for controlled, repeatable loading without motorised dependency
- Strain gauge on measuring shaft: captures test torque as an electrical signal for direct digital readout
- Incremental encoder: measures angle of twist from 0° to 360° with 0.1° resolution
- Dual digital displays: torque and twist angle shown simultaneously on the microprocessor-based display enclosure
- Sliding measurement jig: adjustable along the frame to accommodate test rod lengths up to 300 mm
- Test rod holder: commercially available 19 mm AF hex socket for easy and consistent specimen fitment
- Square base plate sections resist torsional movement during testing for stable, accurate measurement
- Three specimen materials supplied: mild steel, aluminium, and brass, 5 specimens each, all 95 mm x 10 mm
- Software measurable outputs: test torque, twist angle, and stiffness modulus via optional FX-10A LabVIEW software on Windows
- USB PC connectivity (optional); ISO 9001:2015 certified manufacture; CE marked product

Experiments

- Torsional testing of different materials up to specimen fracture
- Recording the torque versus angle of twist curve
- Determination of the elastic range
- Determination of modulus of rigidity

Construction and Design

Torsion Testing Machine FortiTestX 10A is constructed as a rigid, manual benchtop torsion testing machine 300Nm unit built on a structural frame that supports the sliding measurement jig and all drive and measurement components. The handwheel drives a worm gear reduction mechanism, applying torque manually and progressively to the test specimen up to the maximum 300 Nm capacity. The specimen is held at one end by a 19 mm AF hex socket and supported at the base plate by square sections that resist rotational movement during testing, ensuring all applied torque acts on the specimen alone. A strain gauge bonded to the measuring shaft captures torsional load as an electrical signal proportional to the applied torque, while an incremental encoder co-axial with the specimen records the angle of twist at 0.1° resolution across a full 0° to 360° incremental range. Both signals feed into a microprocessor-based measurement unit housed in a secure enclosure, with simultaneous digital display of torque and angle. The sliding jig accommodates all included specimen lengths up to 300 mm, and the 19 mm AF hex socket is a commercially sourced standard component for broad specimen compatibility. This **Torsion Testing Machine 300Nm** design ensures that every phase of the torsion test, from initial elastic loading through to final fracture, is fully observable and measurable. All construction and materials conform to ISO 9001:2015 quality standards and meet CE marking requirements.

Software, FX-10A (Optional)

Customised software designed in the National Instruments LabVIEW environment for data logging and results processing, including measurement of test torque, twist angle, and stiffness modulus. Connected to the apparatus via USB. Compatible with any Windows-based operating system. The software is optional and selected independently of the base unit.

Scope of Delivery

- 1 x Experimental unit (Torsion Testing Machine FortiTestX 10A)
- 15 x Test specimens (5 mild steel, 5 aluminium, 5 brass, all 95 mm x 10 mm)
- 1 x Instruction manual

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q1: What is the maximum torque capacity of the Torsion Testing Machine FortiTestX 10A?
The FortiTestX 10A is a torsion testing machine 300Nm unit, with a maximum test torque of 300 Nm and a maximum specimen length of 300 mm.

Q2: How does the FortiTestX 10A differ from the FortiTestX 10 motorised unit?
Both are torsion testing machine 300Nm apparatus with identical torque capacity and specimen range. The FortiTestX 10A uses a manual handwheel and worm gear drive, while the FortiTestX 10 uses a motor-driven worm gear. The 10A is suited for labs where manual operation and direct tactile feedback during testing is preferred.

Q3: How is torque measured in the FortiTestX 10A?
Torque is measured using a strain gauge bonded to the measuring shaft. The strain gauge converts the torsional deformation of the shaft into an electrical signal that is processed and displayed on the dedicated digital readout.

Q4: Which specimen materials and dimensions are included?
Fifteen specimens are supplied: five each of mild steel, aluminium, and brass. All specimens are 95 mm in length and 10 mm in diameter, consistent across all three materials.

Q5: Is the DAQ software required to operate the FortiTestX 10A?
No. The apparatus operates fully as a standalone torsion testing machine 300Nm unit using the onboard microprocessor-based measurement system and digital displays. The optional FX-10A LabVIEW software adds data logging, stiffness modulus calculation, and PC-based results processing via USB on Windows.

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