

# ANNIS

## Pocket

# MAGNETOMETERS

**MAGNETISM IS EVERYWHERE** — It is most commonly evident as residual magnetism in iron or steel objects. Determination of the degree of such magnetism is becoming more important for many critical components. Alloy steels, those that are heavily cold worked or heat treated, are especially prone to retain magnetism after having been subjected to strong magnetic fields, such as those created by magnetic chucks, magnetic conveyors, spot welding, magnetized machine tools or magnetic analysis testing, etc.

**RESIDUAL MAGNETISM** in steel parts may be readily determined in a few seconds time by checking with an Annis Pocket Magnetometer. Place the lower (test) edge of the Magnetometer Case near or against the object being tested. *The Pointer Instantly Deflects* to a reading on the scale proportional to the magnetism in the object at that point. The higher the reading the stronger the magnetic field. This reading can be compared directly with that produced by other similar objects which are known to be acceptable from a residual magnetism standpoint. Are your parts satisfactorily demagnetized?

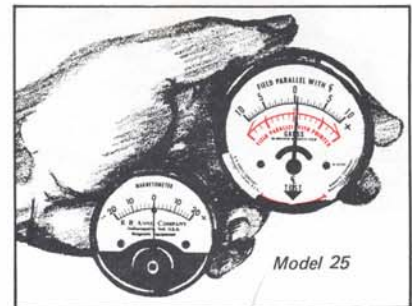
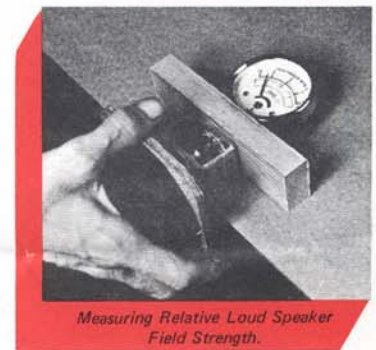
**MAGNETIC POLARITY** of the field being measured is indicated by the direction of pointer deflection on the center zero scale. A plus (+) deflection indicates the test edge of the Magnetometer has been presented to a North (seeking) magnetic pole.

**IS DEMAGNETIZING O.K.** — Steel components such as video and sound tape recorder capstans and guides, that become magnetized, add to background noise and loss of recorded high frequencies. A Pocket Magnetometer will indicate when they are demagnetized to safe levels. Ask for a copy of "Notes on Demagnetizing" which goes into more detail regarding demagnetizing, with particular reference to tape recording.

**ANNIS POCKET MAGNETOMETERS** may also be used to measure and compare magnetic fields so strong they would cause the pointer to deflect off-scale. This is accomplished by maintaining a known distance between the Magnetometer and the object being tested. Experiment will easily determine the correct thickness of wood spacer block (or other non-magnetic material) to interpose between the work and the Magnetometer to obtain consistent and useful readings. Increasing the spacer thickness decreases the meter readings exponentially. Such testing should not be conducted in the immediate proximity of other magnetic materials. Loud-speaker fields, permanent magnets and assemblies, as well as a wide variety of D.C. electro-magnetic devices, can be quickly checked for relative field strength and polarity in this manner.

**TWO DIFFERENT MODELS** The smaller Model 20 instruments are now available with three numerical scale ranges. Those having a red contact spot, multiply the scale readings by 0.5 to obtain the field strength in gauss at the staff of the instrument. Those having a blue contact spot, indicate field strength directly in gauss.

**IMPROVED MODEL 25** (2 1/2" diameter) instruments are calibrated to read directly in gauss and have 10 times the calibration stability of the Standard Model 20. They will withstand accidental exposure to magnetic fields as strong as 400 oersteds without affecting calibration. Model 25 instruments also have an improved and more rugged type of movement, with jewelled pivots and a dust-tight case, conducive to maintaining original sensitivity and accuracy. All instruments are carefully calibrated in a D.C. excited, standard, "Helmholtz" uniform magnetic field.



Model 20



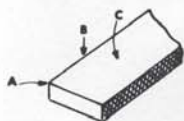


# POCKET MAGNETOMETERS

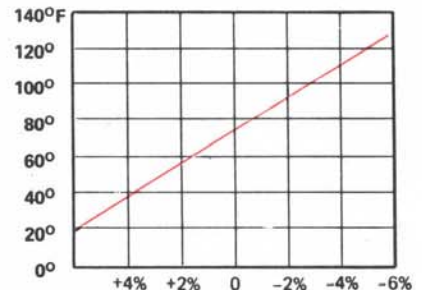
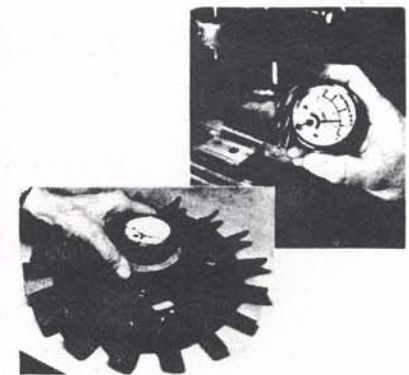
**DUAL PURPOSE, TWO COLOR SCALE** makes the Model 25 Magnetometer more useful. The upper "Black" scale (the one more usually used) reads directly in gauss of a uniform magnetic field oriented parallel with the centerline of the instrument scale. The lower "Red" scale is used in determining the *magnitude and direction* of an unknown magnetic field by merely orienting the instrument for maximum reading. At such maximum reading, direction of the measured field is parallel with the instrument pointer and magnitude, in gauss, is shown on the "Red" scale.

**SENSITIVE INSTRUMENTS AVAILABLE** The one gauss full scale, Model 25 instrument, is so sensitive it will deflect approximately half-scale in the earth's magnetic field. The half-gauss (0.5-0.5) full scale instrument is twice as sensitive and will indicate changes of field strength in the order of 10 milligauss. On request, we can furnish still more sensitive Magnetometers to determine local magnetic anomalies as caused by *shallowly* buried "curb boxes" or other magnetic materials, etc.

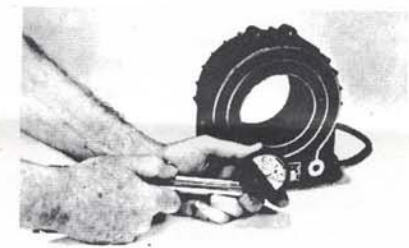
**MAGNETOMETER READINGS ACCURATELY INDICATE** magnetic field strength in the area of the movement staff. It does not hold, however, that readings may be compared directly with those taken with any other type instrument, except under uniform magnetic field conditions. Variations in staff spacing from the work or the surface shape of steel parts being measured will affect Magnetometer readings. Surface shape also affects the retention of "magnetic dirt" and cleaning characteristics of such parts. As the sharpness of the surface shape increases as ("A" in sketch) the local concentration of magnetic flux causes increased retention of magnetic dirt and particles. Therefore, plane surfaces as ("C" in sketch) may give somewhat higher readings than corners, points, or ends of small bars without causing increased cleaning troubles.



**ACCURATE QUANTITATIVE MEASUREMENTS** are possible, even under widely varying temperature conditions. As a matter of convenience, instrument calibration is correct at normal room temperatures but, when the occasion demands, readings that may be taken at extremes of temperature with Model 25 instruments, by applying the indicated % corrections to the readings for ambient (instrument) temperature in accordance with the straight line graph.



Above corrections to readings may be applied when working outside of room temperature range.



**CARE SHOULD BE EXERCISED** in handling your Pocket Magnetometer, it really shouldn't be dropped on the floor. Although quite stable under reasonable conditions of handling, scale calibration, particularly the standard Model 20 Units, can be changed by accidental exposure to strong A.C. magnetic fields or by strong unidirectional fields that would tend to deflect the pointer considerably off scale.

**SEVERAL DIFFERENT RANGES** and two different Models of Annis Pocket Magnetometers are listed in the accompanying table. These are normally available from stock. Prepaid orders for Magnetometers can therefore be shipped promptly. Shipping weight for single units is approximately 9 ounces. Prices shown are F.O.B. Indianapolis, Indiana.

**CALIBRATION TRACEABLE TO N.B.S.** on our better Model 25 instruments. Serialization and certification is available at extra cost.

"A" — Indicates items recommended for Audiophile use.

MODEL	RANGE	SCALE UNITS	PRICE
Model 25 (2½" dia.)	Anomaly Instrument		\$
Model 25	0.5-0.5	Gauss	
Model 25	1-0-1	Gauss	
Model 25	2-0-2	Gauss	
Model 25	5-0-5	Gauss	
Model 25	10-0-10*	Gauss	
Model 25	20-0-20	Gauss	
Model 25	50-0-50	Gauss	
Model 25	100-0-100	Gauss	

Padded Leather Case For Model 25 ..... \$

\*Note — Useful Tool Room Range — Deflects full scale in 10 Gauss uniform field.

**POCKET MAGNETOMETERS ARE HANDY** — fast and easy to use, as well as being relatively inexpensive. The quantitative information secured, can be extremely valuable to personnel in tool room, stock room, inspection, engineering and laboratory, as well as in many production processes.

**SOLD BY:**  
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