FUTURE-TECH

Small Ball Rebound Hardness Tester

eNM3A10

eNM®

～ At anytime, anywhere, for anything, the precise hardness test is available. ～

Features

UNIQUE

Test hardness (coefficient of restitution) using a small ball.

EASY

Switch on, and just start testing! One-push operation to prepare the next test.

UNNECESSARY TO CUT OR PREPARE YOUR SPECIMEN

You can directly test small parts*1 and large objects just as they are.*2

MINIMUM DAMAGE

The ball is 3mm in diameter and weights only 0.06g!
The left trace is very small.

PORTABLE

The tester weights about 0.6kg and is operated by two AA batteries or USB power supply.
With a hard case that is convenient to carry.

ANY DIRECTION

Test is possible in any direction. (upward, downward, horizontal, etc.)

CONVERSION

For ordinary steel, the conversion display of HRC, HRB, HV, HBW, HS is possible.

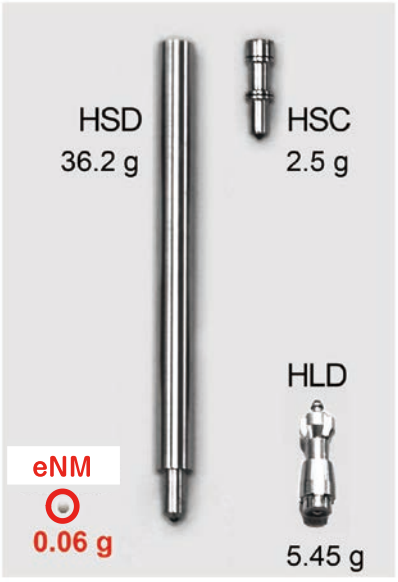
Conversion display example : HRC

*1 As a guide, more than 5mm thickness is required.
*2 It is recommended to polish the surface with #600 emery paper.

Available to test every kind of materials!

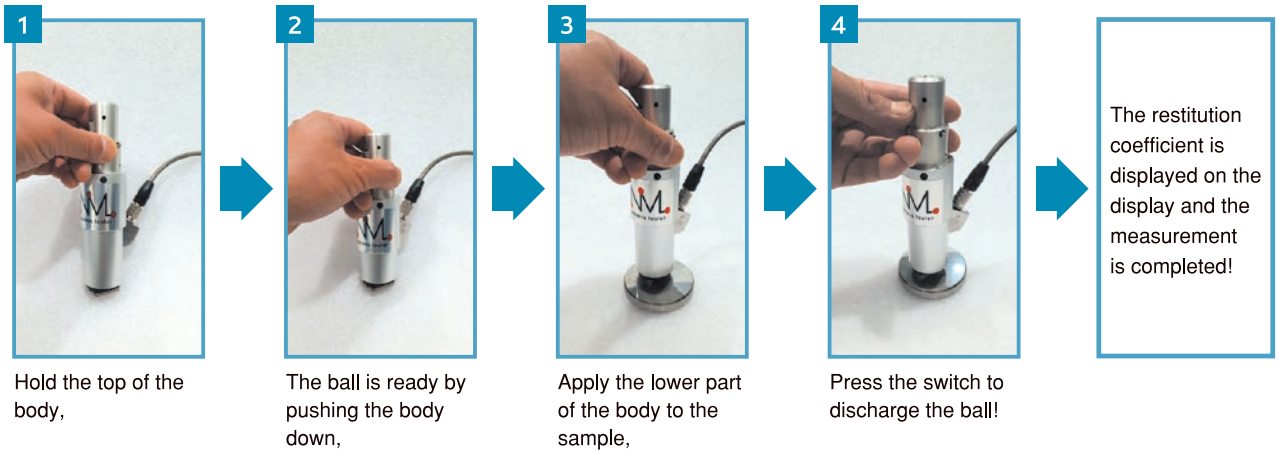
Test results of co-efficient of restitution e (reference)

Materials	e
40HV pure copper hardness standard block（φ64×10mm, 265g）	0.19
Natural rubber block（50mm thick）	0.38
100HV brass hardness standard block（φ64×10mm, 255g）	0.41
Wooden bat for juniors（total length 800mm, 560g）	0.48
200HV steel hardness standard block（φ64×15mm, 380g）	0.55
Polyethylene cooking board（13mm thick）	0.63
400HV steel hardness standard block（φ64×15mm, 380g）	0.71
800HV steel hardness standard block（φ64×15mm, 380g）	0.90
Crystal glass ashtray（1.9kg）	0.98



The mass of the eNM is several tens to several hundreds of the impact bodies (collision bodies) of the conventional rebound hardness testers !
Therefore, smaller samples can be tested!

HOW TO TEST



Hold the top of the body,

The ball is ready by pushing the body down,

Apply the lower part of the body to the sample,

Press the switch to discharge the ball!

eNM3A10 SPECIFICATIONS

Dimensions & weight, main body	φ40mm × H167mm　abt.320g
Dimensions & weight of display device	W69mm × D28mm × H115mm　130g（Excl. battery weight）
Principles & display	Discharge and clash φ3mm alumina indenter against the sample to measure the dischage velocity Vi and rebound velocity Vr. Display the co-efficient of restitution e（=Vr/Vi）.
Conversion display	HRC・HRB・HV・HBW・HS
Indenter	φ3mm alumina ball.　Mass is 0.06g.
Discharge velocity	10m/s（tolerance, within ±5%）
Discharge method	Resilience power of spring.
Power source	Two AA batteries or power supply by USB cable（5V 0.5A）
Data transmission	USB→PC（format CSV type）, Bluetooth→tablet（Android terminal more than 4.0 recommended）
Velocity detection range of indenter	1 ～ 11m/s
Velocity measurement method	Detection by the shutdown of light path. Method to measure the time to pass two points.
Display device of measured value	Liquid crystal display（7seg 8 digits back light）
Recommended environment	Temperature 10℃～35℃, humidity less than 90%, no condensation
Standard accessories	Standard test block e 0.64 equiv.(30HRC equiv.) :1pc. / Standard test block e 0.86 equiv.(60HRC equiv.) :1pc. / hard case :1pc.

Some images and data in this catalog are quoted from Small Ball Rebound Tester eNM explanatory material (http://www.ystl.jp/eNM.pdf).

※Appearance and specifications are subject to change without prior notice for the product improvement.

FUTURE-TECH

JCSS 0228

We are based on JIS Q 17025 (ISO/IEC 17025) as accredited standards, and accredited by JCSS who manages the recognition scheme according to ISO/IEC 17011. IA Japan (accreditation organization who has managed JCSS) who is signatory to the Mutual Recognition Arrangement (MRA) of International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Accreditation Cooperation (APAC).
We are accredited as MRA Calibration Laboratory of JCSS.
Our accreditation number is JCSS 0228.

REGISTERED ORGANIZATION No.1172・ISO 9001

MS CM002

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