SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Torsion Testing Machine 30Nm (Manual) | FortiTestX - 11

Category: Strength of Materials · **Order Code:** MACHINE 30 · **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-fortitestx-11/



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

Technical Specifications

Technical Specifications

Field	Details
Product Name	Torsion Testing Machine 30Nm (Manual) | FortiTestX 11
Model Reference	FortiTestX, 11
Product Category	Strength of Materials Lab Equipment
Apparatus Type	Manual benchtop torsion testing unit
Maximum Twisting Moment	30 Nm
Twisting Moment Range	0 to 30 Nm
Twisting Angle Range	0° to 3200°
Angle Resolution	0.1°
Transmission Ratio	1:63 (worm gear)
Torque Measurement	Strain gauge measuring shaft with inherent deformation compensation
Angle Measurement	Incremental encoder
Display	Electronic measuring amplifier with touch panel
Specimen Mount	2 x 17 mm hexagonal holders
Loading Device	Handwheel and worm gear

Field	Details
Specimen Materials	Steel, aluminium, brass
Specimen Diameter	6 mm
Optional Software	FX-11 (LabVIEW-based DAQ, Windows compatible)
PC Connectivity	Direct PC transmission (optional)
Manufacturer	SCIENTICO, Ambala Cantt, India
Certifications	ISO 9001:2015, CE Marked

Technical Data, Specimens

Material	Length	Diameter	Quantity
Steel	75 mm	6 mm	4
Aluminium	75 mm	6 mm	4
Brass	75 mm	6 mm	4
Steel	175 mm	6 mm	2
Steel	350 mm	6 mm	2
Steel	700 mm	6 mm	2

Technical Data, Measuring Ranges

Parameter	Range / Value
Twisting Moment	0 to 30 Nm
Twisting Angle	0° to 3200°
Angle Resolution	0.1°
Transmission Ratio	1:63
Specimen Mount	2 x 17 mm hexagonal

Key Features

Key Features

- Complete Torsion Testing Machine: manual benchtop strength of materials lab equipment unit for torsion testing of steel, aluminium, and brass specimens to fracture
- Maximum twisting moment: 30 Nm; twisting angle range: 0° to 3200° with 0.1° resolution
- Manual torque application via handwheel and worm gear with 1:63 transmission ratio for precise, controlled loading
- Strain gauge measuring shaft with inherent deformation compensation for accurate twisting moment measurement
- Incremental encoder for continuous twist angle capture throughout the full test range
- Electronic measuring amplifier with touch panel: simultaneous digital display of twisting moment and twisting angle
- Movable measurement device: slides along the frame to accommodate specimens of varying lengths
- Specimen mount: two 17 mm hexagonal holders for secure and repeatable specimen fitment
- Comprehensive specimen set: 6 mm diameter rods in steel, aluminium, and brass across four length variants (75 mm, 175 mm, 350 mm, 700 mm)
- Supports investigation of specimen material, cross-section, and length influence on torsional behaviour
- Optional DAQ software (FX-11): LabVIEW-based, with direct PC data transmission on any Windows OS
- ISO 9001:2015 certified manufacture; CE marked product

Experiments

- Plot the diagram of twisting moment versus twisting angle

- Influence of specimen material on torsional behaviour
- Influence of specimen cross-section on torsional behaviour
- Influence of specimen length on torsional behaviour
- Torsion testing of different metallic specimens to fracture
- Determination of twisting strength
- Examination of plastic behaviour of materials under torsional stress

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Construction and Design

Torsion Testing Machine FortiTestX 11 is built on a sturdy structural frame that supports the sliding measurement device and all loading and sensing components as a dedicated strength of materials lab equipment unit. The handwheel drives a worm gear mechanism with a 1:63 transmission ratio, enabling manual application of twisting moments up to 30 Nm with fine control at each increment of hand rotation. The base plate is reinforced against torsion to ensure that all applied moment is transferred to the specimen without frame distortion. Specimens are secured in two 17 mm hexagonal mounts, one fixed and one on the sliding measurement jig, for consistent axial alignment across all specimen lengths. The strain gauge measuring shaft, featuring compensation for inherent deformation, captures the actual twisting moment as an electrical signal and feeds it to the electronic measuring amplifier. The incremental encoder co-axial with the loading axis records twisting angle at 0.1° resolution across a range extending to 3200°, accommodating the large angular deformation characteristic of long or ductile specimens before fracture. Both measured values are displayed simultaneously on the touch panel. The clear architecture and straightforward operation allow every phase of the experimental sequence to be observed in full detail. All construction and materials conform to ISO 9001:2015 quality standards and meet CE marking requirements.

Software, FX-11 (Optional)

Customised software designed in the National Instruments LabVIEW environment for data logging and results processing. Measured values are transmitted directly to a PC for programme-based analysis. 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 11)
- 1 x Set of specimens (steel, aluminium, and brass across multiple lengths)
- 1 x Instructional 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 twisting moment of the FortiTestX 11?
The Torsion Testing Machine FortiTestX 11 has a maximum twisting moment capacity of 30 Nm, applied manually via a handwheel and worm gear with a 1:63 transmission ratio.

Q2: How does the FortiTestX 11 differ from the FortiTestX 10?
The FortiTestX 11 is a manual torsion testing machine with a 30 Nm capacity, using a handwheel and worm gear for torque application. The FortiTestX 10 is a motorised unit with a 300 Nm capacity. The FortiTestX 11 is suited for detailed manual experiments examining specimen material, cross-section, and length variables at lower torque levels.

Q3: What specimen sizes and materials are supplied?
The apparatus includes 6 mm diameter specimens in steel, aluminium, and brass. Steel specimens are provided in four lengths, 75 mm, 175 mm, 350 mm, and 700 mm, while aluminium and brass specimens are supplied at 75 mm length. Total specimen count is 18 across all materials and lengths.

Q4: What is the twisting angle measurement range of the FortiTestX 11?
The incremental encoder measures twisting angle from 0° to 3200° with a resolution of 0.1°, accommodating the large angular deformations that occur with long steel specimens and ductile materials before fracture.

Q5: Is the LabVIEW software required for operation?
No. The FortiTestX 11 operates fully as a standalone strength of materials lab equipment unit using the onboard electronic measuring

amplifier with touch panel for real-time display of twisting moment and angle. The optional FX-11 software adds PC-based data logging and results processing via direct data transmission on Windows.

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