



Using the new AFFRI® system, the test piece is placed in the machine operating area, selected according to the piece size: its height can range from 50 mm minimum in multiples of 50mm, to 330 mm (or higher on request).

- **High working speed:** the test cycle duration conforms to international standards and can be set by the operator. High accuracy of results, reproducibility and repeatability, the reference point working autonomy implies that all alterations (adjustments, deformations, impurities on test blocks and supports), present in the area above or below the reference point, have no influence on the test. The mechanical and physical characteristics of the supports, similarly, have no influence on the measurement accuracy.

- **Absolute measurements in every condition.**

Test after test, the loading is **precise, repeatable and can be reproduced.**

The instrument meets all ASTM EN ISO requirements. Its use is advantageous in laboratories and in manufacturing for total and continuous monitoring of production in its different stages, leading to great improvement in quality control during manufacturing of components such as bearings, car parts and safety-critical aeronautical materials.

### PERFORMANCE AT THE HIGHEST TECHNOLOGICAL LEVEL

- Ease of use: single initiation
- Division 0.5 HRC
- Rapid testing: no break or pause during the test sequence (unprecedented technology)
- Absolute hardness measuring
- Automatic advancing and return of the measuring head over 50 mm



①



②



④ Supporting accessories for special requirements  
13601 H=100 mm  
13602 H=50 mm



③ Support for anvils to lock the pieces or for quick displacements  
Code 13330 (optional)



⑤ Support base for heavy parts 330x390 mm up to 2000 kg weight (optional)

### Technical characteristics

Preload	(10 Kgf) 98.07 N
Test loads	(60-100-150 kgf) Rockwell 588-980-1471 N (10-60-100 kgf) Vickers 98.07-588-980 N (62.5-125-187.5 kgf) Brinell 612-1225-1839 N
Accuracy	Conforms with standards EN-ISO 6506-2 / 6507-2 / 6508-2 / ASTM-E18
Feasible tests	Rockwell HRC A D B F G L M R
Twin	Brinell HB 30; HB 10; HB 5; Break N/mm <sup>2</sup>
Action	Only one start input moves down head to take contact and clamp the test surface from distance multiple of 50 mm and automatically starts the hardness cycle in automatic succession without breaking a phase: approach to the piece; clamping of the piece; activation of reference surface; entire test cycle performance and release of piece.
Mobile Indenter	from 0 to 50 mm multiples till 400 mm
Mobile clamping	from 0 to 50 mm multiples till 400 mm
Self aligning to test surface	from 0 to 50 mm multiples till 400 mm
Automatic compensation of deflection piece	from 0 to 50 mm
Operation	it can work if not levelled, inclined or near to vibration area, without losing accuracy
Temperature range	+ 5° to + 50° C
Read out	analogic automatic zeroing
Reading resolution	0.5 HRC
Total height capacity	400 mm (more upon request)
Total depth capacity	200 mm
Base	330x390 mm with T slots
Max load of test piece	2000 Kg
Self clamping	200 ÷ 4000 N
Fields of application	For all metals: iron, steel, tempered steel, cast iron, brass, aluminium, copper, metal alloys, hard and soft plastics with a higher thickness than 0.6 mm
Net weight	100 Kg
Packing weight	110 Kg
Packing measurements	54x54x99 cm

### Applicable accessories

#### Standard

- Flat anvil 60 mm
- "V" anvil 60 mm
- Flat and "V" double anvil
- Hardness conversion table
- Wooden case with accessories
- Dust cover
- Power cord
- User manual

#### Rockwell

- Rockwell C indenter
- Rockwell B indenter
- Rockwell test blocks C-B

#### On request

- Printer
- Table to support hardness tester

#### Brinell

- Ball penetrator 2.5 - 5 mm
- Brinell test block for ball 2.5 - 5 mm

#### Vickers

- Vickers 136° indenter
- Vickers test blocks



### **SINGLE INITIATION OF COMPLETE OPERATION INCLUDING AUTO CONTACT WITH TEST PIECE**⑦

- Following initiation by operating the Start lever, the 330 RS head moves down to reach the test surface in distance multiples of 50 mm as part of the continuous test sequence comprising:
  - approach to the piece;
  - clamping of the piece;
  - indentation;
  - complete measurement cycle and release of piece.
- Does not require elevating screws
- Meets all laboratory requirements
- Full operation even in presence of vibrations, sudden changes in temperature or dusty environments
- Perfect and effective measurements including the first test
- Insensitive to deflections ②
- Automatic compensation of deflection up to 50 mm
- Large fixed base 330x390 mm for sturdy and stable support of test pieces. Small and large size components up to 2000 Kg weight can be tested ④ ⑤
- Accessories can be applied on the table to facilitate the positioning of irregular test pieces ③ ④ ⑥
- The long stroke head permits easy tests on different height components without the need to change the elevating screw position every time
- The head moves down automatically into contact and executes the test cycle
- Automatic clamping of test piece surface
- High R. & R. better than 8%
- Large range of test loads (from 98.1 to 1839N)

### **UNLIMITED CONDITION OF USE**

- Any environmental condition is tolerable: presence of dust, vibrations, sudden changes of temperature
- Unaltered operation even in extreme conditions: irregular, unfinished raised or misaligned pieces, every kind of support (lifting screw, deformable materials, etc.) presence of impurities (dust, oil, etc.) between the test piece and the support or between the support and the point of the support.



### ⑦ AUTO CONTACT WITH TEST PIECE AND AUTOMATIC TEST CYCLE

