



V-Guard Corporate Office, Kochi.

V-Guard-Quality you can trust

V-Guard, India's leading electric and electronic consumer products brand, is a name trusted by over 50 million customers for the past three decades. Renowned for innovative products, world-class quality standards and technological excellence, it is also India's No.1 Stabilizer brand. V-Guard offers a wide range of products built for modern living, including Electronic Stabilizers, Digital Stabilizers, Stabilizer for Air Conditioner, UPS, Digital UPS, Electric Water Heaters, Solar Water Heaters, Pumps, Wiring Cables, Industrial Cables, Fans, Switch Gears & Induction Cook-top. Designed and developed by V-Guard's ISO 9000 certified R&D, these products are made from high-quality components, quality checked at all stages through the manufacturing process and equipped with latest technology and advanced features to deliver superior performance. V-Guard products are available with more than 9000 authorized dealers and 250 distributors located across 19 States.

V-Guard... Trusted by over 50 million satisfied customers. Since 1977.

V-Guard Evacuated Tube Collector Solar Water Heater

A revolutionary product from V-Guard-the brand that has always given the best in quality, technology, performance and service. The most advanced in Solar Water Heaters, V-Guard Solar Water Heaters are made from high-quality components and come with international technology. The Evacuated Tube Collector System facilitates high-efficiency absorption and utilization of solar energy, with minimum heat loss. V-Guard Solar Water Heater saves a substantial amount on electricity bills and other fuels, making it a worthy investment for a lifetime.

Features of V-Guard Evacuated Tube Collector System

- The concentric, high quality Borosilicate glass tubes in the Evacuated Tube Collector are sealed on both ends to create vacuum. The number of tubes vary according to the capacity.
- The high quality Solar Selective Coating (AlN/SS/CU) facilitates excellent heat absorption and minimum heat emission.
- The storage tank is made of food grade stainless steel - SS 304L (Sail Steel/Jindal Steel) see figure 2
- ISI Backup Heater with Automatic Temperature Controller (optional)
- Fitted with Sacrificial Anode.
- Huge savings on electricity and fuel charges.
- Models available with Aluminium Stucco/Stainless Steel/MS Powder coated outer cover

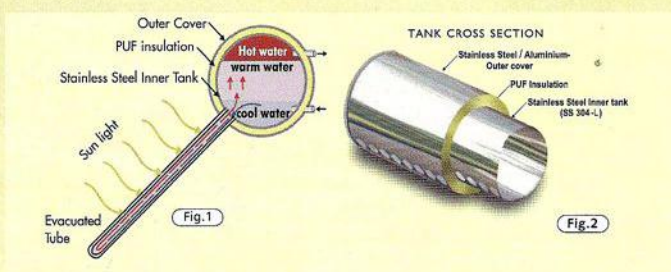
V-Guard Solar Water Heaters are manufactured in our factory with

- Imported machines
- Latest welding technology
- Experienced R&D personnel

Received business leadership award (Solar Thermal) from Solar Energy Society of India, New Delhi.

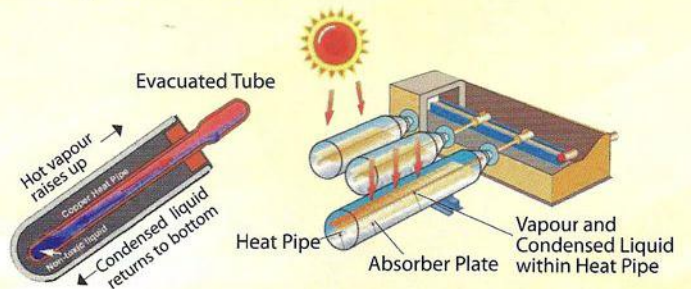
Working Principle of non pressurised Solar Water heater

Sunlight, incident on the Vacuum Tube, passes through the outer transparent glass tube and strikes the outer surface of the inner glass tube with selective coating (AlN/SS/CU). This glass tube, which acts like a black body, absorbs the radiation and gets heated up in the process. The presence of vacuum between the two tubes prevents heat loss to the surroundings. The heated inner tube transfers this heat to the water with which it is directly in contact. Hot water is lower in density and therefore has a tendency to rise up. Cool Water from the tank flows down to replace the hot water, facilitating circulation by thermosyphon. And through this process, the entire water in the storage tank heats up and gets ready for use. The storage tank is insulated with PUF which minimises the heat loss at night.



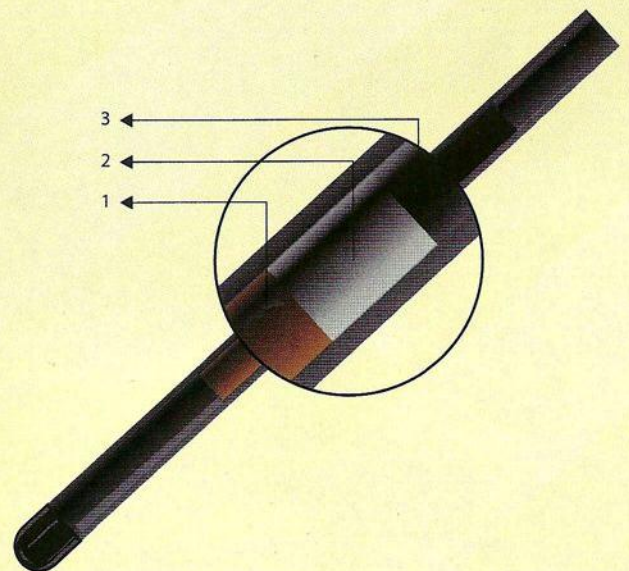
Working principle of pressurised Solar Water Heater

The non-toxic liquid inside the Copper heat pipe used in solar water heaters has a boiling point of only 25 degree C. So when the heat pipe is heated above 25 degree C, the liquid vapourises. The vapor rapidly rises to the top of the heat pipe transferring the heat to the cold water inside the tank. As heat is lost at the condenser top, the vapour condenses to form a liquid and returns to the bottom of the heat pipe to repeat the process. Each heat pipe is tested at 250 degree C. For this reason the Copper heat pipe is relatively soft. Because of high temperature, the glass tube is given a three-layer coating. Given the strict quality control and high Copper purity, the life expectancy of the heat pipe is even longer than that of the solar tube.



Three Layer Evacuated Tube

1. Metal Insulation layer(Copper)
Reduces heat loss and lowers emission rate
2. Absorption layer (Stainless Steel& Al-N-Al Enamelled Mirror)
Anti-Corrosion & Anti-oxidation
3. Anti-reflection Layer(Al-N-Al)
Ensure high absorption rate and low emission rate by reducing reflection



Special model made with SS 316L grade inner tank is also available for hard water area.

EVACUATED TUBE COLLECTOR (ETC) SOLAR WATER HEATER TECHNICAL DETAILS (DOMESTIC SYSTEMS)

| Model V-Hot series | Utility points | Number of persons using hot water | Number of headers | Number of evacuated tubes | Back up heater (optional) | Inner tank | Inlet/outlet pipe size of storage tank | Size of the evacuated tubes | Approx. wt of the storage tank without water | System height from the roof | Min. required over head tank height from the roof | Min. space area reqd. (NSX EW) |
|--------------------|----------------|-----------------------------------|-------------------|---------------------------|---------------------------|------------|--|-----------------------------|--|-----------------------------|---|--------------------------------|
| 100 LPD | 2 | 2-3 | - | 10 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 17 kg | 1.15 m | 1.3 m | 2.2 x 1.0 m |
| 125 LPD | 2 | 3-4 | - | 13 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 19 kg | 1.15 m | 1.3 m | 2.2 x 1.3 m |
| 150 LPD | 3 | 4-5 | - | 15 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 23 kg | 1.15 m | 1.3 m | 2.2 x 1.5 m |
| 200 LPD | 4 | 5-6 | - | 20 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 28 kg | 1.15 m | 1.3 m | 2.2 x 2 m |

• Outer cover: Aluminium /MS Powder Coated/Stainless Steel up to 200 LPD • Tank insulation- PUF

EVACUATED TUBE COLLECTOR (ETC) PRESSURIZED SOLAR WATER HEATER TECHNICAL DETAILS

| Model | Utility points | Number of persons using hot water | Number of headers | Number of evacuated tubes | Back up heater (optional) | Inner tank | Inlet/outlet pipe size of storage tank | Size of the evacuated tubes | Approx. wt of the storage tank without water | System height from the roof | Min. required over head tank height from the roof | Min. space area reqd. (NSX EW) |
|-------------|----------------|-----------------------------------|-------------------|---------------------------|---------------------------|------------|--|-----------------------------|--|-----------------------------|---|--------------------------------|
| 100 LPD-PR | 2 | 2-3 | - | 10 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 13 Kg | 1.3 m | 1.45 m | 2.5 x 1.1 m |
| 125 LPD-PR | 2 | 3-4 | - | 12 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 15 Kg | 1.3 m | 1.45 m | 2.5 x 1.25 m |
| 150 LPD-PR | 3 | 4-5 | - | 15 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 19 kg | 1.3 m | 1.45 m | 2.5 x 1.6 m |
| 200 LPD-PR | 4 | 5-6 | - | 20 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø58 x 1800 mm | 24 Kg | 1.3 m | 1.45 m | 2.5 x 2.1 m |
| 300 LPD-PR | 5 | 8-9 | - | 29 | 2KW | SS 304-L | 2.54 cm (1") | Ø58 x 1800 mm | 33 Kg | 1.5 m | 1.65 m | 2.5 x 2.4 m |
| 500 LPD-PR | 8 | 14-15 | 2 | 44 | 4KW (2KW+2KW) | SS 304-L | 2.54 cm (1") | Ø58 x 1800 mm | 41 Kg | 1.8 m | 1.95 m | 2.8 x 4.4 m |
| 1000 LPD-PR | 14 | 29-30 | 3 | 89 | 6KW (3KW+3KW) | SS 304-L | 2.54 cm (1") | Ø58 x 1800 mm | 120 Kg | 1.97 m | 2.2 m | 3.0 x 7.5 m |

• Outer cover: Aluminium Stucco • Tank insulation-PUF

EVACUATED TUBE COLLECTOR (ETC) SOLAR WATER HEATER TECHNICAL DETAILS (LARGE SCALE SYSTEMS)

| Model | Utility points | Number of persons using hot water | Number of headers | Number of evacuated tubes | Back up heater (optional) | Inner tank | Inlet/outlet pipe size of storage tank | Size of the evacuated tubes | Approx. wt of the storage tank without water | Approx. wt of one header set (one header and 30 tubes without water) | System height from the roof | Min. required over head tank height from the roof | Min. space area reqd. (NS X EW) |
|------------|----------------|-----------------------------------|-------------------|---------------------------|---------------------------|------------|--|-----------------------------|--|--|-----------------------------|---|---------------------------------|
| 300 LPD | 5 | 8-9 | 1 | 42 | 2KW | SS 304-L | 1.9 cm (3/4") | Ø47 x 1500 mm | 30 kg | 115 kg | 1.7 m | 1.85 m | 3.7 x 4.2 m |
| 300LPD DI | 5 | 8-9 | - | 20 | 2KW | SS 304-L | 2.54 cm (1") | Ø58 x 2100 mm | 32 kg | - | 1.47 m | 1.62 m | 2.3 x 1.6 m |
| 500 LPD | 8 | 14-15 | 1 | 60 | 4KW (2KW+2KW) | SS 304-L | 2.54 cm (1") | Ø47 x 1500 mm | 36 kg | 135 kg | 2.08 m | 2.23 m | 4 x 4 m |
| 500 LPD DI | 8 | 14-15 | - | 30 | 4KW (2KW+2KW) | SS 304-L | 2.54 cm (1") | Ø58 x 2100 mm | 38 kg | - | 1.52 m | 1.67 m | 2.4 x 2.5 m |
| 1000 LPD | 14 | 30 | 4-5 | 120-150 | 6KW (3KW+3KW) | SS 304-L | 2.54 cm (1") | Ø47 x 1500 mm | 90 kg | 106 kg | 1.75 m | 1.9 m | 4 x 14 m |
| 1500 LPD | 21 | 45 | 6-8 | 180-240 | 6KW (3KW+3KW) | SS 304-L | 2.54 cm (1") | Ø47 x 1500 mm | 150 kg | 106 kg | 2.1 m | 2.25 m | 4 x 17 m |
| 2000 LPD | 28 | 60 | 8-10 | 240-300 | 6KW (3KW+3KW) | SS 304-L | 3.81 cm (1.5") | Ø47 x 1500 mm | 175 kg | 106 kg | 2.1 m | 2.25 m | 6.6 x 14 m |
| 2500 LPD | 35 | 75 | 10-12 | 300-360 | 6KW (3KW+3KW) | SS 304-L | 3.81 cm (1.5") | Ø47 x 1500 mm | 200 kg | 106 kg | 2.1 m | 2.25 m | 8 x 14 m |
| 3000 LPD | 42 | 90 | 12-15 | 360-450 | 6KW (3KW+3KW) | SS 304-L | 5.08 cm (2") | Ø47 x 1500 mm | 230 kg | 106 kg | 2.1 m | 2.25 m | 9.2 x 14 m |
| 4000 LPD | 56 | 120 | 16-20 | 480-600 | 9KW (3KW-3NOS) | SS 304-L | 5.08 cm (2") | Ø47 x 1500 mm | 280 kg | 106 kg | 2.2 m | 2.35 m | 11.6 x 14 ma |
| 5000 LPD | 70 | 150 | 20-25 | 600-750 | 9KW (3KW-3NOS) | SS 304-L | 5.08 cm (2") | Ø47 x 1500 mm | 340 kg | 106 kg | 2.4 m | 2.35 m | 14 x 14 m |

*Number of tubes in 1000 LPD to 5000 LPD subject to Site condition • Outer cover: Aluminium • Tank insulation-PUF

EVACUATED TUBE COLLECTOR (ETC) SOLAR WATER HEATER TECHNICAL DETAILS (LARGE SCALE SYSTEMS) VERTICAL HEADER AND VERTICAL TANK

| Model | Utility points | Number of persons using hot water | Number of headers | Number of evacuated tubes | Back up heater (optional) | Inner tank | Inlet/outlet pipe size of storage tank | Size of the evacuated tubes | Approx. wt of the storage tank without water | Approx. wt of one header set (one header and 60 tubes without water) | System height from the roof | Min. required over head tank height from the roof | Min. space area reqd. (NS X EW) |
|----------|----------------|-----------------------------------|-------------------|---------------------------|---------------------------|------------|--|-----------------------------|--|--|-----------------------------|---|---------------------------------|
| 1000 LPD | 14 | 30 | 2 | 120 | 6KW (3KW+3KW) | SS 304-L | 3.81 cm (1.5") | Ø47 x 1500 mm | 120 kg | 135 kg | 2.13 m | 2.3 m | 4.5 x 8 m |
| 1500 LPD | 21 | 45 | 3 | 180 | 6KW (3KW+3KW) | SS 304-L | 2.54 cm (1.5") | Ø47 x 1500 mm | 165 kg | 135 kg | 2.68 m | 2.83 m | 4.5 x 12 m |
| 2000 LPD | 28 | 60 | 4 | 240 | 6KW (3KW+3KW) | SS 304-L | 3.81 cm (1.5") | Ø47 x 1500 mm | 190 kg | 135 kg | 2.0 m | 2.15 m | 8 x 8 m |

• Outer cover: Aluminium • Tank insulation-PUF

Applications

• Houses and Bungalows | Hotels/Hospitals/Restaurants | Resorts / Apartments | Poultry Farms / Textile Mills & Drying Units / Industries | Pool Heating



5000 LPD PR (3000 LPD PR+2000LPD PR)



3000 LPD



5000 LPD (2 NOS OF 2000 LPD + 1000 LPD)



2500 LPD