

Solar Water Heating System

Honeywell



**ready for your family's
everyday hot water needs**

bringing **solar energy** to every home

Cost efficient hot water for basic domestic use is a key requirement of every home owner. Solar water heaters are fast emerging as a energy efficient and inexpensive way to satisfy this requirement, especially in a time of rising energy costs, increased pollution and rapidly depleting energy sources.

Honeywell brings you a complete range of solar water heating solutions, including basic as well as temperature control based models suited for varied water conditions and application types – bungalows as well as apartments.



We are building a world
that's safer and more secure ...
More comfortable and energy efficient ...
More innovative and productive.

We are Honeywell

Honeywell thermosiphon solar water heating system

With cost and energy savings like never before, Honeywell thermosiphon solar water heating systems address heating requirements for varying family sizes, climatic conditions & building types. Besides, through a strong dealer network across country & well trained installation team, the systems are easily accessible to end users, thus bringing solar energy to every home.

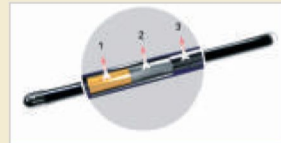
the evacuated tubes



The solar collector comprises evacuated tubes that are optimised in geometry and performance. These tubes are constructed from two concentric glass tubes, half spherically closed on one side & fused together on the other side; the gap between them is evacuated & afterwards hermetically plugged (vacuum insulation).

The internal glass tube has a highly selective & eco friendly aluminium nitrite sputter layer on its external surface, that acts as an absorber, to effectively capture solar power.

- 1. Metal Insulation Layer (Copper)**
Reduce heat loss and low emission rate
- 2. Absorption Layer (Stainless Steel & Al-N-Al Enameled Mirror)**
Anti-corrosion & Anti-oxidation
- 3. Anti-reflection Layer (Al-N-Al)**
Ensure high absorption rate & low emission rate by reducing reflection



the flat plate collectors

Honeywell flat plate collectors are made from the highest quality components, integrated together to create a highly efficient, reliable product that is aesthetically pleasing as well.

Our fins, risers and headers are made from entirely from Copper; Copper has superior heat conducting properties compared to other metals, making it the perfect material for designing the fins, risers and headers that are meant for capturing the Sun's heat and transferring the same to the water.

Our flat plate collector glass comes with low iron content for maximum transmissivity (the ability to transmit the sun's rays) and is textured and toughened for high durability. The glass is 3.2 mm thick, and sealed with EPDM beadings for maximum heat retention.

The fins, risers, headers and the glass are housed within a marine grade, extruded aluminum box of 1.6 mm thickness. The aluminum surface is anodized for better resistance to corrosion.



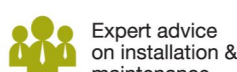
Compact & sleek design



Wide range of products



3 years warranty on tank



Expert advice on installation & maintenance



Assured after sales services



Trusted global brand Honeywell

SS and GI series

Stainless Steel (SS) series is suitable for treated water (municipal or treatment plant) and Galvanised Iron (GI) series is suitable for untreated water (hard water from bore well or other sources).

the evacuated tubes

Parameter	Features	Advantages
Container Welding	TIG based machine welding	Consistent welding, high resistance to corrosion
Container Coating	Bright zinc coating	Corrosion resistant
Insulation	Automated PUF filling + HFC-245FA blowing agent	Minimal heat loss, better structural stability
Stand Material	Anti-corrosive aluminium stand*	Longer stand life
Stand Stability	SS 304 foot, screws in cradle to fix tank	Better stability in windy conditions
Tubes	Honeywell branded 1800 mm tubes	Optimised length, assured tube quality

the flat plate collectors

Parameter	Features	Advantages
Fins, risers and headers	99.9% Copper	Superior heat conducting capability
Collector box fitting	Screw less collector box	Good aesthetics, lower heat loss
Collector glass	Low iron toughened / textured glass	Higher transmissivity, higher heat retention
Collector box material	Marine grade extruded aluminum	Better aesthetics, protection against corrosion
Box Surface Treatment	Anodized treatment of AL surface	Better resistance to corrosion
Riser - Sheet Bonding	Ultrasonic welding	High thermal conductivity, stronger joints

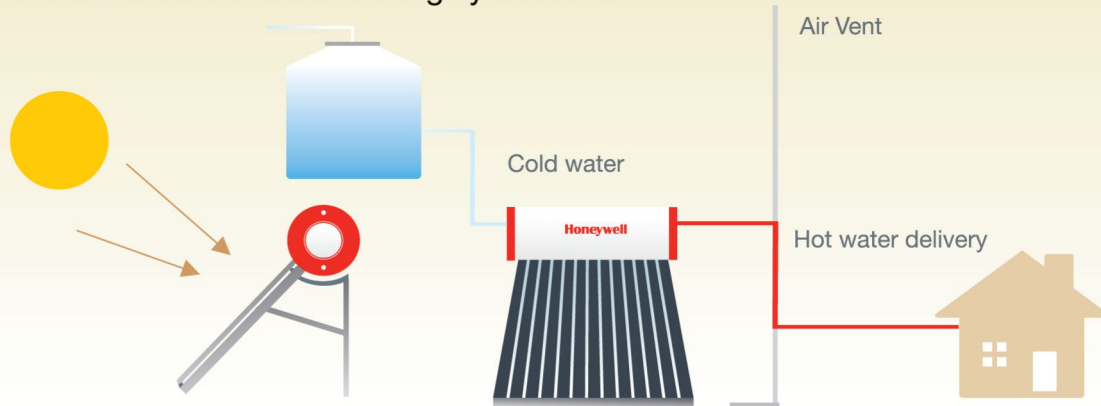


Bungalows



Apartments

How does a solar water heating system work?



SS (For Soft Water)

Capacity	LPD	100	150	200	250	300
Number of Evacuated tubes	Units	10	15	20	25	30
Max. Working Pressure	Bar	0.5	0.5	0.5	0.5	0.5
Inner Tank Thickness	MM	0.6	0.6	0.6	0.6	0.6
Inner Tank Material	Stainless Steel – (SS304) ASTM A 240					
Heater Provision	Provided	Provided	Provided	Provided	Provided	Provided
Insulation	*PUF (Honeywell HFC-245FA) (50mm thickness)					
Stand	Available in Aluminium and Mild Steel variants					

GI (For Hard Water)

Capacity	LPD	100	150	200	250	300	500
Number of Evacuated Tubes	Units	10	15	20	25	30	28
Max. Working Pressure	Bar	0.5	0.5	0.5	0.5	0.5	0.5
Inner Tank Thickness	MM	2	2	2	2	2	2.5
Inner Tank Material	Galvanised Steel- (120GSM) IS 277						
Heater Provision	Provided	Provided	Provided	Provided	Provided	Provided	Provided
Insulation	*PUF (Honeywell HFC-245FA) (50 mm thickness)						
Stand	Available in Aluminium and Mild Steel variants						

Technical specifications subject to change without prior intimation.

* PUF- Polyurethane Foam

Direct Heating (For Soft Water)

Capacity	LPD	100	200	300	500
Number of FP Collectors	Units	1	2	3	4
Working Pressure Range	Bar	0 to 5			
Inner Tank Thickness	MM	2			
Inner Tank Material	Galvanized Steel (also known as Galvanized Iron - GI)				
Heater Provision	Provided				
Insulation	PUF (Honeywell HFC-245FA) (50mm thickness)				
Stand	Mild Steel				

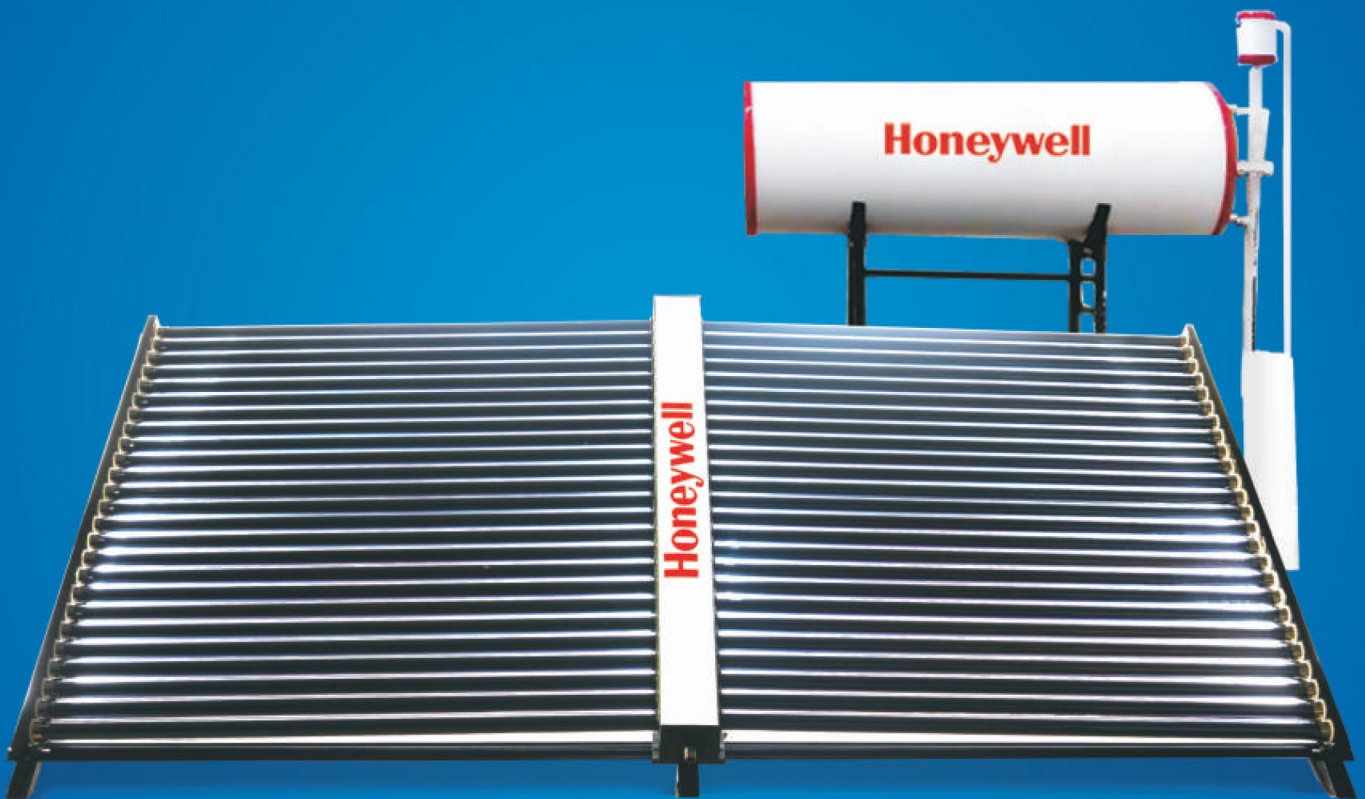
In-Direct Heating (For Hard Water)

Capacity	LPD	100	200	300	500
Number of FP Collectors	Units	1	2	3	4
Heat Exchange Construction / Design	Coil type heat exchanger made of Galvanized Steel (aka GI), enclosed within the storage tank				
Heat Exchange Medium	Water				
Other Accessories	Automation filling tank to top up water in heat exchanger that may get lost to evaporation				
Working Pressure Range	Bar	0 to 5			
Inner Tank Thickness	MM	2			
Inner Tank Material	Galvanized Steel (also known as Galvanized Iron - GI)				
Heater Provision	Provided				
Insulation	PUF (50mm thickness)				
Stand	Mild Steel				

Pressurised series

Our Pressurised range of systems is designed to cater to customer requirements for higher water pressure. We offer systems that can work up to 5 bar pressure.

Parameter	Features	Advantages
Heat Exchange	Proven heat exchanger made of MS	Reliable, consistent hot water supply
Inner Tank Coating	Epoxy coating for MS, coating on welding for SS	Corrosion resistant, longer life
Stand Material	MS stand, Painted with red oxide & two coats of enamel paint	Stable and corrosion resistant stand
Pressure Testing	Each tank is tested for higher pressure than rating	Consistent quality, longer tank life
Tubes	Honeywell branded 1800 mm tubes	Optimised length, assured tube quality



Apartments



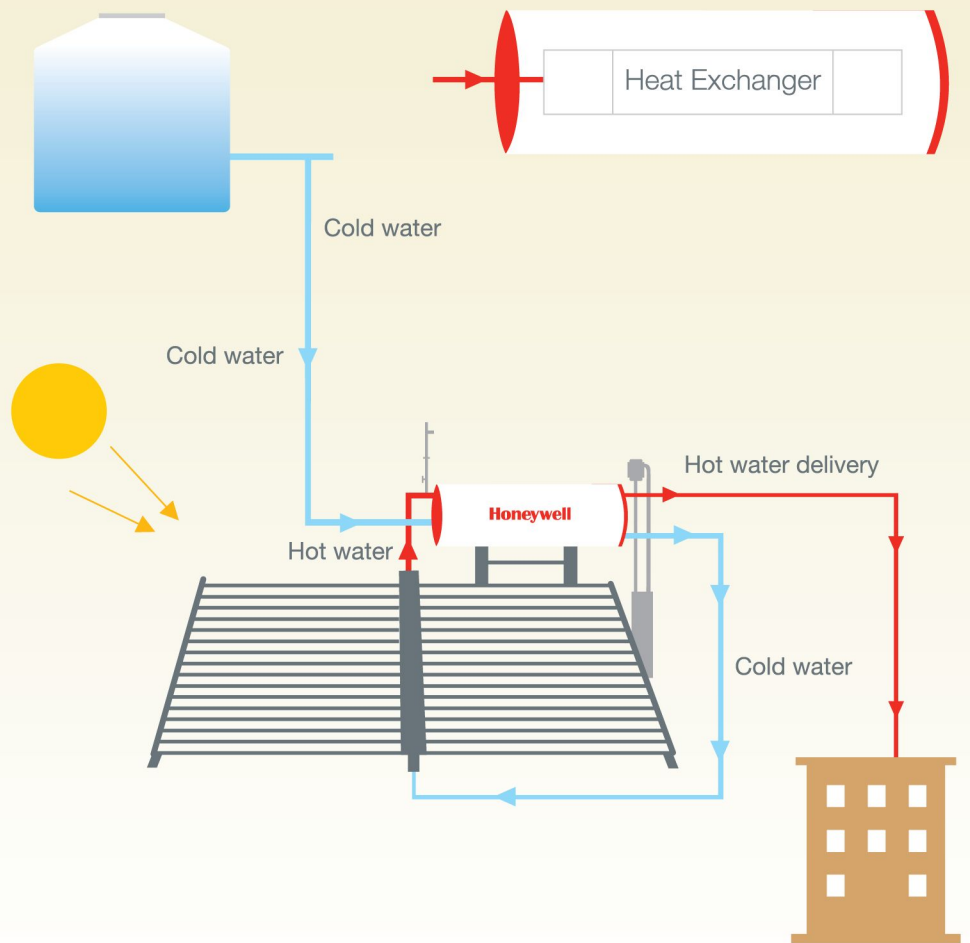
Hospitality



Shower panels that need higher pressure consume significantly more water than normal panels.

Please select a pressurised solar water heater system with the right capacity, for deriving maximum pleasure out of a hot water bath.

How does a pressurized solar water heating system work?



Pressurised System

Inner Tank Material	Mild Steel (for hard water)				SS 304 (for soft water)		
	Capacity (L)	200	300	500	1000	300	500
Max. Working Pressure (Bar)	← 5 →				← 5 →		
Inner Tank Thickness (mm)	3	3	3	4	2	2	2
Insulation	PUF (50 mm)		Rockwool (50mm)		PUF (50 mm)		Rockwool (50 mm)

Sizing and Area requirements

No. of Persons	Capacity (LPD)*	Area Required (Sq ft.)**
2 – 3	100	20
3 – 4	150	27
4 – 5	200	40
5 – 6	250	43
6 – 7	300	62

* Assuming the system caters to one bathroom, sizing will change if hot water connection is for more bathrooms

** Approx. footprint of solar water heating system only; does not cover piping and other accessories

Payback Period Calculations

Parameter	Electricity	Gas (LPG)	Diesel
Calorific Value	860 Kwh/(units)	11000 Kcal/kgs	10000 Kcal/kgs
Combustion Efficiency	95%	80%	80%
Fuel Quantity Needed* p.a.	1566 Kwh(units)	146 Kgs	215 Ltrs
Fuel Cost**	₹ 5.75/unit	₹ 84.5/kg***	₹ 65/ltr
Total Expenditure	₹ 9005	₹ 12337	₹ 13975
Payback Period (months)****	30	22	20
Total lifetime savings*****	₹ 90,000	₹ 1,23,370	₹ 1,39,750

* Calculated for 100 LPD system installation, for 320 working days & 60°C temperature output, input water temperature at 20°C

** As of September, 2014

*** Unsubsidised prices

**** Honeywell sale price for system is approx. ₹ 22,300

***** Assuming 10 yrs life

Our work area



Annually one 100L Solar Water Heater can save

- 250 kilograms of coal
- 1100 KW of electricity
- 565 kilograms CO₂ emission
- 6 trees from being cut down



Honeywell Environmental and Combustion Controls

Honeywell Automation India Limited

OUR BRANCHES:

BANGALORE BARODA KOLKATA GURGAON CHENNAI HYDERABAD MUMBAI COCHIN



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