

INSTALLATION & USER INSTRUCTIONS

Thank you for purchasing this Whale® product. For over 70 years Whale has led the way in the design and manufacture of water and waste systems including:- plumbing, faucets, showers, pumps and heating for low voltage applications.

CONTENTS

1. Principles of Operation
2. Specification
3. Application
4. Warnings
5. Instructions for Installation
6. Plumbing
7. Electrical Connections
8. Operation
9. Maintenance
10. Fault Finding
11. Service Kits
12. Service Support Details

LIST OF IMAGES

1. Pump Orientation
2. Pump Head
3. Altering Flow Direction
4. Typical Pump Out
5. Electrical Connections

1. PRINCIPLES OF OPERATION

The Whale Gulper Toilet pump is designed to pump macerated and non-macerated toilet waste without blocking. It offers a reliable means of emptying waste holding tanks and may be used in vacuum toilet systems.

2. SPECIFICATION

Gulper Toilet Pump Specifications		
Product Code	BP2552B	BP2554B
Voltage	12V d.c.	24V d.c.
Recommended Fuse Size	10 amp automotive	5 amp automotive
Weight	2.12kg (4¾lbs)	
Open Flow Rate Per Minute	18ltrs (4¾ US gals)	
Hose Connections	38mm (1½")	
Minimum Wire Size	1.5mm ² (16AWG)	
Materials	Glass filled nylon, bronze, EPDM, Nitrile, Hypalon, Acetal, stainless steel, brass, aluminium.	
Maximum Head	3m (9.8ft)	
Maximum Lift	3m (9.8ft)	
Maximum Head & Lift	3m (9.8ft)	
Dry Running Current	4amps	2amps
Noise	72db	
Ignition	Protected to ISO8846	

3. APPLICATION

1. If this pump is intended for any other purpose it is the user's responsibility to ensure that the pump is suitable for the intended use.
2. Not suitable for pumping flammable liquids, diesel, chemicals etc. Only suitable for freshwater, salt water or typical toilet waste.
3. 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 water system is drained before installation. In order to securely fasten the unit, ensure that the mounting surface is a minimum thickness of 19mm (¾") when fitted.
4. NOTE: In a marine application, do not screw directly to the hull. Must be mounted on a bulkhead or additional board.
5. 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 guidance only. For full information, refer to the USCG, ABYC and ISO regulations for marine applications and wiring gauges, connectors and fuse protection.

4. WARNINGS

Observe all warnings.

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 and use of the equipment.

5. INSTRUCTIONS FOR INSTALLATION

Before you begin, always disconnect power sources before installing or making connections with all applications. It is important that a system of safe working practice is applied to the installation, use and maintenance. Always ensure that the waste system is drained before commencing work.

Assembly

Ensure the pump inlet and outlet valves are assembled in the correct orientation (Fig 2). Check that the valves are properly seated and the inner and outer valve housings are tightened fully.

1. Mount the pump above the level of the holding tank. If this is not possible, fit a service valve on the holding tank side of the pump. This prevents waste draining into the pump during maintenance.
2. The pump can be mounted horizontally or vertically. If mounted vertically, ensure that the pump head is below the electric motor casing and not above (Fig 1).

3. Direction of flow can easily be altered by loosening the screws which hold the clamping rings. Rotate the pump head to the required angle, check direction of flow and re-tighten (Fig 3).

Note:

- a) The pump is designed to work at a maximum lift/head combination of 3m (10ft). This includes height of pump above holding tank outlet and distances from pump to the highest point in the discharge line and distance of seacock discharge below waterline.
 - b) As the holding tanks on most boats are installed below the waterline; it is essential that proper siphon breaks (vented loops) are installed to prevent siphoning water into the toilet by leakage past the suction or discharge valves of the pump. Typical installation (Fig 4).
4. Position the pump in a dry, ventilated area that allows maintenance access. Fix the pump in position by attaching the screws and washers provided through the rubber feet.

6. PLUMBING

- 1. Use 38mm (1½") smooth bore thick walled non-collapsing hose to minimise the permeation of waste system odours.
- 2. Keep the hose runs as short and as straight as possible. Avoid dips in the hose which will remain "wet". Swept connections instead of elbows **must** be used whenever possible.
- 3. Connect the inlet and outlet hose to the pump ensuring the flow direction is correct (Fig 2). Two stainless steel hose clamps **must** be used at each connection.
- 4. Where appropriate, a Whale Diverter Valve (DV5606), which has been specifically designed to handle toilet waste should be used (available separately).
- 5. Install seacocks, deck fittings, etc. as per manufacturer's recommendations.
- 6. Do not connect pump directly in line with a deck pump out fitting.

7. ELECTRICAL CONNECTIONS

Fig. 5

Note: An in-line fuse assembly is pre-fitted to prevent serious damage in the event of system blockages. Ensure valves, seacocks etc. are fully open before operating the pump.

- 1. Use recommended fuse and correct wire size (see pump specifications).
- 2. Connect the power cable to the spade terminals on the pump using crimped on connectors. **Note:** the pump is polarity sensitive and will not operate if connected wrongly. Protect the cable where it runs through holes or over sharp edges.
- 3. Wiring must comply with applicable electrical standards.

8. OPERATION

- 1. The pump is rated for up to 40 minutes continuous running.
Warning:- Pump motor casing can become hot, avoid prolonged contact.
- 2. Always fit correct fuse (see pump for rating).
- 3. Unnecessary running will reduce the life of the valves and diaphragm. Turn off the pump when leaving the boat.
- 4. Ensure valves and seacocks are open before operating pump.
- 5. Do not flush paper towels or feminine hygiene products. Keep paper usage to a minimum.
- 6. Ensure system is properly vented. To prevent odours, run vent lines from siphon breaks to vent fittings above maximum heeled water line.
- 7. Keep Whale recommended spares kit (AK1557 and AS1562) on board, as well as toilet system spares.

9. MAINTENANCE

Pump

- 1. Isolate power to pump and close service valve, if fitted before dismantling pump. Place a drip tray below pump head and inlet and outlet hoses during maintenance.

Valve Replacement/Inspection

- 1. Disconnect the inlet and outlet hoses and unscrew outer and inner valve housings to give access to the valves.
- 2. The valves should be flexible and the opening slit should be closed to its relaxed state. Trapped debris in the valves or valve housings should be removed.
- 3. When refitting ensure the valves are assembled in the correct orientation (Fig 2).

Diaphragm Replacement/Inspections

- 1. Remove the pump head clamping rings by unscrewing the two clamping screws which will release the pump head and allow easy access to the diaphragm.
- 2. To replace/inspect diaphragm it is not necessary to disassemble valves. This will minimise spillage.
- 3. Remove diaphragm by undoing 8mm locking nut holding diaphragm plate against diaphragm and crank arm.
- 4. When re-assembling ensure that the outer edge of the diaphragm is located securely in the grooves between the body and the gear housing. Failure to do so will cause priming/vacuum creation problems.
- 5. It is important that the diaphragm plate is assembled with the rounded edge towards the diaphragm.
- 6. Refit the locking nut and clamping ring and tighten screws.

General

- 1. Periodically check all connection clamps for slack and corrosion and replace as necessary.
- 2. Use toilet cleaners made specifically for marine toilets. DO NOT USE bleach or drain cleaner. Rinse and flush the holding tank after each pump out to dilute any residual waste, and help prevent blockage and reduce odours.
- 3. Properly winterise the toilet system, leaving the system completely drained and dry.

10. FAULT FINDING

Pump operates but no waste pumped?

Check:

- a) all connections are airtight and secure.
- b) seacocks/valves are open.
- c) clamping ring screws are tight and diaphragm fitted correctly.
- d) diaphragm/valves do not need replacement.

Pump will not operate?

Check:

- a) electrical connections / fuse. If fuse blows check for closed valves and blocked pipes.
- b) correct polarity connections to pump.