

HARDNESS TESTING MACHINES

SERIES - RASN

For Rockwell, Rockwell Superficial & Brinell Testing

PRINCIPLE :

Rockwell & Rockwell superficial tests consists of forcing an indenter (Diamond or Ball) into the surface of a test piece in two steps i.e. first with preliminary test force and thereafter with additional test force and then measuring depth of indentation after removal of additional test force (Remaining preliminary test force active) for measurement of hardness value.

Brinell test consists of forcing a hardened ball into surface of a test piece with a specified test-force and measuring the diameter of indentation for evaluation of Brinell hardness number.

OPERATION :

For Rockwell & Rockwell Superficial Test :

In case of 'RASN' series machines for Rockwell & Rockwell superficial tests a preliminary test force in first applied and then indicator is automatically set for zero. Quickly thereafter an additional test force is applied without removing the preliminary test force. When the penetration is stabilised, the additional test force is removed and the hardness number is shown directly on the indicator.

For Brinell Test :

The operation is exactly same as above. However, the diameter of impression is measured outside of machine by Brinell microscope. Brinell hardness number is found out by referring corresponding hardness tables showing hardness number against dia. of indentation for specified ball diameter and test force.



RASN



RASN (T)



RASN (M)

Rockwell system Hardness Tester Model RASN

- Suitable for Rockwell tests.
- Manually operated.
- Preliminary Test Force - 98.07 N (10 kgf)
- Additional Test Force - 490.3, 882.6, 1373 N (50, 90, 140 kgf)
- Total Test Force - 588.4, 980.7, 1471 N (60, 100, 150 kgf)
- Test force selection by external dialing.
- Auto zero setting dial gauge.

Rockwell cum Brinell Tester, Model RASN (B)

- Same as RASN above. In additional,
- Additional Test Force - 1471, 2354 N (177.5, 240 kgf)
- Total Test Force - 1839, 2452 N (187.5, 250 kgf)

Rockwell cum Rockwell Superficial Hardness Tester, Model RASN (T)

- Suitable for Rockwell & Rockwell Superficial tests.
- Manually Operated.
- Preliminary Test Force - 29.42, 98.07 N (3, 10 kgf)
- Additional Test Force - 177.7, 264.8, 411.9, 490.3, 882.6, 1373 N (12, 27, 42, 50, 90 & 140 kgf)
- Total Test Force - 147.1, 294.2, 441.3, 588.4, 980.7, 1471 N (15, 30, 45, 60, 100, 150 kgf)
- Auto zero setting dial gauge.

Motorised Rockwell system Hardness Tester, Model RASN (M)

- Suitable for Rockwell Tests.
- Motorised for automatic operation cycle i.e. load/dwell/unload.
- Preliminary Test Force - 98.07 N (10 kgf)
- Additional Test Force - 490.3, 882.6, 1373 N (50, 90, 140 kgf)
- Total test Force - 588.4, 980.7, 1471 N (60, 100, 150 kgf)
- Test force selection by external dialing.
- Auto zero setting dial gauge.

FIE's new 'RASN' series of Hardness Testing Machines come with much improved design & look with following major design changes.

- 1) The machine body is having a taper front look and a big size dial gauge in the front. The machine is powder coated for far better look. The paint shade do not fade and machine looks like new over year.
- 2) The elevating screw of machine is guided in a hardened and ground bush, not allowing movement of elevating screw more than 0.05 mm when raised to full height. The accuracy is returned for years together due to hardened bush.
- 3) A hardened and ground stepped bush is fixed on top of main screw for location and rest surface. This guarantees no change in results due to rough handling of test table or test piece. It means a trouble free long life machine accuracy.
- 4) An antifriction linear bearing with almost no clearance is provided for a perfect vertical movement of loading plunger with minimum friction. This enable testing of small dia. pin or ball upto 3mm dia.
- 5) All machine models are provided with automatic zero setting dial gauge or digital readout. Hence zero setting at every test is avoided.
- 6) All four models confirm to respective standards as under
IS : 3804, BS 10109-2 & ASTM E-18 for Rockwell Test.
IS : 5073, BS 10189-2 & ASTM E-18 for Rockwell Superficial Test.
IS : 2281, BS 10003-2 & ASTM E-10 for Brinell Test.

STANDARD ACCESSORIES :

MODEL	RASN	RASN (B)	RASN (T)	RASN (M)
Testing table 50mm dia	1	1	1	1
Testing Table 38mm dia. with 'V' groove for round jobs 6-45 mm dia.	1	1	1	1
Diamond Indentor - Rockwell.	1	1	1	1
Steel Ball Indentor 1/16"with 5 spare balls	1	1	1	1
Steel Ball Indentor 2.5mm with 5 spare balls	-	1	-	-
Test Block Rockwell 'C'	1	1	1	1
Test Block Rockwell 'B'	1	1	1	1
Test Block HB 2.5 /187.5	-	1	-	-
Test Block HR 30 N	-	-	1	-
Allen Spanner	5	5	5	5
Screw Driver	1	1	1	1
Clamping Device	1	1	1	1
Dash Pot Oil	1 Bottle	1 Bottle	1 Bottle	-
Wooden Box for std. Accessories	1	1	1	1
Telescopic Sleeves for Elevating screw protection	1 Set	1 Set	1 Set	1 Set
Spare Fuse 1 Amp	-	-	-	1
Power Cable	-	-	-	1
Brinell Microscope	-	1	-	-
Machine Cover	1	1	1	1
Instruction Manual	1	1	1	1

TECHNICAL DATA :

MODEL	UNIT	RASN	RASN (B)	RASN (T)	RASN (M)
Major Load	N (kgf)	588.4, 980.7, 1471 (60, 100, 150)	588.4, 980.7, 1471, 1839, 2452 (60, 100, 150, 187.5, 250)	147.1, 294.2, 441.3, 588.4, 980.7, 1471 (15, 30, 45, 60, 100, 150)	588.4, 980.7, 1471, (60, 100, 150)
Minor Load	N (kgf)	98.07 (10)	98.07 (10)	29, 42, 98.07 (3, 10)	98.07 (10)
Max. Test Height	mm	222	230	230	230
Depth of Throat	mm	130	133	133	133
Net Wt. Approx	kg.	65	70	62	67
M/c.Dimensions (Approx.)	mm	L-450, W-265, H-627	L-450, W-265, H-627	L-450, W-265, H-627	L-450, W-180, H-627

OPTIONAL ACCESSORIES : • Steel Ball Indentor 1/8", 1/4", 1/2" • Testing Table 200mm dia. • Testing Table 70mm dia. with 'V' groove for round j 10 to 80mm dia. • Vari-rest to support odd shaped jobs. • Jominy test fixture for end quench test. • Gooseneck Adopter No.1 • Special Diamond Indentor suitable for Gooseneck Adopter No.1. • Short nib diamond indentor suitable for Gooseneck Adopter No.1. • Gooseneck Adopter No.2. • Special Diamond indentor suitable for Gooseneck Adopter No.2. • Gooseneck Adopter No.3. • Raised centre testing table 15mm dia. • Diamond spot anvil. • Cylindron anvil for testing big jobs above 20mm dia. • Eyeball anvil with 25.4mm dia or 38mm dia. ball. • Gooseneck anvil for pipes 5 to 25mm ID with 5mm step inserts. • Jack rest for long and heavy jobs.



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