



# NOVOTEST



## Magnetic Flaw Detector NOVOTEST MPD-DC

### OPERATION MANUAL

**2015**



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## 1. Introduction

This manual is designed to introducing with the instrument, principle of action and operation rules of Magnetic Flaw Detector NOVOTEST MPD-DC, hereinafter the Instrument.

## 2. Appointment

2.1. The Instrument is intended for magnetization with applying the magnetic field to the sections of welded joints and surfaces from ferromagnetic materials, during the non-destructive testing with magnetic particle method, are detected the surface and subsurface defects.

2.2. The Instrument has the permanent magnets and provides the pole magnetization the sections of products. During the testing, the poles of device are setted alternately in a single plane to the surface of the product or in two mutually perpendicular planes, creating a magnetizing field in the corresponding direction.

2.3. The Instrument can be used in workshop, laboratory, “field conditions”, at high-altitude objects and in environments where power supply is complicated or inadmissible according to the rules of safety at ambient temperatures from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  and relative humidity up to 95% at  $35^{\circ}\text{C}$ .

## 3. Technical characteristics

3.1. The Instrument based on the permanent magnets, technical characteristics are shown in the Table 1.

Table 1

The main specifications of the Instrument

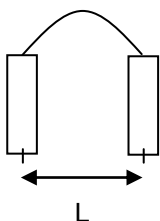
Name of the parameter	Specifications
Method of manufacturing	Sintering in vacuum



Magnetic material	Alloy Fe-Nd-B
Magnetic induction on the surface of the magnets	450 mT - MAX 150 mT - MIN

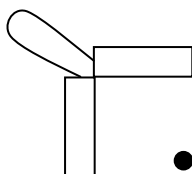
3.2. The maximum power of the magnetic field  $H$ , which is measured at the working pole ends of the Instrument, more than \_\_\_\_ kA / m.

3.3. The maximum power of the magnetic field  $H$ , in the middle of the distance  $L$  between the centers of the poles of the Instrument, when magnetic poles are located in the single plane, is:

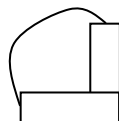


L, mm	50	100	200	300
H, kA/m				

3.4. The maximum power of the magnetic field  $H$ , when the magnets are in perpendicular planes.



●  $H_{\text{max}} = \text{____ kA/m}$



●  $H_{\text{max}} = \text{____ kA/m}$

3.5. Dimensions, mm, no more

Ø31x600

3.6. Weight, kg, no more

0.6



## **4. Completeness**

4.1. Instrument – 1 unit.

4.2. Operation manual – 1 pc.

## **5. Labeling, packaging**

5.1. On the body of device is applied the symbol with the trademark of the manufacturer and serial number.

5.2. The Instrument placed in the package (bag) for storage and transportation.

## **6. Safety precautions**

6.1. Operation of the Instrument is allowed after familiarization with it's design. During the operation with the Instrument, should remember that it is made from the high-energy magnets.

6.2. FORBIDDEN! To disassemble the Instrument during the repair maintenance. This can lead to failure the device.

6.3. In order to protect the Instrument from the damage and degaussing should avoid accidental hitting of the metal objects, falling from heights, locating near a power transformer and electrical power supplies and heating the Instrument to temperature above 50 ° C.

## **7. Design and operation**

7.1. Structurally, the Instrument is consist of two cylindrical housings, which are made from aluminum. Inside the housings there ire the permanent magnets, which are facing to the ends. The polarity of the magnets in separate housings is opposite. Magnets are interconnected with magnetic steel core housed in a sheath.



7.2. Operation with the Instrument is performed by a single operator - NDT inspector.

7.3. The Instrument should be setted up on the test surface at an angle, holding on the cylindrical housings.

## **8. Maintenance**

Maintenance of device made by the manufacturer in case of trouble.

## **9. Storage and transportation**

9.1. The Instrument must be stored at ambient temperature from +10 to +35 ° C and relative humidity up to 80% at 25 ° C.

9.2. The storage should be free of dust, fumes, acids, alkalis and corrosive gases.

9.3. Transporting device in a package can be made by any mode of transport in accordance to the requirements and rules of transportation, operating on the data types of transport.

9.4. During transportation, handling and storage of stock unit should be kept from blows, shocks and moisture.

## **10. Warranty**

10.1. The manufacturer guarantees compliance device to the technical requirements for observance of consumer terms of transportation, storage and use.

10.2. Warranty period - 12 months from date of shipment to the consumer.