

EM1 Test & Calibration Process

Testing tools needed :

- USB A-B Cable



- MacBook Air (malletSTATION test computer) with v6.4 calibration software installed + Sysex Librarian



- Sysex Librarian software with latest Malletstation FW .syx file (malletStation_v1.0.73.syx as of 11-26-19)
- Calibration Jig



Initial Setup :

(note - this step only needs to be performed once, and verified at the start of a calibration session)



- With the pressure switch closed - adjust the **Precision Regulator** (pictured above) to **8psi** (as seen with the manometer)



- This setting can be locked on the regulator, and adjusted as necessary to maintain this pressure of **8psi** in the final step of calibration.

1. Setup

Open malletSTATION test software CalibrateWithAverageLows_v6.4

The screenshot displays the malletSTATION test software interface. At the top, there is a grid of 41 sensor data points, each represented by a small card with four rows of values: 'avg pressure', 'tare', 'avg-tare', and 'live value'. The values are mostly '999' or '999.0'. Below the grid is a control panel with a red header 'SET THESE FIRST' containing a 'Serial Number' field (EM1000166) and a 'factory location' dropdown (RSP). The main control area has six numbered steps: 1. Scan for devices (with a 'malletStation' dropdown), 2. Check version info (Bootloader Version: 1.0.1 ✓, Firmware Version: 1.0.69 ✓), 3. Start node script, 4. Verify Bladder Calibration Data Cleared (Bladder is calibration cleared. Can proceed), 5. Capture resting values, and 6. Calibrate (with a 'RESET TEST' button). A red button labeled 'Close / Lock Calibration Jig' is positioned between steps 4 and 5. At the bottom, an 'excursion threshold' is set to 50. On the right side, there are two large circular buttons labeled 'Pass' and 'Fail'.

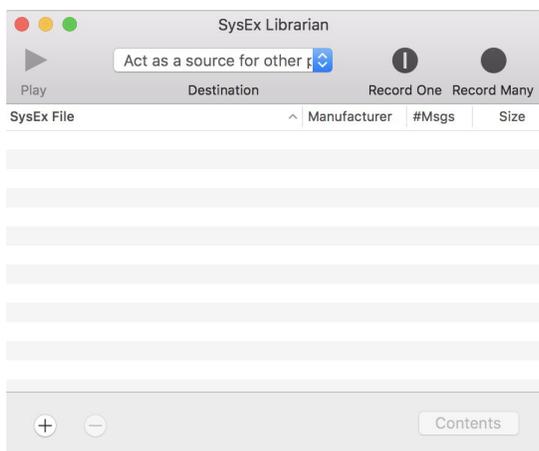
Load malletSTATION into bladder test jig

- Plug in USB cable to malletSTATION and test computer

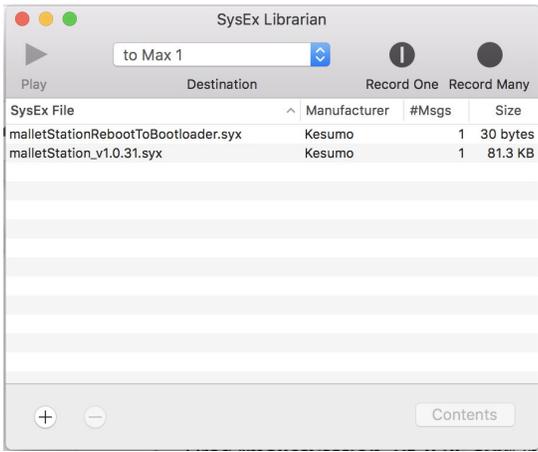


2. Firmware Update

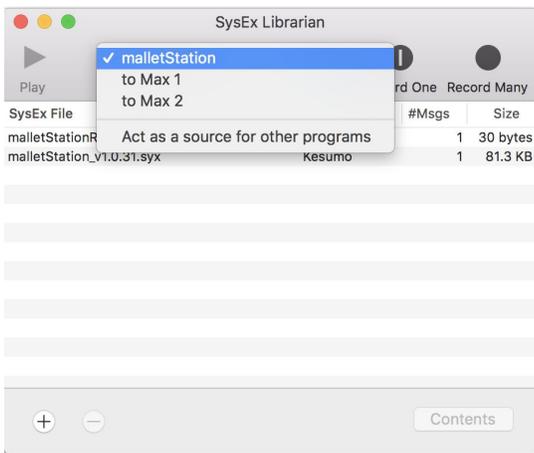
Launch Sysex Librarian



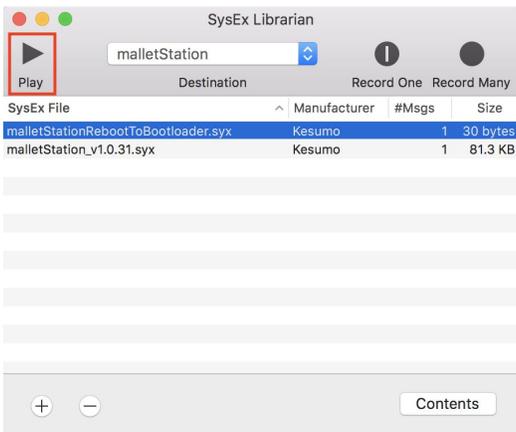
- Drag "malletStationRebootToBootloader.syx" into the Sysex Librarian window
- Drag "malletStation_v1.0.73.syx" into the Sysex Librarian window



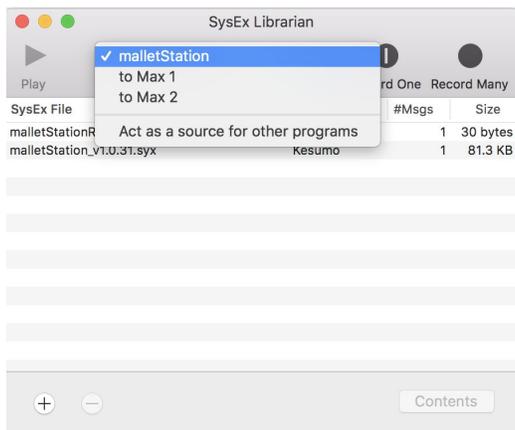
- Select “malletSTATION” as the destination device



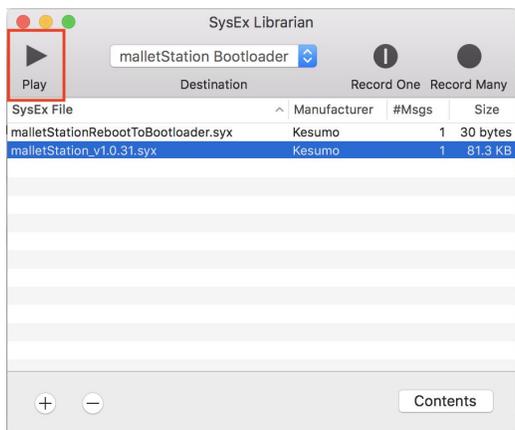
- Select “malletStationRebootToBootloader.syx” in the Sysex Librarian window and press the “Play” button



- Select “malletSTATION Bootloader” as the destination device

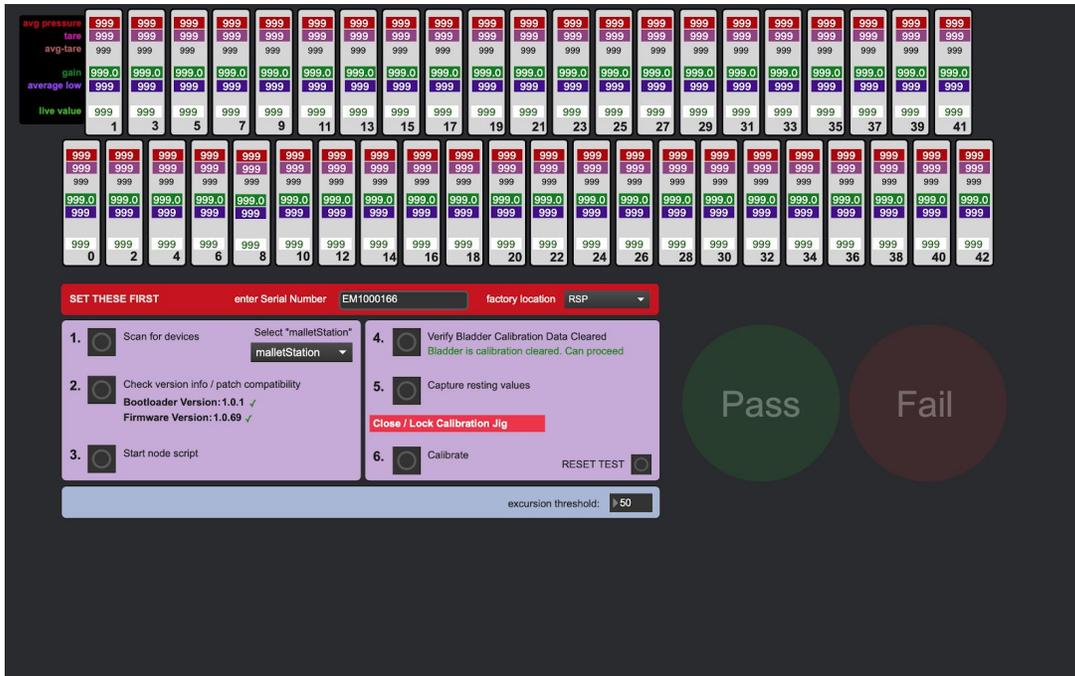


- Select “malletStation_v1.0.73.syx” in the Sysex Librarian window and press the “Play” button



3. Calibrate

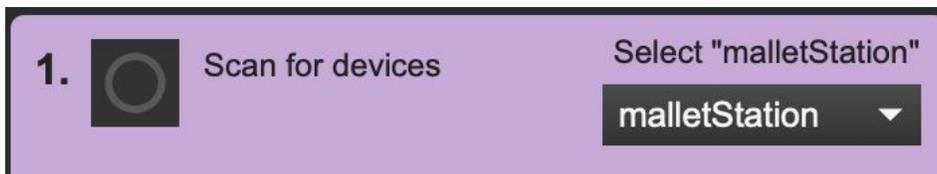
Connect malletSTATION to **EM1-Calibration-v6.5.app** software



1. Enter the serial number of the unit being calibrated and make sure the correct factory location is selected :



2. Press the “**Scan for Devices**” button (this will automatically select **Malletstation** from the drop down menu)



3. Press the **Check version info** button to confirm successful firmware update



- The resting values of the unit have been captured - if successful the message shown below in green will appear

5.



Capture resting values

Resting values Captured. Can proceed

- If this message is shown close and lock the calibration jig and proceed to **Step 6**

- Switch the pressure valve to fill



7. Once the bladder has filled, press the **Calibrate** button

Confirm that the pressure gauge indicates 0.8psi when the switch is set to **Fill**.

Press the **Calibrate** button :

6.



Calibrate

- The pressure will be read by the Malletstation and the values will be sent to the Calibration software.
- If all the sensors are detected as reporting correctly then the calibration values will be sent to the unit and the software will display **PASS**.

The screenshot displays a calibration software interface. At the top, there is a grid of 42 sensor data points, each represented by a small table with four rows: 'avg pressure', 'tare', 'avg-tare', and 'live value'. The values are mostly '999' or '999.0'. Below the grid is a configuration panel with a red header 'SET THESE FIRST'. It includes a text input for 'enter Serial Number' (EM10000007) and a dropdown for 'factory location' (RSP). The main panel contains six numbered steps:

- Scan for devices (with a 'malletStation' dropdown)
- Check version info / patch compatibility (showing 'Bootloader Version: 1.0.1' and 'Firmware Version: 1.0.73' with checkmarks)
- Start node script
- Verify Bladder Calibration Data Cleared (with green text: 'Bladder is calibration cleared. Can proceed')
- Capture resting values (with a red 'Close / Lock Calibration Jig' button)
- Calibrate (with a 'RESET TEST' button)

 At the bottom right, there are two large circular indicators: a green one labeled 'Pass' and a grey one labeled 'Fail'. An 'excursion threshold' slider is set to 50.

- (If **FAIL** displays the unit has one or more boards which contain fabric that has insufficient range and will need to be rebuilt with new fabric)

