

Model NDW-500 Computer Control Torsion Testing Machine



Applications:

NDW-500 computer control torsion testing machine provides loading and weighing capabilities in both rotation directions, which enables it to determine conveniently not only the ultimate torque of a specimen, but also how the specimen behaves under conditions of continuous or intermittent torque loading in both directions. It is mainly used for the torsion test of metal and non-metal materials, as well as the torsion test for parts and components. It is an essential instrument to measure torsion properties of materials for mechanics laboratories of aviation industry, construction industry, scientific research dept, universities and industrial enterprises etc.

Features:

- Adopting Japanese AC servo system, it is loaded through the active clamping head driven by the AC servo motor and cycloidal pinwheel reducer.
- High-precision symmetrical torque transducer to measure test torque and high-precision photoelectric encoder to measure torsion angle.
- Dual control modes: manual control and computer control.
- Windows-based software is used to evaluate torsion property of materials. The functions include automatic test data processing, display of test curves in real time, storage and print out etc.
- Torsion curves, loading speed, peak value etc can be displayed in real time.

Applied Standard:

BS ISO 18338, GB10128 and others equivalent

Main Specifications:

No.	Item	Specifications
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1	Max. test torque (N.m)	500
2	Measuring range of test load ($\pm$ Nm)	10~500
3	Relative error of torque display (%)	$\leq \pm 1.0$
4	Range of test speed ($^{\circ}$ /min)	0.12~720, stepless
5	Resolution of angle measuring ($^{\circ}$)	0.1
6	Max. reading of torsion angle ($^{\circ}$)	9999.9
7	Distance between grips (mm)	0~500
8	Max. Diameter of specimen (mm)	5-20
9	Control mode	Torque or torsion angle close-loop control
10	Test curves	Torque/Angle/Deformation-Time curves Torsion-Angle/Deformation curve
11	Motor power (kW)	≤ 0.5
12	Power supply	AC 220V $\pm$ 10%, 50Hz
13	Noise (dB)	≤ 75
14	Dimension (mm)	1300x550x1230
15	Weight (Kg)	450

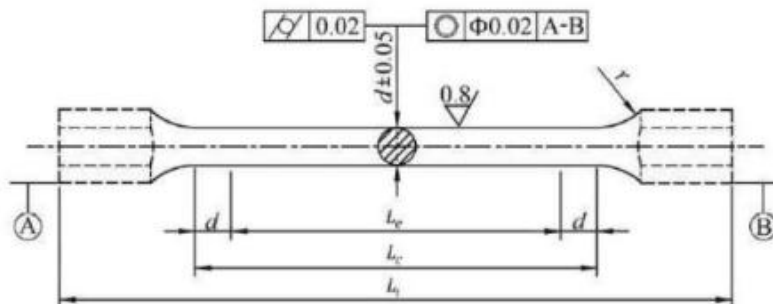
BS ISO 18338:2015
ISO 18338:2015(E)

6 Test piece

6.1 Shape and dimensions of test pieces

6.1.1 Cylinder test pieces

The shape and dimensions for cylinder test pieces are shown in Figure 2. The shape and size for two ends of the test piece should be in coincidence with the testing machine gripping part. It is recommended that the test pieces be 10 mm diameter, 50 mm or 100 mm gauge length, and 70 mm or 120 mm parallel length. If other test pieces are used, the parallel length should be the sum of gauge length and two times diameter.



Key

r transition radius

NOTE The shape of the test-piece heads is only given as a guide.

Figure 2 — Cylinder test piece

Sample should be prepared as per above standard.



Main Configuration:

Load frame including torsion test unit: 1 set

Computer with **English & Russian** version software: 1 set

Grip chuck for round specimen dia. 5-20mm: 1 set



Software Introduction:

Microsoft Windows operation platform, screen display, mouse action

The test torque and peak value display from 4 to 6 measuring ranges, torsion angle display in four measuring ranges, automatic calibration.

Recording torque-torsional angle, torque-time, torsional angle-time & corner-time trend simultaneously, and can switching over for observation at runtime.

Data is processed in man-machine interaction mode, meets the requirements of the standard "Torsion Test Method of Metallic Materials Under room Temperature". Data processing can be realized automatically, also interfered in manual mode to boost the accuracy.

Test data stored by the form of ASCII code into ".txt" file, so convenient for customers to reprocess test data utilizing any form of commercial statements and word processing software, printing test reports as the format customer request.

System supporting Open Loop control mode and Entire Close Loop (as Torque, Torsional Angle and Encoder Angle) control represents the high control level of testing machine.

System provides customer with secondary programming function which means control more easy, process more flexible, adapts to many actual testing requirement.

System support any commercial printers, customer can customize printing contents himself.

Factory parameters are stored into files, easy to restore.

Simple and reliable upgrade of system

Software interface is as follows,

