



Australian Warranty and Service Guidelines and Policy

Victron Energy B.V.

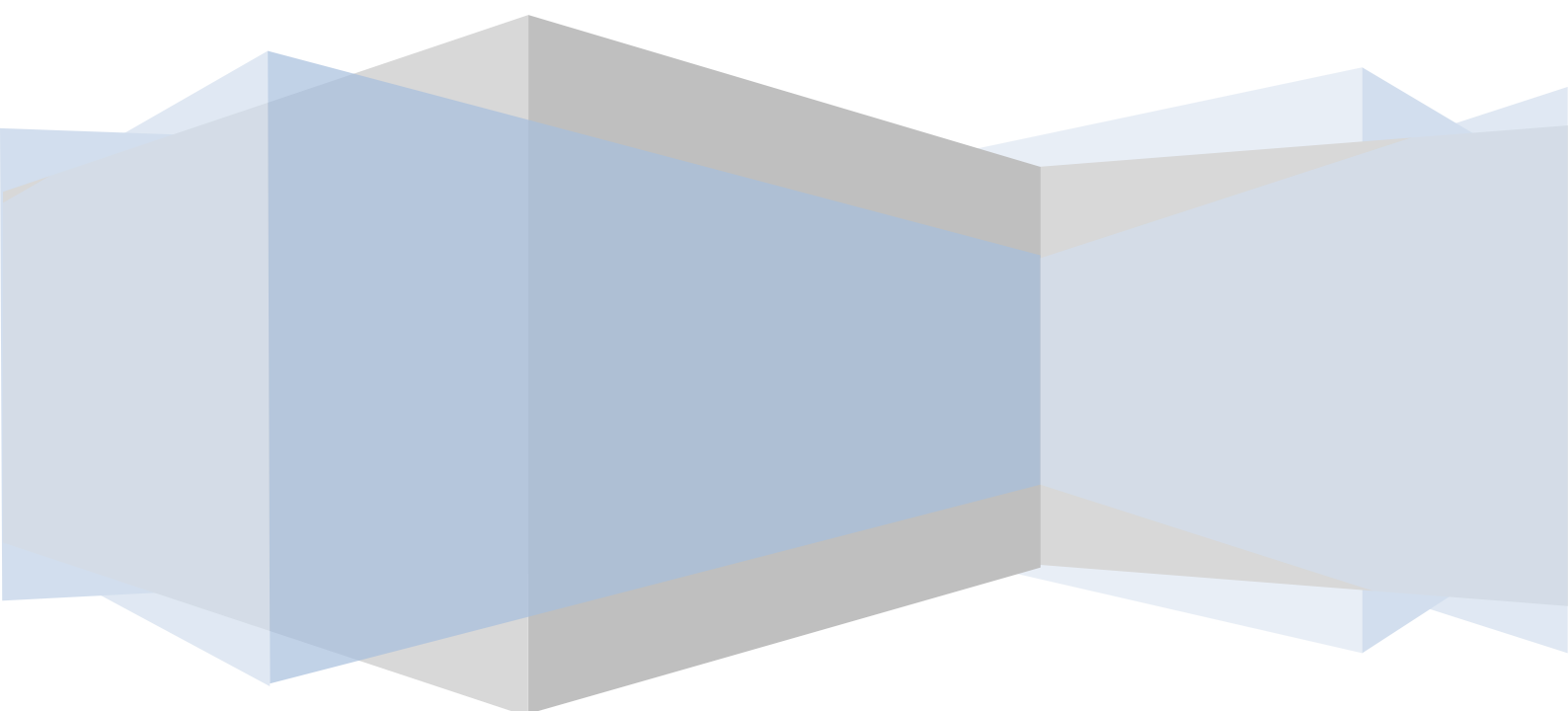


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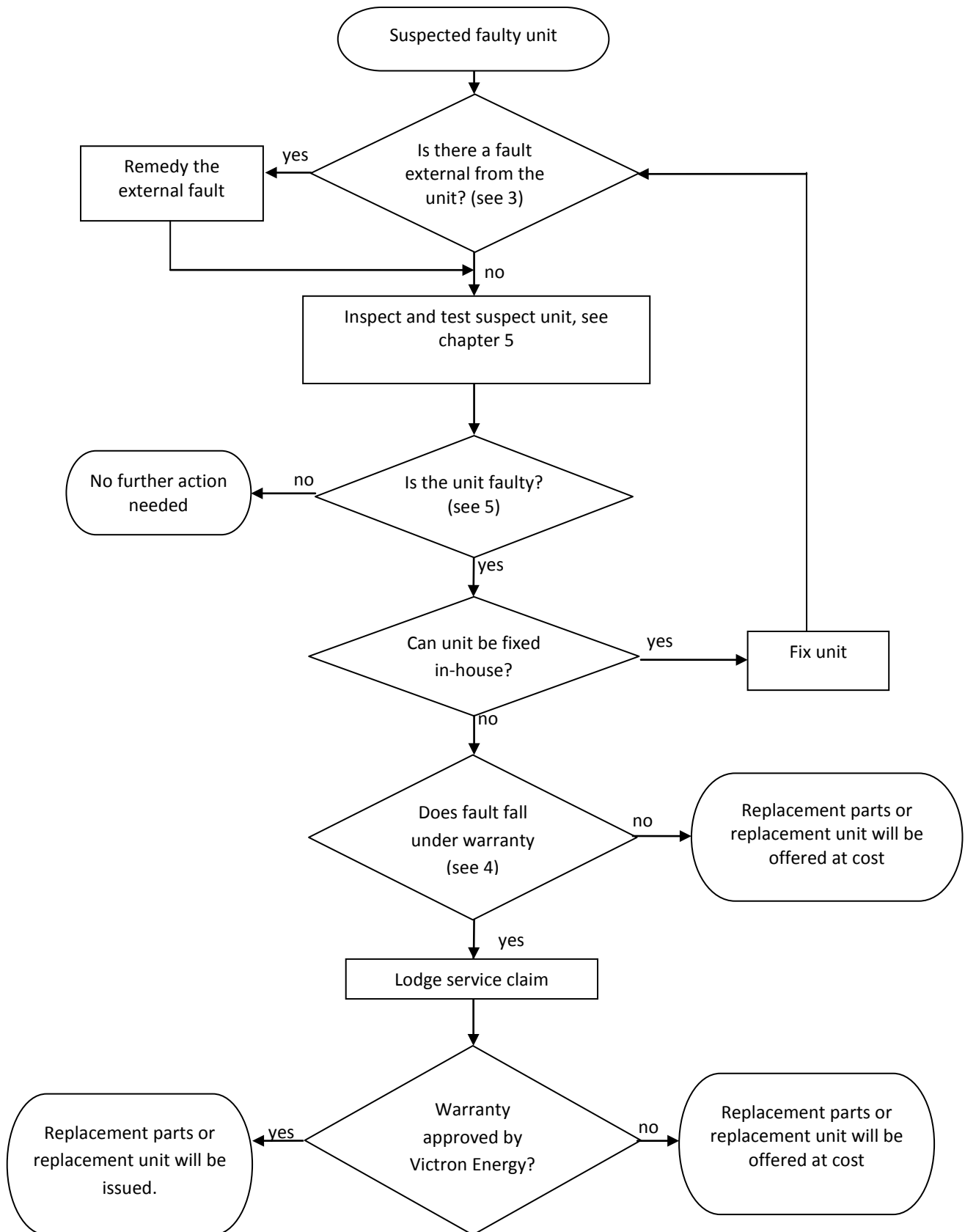
1. Introduction

These procedures can assist you in a smoother warranty lodgement with our service department. Please try to follow these procedures. They may sound a bit overdone at times but you will be surprised how many units are deemed to be faulty, while the fault could have easily been identified and rectified in-situ. These procedures can save you many hours in removing and replacing units as well as unnecessary freight costs and frustration.

Always consult the correct product manual prior to commencing any servicing on our products. Our manuals contain all the necessary safety warnings and instructions. Manuals of all our products, past and present, can be found on our website www.victronenergy.com.

The first part of this document is meant as a guide and a clarification of our general service and warranty policy. Our general service and warranty policy always overrules this document. Our general service and warranty policy can be found in chapter 11.

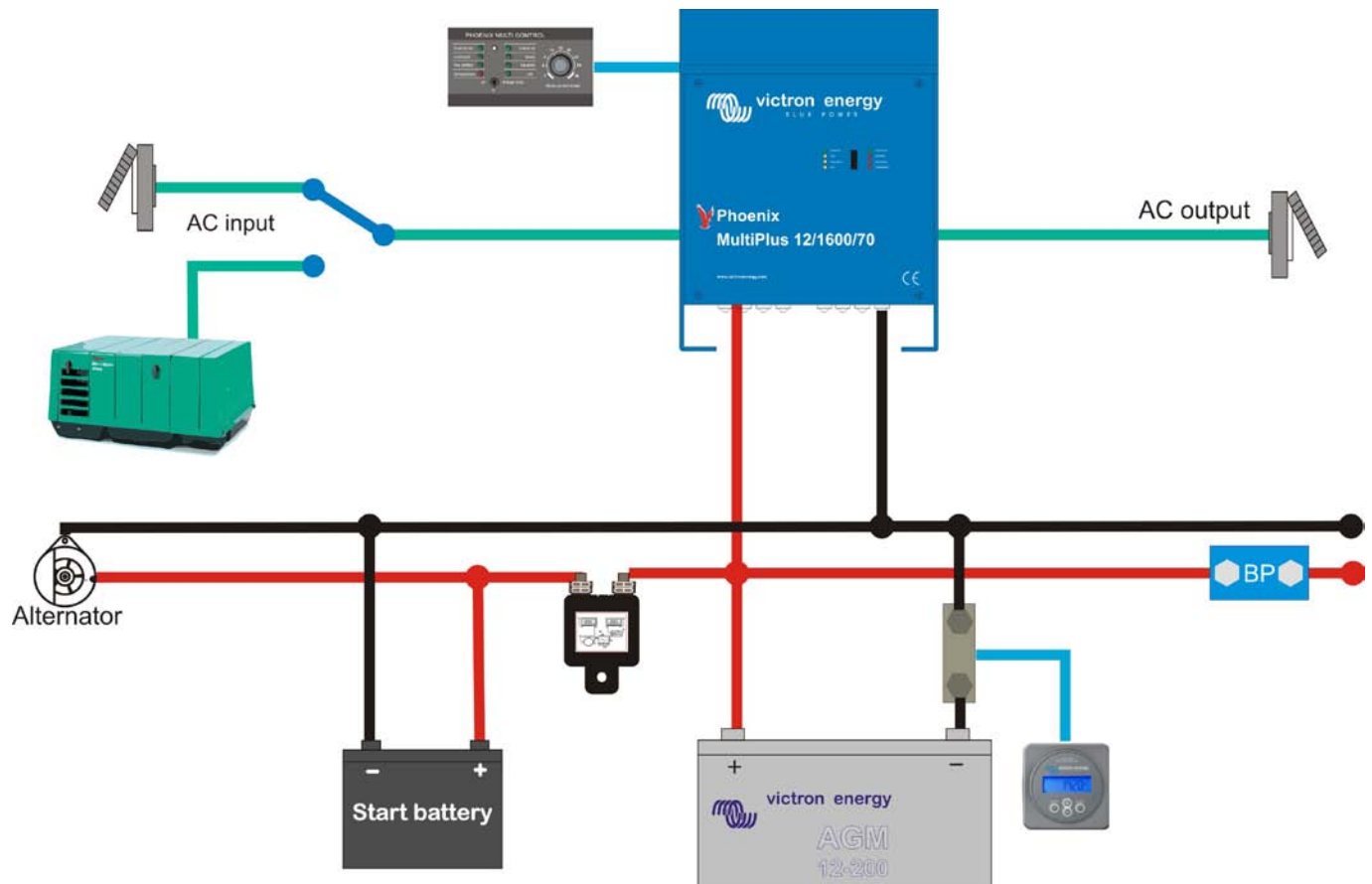
2. Service procedure flow chart



3. External and system faults

A Victron Energy product is nearly always part of a system. It is therefore necessary to pay special attention to that system. The Multi can appear to be faulty, while in reality an external factor can be the cause of this fault.

Below you will find a simple system in where a Multi is most often part of:



As you can see there are many components in this system that can cause an incorrect operation of the Multi. A Multi is after all dependent on many inputs and outputs. Please see below for a list of the most common items that connect to a Multi and some pointers to look out for when checking a system external from a Multi:

Batteries

Batteries are one the most important external factors.

The battery cabling needs to be of a suitable thickness. The fuses in the cables need to be in good shape and all cable connections need to be clean and tight. If any of these are of sub-standard quality a voltage loss and/or a ripple voltage can occur. This leads to a shutdown of the Multi, or causes blinking warning lights. Please see the Multi manual for a list of the types of blinking warning lights.

Batteries can cause a lot of strange symptoms in a Multi when they are empty, almost empty, capacity too small, or are of bad quality. Even to the extent that the Multi appears to be faulty. Most often you will see the overload and low battery light blink or light up simultaneously. In this case the first point of action is to measure the battery voltage under no load and under load. If the battery voltage drops significantly under load the batteries are empty or faulty.

Undercharged batteries are most often due to a large DC load in the system. The DC loads in this case consume more power than the Multi or charger can deliver. Another reason for undercharged batteries can be that the batteries are too large for the charger.

Overcharged batteries can be caused by a very small or faulty battery bank.

AC input and output

Multies do not only connect to mains but also can connect to generators. Depending on the quality of the output voltage of the generator, some settings in the Multi need to be changed. See the manual and also the help files in VE.configure to help you adjust a Multi to certain generators.

Problems with the AC output usually stem from too many appliances or too large appliances connected to the Multi. A fault in one of the connected appliances or a short circuit in one of the connected appliances can also lead to a problematic AC output. Keep in mind that there also could be a fault in the AC wiring itself. These kinds of faults are often indicated by a blinking or illuminated overload light or tripping circuit breakers, RCD's and automatic fuses.

In some cases an AC wiring mistake could have been made in where accidentally the AC input is connected to the AC output

The best way to determine if the fault is in the Multi or in the AC system around the Multi is to bypass the Multi. That is to connect the AC input to the AC output, without the Multi being in the system. If the fault still occurs the cause is naturally external from the Multi.

Control panel and Temperature sensor

Remember that for the control panel to work, the Multi's main on/off switch will need to be set to the "on" position.

A broken, wrongly wired or missing UTP cable between Multi and panel are often the cause for the remote panel not to work.

The temperature sensor is sometimes connected to the wrong terminals, or the sensor is faulty or damaged. This is most often indicated by blinking temperature light on the Multi.

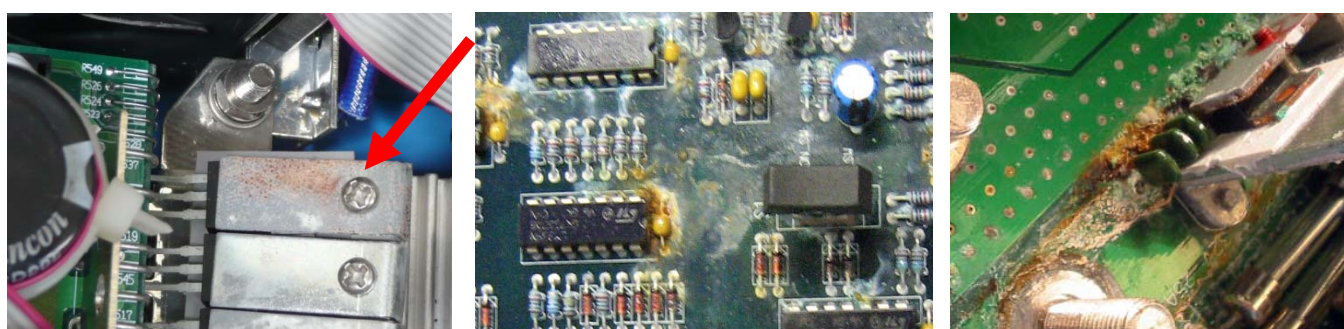
4. What is and what is not warranty

Warranty approval can only be decided by our service department, but in many cases you will be able to tell straight away if a faulty unit broke down outside of warranty.

The following instances are not covered under warranty:

Water damage

The unit needs to be checked on internally and externally. The external evidence is usual removed by the customer. It is therefore very important that an internal visual check is performed. Please pay special attention to corrosion or dried water marks. Also inspect on and around the circuit boards or on any mechanical parts.



Presence of dirt and soot inside the unit

An evident present of dirt, dust or soot will also void the warranty. Soot is the biggest culprit, as it contains carbon which conducts electricity and will cause a lot of damage.

Reverse polarity

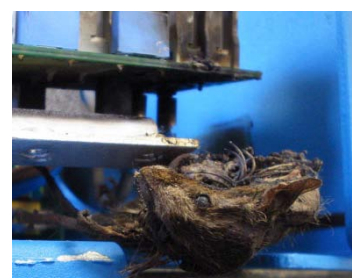
Reverse polarity is when the negative battery cable is connected to the positive Multi terminal and vice versa. Most of the time people do not purposefully mix up the cables, but reverse polarity is caused by a wiring mistake or wrongly labelled cables. Reverse polarity can usually only be detected by a repair agent. In some cases the customer will tell you about it, or you might notice the wiring mistake yourself.

Lightning strikes and power surges

Lightning strikes and power surges are not always evident. This can usually only be detected by a repair agent. But in most cases the customer will tell you about it, or many more electrical devices broke down at the same time.

Insects and other pests

Insects and other pests, even mice can get into the unit and cause a short circuit someplace inside the unit. In most cases they are visible after opening the unit and when closely inspecting inside.



Age of unit

Warranty to the end user is normally 12 or 24 months from the date of purchase, depending on local practices.

Warranty to our customers is 30 months from date of purchase. Any unit older than this does not fall under warranty. In a few cases we can decide to cover older units under warranty, but only after communication with the service department. In these cases the service department can sometimes offer a replacement unit for a discounted price.

To get an idea of the age of the unit, rather than getting the date of the original invoice, you can also look at the serial number. The first two digits stand for the production year and the next two digits stand for the production week. For example: serial number 10110100380 means that this unit was build in 2010, in week 11 of that year.



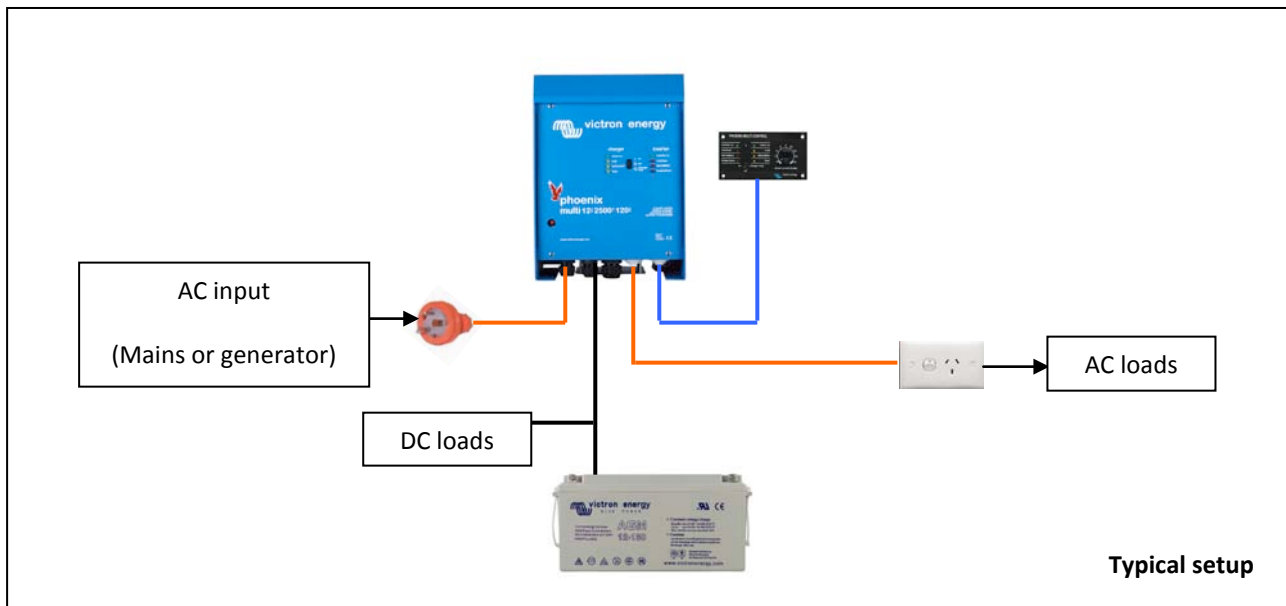
Mechanical damage

Mechanical damage can be anything from clearly dented cases, to accidental holes drilled into the units casing, straight through an essential internal part. It is therefore necessary to always thoroughly visually inspect the outside and inside of the unit. Also look for loose items present inside the unit, like foreign items such as metal filings and bits of electricity cable.

Another item that gets easily damaged are the AC and DC connectors. The bolts and screws that make up these connectors are made of copper and can break when excessive force is applied when tightening.



5. Multi or Quattro fault testing guidelines



A Multi or Quattro test always has to be performed in the following order:

1. Visual check and preparing the multi for diagnostics:

- Turn unit off
- Disconnect or turn off all AC loads.
- Disconnect or turn off all DC loads.
- Disconnect the AC input.
- If connected, disconnect remote panel.
- Perform internal visual check on the following:
 - Broken or missing fuses
 - Burn marks or burn smell
 - Water damage
 - Corrosion
 - Dust or dirt
 - Damaged or incomplete wiring
- Check the Mega fuse (if present).
 - Remove or short (just for testing purposes) the Mega fuse
 - Inspect fuse for mechanical damage
 - Test fuse with multimeter (the fuse needs to be removed for this test)
 - Replace fuse if fuse is faulty.
 - Re-insert fuse.

2. Checking Inverter operation:

- Check correct battery voltage is present at the DC terminals inside Multi.
- Turn Multi off for at least 10 seconds.
- Turn Multi on.
- Connect VE.configure, use VE.configure for measurement purposes.
- Check if the green inverter LED is illuminated.
- Refer to the manual if any red LEDs are illuminated or blinking.
- Check the operation of the inverter by measuring the AC output.
- Connect an AC load and check the operation of the inverter.

- Increase the AC load to the Multi's rated power.
- Disconnect the AC load.

3. Checking transfer from inverter to charger:

- Connect the AC input and check if Multi switches from inverting to charging. This can take some time (this can take up to 1 minute if a bad quality generator is connected).
- Disconnect the AC input and check if Multi switches from charging back to inverting.
- In case of a Quattro, repeat this test for the 2nd AC input

4. Checking Charger operation:

- Connect the AC input and check if the Multi switches from inverting to charging. This can take some time.
- Check if the green "mains on" LED is illuminated.
- Check if any of the amber charger LEDs are illuminated.
- Refer to the manual if any red LEDs are illuminated.
- Check the operation of the charger.
- Connect temp sensor, heat the sensor and verify if the charge voltage drops.
- Connect an AC load and check if this load gets powered by the Multi.
- Switch the unit to "charger only" and check if the unit charges correctly

5. Checking power assist (only for units, 1200VA and above)

- Check if the Multi is a MultiPlus unit or a Quattro.
- Increase the AC load and check if the Multi starts power control. The charge current to the battery should reduce.
- Increase the AC load even further and check if the Multi starts power assisting. This is indicated by a flashing Inverter LED and a reversal of the battery current.

6. Warranty claim lodgement instructions

Warranty claims can be lodged in the following ways:

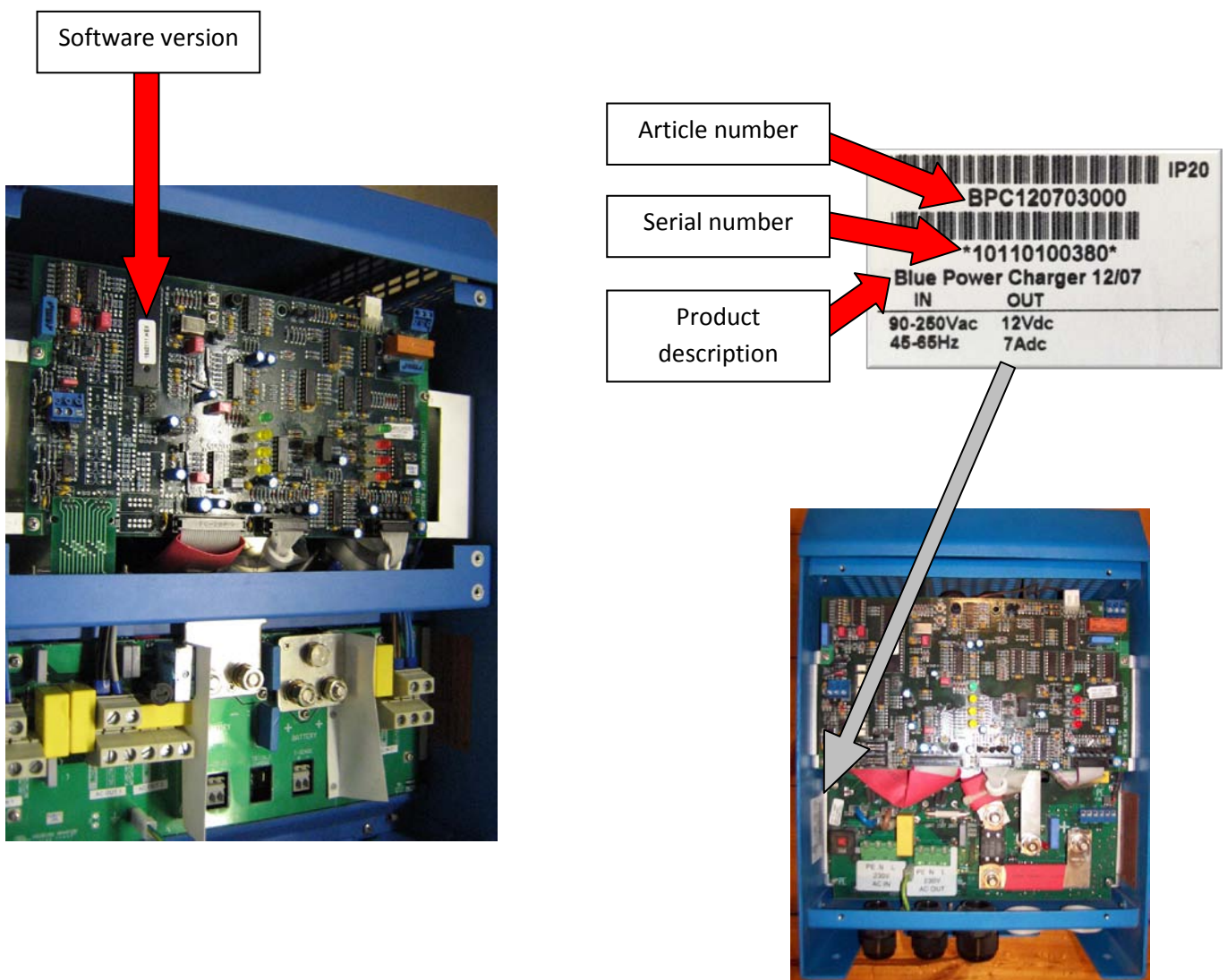
- An email to our service department together with the RMA lodgement form, see chapter 7
- On-line lodgement, please see chapter 8 for instructions

Please make sure when lodging a warranty claim to always include the following:

- Article number
- Product description
- Serial number
- Software version if applicable (the software version ends with .HEX)
- Concise fault description
- Contact person details

The article number, the serial number and the product description can be found on the sticker on the back of the unit and in our larger models also on the inside of the unit, visible after the front plate is removed.

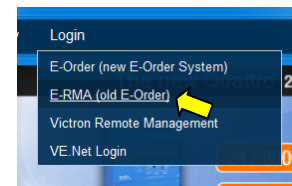
The software version can be found on a sticker on the large black chip on the control circuit board



8. Online RMA lodgement instructions

Step 1

Go to our website www.victronenergy.com
click on Login
and then click on E-RMA (old E-Order)



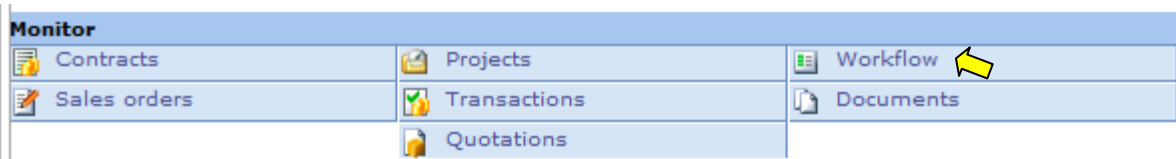
Step 2

Go to 'My Account' by clicking on the 'My Account' button.



Step 3

Go to 'Workflow' by clicking on the 'Workflow' button



Step 4

Create a new request by clicking 'New' on the top left.



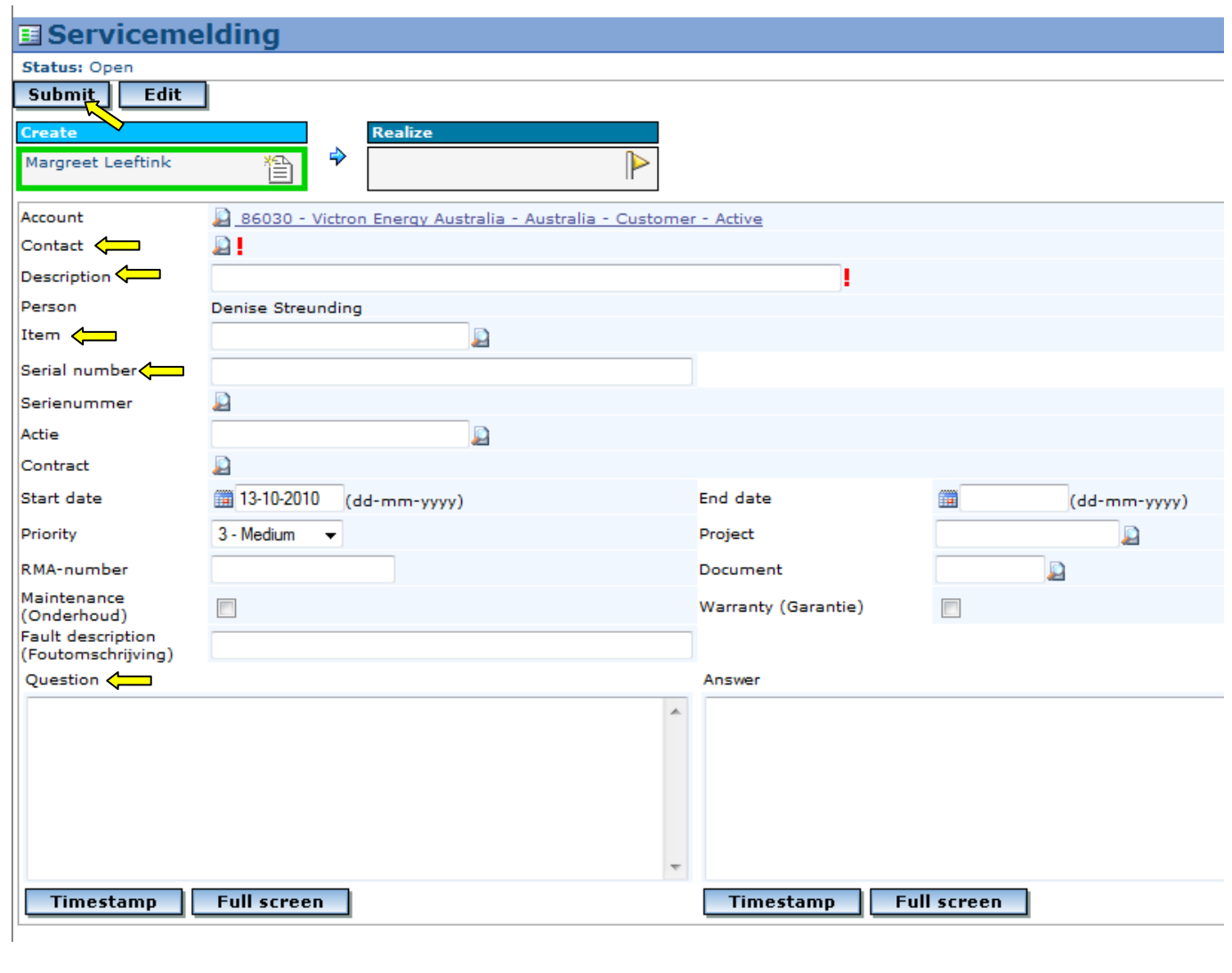
Step 5

Select the bottom option '11007- Servicemelding' to request an RMA nr.



Step 6

1. Contact - select a contact person
2. Description - fill in the product description
3. Item – fill in the article number (can be found at the back of a product)
4. Serial number - Fill in a serial number (can be found at the back of a product)
5. Question - Please fill in a concise problem description and any related questions.
6. Check if all the fields have been filled in correctly
7. Click “submit” to lodge your request.



Step 7:

Return to the ‘My Account’ page.
The RMA number can be found in the ‘requests’ section.
Here you also can see the status of the request.

Example 00.014.986 = RMA number 14986

Monitor			
Contracts	Projects	Workflow	
Sales orders	Transactions	Documents	
	Quotations		
Requests			
✘	00.014.986	17-01-2006 09:36	Open Servicemelding
	Creator: ExactWebGuest Resource: ExactWebGuest		
	(?): The leds do not show any activity.		
	(!):		
✔	00.014.985	17-01-2006 09:09	Realized Servicemelding
	Creator: ExactWebGuest Resource: ExactWebGuest		
	(?): Ook al stuk [denise 17-1-2006 9:15:57] Test RMA		

9. What can be expected after a warranty claim is lodged

Once a claim is lodged, the service department will confirm this by issuing a RMA number for the warranty claim. They will also notify you of the outcome of the claim. The outcome can be any of the following:

- Warranty approved, the service department will send you a replacement unit.
- Warranty approved, the service department will instruct you send the faulty unit to one of our service agents for repair.
- Warranty approved, the service department will send you replacement circuit board(s). This is only applicable if you are able to repair the unit yourself.

- Warranty not approved, you can choose to have the faulty repaired by one of our service agent at cost.
- Warranty not approved, we can send you replacement board(s) at cost or, in some cases we can make an offer for a replacement unit for a special price.

When sending faulty units to our repair agents, please accompany the shipment with a copy of the filled out RMA lodgement form, see page 11.

To prevent transport damage please ensure that the unit is shipped in sufficient packaging, preferable in its original box. Multies and Inverters 5000KVA and above are very heavy and will need to be shipped on a pallet.

Please note that Victron energy does not refund any warranty related shipping costs. We also do not refund any cost made by installation and un-installation of our products.

10. Contact details

Victron Energy

Victron Energy service department:

Denise Streunding – Service engineer

Jaggat Sewsahai – Service engineer

Phone: +31 36 535 9700

Skype: victronenergyservice

Email: service@victronenergy.com

Sales manager Australia:

Margreet Leeftink

Mobile +61 (04) 1240 5150

Skype: mleeftink

Email: mleeftink@victronenergy.com

Victron Energy Service Agents

Electronic Solution Technologies

Contact: Henk van der Veen

Unit 1, 11 Maurita Court

Canungra

QLD 4275

Phone: +61 (04) 1022 6003

Fax: +61 (0)7 5543 4614

Email: Henk@El-SolutionsTech.com

Snaptec

Contact: Bassam Hindeleh

Unit 29 / 15 Valediction Road

Kings Park

NSW 2148

Phone: +61 (02) 9676 2344

Fax: +61 (02) 8569 0659

Email: sales@snaptec.com.au

WA Solar supplies

Contact: Dacre Barrett-Lennard

Unit 5/83 Hector Street West

Osborne Park

WA 6017

Phone: +61 (08) 9244 2668

Fax: +61 (08) 9244 1087

Email: energy@wasolar.com.au

11. General Warranty and Service Policy Victron Energy B.V.

1. Victron Energy B.V. warranty

- 1.1. Victron Energy B.V. warrants the performance of all units for a period of 30 months effective from the invoice date.
- 1.2. The warranty applies only on production and/ or development faults.
- 1.3. Warranty is on parts only. Not on labour and other costs. Warranty repairs are performed, free of charge in the Victron Service Department, also see 7.

2. Function of the Victron Energy B.V. service department

- 2.1. Telephone help-desk.
- 2.2. Repair of PCB's.
- 2.3. Repair of complete units.
- 2.4. Feedback of information in the field to production and development.

3. Repair time

- 3.1. Victron Energy B.V. will at all times try to repair within 5 working days.
- 3.2. Urgent repairs will be done by using exchange boards , either by the dealer or else by the various Victron Energy B.V. Service Centres (only applicable in the Netherlands)

4. First- line service assistance by the dealer

- 4.1. Test and repair of Victron Energy products in their own workshop, using exchange boards when necessary.
- 4.2. Produce fault report.
- 4.3. Advising customers on proper use of Victron Products.
- 4.4. Explanation to the customer about repairs and probable cause of defect.
- 4.5. Provide (if necessary) service on the premises of the customer.

5. Inventory of service-department in dealer's workshop

- 5.1. Workshop with power supplies, batteries and the correct measuring equipment.
- 5.2. ESD-safe workplace for engineer.
- 5.3. Mechanics with an electromechanical training.
- 5.4. Minimal stock of frequently sold units (to be advised by Victron Energy B.V.)

6. Procedures of first-line service assistance by the dealer

- 6.1. The dealer is responsible for checking or executing the following points:
- 6.2. Check if there is a possibility of damage by water or dirt.
- 6.3. Check to make sure that the customer has not tried to repair the unit or parts himself.(e.g. soldering)
- 6.4. Check to see if unit is functioning in the dealer's workshop.
- 6.5. Check to see if unit is suited for application
- 6.6. In case a fault has been identified: repair by exchanging one or more PCB's. and /or return defective PCB's to Victron Energy B.V. accompanied by a complete RMA-form. If necessary contact the service department for assistance.

7. Procedures of returning units or parts

- 7.1. The following units can be sent for repair in the original case, provided that it has been checked as stated in point 6.
- 7.2. All switch-mode chargers and other light weighted products.
- 7.3. Of all other units, (not mentioned above, point 7.1) we only expect to receive a PCB to repair.
- 7.4. All PCB's should be packed in anti static packing; any other packing could cause more damage to electronic parts.
- 7.5. Complete units should be returned, prepaid, in the original packing, to prevent damage due to transport.

- 7.6. In case of complete units being returned to Victron Energy B.V., except for those mentioned in the list above, point 7.1, Victron Energy B.V. will charge the dealer for removing and replacing the PCB's, as well as charge for additional transport costs. Dealer returns all repairs (warranty and non-warranty) on his costs.
- 7.7. Warranty repairs are returned to dealer on Victron Energy costs.
- 7.8. Non-warranty repairs are returned on dealers costs.
- 7.9. When new units have to be credited this has to be discussed in advance with the responsible Sales Manager, if accepted a charge of 15% of the value will be made and the unit has to be returned with a copy of the original invoice and an RMA-Form.

8. Recommended test equipment

- 8.1. Power supply with a voltage range between 0V and 60V and a current range from 0A-40A
- 8.2. Fluke 87 multi meter
- 8.3. Oscilloscope (simple design)
- 8.4. Own design test table with relevant test-equipment to be advised by Victron Energy B.V.

9. Exchanging boards

- 9.1. When a repair has to be done after testing (See 6.) use either boards from a new unit from stock or send defective board(s) back to Victron Energy for repair. In some cases Victron Energy can also send new boards, this is something to be discussed with our service department at that time.
- 9.2. When new units or parts from it are used for warranty repairs contact the service department for details how to proceed.
- 9.3. Always contact the service department in advance when new units are delivered in case of warranty.

10. RMA-procedure (Return Material Authorization)

- 10.1. Repairs sent to Victron Energy B.V. should at all times be accompanied by a filled in RMA form.
- 10.2. Credits sent to Victron Energy B.V. should at all times be accompanied by a filled in RMA Form.
- 10.3. A RMA-number should be requested from Victron Energy B.V. before sending the repair. Contact us at: service@victronenergy.com
- 10.4. Repairs and/or credits without a RMA-Form will not be dealt with. Information that should be filled in on the RMA-form:
 - Dealer's name and RMA number
 - Type and serial number of the unit to which the exchange board belongs
 - Circuit board(s) and names of the sent board (e.g.: Power board multi 12/3000/120-16 and control board multi 12/3000/120-16)
 - Number of boards sent
 - Customer's description of the complaint as well as findings of the engineer; faults established after testing and visual inspection by engineer
 - Fill in whether a quotation is needed (or quotation only when costs are more than a certain amount)