



# ONGA<sup>®</sup>

# WaterSwitch

## Automatic Rainwater Controller

WS1500200



C of C: 40087 in accordance  
with ATS5200.477-2006

Please read Owner's Manual before installation

Should the installer or owner be unfamiliar with the correct installation or operation of this type of equipment, contact the distributor or manufacturer for correct advice before proceeding with installation or operation of the product

# OWNER'S MANUAL

As a global leader in water products, Pentair Water is making a strong commitment to develop the most environmentally responsible products available. The new Eco-Select label is the keystone of this green program to meet the dual objectives of a growing number of home owners - to save money and make more eco-friendly choices.

You'll see the Eco-Select label associated with several existing products and systems that already meet the objectives including the new Onga WaterSwitch.

Eco-Select approved products save energy, conserve water, reduce noise and contribute to a more environmentally responsible choice for the homeowner.



# WaterSwitch Installation Instructions

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The operator must be provided with this owner's manual. This must be read before installation and followed during installation.



These instructions are a guide only. Users not familiar with the installation and maintenance of electrical and pumping equipment should seek advice from people with experience in pump installation and operation.



WaterSwitch is designed to be used with clean water in a residential application. Do not use with alternative fluids, specifically abrasive, corrosive or explosive fluids.



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.

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## Get More Out Of your Tank with Onga WaterSwitch....

Congratulations on your decision to purchase an Onga product. Onga is one of the best known brands in its field, with a proud local and international reputation.

Onga is a brand for reliability, value for money and technological innovation. You will find Onga product wherever people need to move, store or treat water.



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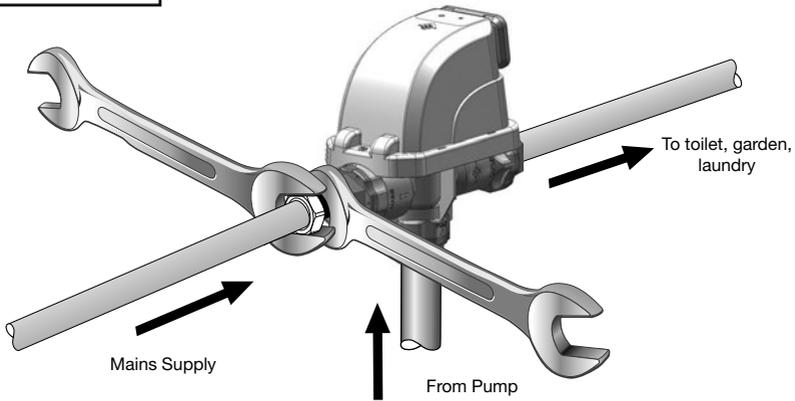
# Model Data

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## Technical Information

Mains Water Supply inlet:	1" BSP thread
Pump connection:	1" BSP thread
Water outlet connection:	1" BSP thread

### **⚠ CAUTION**



Grip and Brace the connection while fitting pipework

Minimum Mains Pressure:	100 kPa
Maximum Mains Pressure:	1000 kPa
Rated Supply Voltage	230-240Va.c.
Maximum electrical load:	10A
Water temperature range:	1°C to 40°C
Ambient Temperature range:	1°C to 40°C
Power consumption (Mains):	1W
Power consumption (Tank):	18W
Minimum Flow Rate:	2 lpm
IP Rating:	IP44

## Accessories

Submersible Pump bracket kit	Part Number 801481
Surface Pump Mount - Barrell Union Kit	Part Number 801439
Water Level Sensor - In Tank Float	Part Number 707170
Water Level Sensor - Grommit 3mm Side Wall	Part Number 801390

# Application

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WaterSwitch is designed to select between stored rainwater (when available) and mains supply water, and send this water to your toilet cistern, washing machine, garden and other non-potable household applications. It features automatic pump control to minimise the use of electricity while saving water.

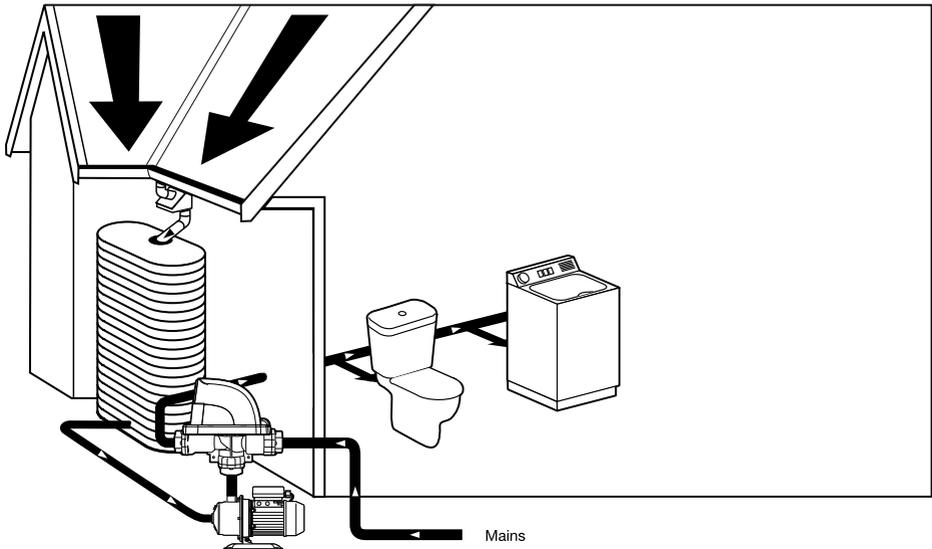
Rain water is used in preference so that:

- your water rates are minimised
- you conserve mains water and reduce usage of the city catchments water supply
- Harvest rainwater to its full potential so there is more space available in your rainwater tank prior to the next rain shower

When your tank is empty, WaterSwitch seamlessly switches to mains supply so that there is no interruption of water to your toilet cistern or washing machine. WaterSwitch provides uninterrupted supply to ensure you can flush your toilet - there will be no unsanitary situations.

Do not use WaterSwitch for liquids other than clean water. Using corrosive, abrasive or explosive fluids will damage the unit, and may cause personal injury or death.

Only Onga gives you an extended range of pumps to couple with WaterSwitch to suit both inground or above ground water tanks. Featuring energy efficiency, low noise levels, high flow and pressure, with a range of accessories there is a pump to suit your needs.



Mains

# Installation

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Freezing conditions will damage the unit, as water expands as it freezes. Ensure that the WaterSwitch is located so that it is not prone to freezing, or ensure that the product is disconnected and dried of water during cold conditions.



WaterSwitch is electrically connected. Ensure that it is isolated from electrical supply during installation and any subsequent service work.



Do not install or operate WaterSwitch in an explosive environment or near combustible matter.



Brace inlet and outlet connections while fitting WaterSwitch. Any movement of connections may disturb internal seals and cause leakage.

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## Preparation for installation

Read these instructions first. Inspect WaterSwitch for shipping damage. Report any damage to your Pentair Water dealer.

If the incoming mains pressure to your property is greater than the specified 1000 kPa, please fit a pressure reduction valve of appropriate capacity upstream of WaterSwitch. This pressure reduction valve must bring the pressure to below the rated value 1000 kPa. A recommended pressure is 500-750kPa. Fitting this type of device to your entire household will extend the life of other appliances such as washing machines, hot water service and dishwashers.

Ensure installation is in accordance with AS/NZS 3500.1 - Plumbing and Drainage - Water Services

# Installation

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## Fittings and accessories

Ensure that you have all required fittings and accessories prior to installing WaterSwitch.

## Surface Pumps

For installation using  $\frac{3}{4}$ " copper tube we recommend the following items:

- threadseal tape
- $\frac{3}{4}$ " flare – 1" BSP Male brass connectors [x2]
- WaterSwitch Surface (Float) Kit 707170

For installation using polyethylene tube, we recommend the following items

- threadseal tape
- 1" BSP Male fitting with appropriate hose barb
- hose clamps
- WaterSwitch Surface (Float) Kit 707170

## Submersible Pumps

Mounting WaterSwitch on a wall is made easy with the optional wall mounting kit (Part Number 801481). In addition, flexible hose (at least 25mm diameter), barbed hose connectors and hose clamps may also be required.

## Protection

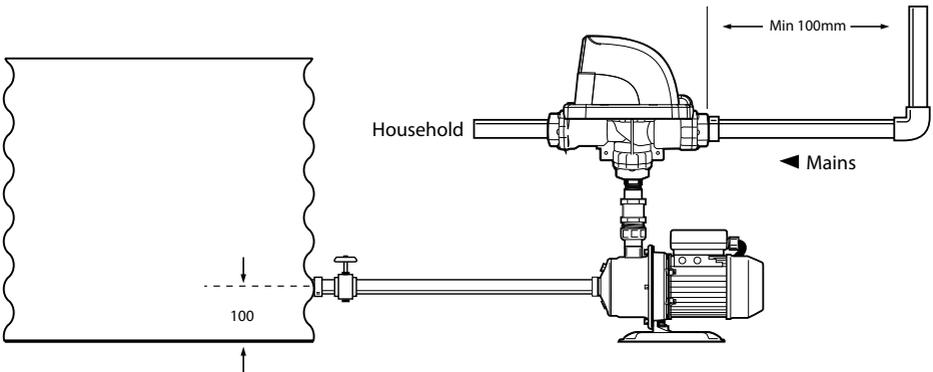
Warranty of this WaterSwitch is void unless it is operated in accordance with this owner's manual. The pump and WaterSwitch should be housed in a weather proof, well ventilated enclosure, to protect from the weather, flooding, chemicals, dust, vermin, insects etc.

# Installation

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## Installation Recommendations

1. The Onga WaterSwitch comes with 2 mesh inline filters. These filters should be correctly inserted on the mains water input and pump input of the WaterSwitch.
2. Onga recommends the height of the tank outlet from the base of the tank be set at 100mm.
3. Onga recommends a minimum distance of 100mm of straight pipe at the WaterSwitch mains water inlet.
4. Clean water is essential for the reliable operation of your WaterSwitch system. Onga recommend the installation of first flush diverters and leaf guards on your water collection system.



Recommended Installation

## Mounting

The pump and WaterSwitch must be mounted on a solid, level, vibration free surface. The WaterSwitch can be mounted in one of two ways:

1. Mount directly to the top of the pump with PN 801439 WaterSwitch surface pump accessory kit
2. Mount remote from the pump with wall bracket PN 801481

# Installation

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## Connecting the WaterSwitch to the Pump Using the Union Kit (Where Supplied)

1. Wrap a sufficient amount of thread seal tape around both ends of the 1" Nipple.
2. Connect one end of the nipple into the pump discharge, threading it until it is watertight. (DO NOT OVERTIGHTEN)
3. Connect the 1" Female end of the complete barrel union onto the protruding end of the 1" Nipple until it is watertight (DO NOT OVERTIGHTEN)
4. Wrap a reasonable amount of threadseal tape around the 1" end of the union nipple. Thread it into the base of the WaterSwitch until watertight (DO NOT OVERTIGHTEN). If you are unable to screw the WaterSwitch on top due to space limitations, unscrew the barren union nut releasing the nipple from the union, then thread the nipple into the WaterSwitch (Make sure the Union nut remains on the nipple). Rejoin the union to complete the connection.

## Mains Inlet Connection

WaterSwitch has a 1" BSP Female fitting to connect the incoming mains supply water. This end is marked with an arrow pointing into the unit (showing water flow direction). Brace this fitting to prevent movement while connecting to the mains supply. Any movement of this fitting may disturb internal seals and cause leakage.

## Water Outlet Connection

WaterSwitch has a 1" BSP Female fitting to connect to household plumbing for uses such as filling toilet cisterns, the washing machine, and garden taps. This end is marked with an arrow pointing out of the unit (showing water flow direction). Brace this fitting to prevent movement while connecting to the mains supply. Any movement of this fitting may disturb internal seals and cause leakage.

## Pipe Marking

In accordance with AS/NZS 3500.1:2003, pipes and outlets connected to WaterSwitch must be marked as follows:

Outlets that are connected to your WaterSwitch must be marked with the wording "RAINWATER". The piping system connected to WaterSwitch must be clearly marked at 1m spacings with the wording "RAINWATER"

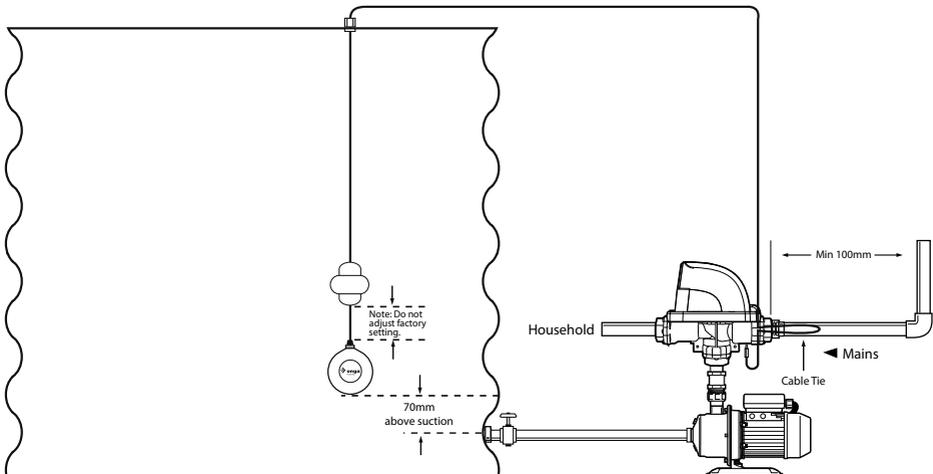
# Water Level Sensor Installation

## Float Sensor Installation

1. Determine a suitable position in the tank roof within reach of the man-hole, to drill a 16mm hole for switch cable penetration. (Note: Hole saw available from Onga dealer). Install the supplied cable gland, with the Locknut positioned inside the tank.
2. Surface Tank Installations: Drape the level sensor up against the side of the tank, lifting the cable until the float is 70mm above the suction. At this point mark the position of the cable that is level with the roof of the tank using the marking tape (supplied).

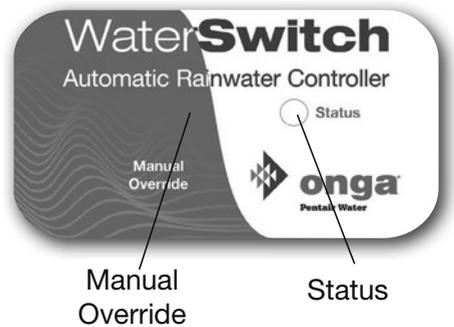
In-Ground installations: Lower the float into the tank. Position the float 70mm above the suction fitting or pump inlet. Use the marking tape (supplied) on the cable to indicate top of tank position.

3. Feed the float switch connector plug, on the end of the float switch cable, through the cable gland from the inside of the tank. Pull the cable through the gland until the tape marker appears and is level with the top of the tank. Tighten the gland's external 'dome nut' to fix the cable position.
4. Once in position, route the cable to the Onga WaterSwitch and plug the connector to the matching receptor on the underside of the panel. Using the cable ties, fix the cable to the pipework near the Onga WaterSwitch to avoid the cable accidentally being pulled free.



# H<sub>2</sub>OInformer

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The WS1500200 model WaterSwitch is equipped with the H<sub>2</sub>OInformer. The H<sub>2</sub>OInformer allows you to see your actual water saving. The H<sub>2</sub>OInformer can be detached from the WaterSwitch and be placed conveniently in the kitchen or other room within 20 metres of the WaterSwitch and will continue to give up to date water readings as you require them. The Pairing process creates a unique code between the H<sub>2</sub>OInformer and the WaterSwitch.

## Pairing the H<sub>2</sub>OInformer

1. Press the “manual override” button on the WaterSwitch cover while powering up the WaterSwitch. Red status light will blink 3 times, acknowledging the switch activation
2. Release the switch when the green status LED starts blinking. Green LED blinking indicates that WaterSwitch is going into pairing mode
3. Hold down the “mode” button on H<sub>2</sub>OInformer for 3 seconds. The H<sub>2</sub>OInformer will go into search mode, with “search” displayed on the LCD screen
4. After pairing is complete, “paired” will be displayed on the LCD screen

When pairing is complete, WaterSwitch will be communicating with the H<sub>2</sub>OInformer and this can be verified by the green LED if tank is full and orange LED if tank is empty, on the WaterSwitch blinking at 1 second intervals. The red LED on the H<sub>2</sub>OInformer will blink each time it receives a signal.

# H<sub>2</sub>OInformer

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## H<sub>2</sub>OInformer Display Options

The following information can be viewed by using the “mode” button to scroll through the menu

1. Rain water usage in litres (indicated by tank icon)
2. Mains water usage in litres (indicated by tap icon)
3. Water savings in percentage (%) – Tank usage Vs Mains usage
4. Number of days usage since last reset

## Resetting the H<sub>2</sub>OInformer Stored Information

1. Press the “manual override” button on the WaterSwitch cover while powering up the WaterSwitch. Red status light will blink 3 times, acknowledging the switch activation
2. Release the switch within 2-3 seconds
3. Scroll through the H<sub>2</sub>OInformer menu using the “mode” button. All water usage, percentage saved and days should now read zero (0)

When resetting is complete, WaterSwitch will be communicating with the H<sub>2</sub>OInformer and this can be verified by the red LED on the WaterSwitch blinking at 1 second intervals

# WaterSwitch Electrical Connection

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To avoid dangerous or fatal electrical shock, turn OFF power to the WaterSwitch before working on any electrical connections.

The supply voltage for the WaterSwitch must be within the stated parameters. Refer to page 3 of the owner's manual.



If the power supply cord or pump interconnection cord is damaged, it must be replaced by an authorised Pentair Water Service Agent or a similarly qualified person in order to avoid hazard.

Before connecting WaterSwitch to an electrical power supply, connect the pump to the WaterSwitch using the provided IEC appliance connectors on the end of the interconnection cords. Ensuring there are no traces of water on the connectors, push them firmly into each other to ensure splash proof protection. This connection should only be separated for servicing purposes, and only after the power supply of the WaterSwitch is removed either through an isolation switch or by unplugging.

Ensure that the tank level sensor is securely connected to the base of the unit using the bayonet fitting, and the lead is cable tied to the connecting pipework to help prevent it being pulled free.

WaterSwitch is supplied with a standard Australian 10A plug and cord, and connection to the power supply is a matter of inserting the plug into the suitable socket outlet. If local authorities require the WaterSwitch and pump to be hard wired, the electrical connection must be done by a qualified electrician with pump knowledge according to the National Wiring rules (AS/NZS 3000) and/or any local council requirements.

We recommend to connect WaterSwitch to a socket outlet protected by a Residual Current Device - RCD (Also known as an Earth Leakage Circuit Breaker – ELCB) with a rated tripping current not exceeding 30mA. Contact a qualified electrician if you cannot verify that the socket outlet is protected by RCD. RCD tripping indicates an electrical problem. If the RCD trips and will not reset have a qualified electrician inspect and repair electrical system

Once installation is completed, switch on the socket outlet switch (or the isolating switch in the installation) on. Refer to pump manual for further installation details.

# Operation

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## Commissioning

Put a small amount of water in the tank (just above the level of the tank sensor). Open a tap on the outlet side of the WaterSwitch (or have someone flush the toilet). The pump will start. Turn off the tap, and the pump will stop.

Temporarily disconnect the level sensor connection (fitting in base). This indicates to the WaterSwitch that there is no water in the tank, and that it will switch to mains supply operation.

Again, open the tap or flush the toilet. Main supply water will fill the cistern. Close the tap, and replace the level sensor connection. If there are any variations to these outcomes, please see the troubleshooting section on page 16.



# Fault Mode

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WaterSwitch has a mechanism to prevent the pump from running with no water. If the level sensor detects water in the tank, but there is a blockage or partial blockage somewhere in the system the following process will occur:

1. If WaterSwitch is supplying water and also senses water in the tank, it will activate the pump to supply rain water.
2. If no rain water is delivered from the tank within 30 seconds, WaterSwitch will switch to supplying mains water.
3. After 6 seconds if no rainwater has passed through the system, waterswitch will divert to mains water.
4. If no water is delivered from the tank it will repeat step 2 and step 3 four times. If there is still no water delivered, WaterSwitch will divert to 'loss of prime' mode.
5. The LED on the WaterSwitch will flash red to warn that abnormal conditions exist. It also locks out the pump from further operation to protect the pump from dry running, and to ensure that the house has continuous mains water supply.

## 6. Automatic Lockout Reset Feature

Event	Reset Time
1st lockout	10 minutes
2nd lockout	1 hour
3rd lockout	6 hours
4th lockout	24 hours
5th lockout	160 hours

This feature can be over ridden by switching the unit off for 10 seconds.

## General Operation

Your WaterSwitch operates entirely automatically without intervention. If electrical supply is cut in your neighbourhood, WaterSwitch will automatically revert to mains supply water, as there is no power to drive the pump. When power resumes, WaterSwitch will continue to operate normally.

If town supply water is shut off in your area, WaterSwitch might not be able to detect water demand in the household (e.g. if the toilet cistern needs refilling). By pressing the manual override button, you can override normal control and start the pump to supply water out of the rain water tank.

## Service and Maintenance

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WaterSwitch is a warm, dry environment for hibernating insects. These can cause electrical malfunction. Ensure that your property is vermin free.



WaterSwitch is electrically connected. Ensure that it is isolated from electrical supply during installation and any subsequent service work.



WaterSwitch should only be serviced by a Pentair Water service agent.

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## WaterSwitch Service

Before removing WaterSwitch for service:

1. Switch off power to WaterSwitch before proceeding.
2. Close shut off valves at inlet, outlet and water tank gate valve.
3. Carefully release all pressure from the pump and piping system.
4. Never tighten or loosen fittings while the pump is operating.

To reset from 'loss of prime' mode

- A) Turn off power for 10 seconds.
- B) Turn power supply back on.
- C) Reprime the pump. Check for blockages in the suction line.

WaterSwitch should resume normal operation

# Troubleshooting

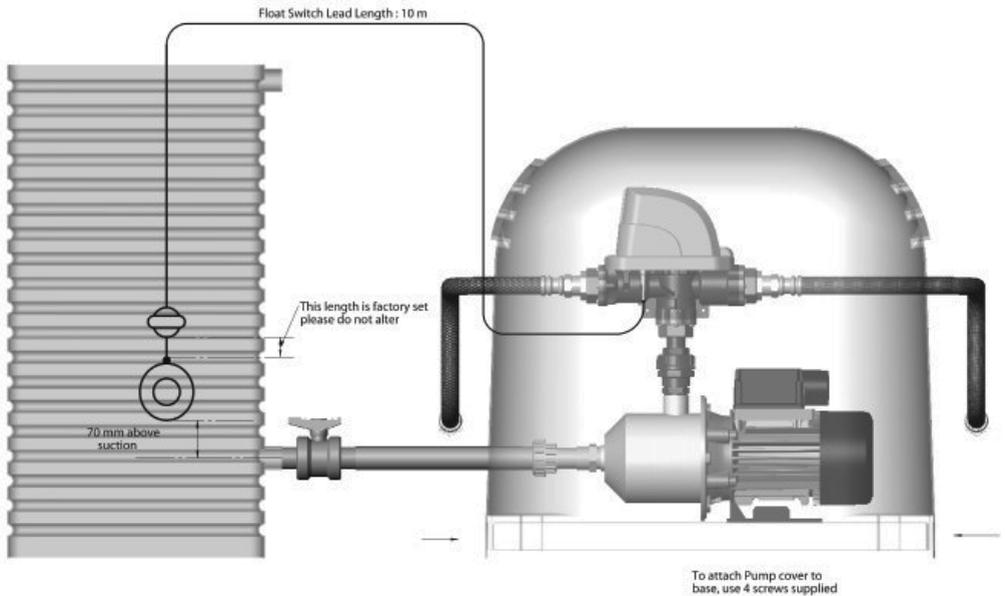
Symptom	Cause	Remedy
(1) No water is being delivered from pump	Water tank is empty	Check tank level, wait for rain if empty
	No power at outlet	Check power supply, circuit breakers and plug.
	Bad signal from level sensor	Check installation and operation of the level sensor.
	Pump has overheated	Allow pump to cool
	Mesh filter is blocked	Switch power off, isolate water and remove pump barrel union, inspect/clean/replace filter
	Pump is worn	Have pump serviced by an Onga service agent or other suitably qualified person
(2) No water is being delivered from pump: WaterSwitch has gone into 'loss of prime' mode	Valve on or between tank & WaterSwitch inlet is closed.	Open gate valve and prime pump. Reset WaterSwitch
	Pump is not primed	Prime pump and reset WaterSwitch
	Mesh filter is blocked	Switch power off, isolate water and remove pump barrel union, inspect/clean/replace filter
(3) No water supply at all	Mains water valve is closed	Check mains water isolation valve is open
	Blockage in system	Check mains water and tank water piping for obstructions
	Incoming mains water pressure is greater than 1000kPa	Fit a pressure reduction valve to reduce incoming mains pressure
(4) Poor Water Pressure through pump	Mesh Filters blocked	Switch power off, isolate water and remove pump barrel union, inspect/clean/replace filter
	Worn pump	Have pump serviced by an Onga service agent or other suitably qualified person
	Pump is too small for application	Have an Onga pump professional recommend a larger pump

# Troubleshooting

Symptom	Cause	Remedy
(5) Pump continually runs	Air lock in system	Bleed air from system. Activate appliances/outlets sequentially from the nearest to the furthest outlet. Repeat if necessary. If problem persists contact your dealer.
(6) H <sub>2</sub> O Informer shows error	Not correctly paired to WaterSwitch	Switch off power for 10 seconds. Turn power on and hold down manual reset on WaterSwitch. Press mode button on the Informer and wait until unit pairs with WaterSwitch
	H <sub>2</sub> O Informer out of range of WaterSwitch	Position H <sub>2</sub> O Informer within 10 metre range and press mode button
(7) No display on H <sub>2</sub> O Informer	Battery flat	Replace battery, pair Informer as per owners manual
	Faulty H <sub>2</sub> O Informer	Replace H <sub>2</sub> O Informer

# Installation of Complete WaterSwitch System

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## Pump Cover Kit installation

1. Place Pump/Cover assembly in position required for installation and remove cover,
2. Install all necessary pipework for Mains, House/Garden and Tank supply.
3. Please flush clean pipe work to waterswitch before connection.
4. Connect tank water, mains and house/garden supply pipework as shown, - ensure the fibre washers of the flat seat nut connections are in place.
5. Turn on mains water and power - Please refer to Commissioning notes pg 13 Owner's Manual for further detail
6. Cut out end slots, each end of cover, to suit flexible hose.
7. Replace pump cover and attach with 4 screws supplied.

## Notes

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## Notes

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## Notes

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IMPORTANT

Please attach your sales invoice/docket here as proof of purchase should warranty service be required.

Please do not return Warranty - Retain for your records.

Purchased From .....

Purchase Date..... Serial No..... Model No.....



1-21 Monash Drive,  
Dandenong South, Vic 3175

**Australia**

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Fax: 1800 006 688  
National Dealer Locator: Phone: 1800 664 266  
Email: [au.sales@pentair.com](mailto:au.sales@pentair.com)  
Web: [www.pentair.com.au](http://www.pentair.com.au)

**New Zealand**

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