

USER MANUAL

SOLAR WATER HEATER MODULAR STORAGE UNIT



SOLAR WATER HEATER
500 LPD FPC
MDLR

Modular Design

SS304 L
TANK

HIGH
DENSITY
PUF

5 YEAR
WARRANTY

INSTRUCTION MANUAL FOR V-GUARD MODULAR WATER HEATING SYSTEM

Dear Customer,

We congratulate you for being the proud owner of a V-Guard Solar Water Heating System. This Product comes to you from a company committed to total quality and dedicated to customer delight, since 1977. The immense trust and support our valued customer give us has always been, and always will be, our motivation to strive harder and harder to live up to their expectations. By using this product, you are not only helping the country save on raw materials (which goes into the generation of electricity) but also contribute towards a greener environment. We, the members of V-Guard, thank you and wish you many years of free hot water.

PRODUCT INTRODUCTION

Large heating & storage capacities are required for large multi-unit residential projects and industrial projects. These large units will be difficult to manufacture, transport, install & service. To overcome all these challenges without reducing the performance V-Guard is introducing unique modular design where the tanks and plumbing is connected such way that it reduces the assembly time and service cost.

TECHENICAL SPECIFICATIONS - 500 L MODULE

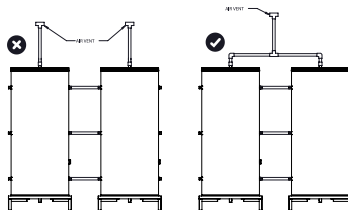
INSULATED HOT WATER STORAGE TANK MODULE

Hot Water Tank	Direct heating hot water insulated storage tank - Non Pressurized
Capacity (Liter)	500
Material	SS-304 L, Thickness- Cylinder - 1 mm & Dish end- 1.2 mm
Orientation	Cylindrical - Vertical
Corrosion protection	Sacrificial Anode
Tank Welding	High quality TIG Welding
Electric backup (Optional)	3kW
Cleaning /service provision	Autoclavic oval flange top & bottom
Supporting Structure	ISA/ISC MS Powder Coated
Designed pressure rating	Working up to 1 bar
System Interconnecting Pipes material	SS- Pipe Nozzles
Size of interconnecting Pipes (cm)	2.54 (1)
Overnight Temperature Drop	<= 5°C
Safety valves	ARV cum VRV
Weight of Tank with stand (kg)	62
Tank Dimensions (LxWxH),cm	95 x95 x 190
Tank Insulation	
Material	Industrial PUF Insulation,Density-38 kg/m ³
Thickness	50 mm
Outer cladding	
Material	26 SWG,Precoated GI sheet
Packaging	
Material	Carton Box

FLAT PLATE COLLECTOR	
	Solar Flat Plate shall be BIS marked and as per IS :12933/2003
Type	Copper-Aluminium
Collector size	203 x 103 x 10 cm + 0.5 cm
Collector Frame	Extruded Aluminium, 1.1mm ,Aluminium extrusion, ANODIZED.
Finish	Powder coated off white
Glass retainer	Extruded Aluminium, 1.2mm
Finish	Powder coated
Header	Copper – 25.4 mm (1) \varnothing , 0.5 mm thick
Riser	Copper – 12.7 mm (1/2) \varnothing , 0.50 mm thick- 9 Nos
Fin	Aluminium – 0.19 mm thick
Width of Fin	12 cm
Number of Fins	9
Bottom sheet	Aluminium sheet, riveted & sealed with silicone Sealant from inside
Glass	Toughened textured prismatic glass, 3.2mm thick
Glass Beading	EPDM
Grommets	EPDM
Flanges	Brass
Bottom Insulation	Fiberglass/Rockwool 50 mm thick
Side Insulation	Fiberglass/Rockwool 25 mm thick
Reflective foil	Aluminium, 50 microns
Frame Corners	Sealed from inside with Silicone Sealant
Fasteners	SS 304 grade
Coating	Selective, black chrome – NALSUN
Absorptivity,	> 0.95
Emissivity	< 0.2
Bonding between Fin & Raiser	Ultrasonic welding
Working pressure	4.0 kg/sq.cm
Collector insulation	Rock wool pads for side & bottom. -25 mm
Flanges	Brass, round with four bolt holes.
Collector area	2.0 sq.m
Collector Weight	40 kg
Collector Structure	Powder Coated steel

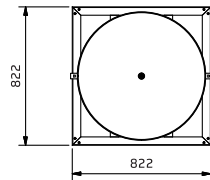
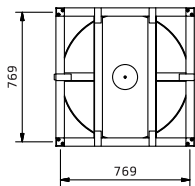
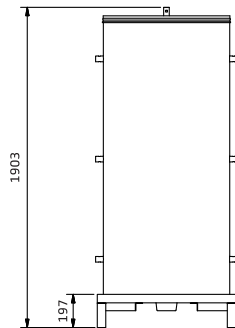
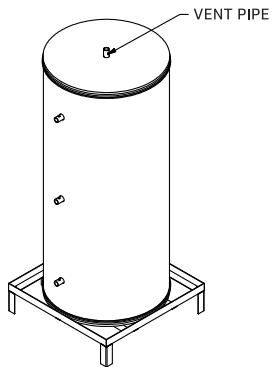
Plumbing Instructions:

1. For plumbing connections please refer the provided connection diagram.
2. Please ensure all safety devices, valves are placed at correct position.
3. Ensure that the Airvent is installed properly.
4. For plumbing, use only pipes which can withstand temperature up to 100°C at the outlet, for hot water.
5. Exposed pipelines carrying hot water should be properly insulated, to avoid heat losses.
6. Each part connected to unit needs to connect with union and installed with ball valve.
7. Install a drain valve at the lowest point of the system to enable the system to be drained.
8. To prevent Vent water overflow from affecting the tank, please refer the illustrative diagram below for vent pipe connection.



Safety Precautions:

1. Ensure level of all tanks
2. Tank stand should be properly grouted on terrace surfaces.
3. Safety valves should be checked and maintain with regular intervals.
4. Ensure that electric shock protection device, like ELCB. Is incorporated in the electric circuit before giving power supply to the backup heater.
5. Ensure that the heater is properly earthed.
6. For pressure pump connection, pressurized models must be selected.
7. Customer should ensure that the system is protected with a earthing / lightning Arrester.



NORMAL WATER QUALITY STANDARDS

Sl.No	Description	Desirable Limit
1	pH	6.5 - 8.5
2	Total Hardness	300 ppm (maximum)
3	Alkalinity	200 ppm (maximum)
4	Total Dissolved Solids	500 ppm (maximum)
5	Chloride	200 mg/l (maximum)

MAINTENANCE INSTRUCTIONS:

Though the maintenance required for this product is minimal, the customer is advised that a little bit of care (a few easy-to-do jobs) is required to maintain the high level of performance and life of the system.

Item	Maintenance procedure	Maintenance schedule
Sacrificial Anode	Check the condition anode	Once every 6 months
Electric wiring	Check earthing and continuity	Once every 3 months
Plumbing	Check for leakages	Once every 6 months
Valves	Check for smooth functioning	Once every 3 months
Collector glass	Drain & flush with plain water	Once in every 6 months

Terms and conditions

The warranty does not cover

1. Rust formation on supports, damage(s) / defect(s) of any nature resulting from repairs effected by unauthorized persons, improper selection of model/ capacity or misuse of any kind.
2. Any parts of the system which are replaced / repaired.
3. Accessories external to the original equipment.
4. Damage(s) due to improper selection of accessories external to the original equipment.
5. Tank leakage and repairs due to scale formation if the system is connected to hard water** supply.
6. Damage(s) due to improper plumbing, civil and electrical work.
7. Damage(s) resulting from exceeding the maximum permissible water pressure as specified by V-Guard.
8. Damage(s) resulting from absence or improper installation of airvent.
9. Damage(s) resulting from not grouting the supports properly.
10. Heat loss resulting from not insulating the outlet plumbing properly and / or not providing a horizontal NRV at inlet.
11. Damage(s) resulting from natural calamities such as storm, heavy rain, hail stone falling, earthquake, fire etc.
12. Corrosion of the absorber tubes and header pipes inside the collector due to hard water.

**Refer normal inlet water quality standards.

The warranty is void

1. If the installation of the system is not in accordance with the installation / plumbing instructions specified by V-Guard.
2. If the installation / repair / replacements are carried out by unauthorized persons.
3. If the system is shifted to a new location from the location at which the system was originally installed by authorized direct marketing associates / dealers of the company.
4. If the system is not connected directly to an overhead tank.
5. If the modifications / alterations are made by unauthorized persons.
6. Warranty does not cover if the system is connected to the water supply which does not meet the inlet water quality standards mentioned in this Instruction manual.

PRODUCT DISPOSAL INSTRUCTION

Material categories	Instruction
Metals (Stainless steel, Aluminium, Galvanized iron, Mild steel, Brass, copper)	The materials shall be disposed through authorized recycler in order to protect environment at the time of product final disposal.
Paper (Carton box, Corrugated buffer, Instruction Manual, sticker)	
PUF	
Rockwool	
Rubber	
Thermocol	
Plastics	
Glass	

Plastic Waste EPR Reg. No.: BO-13-000-07-AAACV5492Q-22



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SCAN TO AVAIL THE
DIGITAL
WARRANTY
BY REGISTERING YOUR
PRODUCT ONLINE



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