V-GUARD

WARRANTY CARD

SOLAR TUBULAR BATTERY

SERVICE RECORD

Date	Specific Gravity (Cell No.1 from positive terminal of the battery)						Battery Open Circuit voltage	Charging Voltage (V) (Across battery terminals)		Sign of the Service Engineer	Remarks
	cell 1	cell 2	cell 3	cell 4	cell 5	cell 6		No load	On load		

V-GUARD BATTERY

Congratulations.....

Now you are the proud owner of a V-Guard Battery. Every battery is inspected and tested thoroughly before leaving our premises. The most up to date design and manufacturing standards make this an ideal battery.

V-Guard Battery Warranty details as follows **Table-01**

SPST 665 ("Similar to 152Ah for conventional inverter application") SPST 20036, SPST 4036 SPST 7536	0-36 months	Free Repair or replacement*
	37-60 months	New Battery at 20% discount on prevailing MRP
SPST 15060 SPST 20060	0-60 months	Free Repair or replacement*
	61-72 months	New Battery at 20% discount on prevailing MRP
SPST 10060	0-60 months	Free Repair or replacement*
	61-90 months	New Battery at 20% discount on prevailing MRP

*Terms & conditions applicable, if it is a manufacturing defect.

a) Terms and Conditions of Warranty as follows

1) V-Guard Solar Tubular Batteries are warranted against all defects in material and workmanship for a period as mentioned in the Table 01, subjected to conditions mentioned in this Warranty Card.

2) Liability under this warranty is limited to making good of defects arising solely from the use of faulty material and workmanship during manufacture and developing under proper use. Consequential liabilities will not be entertained.

3) This warranty is applicable only for V-GUARD SOLAR TUBULAR BATTERY used for solar inverter/charge controller/ solar power system specified by the company and not recommended for any other applications.

4) The warranty period commences from the date of purchase by the Original Customer.

5) In the event of any complaint, the customer has to contact V-GUARD Service help line number (9.00 am to 7.00 pm) 0120 485 0100 for registration of complaint.

6) If the battery is not serviceable at customer's place, customer has to deliver defective battery to the nearest V-GUARD authorized service center or to the assigned dealer in places where service center is not available, as advised by V-Guard Customer Service, along with copies of duly filled, stamped, signed warranty card and authenticated Invoice / Bill with respective battery serial number on it.

7) The defective battery should be delivered in un-tampered and freight paid by the customer.

8) Rectified battery has to be collected from the same point by the customer, after the service.

9) In case of any warranty claim, along with complaint product, duly filled, stamped, signed original warranty card and authenticated Invoice / Bill in original with respective battery serial number on it, must be produced, without which the claim will not be entertained.

10) The right to determine whether a battery needs Repair, Rectification, Free Replacement or Pro-rata settlement rests with the company.

11) Defective battery arising out of free Replacement or Pro-rata settlement will become the property of the Company and no scrap rebate will be given for it.

12) The warranty period on the battery being replaced at free of cost, shall commence from the date of sale of the original battery as stated in the original warranty card and not from the date of replacement given.

13) For batteries purchased on pro-rata warranty settlement, fresh warranty will be applicable from the date of purchase of pro-rata warranty.

14) In the event of any particular battery model being phased out, the company reserves the right to provide another model of the same capacity as settlement of warranty.

15) All liabilities under this warranty will cease if the battery is:

    i) Transferred to any other party other than the original purchaser.

    ii) Used in any application other than that specified by the company.

iii) Found to have additives, dopes, anything else other than battery grade de-mineralized water added to electrolyte.

iv) Used for Vehicle / Generator application.

v) Out of warranty period.

16) The warranty does not cover if:

i) Defects / Damages caused by certain unusual conditions such as Water Logging, Misuse, Transit Damage during purchase, abnormal voltage supply, fire, lightning, acts of God, or while in transit to or from the service center, faulty inverter, electrical system, negligent maintenance, incorrect charging, improper topping up, deep discharge or over charge, improper handling, service of the battery by unauthorized dealer/electrician, willful abuse, not in use for more than 3 months. The warranty obligation does not also cover charges, if any, incurred on account of services rendered which are outside the ambit of warranty.

ii) Breakage or deformation of container and top lid, breakage/deformation of terminal due to mechanical shock or hammering.

Iii) Damage to the battery due to contamination of electrolyte. For topping up purposes use pure distilled water confirming to IS spec.No.1069-1993 with subsequent amendments.

iv) Battery operated in discharged condition for long period

v) Battery exposed to Sun or any heat source.

vi) The QR code sticker number of the warranty card and QR code sticker number of battery is not matching.

vii) The battery is found with high gravity electrolyte. (i.e> 1.260)

viii) Solar panel size is not adequate to properly charge battery.

17) The Solar Inverter, Charging system, Connected load and Electrical circuit to the Inverter, if required shall be checked by the company's authorized person before finalizing the settlement of any warranty claim.

18) If the Inverter's low voltage cut off is not working or has been tampered with, or in the event of severe power cuts, the battery will get over discharged. Lead Acid battery cannot be revived if it is over discharged. Hence an over discharged battery will not be accepted under warranty.

19) Any tampering or over writing on the serial no./ Mfg. Code/ Label/ sticker on the warranty card or on the battery, will invalidate the warranty claim.

20) Customer details, Digital UPS/Solar power system/Solar Inverter details, initial readings of cell voltage, cell specific gravity etc. must be recorded completely in the warranty card by the dealer during the time of sale to end customer. In case of incomplete information on the warranty card, the warranty claim may be liable to be held invalid.

21) Recharging of discharged battery will not cover under the purview of warranty, which will be billed extra.

22) The Service record on the warranty card must be filled up regularly as a proof of specified maintenance. Failure to do so will invalidate this warranty.

23) As per principle and technology of Lead Acid Battery, the backup duration will gradually decrease with every year of usage. This rate of decrease depends on various factors like frequency of charge/discharge, depth of discharge etc..

24) That after expiry of the standard warranty period, any inspection, repair, or servicing of the product, if requested by the customer, shall be provided on a chargeable basis and shall be subject to availability of spare parts at the time-of-service request.

25) All disputes are subjected to Jurisdiction of civil court in Cochin. Customers are deemed to have read, understood and agreed to these conditions at the time of purchase.

b) Pro-rata compensation applicable for V-Guard Battery:

1) Percentage of discount applicable as per table 1 for the purchase of new Battery only.

2) Service Life-Service life of battery is the difference between date of sale and date of complaint. Fraction of month is rounded off to next month.

3) Compensation due to customer, during pro-rata warranty period is to be reckoned as a rebate on purchase of same/equivalent type new V-GUARD SOLAR TUBULAR BATTERY only.

4) This percentage of discount will apply on the MRP applicable at the time of settlement of complaint. The discount value will be calculated based on the type of defective battery received under Pro-rata warranty.

5) Warranty settlement is governed by the terms and conditions indicated in this warranty card.

c) Please follow these simple instructions carefully:

1) For better performance of battery, ideal ambient temperature is 10°C to 40°C.

2) Top of the battery must be kept clean and dry by using moist cotton cloth. Never use woolen / silk / synthetic cloth as it can create spark. All external electric connection and float level indicators should be properly secured and firmly tightened.

3) Please keep the battery terminals clean. It is advisable to apply petroleum jelly on battery terminals and cable clamps for avoiding the deterioration of terminals. Never apply grease.

4) Avoid chances of deep discharge to avoid loss of battery capacity. Immediate recharging recommended after every discharge.

5) Avoid excessive impact/vibration on the battery.

6) The battery should be installed at the lowest level of the equipment and farthest from the heat source.

7) Never use new and old batteries in series.

8) Batteries of different type / performance / capacities should never be used in the same bank.

9) More than 2 parallel strings are not recommended.

10) Replace any defective batteries if any abnormalities are noticed on voltage, temperature and electrolytic leakage or physical deformities.

11) Do not reverse charge the battery. For long stored battery, supplementary charge is preferred.

12) Transport the battery only in the upright position

13) Never bend the terminals or solder directly. Always use appropriate connectors.

14) There is an evaporation loss during the use. Maintain electrolyte level within the band mark, preferably up to the Green mark indicated on the stem of the level indicator.

15) Top-up only with battery grade distilled water as necessary. Never add acid.

16) Ensure proper ventilation.

17) Do not install battery on an uneven surface.

d) Caution:

1) Keep away from sparks, cigarettes and open flame. These can cause explosion.

2) Battery never be exposed to Sun.

3) Terminal corrosion, dirt and moisture can cause loss of power and make the battery weak.

4) Avoid metallic contact across the terminals, as this can result in short circuit and sparking.

5) It is strongly recommended, not to use/add any battery additives or dopes in battery.

6) Keep out of reach of children

e) General Instructions for Usage and Maintenance

1) Use minimum. 10 sq.mm. size copper cables for inter-connections and length shall not exceed 1.5 meters.

2) Ensure that the connecting cables and cable connectors have adequate current carrying capacity and long enough to prevent straining of the battery terminals.

3) Ensure that the cable legs are fixed tightly with lead/tin coated nut & bolts on the terminals and right polarity in connections (positive to positive and negative to negative). Never use clamps, it may result in spark thus may lead to fire.

4) Ensure minimum 1-inch clearance around and between the batteries for proper ventilation.

5) If the battery is kept unused for a period of two months, it is recommended to give a bench charge to enhance the performance of the battery.

6. Ensure that the battery charging system confirms to the following.

a) Float charging voltage should be 13.8 ± 0.2 volts when measured across the battery terminals.

b) Maximum charging current should be 10% of the rated capacity of the battery.

c) Low voltage cut-off limit set and operates at 10.50volts per battery.

d) High voltage cut-off limit set and operates at 14.4 volts per battery.

Please remember that the lead acid batteries contain very toxic and hazardous substance that could causes irreversible damages to health and environment. Unless handed properly, Lead could cause poisoning and affect nervous system thereby resulting in irreversible retardation and subsequent death.

STATUTORY NOTICE

In accordance with the Government of India, Ministry of Environment and Forests notification on Batteries (Management & Handling) Rules, 2001, it is the responsibility of every consumer to ensure that used Lead-Acid Batteries are not disposed off in any manner other than returning to Dealer for recycling of hazardous lead content. Please contact your Dealer for trade-in purpose.

Note: Clause 10, Responsibilities of consumer or bulk customer

It shall be the responsibility of the consumer to ensure that used batteries are not disposed of in any manner other than depositing with the dealer, manufacturer, importer, assembler, registered recycler, re-conditioner or at the designated collection centers.

V-Guard's Commitment to Environmental Sustainability

At V-Guard, we take our responsibility towards the environment seriously. As part of our commitment to sustainable practices, we adhere to the principles of Extended Producer Responsibility (EPR). This policy ensures that we are accountable for the environmental impacts of our products throughout their entire lifecycle – from design and production to disposal.
We are proud to announce our **EPR - Battery Waste Registration Certificate number is 33132834 & Plastic Waste EPR Regn. No.: BO-13-000-07-AAACV5492Q-22**. By implementing these practices, we contribute to a cleaner, greener future for all.

(Specifications are subject to change without prior notice.)
Please register your V-Guard product in the company web site at www.vguardservice.in to avail paperless warranty.

TROUBLE SHOOTING & MAINTENANCE OF BATTERY

Sl. No.	Failure Modes	Symptoms / Evidence	Probable Reasons / Cause	Corrective Actions / Prevention
1	Low backup During First Time Usage	Low Backup	No Refresh Charge After Purchasing the Battery	After Purchasing the battery, customer has to give refresh charge @C10 current till TOCV reaches 16.1 V (+/-0.1)
2	Low OCV & Low Gravity	Low Backup	Battery not getting fully charged	1) Charge the battery upto 100% or upto 16.1 V (+/-0.1) TOCV on CC Charger. 2) Check the Inverter Settings like Float Voltage & Boost Voltage & Aborption Voltage & time 2) Battery voltage should be maintained at 12.60 V(+/-0.1) 3) Battery Specific Gravity should be maintained at 1.255 (+/-0.01)

3	Low Backup	Low OCV & Gravity	Battery not getting fully charged	1) Charge the battery with CC Charger upto 100% , till 16.1 V (+/-0.1) TOC. 2) Battery voltage should be maintained at 12.60 V(+/-0.1) 3) Battery Specific Gravity should be maintained at 1.255 (+/-0.01)
		Age of Battery	After some certain age battery back up will start reduced automatically	
		Inverter Settings	1) Low current supplied by inverter	3) Battery Specific Gravity should be maintained at 1.255 (+/-0.01)
		Due to Winter Season	Low Viscosity of electrolyte	1) Always clean the battery terminal corrosion. 2) Always use rusted & sulphated free thimble. If found, new thimble to be used. 3) Always clean the wire sulphation & corrosion, if sulphated/corroded trim the wire upto corroded part and assemble the thimble. 4) Do's & Don't's mentioned at Page 18 and 19 to be followed strictly.

4	Corrosion at terminals	Presence of battery electrolyte at Lid & terminals	Due to overfilling of DM water, it came out from vent holes & travels to lid surface to terminals	1) Use cotton cloth and clean the battery Never overflow each and every vent hole, it should be filled upto the neck of the vent hole
		Oxidation at thimbles/clips/Nut & bolt	It happens when petroleum jelly/ vaseline not applied to terminal	1) Clean the terminals with soft brush or cotton cloth 2) Always apply petroleum jelly/vaseline after every 15 days of usage
		Melting of Terminals	Due to loose connection & Non standard cable used	1) Always used standard battery cables 2) Always check terminals connection after every 15 days
5	Container Leakage/ Damage	2) Always check terminals connection after every 15 days	Bonding between battery container & cover improper	This is manufacturing defect. Registered FIR to Dealer/Distributor/Service engineer immediately
		Drying of cells.	Battery container & cover heavily damaged	Always use vibration resistant material beneath and sides of the battery to prevent the heavy. If found registered FIR to Dealer/Distributor/Service engineer immediately. Note- In this case, warranty depends on type of damage & location of damage after investigation

6	Short circuited	Wrong connection of the battery band	This happened when connection was done opposite.	Always follow the User Guide of the battery for connection
		Reverse Connection charging	This occurred when we charge the battery by reversing the connection	
		Battery cover melted	Due to leak current travel to metal body rod used to bind the battery bank	
7	Deep discharge	Partially Charge Battery kept in Storage	When battery is not in operation, it will automatically initiate self discharge at high rate due to partially charge	Always charge the battery 100% and when keeping in storage period always give refresh charge after every 30 days mandatorily
		Low Gravity & Voltage of Battery	This is due to insufficient charging given to battery	Always charge the battery 100%. No partial charge battery to be taken in operation
		Low level of electrolyte	No Top Up of water	Regularly check the electrolyte with the help of float indicators & top up the battety with DM Water only
		Impurities in Electrolyte	When used normal/ tap water & other metal objects fall inside the cells	Never ever use the normal or tap water for top up and when installing(using Nut , Bolt & Washers) the battery always keep in mind batttery vent plug should be properly tightened

8	Sulphation	Decreased Capacity	i) Deep Discharge	If detected at an early stage could be revived by de- sulphation treatment (slow changing with DM water). May or may not respond to treatment for hard sulphation
		Sp. Gravity less than normal	ii) Battery was kept idle for long duration without freshening charge	
		High cell voltage at beginning and end of charge.	iii) Upper portion of plates were exposed to air, due topping up not done	
		Gassing starts earlier.	iv) Impurities in electrolyte	
		Abnormal high electrolyte temperature.	v) Adding acid instead of water for topping up	
		Frequent topping up required.	High gravity acid or commercial grade acid used during IFC	
9	Buckling of Plates	Difficult to detect if does not cause short circuit puncturing the separators or shedding. If no short circuit or shedding the battery can deliver its full capacity.	i) Over discharge ii) Continued operation in starved (partial charged) condition iii) Charging at high current iv) Non uniform distribution of current across the Plates	Proper Care & Maintenance of the battery and the system can avoid such failures at early stage.

10	Shedding or Loss of active Material	Decrease in capacity even though adequately charged	i) Normal shedding due to age	Proper Care & Maintenance of the battery can avoid such failures at early stage.
		Quick rise in sp.gr. & Voltage to correct value, but less capacity obtained on discharge.	ii) Charging with very high current or overcharging iii) Charging sulphated plates at high current iv) Charging only part of plates due to low electrolyte level vi) Due to manufacturing defects of active materials v) Due to freezing of electrolyte	Proper recharging processes during use.
11	Loss of Capacity	Low sp. gravity & voltage though normally charged	i) Impurity in electrolyte ii) Sulphation iii) Loose active material	Proper Care & Maintenance can avoid such failures at early stage
		Low open circuit voltage	Separator damaged causing short circuit of plates	
		No free gassing	Shedding of active material	
		Abnormal increase in the electrolyte temp	i) Low level of electrolyte	

12	Reversal of Cell	Fall of capacity & voltage	i) Worn out Separators	Manufacturing problem
			ii) Foreign materials in cell	Dropping metallic pieces in cell
			iii) Bottom short due to sedimentation touching plates	Sedimentation can be avoided by proper charge / discharge procedure
			iv) Badly sulphated plates leading to 'Treeing'	Due to manufacturing defect
13	Earth Leakage	Continuous loss of capacity	Over filling during topping up above maximum allowed level	i) Proper care & maintenance of the battery and the system can avoid such failures at early stage ii) Always fill the DM water upto the neck of the vent hole
		Failing to supply power as and when required	Not cleaning the battery	i) Proper care & maintenance of the battery and the system can avoid such failures ii) Always clean the battery at regular basis with cotton cloth

14	Lagging Cells	Sp.gr. of electrolyte & voltage of one cell is lower than others during discharge & charge	i) Manufacturing defect	Such cells should be subjected to several cycles of charge and discharge
		Temperature of electrolyte of the cell may always remain higher than others.	ii) Internal short iii) Improper maintenance	Necessary repairs could be done to remove internal short.
15	Other Failures	Other Failures	Do's & Don'ts to be followed	Please follow Do's & don'ts as mentioned

DO's & DON'TS FOR SOLAR TUBULAR BATTERY

Sl.No.	Description
1	Always clean the top surface of battery from dry cotton cloth and prevent from dust
2	Always check the sulphation of terminals. If found, clean it. After cleaning ,apply petroleum Jelly
3	During connection of the battery never ever tightened the fasteners not more than 8 to 10 Nm torque, it will cause cracked down the terminal.
4	Always check the battery electrolyte at regular intervals with the help of Float indicator. -If Float at above Green mark -OK -If Float at Below Red mark- Not Ok
5	Always use De-Mineralized Water for top up the cells. Never add Normal or Tap water.It will lead to contamination of electrolyte which affects the battery and its life.
6	Before usage, battery should be 100% charged then only take for use. No partially charge battery taken for use.
7	Always use correct rated inverter for the battery as mentioned in the User Guide
8	Recommended wire size of 10 mm.sq. to be used for connection as mentioned in the User manual
9	The distance between inverter and battery will be less than 1 meter to avoid the backup issue
10	Refresh charge to be given under storage period, if Open circuit voltage drops below 12.10V (± 0.05) and the specific gravity drops below 1.200 @ 27˚C
11	Always make sure the cable connection will not be loose. It should be properly tightened to prevent sparking & terminal heating
12	All terminal bolts have to be tightened with spring and plane washers. The tightness of all bolts to be checked once in every 15 days.
13	During installation always check the polarity of the inverter wires. Positive Terminal- Red wire/ Positive Cable Negative Terminal- Black Wire/ Negative Cable
14	Keep the battery in a well ventilated area
15	Always keep the batteries placed away from sparks, fire, cigarrettes etc.
16	Always follow application chart for usage of battery provided in User Manual
17	Always follow the instructions before installing the battery provided in User Manual
18	Remove watches, rings or other metal objects when performing connection, cleaning or installation task on battery
19	Do not lay tools or metal parts on top of batteries
20	For installing the battery, disconnect charging source and load,

before connecting or disconnecting terminals

21 In case of contact with electrolyte of water to your skin, immediately flush the area thoroughly for 15 minutes under tap/open water source.

22 In case of eye contact with battery electrolyte, immediately wash your eyes and take medical consultation attention if required

23 Never ever dispose the battery directly, it should be dispose through channel in accordance under local/state/federal regulations

V-GUARD

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SCAN TO AVAIL THE
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BY REGISTERING YOUR PRODUCT ONLINE

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