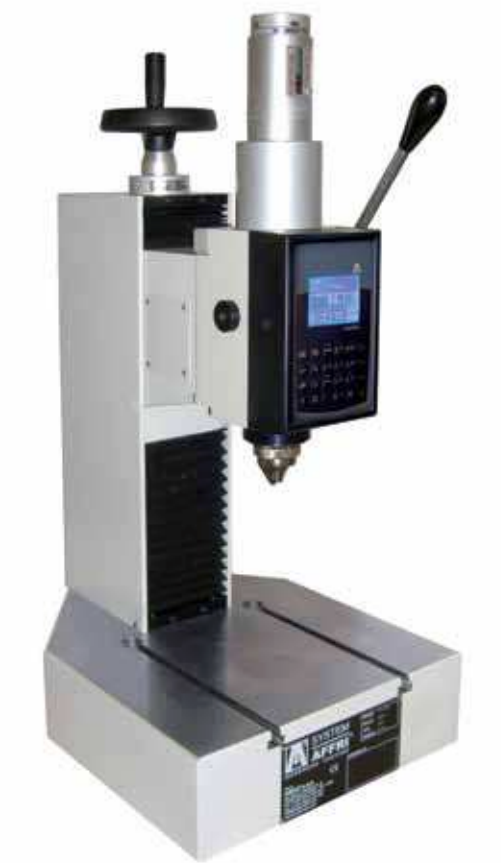
AFFRI SYSTEM IS THE NEW GENERATION OF HARDNESS TESTERS

A SINGLE INPUT TO START in automatic sequence without interruption applies the minor and major load and measure the Rockwell indentation automatically. All test operations are managed through a single start command to reduce operator fatigue and to increase test repeatability and accuracy to the maximum.

AUTOMATIC CONTACT WITH THE TEST PIECE. The AFFRI® system can perform automatic contact with the test piece surface without moving the piece. It automatically moves the indenter and the measuring system until contact is made, the piece is clamped, the force applied and indentation is measured automatically on Rockwell, Vickers or Brinell procedure.

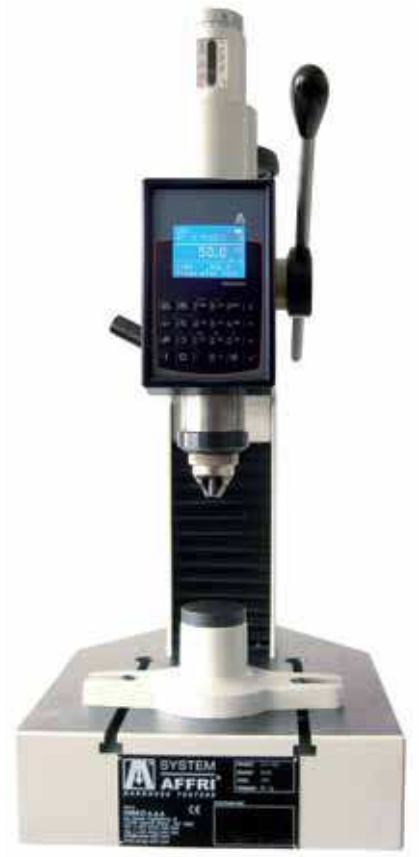
- The system is capable of measuring accurately even if the test piece deflects up to 50 mm during measurement. This automatic compensation provide accurate results under adverse test conditions.
- External source of vibration don't create any influence on result.
- The test piece is CLAMPED AUTOMATICALLY and locked in position before the test force (20 to 400 kgf) is applied.
- The test forces are controlled test by test trough load cell Affri system to assure high performance conform to ISO-JIS Standards.
- Perfect and effective measurments even at the first test with AFFRI® system inside
- Accuracy is stable in every condition
- No need to be levelled when installed
- It can be utilised by everybody also not schooling people only one start input and wait for test result

330 RSD / 330 RS-SD



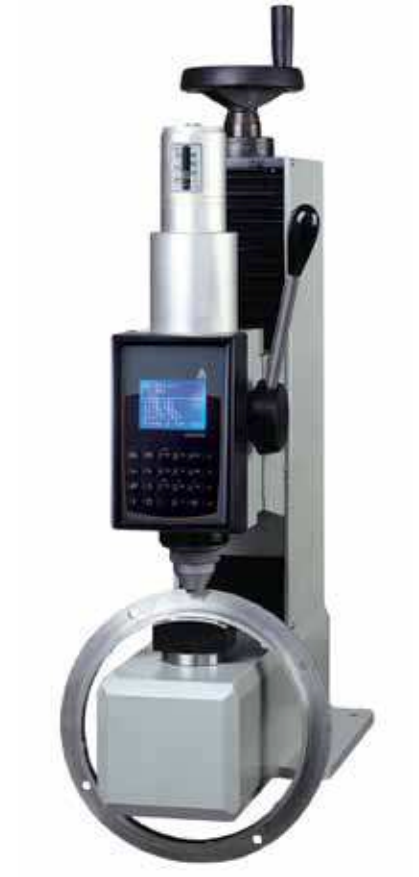
Technical characteristics: 330 RSD	330 RS-SD	
Preload	(10 Kgf) 98,07 N	(3 Kgf) 29,4 N
Test loads	(60-100-150 kgf) Rockwell 588-980-1471 N (10-60-100 kgf) Vickers / Knoop 98,07-588-980 N (62,5-125-187,5 kgf) Brinell 612-1225-1839 N	(15-30-45 kgf) Rockwell 147-294-441 N (3-15-30 kgf) Vickers / Knoop 29-147-294 N (15,6-31,2 kgf) Brinell 153-306 N
Accuracy	Conformation standards EN-ISO 6506-2 / 6507-2 / 6508-2 / ASTM-E18-08 / JIS	
Feasible tests Twin	Rockwell HRC A D B F G L M R Brinell HB 30; HB 10; HB 5; Break Nmm²	Rockwell sup. HRN+HR Brinell HB 30; HB 5; HB 2.5
Mode of operation	Manual	
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 without loosing accuracy		
Temperature range	+ 5° to + 50° C	
Reading	digital Rockwell+Brinell+R N N/mm²	digital Rockwell superficial
Reading resolution	0.1 HRC - 0.1 HB	0.1 HRN
Head stroke	400 mm (more upon request)	
Depth capacity	200 mm	
X-Y tables	330 x 390 mm with T slots	
Max load of test piece	2000 kg	
Self clamping	200 ÷ 4000 N	
Power supply	110V-220V 50÷60Hz - 200VA	
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	Nitriding, cementation, hard facing with depth less to 0.6 mm
Net / Packing weight	100 kg / 110 kg	
Packing measurements	54 x 54 x 99 cm	

270 RSD / 270 RS-SD



Technical characteristics: 270 RSD		270 RS-SD
Preload	(10 kgf) 98,07 N	(3 kgf) 29,4 N
Test loads	(60-100-150 kgf) Rockwell 588-980-1471 N (10-60-100 kgf) Vickers / Knoop 98,07-588-980 N (62,5-125-187,5 kgf) Brinell 612-1225-1839 N	(15-30-45 kgf) Rockwell 147-294-441 N (3-15-30 kgf) Vickers / Knoop 29-147-294 N (15,6-31,2 kgf) Brinell 153-306 N
Standards	EN-ISO 6506-2 / EN-ISO 6507-2 / EN-ISO 6508-2 / ASTM-E18-08 / JIS	
Accuracy	±0,1%	
Feasible tests Twin	Rockwell HRC A D B F G L M R Brinell HB 30; HB 10; HB 5; Break Nmm^2	Rockwell sup. HRN+HRT Brinell HB 30; HB 5; HB 2.5
Mode of operation	manual	
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 270 mm	
Mobile clamping	from 0 to 50 mm multiples till 270 mm	
Self aligning to test surface	from 0 to 50 mm multiples till 270 mm	
Automatic compensation of deflection piece from 0 to 50 mm without loosing accuracy		
Temperature range	+ 5° to + 50° C	
Reading	digital Rockwell+Rockwell+Break Nmm^2	digitale Rockwell/Brinell
Reading resolution	0.1 HRC	0.1 HRN
Head stroke	270 mm	
Depth capacity	170 mm	
X-Y table	270 x 330 mm	
Max load of test piece	2000 kg	
Self clamping	200 ÷ 4000 N	
Power supply	110V-220V 50÷60Hz - 200VA	
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	Nitriding, cementation, hard facing with depth less to 0.6 mm
Net / Packing weight	80 kg / 90 kg	
Packing measurements	54 x 54 x 99 cm	

331 RSD / 331 RS-SD



Technical characteristics: 331 RSD		331 RS-SD
Preload	(10 kgf) 98,07 N	(3 kgf) 29,4 N
Standards	EN-ISO 6506-2 / EN-ISO 6507-2 / EN-ISO 6508-2 / EN-ISO 2039 / ASTM-E18 / JIS	
Force range	Rockwell 588-980-1471 N (60-100-150 kgf)	Rockwell Superficial 147-294-441 N (15-30-45 kgf)
	Vickers / Knoop 98,07-588-980 N (10-60-100 kgf)	Vickers / Knoop 29-147-294 N(3-15-30 kgf)
	Brinell 612-1225-1839 N (62,5-125-187,5 kgf)	At request Brinell 153 - 306 N (15,6 - 31,2 kgf)
Accuracy	±0,1%	
Feasible Test	Rockwell HRC A - D - B - F - G - L - M - R - HRT Brinell HB 30 - HB 10 - HB 5 Break N/mm^2 Vickers HV10 - HV60 - HV100	Rockwell superficial HRN Brinell HB 30 - HB 10 - HB 5 Break N/mm^2 Vickers HV3 - HV15 - HV30 - HV45
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 270 mm		
Self aligning to test surface from 0 to 50 mm multiples till 270 mm		
Automatic compensation of deflection piece from 0 to 50 mm without loosing accuracy		
Temperature range	+ 5° to + 50° C	
Read out	digital Rockwell+Rockwell+R N N/mm^2	digital Rockwell/Brinell
Reading resolution	0.1 HRC	0.1 HRN
Head stroke	up to 270 mm	
Depth capacity	170 mm	
X-Y table	120 x 120 mm	
Max load of test piece	2000 kg	
Self clamping	200 ÷ 4000 N	
Power supply	110V-220V 50÷60Hz - 200VA	
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	Nitriding, cementation, hard facing with depth less to 0.6 mm
Net / Packing weight	100 kg / 110 kg	
Packing measurements	54 x 54 x 99 cm	