1. This high sensitivity gaussmeter probe contains ferromagnetic field concentrators. Though the lowest coercive force materials are used, some magnetic hysteresis and residual field will be present. These two material properties require that certain precautions be taken to minimize errors in the probe readings.

    a. To obtain the specified accuracy of the gamma probe the sensor body should be demagnetized prior to measurements. Commercially available bulk tape erasers run along the probe body generally work well. Placing the gamma probe in a solenoid where an AC field slowly increases to at least 30 G, then decreases to zero also is satisfactory.

    b. After each exposure to magnetic field, demagnetization should be re-done.

    c. Optimally, the probe should first be fixed in an orientation where background fields (such as the earth's magnetic field, ≤500 mG) are minimized. Demagnetization should be activated. Next, the gaussmeter should be zeroed. Then the field to be measured would be applied.

    d. The gamma probe body should never be subjected to bending stresses. Damage to the Hall effect sensor or alteration of the concentrator properties could occur. When affixing the probe to a fixture, all fastening should be low stress with minimum force.

2. Unlike most Hall effect probes, the gamma probe possesses a fairly large sensitive volume over which the field to be measured should be uniform. This volume is centered 55.9 mm (2.2 in) from the front of the probe body and has the dimensions 2.8 mm (0.11 in) wide, 5.1 mm (0.20 in) high, 79.4 mm (3.125 in) long. If the magnetic field is not homogeneous within this volume, the gaussmeter will display a value approximately equal to the average.

3. To obtain a null field reference a zero gauss chamber, such as the Lake Shore 4065, must be used to shield the total gamma probe from external fields.

Form Number F049-00-00 Rev B — ©2014 Lake Shore Cryotronics, Inc. — 2 May 2014