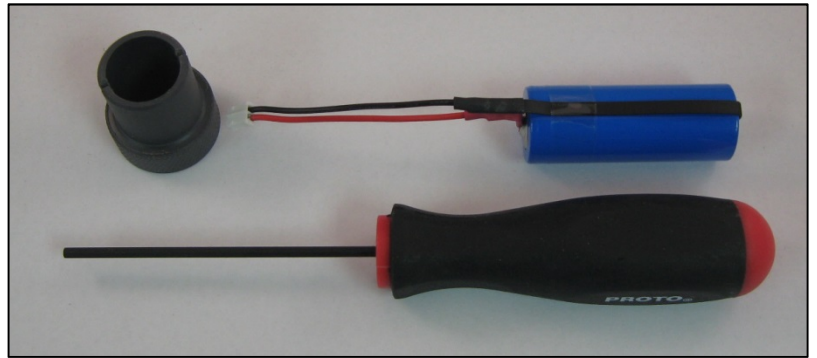


# MAT-1 Battery Replacement Tool Kit

The *MAT-1 Battery Replacement Tool Kit* contains the items that are required to replace the battery in a MAT-1 Data Logger. The kit also includes one replacement battery to get you started. Additional batteries may be purchased separately.



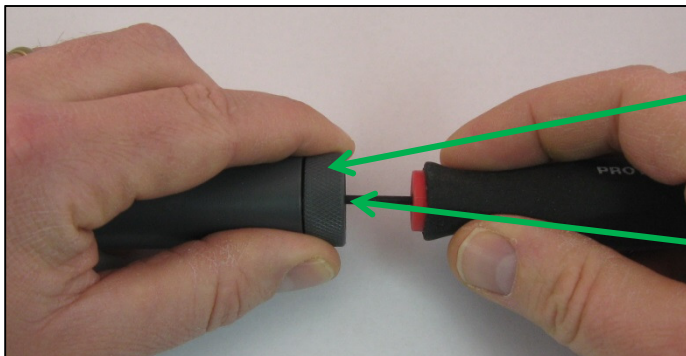
## Package Contents

- Circuit Board Holding Tool
- 3/32" Hex Driver
- Replacement "A" size lithium battery

**Caution:** This logger is sensitive to static electricity when removed from the logger housing. Hold the circuit board by the edges and avoid working on indoor carpet or in other static prone environments.

## Instructions

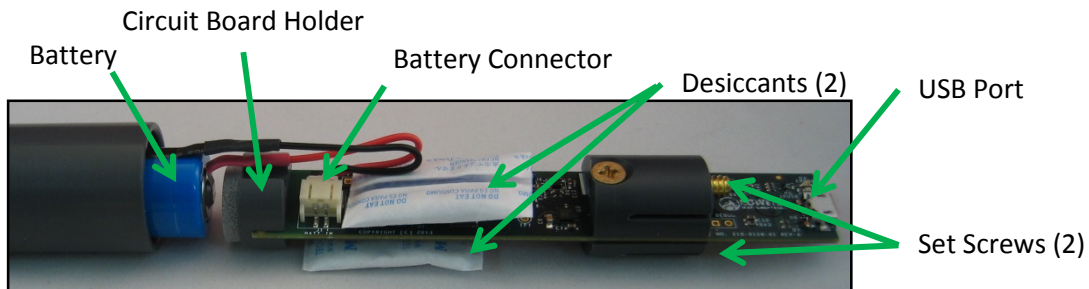
1. Remove the end cap of the logger, connect a USB cable and use MAT Logger Commander to stop the logger. Failure to stop a running logger will result in data loss.
2. Slide the Circuit Board Holding Tool into the end of the logger. Aligning the slot in the tool with the circuit board.



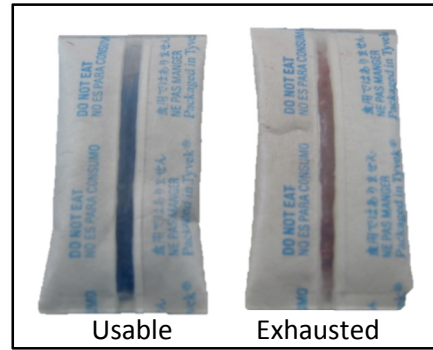
Align Circuit Board Holding Tool and insert fully into logger housing.

Carefully use the Hex Driver to loosen set screws located inside the logger (not shown).

3. Locate the two hex screws inside the logger and insert the hex driver into one of them.
4. Loosen, but do not remove the screw. Repeat on the other side.
5. The board should now be loose within the housing. Gently tap the housing and slide the circuit board and battery out of the logger.



6. Disconnect the old battery by gently pulling on the battery leads.
7. Inspect the desiccant. Replace or refresh the desiccant if not bright blue. To refresh desiccant, warm it with an electric toaster oven or hot plate at 100 C (210 F) for 20-30 minutes.
8. The logger must completely power down for a clean restart. Wait at least 3 minutes between disconnecting the old battery and reconnecting the new battery for the on-board capacitors to discharge.
9. Connect the new battery by gently pushing the polarized connector into the battery socket. Verify that the green and red LED's flash three times. If not, disconnect the battery, wait 3 minutes and repeat.
10. Carefully slide the battery, circuit board holder, desiccant and circuit board back into the logger housing. It may take a couple of attempts to get the hang of it. Do not use force. Gently push the board all the way into the housing using the Circuit Board Holding Tool.
11. Use the hex driver to tighten the hex screws. Alternate sides and do not over torque. (Use four fingers, not your whole arm!)
12. Reconnect the USB cable, open the Logger Status window in MAT Logger Commander and open the COM port.



Verify the logger's clock reset

Verify the battery status is "Good"

Spot check sensor readings

The screenshot shows the MAT Logger Commander interface with the following sections:

- Port Control:** COM: 29, Open Port, Close Port, Find Logger.
- Logging Control:** Start Logging, Stop Logging.
- Status:** Stopped (red bar), 3.68 GB of 3.69 GB remaining, **Logger Time: 01-Jan-2000 12:00:08** (yellow bar), Computer Time: 28-Jan-2014 10:07:45, Sync Logger to Computer Clock.
- Real-time Data:**

Accel X	-0.8227 g <sub>0</sub>
Accel Y	-0.5425 g <sub>0</sub>
Accel Z	0.1050 g <sub>0</sub>
Mag X	608 mG
Mag Y	409 mG
Mag Z	-332 mG
Temperature	19.8401 °C
Battery	3.7080 V
- Logger Information:**
  - Serial Number: 1308026
  - Firmware Version: 1.0.118
  - Model Number: MAT-1
  - Battery: Good
  - Deployment number: 165

13. Verify that the “Logger Time” has reset to the year 2000, that the battery status is “Good” and that the “Real-time Data” is updating. If any of them are not true, then the logger was not fully reset and the logger must be power-cycled again. Go back to step 2 and increase the time between disconnecting and reconnecting the battery.
14. You are done! Reset the logger’s clock and continue using your MAT-1 Data Logger.

## Support

Additional information is available on the Lowell Instruments web site. Please see:

<http://www.lowellinstruments.com/Support> for the most up-to-date support information.

**Warning:** *This logger contains a lithium battery. Do not cut open, incinerate, heat above 85°C (185°F), or recharge the lithium battery. The battery may explode if the logger is exposed to extreme heat or conditions that could damage or destroy the battery case. Do not dispose of loggers or batteries in fire. Do not expose the contents of the batteries to water. Dispose of the batteries according to local regulations for lithium batteries.*

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