SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Universal Testing Machine 30kN | FortiTestX - 16

Category: Strength of Materials · **Order Code:** MACHINE 30 · **Country of Origin:** India

Product Overview

A CE-certified computer-controlled universal testing machine for tensile, compressive, bending, and shear strength testing of materials, 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/universal-testing-machine-30kn-fortitestx-16/



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

Technical Specifications

Technical Specifications - Universal Testing Machine 30kN FortiTestX 16

Field	Details
Product Name	Universal Testing Machine 30kN FortiTestX 16
Model Reference	FortiTestX 16
Product Category	Strength of Materials Lab Equipment
Apparatus Type	Benchtop universal testing machine 30kN, hand-operated hydraulic
Maximum Test Force	30 kN
Maximum Stroke	45 mm
Specimen Space	165 x 65 mm
Force Generation	Hand-operated hydraulic system, no power supply required
Dynamometer Range	0 to 100 bar, 2 bar graduations
Dial Gauge Range	0 to 50 mm, 0.01 mm graduation
Load Cell (Optional)	0 to 30 kN, 0.001 kN graduation
Frame Type	Cross-member frame with ground steel pillars
Standard Accessories	Compression plate set, tensile test fixture
Optional Software	FX-16 (LabVIEW-based DAQ, Windows compatible)

Field	Details
Manufacturer	SCIENTICO, Ambala Cantt, India
Certifications	ISO 9001:2015, CE Marked

Technical Data, Dynamometer and Measurement

Parameter	Value
Dynamometer Measuring Range	0 to 100 bar
Dynamometer Graduations	2 bar
Dial Gauge Measuring Range	0 to 50 mm
Dial Gauge Graduations	0.01 mm
Load Cell Range (Optional)	0 to 30 kN
Load Cell Graduation (Optional)	0.001 kN
Maximum Test Force	30 kN
Maximum Stroke	45 mm
Specimen Space	165 x 65 mm

Standard Accessories

FX 16-01. Compression Plates, Set of 2

Parameter	Value
Platen Diameter	130 mm
Compression Specimens	Set of 5 (4 x plastic, 1 x wood)

FX 16-10. Tensile Test Fixture

Parameter	Value
Tension Test Rods	Set of 4 (aluminium, copper, steel, brass)
Specimen Diameter	8 mm
Gauge Length	50 mm

Optional Accessories

FX 16-01. Bending Device

Parameter	Value
Bending Specimens	Set of 5, cast iron

FX 16-03. Wedge Grip for Round and Flat Tensile Specimens

Parameter	Value
Chucks for Flat Tensile Specimen	1 set
Grip for Round Specimen	1 set
Gauge Length	50 mm
Specimen Diameter	8 mm
Flat Tension Specimens	Set of 4 (2 each of aluminium, copper, steel, brass)

FX 16-04. Device for Testing Helical Springs

Parameter	Value
Specimen Sets	2 sets
Outer Diameter	37 to 40 mm
Inner Diameter	20 to 25 mm
Wire Diameter	6 to 10 mm
Spring Length	85 to 90 mm

FX 16-05. Device for Testing Disc Springs

Parameter	Value
Specimen Inner Diameter	10 to 19 mm
Specimen Height	60 to 70 mm

FX 16-06. Device for Shearing Experiments

Parameter	Value
Shear Types	Single point and double point
Shear Specimens	Set of 5, copper
Specimen Diameters	2 mm, 6 mm, 8 mm

FX 16-07. Device for Cupping Experiments

Parameter	Value
Indenter Diameter	20 mm
Cupping Specimens	Set of 5 each in aluminium, copper, steel, brass
Specimen Size	60 x 60 x 2 mm (all materials)

FX 16-08. Measuring Magnifier for Brinell Impression with Brinell Experiment Setup

Parameter	Value
Brinell Indenter Ball Diameter	4.75 mm and 10 mm
Brinell Specimens	Set of 4 (aluminium, copper, steel, brass)
Specimen Size	60 x 60 x 2 mm

FX 16-09. Device for Shear Test Unsymmetrical

Parameter	Value
Shear Plug Diameters	2 mm, 6 mm, 8 mm (2 sets)

FX 16-11. Holder for Dumbbell-Shaped Tensile

Parameter	Value
Dumbbell-Shaped Tensile Specimens	Set of 10, steel

Key Features

Key Features

- Complete universal testing machine 30kN strength of materials lab equipment unit: cross-member frame with ground steel pillars, hand-operated hydraulic system, dynamometer gauge, dial gauge, and standard accessories all supplied
- Maximum test force 30 kN, maximum stroke 45 mm, specimen space 165 x 65 mm for a wide range of specimen types and sizes

- Hand-operated hydraulic force generation: no external power supply required for base operation of this universal testing machine 30kN unit
- Dynamometer with trailing pointer: 0 to 100 bar measuring range, 2 bar graduations for direct load readout during testing
- Dial gauge elongation measurement: 0 to 50 mm range, 0.01 mm graduation for precise specimen extension tracking
- Optional load cell: 0 to 30 kN range, 0.001 kN graduation for digital force measurement
- Standard tensile test fixture: four tension rods in aluminium, copper, steel, and brass, 8 mm diameter, 50 mm gauge length
- Standard compression plate set: 130 mm platen diameter, five compression specimens in plastic and wood
- Ten optional accessory sets extending capability to bending, wedge grip tensile, helical spring, disc spring, single and double point shear, unsymmetrical shear, cupping, Brinell hardness, and dumbbell-shaped tensile testing
- Quick accessory changeover and straightforward configuration for efficient laboratory session management
- Optional DAQ software (FX-16): LabVIEW-based PC data acquisition, logging, and results processing on Windows
- ISO 9001:2015 certified manufacture; CE marked product

Experiments

Standard Experiments

- Tensile tests
- Bending tests
- Compressive tests
- Recording of stress-strain diagrams

With Optional Accessories

- Cupping tests
- Shear tests
- Testing of disc and helical springs
- Brinell hardness testing

Construction and Design

Universal Testing Machine 30kN FortiTestX 16 is built on a rigid cross-member frame with ground steel pillars that generates both compressive and tensile forces through a self-contained hand-operated hydraulic system, requiring no additional power source for operation. The hydraulic system drives the test load up to a maximum of 30 kN across a stroke of 45 mm within a specimen space of 165 x 65 mm. Test force is indicated on a large dynamometer gauge with a trailing pointer across a 0 to 100 bar measuring range with 2 bar graduations, providing a direct and immediate load readout at all stages of the test. Specimen elongation is tracked by a dial gauge with 0 to 50 mm range and 0.01 mm graduation, mounted for clear readout during testing. The frame accepts a full range of standard and optional accessories for different test types, and the straightforward accessory changing system allows rapid reconfiguration between tensile, compressive, bending, spring, shear, cupping, and hardness test setups without specialist tools. This universal testing machine 30kN design ensures that every phase of loading, deformation, and fracture is fully visible and clearly measurable throughout the experiment. All construction and materials conform to ISO 9001:2015 quality standards and meet CE marking requirements.

Software, FX-16 (Optional)

Customised software designed in the National Instruments LabVIEW environment for PC data acquisition, data logging, and results processing. Compatible with any Windows-based operating system. The software is optional and selected independently of the base unit.

Scope of Delivery

- 1 x Experimental module (Universal Testing Machine 30kN FortiTestX 16)
- 1 x Set of samples
- 1 x Dial gauge
- 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 test force of the Universal Testing Machine 30kN FortiTestX 16?
The FortiTestX 16 universal testing machine 30kN has a maximum test force of 30 kN, a maximum stroke of 45 mm, and a specimen space of 165 x 65 mm.

Q2: Does the FortiTestX 16 require an external power supply?
No. The base unit operates entirely through a hand-operated hydraulic system, requiring no external power supply. An optional load cell and optional LabVIEW-based DAQ software require a PC connection via USB for data acquisition functionality.

Q3: What specimen materials are supplied as standard with the FortiTestX 16?
Standard accessories include four tensile test rods in aluminium, copper, steel, and brass (8 mm diameter, 50 mm gauge length) and five compression specimens in plastic and wood. Additional specimen sets in cast iron, copper, aluminium, steel, and brass are available through the optional accessory range.

Q4: What optional test types are available with the FortiTestX 16?
Ten optional accessory sets extend the universal testing machine 30kN capability to bending, wedge grip tensile testing of round and flat specimens, helical spring testing, disc spring testing, single point shear, double point shear, unsymmetrical shear, cupping, Brinell hardness, and dumbbell-shaped tensile specimen testing.

Q5: How is elongation measured in the FortiTestX 16?
Specimen elongation is tracked using a dial gauge with a measuring range of 0 to 50 mm and a graduation of 0.01 mm. An optional load cell with 0 to 30 kN range and 0.001 kN graduation is available for digital force measurement alongside the standard dynamometer gauge.

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