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**WARNING**

All batteries store high current. Be careful not to short across the terminals with anything, including jewellery such as rings, wrist watches, and necklaces, tools etc. You can wrap insulation tape around a ring if you can't remove it, or around the exposed area of a spanner, socket etc.

**When 100% State of Charge isn't**

One of the wonderful things about lithium is that it is not necessary to bring your battery back to 100% every day. As long as you're more or less replacing the power you use and you're not getting too low in battery capacity, State of Charge or voltage, you can continue this way for quite a while.

But, the problem with *not* getting back to 100% is that your Victron battery monitor will slowly get out of whack. It will tell you that you have a certain percentage of charge left, but when you try to use it, the system shuts down or your inverter screams at you and refuses to run.

If this happens, take a look at the Junsis and see what the voltage is in each cell.



Your T1 Lithium control system will isolate your battery, or it will stop charging your battery, within the following voltage range:

Reading from	Measuring	High	Action	Low	Action
Junsi	Cell voltage	3.6V	Stop all charging	2.8V	Isolate the battery
Junsi	Battery voltage	14.4V	Stop all charging	11.8V	Isolate the battery
Victron	SOC	100%		20%	Warning alarm and flashing of the Victron BMV screen
				5%	Warning alarm and flashing of the Victron BMV screen
Victron	Voltage	14.6V		11.6V	Warning alarm and flashing of the Victron BMV screen

If you've been having extended poor solar and the battery doesn't get the chance to reach a true 100% SOC and stay there for a while (anywhere up to several hours), the SOC reading on the Victron battery monitor will gradually become out of synch with true 100%.

The upshot of this is that roughly once a month, your battery needs to take in as much charge as the control system will allow. That may be whilst plugged into mains charging, a really good solar day, or driving and charging from a DC to DC charger.

This topic has also been covered in **Correcting an out of balance cell** in a slightly different way that may make more sense.

### **VIBRATION: The bane of RV travelling**

There isn't a road on the planet that doesn't cause some vibration in a vehicle. In a caravan being towed behind a vehicle, that vibration is amplified. Travel in the Australian outback (or even a lot of roads less than a highway) and the vibration problem gets worse.



## Caring for your system

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From time to time, particularly after a rough trip, do a visual inspection for anything that looks like it has got hot – ie, the cable insulation looks discoloured, has a strange shape or bulge.



**Make sure you don't have a watch or any jewellery on when touching any part of your system, and touch only one thing at a time.**

Touch the large cable coming out of your inverter, mains charger, DC to DC charger, the T1 Lithium control box. Large cable is meant to carry large current, and these are the cables that are going to cause the most damage if they are loose or damaged.

**You're feeling for heat:** build-up of heat is an indicator that a connection is coming loose. It's an unavoidable consequence of shaking a house on wheels over long distances. Tighten that connection, being careful not to lay a tool between any bolts or connectors.

**An infrared thermometer is an excellent tool to do this** if you're at all nervous about touching electrical cables and it's also handy for measuring the temperature of your axles, tyres etc, not to mention the roast lamb on the camp fire. Feel or measure the temperature of each terminal of the battery and near any connectors that you can see.



All documentation is available on our web site:  
<http://www.t1lithium.com.au/downloads.html>