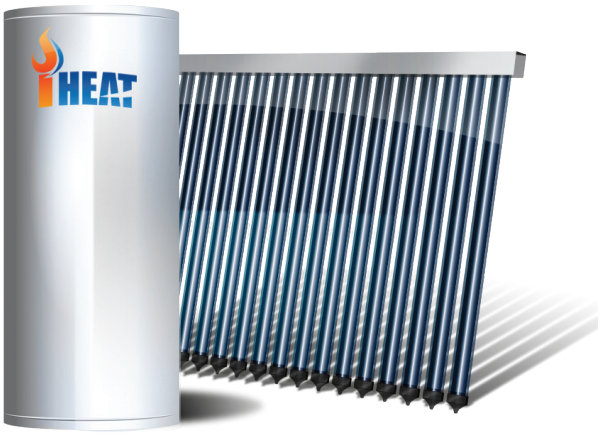
Ground Mount Solar Hot Water System

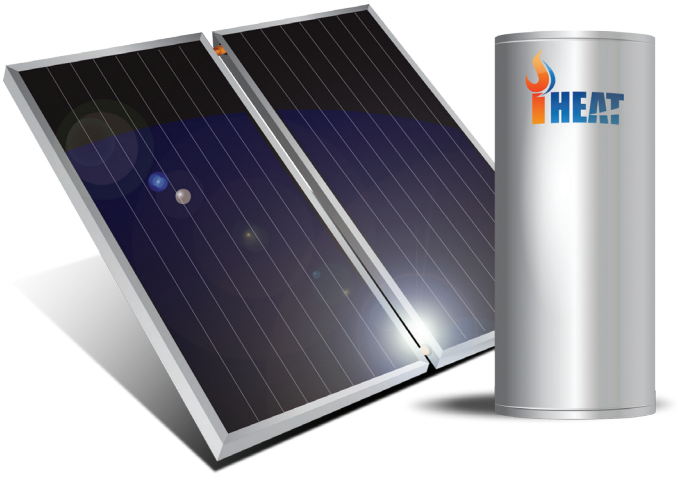
USER MANUAL

REGISTER YOUR WARRANTY ONLINE! www.i-heat.com.au/warranty-registration
Congratulations on the purchase of your new iHeat Hot Water System. To validate your warranty, you must register your product with us within 6 weeks of installation.

iHeat is a leading provider and installer of solar energy solutions.

Our quality and design processes, combined with our years of experience in the solar industry has enabled us to develop a world class solar hot water product.





Evacuated Tubes - Explained

iHeat evacuated glass tubes provide superior daily heat output due to the cylindrical absorber shape always being perpendicular to the sun. Evacuating the heat pipe and placing a small amount of purified water inside, this in turn makes the purified water evacuated.

The purified water will boil at 30°C. When the vacuum tube absorbs the solar energy and the temperature in the heat pipe rises to 30°C, the water vaporizes at the top of the heat pipe condenser, when the heat pipe condenser meets lower temperature, the water will fill and return to the bottom of the heat pipe, this process repeats until the sun goes down.

Flat Panels - Explained

Designed for longevity and superior performance, iHeats flat panel collectors have been designed by Australians, for Australian conditions. Our collectors consist of a copper fin and tube design, manufactured from high grade copper ultrasonically welded together to provide supreme contact for maximum transfer of solar energy.

iHeat's black chrome selective coating and 4mm tempered & patterned glass has been impacted tested to withstand a 25mm hail stone and provide 90% absorption of the suns energy. Enjoy peace of mind with our heavy duty anodized alloy frame, specially manufactured to withstand Australias harsh climatic conditions. Aesthetically pleasing designs, engineered for strength and optimal performance, ensure maximum benefits from the iHeat Hot Water system of your choice.

HOT WATER CAN CAUSE SERIOUS INJURY

WARNING - Hot Water is dangerous! As a safety precaution, young children should always be supervised around hot water fixtures

THIS WATER HEATER IS ONLY INTENDED TO BE OPERATED BY PERSONS WHO HAVE THE EXPERIENCE OR THE KNOWLEDGE AND THE CAPABILITIES TO DO SO. THIS WATER HEATER IS NOT INTENDED TO BE OPERATED BY PERSONS WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES IE: THE INFIRM AND CHILDREN.

As solar water heaters can generate water temperature in excess of 80oC, regulations require that an approved solar rated tempering valve shall be installed in accordance with the valve manufacturer's instructions. This is required to prevent water temperatures supplied to the house exceeding a preset safe maximum. The tempering valve is connected to the hot water outlet lines. The valve must be fitted by an authorised plumber at the time of installation or in retrofitting to existing systems.

CHECK THE WATER TEMPERATURE BEFORE USE, SUCH AS WHEN ENTERING A SHOWER OR FILLING A BATH OR BASIN, TO ENSURE IT SUITABLE FOR THE APPLICATION AND WILL NOT CAUSE SCALD INJURY.

Hot water systems can store water at temperatures that can cause scalding. Water temperatures over 50oC can scald and care needs to be taken to ensure that injuries do not occur through incorrect use of your water heater.

THIS WATER HEATER USES 240V AC POWER FOR THE ELECTRICALLY OPERATED COMPONENTS.

THE REMOVAL OR ATTEMPTED ALTERATION OF ANY ELECTRICAL COMPONENT MUST BE CONDUCTED BY A QUALIFIED ELECTRICAL SERVICE PERSON.

Care should be taken to avoid coming into contact with any pipe work or fixtures associated with the water heater collector flow and return lines.

FOR CONTINUED SAFETY OF THIS APPLIANCE, IT MUST BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.

Water from the solar collectors can be hot enough to create pressurized steam which can cause severe scalding - under NO circumstances should any alterations be made by unauthorised personnel.

IN ORDER TO KILL LEGIONELLA BACTERIA IT IS AN AUSTRALIAN STANDARDS REQUIREMENT (AS3498-2009) THAT THE HOT WATER IN THE STORAGE TANK BE HEATED UP TO AT LEAST 60oC ON A REGULAR BASIS, EITHER WHILE IN THE STORAGE TANK (SOLAR / ELECTRIC) OR BY A POST BOOST SET AT 70°C (GAS CONTINUOUS FLOW).

Standards and Regulatory Requirements

All iHeat solar hot water systems must be installed by an authorized plumber. All installation work must meet local authority standards, Australian standard (AS 3500.4) and the National Plumbing Code along with local electrical regulations. Where required, the relevant electrical and plumbing work will need to be certified to the satisfaction of local regulatory authorities

Solar Hot Water Storage Tank

To obtain maximum performance the solar tank/system should be positioned as close as practical to the most used hot water outlets. This will reduce the amount of “lag time” which is the amount of cold water discharged through the outlet before the hot water reaches the outlet.

Frost Protection

iHeat’s ‘Open Loop’ split systems are fitted with an inbuilt frost protection mechanism in the solar control unit designed to automatically circulate a small amount of water through the solar collector array when freezing conditions occur. It is important to ensure that the power supply to the control unit is NEVER switched off during normal day to day operation. iHeat split system has been tested to level 2 - severe frost condition according to AS/NZS 2712:2007 Appendix E.

Warranty will not apply to frost damage collectors if the pump and/or controller are determined to be faulty for any reason, including power failure except within the first 12 months. If installation is in a frost area, frost protection is required.

It is the home owner’s responsibility to check the system before winter to d termine that the system is circulating water to the collectors. This can be done by checking temperature of the pressure relief valve on a sunny day in the late afternoon. If the valve is hot the pump and controller are working properly and this verifies that the frost protection will function correctly. Failing to perform this check will render the home owner liable for the full expense of collector replacement should frost damage result.

iHeat evacuated tubes are designed for installation conditions where temperatures fall below 2°C or installation site is located above 800 metres altitude.

Going away on holidays?

If the water heater is left unused for two weeks or more, a small quantity of hydrogen gas (which is HIGHLY flammable) may accumulate in the top water cylinder. To dissipate this gas safely it is recommended that a sink or bath hot tap be turned on to dispel a couple of litres of water. During this procedure there should be no smoking, open flames or any electrical appliances such as washing machines or dish washers operating nearby. If Hydrogen is discharged through the tap, it will make a sound like air escaping.

Handy Hints about Boosting

The following hints are provided to assist you with your operation of your solar water heater:

1. Solar energy input is greater on sunny days between 10am and 3pm. If possible, schedule your large hot water demands (e.g. heavy washing or laundry) for as close as possible to the middle of the day.
2. If a timer is installed, boost your tank's water after this 10am to 3pm hot period. The sun has made its maximum contribution by this time, the booster will then raise the water to the desired temperature if the sun has not done so (in winter for example).
3. Keep trees in the sun's path at a level where the collectors are not shaded at any time during periods of effective solar radiation.

OFF PEAK ELECTRICITY & BOOSTING

If the water heater's in-tank electric booster is connected to an Off Peak (night rate) electrical supply, it is important to remember that the booster may only operate late at night. On cloudy days the tank may only gain a small amount of energy during the day. Careful planning will be required to avoid running out of hot water if large quantities are drawn during the day. In areas where a Day Rate electrical switch is permitted, the storage tank can be boosted to ensure hot water is available at the end of the day.

iHeat Hot Water Performance & Operation Information

General facts to know about your iHeat Water Heater

The performance and energy savings that you can expect from your iHeat water heater will depend upon a number of factors, such as water usage patterns, daily temperatures, available solar energy and the cost and type of purchased energy being utilized.

iHeat active open loop split system

Our solar collector is a thermal solar heating device, quite different to photo-voltaic "PV" which converts the sun's energy into electricity. The iHeat process is very simple:

1. The collector on your roof absorbs sunlight and converts it into usable heat
2. An electronic controller measures the temperature of the solar collector and the water in the bottom of the storage tank. If the collector is hotter, meaning there is heat available, the controller supplies power to a circulation pump which pushes water through the collector and back to the storage tank.
3. Throughout the day the circulation pump switches on and off gradually heating up the water in the tank. This is called solar contribution.

Understanding Solar Contribution

Some solar hot water owners make the mistake of thinking that once they install a solar water heater they can turn their element or gas booster off whenever there is sunlight. This is incorrect for two reasons:

Firstly it is a requirement to heat the water to 60°C on a regular basis to kill Legionella bacteria.

Secondly, solar radiation is only half or one third as strong in the winter months compared to summer, and therefore is not able to provide the same amount of hot water as in the summer. Your solar system is designed to meet virtually 100% of summer hot water needs and will provide about 50% in the winter, averaging about 60-80% annually, depending on your location.

If the solar contribution during the day is not enough to raise the water to a suitable temperature an electric or gas booster will be required to provide additional heating.

During good sunny weather the solar collector will normally be able to provide enough hot water, but during winter months and inclement weather, boosting will be required. It is a legal requirement that the water be heated to 60oC on a regular basis to kill Legionella bacteria that can lead to Legionnaires disease.

Bottom element electric boosted system
= Once per week to 60°C

Mid element electric boosted systems
= Once per day to 60°C

Gas boosted systems = Each time the water passes through the booster the sensor will automatically heat the water to 70°C. When utilizing a continuous flow gas water heater as the auxiliary booster, the gas water heater will need to be left with the power and gas switched ON at all times.

During good sunny warm weather (above 25°C clear & sunny) the electric booster can often be turned off, strictly by the use of an optional timer switch adjusted to daily heating periods (3-6am) & (3-6pm) as the solar contribution will achieve 60°C in the tank, however during overcast or winter periods it is important that the booster is activated to meet the above requirements. Gas boosted systems must always be turned on. For electric boost systems, iHeat strongly recommend that the electric booster is left on, or controlled by an optional timer switch.

When using gas boosting through a continuous hot water system, the gas system should be as close as possible to the most used outlets.

iHeat Hot Water Systems Terms and Conditions of Warranty

1. For all warranty issues please call iHeat on 1300 829 118 or email info@i-heat.com.au
2. This Warranty is effective for all iHeat Hot Water Systems manufactured and installed after 1 November 2012.
3. If the Customer has not paid in full for the iHeat Hot Water System then this Warranty does not apply.
4. iHeat Hot Water System and its components are covered by a warranty against defective factory parts or workmanship from the date the iHeat Hot Water System is installed for the relevant period for such component as outlined in Table 1 - Warranty Periods. If the date of installation is unknown, the Warranty commences one (1) Month after the date of manufacture.
5. This Warranty is for normal domestic use of the iHeat Hot Water system only.
6. To the extent a claim falls under the “Parts Only” Warranty Period the Warranty covers the replacement of such failed component in the iHeat Hot Water System free of charge. Subject to an area within a 30 kilometre radius of the iHeat Branch or Authorised Distributor from where the unit was purchased. Customers outside this area will be subject to any freight costs and any travelling charges incurred by the iHeat representative carrying out the rectification.
7. To the extent a claim falls under the “Parts and Labour” Warranty Period, the Warranty covers the repair and/or replacement of such failed component in the iHeat Hot Water System and any associated labour costs free of charge. Subject to an area within a 30 kilometre radius of the iHeat Branch or Authorised Distributor from where the unit was purchased. Customers outside this area will be subject to any freight costs and any travelling charges incurred by the iHeat representative carrying out the rectification.
8. The decision to repair or replace the component the subject of the Warranty will be entirely at the discretion of iHeat.
9. Where a iHeat Hot Water System or a component thereto is repaired or replaced by iHeat, the balance of any original Warranty Period will remain effective. The repaired or replaced part does not carry any additional warranty period.
10. Upon installation of the iHeat Hot Water System, it is the consumer’s responsibility to register their warranty online www.i-heat.com.au/warranty-registration. Consumer must provide the following detail - home owners detail, product model number, product installation date, product serial numbers, licensed plumber contact details. Once you have successfully completed the online registration form, you will be notified of successful warranty registration. If you do not have access to the internet, please contact iHeat on 1300 829 118 to register your warranty. To be eligible to make a claim under this warranty, consumer must register their warranty within 6 weeks of the installation.

11. The iHeat Hot Water System must be installed in accordance with iHeat's installation instructions, and all relevant local, state and national statutory requirements, including but not limited to, AS3500,4 & 5, AS5601, AS3000 and AS2712.
12. Installation must be completed by registered plumbers, gas fitters and electricians that are licensed in the State or Territory in which the installation is completed. Installation must include all relevant valves as required by federal/state regulations & must incorporate a 500kPa Pressure Reduction Valve. Installation of a Pressure Limiting Valve does not comply with manufactures installation instructions. Failure to incorporate a 500kPa Pressure Reduction Valve will void this warranty.
13. The electrical system components must be installed in a domestic application and connected to a 240V power supply by a qualified electrician in accordance with AS3000.
14. iHeat reserves the right to alter the design, components or construction to its iHeat Hot Water System. Such alterations shall not constitute a defect in design or construction under this Warranty. See Warranty Table on next page.
15. Any claim under this Warranty must include full details of the defect and/or damage to the iHeat Hot Water System. All claims must be made within one (1) month of the detection of the defect.
16. Dated proof of purchase is required prior to commencement of any work under this Warranty. This Warranty does not apply to any defects or damage NOT due to faulty factory parts or workmanship including, but not limited to, defects or damage caused by or resulting from: (a) accidental damage, storm damage, vandalism, failure due to misuse or abuse, or neglect of any kind; (b) incorrect or improper installation of the iHeat Hot Water System, including but not limited to, installation otherwise than in accordance with the instructions contained in the installation manual supplied by iHeat or incorrect system selection; (c) alteration or repair of the iHeat Hot Water System other than by a licensed plumber or by an approved iHeat agent; (d) attachment of any parts or accessories other than those manufactured or approved by iHeat; (e) freezing in regions with minimum temperatures below -15°C (in accordance with AS/NZS 2712:2007 freeze level 2); (f) the power supply to the iHeat Hot Water System being cut; (g) power surges; (h) animals, birds and/or rodents; (i) the solar collector being left dry (no liquid circulation) and exposed to daily sunlight (i.e. not covered) for a period exceeding 14 consecutive days; (j) excessive water pressure, negative pressure (partial vacuum), excessive temperature, corrosive atmosphere, faulty plumbing and/or electrical wiring; (k) sludge/sediment as a result of connection to a water supply from filtered or treated sources i.e. spring, dam, bore, river or town supply from a bore; (l) contamination and corrosion from particles in the water supply; (m) serial tags/stickers on any of the components being removed or defaced; (n) the iHeat Hot Water System being relocated from its original point of installation; and (o) the water stored in the cylinder exceeding at any time the following levels:

Total hardness	200 mg/litre or p.p.m
Total dissolved solids	600 mg/litre or p.p.m
Electrical conductivity	850 µS/cm
Chloride	250 mg/litre or p.p.m
Magnesium	10 mg/litre or p.p.m
Sodium	150 mg/litre or p.p.m
pH	Min 6.5 to Max 8.5.

17. iHeat does not warrant any work conducted by the installer of the iHeat Solar Hot Water System.
18. This Warranty only applies to the iHeat Hot Water System and its components and does not cover any plumbing or electrical associated parts, including but not limited to any parts supplied by any person installing the iHeat Solar Hot Water System.
19. To the extent permitted by law, iHeat shall not be liable under this Warranty for any consequential loss or damage or any incidental expenses resulting from any breach of this warranty, including but not limited to, claims for damage to buildings, roofs, ceilings, walls, foundations, gardens, personal belonging or household effects, fixtures and fittings. or any other consequential loss, damage or inconvenience, either directly or indirectly due to leakage from the iHeat Hot Water System or any other matter related to the system or its operation.
20. The benefits conferred by this Warranty are in addition to all other rights and remedies in respect of the iHeat Hot Water System, which the purchaser has under the Competition and Consumer Act 2010 and consumer protection legislation of the States and Territories. Nothing in this Warranty has the effect of excluding, restricting or modifying those rights.

21. Goods presented for repair may be replaced by refurbished goods of same type rather than being repaired. Refurbished parts may be used to repair/replace the goods.
22. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
23. iHeat strongly recommends that the consumer update their household insurance policy.

Component Warranty Table

COMPONENT	WARRANTY PERIOD (Parts Only)	WARRANTY PERIOD (Parts and Labour)
iHeat Glass Lined Tank (Does not include element, thermostat or sacrificial anode)	5 years	1 year
Flat Panel & Mounting Kit	5 years	1 year
Manifold and Mounting Frame (Evacuated Tube)	5 years	1 year
Circulation Pump	2 years	1 year
Pump Station Fittings	1 year	1 year
iHeat Controller and sensor leads	1 year	1 year
Tank Element, Thermostat and sacrificial anode	1 year	1 year
Pressure Temperature Valve (PTR)	1 year	1 year
Thermosyphon Arrestor Valve	1 year	1 year
Gas Booster Heat Exchanger	10 years	3 years

Save A Service Call - iHeat Basic Troubleshooting Guide

PROBLEM	SOURCE	EXPLANATION
Water not as hot as previous hot water system	Tempering Valve installed	A tempering valve must be installed on every solar hot water system. Tempering valves will mix water down to 50°C.
No Hot Water	Electric or gas booster is not turned on or not configured correctly	Electric booster should be set to at least 60°C. Ensure circuit breaker is switched on. Ensure power is switched on to gas booster. Ensure mains gas supply hasn't been isolated.
Overflow pipe is dripping	Pressure Temperature Relief Valve (PTR) / Expansion Control Valve (ECV) where applicable.	An 850kPa and 99°C PTR valve is used on the iHeat water tank, which is located on the side of the water tank and is essential for its safe operation. The PTR valve is designed to allow 3-5% of total tank volume to discharge during heating to allow for hot water expansion.
Water pressure is slightly lower than previous hot water system	Pressure Reduction Valve (PRV)	A pressure reduction valve has been installed to limit the inlet pressure to your new iHeat Water Heater. This device regulates the incoming pressure & increases life of the cylinder. This device will also protect your cylinder if the mains pressure is increased by the local water authority.

Thank you for choosing iHeat Hot Water Systems

Complete the details below for future reference

Supplier Name:	
Supplier Address:	
Supplier Phone:	
Installation Date:	
Plumbers License No.	

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