



NATIONAL ACADEMY OF SCIENCES OF BELARUS
RESEARCH AND PRODUCTION ENTERPRISE "DIATECH"
COERCIMETER КИПФ-1



PURPOSE

The coercimeter КИПФ-1 is designed for nondestructive testing of the quality of the heat treatment, mechanical properties and structure of the articles of metallurgy and machinebuilding from ferromagnetic steels on the established correlation between the measured coercive force value and the parameters under test.

PRINCIPLE OF OPERATION

The tested article is magnetized using the horseshoe electromagnet, the is magnetized in a reverse sense on the descending branch of the hysteresis loop. At the instant of the equality to zero of the magnetic flow in the circuit the superimposed electromagnet – the article the value of the demagnetization current is measured, that proportional to the coercive force of the material is. The correlation between the measured value of the coercive force and the parameters under test is determined using the standard 30415-96.

CONSTRUCTION

The coercimeter КИПФ-1 is designed as a portable one consisting from the electronic block and the transducer (including the horseshoe electromagnet), connected by the electrical cable with the length of 1,5 meters.

SPECIFICATIONS

The range of the coercive force measurement is from 100 up to 5000 A/m, the error is not more than 5%; the duration of one measurement is not longer than 15 seconds; the time of continuous operation is not less than 8 hours; the power consumption is not more than 250 V·A; overall dimensions are 385×265×140 mm; the weight is not more than 9 kg; the digital indication is in A/m; there is the possibility of computer indication of the measured value.

The substitution of nondestructive testing of the commercial articles using the coercimeter КИПФ-1 instead the direct measurement of mechanical properties helps to save the metal and to enhance the productivity of the testing process and to ensure the high quality of the articles.

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