



आदित्यात् जायते वृष्टिः वृष्टे अन्नं ततः प्रजाः
सूर्यथी वृष्टि, वृष्टिथी अन्न अने ते पछी जिवन उद्भववे छे.

Sunline

SOLAR WATER HEATER



Always hot free of Cost..!!

When you install a *Sunline* Solar Water Heater in your home or commercial premises, you can be assured of

- High Quality *Sunline* Solar Flat Plate collector.
- Durable, efficient & proven State-of-the-art technology.
- Prompt pre and after sales service.
- Customer satisfaction through customer oriented approach.
- Comprehensive warranty packaged with service at your door step.



Salient Features

- Eco-friendly.
- Saves Energy.
- Round the clock hot water.
- Safe to use - No fear of accident.
- The most Luxurious way of getting hot water.
- Zero expenditure on heating water.
- Quick return of investment.
- Easy to install.
- 80% depreciation for commercial use.
- Long life span of 15 - 20 years.
- Very low maintenance.

Sunline Domestic Solar Water Heaters: Ideal for routine hot water requirements for bathing, washing and other household chores.

Sunline Domestic Solar Water Heater supplies hot water at 60° C and operates on the Thermosyphon / Natural Convection principle. Solar rays strike the selectively coated absorber, which in turn heats the water of the riser tubes by thermal conductivity. The driving force for circulation in such a system is derived purely from the density difference between hot and cold water through the solar collector. As the water gets heated up it becomes lighter, and "automatically" rises, and in turn is displaced by the comparatively heavier cold water from the storage tank. The system is designed to facilitate optimal stratification inside the SS-304 / copper storage tank ensuring the efficiency of the system.

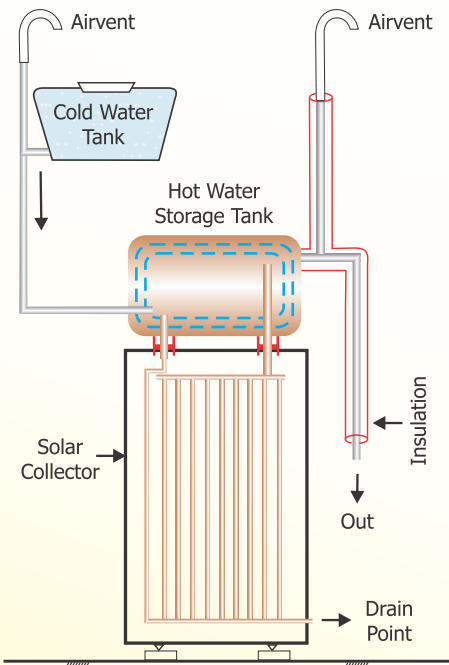
The hot water is collected and stored in a properly insulated SS-304 / copper storage tank which ensures that the water heated the previous day also remains hot for an early morning bath the next day.

Hot water availability depends on the absorber plate receiving enough solar insolation (direct sunlight) as well as the capacity of the system installed, depending on the number of persons in the family. The system is made with high quality materials and a design that ensures efficiency, durability, long life and consistent performance. Therefore, there are negligible repair and maintenance costs. The collector is made with good grade aluminium sheet and aluminium extruded section that makes it look better, is lighter in weight, resists corrosion and lasts longer. The riser-header tubes made from copper and absorber plate made from copper with selective coating increases efficiency of the system, ensures better temperature and protects it from corrosive effect. The storage tank is also made from SS-304 / copper and there is a special provision for electrical back-up. Superior quality insulation is used throughout the system for maximum efficiency. The absorber plate is also fitted with a toughened glass sheet with a high transmittency for optimum absorption of the sun's heat, even during the winter months. *Sunline* **pressurised solar water heater available for pressure boosting pump operation.**

Once installed, the *Sunline* Solar Water Heating system incurs no fuel cost whatsoever and the investment in the system pays back in just 2-3 years as compared to conventional electric geysers.



Schematic Diagram Thermosyphon System



Specification of Domestic Solar Water Heater

Capacity LPD (Liters / Day)	100	200	300	500	
No of Collectors	1	2	3	4	
Installation area	East - West	1150 mm	2300 mm	3450 mm	4600 mm
	North - South	2550 mm	2550 mm	2625 mm	2625 mm
Collector box	Aluminium with extruded section				
Absorber material	Copper with Selective Coating (Nickel plated & Black chrome)				
Storage Tank Material	SS-304 Grade / Copper				
Outer cover for tank	Aluminium				
Stand	Mild steel with weather resistant Coating				
Insulation for tank	Rock wool / Glass wool - 100mm thick				
Glazing	Toughened Glass - 4mm thick				
Electrical back up (optional)	2 kw	3 kw	3 kw	4 kw	

Sunline Industrial / Commercial Solar Water Heaters:

Ideal for use in Dairies, Guest Houses, Lodges, Canteens, Hotels, Hostels, Hospital, Health Clubs, Gymnasiums, Chemical Industries, Tanneries, Sugar Factories, Breweries, Oil Mills, Paper Mills, Preheating of water for boilers & whenever you need hot water.

The Industrial / Commercial Heaters are designed to supply water at 80° C. The absorber plate collectors are technically the same as in the Domestic Heaters but they are larger in number and instead of operating on the thermosyphon mode, the forced flow circulation system with thermostatically controlled fixed or differential temperature controllers is installed. The system consists of an array of collectors, arranged in a series parallel combination so as to optimise the pressure drop as well as the heat collection, while utilising the available space to the maximum. A motor pump is used to circulate water through the collectors. This pump is activated by a capillary type thermostat with the rise in the temperature from the preset condition. The heated water is supplied to a properly insulated storage tank which can keep it hot overnight.

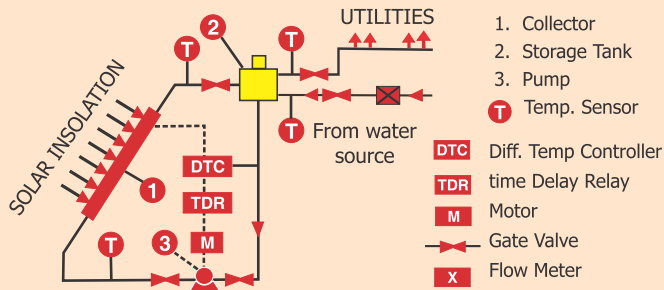
The Sunline Industrial / Commercial System has a payback period of 1-2 years when compared to electric heaters and, 3-4 years when compared to oilfired boilers. With the prices of conventional fuels not likely to decrease in the future, the Sunline Solar Water Heater offers even better benefits.





Schematic Diagram

Forced Flow Circulation System



Technical Specification of Solar Flat Plate Collectors

Over all dimensions 2120 x 1040 x 100 mm

Temperature range Up to 85°C

Test Pressure 5 Kg. / Cm²

ABSORBER

Fin Material Copper

Surface Coating Selectively Coated (Black Nickel Chrome)

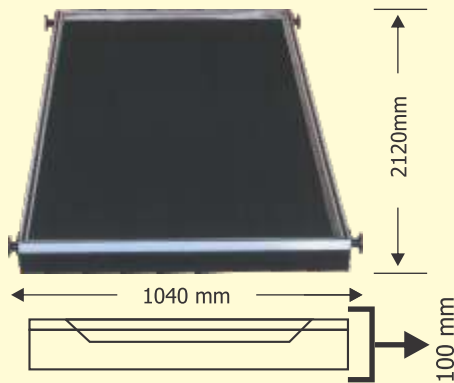
Headers / Risers No. 9 Copper

Flanges Brass

Collector Box Aluminium with Extruded Channel Section

Insulation (50 mm) Resin Bonded Rock Wool / Twiga equivalent

Cover Plate Toughened glass - 4 mm thick with RTV sealant



- Absorber-Selectively Coated Copper
- Black Nickel Chrome
- Max. Temp. 85°C

Savings At A Glance

100 Liters per day Solar water heating system at 60°C.

FUEL	CALORIFIC VALUE (K.cal./Kg.)	EFFICIENCY (%)	FUEL SAVED (Annum.)
Fire Wood	4708	17.3	2127 kg.
Kerosene	9122	50.0	380 ltrs.
LPG	10882	60.0	265 Kg.
Charcoal	6940	28.0	891 kg.
Diesel	10004	75.0	231 ltrs.
Electricity		90.0	2230(kwh)



Sunline
SOLAR WATER HEATER



Solar Energy Services, one of the leading manufacturer of Solar Water Heaters in the country operates with a distinct philosophy. Quest for the latest technologies to meet the diverse need of customer, Quest for excellence, setting new standards of performance... and Total commitment to the customer satisfaction. This distinctive spirit has been instilled by the first generation promoters of the company.

The company is ably supported by a motivated team of thoroughbred professionals in design, manufacturing, installation and after sales service of Sunline Solar Water Heaters.

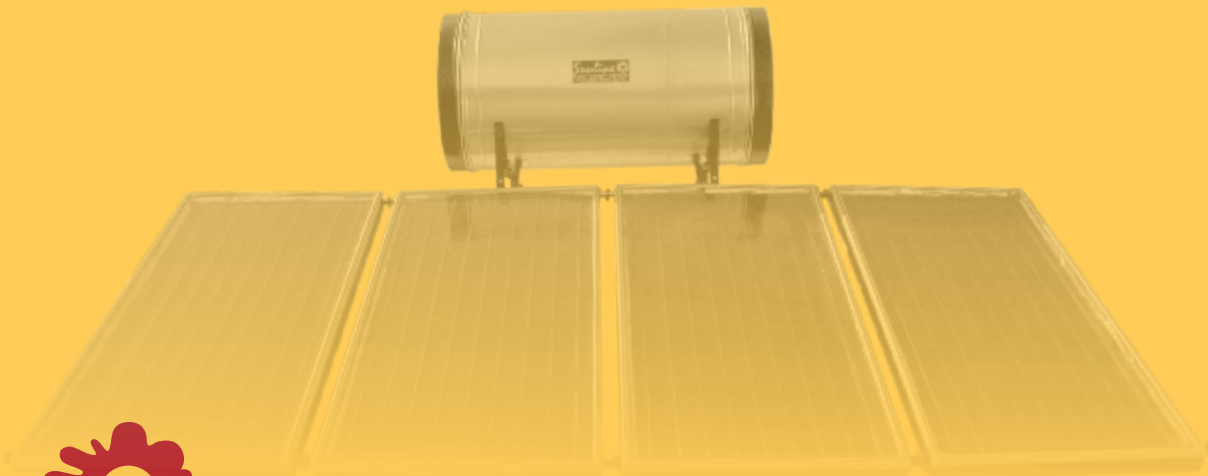
A State-Of-The-Art manufacturing plant and a separate quality control department testifies to the Company's relentless search for the highest quality.

Consolidating its experience, Solar Energy Services ventured in to the field of **Automatic Gas Fired Water Heater** manufacturing and within a short span has more than 1000 thoroughly satisfied customers to its credit.

The Company has to its credit more than 6000 thoroughly satisfied customers due to its high quality product, customer-oriented approach, expertise and prompt after -sales service.

Solar Energy Services is an approved manufacturer of Solar Water Heaters by **Ministry of New and Renewable Energy (MNRE)** Government Of India and **Gujarat Energy Development Agency (GEDA)** a state nodal agency of Gujarat State.

Yes..... Solar Energy Services committed to the present and is working towards a better future. Solar Energy Services believes that if you want to know what the future has in store for you, you must take a hand in shaping that future NOW.



SOLAR ENERGY SERVICES

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NOTE: Due to continuous development in the product the company reserves the right to change the Design, Dimension and Pattern without prior notice as and when required.