

**AT REQUEST**

- Brinell hard metal ball indenter Ø 1 - 2,5 - 5 mm
- Brinell hard metal ball indenter Ø 1/2"-1/4"-1/8" for plastics
- Brinell test block
- Vickers diamond 136° indenter
- Vickers test block
- Microscope with illumination
- 80 column printer with input RS 232 C
- Computer for data processing
- Personalized programs for results measures can be supplied
- Clamping of piece



**STANDARD ACCESSORIES**

- 1 HRC diamond indenter
- 1 HRB ball indenter Ø 1/16"
- 1 HRC-N test block
- 1 HRB-T test block
- 1 V flat anvil 60 mm diameter
- 1 flat anvil 60 mm diameter
- 1 double face spot anvil v and flat 25 mm diameter
- 1 Wooden case with tools
- 1 Test certificate and warranty
- 1 Tables for hardness conversion
- 1 Dust cover



**Tecnical characteristics**

MODEL	250 DRM	250 DRMS	250 DRMC
Preload	10 Kgf (98,07) N	3 Kgf (29,4) N	(10 Kgf) 98,07 N - (3 Kgf) 29,4 N
Test loads on demand	60-100-150 Rockwell (588-980-1471) N 62,5-125-187,5 Brinell (612-1225-1839) N	15-30-45 Rockwell (147-294-441) N 15,6-31,2 Brinell (153-306) N	60-100-150 Rockwell (588-980-1471) N 62,5-125-187,5 Brinell (612-1225-1839) N 15-30-45 Rockwell (147-294-441) N 15,6-31,2 Brinell (153-306) N
Feasible tests	Rockwell HRC A D B F G L M R Brinell HB 30, HB 10, HB 5, R Kgmm <sup>2</sup>	Superficial Rockwell HRN+HRT Brinell HB 30, HB 5, HB 2,5	Rockwell HRC A D B F G L M R Superficial Rockwell HRN+HRT Brinell HB 30, HB 10, HB 5, HB 2,5, R Nmm <sup>2</sup> Vickers (3 5 10 20 30 50 100 Kgf) 29,43 49,05 98,10 196,20 294,3 490,5 981N
Mode of operation	only one single start input without brake to activate automatically: research and contact on test sample, test cycle phase, autoclamping Insensible to deflections during the test cycle		
Digital reading	Rockwell+Brinell+R Nmm <sup>2</sup> - Vickers	Rockwell - Brinell - Vickers	Rockwell - Brinell - Vickers
Reading resolution	0,1 HRC - 0,1HB	0,1 HR - 0,1HB	0,1 HR - 0,1HB
Conform to standards	EN-ISO 6506 / 6507 / 6508 / ASTM-E18		
Certificability by direct and indirect method	Yes		
Working depth	215 mm		
Working stroke	190 mm		
Max load of test piece	1000 Kg		
Data output	RS 232 C		
Pieces selection	Hard - Soft - Ok		
Power supply	240V 50±60 Hz 200 VA		
Field of application	For all metals, iron, steel, tempered steel, cast iron, bronze, aluminium, metal alloy, hard and soft plastic. Thickness over 0.6 mm	Like MRS, for all metals but with a thickness lower than 0.6 mm and for carburizing treatment, nitriding, filling material	For all metals: iron, steel, tempered steel, bronze, aluminium and nitriding, cementation, hard facing
Net weight	75 Kg		
Packing weight	90 Kg		
Packing measures	37x60x100 cm		

Changement of data can be effected without notice



**250 DRM**

*AFFRI introduces a system of automatic hardness tester for the future*



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**AUTOMATIC  
HARDNESS  
TESTER**

# AFFRI introduces a system of automatic hardness tester for the future

Since 1964 AFFRI has been producing hardness testers in which the forces are used to get test loads together with innovative devices which concur to make up the AFFRI SYSTEM. The power supply is indifferently mechanical, electromechanical, hydro-mechanical, pneumo-mechanical.

Long-time ago AFFRI SYSTEM successfully overtook the philosophy of dead-weight concerning the traditional hardness testers.

AFFRI SYSTEM in its technological

evolution is protected by the patents registered over the years.

An increase in the operative performances has been obtained with the use of control load cell in closed-loop (Patent AFFRI N. 1175158).

However this improvement appears moderate if we compare it with the high qualitative and operative level reached by AFFRI SYSTEM.

A further improvement in performances was achieved when AFFRI made really

automatic the hardness tester working in Rockwell and Brinell tests: only one drive starts up and performs - without a break - the phases of positioning, approach and execution of the test.

The fully automatic operation and the speed in the whole test cycle, obtained by AFFRI SYSTEM, remains unchanged even in the version with load cell due to the use of unprecedented technologies (patent pending).

## 250 DRM

### Absolute measure

- Unrivalled accuracy with no misalignment and/or anomalous shoves
- All operations are fully automatically started up through only one drive
- It meets all laboratory requirements
- Full operation even in presence

of vibrations, sudden changes in temperature or dusty environment

- **Unparalleled accuracy, repeatability and reproducibility** in all test conditions (0,1 HRC) which can be checked in operation condition
- Survey of load and indenter penetration in axis, in order to obtain an absolute hardness measure
- Graphical lighted display with

- high contrast to obtain clear, rapid and accurate readings. Icons facilitate the operator in identifying software functions.
- Signal for test cycle end that facilitate the operator
- The operator can automatically select test load and measure scale only through a button
- Simultaneous conversion different scales (Rockwell, Brinell, Vickers and in N mm2 resistance)
- **Automatic control and selection of pre-loads and loads** through a software in closed-ring and with load cell
- Effective statistics software incorporated with connection to printer or computer in order to supply: diagram, graph, tests list, average, standard deviation, cp, cpk.
- The instrument and its controls are ergonomically provided with security devices according to CE norms
- Software includes setting in three selection classes in order to simplify the insertion of the instrument in an automatic working line
- Programmable test load,



division 0.1 second  
 - Automatic correction of measure on round surfaces and results memorisation

- **High resolution of measure 0.1 HRC or 0.01 HRC** on demand
- Fully conform to ASTM E 18, UNI EN ISO 10109 norms
- Reversibility from automatic to semiautomatic for single test.
- **2 years full warranty** in order to assure high technological level it contains
- Wide range of accessories in order to hold piece of every shape



Certificability by direct and indirect method

### DRM SERIES

#### MOTORIZED

- Automatic load application and selection
- Load cell in closed loop AFFRI patent
- Rapid functioning with indenter touch
- High precision and rapidity of measurement
- High division (0.1 micron mm)
- Large and graphical display, with different functions and light back

#### SIMPLE AND UNIVERSAL

- Every environmental condition is tolerated in presence of dust, vibration, changes in temperature
- Wide software functions, information guide and Windows icons
- Brinell, Vickers, Rockwell tests for every scale and immediate conversions
- Statistics and connection to printer with diagrams and graphs

#### VERY HIGH PERFORMANCES

- Unaltered operation even in extreme conditions: irregular pieces, unfinished pieces, piece that are raised or misaligned, presence of impurity (dust, oil, etc.) between the piece to be tested and the support or between the support and the point of support

#### AUTOMATION

- Optional equipment: interlocks for rapid tests with selection for large series (bearings, shafts, forged pieces, semifinished pieces, finished odds and ends, etc.)

#### CERTIFICATION

- Endowed with all requirements of certification according to UNI EN ISO 10109 ASTM E 18 norms
- Supplied with certificates on primary SIT samples.

