



### THREE INSTRUMENTS IN ONE

- Combines different instruments in only one machine which is a first in laboratories with optical Vickers - Brinell - Rockwell measurements.
- Very quick and accurate in production environment with automatic Vickers - Brinell - Rockwell measurements.
- Effective statistics software incorporated with connection to printer or computer in order to supply: diagrams, graph, tests lists, averages, standard deviations.
- The instrument and its controls are ergonomically provided with security devices according to CE norms.
- Software includes settings in three selection classes in order to simplify the insertion of the instrument into a production line.
- Programmable load dwell time 0.1 second increment
- Automatic correction of measurements on round surfaces and saving of results.
- **High resolution of measurement 0.1 HRC (or 0.01 HRC on demand), 0.1 HV**
- Reversion from automatic to semi-automatic operation for single tests.
- **Two years full warranty** as assurance of high quality.
- Optical gauge high definition 0.1 Micron m. for very accurate Vickers and Brinell measurements
- **Unparalleled accuracy, repeatability and reproducibility** in all test conditions (0.1 HV) which can be checked in operation condition within 8%
- Application of load and indenter penetration on the same axis in order to obtain absolute hardness measurements.
- Graphical illuminated display with high contrast to obtain clear, quick and accurate readings.
- Icons facilitate the operator in identifying software functions.
- Signal for test cycle end that facilitates the operator.
- **Automatic control and selection of pre-loads and main load** using software controlled closed-loop with load cell (AFFRI® Patent).
- Single button operator selection of test load and measurement scale.
- Simultaneous conversion between different scales (Rockwell, Brinell, Vickers, N/mm<sup>2</sup>)

### CERTIFICATION

- Supplied with certificates on SIT primary samples.



Sledding table (optional)



X-Y table 100x100 mm

### Technical characteristics 770 VRSD VM VICKERS

Vickers force	(0.3 0.5 1 2 2.5 3 5 10 15 20 30 50 Kgf)
	2.94 4.9 9.81 19.6 24.5 29.43 49.05 98.1 147.15 196 294.3 490 N

### Technical characteristics 770 VRSD

Vickers Knoop loads	(1 2 2.5 3 5 10 15 20 30 60 100 120 Kgf) 9.81 19.6 24.5 29.43 49.05 98.1 147.15 196 294.3 588.6 981 1177 N
Rockwell loads	(10 60 100 150 Kgf) 98.10 588.60 981 1471.50 N
SuperRockwell loads	(3 15 30 45 Kgf) 29.43 147.15 294.30 441.45 N
Brinell loads	(5 6.25 10 15.6 25 30 31.2 62.5 125 187.5 Kgf - on request extra 250 Kgf) 49.05 61.3 98.1 153.23 245 294.43 306.5 613 1226 1839 N (on request 2452)
Optional test loads	49 132 358 961 N (for plastic, rubber as per EN-ISO 2039 std) (250 Kgf) 2452.5 N Brinell
Shore	A - B - C - D
Accuracy: Conforms with standards	EN-ISO 6506 / 6507 / 6508 / ASTM-E18 - EN-ISO 2039
Mode of operation	Automatic
Magnification	150x 250x 400x
Reading resolution	0.1 HR - 0.1HB (0.01 HR unit, on request)
Resolution	0.1 micron m.
Reading	Digital
Total depth capacity	190 mm
Working table	270x330 mm
Working height	700 mm - Motorised
Data output RS 232 C	Yes
Power supply	220V 50÷60Hz - 200VA
Net weight	95 Kg
Packing weight	120 Kg
Packing measurements:	50x50x100 cms
CCD camera	High resolution 500x, 1000x, 2000x
Monitor	17" b/w high resolution

### Applicable accessories

- Standard**
- Wooden case with accessories
  - Dust cover
  - Power cord
  - User manual
  - Hardness conversion table
- On request**
- Flat anvil 60 mm
  - "V" anvil 60 mm
  - Flat and "V" double anvil
  - X-Y table 100x100 mm with micrometers div 0.01 mm
  - CCD camera screen computer software for Vickers
  - Printer
  - Table to support hardness tester
- Rockwell**
- Rockwell C-N indenter
  - Rockwell B-T indenter
  - Rockwell test blocks C-B-N-T
- Vickers**
- Vickers indenter
  - Vickers test blocks
  - Knoop indenter
  - Knoop test blocks
- Brinell**
- Ball penetrator 1 - 2.5 - 5 - 10mm
  - Brinell test block
- EN-ISO 2039 for plastic**
- Ball penetrator 5 mm
  - Large clamping base
  - Test block
- Shore**
- Digital Unit for Shore readout
- A078.A1.010 Probe SHORE A with tungsten carbide indenter
  - A078.A1.020 Probe SHORE B with tungsten carbide indenter
  - A078.A1.030 Probe SHORE C with tungsten carbide indenter
  - A078.A1.040 Probe SHORE D with tungsten carbide indenter



**SINGLE INITIATION OF COMPLETE OPERATION INCLUDING AUTO CONTACT WITH TEST PIECE ①**

- Following initiation by the Start button, the 770 VRSD 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 deflection
- Automatic compensation of deflection up to 50 mm

**MOTORISED**

- Automatic load application and selection
- Load cell in closed loop AFFRI® patent
- Rapid measurement following contact with indenter
- High precision optical system and rapid measurement
- Large backlit graphical display, with different functions

**VERY HIGH PERFORMANCE**

- Measures according to optical absolute method
- 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.

**OPTIONAL ACCESSORIES**

- Application of camera and computer for electronic analyses on prints and quick Vickers and Brinell measurements.
- Table for displacements on X and Y axis for sewing tests
- Optional equipment: interlocks for quick tests to accommodate a wide variety of test pieces (supports, shafts, forged pieces, semi-finished pieces, finished odds and ends, etc.)

- **Motorised long stroke from 0 to 700 mm in height**



Optional screen, note book combined with camera and software for automatic Vickers Brinell measure



① **AUTO CONTACT WITH TEST PIECE AND AUTOMATIC TEST CYCLE**

