



wave *brite*TM

SMART

INSTALLATION & OPERATING INSTRUCTIONS

www.waveinternational.co.uk



Contents

Section	Page
1. Introduction	2
1.1 Important	2
1.2 What It Does	2
1.3 Before you begin	3
2. Components	4
3. Wavebrite™ SMART Specifications and Replacement Part Numbers. Fig 1.	4
5. Installation	5
5.1 Plug Wiring Diagram Fig. 2.	5
5.2 Drawing WHALE GREY WASTE WATER SUMP 16L Fig. 3	6
6. Wavebrite SMART Screens & Cartridge Replacement	7-9
7. Functional Checks	10
7.1 Installation check	10
7.2 With pump running, check	10
7.3 Operational / Maintenance check	10
8. Code of Practice	10



Section 1. Introduction

1.1 Important

It is important that this product works as described and that you enjoy the extra peace of mind that the Wavebrite™ SMART offers by protecting the environment. If you have any queries that can not be answered by your supplier or engineer, please contact us direct on +44 (0) 1476 861717 or email info@waveinternational.co.uk

1.2 What it does

- The Wavebrite™ SMART filter system removes contaminants from onboard Grey Waste Water before overboard discharge meeting the EU Waste Water Standard. Grey Waste Water is generally produced by onboard showers, hand basins and washing machines. The system is controlled by a level control switch located in the Whale Grey Waste Water Sump which controls the pump. If galley waste water is put through the system cartridge life could be drastically reduced if any solids are present in the water and it is then recommended to install a Wavebrite Grease Trap.

Wavebrite™ SMART is a fully automated system that displays on a set of screens flow rate, daily and total volumes, system conditions and status of the filters, simply go to the visual display unit and scroll through. They give a clear indication of how many litres of water have been processed daily and over the lifetime of the product, responsibly with due care for the environment.

- Wavebrite™ SMART is designed for use in a wide range of craft from small boats with a single basin to those with multiple sources. The standard Wavebrite™ SMART can process up to 20,000L of grey water before the main module needs to be changed. Flow rate, differential pressure and accumulative volume are automatically monitored and used to indicate when maintenance is required, this is shown on the Pico screen of the unit. The Pico screen gives all the information required by the operator and a second Pico screen for remote location is also supplied.
- **Where possible galley waste water should be directed to the black water system due to the food waste content** if directed to the Wavebrite™ SMART system it may significantly reduce cartridge life. A Wavebrite™ grease trap is available in two sizes 1.75 and 4.50 litres.

1.3 Before you begin

Before you start, please read through these instructions carefully as well as those supplied by WHALE. Fitting a Wavebrite™ SMART involves:

- Cutting into a section of flexible hose or grey waste water discharge pipe. Making electrical connections.
- Installing Wavebrite™ SMART into the grey waste water discharge system requires hose tail clamps which are not provided. Electrical connections should be made by a qualified electrical installer with reference to the electrical equipment suppliers' instructions.
- The position you mount the Wavebrite™ SMART should allow access for maintenance being on one side which has an opening door.
- Suction hose length between the Wavebrite™ SMART inlet and the Whale Grey Waste Water Sump, if too long this can reduce pump performance and the head from Wavebrite™ SMART inlet to the Whale Grey Waste Water Sump should be less than 1000 mm
- Hose diameter and type, correct hose is supplied with the Whale Grey Waste Water Sump, hose clamps are also supplied.
- Note that bends and fittings in hoses all cause a reduction in pump efficiency.
- The shorter the pipe runs to and from the Wavebrite™ SMART with no extra fittings such as elbows and bends, the better the system will perform.
- Check with Wave International technical department if in doubt.

Section 2.

Components

Before you start check that your system kit contains the following components. If you think you are short of any items, please call us immediately.

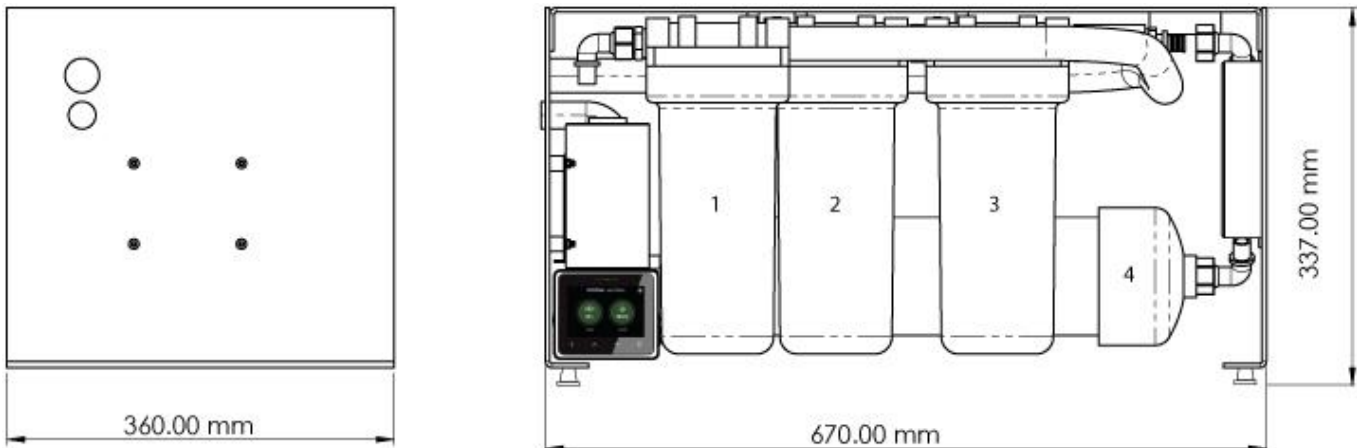
<u>Item</u>	<u>Qty.</u>	<u>Description</u>
1.	1	Wavebrite™ SMART
2.	1	WHALE GREY WASTE WATER SUMP 16L.
3.	1M.	25 mm braided hose.
4.	4	Hose clips.
5.	1	Instruction and information online https://www.waveinternational.co.uk/downloads.html

Refer to Whale Water Systems Catalogue for further information regarding WHALE PUMPS and the WHALE GREY WASTE WATER SUMP +44 (0)28 9127 0531 info@whalepumps.com www.whalepumps.com

Section 3. Wavebrite™ SMART Grey Waste Water Filter System Specifications and Replacement Part Numbers.

FLOW RATE:	1-15 Liters per min.	
POWER:	12 volts DC.	
SYSTEM MAX. PRESSURE:	4 bar.	
PRE-FILTERS MAX. DIFF. PRESSURE:	2 bar. (@ 2 bar. change cartridges 2&3)	
WAVEBRITE SMART MODULE CAPACITY:	20,000L	
MAX. TEMP:	45 deg. C	
MIN. TEMP:	1 deg. C	
WOUND CARTRIDGE:	Part No. WB004 (0,5 micron)	
WOUND CARTRIDGE:	Part No. WB005 (5 micron)	
FILTER SLEEVE:	Part No. WB006 (100 micron)	
WAVEBRITE SMART MODULE:	Part No. WBSLC1	
WAVEBRITE SMART WEIGHT	Dry – 30 kgs	Wet – 42 kgs
WHALE GREY WASTE WATER SUMP 16L:	Dry – 2 kgs	Wet – 18 kgs

Fig 1.



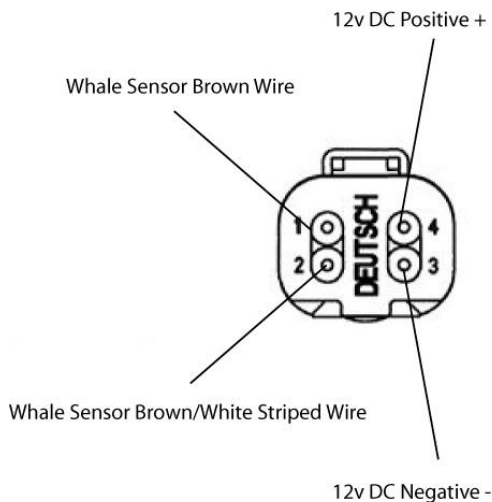
Section 5. Installation

Although the installation and connection of the Wavebrite™ SMART is relatively simple you should always seek the advice of a professional, please note that all electrical connections should be made by a qualified electrical installer.

- When positioning the Wavebrite™ SMART be sure it is not touching a surrounding structure to avoid any vibration or resonance from the unit.
- There is an opening panel to the front, ensure this is easily accessible for maintenance when in service, also that the Pico screen on the front of the unit can be viewed. Filter/Strainer No. 1 will require regular cleaning.
- There are 4 anti-vibration feet located to the underside of the unit which allow for fixing in place.
- The WHALE GREY WATER SUMP should be located so the head to the base of the Wavebrite™ SMART is no more than 1000mm, the hose connecting stubs on the sump must be drilled. The grey waste water supply, such as from showers and basins, are to go to the top connections, no hose or hose clips are supplied for this. Connect from the lower 25mm connection to the Wavebrite™ SMART using the 25mm flexible braided hose supplied, 2 no. hose clips should be used on each end, these are supplied. **Galley waste water should be directed to the black water system due to the food waste content and if directed to the Wavebrite™ SMART system it may significantly reduce cartridge life.**
- Connect the WHALE GREY WATER SUMP to the inlet with the braided hose supplied with the 2 hose clips also supplied.
- Connect the outlet to the overboard skin fitting (hose and stainless steel clips are not supplied), ensure if the overboard skin fitting will be below the waterline at any time the required safety measures are taken, such as above water loops or check valves, consult a marine plumbing specialist.
- Make the electrical connections to the Deutsche connecting plug as specified. All electrical connections to be carried out by and checked by a qualified marine electrical installer. **See section 5.1 Fig 5.**

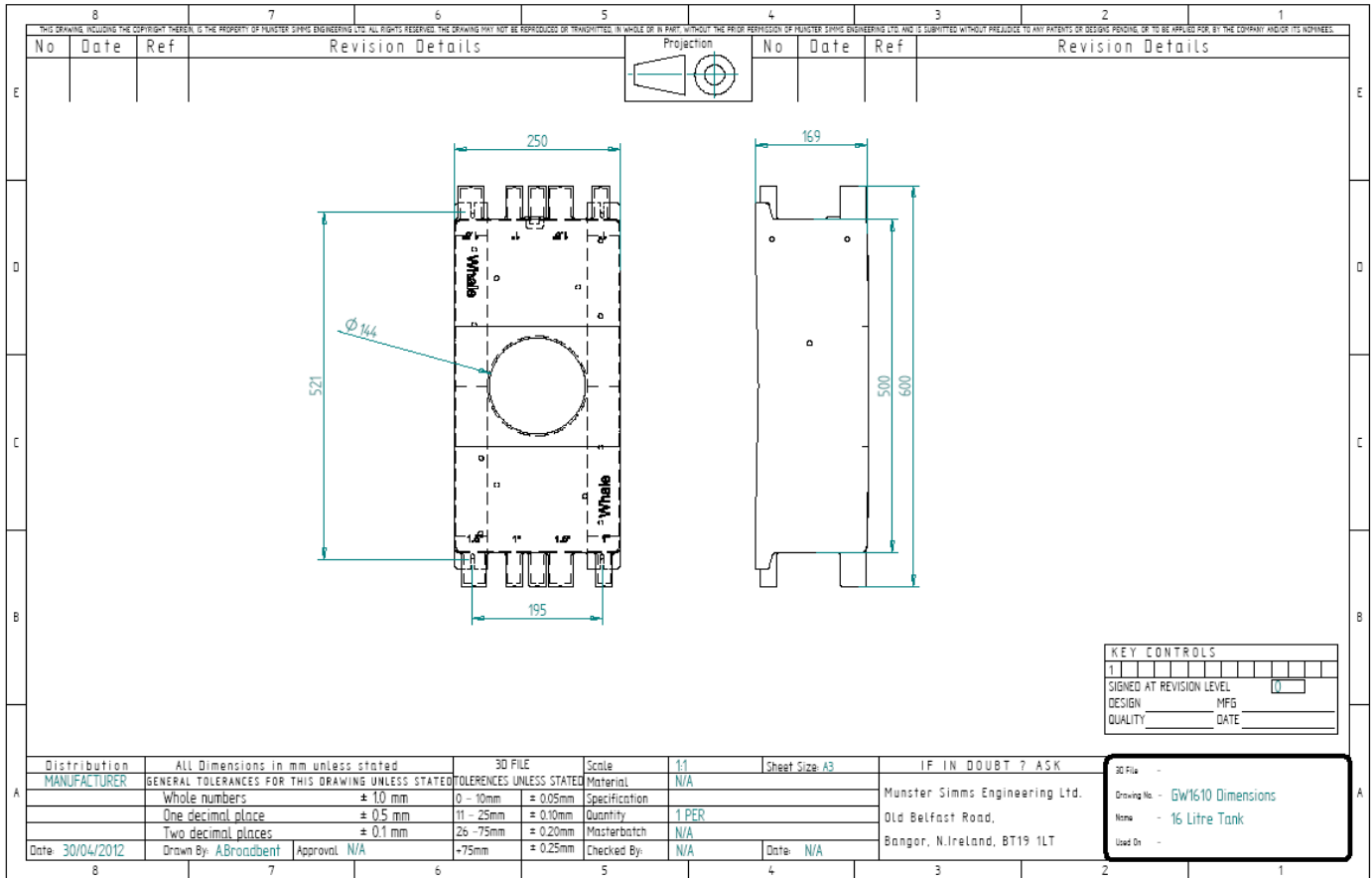
5.1 Deutsche Plug Wiring Diagram

Fig. 2.



5.2 Drawing WHALE GREY WASTE WATER SUMP 16L

Fig. 3.





Section 6. Wavebrite™ SMART VDU Screens and Cartridge Replacement

- Images of Wavebrite™ SMART screens are on the 2 following pages.

IMPORTANT. Before replacing the cartridges ensure the power to the Wavebrite™ SMART is switched off and there is no pressure in the system.

- **FILTER/STRAINER 1 (100 MICRON) screen requires cleaning periodically as indicated by the Wavebrite™ SMART monitor.** If the strainer becomes blocked pump performance will be significantly reduced and cause the flow in the complete system to drop.
- **The filter cartridge in FILTER 2 (5 MICRON) requires changing when indicated by the Wavebrite™ SMART monitor**
- **The filter cartridge in FILTER 3 (0.5 MICRON) requires changing at the same time as FILTER 1 as indicated by the Wavebrite™ SMART monitor**
- When replacing the filter bowls hand tighten only.
- Unscrew the filter bowl and pour the excess water remaining in the bowl back in to the grey or black water system. Plastic spanners can be supplied and should only be used to remove the filter bowl, they should be replaced by hand and only hand tight.
- **The Wavebrite™ SMART MAIN MODULE 4. requires changing after 20,000 litres have been processed and will be indicated by the Wavebrite™ SMART monitor.** The complete module is replaced, disconnect both end fittings, unclip both saddle brackets remove and replace with a new Wavebrite™ SMART Main Module.
- Remove the saturated cartridges and module placing them in a suitable receptacle for onward disposal.
- Check the filter housing 'O' rings are in good condition.
- Turn on the pump by running water into the grey water system and allow the air to be dispelled the filter should not need bleeding, there are bleed buttons if required, check for any leaks.



SYSTEM OFFLINE

This screen notifies the user that the system is offline.

The Wavebrite SMART stores the daily and overall volumes of litres of water processed.



SYSTEM ONLINE

This screen gives the status of the complete system

Green - Good

Orange - Will need maintenance soon.

Red - Needs maintenance to operate.



SYSTEM REQUIRES ATTENTION

This screen warns the user that the system needs maintenance to operate.

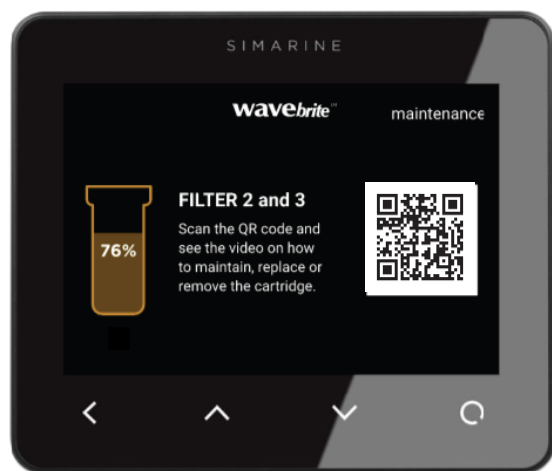
The user must navigate to the Maintenance screen for further information about the warning.



MAINTENANCE

This screen allows the user to view the selected Main Module, Filter or Pump.

The QR code links to the manual page on the Wave International website, WBSMART manual contains part numbers and further information to assist.



MAINTENANCE

This screen gives the status of filters 2 & 3 and the % they are used up.

The QR code is a link to the instructions and parts list.



OVERVIEW

This screen gives the status of the complete system

Green - Good

Orange - Will need maintenance soon.

Red - Needs maintenance for system to operate.



Section 7. Functional Checks

7.1 Installation Check

- Ensure hose clips securing the flexible hose are fully tightened.
- All connections must be tight.
- Electrical connection to be checked by a qualified marine electrical installer.
- Make sure any other components you disturbed or removed during the fitting process have been refitted correctly.

7.2 Wavebrite™ SMART Power On And Pump Running

- If fitted check the pump discharge valve is OPEN before power on.
- Pump is controlled by the float switch in the WHALE GREY WASTE WATER SUMP, run water through the system and check for leaks.

7.3 Operational / Maintenance Check

- **IMPORTANT.** Before opening filter housings ensure the power to the Wavebrite™ SMART is switched off and there is no pressure in the system.
- Apart from making cartridge changes as described in **Section 6.** make cartridge replacements part of a regular maintenance programme before the season.
- Galley sink waste should be directed to the black water system due to the food waste content, if directed to the Wavebrite™ SMART system it may significantly reduce cartridge life.

Section 8. Code of Practice

Some points to remember

- Make sure all grey water lines and connections are in good order and are not leaking.
- Where possible prevent particulate or food materials from entering the grey water system.
- If the additional by-pass pump is fitted ensure that direct pump out from the WHALE GREY WASTE WATER SUMP is permitted and reinstate the Wavebrite™ SMART as soon as possible.
- Take ashore in proper containers any Wavebrite™ SMART system cartridges to be disposed of at approved facilities at marinas, lock stations or local authority waste disposal sites.
- As far as possible, use biodegradable detergents, soaps and cleaning material

Wave International Limited
Axholme House
Newton Way
Colsterworth
Grantham NG33 5NP
UK

Your local agent is:

tel.: +44 1476 861717

email: info@waveinternational.co.uk
www.waveinternational.co.uk

Wavebrite™ is a Wave International Limited Trade Mark

Wave International limited makes no representations or warranties with respect to the contents or use of this manual and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Wave International Limited reserves the right to revise this publication and make changes to its content, at any time and to make changes to any and all parts of Wave International products without obligation to notify any person or entity of such revisions or changes.