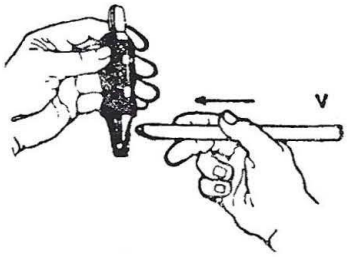
BAQ GmbH
Hermann-Schlichting-Str. 14
D-38110 Braunschweig / Germany
+49 5307 95102 -0
info@baq.de
http://www.baq.de

Instruction manual for the Poldi hardness tester

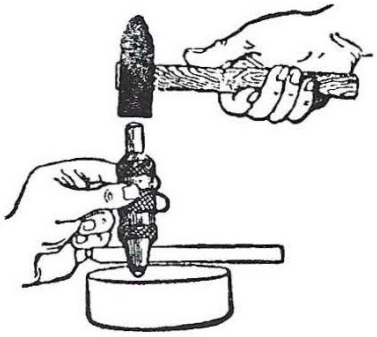
Preparation



To start the testing push the steel bar "V" with the beveled end ahead between the ball and stamp (see figure). The steel bar is pressed by the spring, which is located in the housing, firmly to the ball.
The test piece needs to have a polished smooth and flat area. The grinding marks should be as parallel as possible and should not be too rough.

Carrying out the measurement

Put the Poldi hardness tester (equipped with the steel bar) vertical on the to be tested area. Stroke the stamp with the aid of a hammer. The stroke should not be too strong and as vertical as possible (see figure). Smaller test pieces should be fixed on a heavy surface.
Through the stroke, ball impressions appear on the steel bar and on the test piece. The impression‘s diameter on the steel bar mustn‘t be more than 4.2 mm. Otherwise the distance to the edges of the bar wouldn‘t be sufficient for a correct reading.



To avoid a doubled stroke because of the rebound, the stroke should be short and vertical. If not, the impression‘s edges of the test piece could be damaged.
If the stamp is worn out (flattened), it needs to be exchanged.
The impression‘s diameter can afterwards be measured with the magnifier, which has a tenth of a millimeter graduation. For oval impressions, the average diameter should be taken. Attention should be paid to ensure that the center of the ball impressions on the steel bar are minimum 15 mm separated from each other.
The numerical tables apply to a steel bar made of 70 kg/mm², which corresponds to a Brinell hardness of 197.

Determination of the Brinell hardness

First, the ball impression diameter of the steel bar and the ball impression diameter of the test piece need to be found on the same page of the table. The Brinell hardness can then be read in the intersection of the vertical and horizontal lines.
If the stability of the steel bar is higher or lower than 70 kg/mm², the read value needs to be multiplied with the ratio:

$$\frac{\text{Actual stability of the steel bar}}{70}$$

The steel bars are marked with the actual stability (between 65 and 75), as well as with the belonging ratio (0,928 - 1,071).