MAGNETISM DETECTOR

INSTRUCTIONS # DET- 432

MAC's Magnetism Detector is a convenient, hand held meter used to determine the approximate degree of residual magnetism in ferrous material.

Applications include checking bar stock, tubing or parts where magnetism may interfere with subsequent machining or handling operations, or with the end use of the product. The unit can also be used to check products such as tools, aircraft parts, or any product where magnetism could be a problem. It is not suitable, however, for measuring the strength of electro-magnetic fields created by AC power lines.

The meter has been tested before shipment and its accuracy, from one to another should vary no more than approximately 10%. For those applications where the sensitivity of the instrument, as supplied, is of significance, the full-scale reading (+/-20) is obtained when the meter is subjected to a field whose known intensity is 20 gauss plus or minus 10%.

CHECKING BARSTOCK & TUBING

To test for magnetism in bar stock or tubing, place the base of the needle squarely against the end of a separate bar or tube that you wish to check. The needle indicator will move to a point on the scale that represents the strength of the magnetic field (in gauss) of the material. The meter scale reads 20 units on each side of the zero center point. This arrangement allows ready identification of the field's polarity, as well as the level of the magnetic field.

Generally, for bar stock or tubing, a reading of ten or less on the meter scale is considered acceptable. However, individual requirements or specifications may vary, and the user may have to determine the acceptable level of magnetism for their specific application.

Please refer to the cautionary notes shown below.

CAUTIONARY NOTES

Separate the bar or tube from the bundle before testing

Do not attempt to test while the bar or tube is in a bundle or group of pieces as the indication will be affected by the residual magnetism of the bundle and you will not get a true reading for the individual piece.

Use a spacer when testing highly magnetized material

If the piece you are checking is highly magnetized, the indicator needle may move to the extreme end of the scale, even before the meter is in contact with the material. If this occurs, do not attempt to place the meter against the material as this may overdrive the needle and damage the meter. The recommended practice in this case is to use a spacer, which may consist of a block of wood, or other non-magnetic material, between the meter and the material being checked.

Handle with care

The magnetism detector may be damaged if not handled with reasonable care. Do not drop, or subject it to severe mechanical vibration. Avoid strong magnetic fields, whether alternating or direct, such as those produced by large horsepower motors, generators, or welding equipment. Improper handling may cause the instrument's permanent magnet to become partially or completely demagnetized. Partial demagnetization can result in an increase in sensitivity. Complete demagnetization makes the meter inoperable with the needle deflecting in a random manner, and not returning to the mid-scale zero in the absence of a magnetic field.

Calibration

This meter has been calibrated before shipment, as signified by the sticker applied and initialed by MAC's QC Department. Calibration to a Level +/- 1 gauss at 10 gauss is performed using a calibration fixture that has, in turn, been calibrated with a gauss meter calibrated with standards traceable to the N.I.S.T. If you have any questions, please call, fax or email.

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