AGICO

ADVANCED GEOSCIENCE INSTRUMENTS COMPANY

WWW.AGICO.CZ

INSTRUMENT PORTFOLIO

ABOUT AGICO

AGICO (Advanced Geoscience Instruments Company), founded in 1995 and based in Brno, Czech Republic, is one of the world's most respected manufacturers of scientific instruments for rock magnetism, paleomagnetism, and environmental magnetism.

AGICO's product portfolio includes state-of-the-art instruments such as the Kappabridges KLY5 and MFK2, with optional CS4 and CS-L attachments, the BCK1 Big Coil Kappabridge, the highly reliable JR-6 Spinner Magnetometer, the advanced LDA6 Demagnetizer/Magnetizer system, and the precise PUMA Impulse Magnetizer.

In addition to hardware, AGICO develops widely used software tools such as Remasoft, Anisoft, and Cureval, designed for efficient data processing in rock magnetic research.

What sets AGICO apart is the unique combination of in-house engineering excellence, scientific expertise, and active collaboration with academic and commercial research institutions. Many AGICO team members are also active researchers, contributing to and even pioneering advances in rock magnetism.

This synergy of science, engineering, and collaboration has proven exceptionally productive. AGICO proudly maintains a global presence, with hundreds of instruments manufactured or upgraded over the past 30 years now operating across all continents—including Antarctica.

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INSTRUMENT OVERVIEW

KAPPABRIDGES

MFK2 - Ultra-sensitive, three-frequency instrument for measuring magnetic susceptibility across various frequencies and magnetic field strengths.

KLY5 - Highly sensitive instrument designed for precise separation of the in-phase and out-of-phase components of magnetic susceptibility.

Both instruments can be complemented with optional accessories, including a 3D Rotator for easy anisotropy of magnetic susceptibility (AMS) measurements, the CS4 unit for high-temperature measurements, and the CS-L unit for low-temperature magnetic susceptibility analysis.

BCK1 - Big Coil Kappabridge designed to measure magnetic susceptibility and its anisotropy in cylindrical rock samples up to 2 inches in diameter or cubic samples with 2-inch edges.

SPINNER MAGNETOMETERS

The JR-6 and JR-6A Spinner Magnetometers are the most sensitive commercially available non-quantum instruments for measuring the magnetic remanence of rock samples. As the sixth generation of this widely used system, they are known for their durability, user-friendly operation, and compact design.

INSTRUMENT OVERVIEW

DEMAGNETIZER / MAGNETIZER SYSTEM

The LDA6 Demagnetizer / Magnetizer allows the demagnetization of rock samples in both static and tumbling modes, with AC field strengths ranging from 1 to 200 mT. Anhysteretic remanent magnetization (ARM) can be applied using a DC field of up to 1 mT. The system is also equipped with a low-field impulse magnetizer capable of generating magnetic fields up to 50 mT.

HIGH FIELD IMPULSE MAGNETIZER

PUMA - The Impulse Magnetizer is a precision high-field impulse magnetization system. It features a magnetization coil with an inner diameter of 41 mm, allowing standard-sized paleomagnetic specimens to be magnetized in any orientation using pulses ranging from 1 mT to 5 T.

For more information or price inquiries, feel free to contact us at agico@agico.cz.

MAGNETIC SUSCEPTIBILITY

MFK2 - THREE FREQUENCY KAPPABRIDGES

The MFK2 series represents the latest generation of advanced Multifunction Kappabridges, building upon the legacy of the MFK1 models. These instruments are the most sensitive commercially available systems for laboratory measurements of anisotropy of magnetic susceptibility (AMS) and bulk magnetic susceptibility in low, variable magnetic fields (ranging from 2 A/m to 700 A/m peak values). In addition to measuring in-phase bulk susceptibility, the MFK2 also enables the detection of relative changes in the phase angle. The MFK2-FA and MFK2-FB models operate not only at the base frequency of 976 Hz but also offer measurements at two additional frequencies: 3904 Hz and 15,616 Hz.

The spinning specimen method utilizes a 3D Rotator or a classic rotator to enable fast, easy, and precise AMS measurements. Automated routines for investigating field-dependent variations in AMS and bulk susceptibility are included for enhanced user convenience.

Optional CS4 and CS-L attachments allow bulk susceptibility measurements across a wide temperature range, from –192 ˚C to 700 ˚C.

MAGNETIC SUSCEPTIBILITY

MFK2 - Technical specifications

Operating frequencies 976 Hz, 3904 Hz, 15616 Hz

Field intensity ranges
- Frequency 976 Hz 2 - 700 A/m (peak)
- Frequency 3904 Hz 2 - 350 A/m (peak)
- Frequency 15616 Hz 2 - 200 A/m (peak)

Sensitivity
- 976 Hz, 400 A/m peak 2×10^{-8} SI (400 A/m)
- 3904 Hz, 200 A/m peak 6×10^{-8} SI (200 A/m)
- 15616 Hz, 200 A/m peak 12×10^{-8} SI (200 A/m)

Field homogeneity at 976 Hz 0.5 %

Measuring range up to 0.5 (SI) at 976 Hz
Accuracy within one range ± 0.1 %
Accuracy of absolute calibration ± 3 %
Pick-up coil inner diameter 43 mm
Power requirements 100 - 240 V, 50/60 Hz, 40 VA

Specimens to be measured
- For spinning method
  - Cylinder (regularly shaped specimens)
    - Diameter 25.4 mm
    - Length 22.0 mm
  - Cube 20x20x20 mm
- For static method as for spinning method plus
  - Cube 23x23x23 mm
  - ODP type 26x25x19.5 mm
  - Fragments up to 40 cm^3 for bulk susceptibility

MAGNETIC SUSCEPTIBILITY

KLY5 - IN-PHASE and OUT-OF-PHASE KAPPABRIDGE

The KLY5 Kappabridges are the most sensitive commercially available laboratory instruments for measuring magnetic susceptibility and anisotropy of magnetic susceptibility (AMS). The KLY5 series offers precise absolute measurements of both the in-phase and out-of-phase components of magnetic susceptibility, as well as their anisotropy.

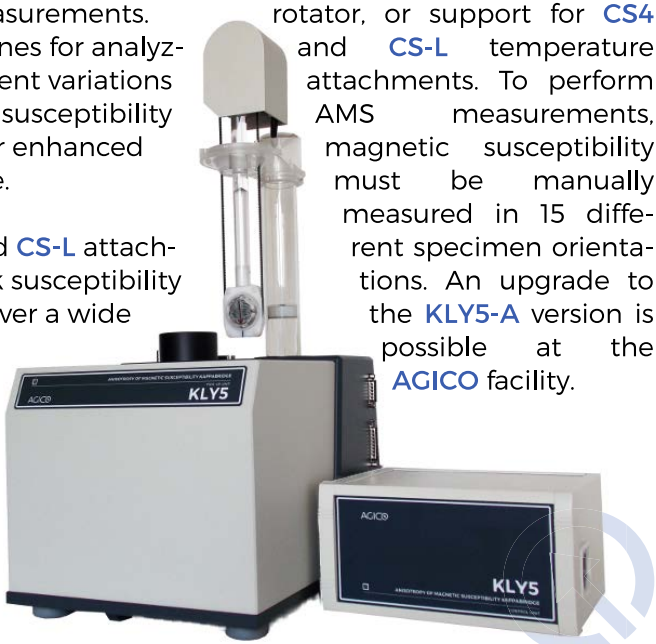
KLY5-A

The system is fully equipped with a dedicated up/down mechanism and a rotator, enabling the use of the spinning specimen method with either a 3D Rotator or a classic rotator for fast, easy, and precise AMS measurements. Automated routines for analyzing field-dependent variations of AMS and bulk susceptibility are integrated for enhanced user convenience.

Optional CS4 and CS-L attachments allow bulk susceptibility measurements over a wide temperature range, from –192 °C to 700 °C.

KLY5-B

The basic version of the Kappabridge is designed for manual measurements of AMS, bulk susceptibility, and field-dependent variations of magnetic susceptibility. It does not include the up/down mechanism, rotator, or support for CS4 and CS-L temperature attachments. To perform AMS measurements, magnetic susceptibility must be manually measured in 15 different specimen orientations. An upgrade to the KLY5-A version is possible at the AGICO facility.



MAGNETIC SUSCEPTIBILITY

KLY5 - Technical specifications

Operating frequency	1220 Hz
Field intensity range	5 - 750 A/m (peak)
Sensitivity	2 x 10^{-8} SI (400 A/m)
Field homogeneity	0.2 %
Measuring range	up to 0.5 (SI) at 750 A/m up to 1 (SI) at 400 A/m
Accuracy within one range	± 0.1 %
Accuracy of absolute calibration	± 3 %
Pick-up coil inner diameter	43 mm
Power requirements	100 - 240 V, 50/60 Hz, 40 VA

Specimens to be measured
- For spinning method
  - Cylinder (regularly shaped specimens)
    - Diameter 25.4 mm
    - Length 22.0 mm
  - Cube 20x20x20 mm
- For static method as for spinning method plus
  - Cube 23x23x23 mm
  - ODP type 26x25x19.5 mm
  - Fragments up to 40 cm^3 for bulk susceptibility

MAGNETIC SUSCEPTIBILITY

BCK1 - BIG COIL KAPPABRIDGE

The BCK1 is a laboratory instrument specifically designed for measuring the magnetic susceptibility and anisotropy of magnetic susceptibility (AMS) of samples larger than standard paleomagnetic cylinders or cubes.

It provides precise measurements of both in-phase and out-of-phase components of magnetic susceptibility across a magnetic field intensity range from 5 to 600 A/m.

With a coil inner diameter of 84 mm, the instrument can accommodate cylindrical samples up to 2 inches in diameter and cubes with edges up to 48 mm. Additionally, rock fragments and powders can be measured in volumes of up to approximately 200 cm^3.

MAGNETIC SUSCEPTIBILITY

BCK1 - Technical specifications

Operating frequency	1220 Hz
Field intensity range	5 - 600 A/m (peak)
Sensitivity	2 x 10^{-8} SI (400 A/m)
Field homogeneity	0.5 %
Measuring range	up to 0.5 (SI) at 750 A/m up to 1 (SI) at 400 A/m
Accuracy within one range	± 0.1 %
Accuracy of absolute calibration	± 3 %
Pick-up coil inner diameter	84 mm
Power requirements	100 - 240 V, 50/60 Hz, 40 VA

Specimens to be measured
- AMS measurements
  - Cylinder (regularly shaped specimens)
    - Diameter up to 51 mm
    - Length up to 46 mm
  - Cube up to 48x48x48 mm
- Bulk susceptibility
  - Cylinders up to 82 mm in diameter
  - Cubes up to 58x58x58 mm
  - Fragments up to 200 cm^3

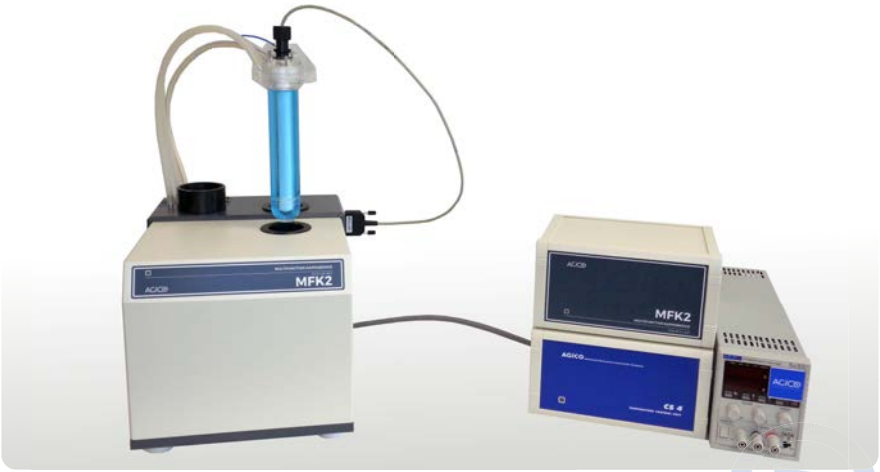
MAGNETIC SUSCEPTIBILITY

CS4 - HIGH TEMPERATURE FURNACE APPARATUS

The CS4 High-Temperature Furnace is an optional attachment for the KLY5-A, MFK2-FA, and MFK1-FA/A Kappabridges. It is designed for measuring temperature-dependent variations in low-field magnetic susceptibility of minerals, rocks, and synthetic materials over a temperature range from ambient up to 700 °C.

Measurements can be performed under a protective argon atmosphere to prevent oxidation of the specimen.

The quasicontinuous measurement process is fully automated and controlled by dedicated software. The accompanying Cureval data processing software provides advanced analysis of thermo-magnetic curves, including empty furnace baseline subtraction, Curie temperature estimation, and separation of the ferromagnetic and paramagnetic components of susceptibility.



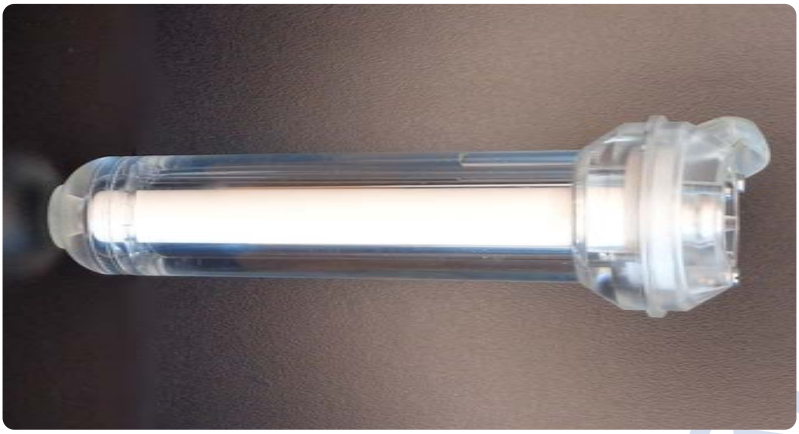
MAGNETIC SUSCEPTIBILITY

CS4 - Main features

Lowest detectable susceptibility change 1 x 10^{-7} SI
Measurement at high temperatures up to 700° C
Software controlled heating and cooling modes
Measurement in the air or argon atmosphere
500 to 700 pairs of susceptibility and temperature measurements to define a thermomagnetic curve

CS4 - Technical specifications

Nominal specimen volume (powder or fragments)	0.25 cm^3
Temperature range room temperature	up to 700°C
Accuracy of temperature determination	± 2 °C
Sensitivity to susceptibility changes	1x10^{-7} SI
Power requirements	100 - 240 V, 50/60 Hz, 700 VA



MAGNETIC SUSCEPTIBILITY

CS-L - LOW TEMPERATURE CRYOSTAT APPARATUS

The CS-L Low Temperature Cryostat is an optional attachment for the KLY5-A, MFK2-FA, and MFK1-FA/A Kappabridges. It is designed to measure temperature-dependent variations of low-field magnetic susceptibility in minerals, rocks, and synthetic materials over a temperature range from –192 °C to ambient temperature.

Specimens are placed in a measuring vessel cooled inside the cryostat using liquid nitrogen, then allowed to warm spontaneously to the target temperature. Argon gas is used to purge the liquid nitrogen from the cryostat.

The quasicontinuous measurement process is fully automated and controlled by software. Data analysis is performed with the Cureval software, which provides advanced processing of thermomagnetic curves, including empty furnace baseline subtraction, Curie temperature estimation, and separation of ferromagnetic and paramagnetic susceptibility components.

Note: The CS4 High-Temperature Furnace Apparatus is a pre-requisite for using the CS-L system

MAGNETIC SUSCEPTIBILITY

CS-L - Main features

Lowest detectable susceptibility change 1 x 10^{-7} SI
Measurement at low temperatures from -192˚C
Cooled by liquid nitrogen
Estimation of ratio between ferromagnetic and paramagnetic part of susceptibility

CS-L - Technical specifications

Nominal specimen volume (powder or fragments)	0.25 cm^3
Temperature range	-192˚C - 0˚C
Accuracy of temperature determination	± 2 ˚C
Sensitivity to susceptibility changes	1 x 10^{-7} SI
Power requirements	100 - 240 V, 50/60 Hz, 700 VA

MAGNETIC REMANENCE

JR-6 - DUAL SPEED SPINNER MAGNETOMETER

The JR-6 and JR-6A are the most sensitive and accurate instruments available for measuring remanent magnetization of rocks based on classical (non-quantum, non-cryogenic) principles. Their exceptional sensitivity allows measurement of even very weakly magnetized rocks, such as various sedimentary types including limestones and quartzites.
Two rotation speeds are offered: a higher speed of 87.7 revolutions per second (rps) for maximum sensitivity, and a lower speed of 16.7 rps for measuring softer specimens.
The JR-6A (automated) model is designed for rapid and precise measurement of remanent magnetization. The specimen is manually inserted into the holder, after which the instrument automatically changes the sample orientation to determine the remanence vector.
The JR-6 is the non-automated version, offering the same sensitivity and accuracy. However, sample orientation must be adjusted manually, similar to other magnetometers. Depending on the desired accuracy, measurements can be taken in two, four, or six orientations.

MAGNETIC REMANENCE

JR-6/6A - Technical specifications

Sensitivity 2.4 x 10^{-6} A/m (high speed)

Measuring range up to 12500 A/m

Speed of rotation 87.7 rps and 16.7 rps

Accuracy of absolute calibration ± 3 %

Power requirements 100, 120, 230 and 240 V, 50/60 Hz, 40 VA

Specimens to be measured
Cylinder (regularly shaped specimens)
Diameter 25.4 mm
Length 22.0 mm
Cube 23x23x23 mm
20x20x20 mm

MAGNETIC REMANENCE

LDA6 - DEMAGNETIZER / MAGNETIZER SYSTEM

The LDA6 is a comprehensive laboratory magnetic treatment system that integrates an AF demagnetizer with anhysteretic and low-field impulse magnetizers. Its advanced design enables precise control of the AC field amplitude up to 200 mT, anhysteretic DC field intensity up to 1 mT, and impulse DC field intensity up to 50 mT. All parameters are managed via user-friendly control software, LDA6.

The sample holder features a two-axis tumbler, allowing either random rotation or positioning in one of eighteen discrete orientations. While optimized for standard-size paleomagnetic specimens, the tumbler can accommodate approximately 10 ccm of rocks, environmental samples, or man-made materials.

The advanced control electronics ensure a well-defined amplitude and a pure sinusoidal alternating field. Triple mu-metal shielding effectively eliminates local magnetic interference, making operation within a low-field cage unnecessary.

MAGNETIC REMANENCE

LDA6 - Technical specifications

Alternating field amplitude	1 - 200 mT (peak)
Anhysteretic DC field	1 µT - 1000 µT
Impulse DC field	1 mT - 50 mT
Accuracy of set field	± 1 %

Field homogeneity better than 98 %
Total Harmonic Distortion of alternating field < 0.1%
Tumbling specimen or 3-axes demagnetization
Sets 18 magnetization directions
Dimensions and mass 115x63x45 cm (l x h x w), 125 kg
Power requirements 120 and 230 V, 50/60 Hz, 1600 VA

Specimens to be processed
Cylinder (regularly shaped specimens)
Diameter 25.4 mm
Length 22.0 mm
Cube 23x23x23 mm
20x20x20 mm

MAGNETIC REMANENCE

PUMA - 5 TESLA IMPULSE MAGNETIZER

The PUMA is a precision high-field impulse magnetizer featuring a magnetization coil with an inner diameter of 41 mm, allowing magnetization of standard-sized paleomagnetic specimens in any orientation. It enables the application of isothermal remanent magnetization (IRM) over a wide magnetic field intensity range from 1 mT up to 5 T.

The instrument's sophisticated design ensures precise pulse intensity control and high field homogeneity throughout the entire specimen volume.

The magnetization process is managed via user-friendly PUMA software or directly through the instrument's control panel.

MAGNETIC REMANENCE

PUMA - Technical specifications

Impulse field	1 - 5000 mT
Length of pulses	~ 7 ms
Dimensions, mass	715 x 435 x 500mm , ~78 kg
Power requirements	120 or 230 V, 50/60 Hz, 1600 VA

Specimens to be magnetized
Cylinder (regularly shaped specimens)
Diameter 25.4 mm
Length 22.0 mm
Cube 23x23x23 mm
20x20x20 mm

MAGNETIC SUSCEPTIBILITY

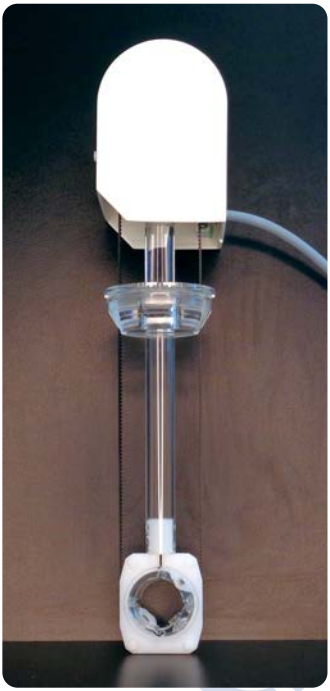
3D ROTATOR

The 3D Rotator significantly increases the speed and convenience of anisotropy of magnetic susceptibility (AMS) measurements. It is compatible with the MFK2-FA, KLY5-A, and MFK1-FA/A Kappabridges.

The measurement process is fully automated—once the specimen is mounted in the rotator, no further manual intervention is required to complete the full AMS tensor measurement. The total time for one anisotropy measurement, including bulk susceptibility, is approximately 1.5 minutes, compared to over 3 minutes using the classical (3-plane) rotator.

Specimens to be measured

Cylinder (regularly shaped specimens)	
Diameter	25.4 mm
Length	22.0 mm
Cube	20x20x20 mm



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