



### **Kwiksol System**

Solar Water Heaters – Close Coupled & Split – Direct System

The direct system is used in frost-free locations, where the ambient temperature never falls below 5 degree Celsius and where the water quality is good (less than 600ppm Total Dissolved Solids/Minerals).

A direct system is where the water to be used in the household (hot water) circulates through the solar collector panels, or solar vacuum tubes manifold, transferring solar energy into the storage tank of the solar water heater.

The direct system can be installed as a Split System (pumped or thermosyphoned circulation methods), where the solar water heater is installed inside the roof or away from the solar collector panels or solar vacuum tubes, or installed as a Close Coupled System (thermosyphon circulation), where the solar water heater is installed outside on the roof and above or higher than the solar collector panels or solar vacuum tubes (see section Circulation Methods).

- **Product Features**

- The Kwiksol Kwiksol Solar Water Heater Direct System complies with SANS 1307, is SABS 400kPa approved and can be used as a close coupled system or split system.
- The inner cylinder is manufactured from 2mm steel and thermo fused porcelain enamelled for cylinder longevity and hygiene.
- Polyurethane insulation between the inner cylinder and outer casement reduces energy and heat loss.
- 2 x magnesium sacrificial anodes are fitted for corrosion protection.
- The solar water heater is designed for domestic hot water application in conjunction with one or more solar collector panels or solar vacuum tubes.
- The two extra water connections required for connecting solar collector panels or connecting the manifold above the solar vacuum tubes, and the booster element, ensures that the solar water heater can be used as a conventional electric water heater and as a solar water heater.
- The solar water heater thermostat will automatically switch on when the incoming hot water from the solar collector panels or from the manifold above the solar vacuum tubes, has not reached the set temperature setting on the thermostat. This will occur on cloudy days and at night when the water temperature drops in the solar water heater or when hot water is drawn off and cold water enters the solar water heater.



### **Product Installation Data**

When the solar water heater is installed in the roof, it must be installed in compliance with SANS 10106 Solar Water Heater Specification complete with a Temperature & Pressure Valve (Safety Valve), Drain Cock (both supplied with the solar water heater), Multi Pressure Control Valve 400kPa, Drip Tray and Kwikot Vacuum Breakers on the cold water supply and hot water supply.

If the solar water heater is installed in the roof, the following minimum installation clearance must be allowed for on each side of the solar water heater in order to remove the element or thermostat and the anode/s from the opposite end:

150lt – 450mm

200lt/250lt – 920mm

If the solar water heater is installed on the roof, careful inspection must be carried out to ensure that the roof can support the weight of the entire installation system once it is filled with water. Care must be taken where the front feet of the solar water heater are located. The feet should be located over a tile batten, purlin or similar for maximum strength.

### **Product Warranty and Anode Servicing**

- The period of warranty is from the date of installation, providing that documented proof of installation is furnished, or alternatively from date of manufacture as determined from the serial plate code on the solar water heater.
- One year on the heating element, thermostat, flange assembly plate and gasket.
- Two years on the Safety Valve and Drain Cock.
- Five years on the inner cylinder, subject to water conditions equivalent to main Metropolitan supply authorities. This warranty is subject to only genuine Kwikot replacement parts (heating element and thermostat etc) being used whilst the inner cylinder is still under guarantee.
- The warranty on the installation is the responsibility of the intaller.
- Water specification and Anode servicing/replacement as follows:

### **Solar Collector Panel Product Features**

- Manufactured with an aluminium frame, 4mm toughened prismatic, non-reflective, anti-hail tempered glass.
- Durable copper waterway tubes.
- Rubber seals ensure durability and reliability in extreme climatic conditions.
- Semi-selective black chrome surface on copper substrate offering maximum absorption efficiency.
- Working Pressure up to 400kPa.
- Total and useful energy rating 3.84kWh/m<sup>2</sup>



## **Product Warranty**

### **1. Pump Circulation in a Split System**

It is not always possible or convenient to place the solar water heater in a higher position than the solar collector panels. A circulating pump, controlled by an electronic control unit, therefore becomes necessary. The control unit using two sensors constantly monitors the temperature of the solar collector panels or the temperature of the manifold for the vacuum tubes and the solar water heater, powering the circulation pump only when the water in the solar collector panel or manifold is hotter than the water in the solar water heater.

When the temperature difference is less than the set point during the working process of the circulating pump, the pump will stop.

When the temperature of the water in the solar water heater reaches the highest set point, the controller will stop the circulating pump.

The electrical thermostat and element will automatically maintain the water temperature of the upper part of the solar water heater.

The set temperature on the thermostat must be lower than the maximum temperature attainable on the solar collector panels or solar vacuum tubes.

The circulating pump must be installed in accordance with the manufacturers instructions and ease of access for maintenance/repair.

The split system can also be installed as a thermosyphon system, if there is sufficient roof space to locate the solar water heater above the solar collector panels or array of vacuum tubes (see installation diagram).

A 12V solar circulating pump can also be used, powered by a photovoltaic collector panel.

