



BEARING & TOOL CENTRE



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Our Sister Concern : RELIEF SERVICE CENTRE

Repairs, Removal of Jaw Error, Bore Gauge Extension, Instrument Modifications & Spares

Quotation

104 Poldi Metal Hardness

Mechanical Metal Hardness	Poldi TEE	Poldi PHM BSE	Poldi PHM-II BSE	Test Bar TEE	Test Bar BSE
Rs.	2500	3150	6250	300	450
Catalog		Page No.3	Page No.2		

Terms & Conditions –

- ✚ Goods offered - Subject to Prior Sale
- ✚ Price Validity: "15 Days from Date of Quotation"
- ✚ C.S.T 2% extra against form C. Otherwise 5% without form C For Out of Gujarat Sales only.
- ✚ VAT 5% extra for Sales within Gujarat. Prices Ex-Godown Ahmedabad.
- ✚ Payment against Proforma Invoice, Packing, Forwarding & Freight extra.
- ✚ **Bank Detail** – Kotak Mahindra Bank Ltd.
- ✚ **Branch** – Shivranjini
- ✚ **Bank IFSC Code** - KKBK 0000 810
- ✚ **Bank Account No.** 08102 00000 2689
- ✚ Note - While making payment online do mention your Company's name.
- ✚ TIN NO 24070901229 , CST No. 24570901229
- ✚ We are looking forward to your valued orders.

NEW POLDI TYPE IMPACT HARDNESS TESTER

FOR FERROUS & NON-FERROUS METALS & METALLIC SHEETS

MODEL : PHM - II



APPLICABILITY:

The hammer type Poldi impact hardness tester is useful for simple and quick determination of Brinell hardness of metals such as steel, cast iron and non-ferrous and sheets. Due to its easy handling and maneuverability, this tester is most suitable for testing heavy castings and other components, difficult to be carried to a table type hardness tester.

NEW DEVELOPMENT:

A newly developed Double-Cone-Attachment (Patent pending) which can be interchanged with the conventional 10 mm ball attachment, makes this model: PHM-II suitable to test even thin sheets of 1 mm thickness and above for hardness. Relevant graphs are supplied with the tester for finding hardness of thin specimens.

PRINCIPLE:

Load is applied on the specimen and a standard test bar in a linear direction through a special Brinell ball of 10 mm dia or specially machined double cone for thin specimens, by a hammer blow. The impact load being same, the extent of indentations obtained on the specimen and the test bar depend on their hardness-harder the material less is the depth of indentation. The two diameters of indentations are measured by a special bse Magnifiscope measuring magnifier supplied with the tester. By referring to the table provided, the hardness of the specimen can be determined.

TECHNICAL DATA:

BRINELL BALL	: 10 mm dia. fixed in a special detachable holder.
DOUBLE CONE	: Special detachable holder for thin specimens.
PLUNGER	: Spring loaded for firm contact pressure.
STANDARD TEST BAR	: Each bar individually calibrated and tested; and multiplying factor marked thereon for high accuracy.
MAGNIFISCOPE	: Measuring magnifier.
Measuring range	: 0-10 mm
Scale graduations	: -0.1 mm
Magnification Accuracy of	: -10X
Measurement	: -0.05 mm
HARDNESS GRAPHS	: For thin specimens.
HARDNESS TABLES	: Comparison tables for finding hardness of heavy specimens.
GROSS DIMENSIONS	: 220 x 75 x 50 mm. (Approx)
SPECIFIC USERS OF PHM-II	: Foundries, Sheet metal working, Workshop, Engineering Colleges, Technical Institutions, etc. Useful in any industry where hardness or approximate tensile strength is to be determined.

POLDI TYPE HARDNESS TESTER

MODEL : PHM



APPLICABILITY

The hammer type Poldi impact hardness tester is useful for simple and quick determination of Brinell hardness of metals such as steel, Cast Iron, Brass, Aluminium, Copper etc. Due to easy handling and manoeuvrability, this tester is most suitable for testing heavy castings and other components, difficult to be carried to a table type hardness tester.

PRINCIPLE

Load is applied on the specimen and a standard test bar in linear direction through a special Brinell Ball of 10 mm dia. by a hammer blow. The impact load being same, the extent of indentations obtained on the specimen and the test bar depend on their hardness, harder the material less is the depth of indentation. The two diameters of indentations are measured by a special "Magnifiscope" measuring magnifier supplied with the tester. By referring to the table provided, the hardness of the specimen can be determined.

SPECIFIC USER OF PHM:

Foundries, Workshops, Engineering Colleges, Technical Institutes etc. Useful in any industry where approximate tensile strength is to be determined.

TECHNICAL DATA :

Brinell Ball	: 10 mm dia. Fixed in a special holder with a spring loaded plunger.
Standard Test Bar	: Each bar individually calibrated and multiplying factor marked thereon.
MAGNIFISCOPE	: Measuring magnifier
Measuring range	: 10 mm
Scale graduations	: 0.1 mm
Magnification	: -10 x
Accuracy of measurement	- 0.05 mm

HARDNESS TABLES :

Comparison Tables for finding hardness. Separate Tables for Steel, Cast Iron, Brass, Copper and Aluminium.

GROSS DIMENSIONS

170 x 65x 40 mm (approx.)

DIRECTIONS FOR USE OF POLDI HARDNESS TESTER MODEL "NP":

Insert the tapered end of the standard test bar after cleaning into the space provided between the ball and the plunger and slide it further beyond the tapered position. The test bar will thus be firmly gripped between the ball and the plunger pressed by a spring. The specimen to be tested be properly ground or filed and polished at the surface where it is to be tested to ensure accurate readings, With standard test bar inserted place the tester vertically on the specimen such that the ball touches the polished surface. Give a blow on the top of the plunger, with a hammer.

The blow should not be very hard and should as vertical as possible. The blow will cause two indentations, one on the standard test bar and the other on the specimen. The diameters of these two indentations should be measured accurately with magnifier having, least count of 0.1 mm provided with the machine. If the indentations so obtained are slightly elliptical, average diameter should be found out. The distance between the centers of any two indentations on standard test bar should be less than 15mm. If the bar is fully utilized it has to be replaced. The limiting indentation diameter on the standard test bar is 4.2mm.

SPECIFICATION OF POLDI TESTER

MATERIAL	: ALLOY STEEL EN-8 OR EN-9
DIA	: 30 MM
LENGTH	: 85 MM
TUNGSTON CARBIDE BALL	
DIA	10 MM
POLDI BAR	
MATERIAL	: ALLOY STEEL EN-8 OR EN-9 OR CARBEN STEEL- WPS
SIZE	: 12mm x 12mm x 150mm
EYE PIECE	: 8 X
BRINELL MICROSCOPE	25 X (OPTIONAL AT EXTRA COST)

Tensile strength and Brinell Hardness Numbers of various metals can be found as under :

STEELS

The booklet contains two tables, one for steel in natural or annealed state and the other for steels in hardened or hardened and tempered state. It is necessary to know the condition of specimens before and it, however it is not known or cannot be determined then first tables for natural or annealed steels be used for specimens having Brinell hardness of up to 360. When the hardness of the specimens exceeds 360, the other tables are to be used.

OTHER METALS

Separate Tables have been provided for other metals, e.g. Brass, Copper, Aluminium, Bronze and Cast Iron. These tables do not show the tensile strength of these metals but only the Brinell hardness number because the relation between the Brinell hardness & the corresponding tensile strength has not yet established with as much reliability as in the case of steels.

PROCEDURE

After measuring the actual dia of indentation on standard test bar the column "Dia of indentation on standard test bar" should be referred for the same value and for actual dia of indentation on work piece the row "Dia of indentation on work piece" should be referred. Where the horizontal and vertical columns intersect the tensile strength in tones per sq. in (the upper figures) and the Brinell Hardness Numbers (the lower figures) can be read. To convert tensile strength from tons / sq. in to Kg. / sq. mm use a multiplying factors of 1.575. To take care of the varieties in the tensile strength and the hardness of standard test bars coming out of production, each test bar is properly tested and a multiplying factor is inscribed on it, at one end. For determining the exact tensile strength and hardness of specimens, multiply, the reading found from the tables by this multiplying factor.

EXAMPLE

Diameter of ball indentation -

- 1) On the test bar 1.8 mm.
- 2) On the specimen (steel in natural condition) 1.7 mm.

Tensile strength founds from Tables 50.8 tone/sq. inch after multiplying with 1.575 to convert in to kg/sq. mm comes to 80 Kg./sq.mm.

Brinell Hardness Number found from tables 225 BHN.

Multiplying factor inscribed on standard test bar: 1.14. Therefore, the tensile strength of specimen is $80 \times 1.14 = 91.20$ Kg/sq. mm in and the Brinell hardness = $225 \times 1.14 = 256.5$ BHN. When after some use, the protruding end of the plunger gets deformed by blows, it may be reconditioned and rounded off again or simply replaces.

Poldi type Impact Hardness Tester is not designed to replace the tensile strength testing machine or standard hardness tester. The accuracy of this hardness tester may vary sometimes to the extent $\pm 10\%$ as against the more accurate table type standard Hardness testers. However, the Poldi Impact Hardness Tester has the advantage of easy handling and greater flexibility. This is very important, especially for testing heavy specimens who cannot be taken to table type hardness are extremely costly compared to Poldi tester and require greater skill to operated properly.