



INSTALLATION AND OPERATION MANUAL

Whale® Gulper® IC Waste Pump Range



Model Number	Description
BP2082B	Gulper® IC Waste Pump - 12 V d.c. Bulk
BP2084B	Gulper® IC Waste Pump - 24 V d.c. Bulk

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 and 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.

For information on our full range of products visit www.whalepumps.com

1. TYPICAL INSTALLATION

This Gulper® IC is a high capacity waste pump with intelligent control electronics inside designed to be installed in recreational marine vessels in one of two applications:-

1. High Capacity Grey Waste Drainage Pump
- OR
2. Remote Mounted Bilge Pump - Suitable as a primary bilge pump for boats up to 12 metres / 39.4 ft (designed to ISO15083), or as a secondary bilge pump on any vessel.

There are three options for installation:-

Option 1- Gulper® IC - Grey Waste Pump with Whale® IC grey waste accessories (available separately). See Fig 1a for Gulley IC accessory and Fig 1b for Two Way Manifold IC accessory.

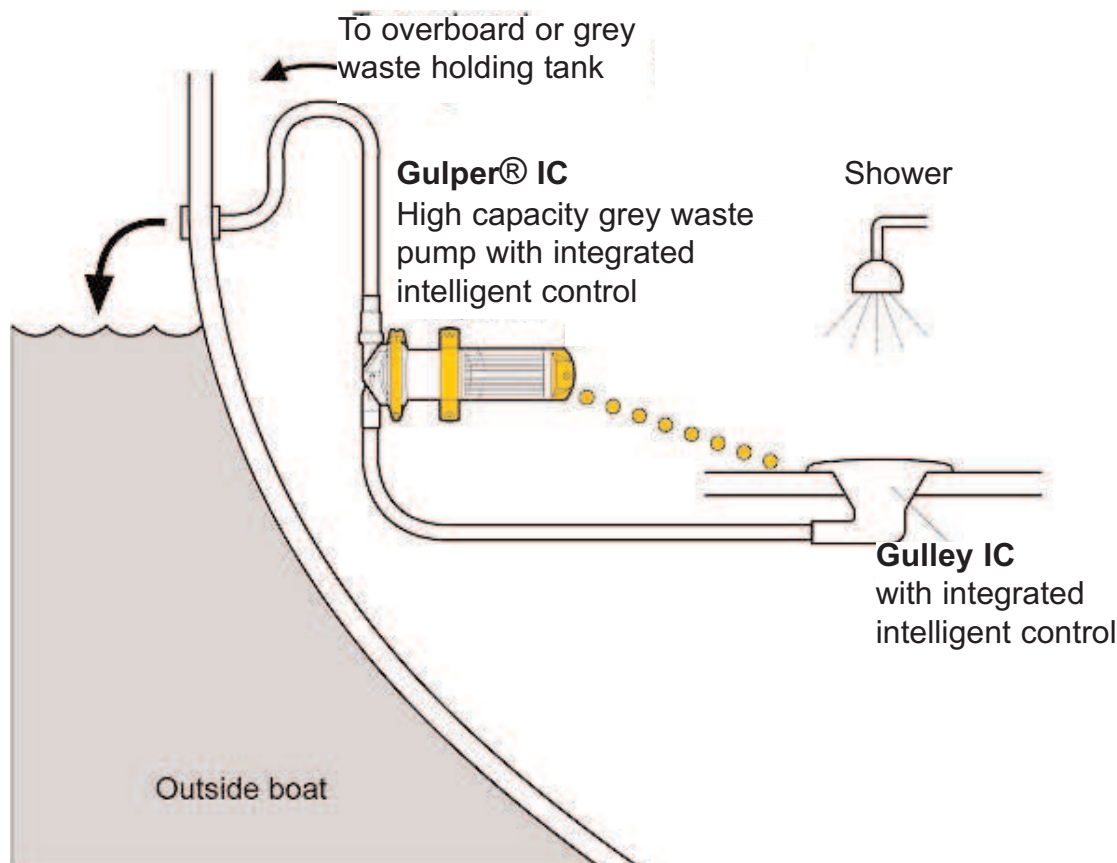


Fig. 1a Typical Installation using Gulper® IC as a high capacity grey waste pump with Gulley IC

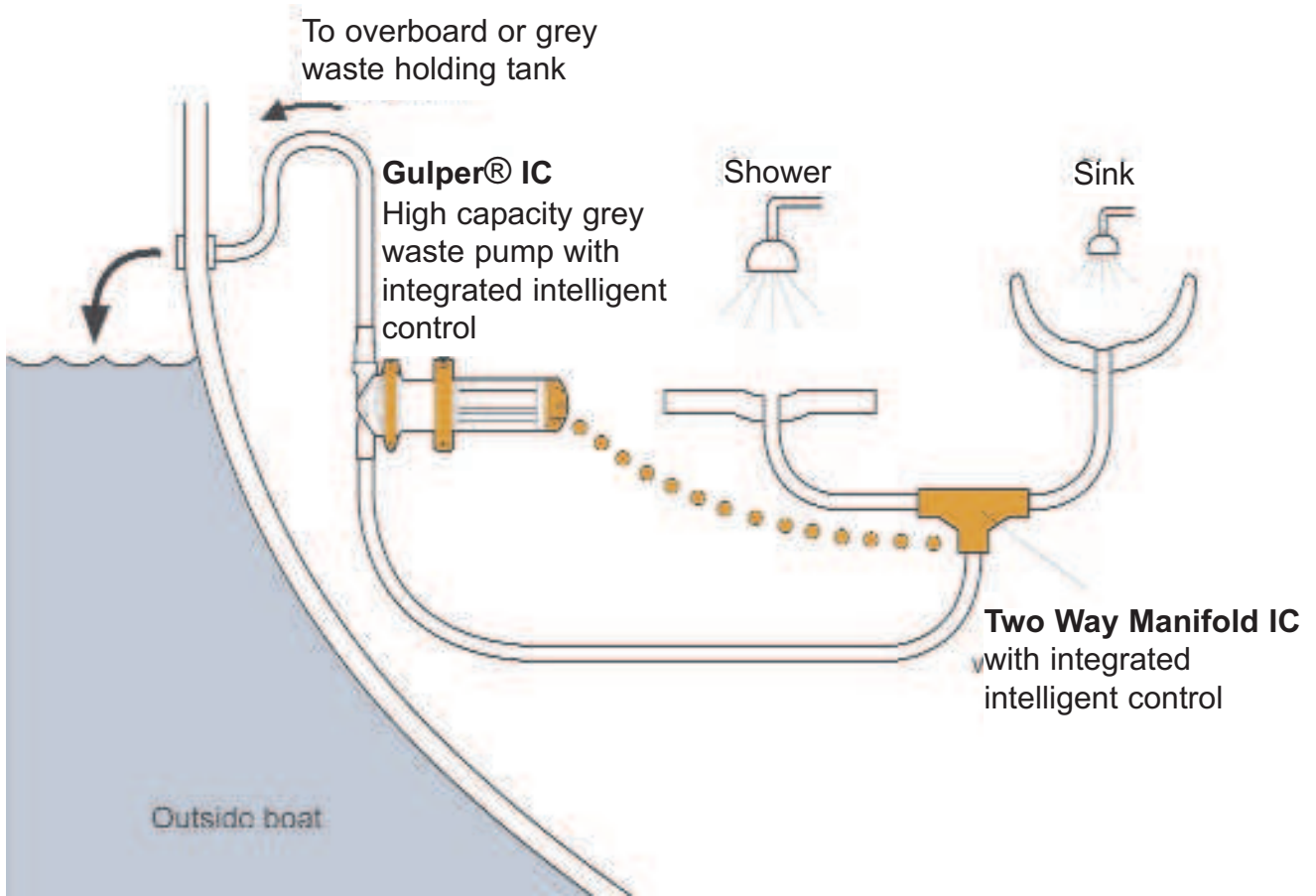


Fig 1b Typical Installation using Gulper® IC as a high capacity grey waste pump - with Two Way Manifold IC

Option 2 - Gulper® IC Grey Waste Pump with non Whale® grey waste accessories

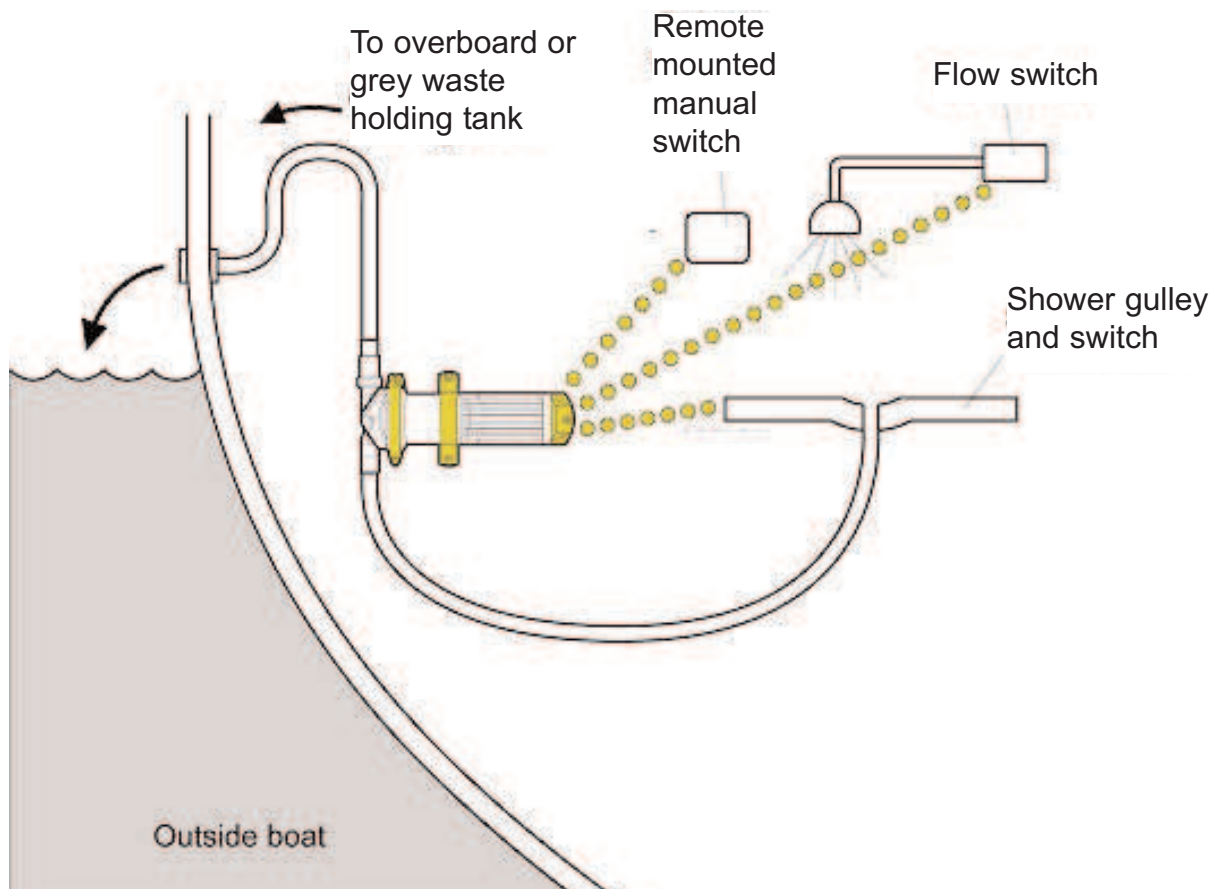


Fig 2 - Typical Installation using Gulper® IC as a High Capacity Grey Waste Pump - used with a traditional switch / non Whale® IC accessories

Option 3 - Gulper® IC as remote mounted bilge pump - with Whale Strainer IC (available separately)

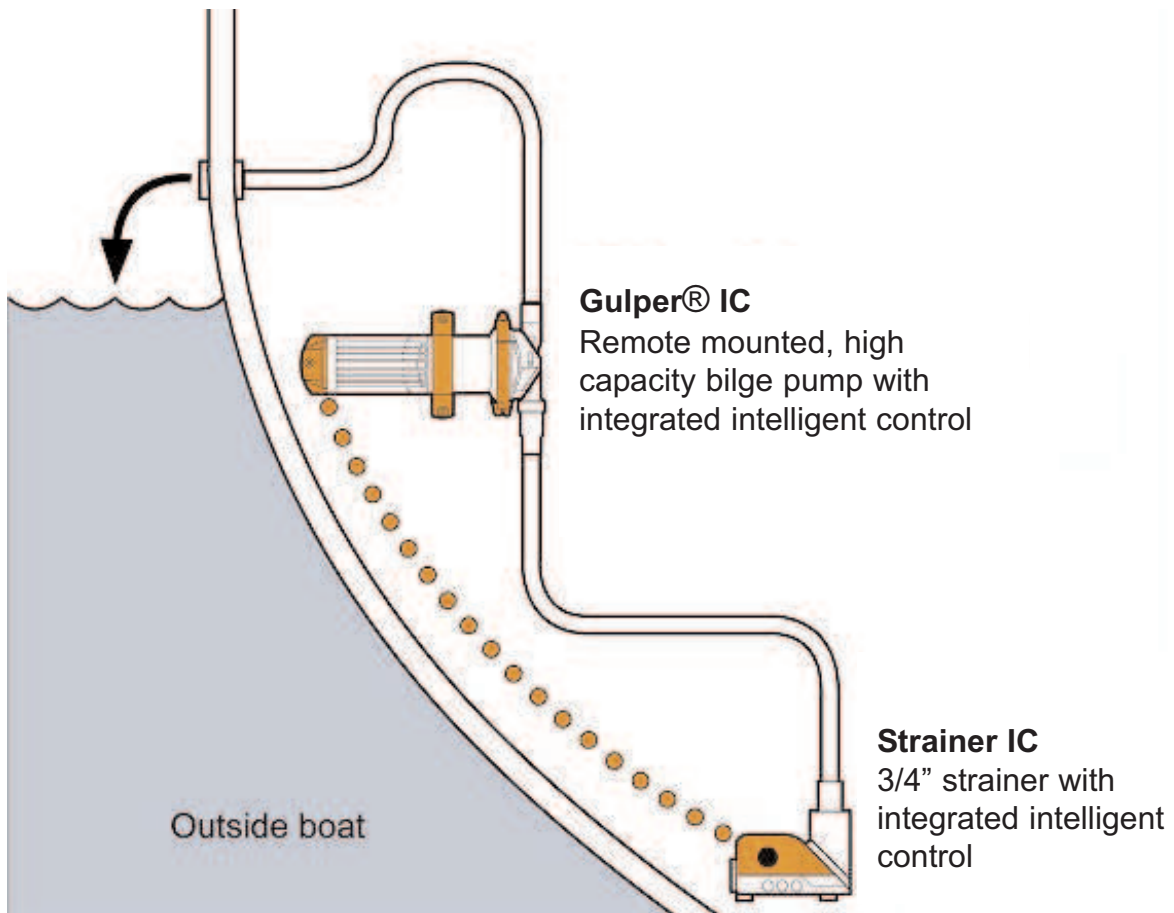


Fig 3- Typical Installation Gulper® IC as a remote mounting bilge pump with Whale® Strainer IC

2. SPECIFICATION

Model	Gulper® IC	
Product Code	BP2082B	BP2084B
Voltage	12 V d.c.	24 V d.c.
Voltage Range	10 V d.c. to 13.6 V d.c.	21.6 V d.c. to 27.2 V d.c
Hose Connections	Barbed connections - to connect to either 19mm (¾") or 25mm (1")	
Recommended Fuse Size	10 Amp Automotive	5 Amp Automotive
Minimum Wire Size	1.5mm ² (16 AWG)	
Weight	1.6 kg (3.5 lbs)	
Materials	Pump Head - Glass filled Nylon Valves and Diaphragm - Santoprene® Pump Body - Aluminium Gear Wheel - Delrin Fasteners - Stainless Steel	
Service Kits	AK2050 - Replacement Gulper® Pump Head	
Accessories - Grey (Available separately)	SG3482B- Small Gulley IC - 2 m (6ft) cable SG3484B- Small Gulley IC - 4 m (12 ft) cable SG1982B- Large Gulley IC - 2 m (6ft) cable SG1984B- Large Gulley IC - 4 m (12 ft) cable WM1982B - Two Way Manifold - 2m (6ft) cable ¾" (19mm) ports WM1984B - Two Way Manifold - 4m (12ft) cable ¾" (19mm) ports WM2582B - Two Way Manifold - 2m (6ft) cable 1" (25mm) ports WM2584B - Two Way Manifold - 4m (12ft) cable 1" (25mm) ports WM3882B- Two Way Manifold - 2m (6ft) cable 1 ½" (38mm) ports WM3884B - Two Way Manifold - 4m (12ft) cable, 1 ½" (38mm) ports	
Accessories - Bilge (Available separately)	SI8222B - Strainer IC - 2m (6ft) cable 19mm (¾") port, 12 V d.c. SI8224B- Strainer IC - 4m (12ft) cable 19mm (¾") port, 12 V d.c. SI8422B - Strainer IC - 2m (6ft) cable 19mm (¾") port, 24 V d.c. SI8424B- Strainer IC - 4m (12ft) cable 19mm (¾") port, 24 V d.c.	
Connectors	Deutsch connectors : Quick Connect series 7 ways AK2081 -Traditional Deutsch® to two spade connector	
Maximum Suction Lift (vertical)	3m (10 ft)	
Maximum Discharge Head (vertical)	3m (10 ft)	
Maximum Discharge Head and Suction Lift Combined vertical vent)	4m (13.5 ft)	
Operational Time Delays	On / off delay	
Current Profile	Soft start / soft stop	

PERFORMANCE DATA

Suction Lift	0m / ft	0m / ft	1m / 3ft	1m / 3ft
Discharge Head	1m / 3ft	1m / 3ft	1m / 3ft	1m / 3ft
Hose Size	19mm / ¾"	25mm/ 1"	19mm / ¾"	25mm/ 1"
Flow Rate per min	19 ltrs (5 US gals)	17.5 ltrs (4.6 US gals)	17.5 ltrs (4.6 US gals)	15.5 ltrs (4.1 US gals)
Flow Rate per hour	1140 ltrs (300 US gals)	1050 ltrs (276 US gals)	1038 ltrs (270 US gals)	930 Ltrs (246 US gals)
Current Draw (12 V d.c.)	7.5 amps	8 amps	7.5 amps	9 amps
Current Draw (24 V d.c.)	3.25 amps	4 amps	3.25 amps	4.5 amps

Note - Output capacity depends on installation and operating conditions.

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

3. LIST OF CONTENTS AND DIAGRAMS

1. TYPICAL INSTALLATION
2. SPECIFICATION
3. CONTENTS AND LIST OF DIAGRAMS
4. PRINCIPLES OF OPERATION
5. TO THE USER
6. TO THE FITTER
7. APPLICATION
8. WARNINGS
9. PARTS LIST
10. OPTIONAL EXTRAS
11. INSTALLATION
12. PLUMBING
13. INSTRUCTIONS FOR USE
14. MAINTENANCE
15. HELPFUL HINTS
16. TROUBLE SHOOTING
17. WINTERISING
18. PATENTS/ TRADEMARKS
19. WARRANTY STATEMENT
20. EU DECLARATION OF CONFORMITY, APPROVALS

List of Diagrams:

- Fig 1a Typical Installation as a High Capacity Grey Waste Pump for use with Gulley IC
- Fig 1b Typical Installation as a High Capacity Grey Waste Pump for use with Two Way Manifold IC
- Fig 2 Typical Installation as a High Capacity Grey Waste Pump used with non-whale accessories

Fig 3	Gulper® IC - Typical Installation as a Remote Mounting Bilge Pump for use with Whale Strainer IC.
Fig 4	Pump Orientation
Fig 5	Gulper® IC installation
Fig 6	Install P Clamp
Fig 7a	Wiring Gulper® IC to Whale IC Accessories
Fig 7b	Wiring Gulper® IC to Traditional Switch - non Whale IC Accessories
Fig 8	Connecting Switching Cable Through Bulkhead
Fig 9a	STEP 1- Connect Deutsch Connectors
Fig 9b	STEP 2 - Connect adaptor with 2 spades
Fig 10	Secure Pipework
Fig 11	Strainer IC Operation test

4. PRINCIPALS OF OPERATION

IC - Intelligent control technology

At the heart of every Whale® IC product lies innovative electronic control circuitry built in. This enables IC sensor accessories to communicate directly with IC pumps to control their performance. These accessories send signals to built-in intelligent software which then control the pumps to react as required.

Gulper® IC

The Gulper® IC fully automatic self-priming pump is designed to pump waste water from a shower tray/galley sink, (either overboard or to a holding tank) or as a remote mounting bilge pump. Output capacity depends on installation and operating conditions.

GREY WASTE APPLICATION - WITH WHALE® IC ACCESSORIES

When Gulper® IC is installed as a grey waste pump with Whale® IC Grey waste accessories, electrical signals are sent from the Gulley IC or Two Way Manifold IC only when grey waste water needs to be pumped out. (See Figs 1a and 1b)

GREY WASTE APPLICATION - WITH NON WHALE® IC ACCESSORIES

Gulper® IC may also be installed as a grey waste pump in conjunction with non whale accessories. This allows the installer to fit low current controlled switching which prevents burn outs from high current. (See Fig 2)

REMOTE MOUNTED BILGE APPLICATION

Save time and money by reducing four separate components to one pre-wired system. Remote mounting automatic Gulper® IC receives signals from Strainer IC and switches on and off automatically. (See Fig 3) Suitable for a primary bilge pump for boats smaller than 12 metres/39.4 ft (designed to ISO15083), or as a secondary bilge pump on any recreational marine vessel.

5. TO THE USER

Read the following instructions carefully.

6. 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.

7. APPLICATION

Gulper® IC is designed for installation in recreational marine vessels only and operated on 12 or 24 V d.c. electrical supply only. If it is intended for use for any other purpose or with any other liquid, it is the user's responsibility to ensure that the pump is suitable for the intended use and, in particular, that the materials are fully compatible with the liquids to be used. The Whale® Gulper® IC pump is **NOT** recommended for domestic applications.

8. WARNINGS

- This pump must not be mounted below the water line when connected to an intake or outlet unless the system has a vented loop (see Fig 1 - 3).
- Not suitable for pumping flammable liquids, diesel, chemicals etc.
- This pump is **not** intended for damage control.
- **NOTE** - Bilge pump capacities may not be sufficient to prevent flooding from rapid accumulation of water due to storms, rough weather and/ or rapid leaks created by hull damaged and or unsafe navigational conditions.



- With all applications it is important that a system of safe working practice is applied to installation, use and maintenance. Ensure the electric supply is turned off and waste water system is drained before installation. In order to securely fasten the unit, ensure that the mounting surface is a minimum thickness of 19mm (3/4") (when fitted with the screws supplied).
- **NOTE** Do not screw directly to the hull - must be mounted on a bulkhead or on an additional board.
- **NOTE - DO NOT** unscrew the rear section, as interference with the internal electrics will render the pump unfit for use and invalidate the warranty. This is a non-serviceable part of the pump.
- **WARNING:** 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. Switch off the power while making connections.

Suggested wiring information is given as a guide only. For full information, refer to the USCG, ABYC and ISO regulations for marine applications and wiring gauges, connectors and fuse protection.

Contact Whale® Support team for further technical advice +44 (0)2891 270531 or email: info@whalepumps.com

9. PARTS LIST

Qty 1	Gulper IC pump	Qty 1	Inline fuse assembly
Qty 3	No.8 self tappers and washers		

10. OPTIONAL EXTRAS

AK2081 Traditional Deutsch to two spade connector

AK2050- Service kit - Replacement head for all Gulper® pumps

IC accessories - see specification table, Section 2

11. INSTALLATION

Note: Incorrect installation will invalidate warranty

Preparation - Always disconnect power sources before installing.

11.i Location

- Choose a position to mount the pump that is dry and away from standing water and is free from obstacles.
- Mount in a position with the shortest pipe run lengths possible.

11.ii Mounting Instructions

- Gulper® IC can be mounted on a horizontal or vertical surface.
- When mounted vertically ensure that the pump head is lower most (Fig 4).

NOTE -It is recommended that the outlet is mounted above the water line and anti-siphon loops are fitted where applicable (see typical installation Figs 1 - 3).

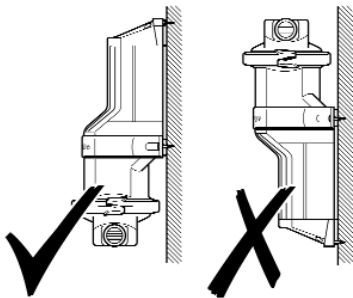


Fig. 4 - Pump Orientation

- When mounting, position the pump on surface and work-out the best angles for the hose (to prevent kinking) and mark the 3 hole positions using the pump feet.

NOTE: The pump head may be rotated to suit the hose connections. Loosen the screw, adjust and reposition the head to the required position (Fig 5) and tighten the screw

- Drill pilot holes of 3.2mm (1/8").

NOTE: Do **not** drill through hull, ensure that pump is mounted to additional board or bulkhead.

- Use the three No.8 self tappers and washers (included) to secure the pump.
- Use 19mm (3/4") or 25mm (1") smooth bore reinforced hose to connect to the pump with hose clips.

NOTE: Barbed connections mean there is no need to cut inlets or outlets to size.

NOTE: Ensure tight connections, but do not over-tighten clamp rings/ screws/hose clips

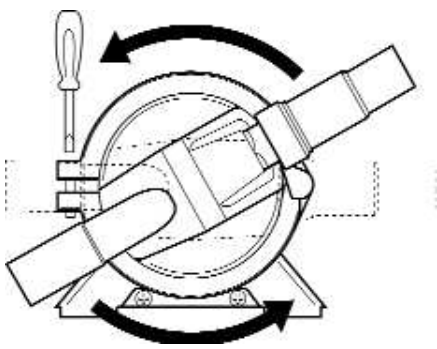


Fig 5 - Gulper® IC Installation

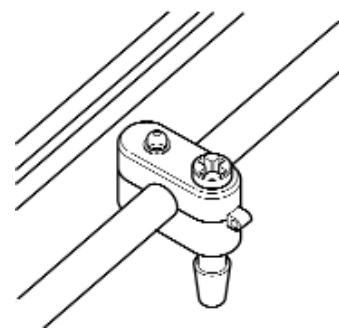


Fig 6 - Fit P clamp

- Screw p clamp to bulkhead ensuring it is located approx. 100 mm (4") from rear housing (Fig 6).

NOTE: In order to securely fasten the unit, ensure that the P clamp mounting surface is at least 19mm (3/4") minimum thickness.

11.iii Electrical Wiring

- For installation with Whale® IC accessories use pre-wired Deutsch® connectors attached
- For installation to non-whale systems - use spade connector adaptor AK2081- available separately
- If you are not familiar with applicable electrical standards, ensure that the unit is installed by a qualified electrician/ technician.

WARNING: 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.

NOTE: Switch off the power prior to making connections. Suggested wiring information is given as a guide only. For full information, refer to the USCG, ABYC and ISO regulations for marine applications and wiring gauges, connectors and fuse protection.

CONNECT POWER CABLES

The polarity is indicated by coloured cable (Positive - red, Negative - black).

NOTE The pump is protected against reverse polarity connection.

NOTE: Undersized wire in the circuit before the pump will reduce voltage when the pump is under load, thus giving poor performance and potential motor failure.

- Ensure all power cables installed are at least the minimum wire size is 1.5mm² (16 AWG).
- To control the pump, a system switch should be fitted between the positive live terminal on the battery and the positive lead on the pump.

WARNING Ensure that there are no loops of electrical cable that could cause trip hazard.

11.iv FITTING THE FUSE

Fuse rating for BP2082B (12V d.c.) pumps 10 Amp automotive.

Fuse rating for BP2084B (24V d.c.) pumps 5 Amp automotive

The in-line fuse assembly supplied must be fitted to the positive side of the pump. (see fig 7 a or b)

PURPOSE OF FUSE: The purpose of this fuse is to protect the pump from serious damage in the event of system blockages, therefore please ensure all valves are fully open before operating the pump.

If the fuse blows:

- a) Check that all system valves/stopcocks are open
- b) Check that the inlet and outlet ports are not blocked
- c) Check that the rest of the system is not blocked in any way

11.v. Wiring Diagrams:

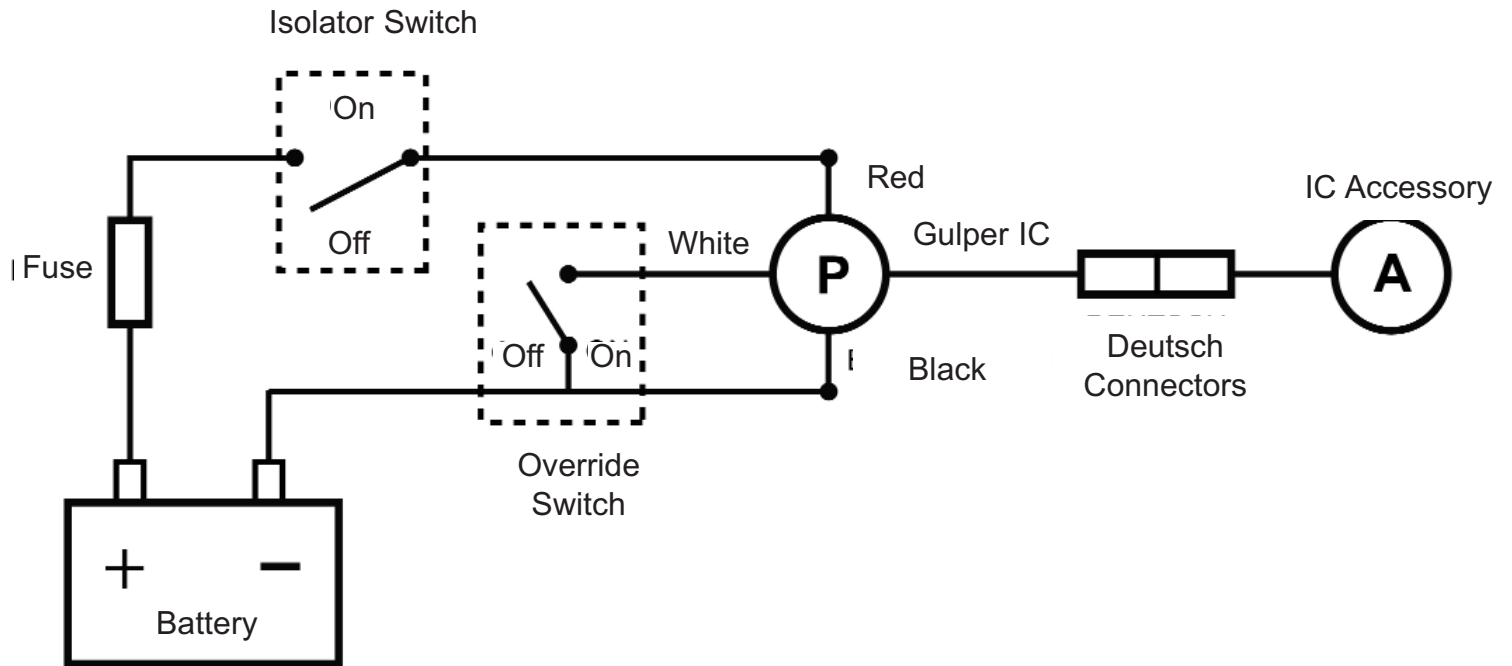


Fig 7a Wiring Gulper® IC to Whale® IC accessories

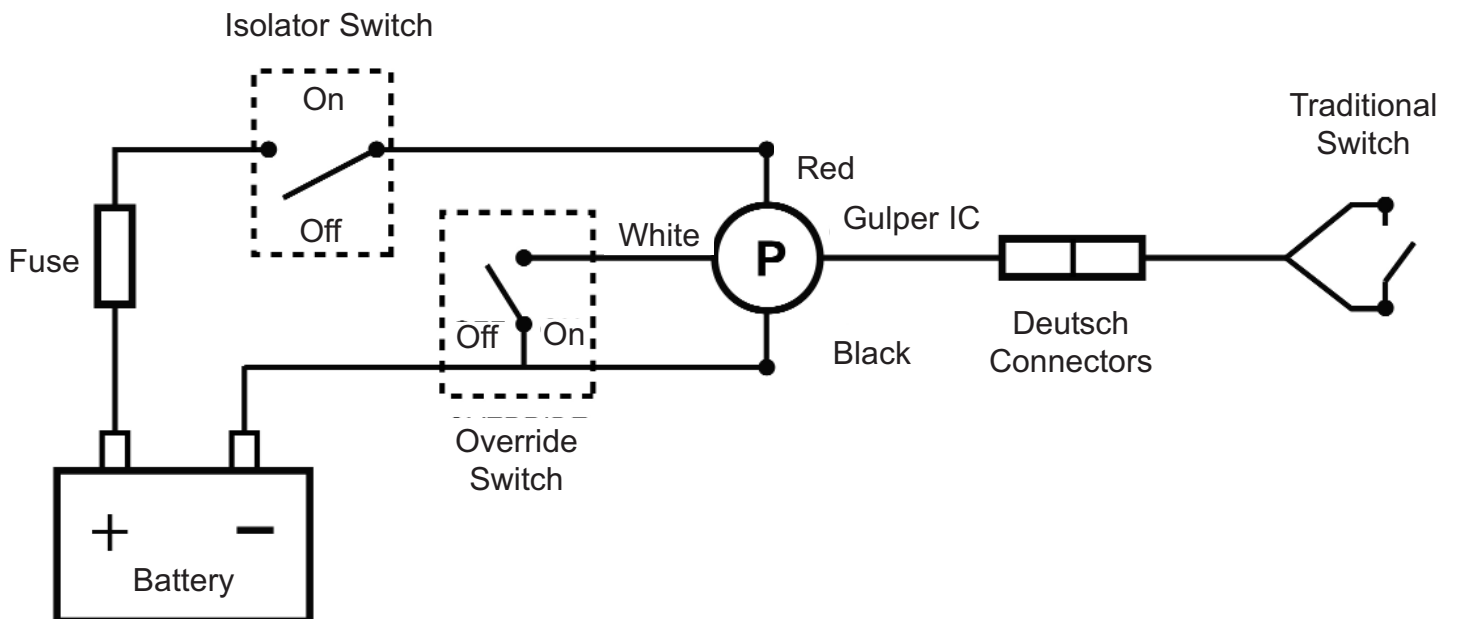


Fig 7b Wiring Gulper® IC to traditional switch - non Whale® IC accessories

11.vi CONNECT SWITCHING CABLE

If switching cable must be fitted through bulkhead, ensure a minimum hole diameter 25mm (1") is drilled.

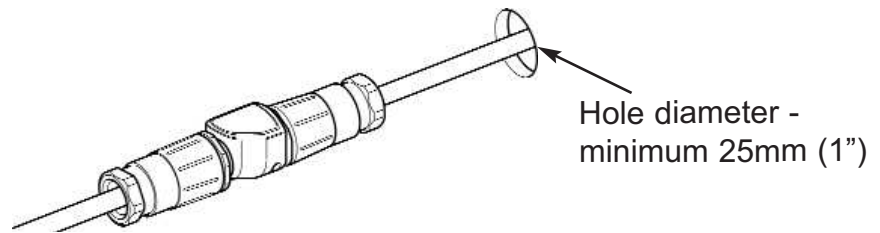


Fig 8- Connecting switching cable through bulkhead

11.vii CONNECTING GULPER® IC TO WHALE® IC ACCESSORIES- GREY AND BILGE APPLICATIONS (SEE FIG 1-3)

Connect the pre-wired Deutsch® connectors on Gulper® IC and Whale® IC accessory (see Fig 9.a) .

11.viii. INSTALLATION FOR GULPER® IC WITH TRADITIONAL SWITCHES OR NON-WHALE® IC ACCESSORIES (SEE FIG 2)



Fig 9a. STEP 1- Connect Deutsch® Connectors

Fig 9.b. STEP 2 - connect adaptor with 2 spades

Use Adaptor AK2081 (available separately) Deutsch® to traditional 2 spade connector lead to connect to non Whale® IC remote mounted manual switch/ flow switch or gulley switch. (see Fig 2)

Step 1 - Connect Deutsch® connector on Gulper® IC to adaptor (see Fig 9.a)

Step 2 - Connect adaptor traditional 2 spade connections to traditional switch or non Whale® IC accessory. (see Fig 9.b)

12. PLUMBING

Use 19mm (3/4") or 25mm (1") smooth bore reinforced pipework to connect to the pump. Secure the pipework on inlet and outlet with worm drive hose clip (Fig 10)

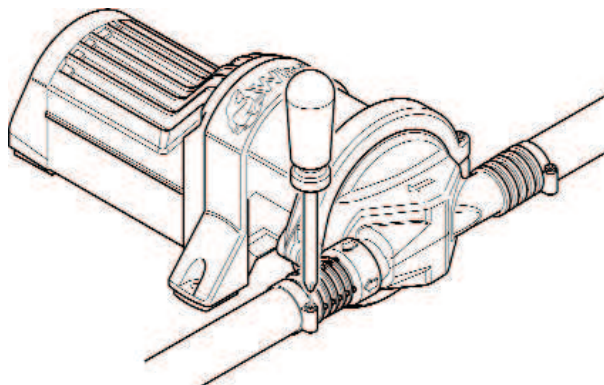


Fig 10 Secure pipework

13. INSTRUCTIONS FOR USE

Ensure that pump installation is thoroughly tested before first use.

NOTE - These are all automatic or semi-automatic applications; therefore ensure that isolator switch is turned on. **Do not leave the craft unattended with the electrical system energized except in a bilge application.**

13.i GREY WASTE APPLICATION

GULPER® IC - WITH GREY WASTE WHALE® IC ACCESSORIES

Gulper® IC with Gulley IC - Switch on shower to run grey waste through Gulley IC and check pump is operating (1 second start delay).

NOTE The pump should stop 15 seconds after deactivation.

Gulper® IC with Two Way Manifold IC - Switch on shower and or sink to run grey waste through Two Way Manifold IC and check pump is operating (1 second start delay).

NOTE The pump should stop 15 seconds after deactivation.

Gulper® IC - used with non Whale® IC accessories - Activate the switch to check pump operation (1 second start delay).

NOTE The pump should stop 15 seconds after deactivation.

13.ii BILGE APPLICATION

Gulper® IC with Strainer IC - Place finger over sensor area to check pump is activated, remove finger and wait for the pump to stop (45 seconds).

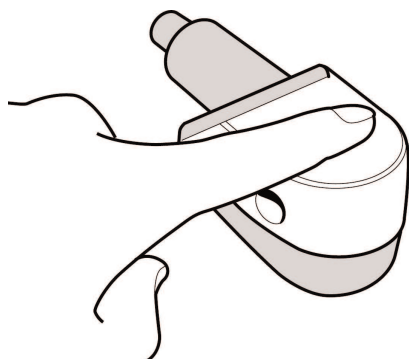


Fig 12 Testing Strainer IC

14. MAINTAINENCE

This Whale Gulper® IC is designed to only require minimal maintenance.

WARNING: Before servicing pump, turn off pump and drain water from system.

Annual Checks

- Whale advise that the boat's plumbing system is checked annually for leaks and obstructions. Also a pump electrics check is advisable.
- Before inspecting or replacing the diaphragm, disconnect the electrical supply.

Optimal Performance

- Ensure this product is clear of debris

IF THE PUMP IS NOT OPERATING AS EXPECTED:-

- Loosen the hose clips to release the pump from plumbing.
- Unscrew the Ezi-clamp clamping ring to release the pump head - see Fig 5
- This will release the pump head, and allow easy access to the valves & diaphragm.
- The diaphragm and valves should be checked for any excessive wear, damage or cracks, and should be replaced if necessary (service kit AK2050 - replacement pump head).

Cleaning

Gulper® IC and accessories should be wiped clean regularly to maintain optimal performance and ensure no clogging occurs. **WARNING:** Do not use abrasive cleaners.

15. HELPFUL HINTS

The unique ezi-clamp ring makes installation and maintenance of the pump easier with a retaining screw which means the head can be fitted or replaced easily by one fitter, without the risk of dropping screws.

16. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	POTENTIAL SOLUTION
Fuse blown or loose electrical connection	Main power (Isolator switch) supply OFF /not working. Loose wiring connection	Check the isolator switch is on.
	Pump circuit has no power	Check electrical connections to ensure pump is receiving power as normal and free from corrosion. Check there is 12/24 volts from the battery
	Fuse blown or loose electrical connection	Check the in-line fuse & ensure all electrical connections are tight and free from corrosion. If fuse has blown check for closed valves or seacocks, then for debris in pump head and clean out if necessary. (See section 11). Replace fuse and run pump.
Failure to prime - Motor operates, but no pump discharge	Shower/sink drain is clogged	Check/ clean the shower/sink drain.
	Debris under flap valves / not seated properly	Turn off electrics and disconnect plumbing check valves for blockages and remove debris
	Air leak in intake line	Check hose connections are airtight. Open pump head and check valves and diaphragm
	Punctured pump diaphragm	Replace the damaged part using service kit - Part number AK2082 (See section 14)
	Restricted intake or discharge line	Check all hose connections are airtight, free from blockages, and hose has not collapsed/kinked.
Pump fails to turn off when required	Strainer IC bilge strainer, grey waste IC accessory or traditional switch not working	Check IC accessory or traditional switch is operating properly (see section 13) , if not replace part (see specification table)
	Defective/ debris on grey waste float switch	Clear debris/ replace float switch.
	Insufficient voltage to the pump	Check power supply to pump.

PROBLEM	POSSIBLE CAUSES	POTENTIAL SOLUTION
Low flow	Air leak at pump intake	Check the hose connections are airtight.
	Debris inside pump and plumbing	Turn off electrics and disconnect plumbing, check for blockages and remove (See section 14)
	Punctured pump diaphragm	Replace the damaged part using service kit- Part number AK2082 (See section 14)
	Defective electronic control	Replace pump. If within specified warranty period contact Whale (see details below)

WARNING: DO NOT unscrew the rear section, as interference with the internal electrics will render the pump unfit for use - this is a non-serviceable part of the pump.

17. WINTERIZING

NOTE - When winterizing, fully drain system
Whale® cannot guarantee warranty if the system is not fully drained for winterizing

18. PATENTS AND TRADEMARKS

Trade marks - Whale® and Gulper® are registered trademarks to Munster Simms Engineering limited (also trading as Whale® Water Systems)

Whale® Gulper® IC products are protected by the following patent applications:-

P92580GB00

P92043GB00

DEUTSCH® is a registered trade name of Deutsch Group. Santoprene® is a registered trade name of Advanced Elastomer Systems, LP, an Exxonmobil Chemical Affiliate
Delrin®, Teflon® and Neoprene are registered trade names of Dupont Neumeurs and Co.
Monprene® is a registered trade name of Technore Apex.

19. WARRANTY STATEMENT

This Whale® product is covered by 2 year warranty - Please see enclosed document for details of our statement of limited warranty

20. DECLARATION OF CONFORMITY, STANDARDS, APPROVALS

This product complies with all relevant European directives and standards. Please contact Whale® if further details are required

Manufacturer's Declaration

We hereby declare, under our sole responsibility, that the enclosed equipment complies with the provisions of the following EC Directives.

Electromagnetic Compatibility Directive 89/336/EEC, amended by 92/31/EEC and 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Low Voltage Directive 73/23/EEC amended by 93/68/EEC on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits.

CE mark affixed: 10/1/05

Basis on which conformity is declared

The above equipment complies with the protection requirements of the EMC Directive and the principal elements of the safety objectives of the Low Voltage Directive.

Standards applied

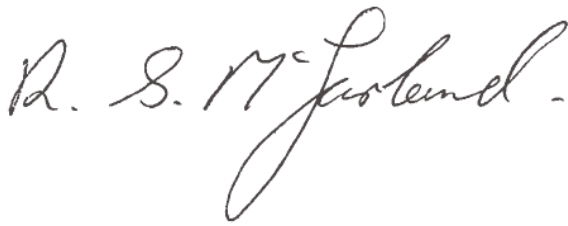
EN60335 - 1:2002 Safety household and similar electrical appliances

EN60335 - 2:41:2003 Particular requirements for pumps

EN55014 - 1:2000 Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus. Emission

EN55014 - 2:1997 Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus. Immunity. Product family standard

Signed:



Date: 31st May 2010

Position: Engineering Director

Ref: sr_180.137_v2_0211

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