ANNIS
PRECISION DEMAGNETIZING
AND TESTING EQUIPMENT

INSTRUCTIONS
FOR MODEL 25 "B"
"V" Block Type
Calibration Checking Fixtures

These checking fixtures are used to determine calibration accuracy of Annis Model 25 Pocket Magnetometers. The new Model "B" fixture is quite similar to the Model "A" which has served so well over the years, except that the Model "B" is easier to use and one corner of the "V" block is machined off at an angle, forming one end of the sealed cavity that contains the high coercive magnet standard.

The Model "B" fixture was designed to be easier to use, eliminating the need for very accurate alignment of the tip of the scale test arrow with the index line on the name plate.

Accurate magnetic field testing can only be assured when such testing is conducted in an area that is reasonably free of other magnetic material and where the direction of the local magnetic field (mainly the earth's field) is known. Such local magnetic direction is easily determined with an ordinary magnetic pocket compass. Any temperature error is eliminated when checking, by having both the instrument and the checking fixture stabilized at the same temperature. Both contain high coercive magnet material having the same temperature coefficient.

Another criteria for making accurate magnetic fields tests is to eliminate any effect the local magnetic field would have on instrument readings, particularly on sensitive, low range instruments. This is easily accomplished in the following manner. The rotor magnet on the instrument staff, is magnetized at right angles to the pointer, so that when the pointer is aimed toward magnetic west, the poles of the rotor magnet are already aligned with the local field, with the result being that there is no tendency for the rotor magnet/movement to turn or deflect because of the right angle field that was created. Thus this simple "west pointing" procedure eliminates local field reading error, with the instrument responding only to the test field.

Calibration Checking Procedure

1. Make sure that the full-scale gauss figure on the instrument dial and the gauss figure stamped on the fixture nameplate, are the same value.

Check zero reading on the instrument to be tested by aiming the pointer magnet west. When the instrument is so oriented, the pointer should coincide with the center zero scale division. Note that if the pointer is off-zero any appreciable amount, when so oriented, the calibration will also be in error. Such off-zero readings usually indicate that the instrument was accidentally exposed to a very strong magnetic field, well in excess of 400 oersteds.

2. Position instrument snugly against the "V" fixture surfaces having the dial test arrow roughly centered in the "V". The instrument pointer should now be deflected approximately full scale.

3. Now rotate both the fixture and the instrument, as a unit, until the full scale deflected pointer is again aimed toward magnetic west.

4. While holding the instrument firmly in this west aiming orientation, rotate the "V" block slightly in either direction so as to obtain a maximum deflection, for checking calibration.

If instrument calibration is correct, the tip of the pointer will exactly coincide with the full-scale division on the dial.

It should be noted that other size or type of magnetic field indicators cannot be expected to correlate. This is due to the possibility of different spacing or positioning of the movement or sensing element, or to a discrepancy in original calibration by some manufacturers.

All certified Model 25 Pocket Magnetometers have a serial number stamped in the lower-right quadrant of the dial, the first two digits indicating the year when first certified. Each certified instrument is accompanied by a dated, signed, and serialized calibration certificate showing traceability and conformance with MIL-STD 45662.

If it is found that calibration of an Annis Model 25 instrument is in appreciable error (one half division or more) it should be returned to the factory for repair, recalibration, or certification. Such repairs are done promptly, if accompanied by a purchase order, which may state: Not to Exceed 75% of replacement value. Many users of certified instruments automatically return them for re-certification on a regular basis. If, by chance, the checking fixture should become suspect, it may also be returned for prompt check and re-certification.

R.B. Annis Instruments, Inc.
1101 N. Delaware Street
Indianapolis, IN 46202
Ph. / Fx. (317) 637-9282