

Revision 1.0
www.r00li.com

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Preparing the battery for use

Before you can use this battery in your Aibo you need to install lithium cells into the case. These can be installed similarly to any other batteries into any battery operated product. Install the cells as indicated by the stickers inside the case - positive terminal of the battery should be connected to the + side of the battery case (metallic bump), negative terminal should be connected to the - side of the case (spring). **Be very careful with cell orientation. Unlike consumer products this case does not include any reverse polarity protection. Orienting the cell incorrectly may permanently damage/destroy the battery case.**

Once the cells are installed you need to insert the battery into your Aibo and connect it to a charger (either charging station or dongle). This will jump start the battery and should allow it to work. **Note that without doing this the Aibo will not power on.**

You can now either continue charging your Aibo until the charging stops (indicated by orange LED turning off on your Aibo or your charging station indicating full charge) or disconnect it immediately and power it on.

Note that new lithium cells are usually shipped empty and may need to be charged before the Aibo will power on.



Battery with installed 18500 lithium cells

AIBO ERS-31X/ERS-7 REPLACEMENT BATTERY INSTRUCTIONS

Troubleshooting

Aibo will not power on (no LED, no sound):

The battery has not been jump started or the cells are completely empty. Connect the Aibo to a charger and ensure that the battery is charging (orange LED, station indicating charge). Wait at least 30 minutes or until charging is complete. If this does not resolve the problem, remove and reinstall the battery a few times.

Aibo will not power on (sad tune):

The battery is not communicating properly with the Aibo. Remove the battery from the Aibo and immediately re-insert it again. Try powering on Aibo again. If this did not help try this procedure a few times. If this does not resolve the problem try connecting the Aibo to the charger and charge the battery for at least 30 minutes, then try powering it on again.

Other issues/if this does not help:

Contact me at roli.r00li@gmail.com and I will try to find a solution. See my website www.r00li.com for other contact details.

Lithium cell selection and runtime information

In order for the Aibo to work correctly you need to select correct lithium cells. The case uses two standard 18500 (flat top) lithium ion cells. The recommend cell capacity is 2000mAh and the cells should be able to provide at least 4A of constant current (or more).

Recommended cells are Vapcell ICR18500 which have a 2000mAh capacity and can provide 5A of constant current. *Expected runtime with these cells is about 2 hours for ERS-31x and about 1 hour for ERS-7.* Website: www.vapcelltech.com/h-pd-48.html

While Panasonic NCR18500A cells are from a quality manufacturer they do not have sufficient current capacity. They should work but expect reduced runtime and decreased cell lifetime. You should avoid these (if possible) if running an ERS-7.

It is highly recommended that once cells are installed you no longer remove them from the case until they are dead (not discharged) and you wish to replace them. This is due to the fact that cell calibration data is stored in RAM that gets erased when battery loses power.

Upon installing cells into the case you may need to perform one or two charge/discharge cycles (completely charging and discharging the battery) before Aibo will correctly indicate discharged battery (voice prompt on ERS-7, charging pose on ERS-31x). Until then Aibo may suddenly collapse (and not save data) when battery is discharged. Additionally the runtime will usually stabilise after about 10 charge cycles. Until then you may see lower than expected runtime.