



High Flow Watermaster Pump with Intelligent Control (IC)

EP1632

INSTALLATION & USER INSTRUCTIONS

Thank you for purchasing this Whale® product.

For over 40 years, Whale® has led the way in the design and manufacture of freshwater and waste systems including: pumps, plumbing faucets, showers for low voltage applications. The company and its products have built a reputation for quality, reliability and innovation backed up by excellent customer service.

Typical Installation

The Watermaster® IC is designed for use in recreational vehicles to simplify the supply of freshwater to caravans and motorhomes, where a Whale® High Flow Watermaster® pump is used to supply the taps and showers.

The Watermaster® socket (already installed or available separately) **must be** mounted so that the rear of the socket is accessible from within the vehicle.

Ensure at least 30mm clearance below the socket to allow for wiring. Following a “once only” calibration the Watermaster® IC unit removes the need for adjustment of the pressure switch, removes the requirement to have a surge damper in the system and switches off the pump when it runs dry. For information on our full product range visit: www.whalepumps.com

This product is designed for use with freshwater. If it is intended for use with any other liquid, it is the user's responsibility to ensure that the materials are fully compatible with the liquids to be used and that a system of safe working practice is applied to installation, use and maintenance.

SPECIFICATION

| | |
|---|---|
| Product Codes | EP1632 |
| Voltage | Voltage range 9.5V d.c. to 14.5V d.c. (normal operation) Voltage range 8.5V d.c. to 9.5V d.c. (limited operation, see Section 1) |
| Nominal Current | Operating 3.7 Amps Standby 0.007 Amps |
| Recommended Fuse Size | 5 Amp automotive |
| Weight | 0.65kg |
| Materials | Pump Body: ABS, Seals: Nitrile®, Strainer: Polypropylene Impeller: PBT, Cable: PVC, Grease Seal: Nitrile® Wire: PVC insulated copper, Hose: PVC, Plug: PBT Watermaster IC: Polycarbonate |
| Accessories | WF1230 – inline water filter (available separately) |
| Service Kits | Watermaster® IC is not a serviceable part EP1612 - Replacement High Flow plug and pump kit |
| Performance Data @ 13.6V Discharge Head - 0 m (0ft) 1 m (3ft) 3 m (9ft) | Flow Rate Per Minute / Current Draw - 15.8 ltrs / 3.8 amps 14.8 ltrs / 3.7 amps 12.8 ltrs / 3.5 amps |
| Compatible Pumps | For use with Whale® High Flow Watermaster® (EP1612) only |
| Operating Temperature Range | 3°C to 40°C |
| Storage Temperature Range | -30°C to 60°C |

Whale's policy is one of continuous improvement and we reserve the right to change specifications without prior notice.

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1. PRINCIPLES OF OPERATION

The Watermaster® IC is a means of control for the Whale® Watermaster® High Flow system, which allows it to operate without the need for pressure switch adjustment. It offers three key features, eliminates rapid water pulsation, ensures that the pump turns off at low battery voltages and in a run-dry situation when the water supply runs out.

This (patent applied for), Intelligent Control is achieved by a pressure switch turning on the pump when the pressure drops to a low level and the microprocessor turning off the pump at programmed current levels, which are set during the "one time" calibration process. This calibration process may have to be repeated if the pump is replaced.

Additionally "soft" start/stop control is used to control the pump motor.

To the Fitter:

Check that the product is suitable for the intended application, follow these installation instructions and ensure all relevant personnel read the points listed below. Also ensure that these operating instructions are passed on to the end user.

To the User:

Please read the following carefully before installation

- Removes the need for adjustment of the pressure switch, and removes the requirement to have a surge damper or inline pressure switch in the system.
- Watermaster® IC is pre-programmed and must initially be calibrated before use - see Section 6.
- When the system has shut down due to running out of water, reset by turning the pump isolation switch off and back on after refilling the tank.

- If the battery voltage is very low (8.5V-9.5V), the Watermaster® IC is designed to shut down after approximately 30 seconds operation to prevent the battery being drained further. Restart the system by turning the pump isolation switch off and back on. This can be repeated to provide a limited operating mode but the battery should be recharged as soon as possible.

2. APPLICATION

Please note that Watermaster® IC is designed to work with the Whale® Pressure Switched Socket ES1001 / ES5001, and with the Whale® High Flow Watermaster® pump kit ONLY, and is not compatible with other sockets or pump systems

For users with other Whale® or non-Whale® products, their systems may be upgraded to IC by purchase of the Whale product codes - socket ES1001 / ES5001 and Pump & Watermaster® IC (EP1632).

3. WARNINGS



- This product is not designed for any other purpose than supplying water to a caravan or other recreational vehicle system.
- Always disconnect power sources before installing or making connections.
- Fire hazard. Wiring must comply with applicable electrical standards and include a properly sized fuse or circuit breaker. Improper wiring can cause a fire resulting in injury or death. Suggested wiring information is given as a guide only.
- Please note that incorrect installation may invalidate the warranty.
- The Watermaster® IC is designed to work in conjunction with a 5 Amp automotive fuse (see fuse box for fuse marked 'pump').
- There **must be** access to the back of the socket for a once only calibration, and the socket must not be mounted at floor level as cables need to plug in to the bottom of the socket.
- Please note that incorrect wiring will result in a blown fuse.
- Please note that Watermaster® IC is designed to work in conjunction with the EP1612 Watermaster® High Flow 12V d.c. pump and the ES1001 / ES5001 Pressure Switched Socket ONLY and will not operate with any other Whale® products.
- With all applications it is important that a system of safe working practice is applied to installation, use and maintenance.
- Please note that the Watermaster® IC controller unit is enclosed to protect the electronics. Opening the unit will result in damage and will invalidate warranty.
- **Do not** use the pump in water temperatures above 40°C (100°F).
- It is best to stand the pump vertically in the tank.

Contact the technical helpline (Whale® 02891 270531) for additional advice on this product or its installation.

4. PARTS LIST

- 5Qty 1 Watermaster® IC - controller
- Qty 1 Securing screw
- Qty 1 Watermaster® with plug and 12V d.c. High Flow Pump

5. OPTIONAL EXTRAS

- No extra parts are required to complete the system
- If you need to replace the pressure switched socket – part number ES1001
- If you need to replace your Watermaster® pump – part number EP1612

6. INSTALLATION

Please note - The manufacturer cannot be held responsible for claims arising from incorrect installation, unauthorised modification or misuse of this product.

Before installing, please check that the submersible pump can reach the bottom of the water container and that there is access to the back of the socket.

TO CONNECT THE IC CONTROL UNIT (BACK OF SOCKET)

Step 1 - Switch off the 12V d.c. supply at the main panel (isolator switch)

Step 2 - Unplug the spade connections on the water inlet socket – ensuring that you note the order of wires for reconnection with the Watermaster® IC (see Fig. 1 & Fig. 2)

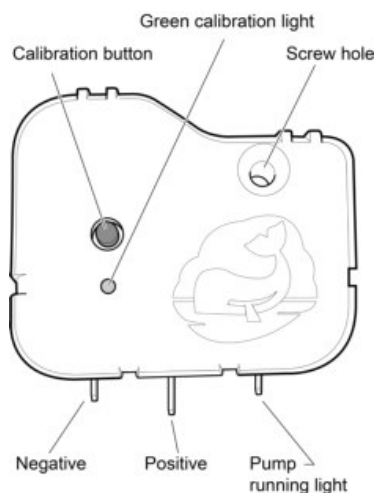


Fig. 1 Watermaster® IC features

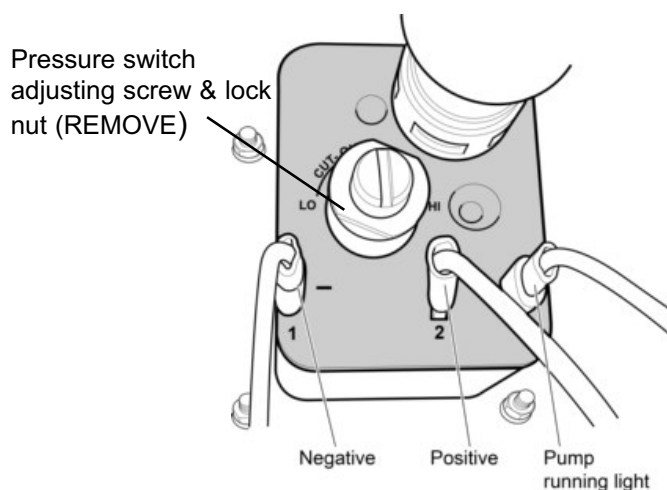


Fig. 2 Wiring connections Watermaster® socket

Step 3 - Unscrew and remove the pressure switch adjusting screw and locking nut (see Fig. 2)

Step 4 - Remove securing screw (see Fig. 3)

Step 5 - Take Watermaster® IC and place countersunk screw into screw hole (see Fig. 4)

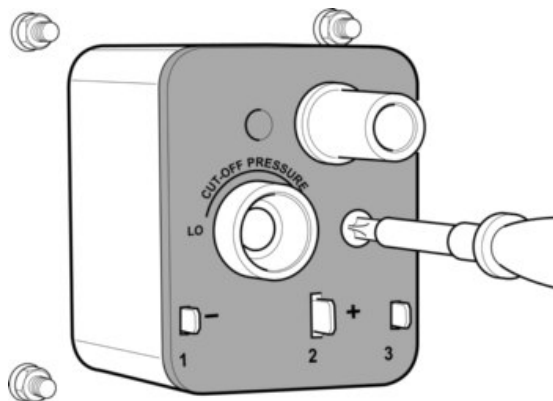


Fig. 3 Preparing Watermaster® socket for Connecting Watermaster® IC and Removing the Securing Screw

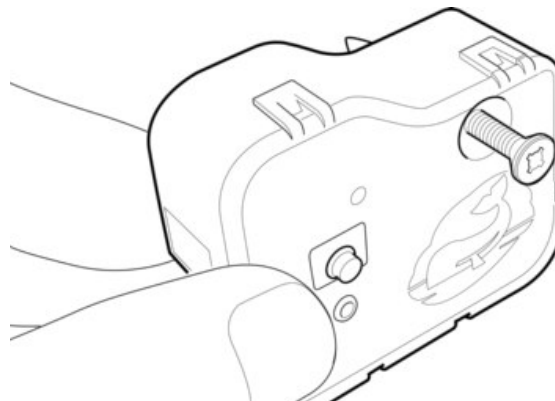


Fig. 4 Place Securing Screw into Watermaster® IC

Step 6 - Plug Watermaster® IC onto socket (see Fig. 5) and tighten screw (N.B – DO NOT OVER TIGHTEN)

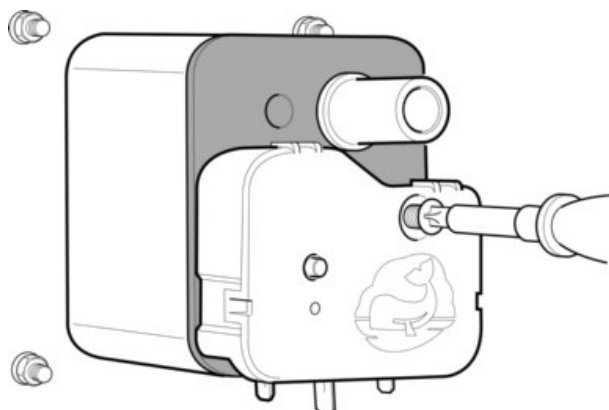


Fig. 5 Insert screw into Watermaster® IC

Ensure Watermaster® IC is plugged securely onto back of socket & tighten screw.

Step 7 - Reconnect spade connectors ensuring correct order of wires (as per step 1)

TO CONNECT THE PLUG AND PUMP KIT

Priming:

Step 1 - Place pump into a full water container (Fig. 6).

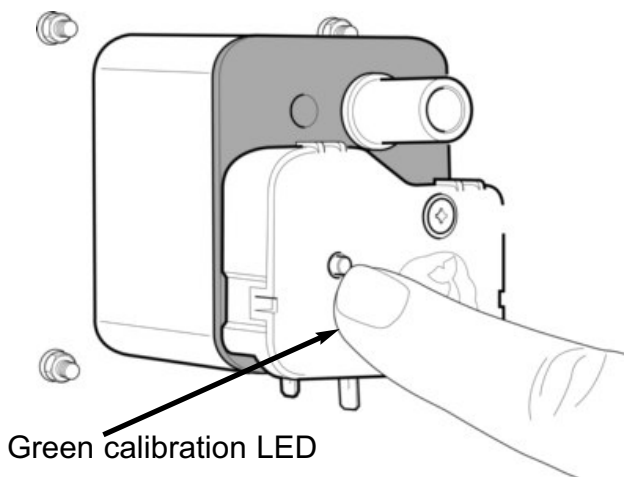
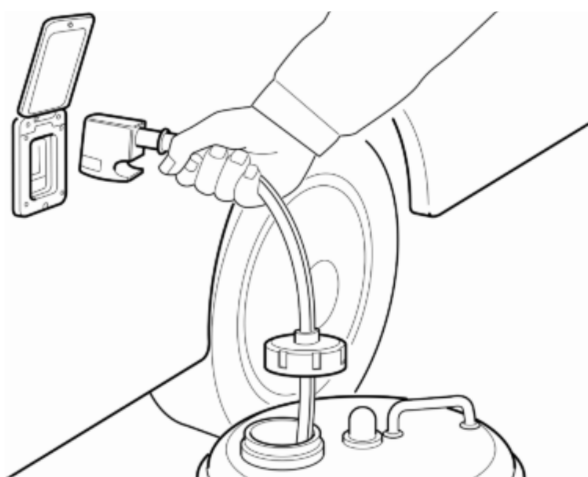


Fig. 6 and 7 Installing and calibrating the system

Step 2 - Insert plug into wall socket and close lid to lock plug in place.

Step 3 - Adjust dust cover over opening in container (please note dust cover should not be secured to water container as air must be allowed to enter container to replace water being pumped out).

Step 4 - Switch on 12 volt supply at main panel (Isolator switch) - the pump should start to run.

Step 5 - Open one cold tap (eg. kitchen sink).

Step 6 - After trapped air has been expelled water will flow from the open tap.

Step 7 - When air has been expelled turn off tap, the pump should turn off after approximately 10 seconds.

TO CALIBRATE THE SYSTEM

Step 1 - Press and hold the calibration button until the green LED starts to flash after 1-3 seconds (Fig. 7).

Step 2 - Open the tap and the pump should start (there maybe a short delay).

Step 3 - After approximately 30 seconds, turn off the tap.

Step 4 - After approximately 10 seconds, (the pump should still be running), press the calibration button again.

Step 5 - The LED should turn solid green and the pump will stop after approximately 10 seconds. The green LED should turn off and blink briefly every 5 seconds. The system is now calibrated.

The Watermaster® IC is now installed and ready for use.

Please Note: In normal operation the pump may run for up to 15 seconds after the tap is closed.

7. INSTRUCTIONS FOR PUMP STORAGE WHEN NOT IN USE

Pump hose can be inserted into groove on plug to keep pump off ground while refilling water container (Fig. 8). The plug should always be removed before moving the caravan/motorhome.

When removing plug:

Step 1 - Lift the lid to unlock the plug

Step 2 - Pull out plug from socket using hand grip

Step 3 - Shut lid

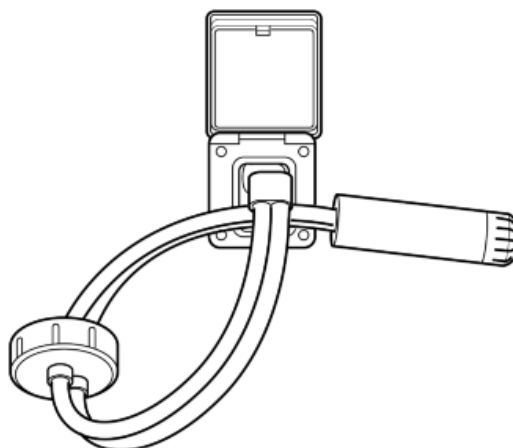


Fig. 8 Storing pump plug kit

8. MAINTENANCE

This IC control unit (located on the back of the socket) is designed to be service free and does not contain serviceable parts. Please note that the unit is enclosed to protect the electronics. Opening the unit will result in damage, and will invalidate warranty.

For information on service kits, please visit www.whalepumps.com

9. HELPFUL HINTS

- Note - If at any stage the user experiences less than optimum performance from the Whale® Watermaster® IC, recalibrate the system as per steps above in Section 6.
- To obtain efficient running and maximum pump life, ensure the following:
 - There is sufficient water in the container.
 - Maximum pumping period is not more than 15 minutes.
 - All hose connections are firm and water tight.
 - The power supply is adequate - low performance could result from a weak battery or reduced voltage due to undersized wiring (we recommend wiring should be a minimum thickness of 2.5mm²).
 - When replenishing the water supply, it is possible to create an air lock in the pump. As a result, the pump will run noisily and give no discharge. To remedy, unplug from the socket while keeping the pump submerged to dislodge the air pocket in the pump. Also shaking the dual hose gently may dislodge the air pocket in the pump, or switch off pump at main panel, open a tap outlet and switch pump on again at the main panel.

10. TROUBLE SHOOTING

(a) If the pump will not run:

- Check at least one tap is open
- Turn the pump isolation switch off and on again
- Check the battery condition
- Check the mains isolator switch is on
- Check the pump isolator switch is on
- Check the contacts in the plug and socket are clean and making contact
- Check wiring connections
- Check fuse (see fuse box)

(b) If the pump cycles on/off with all taps and shower closed:

- Check for air or water leaks in taps and piping
- Check that non return valve in socket is free from grit by pushing a suitable blunt object, for example a ballpoint pen into the socket nipple against the non-return valve holding the valve open to dislodge trapped grit
- Recalibrate the system (see calibration section of the installation section)

(c) If pump motor runs steadily and does not stop after 30-40 seconds:

- Check all connections in pipework
- Recalibrate the system

Diagnostic Codes

To aid with troubleshooting the LED on the back of the Watermaster® IC has a number of different flash codes as described in the table below

| LED | State | Description |
|-------|--------------------------|---|
| Green | Constant On | Tap open, pump running |
| Green | Fast Flash (< 1 sec) | In Calibration Mode |
| Green | 200ms blink every 5 sec | Calibrated and ready for use |
| Green | 200ms blink every 10 sec | Un-calibrated |
| Green | 200ms blink every 15 sec | Suspended due to dry run need to turn pump switch on and off |
| Green | 200ms blink every 20 sec | Suspended due to low battery voltage, turn pump switch on/off, need to charge battery |

11. WINTERISING

Watermaster® IC does not require any additional winterizing. For details of how to drain your water system for winterizing please visit www.whalepumps.com/rv

12. SERVICE SUPPORT DETAILS

For installation or serviceable parts advice please contact Whale® Customer Support:

Tel: +44 (0)28 9127 0531

Fax: +44 (0)28 9146 6421

Email: info@whalepumps.com

www.whalepumps.com

13. EU DECLARATION OF CONFORMITY, STANDARDS & APPROVALS

Declaration no.: EU-753.133-000

We the undersigned:

Name of manufacturer: Munster Simms Engineering Ltd
Address: 277 – 279 Old Belfast Road, Bangor, BT19 1LT
Country: Northern Ireland

Declare under our sole responsibility that the following apparatus:

Product description: Pump controller
Model name and no.: Watermaster® IC EP1632
Brand name: Whale

Is in conformity with the following relevant EU Legislation:

EMC directive 2004/108/EC

LVD directive 2006/95/EC

Based on the following harmonized standards:

EN55014-1:2000 EMC Emissions

EN55014-2:1997 EMC Immunity

And therefore complies with the essential requirements of those directives.

Additional information:

Technical file number: TF-753.133-000

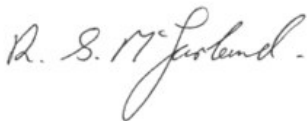
Location of technical file: Munster Simms Engineering Ltd, 277-279 Old Belfast Road , Belfast, BT19 1LT

Year mark first applied: 2012

Limitations of use: For use with EP1612 12V submersible pump only

Name and position of person binding the manufacturer or authorized representative:

Signature:



Name: Stanley McFarland

Function: Engineering Director

Location: Munster Simms Engineering Ltd
277 – 279 Old Belfast Road, Northern Ireland, BT19 1LT

Date of Issue: 27.03.12

CE marked

14. PATENTS AND TRADEMARKS

Watermaster® IC is protected by the following pending Patent Application

Patent UK patent application no. 1017025.6

WHALE® and Watermaster® are registered trademarks of Munster Simms Engineering Limited, Bangor, Northern Ireland trading as Whale®. WHALE IC™ and IC Intelligent Control™ logo device are trademarks pending registration of Munster Simms Engineering Limited, Bangor, Northern Ireland trading as Whale®.

15. WARRANTY

This product is protected by a 1 year warranty, for full details of our warranty statement please see enclosed leaflet.

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WHALE®, is a registered trademark of Munster Simms Engineering Limited, Bangor, Northern Ireland trading as Whale. Whale's policy is one of continuous improvement and we reserve the right to change specifications without prior notice. Illustrations are for guidance purposes only.

Please note that by contacting Whale Support you will be indicating your consent to receiving product updates, recall information, help guides and appropriate marketing messages from us via post, email or telephone unless you indicated an objection to receiving such messages.

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