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USE

INSTRUCTIONS

Réf : **MO/ B300 series**

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Rev : 0 Du : 03/08/09

Electromagnets B300S / B48

The B300 Contour Probe is a rugged high performance instrument for Magnetic Particle inspection to accepted Nondestructive testing standards. Certain operating procedures and safety precautions should be observed.

ELECTRICAL: The B300 Contour Probe is designed to operate from a standard 115VAC, 60Hz, 1P, grounded power source. The model B300S is designed to operate from a 230VAC, 50-60Hz, 1P, grounded power source. The model B48 is designed to operate from a low voltage (48VAC) power source or power supply. Both the B300 and B300S may be operated from the optional DC300 or DC300S power supply.

Repairs should not be attempted on these units. Units are sealed and should be returned to the factory for service.

FIG. 1

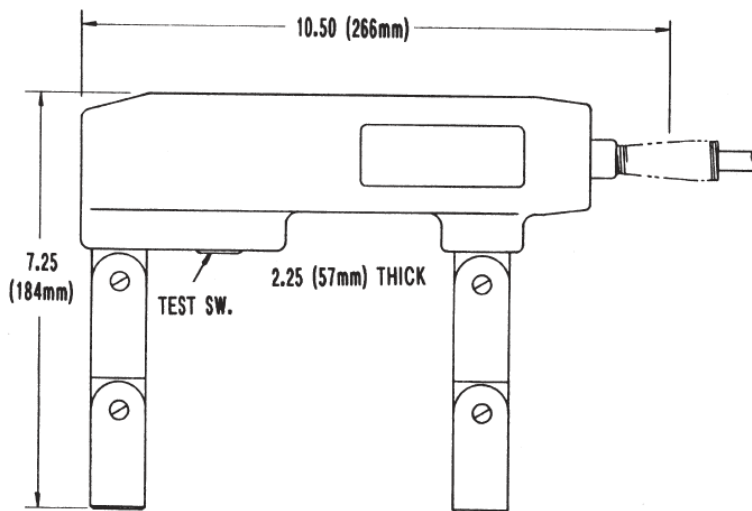
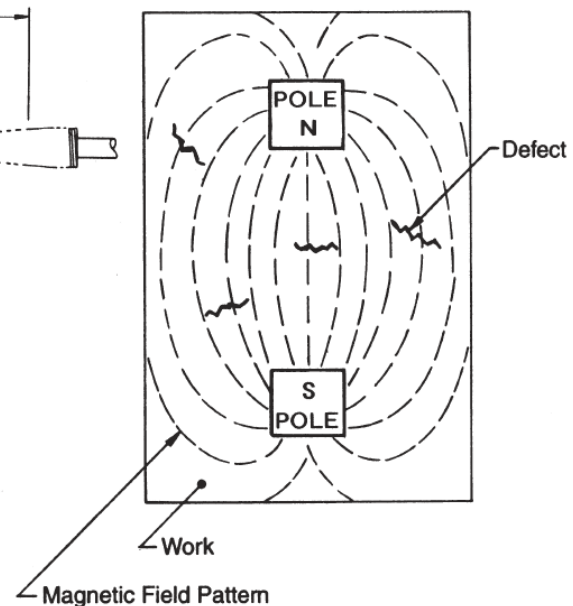


FIG. 2



INSTRUMENT DESCRIPTION: Basically the B300 Contour Probe is an electromagnet producing a strong AC magnetic field. Placement of the two poles (legs) upon ferrous materials merely provides a path for the intense magnetic field to pass from one pole to the other. The part completes the flux path and becomes highly magnetized. In overall design and performance, the Contour Probe comprises a coil wound on a laminated steel leg assembly contained within the rugged molded housing. Flexibility of the legs allows the field to actually be “focused” at the precise area of inspection.



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OPERATION: Plug the B300 Contour Probe into a Grounded power source. Place the Probe legs upon the work surface with the suspected defect at right angles to the legs. Push the test switch and lightly dust or float inspection powder over the area being inspected. Defect indications will be revealed in a direction shown on figure 2. Turn the Probe 90 degrees from the first test and repeat the procedure. Test switch should be released after powder application. However, if excess powder is to be lightly blown away, as is the procedure to reveal minute indications, the Probe should remain energized while this procedure is performed.

DEMAGNETIZATION: Small pieces which have become residually magnetized, may be easily demagnetized by the following procedure. Energize the Probe and pass small parts through the area between the pole ends “feet” and withdraw to a distance of about two feet. On large pieces, place the Probe in the same position as inspection, energize and lift from the work surface to a distance of about two feet. This procedure may need to be repeated more than once to remove the residual field.

USE OF AC AND DC FIELDS: The following is a brief outline of the advantages and limitations of the two magnetic fields. Familiarization will greatly increase the utilization of your Probe and the reliability of your inspection work.

AC MAGNETIZATION: An AC field induced into a part is a skin or surface field and does not penetrate the cross section of the material. A bi-product of AC is in the form of eddy currents which tend to guide or direct the magnetic field in a basically narrow pattern between the poles. Another bi-product is a vibratory action which adds mobility to the inspection particles to form a highly defined powder build-up at the defect. For these reasons, an AC field is the most desirable for the detection of surface or surface breaking defects.

The B300 series contour probes are designed to provide a strong magnetic field for the detection of cracks and flaws in ferrous metals. The instrument should be tested periodically to assure adequate field strength, per applicable inspection agency. The instrument should be wiped clean with a general purpose cleaner after each use. The B300S and B48 are sold without electrical power plugs. Only approved plugs should be used and installed by certified personnel.

Duty Cycle: Two Minutes “On”, Two Minutes “Off”

Operating Environment: Temperature: 32° to 104°F (0° to 40°C). Relative humidity: 10% to 95%, non-condensing

Shipping and Storage Environment: Temperature: -40° to 140°F (-40° to 60°C). Relative humidity: 5% to 95%. Vibration and shock: As encountered in normal shipping and handling with no degradation.

ACCESSORIES

Transformer with thermal circuit breaker
630NF48/12 or 630NF48/24 for low tension
devices only :



Induction lights Y300 and Y400:



TB10 Test bar (for verification
of lifting force)



Panel for verification of magnetic field
according to ISO 09590

