SKLERO - TESTER

MODEL : SKM

APPLICATIONS

The Sklero Tester is essentially a dynamic type of instrument as it operates on the rebound principle i.e. when its hammer is allowed to fall on the specimen, it rebounds back to a certain height due to the reaction offered by the specimen. It may be used for testing the hardness of all metals, ferrous or non-ferrous, polished or unpolished with virtually no limitation in size or shape. Flat, round and tubular surfaces can also be tested with Sklero Tester. The most important feature of Sklero Tester is the speed at which it is capable of testing the hardness of all metals compared to any other competitive device in the market. It is indispensable for on-the-spot testing by Engineers, Inspectors, Metallurgists and Foremen. In short, this instrument is a must for factories mass manufacturing any industrial components or engines, Automobile Industry, Locomotive Industry, Machine Tool Manufacturers, Steel Foundries, Iron and Steel Works, and their Ancilliary Industries, as well as Tool Rooms, Die making factories etc., where one hundred percent testing of all the products produced is required to be carried out and that too, where no dent left by normal table-type hardness testers can be allowed.

SPECIFIC USERS

Rolling Mills, Grinding and other Machine Shops, Forging Works, foundries and Welding Shops, manufactures of crankshafts, Die-Casting, manufacturers of Dies and Moulds for Die Castings and Plastics, Steel Mills, Railways and for checking carbon brushes on Electric Motors.

OPERATION

It is very easy to operate the Sklero Tester. Pull the plunger vertically up till it is locked in position. Place the tester vertically on top of the specimen and hold it steady at the bottom. Release the plunger by pressing the button slightly, the plunger will rebound back after hitting the specimen and will be locked in its highest rebound position. Harder the specimen, higher will be the rebound height of the plunger, and vice-versa. This position, i.e. the height of rebound is the measure of the hardness of the specimen, since it results from elastic resistance to penetration in depth, in other words, from hardness. From the tables provided, these rebound hardness nos. can be converted to Brinell, Shore - D, Rockwell B & C and Vickers Hardness nos.

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INSTRUCTIONS AND PROPER USE OF SKLERO TESTER

ADVANTAGES:

(A) Sklero Tester® is designed on the rebound principle and not on the indentation principle therefore, it does not leave any damage done to the tested surface by way of the indentation as in the case of other Hardness testers.

(b) Because of the rebound principle and the quick locking arrangement the testing becomes very easy and quick, thereby, hundred percent testing of mass-manufactured items becomes possible-once the initial preparatory work is done on the mode of fixing the items and evaluating the Sklero readings in units of actual hardness values and finding the actual relation for the particular item at its particular point when fixed in a particular fixture.

(c) On very heavy castings or Die-Blocks, Sklero Tester® will give quick and reliable hardness values and will require no special preparatory work. Such heavy specimens otherwise cannot be easily tested with standard tester.

LIMITATIONS:

(a) Because soft specimens (such as non-ferrous metals or natural/annealed steels) will not offer sufficient reaction, the hammer will not rebound to sufficient height, therefore the Sklero Tester® is not suited for soft metals.

(b) Small components do not have enough mass of their own to offer reaction, therefore, the Sklero Tester® will not be suited to test small components individually, unless a big quantity of these small components required to be tested regularly for which it is worthwhile to do the initial preparatory work for evaluating the Sklero readings in terms of the hardness values obtained on standard table hardness testers.

(c)Similarly, components of shapes and sizes which do not offer sufficient reaction are difficult to test unless a proper fixture is designed for them and the initial preparatory work as detailed below is carried out.

INITIAL PREPARATORY WORK:

The shape, size and weight of the components to be tested should be carefully studied and proper fixtures designed to hold the specimen exactly as per the hints given in the "Do's and Don'ts" leaflet, to give a good reaction to the hammer so that the reaction-cone passes completely through the mass of the fixture and the components.

A few pieces of the components should be tested on the standard table type hardness tester and the hardness determined in Vickers, Rockwell B or C, or Brinell hardness nos. Then these pieces should be assorted for the higher and the lower tolerance limits of the hardness values allowed as per the design laid down for the type of components.

A few components having the upper limits of hardness value, and a few having the lower limits of hardness value are then fixed in the fixture and tested with Sklero Tester® and the corresponding upper and lower Sklero values found out. These upper and lower values of Sklero nos. fix the values of acceptance of hardness of the components and any results out of these two values are to be rejected. Then the mass testing of components becomes very easy and simply the components are fixed and rebound Sklero values taken before sorting out the components as "accepted" or "rejected".

If more number of test specimens are tested on Sklero and evaluated for their absolute hardness and a graph of comparison is plotted, then the Sklero values will also give the absolute hardness of each and every component tested.

NOTES:

This conversion table on the scale supplied with every Sklero Tester® gives the actual hardness values in Rockwell B or C, Brinell etc., against Sklero readings, only when tested on standard hardness blocks of special design, size and finish and may not be used for every specimen without the above mentioned preparatory work is done.

It is recommended, the test specimen should have a mass of at least 2 kg. In case the specimen is of lesser mass, an anvil may serve the purpose. The observations made by the instrument will be consistent, even though slightly deviating from the actual hardness. This deviation can be checked against the known hardness and thus compensated for with each test.

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