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## WHALE® GUSHER® URCHIN® BILGE PUMPS

### NOTICE

READ CAREFULLY BEFORE INSTALLATION AND USE.

#### TO THE FITTER :

Ensure all relevant personnel read the points listed below and that a copy is passed on to the end-user.

#### TO THE USER :

Read the points listed below before installation and use of equipment.

This bilge pump is designed to discharge normal bilge water. Output capacity depends on installation conditions and pumping rate ( see Fig. 2 ).

Users should be aware that capacity may not be sufficient to cope with rapid influx of water.

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. If in doubt, please write to our Customer Service Department for details.

Regular inspection is recommended, replacing components as necessary. Service Kits and replacement components are available from dealers or direct from the manufacturer. The manufacturer cannot be held responsible for claims arising from incorrect installation, unauthorised modification or misuse of the product.

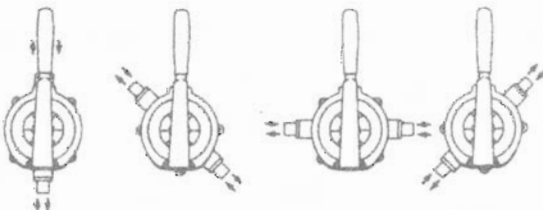


Fig. 1

### INSTALLATION

Fixed and removable handle models (BP9005 and BP9021) allow considerable flexibility in the choice of handle position in relation to the direction of flow. ( see Fig. 1 ) This is achieved by releasing the pinching screw, removing the clamping ring easing the diaphragm off and rotating the body to the required position. Re-secure the diaphragm, clamping ring, pinching screw and nut. Inlet is always 180° opposite outlet.

Select a suitable position for installation where the pump can be operated comfortably with the full movement of the handle available.

A lanyard is supplied with removable handle models. Ensure this is used to secure the handle convenient to the pump. Complete the installation using 6 mm. (1/4") bolts to secure the pump. Stepped inlet/outlet nipples allow for the use of either 25 mm. or 38 mm. (1" or 1.5") hose. If the larger diameter is required, saw off the 25 mm. portion. Male and female elbows EB3364 25 mm. (1") EB3488 34 mm. (1.5"), are also available to fit directly to both sizes of nipple to facilitate installation in tight corners. Ensure airtight seals with good quality s/s wormdrive hose clips.

If there is easy access to the end of the suction pipe, we recommend fitting a Whale strumbox incorporating a non-return valve. Whale strumboxes also have stepped outlet ports that cater for 25 mm. or 38 mm. (1" or 1.5") hose. Otherwise ensure that the open end of the hose is not tight against a flat surface.

For underdeck installation (model BP9013), the deck thickness must be a minimum of 13 mm. (0.5"), and a maximum of 25 mm. (1"). (See Template supplied with underdeck model only) With the underdeck model, the flow directions can be reversed by following the instructions above.

### MAINTENANCE

Regular inspection is recommended to replace worn or damaged components. Always have a Service Kit available. Use kit SK9003 if pump is used for clean bilge water and kit SK9011 if the bilge water is contaminated with oil.

### REPLACING RUBBER COMPONENTS.

To change the diaphragm and valves, release the pinching screw and slacken the clamping ring securing the diaphragm. Release the circlips at both sides of the fulcrum pin to expose the clamping bolt. Remove and replace inlet and outlet valves and diaphragm. Replace the clamping bolt and tighten. Secure to operating lever, replace the diaphragm on the pump body and secure the lever to the clamping plate using the fulcrum pin and circlips. Finally, reposition and secure the clamping ring. Check for leaks and ensure correct priming and discharge.

### FAULT FINDING

If pump fails to prime or chokes check for:-

1. blockages in inlet hose or air leaks at connection to pump - clear blockage
2. a torn diaphragm - use Service Kit
3. dirt under valves or distorted valves - use Service Kit
4. collapse of inlet hose on inlet stroke - use reinforced hose.

### WARRANTY

This whale product is covered by 5 years warranty.

Please see the enclosed document for details of our statement of limited warranty.

Fig. 2 Gusher Urchin 1" (25mm) Hose Bore  
Output in Gallons (Litres) per minute

Lift in metres	Head in metres	At 60 Strokes/minute	At 70 Strokes/minute	At 80 Strokes/minute	At 90 Strokes/minute
1	0.5	8.00	8.10	9.40	10.40
		36.37	36.81	42.73	47.28
2	0.5	7.30	8.30	10.10	9.70
		33.19	37.73	45.92	44.10
3	0.5	6.90	7.90	7.90	8.90
		31.73	35.91	35.91	40.46

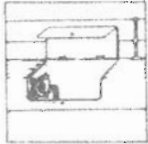
Gusher Urchin 1 1/2" (38mm) Hose Bore  
Output in Gallons (Litres) per minute

Lift in metres	Head in metres	At 60 Strokes/minute	At 70 Strokes/minute	At 80 Strokes/minute	At 90 Strokes/minute
1	0.5	10.90	11.60	12.60	15.00
		49.55	52.73	57.28	68.19
2	0.5	10.10	11.60	13.70	14.21
		45.92	52.73	62.28	64.60
3	0.5	9.50	10.80	11.20	12.10
		43.19	49.10	50.92	55.00

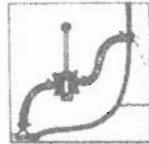
### Fig. 3 HELPFUL HINTS



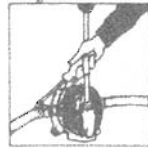
1 Install your pump where you can pump comfortably - particularly important in an emergency when prolonged periods of pumping may be necessary



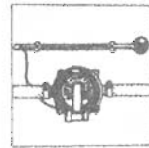
2 Avoid installations which require you to open a cockpit locker to operate the pump.



3 Ideally, for minimum pumping effort, you should site the pump halfway in height between strainer box and hull outlet



4 Install the pump so that you have easy access to the pump for servicing



5 If the pump handle is detachable, it is recommended that you secure the handle in a position convenient to the pump.

6 Carry a service kit for each pump on board  
7 Even though you may have a dry boat, test your bilge pumps regularly

8 If fitting a strumbax/strainer, you should have easy access to it for cleaning. It is preferable to fit a strainer with a non-return valve

9 Suction inlet should be at the deepest bilge point.  
10 Check that all fittings are of uniform bore - restricted outlet can cause choking, restricted inlet makes for difficult pumping

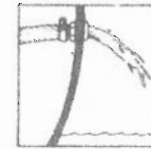
11 Sometimes two smaller pumps are better than one large pump. If using two or more pumps, it is good to have identical pumps

12 Ensure pipes are kept as straight as possible. Use elbows where bends are unavoidable

13 A whole in-line non-return valve will prevent drainback

14 Use good quality smooth bore reinforced hose - and stainless steel clamps firmly fitted at all connections. Avoid sharp bends in such hose

15 If you are to have thru-hull discharge, make sure good quality thru-hull/skin fittings are fitted and that the discharge point is well above the water line



### MAINTENANCE LIST

#### UNDERDECK VERSION

#### STANDARD

734 70 Whale Cover

733 17 Screw M6 x 40

734 69 Deckplate

703 52 Gaiter

733.03.00

733.10.00

733.45.00

733.07.00

733.11.00

E 703 0206 Lever

Long Fastener Pin

E 703 2300 Lever Spring

E 733 2600 Finishing Screw Nut

E 733 1400 Finishing Screw

E 733 0200 Clamping Ring

E 733 46 00 Polycarb Pin

E 733 40 00 Small Circle

#### REMOVABLE HANDLE

E 703 3700 Handle Valve

E 703 3402 Reinforced Handle

E 733 40 00 Small Circle

E 733 46 00 Polycarb Pin

E 733 0200 Clamping Ring

E 733 0300 Pin

E 733 14 00 Finishing Screw

E 733 26 00 Finishing Screw Nut

#### ALL VERSIONS

E 733 1300 No 8 x 5/8 SS ST Screws

E 733 0400 Duracl Mopple

E 733 0900 Outlet Valve

E 733 0100 Bolt

E 703 5000 Large Circle

E 733 1800 Clamping Nut

E 703 0506 Super Clamping Plate

E 733 1900 Clamping Nut

E 703 0403 Super Clamping Plate

E 733 0800 Inlet Valve

E 733 0500 Inlet Mopple

E 733 1300 No 8 x 5/8 SS ST Screws

E 733 0700 Diaphragm

E 703 5000 Large Circle

E 703 4901 Short Fastener Pin

E 733 40 Small Circle

#### SERVICE KITS

- SK 9003 Service Kit with complete set of washers and Neoprene Diaphragm. (Suitable for all models)
- SK 9011 Service Kit with complete set of washers and Nitrile Diaphragm. (Suitable for all models)

#### ASSEMBLIES

AS 8680 S/S Handle Assembly

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**MUNSTER SIMMS ENGINEERING LIMITED**