

**Molspin Ltd.**

## Pulse Magnetizer User Manual

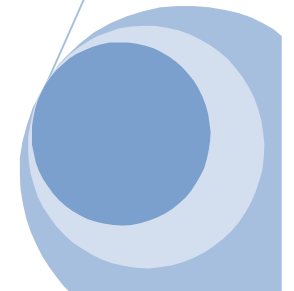


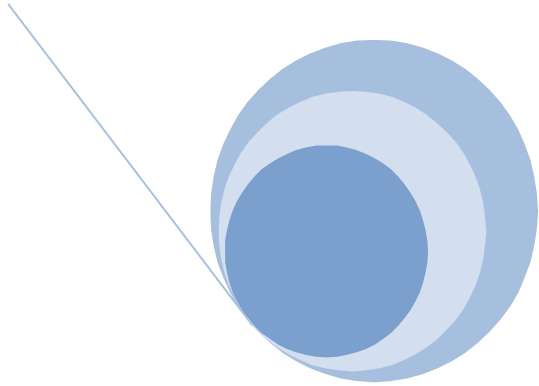
**Pulse Magnetizer**

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# Pulse Magnetizer

*Magnetizing rock or environmental samples*



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## Overview

- The Pulse Magnetizer is designed to produce accurate magnetization fields up to 1 Tesla
- The instrument is ruggedly constructed using high quality components and is designed for laboratory usage but can be used in the field (subject to the provision of adequate protection from humidity and an adequate power supply)
- Rock or environmental specimens are rotated and magnetized within a field of up to 1 Tesla
- Control over the magnetization field is provided by an analogue control system
- Calibration can be performed by adjusting the field strength and testing this prior to the use of the sample

## Control of the Pulse Magnetizer System

To achieve a Tesla a current of about 400 amps is needed. This is obtained by charging a bank of capacitors and then discharging them into a coil. There is a linear relationship between the capacitor voltage and the peak current so that by setting a voltage that the capacitors are discharged a convenient method of control is facilitated. However temperature and age of the capacitors can change the relationship so that when a pulse has occurred the meter reads the peak current of the pulse. So that it is this reading that is an accurate version of the peak field.

To magnetise a sample press the set button with one hand and use the other hand to turn the control knob to the desired reading. Press start when the capacitor bank will charge to the desired value and a pulse will occur. Read the meter to check the obtained field. For most purposes this is all that is necessary and the observed field will be very close to the set field.

If the very highest accuracy of field is needed then a trial pulse can be made without the sample in place. If the field is not within the accuracy desired then a small adjustment to the set field can be made. This can be tested and repeated until satisfactory. The sample can then be inserted and magnetised. This may be necessary for fields below 0.2 Tesla

The reading of the field is stored on a capacitor and this does change (up or down) with time but there is at least 10 seconds before the reading changes appreciably.

As there are dangerous currents within the magnetiser it must be returned to Molspin for any repairs.

## Unpacking

Remove the Pulse Magnetizer from the transportation packaging and confirm the following items are enclosed

- Pulse Magnetizer Chassis and Protective Lid
- Mains Supply IEC Lead
- A Calibration Sample and Sample Holder
- User Manual

# Pulse Magnetizer

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## Specifications

<b>SPECIFICATIONS</b>	
Sample size	2.54cm dia x 2.54cm high (or equivalent environmental pot size)
Magnetisation Field	Up to 10,000 Oersted (1.0T). Single or Dual Scale Versions available. Dual Scale Version provides more accuracy below 0.1T.
Power supply	120 or 240 volt AC, 50/60 Hz
Power consumption	100 watts
Dimensions	32cm high 32cm wide 25cm thick
Weight	28 kg

# Pulse Magnetizer

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## Care and Maintenance

### Cleaning the equipment

The outside of the equipment can be wiped down with a soft damp cloth. Obstinate marks can normally be removed with a little abrasive cleaning cream like Cif. Bleaches or acidic cleaners should not be used.

The inside of the coil should be monitored for the build up of particles or other dust/detritus. Such materials may interfere with the results you obtain and should be removed. Do this gently using a vacuum cleaner hose attachment.

### Maintenance

Your pulse magnetizer should require no maintenance.

### Dos and Don'ts:-

**Do** protect the pulse magnetizer from moisture or very high humidity - it is not waterproof!

**Do** operate in a dry environment - it is mains powered.

**Do** be careful when moving or handling the pulse magnetizer - it is very heavy!

**Don't** operate the unit outside of its protective container.

**Don't** put items other than the samples in the pulse magnetizer.

**Don't** put metal objects, tools, magnets or magnetized tools in the pulse magnetizer.

**Don't** attempt to service this equipment - dangerous voltages and currents inside!

# Pulse Magnetizer

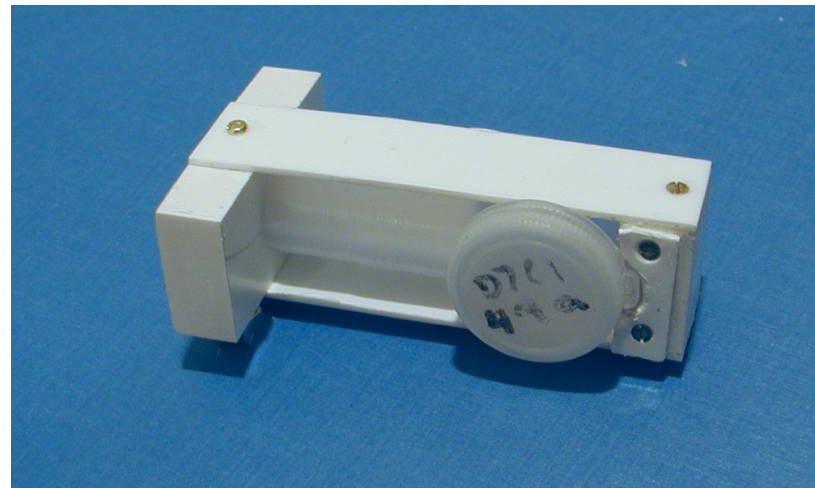
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## Environmental Adaptor

If you are intending the unit to be used in the study of environmental magnetism, you may be interested in the adaptor for environmental sample pots. This adaptor only takes the nominal 1" (2.54cm) diameter x 1" (2.54cm) high acrylic pot. Our website indicates where such pots may be obtained.



# Contacts



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