

Motorized Hardness Tester EsaTest MTR

For Hard to Access Areas



Esatest MTR is the result of more than 40 years of experience and continuing research into new technological solutions to problems in the hardness testing of metals. It is a new hardness tester that measures electrical resistance.

EsaTest MTR has been designed as a solution to previously unresolved problems in hardness testing, particularly for testing in places that were inaccessible until now. Thanks to a new, patented system of impression reading, EsaTest MTR requires neither optical reading of the impression nor measuring of penetration depth. It can perform testing in all positions with minimum difficulty and without special stability.

Readings are provided on the display in Vickers, Rockwell C and other scales upon request.

With EsaTest MTR, the load is applied progressively. So with one test, different hardness values conforming to the entire range of applied loads can be observed.

This solution is very useful for testing superficially treated specimens. It allows a quick evaluation of the depth of the superficial treatment and possible rectification of ground parts.

The new system measures electrical resistance between the mounting of a diamond indenter conducting electricity and the contact limit between the indenter and the surface of the specimen during penetration (see working scheme at right).

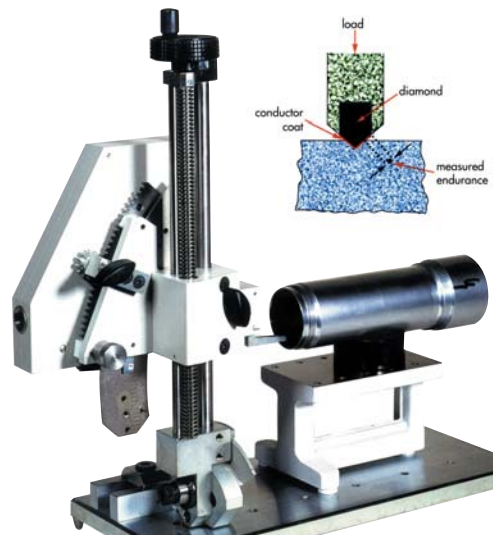
This resistance decreases as penetration increases and the penetrator acts as a probe to determine the dimensions of the impression. EsaTest MTR is limited to use with metals only.

This new principle of hardness measuring permits testing in the most difficult or previously inaccessible locations.

The wing of a supersonic plane, the wishbone of a Formula One race car, a turbine blade and a wheel joint are only some of the "difficult" applications that EsaTest MTR can handle, issuing data with a detailed comparative diagram.

- Small and large specimens
- Irregular shapes
- Internal surfaces
- Gears
- Applicable in different positions

- Motorized progressive load application.
- With only one measurement, different hardnesses can be determined, conforming to the entire load ranges from 1 to 10 kg (9.81 - 98.1 N); also 0.5 to 10kg, as well as 0.2 up to 1 kg load ranges available upon request as the other versions of MTR.
- No clamping devices are needed for the specimen.
- Results will not be affected by deflection and vibration.
- Electronics provide high memory capacity.
- Advanced multilingual and multi-function software.
- Direct readings on 107 x 57-mm graphic liquid crystal display (LCD).
- Certificate printing in five languages.
- Direct reading on 4.20 x 2.25 inch graphic LCD



TECHNICAL SPECIFICATIONS

TYPE	Esatest MTR motorized hardness tester; can be applied directly to structures built for special requirements
WORKING PRINCIPLE	Measuring electrical resistance
READING	Digital, on 107 x 57-mm graphic liquid crystal display (LCD)
TEST LOAD ESATEST MTR	progressive application from 1 to 10kg, hardness observed at intervals of 0.5kg.
TEST LOAD ESATEST MTR/B	progressive application from 0.5 to 10kg, hardness observed at intervals of 0.5kg.
TEST LOAD ESATEST MTR/C	progressive application from 0.2 to 1kg, hardness observed at intervals of 0.1kg.
LOAD APPLICATION	Motorized, progressive; maximum load can be set by keyboard
LOAD OPERATION	Keyboard or Pedal.
INCORPORATED SCALES	HV 100 - 1000, HRC 0 - 70, other scales upon request.
ELECTRONICS	16 bit microprocessor system, connectable to peripheral units.
AVAILABLE FILES	64.
MEMORY CAPACITY	4000 values.
KEYBOARD	Function keys F1, F2, F3, F4, and F5.
SELECTABLE FUNCTIONS	scales, tolerances, calibration, statistics, graphics, certificate printing, language selection, file configuration, etc.
OUTPUTS	RS232 C for printer, RS 232 C bi-directional for computer, parallel.
CERTIFICATION	All results can be printed in 5 languages with date and hour.
CALIBRATION	User can calibrate the hardness tester on certificated test blocks
STAND	Revolving on three axes
MAXIMUM MEASURABLE HEIGHT	230mm (9 in.) depth: 110mm (4.33 in.). Easy application on other supports.
OVERAL DIMENSIONS	H x W x D 380 x 150 x 350mm - 15 x 5.9 x 13.8 inch
POWER SUPPLY	Single-phase from 100 to 220 VAC, 50/60 Hz with earthing.
OPERATING TEMPERATURE	10 - 40°C, with sensor for automatic temperature compensation.
GROSS WEIGHT	10 Kg - 22 lbs

STANDARD ACESSORIES

Vickers test block calibrated at 1 to 10 kg

V-anvil for round Ø 60mm.

V-anvil for round Ø 30mm.

V-anvil for round Ø 6mm.

Penetrator extention 50mm (2 in.)

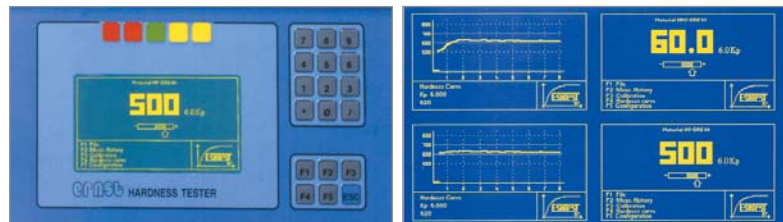
Support for test block

Kit for non-magnetic materials

Magnetic sensor cable

Pedal

Wooden box



OPTIONAL ACESSORIES

Special scales

Spare indenter

80 columns printer

Printer cable

Software for analysis and hardness graphs on PC

Penetrator extentions 75/100/150/200mm - 2.95/3.9/5.9/7.87 inch lbs

