JR-6A Spinner Magnetometer Quick Start Guide

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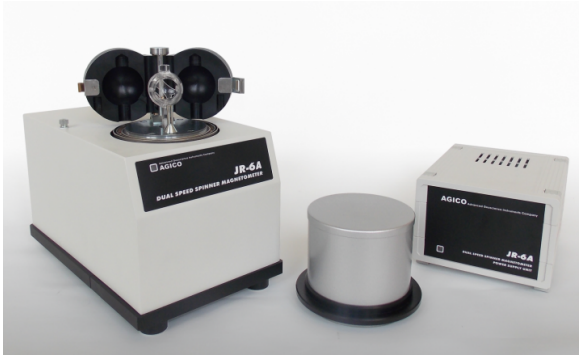

The AGICO JR-6A Spinner Magnetometer (Image from AGICO: https://www.agico.com/text/products/jr6/jr6.php)

Introduction

This user guide will help scientists and technicians correctly use the JR-6A Spinner Magnetometer (*Figure 1*). The JR-6A measures the magnetization of discrete samples, one at a time. Some scientists prefer the spinner magnetometer to the SRM Discrete program. The spinner magnetometer is also better at measuring weaker magnetized samples. There are some caveats regarding the use of the JR-6A, however, which are discussed later in this guide. For more questions, refer to the Agico Manual located in the Pmag library.

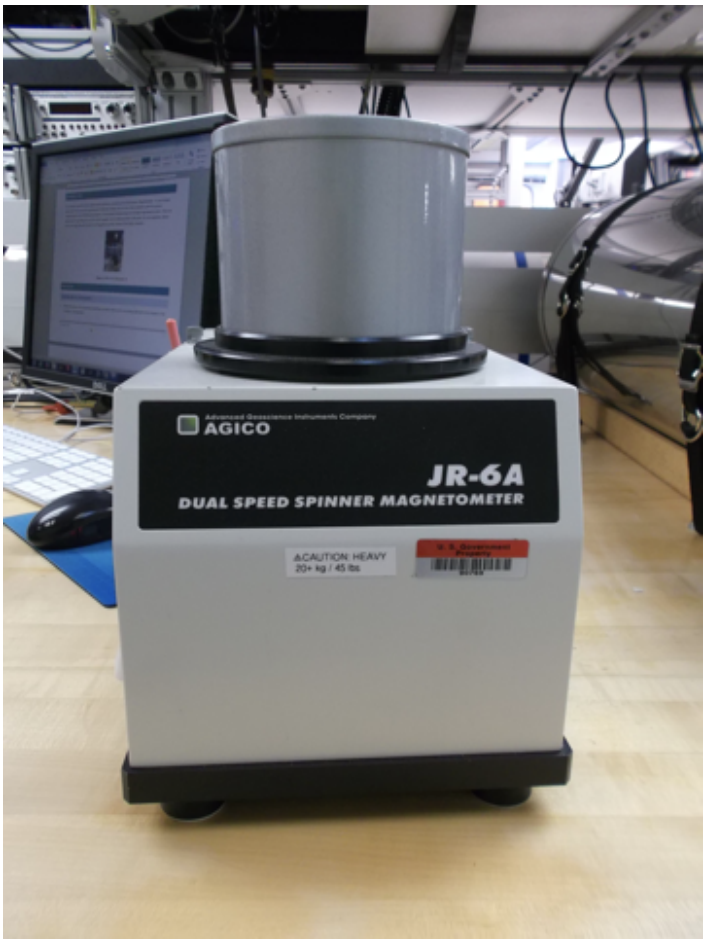

Figure 1: JR-6A in the Paleomagnetism Lab.

Procedures

Preparing the instrument

1. Move the spinner as far away from everything as possible:
    a. Make sure it is not sitting next to the computer
    b. Make sure it is not sitting next to the D-2000 AF Demagnetizer
    c. Make sure it is at least 0.5 m from its power supply
2. Power on the instrument using the power switch located on the back of the power supply. The power supply is currently located above the JR6 workstation.
3. Let the instrument warm up for 15–30 minutes before use. Also, make sure the green lights are lit up on both the power supply and the spinner itself before starting a measurement.
4. Open the REMA6 software (version 6.2.06; release May 31, 2017), located on the desktop of the JR6 computer. The main REMA6 window will open (*Figure 2*).
5. Confirm that the IODPmode.cfg file is in the same folder as the Rema6.exe application (default location is C:\Agico\Rema6\Rema6.exe). This file is necessary for creating the .csv file.

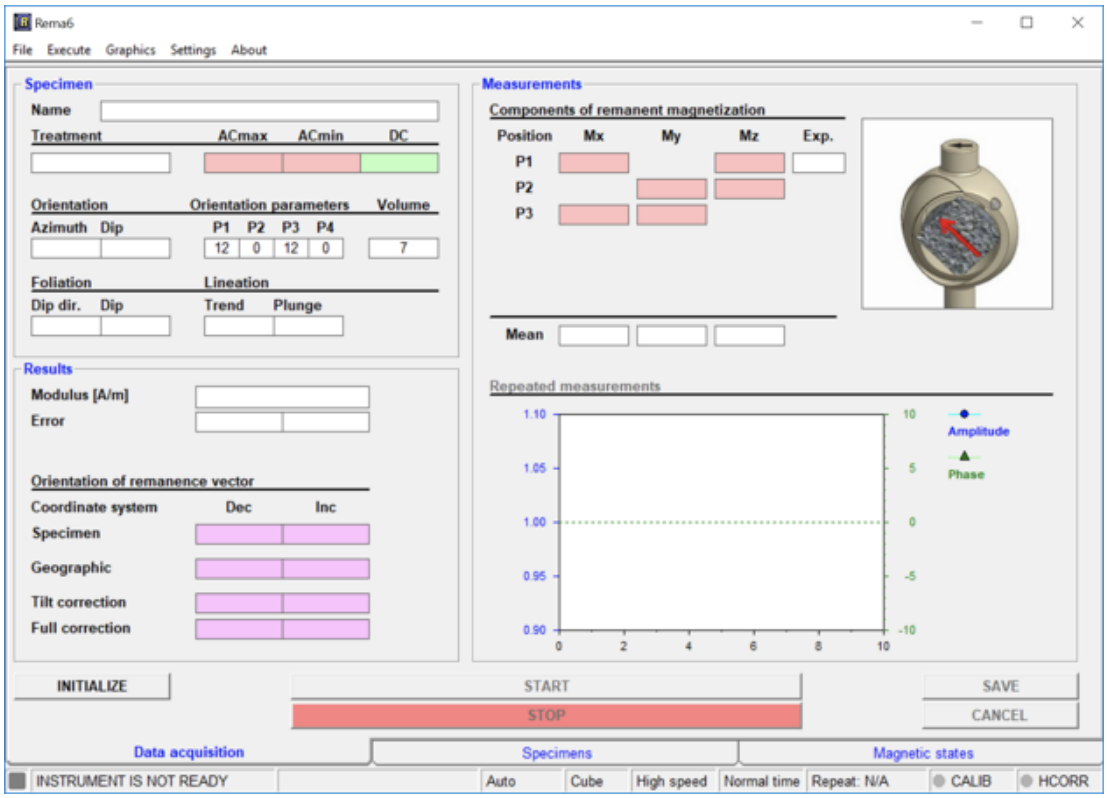

Figure 2: JR-6A Main Window before initialization.

Instrument Configuration and Initialization

1. On the top tool bar of the main JR-6A window, select **Settings > Instrument configuration.** Set the correct **Holder** and **Specimen type** (*Figure 3*)**.** Make sure the **Specimen volume** is correct; Japanese style cubes (rounded corners) are 7 cm^3 while cubes cut with the saw are 8 cm^3.
2. Select **OK**.
3. Confirm that the orientation parameters are set to 12/0/12/0 on the main window (*Figure 2*). If they are not, select **Settings** > **Orientation parameters** to set them**.**
4. Select **OK.**
5. Click the **Initialize** button in the bottom left hand corner of the window (*Figure 2*). A dialogue box will appear and go through a series of checks (*Figure 4*). Once it is complete click **OK**.
    a. If communication fails, check that you do not have more than one version of REMA6 open on the computer.

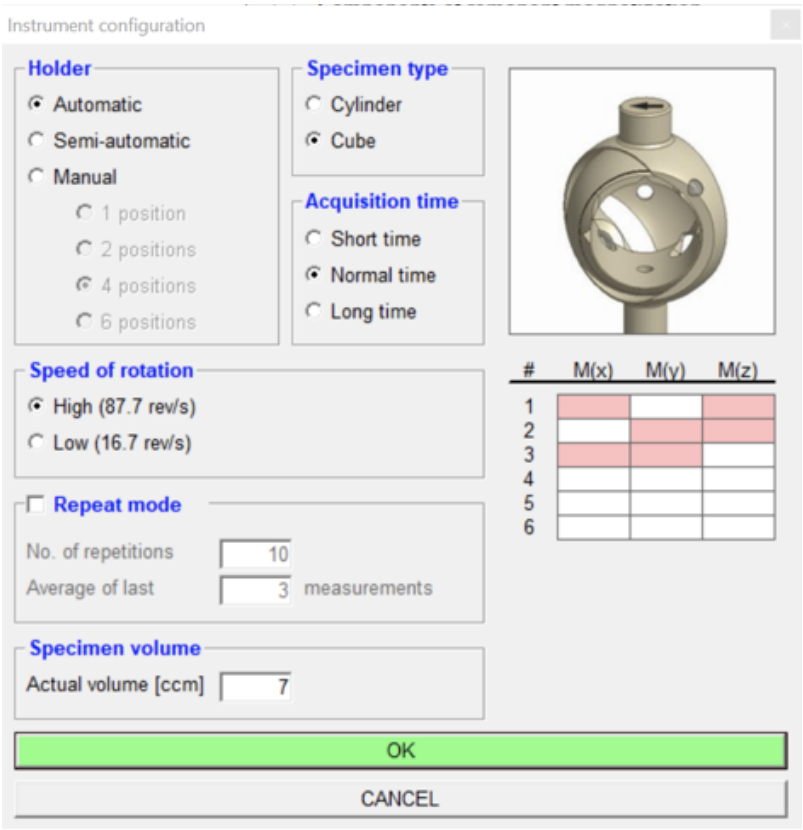

Figure 3: Instrument configuration dialogue box.

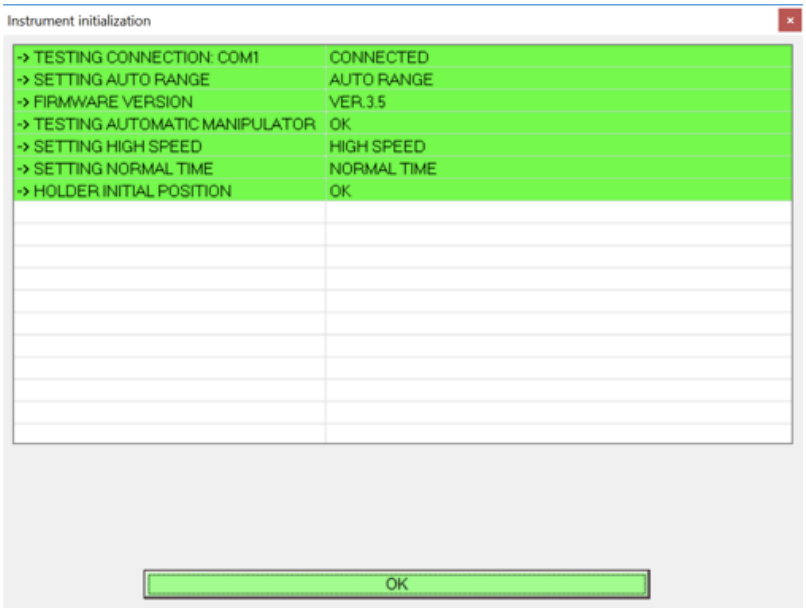

Figure 4: Instrument initialization dialogue box.

Calibrating the instrument

1. Insert the calibration standard into the holder and tighten the set screw. Center the standard in the holder by using your fingers on either side. Wiggle the standard and tighten more if necessary; it is important that the sample does not slip. Do not overtighten the screw, as it will cause the holder to break.
2. Close the coils and put on the shield cap.
3. Check the calibration standard settings by clicking **Settings> Calibration Standard.** The magnetization and volume values should match the values written on the cube. Then select **OK**.

4. Open the calibration dialog box by selecting **Execute > Calibration** (*Figure 5*)**.**
5. Select **Start**. As the standard runs, keep your hand on the spacebar. This is the kill switch/emergency stop and will need to be hit if the sample slips in the spinner and begins to scrape the side. Listen for this as the spinner operates.
    a. The displayed **Phase** and **Gain** should be the "current" values. **Gain** should be within ±15% from the nominal value for the corresponding speed; **Phase** should be ±20° from nominal. If so, click **Save**. Otherwise, redo the calibration.
6. Remove the calibration standard from the spinner. Make sure the screw head is flush with the holder or just below the edge.

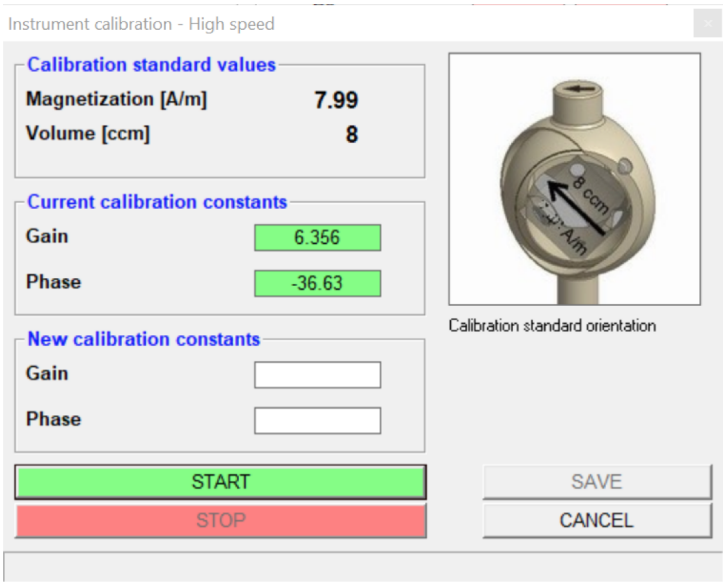

Figure 5: Calibration dialogue box.

Performing the Holder Correction

1. Click **Execute** > **Holder Correction**. The Holder Correction dialogue box will open (*Figure 6*).
2. Make sure the holder is empty, the screw is flush with the edge of the holder, the coils are closed, and the shield cap is in place.
3. Click **Start** in the dialogue box and wait for measurement to complete.
    a. There is an error associated with this process. The program tends to overflow (error E9) and then say that it is completed even when it hasn't gone through all three positions. See the appendix for help with this issue.
4. If all of the values are highlighted in green, then select **Save**. If the values are highlighted red or are blank, remeasure.

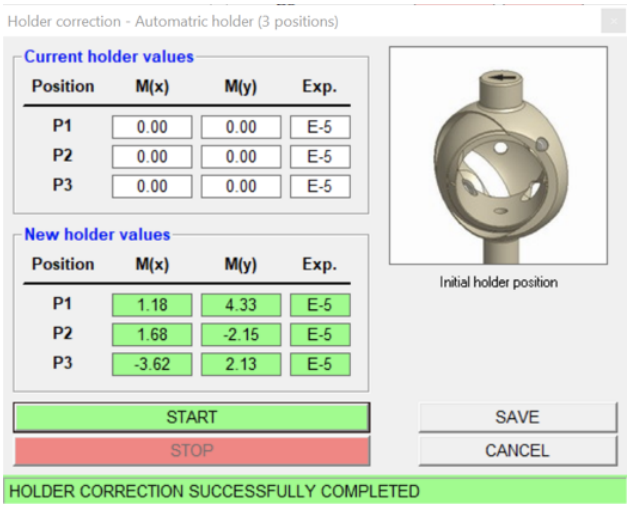

Figure 6: Holder Correction dialogue box after successful measurement.

Preparing Samples

1. For Japanese style cubes collected from a working half using the push method, no special preparation is needed, simply install the cube into the holder with the arrow pointed up and left (*Figure 7*, red arrow). An orientation correction of Azimuth=0 and Dip = 90 will be applied during sample information entry.

2. For Japanese style cubes collected from a working half using an extruder, the cube should be inserted with the arrow end first but still pointing up and to the left as shown in *Figure 8* (180 degree rotation about the Z axis).
3. For hard rock samples, there are two options for installing the cube into the holder.

Option 1 (Recommended method):

- Install the cube in the holder in the same manner as with the Japanese style cubes with the split face arrow pointed up and left and enter the orientation correction (Azimuth=0 and Dip = 90) when the samples information is entered.

Option 2:

- Draw another arrow on the face being pointed to by the “up” arrow drawn on the split plane. In *Figure 9*, the red arrow with hash marks is the arrow drawn on the split plane, and the gray pencil arrow is the arrow added to designate the positive z-axis in the spinner’s coordinates.
- Install the cube into the spinner as seen in *Figure 10*, with the added arrow pointing up and left. The reason for this is the differing coordinate systems between the JR 6A and IODP. See the figure on the side of the spinner from the Methods section of Expedition 342. The coordinate systems will be discussed further in Appendix A.
- With this option 2, there is no need for further coordinate corrections.

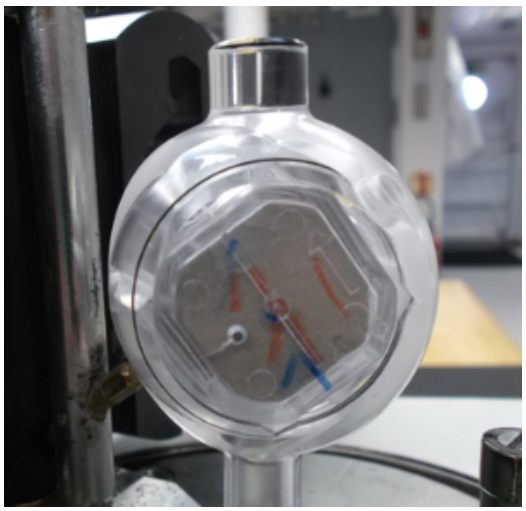

Figure 7: Japanese cube sample placement.

Figure 8: Japanese cube from extruder placement.

Figure 9: Added arrow to hard rock sample.

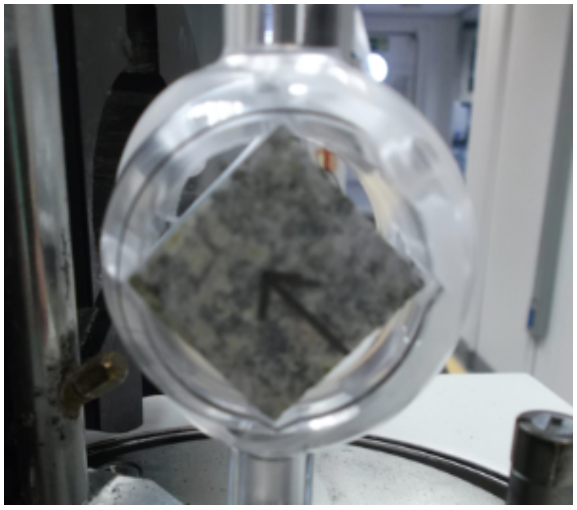

Figure 10: Hard rock sample in automatic holder of spinner.

Measuring Samples

1. Securely install the sample into the holder, close the coils, and put on the shield cap.
2. Click **File** > **New** to create a .jr6 file and to set the file path. This file path will be where the data is placed when **SAVE** is selected. Name the file appropriately – for example: 341_U1234A (Expedition_Site/Hole). Save to the folder C:\JR6Data\IN.
3. Click **New Specimen** in the bottom left corner of the window (*Figure 11*). This will prompt the New Specimen dialogue box to open (*Figure 11*).
4. Use the barcode scanner to enter the name of the sample in the Name field (sample names are truncated to 9 characters in the .jr6 file). IODP convention is to use the *Text ID* of a sample as the name.
    a. Data will upload if the name is a valid Text ID. User may manually enter the sample name if the barcode scanner is unavailable, but it must be the entire Text ID.
5. Enter the Treatment information for the cube (NRM, AFD, TD, etc.)
6. Enter the Orientation information.
    a. For Japanese cubes and hard rock cubes prepared following option 1 from the Preparing the Sample section, enter *Azimuth* = **0** and *Dip* = **90.** This will make the correction for the coordinate system discrepancy and report the data in the IODP reference frame under “geographic coordinates” in the data files.
    b. For hard rock cubes prepared following option 2 of the Preparing the Sample section, leave the orientation fields blank.
7. Select **OK** in the dialogue box. The main window will now display the updated sample information (Azimuth, Dip, Name, and Treatment) (*Figure 12*).
8. Select **Start** at the bottom of the window (*Figure 11*).
    a. During a measurement, the Stop bar at the bottom of the window or the space bar will stop a measurement immediately. Use these options if the sample comes loose in the holder.
    b. During measurements, the status of the instrument is displayed in the lower left-hand corner.
9. When the run is completed, click **Save** in the right hand bottom corner (*Figure 11*) in order to save the measurement and continue to the next specimen, or click **Start** to redo the measurement.
    a. The file will be saved to the path set by the user. If no path has been set, the Rema6 software will prompt the user for a path.

b. Three files will be written: .csv, .jr6, and .txt. These three files are necessary for data upload to LIMS. The .csv file is an IODP specific format. For further information on file formats and uploading see **Appendix B** or the **JR6 Uploader Guide.**

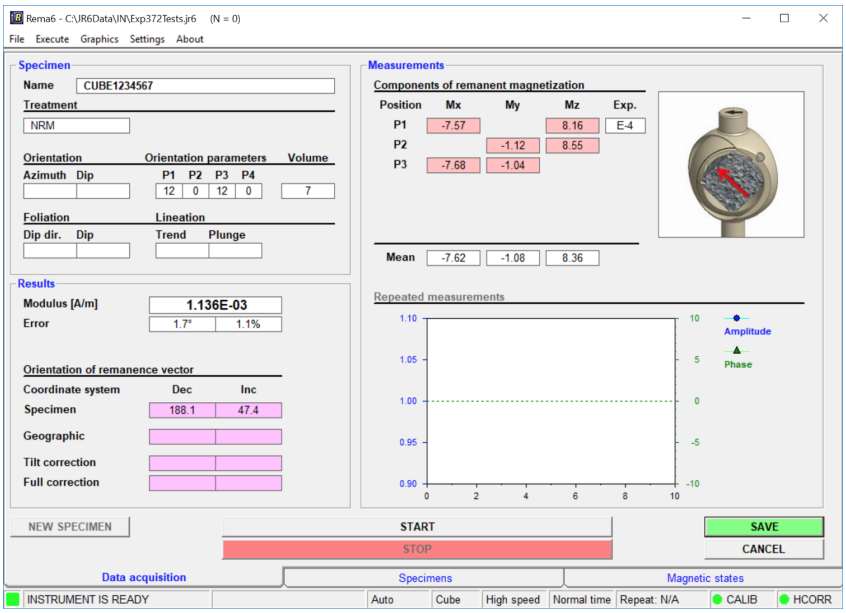

Figure 11: Main screen after sample has been run.

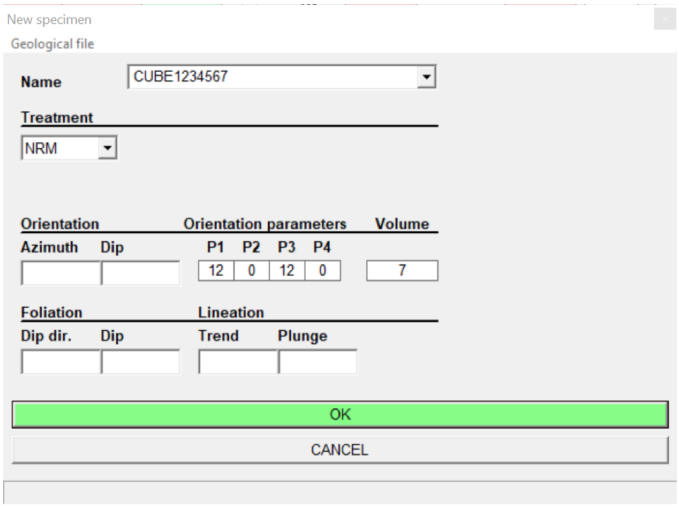

Figure 12: New Specimen dialog box.

Viewing Data in Rema6

The measurement data can be viewed under the specimens or magnetic states tabs at the bottom of the Rema6 window (*Figure 11*). Be aware that specimen names will be displayed properly (entire Text ID) when specimens are first measured and saved to the file. But if the file has been reopened, the names will be truncated (BE1234567 instead of CUBE1234567). This results in measurements for a specimen being displayed in two separate groups. The user can select **File> Open** and reopen the file to force the Rema6 software to rename and group all of the measurements for a specimen.

This issue only affects the Rema6 data viewing during measurements. The user **MUST** use the full Text ID when entering sample names. Do not manually truncate sample names in Rema6 or the upload process will be complicated.

Data Processing

IODP provides two options for processing JR-6A data: Remasoft 3.0 software and Puffin plot. To use Remasoft 3.0, export specimen files from the Rema6 main window. To use Puffin plot to process the data, download the .csv file from LIMS. An Excel macro (JR6toPuffinPlot) has been added to the JR6 PC and MAC workstation. This macro will format the LORE download file into a simple file for use within PuffinPlot. See the *Quick Start Guide to using Puffin Plot* for further details.

Note: Puffin Plot was reported to incorrectly calculate values during PCA analysis on occasion during Exp 386X.

Appendix

A.1 Holder Correction

The Rema6 program has experienced errors during holder correction measurements. *Figure A.1* displays very briefly in the middle of the correction routine, displaying an E9 overflow in the bottom of the window. Following this, the program states that it has done a successful holder correction, even though it has not gone through all three positions yet. The new holder values cells may be empty or only partially filled.

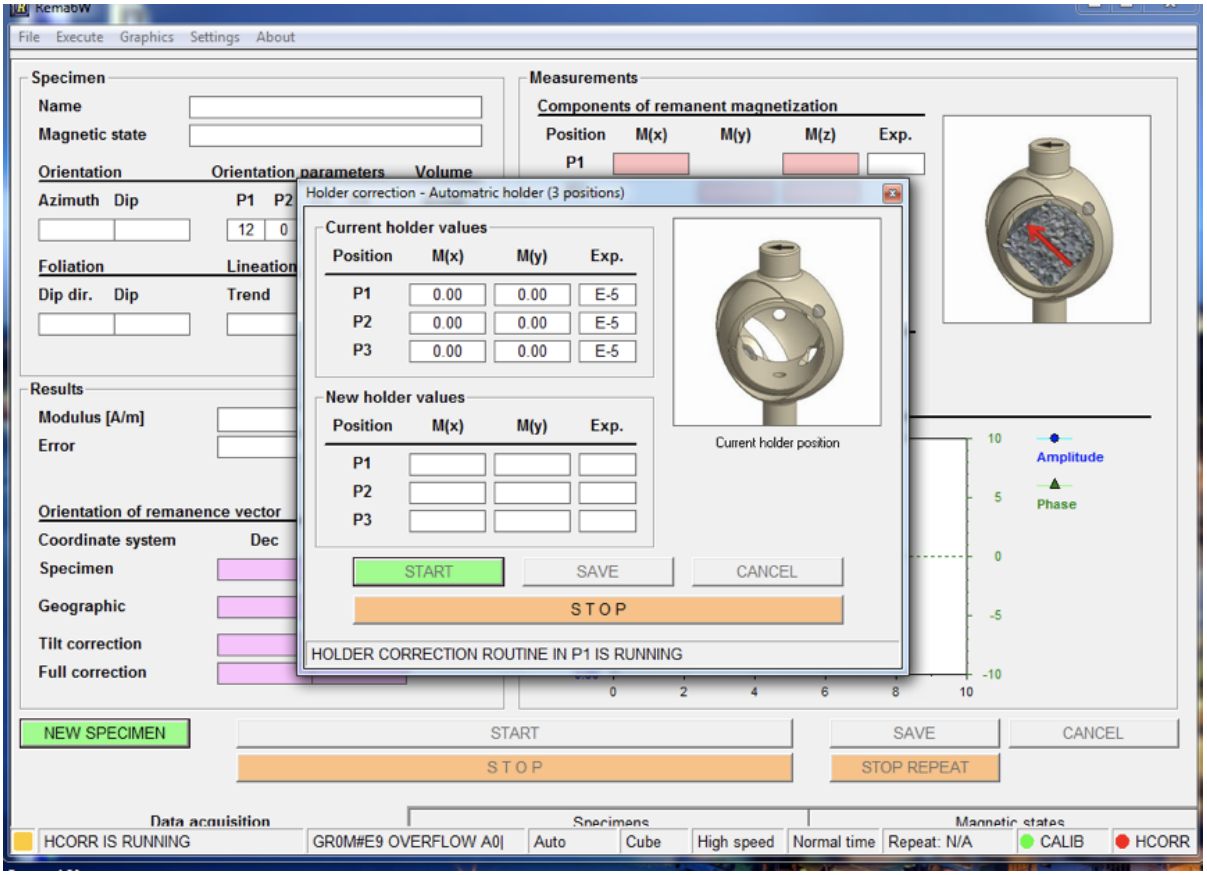

Figure A.1: E9 OVERFLOW Error.

Once the error has occurred, the holder correction measurement must be redone. Make sure the holder is clean and attempt to remeasure the holder. Agico suggests cleaning the optical system rotation screen (see directions for the JR6 screen cleaning files *here).*

The error may be related to the initial position of the holder. If the actuator moves up to adjust the holder rotation, but can not rotate the holder properly, the system may indicate an error. Make sure the holder is in the proper initial position and reattempt the holder correction measurements.

A.2 Orientation and varying coordinate systems

The JR-6A coordinate system is different from the IODP coordinate system (from Exp. 342 “Methods”):

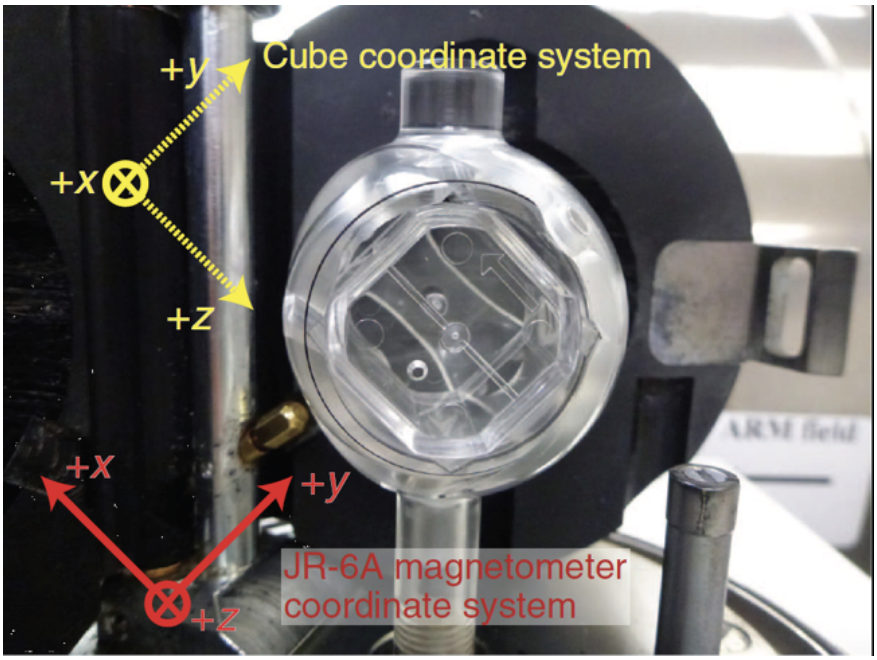

Figure A.2: Coordinate systems (Source: Exp. 342 Methods).

To convert from JR-6A coordinates to IODP coordinates, follow the directions above in Preparing the Sample and Measuring the Sample. If option 2 of Preparing the Sample is followed for hard rock cubes, the correct declination for the sample will be given in the data files under the “specimen coordinates” heading. The corrected data for Japanese cubes and hard rock cubes entered following option 1 of Preparing the Sample will be given in the data files under the “geographic coordinate” heading.

A report on orientation related issues and corrections was prepared during Exp 350 and is available *here*.

A.3 Specifications

Specifications

Cylinder Specimen Size (mm)	25.4/22
Cubical Specimen Size (mm)	20 on edge
Sensitivity (A/m)	2×10^{-6} (high speed)
Rotation Speed (rps)	High: 87.7 Low: 16.7
Measuring Range (A/m)	up to 12,500
Power	110 V/60 Hz or 220 V/50 Hz
Power Supply (dimensions/weight)	200 × 160 × 120 mm; 2.5 kg
Pick-up Unit (dimensions/weight)	290 × 130 × 310 mm; 24 kg

(Source: http://ascscientific.com/JR6.html)

B.1 Uploading JR6 data

The current REMA6 version (6.2.06) has been modified for IODP use. REMA6 will output three file types: .csv, .jr6, and .txt. These three files are necessary for data upload to the LIMS database. The .txt file and .jr6 files are standard REMA6 outputs.

The .jr6 file is the main REMA6 program file. Data is appended to the .jr6 file after **Save** is selected and samples names are truncated to nine characters. Users can reopen the .jr6 file in Rema6 at any time to add more measurements to the file or generate specimen files for use in Remasoft 3.0.

The .txt file is a simple copy of the REMA6 measurement window at the time the user selected **Save**.

The .csv file is an IODP specific file, which includes all information that is uploaded to the LIMS database. In order to generate this file the IODPMode.cfg file must be in the same directory as the main application (REMA6.exe). The default location is C:\Agico\Rema6\Rema6.exe. If this .cfg file is not in the correct location, the .csv file will not be written and the data will not upload to LIMS.

Use the MegaUploadaTron (MUT) application to upload all JR6 files. When an upload is completed the three files are copied to the archive file, but remain in the IN folder so data can be added as measurements progress. When MUT refreshes, the number of new results will be displayed in the MISC column. Automatic upload will only work when new files are added to the IN folder, not when new data is added to an already existing file. Manually select the files to upload by checking the boxes on the left (must have all three files checked).

Do not delete rows from the files after upload! The uploader references the number of lines in the file to determine if new data has been added. When lines are removed, the count is inaccurate and the data may not upload properly.

For more detailed instructions, see the **legacy JR6 Uploader Guide**.

Credits

This document originated from Word document JR-6A_QSG_374_draft.docx (see Archived Versions below for a pdf copy) that was written by G. Matson (2013-05-25) and edited by B. Novak (2017-12-27). Credits for subsequent changes to this document are given in the page history.

LIMS Component Table

ANALYSIS	TABLE	NAME	ABOUT TEXT
JR6A	SAMPLE	Exp	Exp: expedition number
JR6A	SAMPLE	Site	Site: site number
JR6A	SAMPLE	Hole	Hole: hole number
JR6A	SAMPLE	Core	Core: core number
JR6A	SAMPLE	Type	Type: type indicates the coring tool used to recover the core (typical types are F, H, R, X).
JR6A	SAMPLE	Sect	Sect: section number
JR6A	SAMPLE	A/W	A/W: archive (A) or working (W) section half.
JR6A	SAMPLE	text_id	Text_ID: automatically generated database identifier for a sample, also carried on the printed labels. This identifier is guaranteed to be unique across all samples.
JR6A	SAMPLE	sample_number	Sample Number: automatically generated database identifier for a sample. This is the primary key of the SAMPLE table.
JR6A	SAMPLE	label_id	Label identifier: automatically generated, human readable name for a sample that is printed on labels. This name is not guaranteed unique across all samples.
JR6A	SAMPLE	sample_name	Sample name: short name that may be specified for a sample. You can use an advanced filter to narrow your search by this parameter.
JR6A	SAMPLE	x_sample_state	Sample state: Single-character identifier always set to "W" for samples; standards can vary.
JR6A	SAMPLE	x_project	Project: similar in scope to the expedition number, the difference being that the project is the current cruise, whereas expedition could refer to material/results obtained on previous cruises
JR6A	SAMPLE	x_capt_loc	Captured location: "captured location," this field is usually null and is unnecessary because any sample captured on the JR has a sample_number ending in 1, and GCR ending in 2
JR6A	SAMPLE	location	Location: location that sample was taken; this field is usually null and is unnecessary because any sample captured on the JR has a sample_number ending in 1, and GCR ending in 2
JR6A	SAMPLE	x_sampling_tool	Sampling tool: sampling tool used to take the sample (e.g., syringe, spatula)
JR6A	SAMPLE	changed_by	Changed by: username of account used to make a change to a sample record
JR6A	SAMPLE	changed_on	Changed on: date/time stamp for change made to a sample record
JR6A	SAMPLE	sample_type	Sample type: type of sample from a predefined list (e.g., HOLE, CORE, LIQ)
JR6A	SAMPLE	x_offset	Offset (m): top offset of sample from top of parent sample, expressed in meters.
JR6A	SAMPLE	x_offset_cm	Offset (cm): top offset of sample from top of parent sample, expressed in centimeters. This is a calculated field (offset, converted to cm)
JR6A	SAMPLE	x_bottom_offset_cm	Bottom offset (cm): bottom offset of sample from top of parent sample, expressed in centimeters. This is a calculated field (offset + length, converted to cm)
JR6A	SAMPLE	x_diameter	Diameter (cm): diameter of sample, usually applied only to CORE, SECT, SHLF, and WRND samples; however this field is null on both Exp. 390 and 393, so it is no longer populated by Sample Master
JR6A	SAMPLE	x_orig_len	Original length (m): field for the original length of a sample; not always (or reliably) populated

JR6A	SAMPLE	x_length	Length (m): field for the length of a sample [as entered upon creation]
JR6A	SAMPLE	x_length_cm	Length (cm): field for the length of a sample. This is a calculated field (length, converted to cm).
JR6A	SAMPLE	status	Status: single-character code for the current status of a sample (e.g., active, canceled)
JR6A	SAMPLE	old_status	Old status: single-character code for the previous status of a sample; used by the LIME program to restore a canceled sample
JR6A	SAMPLE	original_sample	Original sample: field tying a sample below the CORE level to its parent HOLE sample
JR6A	SAMPLE	parent_sample	Parent sample: the sample from which this sample was taken (e.g., for PWDR samples, this might be a SHLF or possibly another PWDR)
JR6A	SAMPLE	standard	Standard: T/F field to differentiate between samples (standard=F) and QAQC standards (standard=T)
JR6A	SAMPLE	login_by	Login by: username of account used to create the sample (can be the LIMS itself [e.g., SHLFs created when a SECT is created])
JR6A	SAMPLE	login_date	Login date: creation date of the sample
JR6A	SAMPLE	legacy	Legacy flag: T/F indicator for when a sample is from a previous expedition and is locked/uneditable on this expedition
JR6A	TEST	test changed_on	TEST changed on: date/time stamp for a change to a test record.
JR6A	TEST	test status	TEST status: single-character code for the current status of a test (e.g., active, in process, canceled)
JR6A	TEST	test old_status	TEST old status: single-character code for the previous status of a test; used by the LIME program to restore a canceled test
JR6A	TEST	test test_number	TEST test number: automatically generated database identifier for a test record. This is the primary key of the TEST table.
JR6A	TEST	test date_received	TEST date received: date/time stamp for the creation of the test record.
JR6A	TEST	test instrument	TEST instrument [instrument group]: field that describes the instrument group (most often this applies to loggers with multiple sensors); often obscure (e.g., user_input)
JR6A	TEST	test analysis	TEST analysis: analysis code associated with this test (foreign key to the ANALYSIS table)
JR6A	TEST	test x_project	TEST project: similar in scope to the expedition number, the difference being that the project is the current cruise, whereas expedition could refer to material/results obtained on previous cruises
JR6A	TEST	test sample_number	TEST sample number: the sample_number of the sample to which this test record is attached; a foreign key to the SAMPLE table
JR6A	RESULT	offset (cm)	Top offset (cm): position of the measurement expressed in cm from top of section
JR6A	CALCULATED	Top depth CSF-A (m)	Top depth CSF-A (m): position of observation expressed relative to the top of the hole.
JR6A	CALCULATED	Bottom depth CSF-A (m)	Bottom depth CSF-A (m): position of observation expressed relative to the top of the hole.
JR6A	RESULT	inclination	RESULT Inclination (deg.): inclination in specimen coordinates computed from JR6 magnetic moment data
JR6A	RESULT	declination	RESULT Declination (deg.): declination in specifmen coordinates computed from JR6 magnetic moment data
JR6A	RESULT	geo_inclination	RESULT Inclination (geographic) (deg.): inclination in geographic coordinates computed from JR6 magnetic moment data with correction applied for entered azimiuth and dip
JR6A	RESULT	geo_declination	RESULT Declination (geographic) (deg.): declination in geographic coordinates computed from JR6 magnetic moment data with correction applied for entered azimiuth and dip
JR6A	RESULT	intensity	RESULT Total intensity (A/m): total intensity as calculated by Rema6 software
JR6A	RESULT	mag_moment_x	RESULT magnetic moment x (Am^2): raw magnetic moment measured by the JR6 for the x-axis
JR6A	RESULT	mag_moment_y	RESULT magnetic moment y (Am^2): raw magnetic moment measured by the JR6 for the y-axis
JR6A	RESULT	mag_moment_z	RESULT magnetic moment z (Am^2): raw magnetic moment measured by the JR6 for the z-axis
JR6A	RESULT	treatment_type	RESULT treatment type: type of treament applied to the discrete specimen (e.g., A/F demag, NRM)
JR6A	RESULT	treatment_value	RESULT treatment value (unit varies): value of the treatment; may be in mT, deg. C, or other units)
JR6A	RESULT	azimuth_specimen	RESULT azimuth (deg.): directional value entered by the user at the time of measurement: horizontal angle
JR6A	RESULT	dip_specimen	RESULT dip (deg.): directional value entered by the user at the time of measurement: vertical angle
JR6A	RESULT	orient_parm_p1	RESULT orientation parameter P1: clock value of the orientation of the fiducial mark drawn on the front side of the cylinder. Standard JRSO value = 12
JR6A	RESULT	orient_parm_p2	RESULT orientation parameter P2 (deg.): P2 = 0 if the dip of the frontal side (psi1) is measured; 90 if the plunge of the cylinder axis (psi2) is measured. Standard JRSO value = 0

JR6A	RESULT	orient_parm_p3	RESULT orientation parameter P3: clock value of the direction which is measured in the field (visualize by arrow, which need not neccesarily be drawn). Standard JRSO value = 12
JR6A	RESULT	orient_parm_p4	RESULT orientation parameter P4 (deg.): P4 = 0 means that azimuth of dip and dip of mesoscopic foliation are measured; 90 means that strike (right oriented) and dip are measured. Standard JRSO value = 0
JR6A	RESULT	azimuth_file	RESULT foliation plane azimuth of dip (deg.): the azimuth of the dip of the foliation plane; will be populated with 0 unless user enters required information in JR6 software
JR6A	RESULT	dip_file	RESULT foliation plane dip (deg.): the dip of the foliation plane; will be populated with 0 unless user enters required information in JR6 software
JR6A	RESULT	lineation_trend	RESULT lineation trend (deg.): the direction of a line on the horziontal plane; will be populated with 0 unless user enters required information in JR6 software
JR6A	RESULT	lineation_plunge	RESULT lineation plunge (deg): the plunge of a line on the vertical plane; will be populated with 0 unless user enters required information in JR6 software
JR6A	RESULT	precision_pct	RESULT precision (%): relative percent precision for the measurement vector in percent
JR6A	RESULT	precision_deg	RESULT precision (deg.): precision for the measurement vector in degrees
JR6A	SAMPLE	sample_type	SAMPLE sample type: lookup of the sample type from the SAMPLE table for this sample (e.g., CYL or CUBE)
JR6A	RESULT	run_csv_asman_id	RESULT raw data csv file ASMAN_ID: serial number of ASMAN link for the raw data file in .CSV format
JR6A	RESULT	run_csv_filename	RESULT raw data csv filename: file name of raw data file in .CSV format
JR6A	RESULT	run_txt_asman_id	RESULT raw data txt file ASMAN_ID: serial number of ASMAN link for the raw data file in .TXT format
JR6A	RESULT	run_txt_filename	RESULT raw data txt filename: file name of raw data file in .TXT format
JR6A	RESULT	run_jr6odp_asman_id	RESULT raw data JR6ODP file ASMAN_ID: serial number of ASMAN link for the raw data file in .JR6ODP format
JR6A	RESULT	run_jr6odp_filename	RESULT raw data JR6ODP filename: file name of raw data file in .JR6ODP format
JR6A	RESULT	run_dat_asman_id	RESULT raw data dat file ASMAN_ID: serial number of ASMAN link for the raw data file in .DAT format
JR6A	RESULT	run_dat_filename	RESULT raw data dat filename: file name of raw data file in .DAT format
JR6A	RESULT	run_jr6_asman_id	RESULT raw data JR6 file ASMAN_ID: serial number of ASMAN link for the raw data file in .JR6 format
JR6A	RESULT	run_jr6_filename	RESULT raw data JR6 filename: file name of raw data file in .JR6 format
JR6A	RESULT	Timestamp (UTC)	RESULT upload timestamp: upload date/time stamp when the measurement was uploaded to LIMS
JR6A	TEST	Instrument	TEST instrument: instrument entry from the TEST table
JR6A	SAMPLE	Text ID	SAMPLE Text_ID: lookup of the sample's text_id from the sample table
JR6A	TEST	Test No.	TEST test number: automatically generated database identifier for a test record. This is the primary key of the TEST table. (This is a repeat of the test number field above.)
JR6A	SAMPLE	sample description	SAMPLE comment: contents of the SAMPLE.description field, usually shown on reports as "Sample comments"
JR6A	TEST	test test_comment	TEST comment: contents of the TEST.comment field, usually shown on reports as "Test comments"
JR6A	RESULT	result comments	RESULT comment: contents of a result parameter with name = "comment," usually shown on reports as "Result comments"

Archived Versions

- JR-6A Quick Start Guide v2018-10-22.pdf: An exported PDF version of this wiki page as of 2018-10-22.
- JR-6A Quick Start Guide v2018-10-20.pdf: An exported PDF version of this wiki page as of 2018-10-20.
- JR-6A_QSG_374_draft.pdf: A PDF version of the JR-6A Quick Start Guide that was edited on Expedition 372, reviewed on Expedition 374, and is superseded by this wiki page.
- JR-6A_QSG_exp378.pdf: PDF version of the JR-6A Wuick Start Guide as of 2020-02-24