SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Torsion Testing Machine 300 Nm Motorised | FortiTestX - 10

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-fortitestx-10/



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

Technical Specifications

Technical Specifications

Field	Details
Product Name	Torsion Testing Machine FortiTestX 10
Model Reference	FortiTestX, 10
Product Category	Strength of Materials Lab Equipment
Apparatus Type	Motorised benchtop torsion testing unit
Maximum Test Torque	300 Nm
Maximum Test Rod Length	300 mm
Torque Measurement	Strain gauge on measuring shaft
Angle of Twist Measurement	Incremental encoder
Angle of Twist Range	0° to 360° (incremental)
Angle Resolution	0.1°
Test Rod Holder	19 mm AF hex socket
Drive Mechanism	Worm drive operated with motor
Test Rod Materials	Mild steel, aluminium, brass
Optional Software	FX-10 (LabVIEW-based DAQ, Windows compatible)

Field	Details
PC Connectivity	USB connection (optional)
Manufacturer	SCIENTICO, Ambala Cantt, India
Certifications	ISO 9001:2015, CE Marked

Technical Data, Test Specimens

Specimen 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: motorised benchtop strength of materials lab equipment unit for torsional testing to fracture, supplied with 15 calibrated specimens
- Maximum test torque: 300 Nm; maximum specimen length: 300 mm
- Worm gear reduction drive operated by motor for controlled, repeatable torque application
- 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 unit
- Sliding measurement jig: adjustable along the frame to accommodate varied specimen lengths up to 300 mm
- Test rod holder: commercially available 19 mm AF hex socket for easy specimen fitment
- Three specimen materials supplied: mild steel, aluminium, and brass, 5 specimens each, all 95 mm length x 10 mm diameter
- Optional DAQ software (FX-10): LabVIEW-based, supports live graph plotting on HMI and results processing on any Windows OS
- USB connectivity for optional PC integration
- 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 10 is constructed as a rigid benchtop strength of materials lab equipment unit built around a structural frame that supports the sliding measurement jig and all drive and measurement components. The worm gear reduction mechanism, driven by a motor, applies torque progressively and controllably to the test specimen. 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. A strain gauge bonded to the measuring shaft captures torsional load as an electrical signal proportional to applied torque, while an incremental encoder co-axial with the specimen records the angle of twist at 0.1° resolution across a full 360° range. Both signals feed into a

microprocessor-based measurement unit housed in a secure enclosure, with simultaneous digital display of torque and angle. The jig slides along the frame to accommodate specimens from short lengths up to 300 mm, and the 19 mm AF hex socket holder is a commercially sourced standard component for broad specimen compatibility. All construction and materials conform to ISO 9001:2015 quality standards and meet CE marking requirements.

Software, FX-10 (Optional)

Customised software designed in the National Instruments LabVIEW environment for data logging, live graph plotting on HMI, and results processing. Compatible with any Windows-based operating system. Connected to the apparatus via USB. The software is optional and selected independently of the base unit.

Scope of Delivery

- 1 x Experimental unit (Torsion Testing Machine FortiTestX 10)
- 15 x Test specimens (5 mild steel, 5 aluminium, 5 brass)
- 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 FortiTestX 10?
The Torsion Testing Machine FortiTestX 10 has a maximum test torque capacity of 300 Nm, with a maximum specimen length of 300 mm.

Q2: How is torque measured in the FortiTestX 10?
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 digital readout.

Q3: How is the angle of twist measured?
The angle of twist is captured by an incremental encoder with a measurement range of 0° to 360° and a resolution of 0.1°, providing precise angular data throughout the torsion test.

Q4: Which specimen materials are included with the Torsion Testing Machine?
Fifteen specimens are supplied: five each of mild steel, aluminium, and brass. All specimens are 95 mm in length and 10 mm in diameter.

Q5: Is PC software required to operate the FortiTestX 10?
No. The apparatus operates as a standalone strength of materials lab equipment unit using the onboard microprocessor-based measurement system and digital displays. The optional FX-10 LabVIEW software adds data logging, live HMI graph plotting, and PC-based results processing via USB connection.

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