Hardness Test Pencil Model 318

Pocket-size Instrument
For the Measurement
of the Hardness
of Protective Coatings

testing equipment for quality management

ERICHSEN

Technical Description and Operating Instructions

3 Test Geometries:
0.75 mm (Bosch)
1.0 mm (ISO)
0.5 mm (van Laar)
0.5 mm (Opel)

3 Pressure Ranges:
0 - 3 N
0 - 10 N
0 - 20 N

Purpose and application

Modern manufacturing processes require efficient testing methods. Speedy, straightforward, accurate. Every time, everywhere.

This instrument has been designed for the measurement of the hardness of protective coatings. The degree of hardness of paint films, plastic coatings, etc. can be accurately measured and recorded with the **Hardness Test Pencil, Model 318**, no matter whether on a level or curved surface, small or large.

The instrument is always ready for use. It is carried in the pocket, an asset which will be appreciated by all concerned with hardness tests.

Uniform hardness and quality of the coating facilitate smooth-running manufacture. Deviation from a specified hardness causes rejects, delay in production and complaints. Developed by Robert Bosch GmbH of Stuttgart and manufactured by ERICHSEN, the instrument permits regular quality control of protective coatings, even during processsing.

The **Hardness Test Pencil** provides the engineer, foreman, inspector and others with a test instrument that satisfies the requirements of smooth production runs.

Test procedure using marking pins nos. 1, 2 and 3

The handling of the **Hardness Test Pencil, Model 318**, is extremely simple. The estimated or known spring tension is set with the help of the slider. Holding the instrument upright and placing its point on the test surface one draws a 5 to 10 mm long line at a rate of approximately 10 mm/sec. The stylus should produce a scratch which is just visible with the naked eye. If the spring pressure is too high, the scratch is clearly visible; if too low, no scratch appears. By locking the slider every time one can control the applied pressure which is marked in Newtons.

Three scales are engraved into the pencil for the three pressure ranges:

0 - 3 N (blue mark)
0 - 10 N (red mark)
0 - 20 N (yellow mark)

The springs for each of the pressure ranges are colour coded and the corresponding scale is marked in the same colour.

Test procedure using marking pin no. 4

The marking pin in accordance with Opel (0.5 mm dia.) has got a special tip geometry and a length that exceeds that of the other marking pins by approx. 5 mm. In order to exert the pressure preset by the clamped slider, onto the marking pin the latter must be pressed into the test rod by approx. 5 mm during the test.

Care and maintenance

A clean instrument produces clean results. For the purpose of cleaning, one unscrews the knurled head and removes the engraving pencil. Rod and bore are then cleaned with a soft cloth. No further maintenance is required, because of the plastic bearings used for the construction of the instrument.

Although the **Hardness Test Pencil, Model 318** is of sturdy construction, the stylus point does not tolerate heavy blows. The wooden case supplied serves for its protection. When not in use, the slider should be set to zero for preserving the accuracy of the springs.

Technical data

Compression Springs:	spring steel
Marking pins	
nos. 1, 2 and 3:	tungsten carbide spheres
no. 4	spring steel, with special tip geometry
Stylus point dia:	
no. 1	0.75 mm (Bosch)
no. 2	1.0 mm (to relate to ISO 1518 and DEF
no. 3	0.5 mm (van Laar)
no. 4	0.5 mm (Opel)
Total length:	160 mm
Diameter:	16 mm
Weight, net:	approx. 250 g

Order Information

Order-No.	Product Description
0020.01.31	**Hardness Test Pencil, Model 318**

Included in scope of delivery:

- 1 Marking pin no. 1 (0.75 mm dia. - Bosch)
- 3 Springs
- 1 Wooden case

Accessories

Order-No.	Product Description
0428.02.32	Marking pin no 1 acc. to Bosch
0428.03.32	Marking pin no. 2 acc. to ISO 1518
0428.04.32	Marking pin no. 3 acc. to von Laar
0428.01.32	Marking pin no. 4 acc. to Opel
0429.01.32	Spring 0 - 3 N
0429.02.32	Spring 0 - 10 N
0429.03.32	Spring 0 - 20 N

Subject to technical modification.
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ERICHSEN GmbH & Co. KG
Am Iserbach 14 | 58675 Hemer | Germany | Tel. +49 (0) 2372 - 9683-0 | Fax +49 (0) 2372 - 6430 | www.erichsen.de | info@erichsen.de