Telebrineller System for Portable Brinell Measurement

Now you can measure Brinell hardness anywhere in the field, in the plant or in the lab

Simple, Certain Operation under all Conditions

The Telebrineller system is a major achievement in quality assurance. This system is based on proven metallurgical knowledge supported by more than fifty years of field experience.

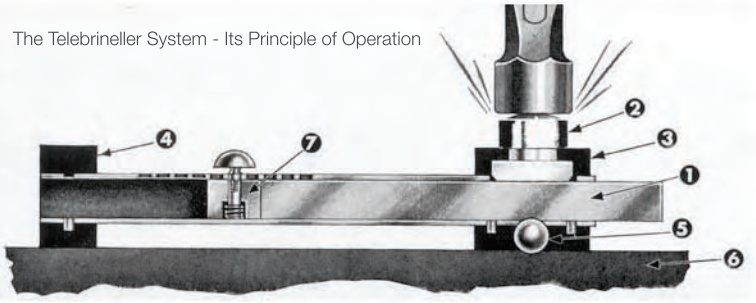
LightWeight: The complete Telebrineller system, in its case, weighs less than ten pounds. Easily transported to any location, it is highly practical for all Brinell hardness testing needs.

Simple Operation: One hammer blow, measurement of the resulting impressions, and the manipulation of a basic equation on the computer provided- that's all. No special training required. In a few minutes, anyone can learn to determine BHN accurately.

Certified Accuracy: The test bars which are the core of this system are calibrated to a uniform hardness of ±3% of the labeled BHN. Hardness of the bars is measured by equipment whose accuracy is certified traceable to the National Standards Institute. The Telebrineller microscope is by Leica. Readings may be made within .05 millimeters.

Weatherproof: Designed for field use; there are no delicate adjustments or fragile components to be concerned with. All parts are rugged, solid, able to deliver accurate measurements in all weather, under the roughest field conditions.

The Telebrineller System - Its Principle of Operation



A test bar of known BHN, approximating the hardness of the specimen to be tested, is selected. Consistent accuracy is maintained when the test bar BHN is within 15% of the specimen BHN and is of the same general material. (Testing non-ferrous materials with carbon steel bars causes impact errors that must be compensated for by applying correction factors to the test results.) The test bar is inserted into the Telebrineller instrument and the instrument placed upon the specimen.

When the Telebrineller instrument is compete with test bar (1), the anvil (2), encased in a soft molded rubber head (3), rests on the test bar. The rubber head and a similar resting block (4), provide non-skid footing. Below the test bar, a steel impression ball (5), secured in the base of the head, is in contact with both the test bar and the specimen. The anvil is struck sharply with a three to five pound hammer. The impact, regardless of force, is transmitted equally to the test bar and, through the impression ball to the specimen metal (6), making impressions in both. The diameters of the resulting impressions are directly related to the respective hardnesses of the test bar and the specimen.

A spacing bar (7), operated by a spring catch and button, adjusts the test bar to a clear area for each test. By turning the bar to utilize the full length of all four faces, a total of 80 tests can be made with one bar.

Measuring Diameters: The bar is removed from the instrument and the Telebrineller Microscope positioned over the appropriate impression. The microscope provides a scale of 1/10 millimeter divisions and is designed so that the image and scale are bright and clear to the observer. A numbered division is aligned tangent to the impression and the diameter measured by the division that falls over the opposite tangent. Readings may be made easily and accurately within .05 millimeters. The impression in the specimen metal is measured in the same manner. Both measurements take just a few moments.

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Determining BHN- The Brinell hardness of the specimen metal is determined quickly with a simple mathematical equation:

$$\left(\frac{\text{Diameter of Impression in Bar}}{\text{Diameter of Impression in Metal}}\right)^2$$

x (BHN of Test Bar) = BHN of specimen metal.

EXAMPLE: Assume the impression diameter of the test bar is measured to be 3.05; the impression diameter of the specimen metal, 3.15; and the labeled BHN of the bar is 352.

$$\left(\frac{3.05}{3.15}\right)^2 \quad x\ 352 \ = \ .968\ x\ .968\ x\ 352 \ = \ 330$$

thus the BHN of the specimen metal is 330.

This computation is simplified with the use of the Telebrineller Computer or any pocket calculator. Complete instructions are included in every Telebrineller system. Telebrineller replacement parts and test bars of hardnesses from 100 to 600 BHN are always available.