



# HARDNESS TESTING MACHINES

For Rockwell, Rockwell Superficial & Rockwell cum Brinell Testing

## SERIES - RASNE



### Principle :

Rockwell, Rockwell superficial & Rockwell cum Brinell test 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.

RASNE series machines are suitable for Rockwell, Rockwell superficial & Rockwell cum Brinell tests. These are motorized digital Hardness testers having LCD display for easy hardness measurement. The results are displayed in 0.1 Rockwell unit for more accurate measurement.

### Operation :

Various parameters of test can be set on front panel by operation of key board and observing LCD display viz high/low limits, dwell time, auto/manual start, printer selection, scale selection etc. All set data can be verified edited by pressing SCL key one after another.

Machine operation is very simple. The normal mode is a bar followed by "SET" indication. Raise elevating screw slowly through bar indication till "SET" position which will show "PRESS START" indication. Now press "START" button. Loading/unloading cycle will be completed and hardness is shown on LCD display with high/Good/Low indication. Lower down elevating screw. Panel will show normal mode for next test. Also when required 'AUTO START' set 'AUTO START' on front panel by operation of key board & observing LCD Display then raise elevating screw slowly through bar indication till "SET" position then it will start loading/unloading cycle automatically & hardness is shown on LCD Display with High/Good/Low indication.



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

- 1) This is motorized machine having automatic loading/unloading cycle suitable for production testing.
- 2) The machine body is having a taper front look and large size read-out in the front. The machine is powder coated for better look. The paint shade do not fade and machine looks like new over years.
- 3) 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 retained for years together due to hardened bush.
- 4) 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.
- 5) An antifriction linear bearing with almost no clearance is provided for a perfect vertical movement of loading plunger with minimum friction. This enables testing of small dia. Pin or ball upto 3 mm dia.
- 6) These models are provided with automatic working cycle and digital LCD display with 0.1 Rockwell resolution. This insures productivity with better accuracy.
- 7) IS:1586:2000 for Rockwell and Rockwell superficial test. IS:2281:2005 for Brinell hardness test.

## Standard Accessories :

Model	RASNE-1	RASNET-1	RASNEB-1
Testing table 50mm dia	1	1	1
Testing table 38mm dia with "V" groove for round jobs 6-45 mm dia.	1	1	1
Diamond indenter - Rockwell RA	1	-	1
Diamond indenter - Rockwell SF	-	1	-
Stell Ball indenter 1/16" with 5 spare balls	1	1	1
Stell Ball indenter 2.5 mm with 5 spare balls	-	-	1
Test block Rockwell "C"	1	1	1
Test block Rockwell "B"	1	1	1
Test block HB 2.5/187.5	-	-	1
Test block HR 30 N	-	1	-
Allen Spanners	5	5	5
Screw Driver	1	1	1
Clamping device	1	1	1
Wooden box for std. accessories	1	1	1
Telescopic sleeves for elevating screw position	1 set	1 set	1 set
Spare fuse 1 AMP	1	1	1
Power cable	1	1	1
Brinell microscope	-	-	1
Machine cover	1	1	1
Instruction Manual	1	1	1

## Technical Data :

Model	Unit	RASNE-1	RASNET-1	RASNEB-1
Major Load	N	588.4, 980.7, 1471	147.1, 294.2, 441.3, 588.4, 980.7, 1471	588.4, 980.7, 1471, 1839, 2452
	kgf	(60,100,150)	(15,30,45,60,100,150)	(60,100,150,187.5,250)
Minor Load	N	98.7	29, 42, 98.07	98.07
	kgf	(10)	(3, 10)	(10)
Max Test height	mm	230	230	230
Depth of throat	mm	133	133	133
Net Wt. Approx.	kg	75	77	77
M/c dimensions	mm	L-450, W-175 H-627	L-450, W-175 H-627	L-450, W-175 H-627

## FIE Motorized Digital Hardness Tester :

Model	RASNE-1	RASNET-1	RASNEB-1
Type	Digital Rockwell	Digital Rockwell & Rockwell Superficial	Digital Rockwell cum Brinell
Operation Cycle	Automatic Load/Dwell/Unload	Automatic Load/Dwell/Unload	Automatic Load/Dwell/Unload
Preliminary Test Force	98.07 N (10 kgf)	29.42 N (3kgf) & 98.07N (10 kgf)	98.07 N (10 kgf)
Additional Test Force	490.3, 882.6, 1373 N (50, 90, 140 kgf)	177.7, 264.8, 411.9, 490.3, 882.6, 1373 N (12, 27, 42, 50, 90, 140 kgf)	490.3, 882.6, 1373, 1471, 2354 N (50, 90, 140, 177.5, 240 kgf)
Total Test Force	588.4, 980.7, 1471 N (60, 100, 150 kgf)	141.7, 294.2, 441.3, 588.4, 980.7, 1471 N (15, 30, 45, 60, 100, 150 kgf)	588.4, 980.7, 1471, 1839, 2452 N (60, 100, 150, 187.5, 250 kgf)
Test Force Selection	By external dialing	By external dialing	By external dialing
Set Position	With LCD bar indicator	With LCD bar indicator	With LCD bar indicator
Key Board Entry	Through membrane switches for scale, GO-NO GO & dwell time selection.	Through membrane switches for scale, GO-NO GO & dwell time selection.	Through membrane switches for scale, GO-NO GO & dwell time selection.
Resolution	0.1 Rockwell	0.1 Rockwell or 0.1 Rockwell Superficial	0.1 Rockwell
Output	Parallel output for connecting dot matrix Printer to get results indicating serial no. of tests, hardness scale, hardness value & high/good/low indication	Parallel output for connecting dot matrix Printer to get results indicating serial no. of tests, hardness scale, hardness value & high/good/low indication	Parallel output for connecting dot matrix Printer to get results indicating serial no. of tests, hardness scale, hardness value & high/good/low indication
Optional	Serial PC interface & windows software	Serial PC interface & windows software	Serial PC interface & windows software for only Rockwell scales.

**Note :** For Brinell scale - manually select (187.5 or 250 kgf) with respected ball indenter. At that time take reference of set point only, apply the load, then measure the impression dia by Brinell microscope only. (No Brinell scale display on screen).

## OPTIONAL ACCESSORIES

► Steel ball indenter 1/8", 1/4", 1/2" ► Testing Table 200mm dia ► Testing Table 70mm dia with 'V' groove for round jobs 10 to 80 mm dia. ► Vari-rest to support odd shaped jobs ► Jominy test fixture for end quench test ► Gooseneck Adoptor No.1 ► Special diamond indenter suitable for Gooseneck Adoptor No.1 ► Short nib diamond indenter suitable for Gooseneck Adoptor No.1 ► Gooseneck Adoptor No.2 ► Special diamond indenter suitable for Gooseneck Adoptor No.2 ► Gooseneck Adoptor No.3 ► Raised center testing table 15mm dia ► Diamond Spot Anvil ► Cylinder anvil for testing big jobs above 20mm dia ► Eyeball anvil with 25.4 mm dia or 38mm dia ball ► Gooseneck anvil for pipes 5 to 25mm ID with 5mm step inserts. ► Jack rest for long and heavy jobs.

\* PC & Printer is not in our standard scope of supply.

Manufactured by :  **Fuel Instruments & Engineers Pvt. Ltd.**

Plot No. 68 & 89, Parvati Co-op. Ind. Estate, Yadrav-416 145 (Ichalkaranji), Tal : Shirol, Dist : Kolhapur, Maharashtra State (INDIA)  
Tel : +91-2322-252137, Fax : +91-2322-252397, Cell : +91 98223 94981  
E-mail : mrk@fietest.com, Web : www.fietest.com / www.fuelinstrument.com