



*AFFRI® introduces
an automatic
hardnesstester system
for the future*



INTEGRAL - E

UNIVERSAL
- ROCKWELL
- VICKERS
- BRINELL

- Fully Automatic Universal Hardness Tester
- It can measure automatically the case depth surface of heat treatment from 0.15 to 1.5 mm thickness directly up the surface without cutting sample (HDTL) cycle. It is not a destructive test.
- Automatic Brinell, Vickers, Rockwell measures
- Thanks to the Affri system Closed loop technologies inside the Autofocus for Vickers and Brinell is easy and automatic
- Color touch screen TFT 17"
- Elevating screw columns base for fast adjustments
- Sliding indenter stroke from 50 to 0 mm self touching surface
- Automatic clamping for Rockwell tests (Brinell at request)
- One single start input to activate without interruption: (self touch surface to be tested, self load -un-load self switching indenter, optic, self focus and self measure, self goes up to free sample)
- Insensible to external vibrations sources
- Insensible to change of temperature (5 to + 50°C)
- Insensible to deflections during test cycle
- It can be operative also if is not leveled or if inclined



Scrolling menu on touch screen for easy and simple use



Measure of case depth of hardness treatment without cut sample



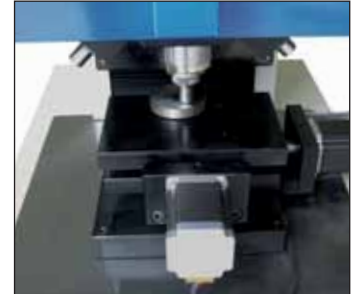
- Rotating turret at 6 positions for automatic switch to several indenters and objectives



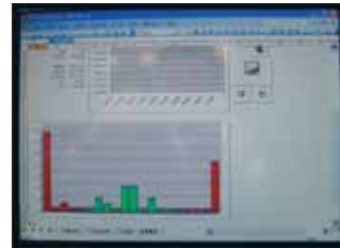
Automatic Brinell / Vickers and Auto Focus

OPTION

- Large vision field optic camera for automatic sample border or bar code recognizing.
- HDTL for case depth



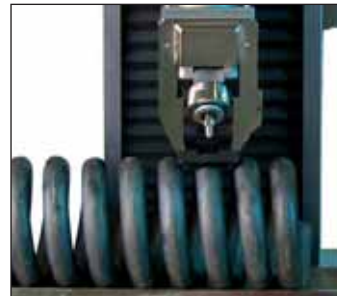
- Motorized X-Y axis table 200 x 100mm division 0,01 mm combined to automatic start test cycle for hardness case depth. The axis are independently or combined programmed



Complete statistic and histogram customized text

Example of test report for case depth:

TEST REPORT	
AFFRI - HDTL	
Hardness Depth Treatment Loads	
Product Code
Operator
Date of test
Vickers	depth measured
HV 525	0,27 mm
HV 550	0,31 mm
HV 600	0,34 mm
Superficial Hardness detected	HRC 54,46



- Clamping system combined to the high technology of Affri System assure perfect clamping also on unstable or flexible parts

Available models

- **INTEGRAL - E 1 (loads from 15,6 to 3000) Brinell**
Brinell 15,6 31,2 62,5 125 187,5 250 500 750 1000 3000.
- **INTEGRAL - E 2 (loads from 1 to 250) Rockwell+Brinell + Vickers + Shore**
Brinell 1 5 10 15 15,6 30 31,2 62,5 125 187,5 250 .
Vickers 1 2 3 5 10 15 30 50 60 100
Rockwell 15N/T 30N/T 45N/T 60 100 150 HRC A D B F G L M R S T V X Z
ISO 2039 tests for plastic
- **INTEGRAL - E 3 (loads from 3 to 1000) Brinell + Vickers + Rockwell +Superficial Rockwell + Case depth**
Brinell: 3 5 10 15 5 31,2 62,5 125 187,5 250 500 1000; Vickers: 3 5 10 15 30 60 100 120
Rockwell: 60 100 150; Superficial Rockwell: 15 30 45
HDTL case depth automatic HV 525 - 550 - 600 (at request)
- **INTEGRAL - E 4 (loads from 1 to 50) Brinell + Vickers + Shore**
Brinell 1 5 10 30 31,2 50, Vickers 1 2 3 5 10 15 30 50, Rockwell 15N/T 30N/T 45N/T
ISO 2039 tests for plastic
- **INTEGRAL - E 5 (loads from 10 to 3000) Rockwell + Brinell + Vickers**
Brinell 10 30 31,2 62,5 125 187,5 250 500 750 1000 3000.
Vickers 10 15 30 50 60 100 120
Rockwell 60 100 150 HRC A D B F G L M R S T V X Z
HDTL case depth test
- **INTEGRAL - E 6 (loads from 0,3 to 30) Micro Vickers+Superficial Rockwell+Brinell**
Micro Vickers 0,3 0,5 1 2 5 10 20 30
Brinell 1 5 10 30 31,2
Superficial Rockwell 15 30 45

Technical characteristics

Measures	Automatic Brinell, Vickers, Rockwell and case depth treatment (depend to the models)
Resolution	0.1 HR 0.01 mm case depth
HDTL function	Permits checking the case depth of hardness from 0.15 to 1.5 mm range at 525 - 550 - 600 HV1
Load force	Controlled in closed loop load cell inside Affri patent
Test height	max 400 min 0 mm self adjusting in step of 50 mm acting the Test start input and Handwheel for long stroke
Depth	200 mm (others on request)
Action:	Only one start input moves down head and indenter to reach test surface self touch surface to be tested, self load -un-load self switching indenter, optic, self focus and self measure, self goes up to free sample
Automatic turret	self switching 1 indenter + 1 objective (optional 5 steps 3 indenters + 2 objectives)
Net work	wire connection for technical assistance auto diagnosis
Operativity	it can work if not levelled, inclined or near to vibration area, without losing accuracy
Temperature range	+ 5° to + 50° C
Self aligning to test surface	from 0 to 50 mm
Compensation of deflection	From 0 to 50 mm range
Accuracy:	Conformation standards Brinell EN-ISO 6506-2, Vickers EN-ISO 6507-2, Knoop, Rockwell EN-ISO 6508-2, Plastic DIN EN 53456, EN-ISO 2039-2
Max. weight allowed for the specimen to be tested	200 Kg
Base	Anvils set applicables
Fields of application	For all metals: iron, steel, tempered steel, brass, aluminium and nitriding, cementation, hard facing, plastic
Size	400x600x1700h
Net weight / Packing weight	380 Kg / 450 Kg
Power supply	220V 50÷60Hz - 200VA - Air compressed 5 ATM



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