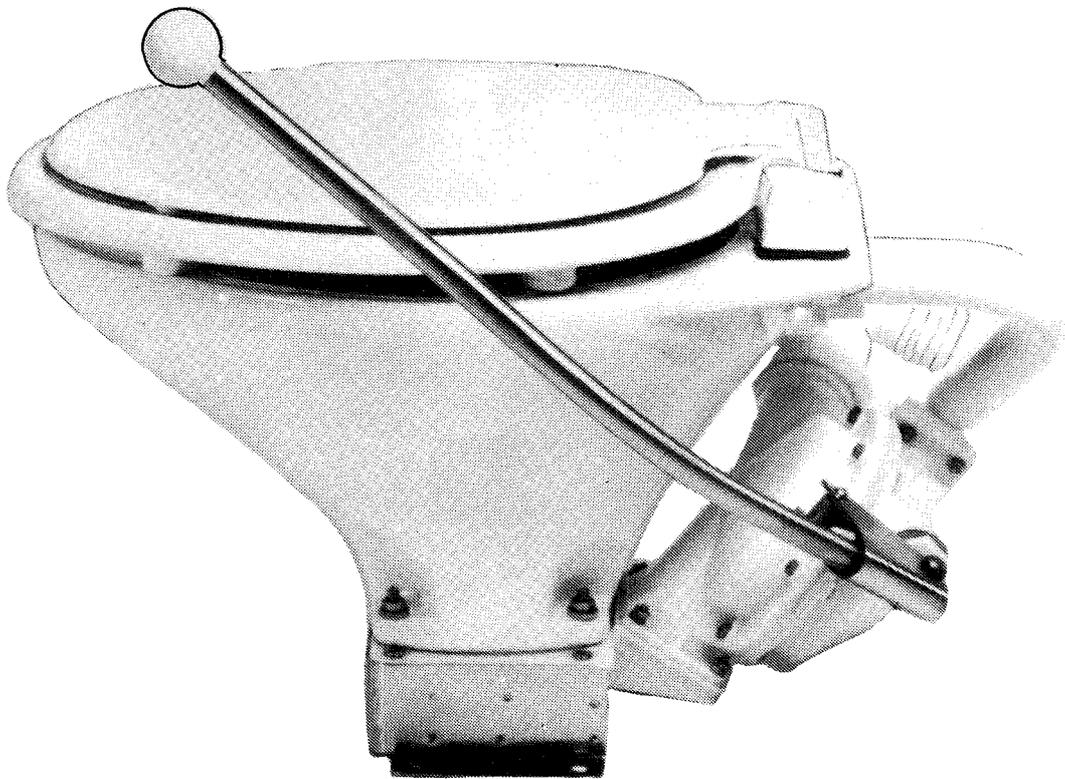
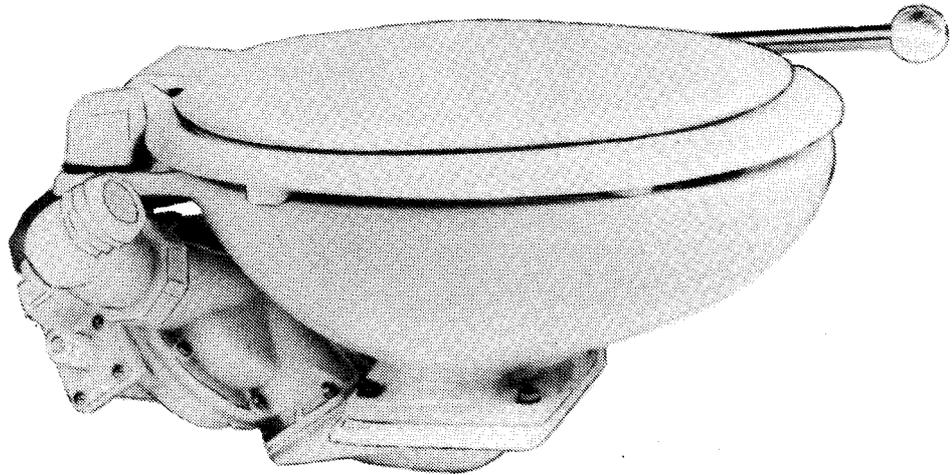


# S-L 400 / S-L 401

## Installation, Operation and Maintenance Instructions



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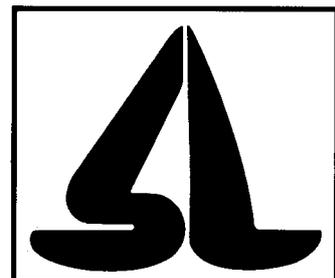
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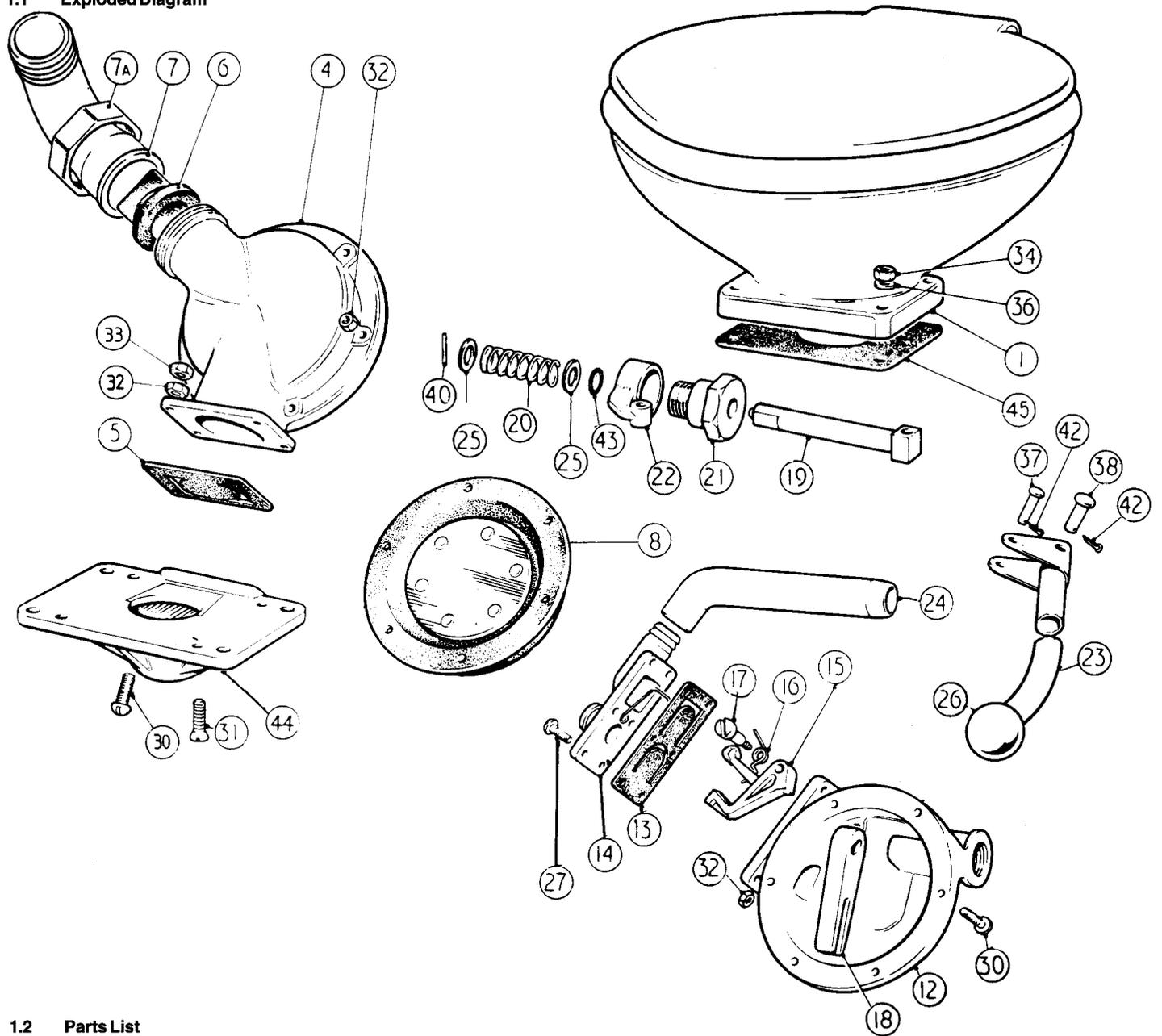
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**SIMPSON**

**LAWRENCE**

1. PARTS  
1.1 Exploded Diagram



1.2 Parts List

Ref. No.	List No.	Description	400	401	Ref. No.	List No.	Description	400	401
1	6040001	White Basin	1	-	24	6040024	Flushing Tube	1	-
1	6040101	White Basin with four headed bushes	-	1	24	6040102	Flushing Tube	-	1
4 *	6040004	Soil Chamber	1	1	25		Washer	2	2
5		Soil Valve	1	1	26	6040026	Handle Ball	1	1
6		Joker Valve	1	1	27 †		2BA x 5/8" Round Hd Screw	6	6
7		Soil Outlet Nozzle	1	1	30 †		2BA X 1" Round Hd Screw	10	10
7A	6040007	Threaded Nut	1	1	31 †		1/4" BSW X 1" Countersunk Hd Screw	4	-
8	6040008	Diaphragm Assembly	1	1	31 †		1/4" BSW X 1 1/4" Countersunk Hd Screw	-	4
12		Inlet Chamber	1	1	32 †		2BA Standard Nut	14	14
13	6040013	Inlet Valve Spring Assembly	1	1	33 †		2BA Half Nut	4	4
14	6040014	Inlet Nozzle	1	1	34 †		1/4" BSW Standard Nut	4	4
15		Valve Operating Lever	1	1	36 †		1/4" Standard Washer	4	4
16		Lever Return Spring	1	1	37		3/16" Dia x 1 1/8" Clevis Pin	1	1
17		Shoulder Pin	1	1	38		5/16" Dia x 1 1/8" Clevis Pin	1	1
18	6040018	Rocking Lever	1	1	40		1/8" Dia x 3/4" Spring Pin	1	1
19		Operating Spindle	1	1	42		3/32" Dia X 1/2" Split Pin	2	2
20		Spindle Return Spring	1	1	43		O Ring	1	1
21	6040021	Gland Nut	1	1	44	6040044	Base	1	1
22	6040022	Swivel Ring	1	1	45	6040045	Base Gasket	1	-
23	6040023	Handle Assembly	1	-	45	6040145	Base Gasket	-	1
23	6040103	Handle Assembly	-	1	50	0440007	Sub-Base (Not illustrated)	-	1

\* For toilets installed before 1971 with straight outlet parts 7, 7A and 4 require to be ordered.

† These items supplied in complete sets only.

## 2. SPECIFICATION

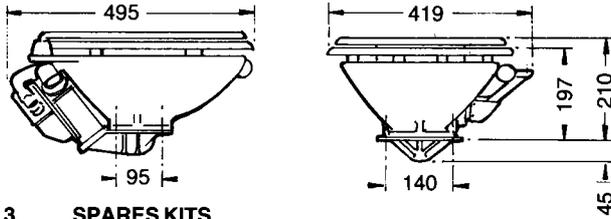
### 2.1 Materials

Basin	High quality vitreous china
Pump, diaphragm, inlet and outlet valve	Synthetic rubber
Fastenings and handle	Stainless steel
Other major components	Natural white Delrin
Weight: (400 WC)	10 kg (21 lb)
(401 WC)	12 kg (27 lb)

### 2.2 Contents Checklist

List No. 0440004	List No. 0440100
S-L 400 toilet	S-L 401 toilet
White seat and cover	White seat and cover
Instruction Booklet.	Stainless steel mounting base
	Instruction Booklet.

### 2.3 Dimensions



## 3. SPARES KITS

Individual components should be ordered using their list number as shown on the parts list above whenever possible. The following overhaul kits are also available:

### 400/401 MODELS

6039700 Valve Spares Kit consisting of  
 1 x part 5 1 x part 6 1 x part 13 1 x part 16  
 1 x part 20 1 x part 43 1 x part 45(400) 1 x part 45(401)

6040061 Operating Spindle Assembly consisting of  
 1 x part 19 1 x part 20 1 x part 21 2 x part 25  
 1 x part 40 1 x part 43

6040062 Clevis Pin Set consisting of  
 1 x part 37 1 x part 38 2 x part 42

### 400 MODEL ONLY

6040012 Inlet Chamber Assembly consisting of  
 1 x part 12 1 x part 15 1 x part 16 1 x part 17  
 6040055 Set of Bolts & Nuts consisting of  
 6 x part 27 10 x part 30 4 x part 31 14 x part 32  
 4 x part 33 4 x part 34 4 x part 36

6040060 Valve Operating Set consisting of  
 1 x part 15 1 x part 16 1 x part 17

6040070 Pump Unit consisting of  
 1 x part 4 1 x part 6 1 x part 7 1 x part 7A  
 1 x part 8 1 x part 12 1 x part 13 1 x part 14  
 1 x part 15 1 x part 16 1 x part 17 1 x part 18  
 1 x part 19 1 x part 20 1 x part 21 1 x part 22  
 2 x part 25 6 x part 27 6 x part 30 10 x part 32  
 1 x part 40 1 x part 43

### 401 MODEL ONLY

6040112 Inlet Chamber Assembly consisting of  
 1 x part 12 1 x part 15 1 x part 16 1 x part 17  
 6040155 Set of Bolts & Nuts consisting of  
 6 x part 27 10 x part 30 4 x part 31 14 x part 32  
 4 x part 33 4 x part 34 4 x part 36

0040160 Valve Operating Set consisting of  
 1 x part 15 1 x part 16 1 x part 17

6040170 Pump Unit consisting of  
 1 x part 4 1 x part 6 1 x part 7 1 x part 7A  
 1 x part 8 1 x part 12 1 x part 13 1 x part 14  
 1 x part 15 1 x part 16 1 x part 17 1 x part 18  
 1 x part 19 1 x part 20 1 x part 21 1 x part 22  
 2 x part 25 6 x part 27 6 x part 30 10 x part 32  
 1 x part 40 1 x part 43

## 4. ACCESSORIES

### Item

White Plastic Seat and Cover	0439204
Floor mounting base for S-L 400 (as standard on S-L 401)	0440007
Inlet Seacock, Gunmetal	0440401
Gate Valve, Bronze & Brass	0440801
Gate Valve, Bronze & Gunmetal	0440802
Outlet Seacock, Gunmetal	0440403
Reinforced Flexible Tube, 19 mm (3/4") internal diameter	0552001

38 mm (1 1/2") internal diameter	0552004
Hose Clips, Stainless steel	
14-22mm (for inlet)	0547204
35-50mm (for outlet)	0547210
FLEXIBLE TANKS	

List No	Capacity		Empty Dimensions	
	Litres	Gallons	mm	ins
0554001	55	12	660 x 610	26 x 24
0554002	90	20	660 x 850	26 x 33 1/2
0554003	135	30	660 x 1155	26 x 45 1/2
0554004	260	57	825 x 1385	32 1/2 x 54 1/2

## 5. PLANNING THE INSTALLATION

### 5.1 Please Note

Both S-L 400 and 401 are designed to be used either above or below the vessel waterline. If mounted below, a suitable height of anti-syphon bend should be allowed on the discharge pipe. The inlet is automatically controlled by an internal valve.

### 5.2 Additional Requirements

Two seacocks are required as part of the toilet installation; 19 mm (3/4") for the water inlet and 38 mm (1 1/2") for the discharge outlet. Appropriate lengths of 19 mm (3/4") and 38 mm (1 1/2") internal diameter reinforced tubing. Stainless steel hose clips. (Tubing should be secured to the seacocks and toilet using two clips on each connection.) Suitable S-L components to complete your installation are shown in installation diagrams A and B.

## 6. INSTALLATION

### 6.1 Location

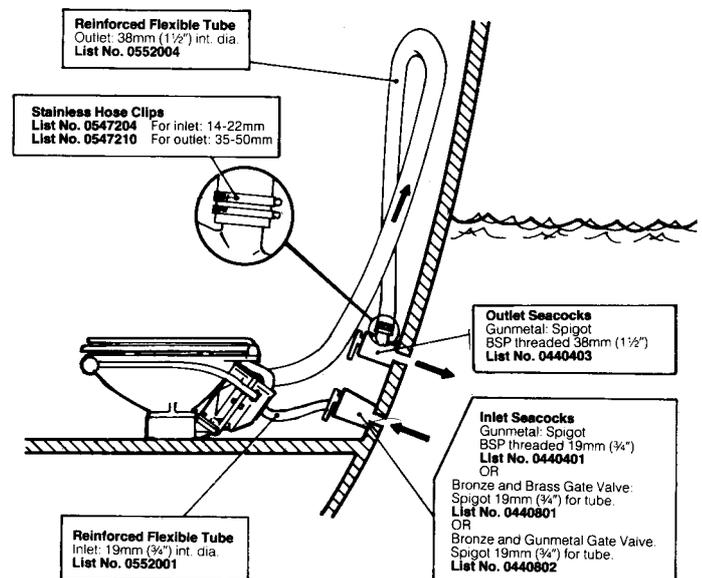
- 6.1.1 The inlet and discharge seacocks should be on opposite sides of the vessel. If this is not possible, the inlet one should be below and forward of the discharge one.
- 6.1.2 Locate the toilet in a convenient position and check that the handle can be operated upwards, downwards and to the left and that the toilet door can close properly.
- 6.1.3 For the 400 the plastic base can rest on two transverse wooden bearers. Alternatively, a rectangular hole cut in a raised platform base can be used. Use four 5/16" (8 mm) dia. nuts and bolts to rigidly mount the base to the supporting structure. Lags bolts and coach screws can be used as alternatives to bolts.
- 6.1.4 If the stainless steel base is used or a 401 is being fitted, the base should be screwed to the cabin floor and the toilet attached to it using the four set pins provided.

### 6.2 Plumbing

- 6.2.1 The inlet pipe can be led directly from the inlet seacock to the inlet nozzle on the toilet.

## INSTALLATION DIAGRAM A

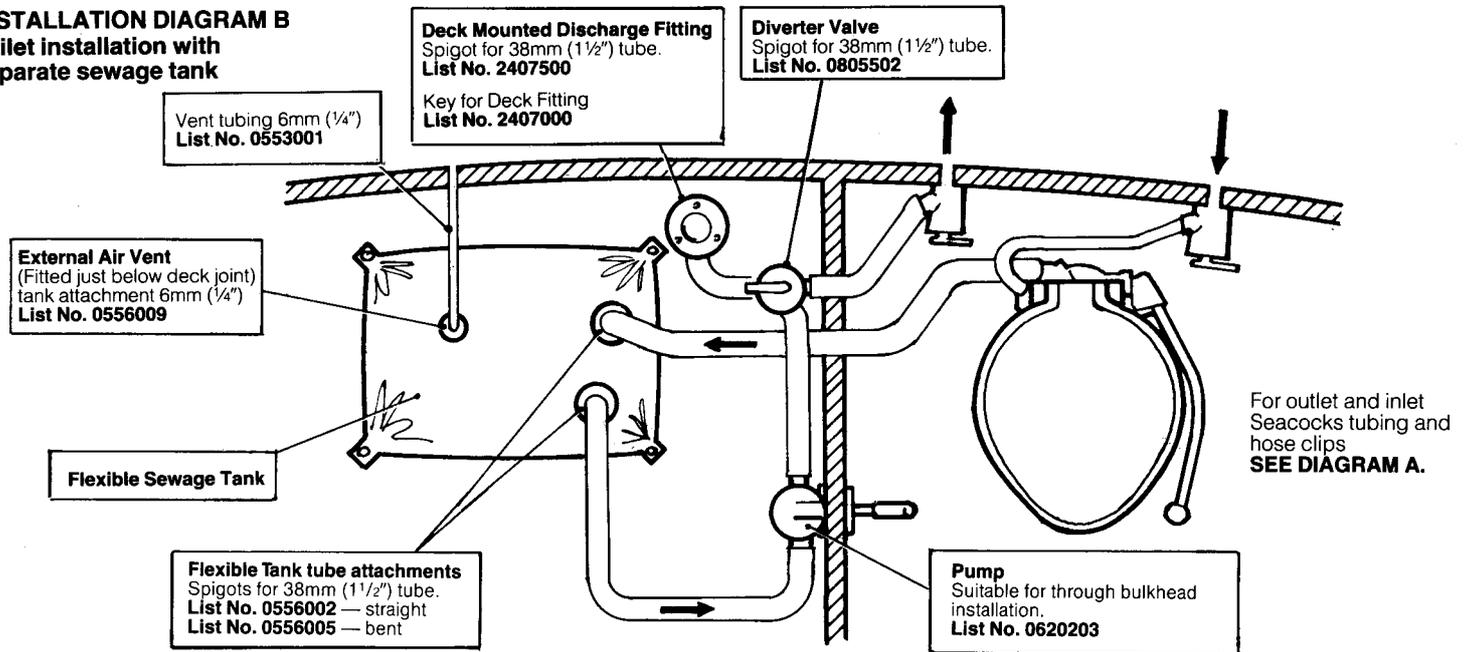
### Normal installation of Sea-Toilet in small craft



Note: Adaptors for using tube on BSP threaded Seacocks

List No. 0545002 19mm thread to 19mm tube.  
 List No. 0545005 38mm thread to 38mm tube.

## INSTALLATION DIAGRAM B Toilet installation with separate sewage tank



This type of installation gives the useful option of:

- A. Discharging direct in unrestricted waters.
- B. Discharging through the holding tank and deck discharge connection when operating in waters with laws covering discharge of sewage.

6.2.2 The discharge pipe should be led from the discharge outlet in an

upward loop above the vessel's waterline before returning to the discharge seacock.

*This is particularly important - on a sailing craft it is essential that the top of the loop will remain above the heeled waterline.* The purpose of the loop is to prevent sea water syphoning into the toilet.

6.2.3 The discharge outlet from the toilet should be left loose for adjustment during installation and then screwed up tightly when the discharge tube has been fitted.

**Note:** Always turn off the seacocks when leaving the vessel unattended.

## 7. OPERATING INSTRUCTIONS

### 7.1 Preparation

7.1.1 Ensure both seacocks (inlet and outlet) are open.

### 7.2 Operation

7.2.1 Pumping the handle in the neutral (i.e. not pressed to the left) position will 'dry bowl' the toilet. This is a most useful feature as vessel motion or a yacht's heeling angle may cause the normal water content of the bowl to spill.

7.2.2 Pressing the handle to the left, using the open palm of the hand against the ball of the handle will engage the flush cycle such that the upward stroke will discharge the bowl and the downward stroke cause flushing water to enter the bowl. Maintain leftward pressure on the handle throughout discharge and flushing operation.

**Note:** Always shut off seacocks when vessel is unattended. This instruction is in keeping with good seamanship.

## 8. MAINTENANCE

### 8.1 General Recommendations

8.1.1 Regularly apply a few drops of oil to the operating spindle part No. 19.

8.1.2 Avoid overtightening the gland nut.

8.1.3 We recommend the use of S-L Loosan liquid disinfectant for normal cleaning, List No. 4916100.

8.1.4 Calcium scale will, in the course of time, build up on the inside of the valves pump and pipework. We recommend an annual pump and pipework overhaul to remove any scale. Scale can be removed from pipework by vigorous flexing, the toilet flush cycle will then eject any loose scale.

8.1.5 Always, as a matter of prudence, carry a spares kit aboard (see Spares section).

### 8.2 Laying up

8.2.1 When the vessel is unused for long period, pump Loosan through the system and leave to stand.

8.2.2 During winter conditions, in countries where freezing might be encountered, drain the toilet and associated pipework to avoid ice damage.

### 8.3 Servicing

8.3.1 When major servicing work is anticipated, it is often most

convenient to detach the toilet from its mountings. Flexible plumbing should allow the toilet to be moved out from its mounting and tilted forwards for easier access to the pump unit.

8.3.2 The exploded diagram (Section 1.1) indicates the configuration of separate parts.

### 8.4 Inlet Valve Replacement.

8.4.1 Before replacing the inlet nozzle and new inlet valve, move the operating handle into the flushing position (held left).

8.4.2 Insert a suitable wedge (e.g. screwdriver head) between the handle/operating spindle and the gland nut. This releases the inlet valve operating lever allowing the valve to be more easily seated.

### 8.5 Soil valve replacement.

8.5.1 Ensure that the soil valve is replaced as shown in the exploded diagram, i.e. flap hinge upwards and forward.

## 9. WARRANTY

The Simpson-Lawrence warranty covers your unit for a period of two years from the date of purchase, to be free from defects in material and workmanship. This warranty is subject to proper installation and use in service as described in this booklet. Our current catalogue contains our full "Conditions of Sale". A copy of these conditions can be obtained by application to any of our branches or our agents.

The models described in this document are subject to a policy of continual improvement. Simpson-Lawrence Ltd. reserve the right to alter specifications and recommendations without notice. For the latest information regarding any aspect of your windlass please contact your local agent or -

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