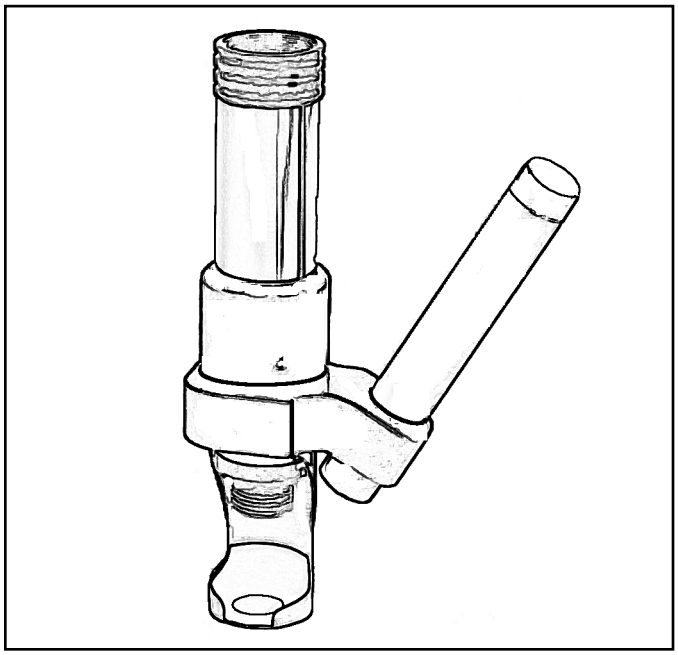
Model 35-450
Brinell Microscope Reader & Illuminator



Model 35-450 Brinell Microscope Reader
Calibrated microscope for measuring
Brinell indentations in millimeters

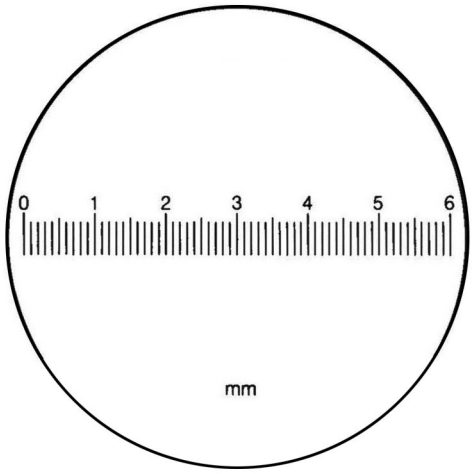
SPECIFICATIONS

1. Magnification ..... 20X.
2. Reticle scale length ..... 6.0 mm.
3. Scale divisions ..... 0. 1 mm.
4. Field diameter ..... 710 mm.
5. Weight ..... $7\frac{1}{2}$ oz. (213 g).
6. Shipping weight ..... 2 lbs. (907 g).
7. Height ..... $4\frac{7}{8}$"

WARRANTY & CALIBRATION SERVICE

Newage Testing Instruments, Inc. guarantees the workmanship and materials of this instrument for a period of one year from the date of purchase.

Newage provides a certificate of calibration for the Brinell scope.



The scale Is calibrated in 0. 1 mm units over a range of 6 mm. The diameter of the microscope field is 7mm.

DESCRIPTION

The Newage Model 35-450 Brinell Micro-scope Reader features a calibrated reticle In a flat field optical system. This instrument makes accurate measurements of the indentations for all Brinell type hardness testers.

The Model 35 450 is a compact, portable reader designed as an accessory for Brinell type testers. The Illumination system features a MagLite® SolitaireTM flashlight. The flashlight uses one size AAA battery included with the Instrument). This instrument is quality built and durable, making it suitable for both the shop and laboratory.

The reticle is calibrated in 0. 1 mm units over a range of 6 mm and the field of vision is 7 rnm. Measure the indentation at its largest diameter against the reticle scale. Use this measurement and convert to its Brinell Hardness Number (BHN) by using the chart on the back of this sheet.

NEWAGE Testing Instruments, Inc.

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BRINELL HARDNESS NUMBERS

Ball 10mm in diameter, Applied loads of 500, 1500, and 3000kgf

Diam. of Indentation mm	BRINELL HARDNESS NUMBER 500kgf Load	1500kgf Load	3000kgf Load	(HRC/B)*
2.00	158	473	945	
2.05	150	450	899	
2.10	143	428	856	
2.15	136	408	817	
2.20	130	390	780	
2.25	124	372	745	
2.30	119	356	712	(63 HRC)
2.35	114	341	682	(62 HRC)
2.40	109	327	653	(60 HRC)
2.45	104	313	627	(59 HRC)
2.50	100	301	601	(57 HRC)
2.55	96.3	289	578	(56 HRC)
2.60	92.6	278	555	(55 HRC)
2.65	89.0	267	534	(54 HRC)
2.70	85.7	257	514	(52 HRC)
2.75	82.6	248	495	(51 HRC)
2.80	79.6	239	477	(50 HRC)
2.85	76.8	230	461	(49 HRC)
2.90	74.1	222	444	(47 HRC)
2.95	71.5	215	429	(46 HRC)
3.00	69.1	207	415	(45 HRC)

Diam. of Indentation mm	BRINELL HARDNESS NUMBER 500kgf Load	1500kgf Load	3000kgf Load	(HRC/B)*
3.05	66.8	200	401	(43 HRC)
3.10	64.6	194	388	(42 HRC)
3.15	62.5	188	375	(40 HRC)
3.20	60.5	182	363	(39 HRC)
3.25	58.6	176	352	(38 HRC)
3.30	56.8	170	341	(37 HRC)
3.35	55.1	165	331	(35 HRC)
3.40	53.4	160	321	(34 HRC)
3.45	51.8	156	311	(33 HRC)
3.50	50.3	151	302	(32 HRC)
3.55	48.9	147	293	(31 HRC)
3.60	47.5	142	285	(30 HRC)
3.65	46.1	138	277	(29 HRC)
3.70	44.9	135	269	(28 HRC)
3.75	43.6	131	262	(27 HRC)
3.80	42.4	127	255	(25 HRC)
3.85	41.3	124	248	(24 HRC)
3.90	40.2	121	241	(100 HRB)
3.96	39.1	117	235	(99 HRB)
4.00	38.1	114	229	(98 HRB)
4.05	37.1	111	223	(97 HRB)

This table Is based on ASTM, A370 Table 3A and E10, Table 1. This table gives the approximate interrelationships of hardness values of steel. It Is possible that steels of various compositions and processing histories will deviate In hardness relationship from the data presented in these tables. The data in this table should not be used for austenitic stainless steel, but have been shown to be applicable for ferrite and martensitic stainless steel. Where more precise conversions we required, they should be developed specially for each steel composition, heat treatment, and part

* Conversion to HRC or HRB is approximate. There is no general method for converting accurately Brinell hardness numbers to other hardness scales or tensile strength values. Such conversions are, at best, approximations and therefore should be avoided, except for special cases where a reliable basis for the approximate conversion has been obtained by comparison tests.

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