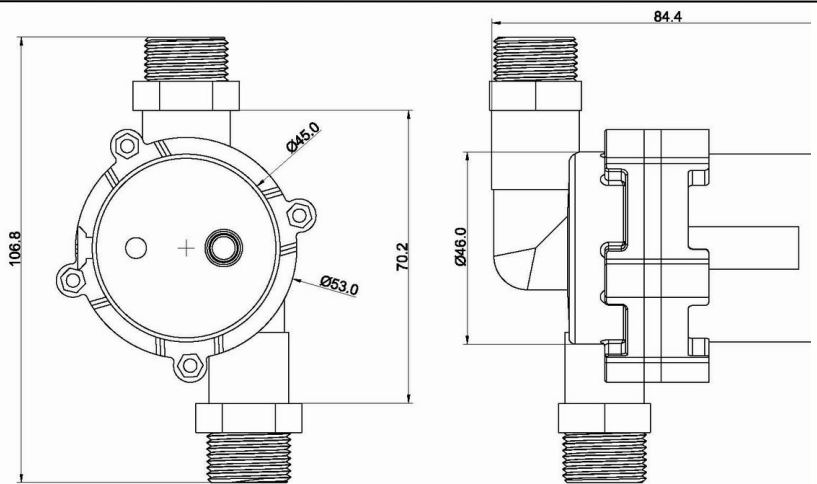




## ITS 12V – B Circulation Pump

### Applications

- The ITS12V-B solar DC pump can be used for most hot water circulation applications.
- The ITS12V-B can be connected directly to a 5W or bigger photovoltaic panel and is characterized by its small size, high efficiency, and extreme low power consumption. We however recommend that the pump be used with one of our solar thermal controllers as this will greatly improve the overall thermal efficiency of the solar system.
- This pump is perfect for single family solar thermal systems with solar collector sizing of up to 4m<sup>2</sup> (24 tube evac collector) – look at flow rate requirement of the system.



### TYPICAL WORK PERFORMANCE CHARACTERISTICS

Working Voltage (DC)	8V~24V
Power consumption	2W ~ 10W
Life Span	13 years (normal solar use)
Noise	< 42dB
Max Flow Rate	10L / minute
Static Head	2.3m
Working Temperature	Max 110°C
Connection Ports	1/2 inc brass
Weight (g)	330
Max Pressure	10 bar

### Features

- ◇ Energy efficient micro processor controlled brushless DC motor.
- ◇ Low inrush current soft start. Starts at 2 Watt.
- ◇ Durable permanent magnetic rotor/impeller and fine ceramic shaft.
- ◇ Long life brushless motor technology provides maintenance free and quiet service.
- ◇ Heavy duty. Continual 24 hour operation.
- ◇ High temperature Ryton casing and impeller (no deformation up to 260°C).
- ◇ Automatic dry-running, over-temperature and overload protection.
- ◇ Low power consumption

### Over – temperature protection

The ITS12V-B Solar DC pump comes with an integrated over-temperature safety device which slows down the pump at 95 °C and shuts off the pump electronics when reaching temperature over 110°C (230 °F). When the temperature of the pumped fluid cooled to below 95 °C (203 °F) the pump will function normally again.

### Guarantee

The 12Vdc pump carries the same 1 year guarantee as all other electronics supplied by ITS and is subject to the same guarantee claim procedures. Please note that the guarantee become void if not installed as described below. The guarantee is also void if not installed with the ITS supplied non return valve and controller.

\* ITS Solar reserves the right to modify or update all data without notice, due to continuous product development.

## ITS - INSTALLATION PRACTICES AND PRINCIPLES

### Circulation pump installation

The geyser must be installed according to standard approved practices. A circulation pump is required to pump water from the cold send port of the geyser through the solar collector and into the hot solar port of the geyser. Please ensure that the pump is installed so that the water circulation occurs in the correct direction through the loop. The arrow on the pump indicates the pumping direction. The pump must be at the cold send side of the circulation loop no more than 1 meter from the geyser. **Always place the pump over the drip tray** so that if a leak develops the water will drip into the drip tray. **An ITS supplied or approved non-return valve must be installed after the pump** to prevent reverse siphoning and hot water from pushing back during collector stagnation. If this is not installed ITS will not honour the warranty on the pump. Insulating the pump improves the thermal performance of the system but also reduces the audible noise from the pump. Should a leak for some reason occur on the pump, water will flush into the insulation material and drip into the drip tray rather than spray the roof space. When unions are fitted to the bronze ends, two shifters must be used at all times at each side even when the unit is pre fitted. Failure to do so will cause stress fractures in the head casing.

Pipe fixtures must be done in accordance to SANS national standards. Provision must be made for stress relieve on piping.

**Note: Most of the pumps (WILO 220Vac and ITS 12Vdc pumps included) require the drive shaft to be mounted horizontally. If these pumps are mounted with the rotating shaft in a vertical position it will overheat eventually.**

**On the 12Vdc pump please take special care to observe the polarity of the power connected as incorrect polarity will instantly break the pump electronics. Also make sure that the copper piping is not causing any tension on the pump body.**

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### Re-pressurizing the system

After the geyser plumbing and the entire solar circulation loop fitment are completed, the main supply valve to the geyser can be opened. Inspect the entire system for water leaks, paying special attention to all compression fittings.

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### Circulation pump test

**Note: Activating the pump with no water in the system may result in pump damage!**

Most solar controllers have an override function to switch on the pump. Activate this and feel the pump for vibration to make sure it is running.

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### Circulation pump wiring

The 12Vdc solar controller has a 12Vdc (positive and negative) output to control the circulation pump. Please use a suitable cable for 12Vdc to make the connection between the controller and the circulation pump. The 12V pump is highly polarity sensitive so it is critical that this is done correctly. **If the pump polarity is incorrectly connected the pump will burn out immediately.**

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