

Vacu-Flush[®]

sanitation system

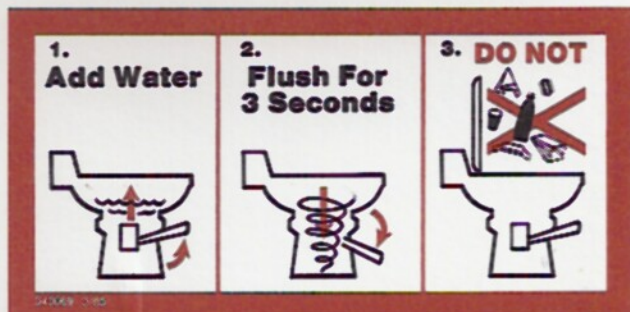
OWNERS MANUAL



Installing Operating Troubleshooting Information & Spare Parts

Do's

1. Read the operating instructions carefully. See "How To Use The Toilet," page 4.
2. Fill out and return the attached registration card immediately.
3. Make sure all guests understand the operation of the Vacu-Flush® System and that all system labels are in plain sight and easy for guests to read.



4. Be certain all seacocks and inline check valves are in correct position.
5. Carry a few spare parts onboard to avoid problems that may arise. SeaLand Technology has developed several repair kits that will save you a great deal of time and expense should a problem arise. See page 28.






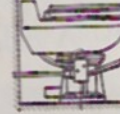
6. Use the correct chemicals in your Vacu-Flush system. For systems with holding tanks use Waste-Be-Gone™ Deodorant (liquid or dry). For systems with a Model TDX treatment device, use TDX-C solution. A good biodegradable tissue such as SeaLand Sani Soft™ is also recommended. These products are available from your local marine retail store.

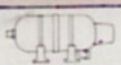
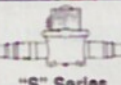



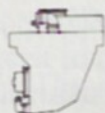


Don'ts

1. Don't allow a problem with the system to go unsolved. A small vacuum leak can cause a great deal of problems. (Example, excessive pump recycling.)
2. Don't use chlorine or caustic chemicals, such as drain opening types, in the system.
3. Don't allow foreign objects to be flushed through the system.
4. Don't leave the toilet system circuit breaker on when leaving the boat.
5. Don't forget the pump starts automatically. Turn off power before servicing.

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What's What

Item	Product No.	Description
	317080601	806 Toilet, Below Floor Discharge, Short Base, White
	317080603	806 Toilet, Below Floor Discharge, Short Base, Bone
	317080801	808 Toilet, Below Floor Discharge, White
	317080803	808 Toilet, Below Floor Discharge, Bone
	317084801	848 Toilet, Above Floor Discharge, White
	317848803	848 Toilet, Above Floor Discharge, Bone
	317050601	506 Full Sized Toilet, Below Floor Discharge, White
	317050603	506 Full Sized Toilet, Below Floor Discharge, Bone
	317050801	508 Full Sized Toilet, Below Floor Discharge, White
	317050803	508 Full Sized Toilet, Below Floor Discharge, Bone
	317054801	548 Full Sized Toilet, Above Floor Discharge, White
	317054803	548 Full Sized Toilet, Above Floor Discharge, Bone

Item	Product No.	Description
Vacuum Tank		
	317729100	Tank, Vacuum
Vacuum Pumps		
 "S" Series	317001200	Vacuum Pump, 12 VDC
	317002400	Vacuum Pump, 24 VDC
	317003200	Vacuum Pump, 32 VDC
 "L" Series	317111500	Vac. Pump, 110 VAC, Includes Relay
	317101200	Vacuum Pump, 12 VDC, Includes Relay
	317102400	Vacuum Pump, 24 VDC, Includes Relay
	317103200	Vacuum Pump, 32 VDC, Includes Relay
Accessories		
	316409000	Tank Level Indicator, 12 VDC
	316409200	Tank Level Indicator, 32 VDC
	316409400	Tank Level Indic., 12 VDC (Universal)
	316409600	Tank Level Indic., 32 VDC (Universal)
	315210000	Treatment Device, WITHOUT Pump (Includes pumpout panel light. TDX-S may be ordered with S12D AB pump for electric discharge or 681-8880 diaphragm pump for manual discharge.)
	Refer To Page 26	Holding Tanks, from 10 to 55 gallon capacity in heavy duty polyethylene.
		SeaLand offers a variety of care products for your system under the Waste-Be-Gone™ and Sani-Soft™ brand names.

Do's & Don'ts
What's What

How To Use
The Toilet

Cleaning &
Winterizing

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Principle of Operation

The Vacu-Flush toilet flushes in a different way from other marine toilets.

Vacu-Flush System uses a small amount of water to flush in addition to a simple vacuum generated by the Vacu-Flush vacuum pump. Each toilet must be connected to a pressurized water system which maintains a minimum pressure of 20 psi. Fresh water is recommended, but sea water may be used.

No complicated user instructions are required, see page 5. A foot pedal adds water to the bowl and controls the vacuum flushing action.

This foot pedal opens a mechanical seal, allowing the vacuum force to pull the waste from the bowl as clean water rinses the bowl. The vacuum pulls the waste (at approximately 20 feet per second) through a one inch opening in the toilet base. The incoming air fragments the waste as it passes through the base opening. This process eliminates the need for macerators or mechanical motors.

Next, the waste is transmitted to the vacuum tank, then through the vacuum pump and finally to the holding tank, treatment device or directly overboard.

The vacuum tank "stores" vacuum. System vacuum is monitored by a vacuum switch located on the vacuum tank. When this switch senses a drop in vacuum in the system, it automatically signals the pump to come on

and bring the vacuum to operating level. This process is usually done in less than one minute.

In a properly operating system, the stored vacuum will "leak" down between flushes causing the vacuum pump to run for a short period. The pump should not run more than once an hour after the last flush for recharging vacuum.

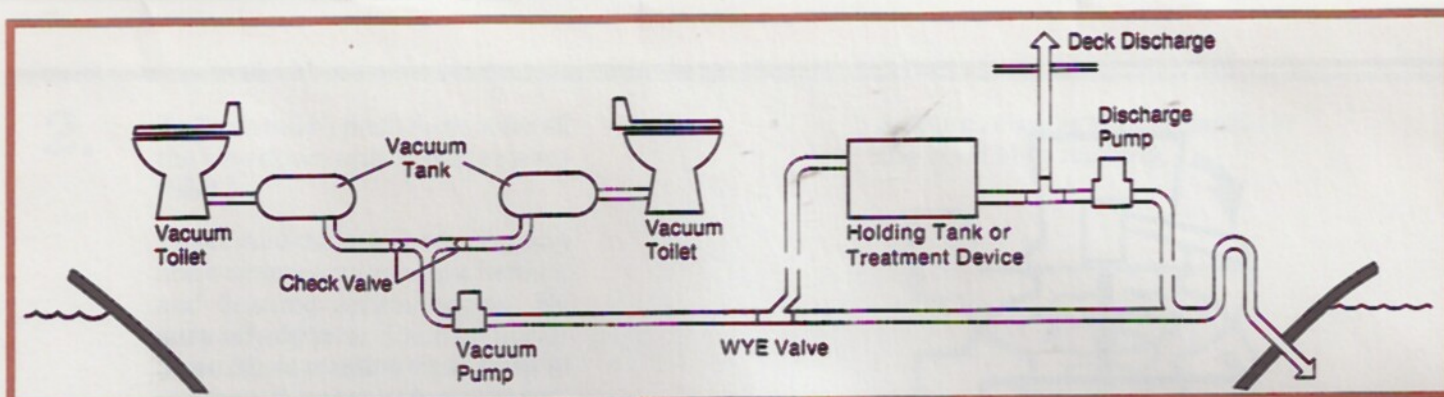
If noise from pump running during sleeping hours is disturbing, an "On-Off" night switch can be installed. Refer to the electrical schematics for proper location of the night switch, see page 19.

When more than one toilet is used with one vacuum pump, each toilet must have its own vacuum tank and in-line check valve, so that one toilet may be flushed without releasing the vacuum from the other. The toilets may be flushed at the same time, or within seconds of each other, and both will function properly.

The S-Series vacuum pump is an electric, straight through bellows type pump made of long lasting polypropylene using 2 to 6 amps and handling up to 2 toilets.

The L-Series pump is an electric straight through diaphragm pump using 10 to 50 amps and handling up to 6 toilets.

A typical one-head and/or two-head installation is schematically detailed below.



Start Up

If the Vacu-Flush System has never been operated or is being commissioned for summer use after being winterized, the following instructions should be followed:

1. Make sure water supply line is connected to base of toilet. Turn on inlet water supply. Check all water connections for leaks, for example, water valve, toilet, water supply source and seawater filter if used. Tighten or repair any leaks as required.
2. Turn on electrical power to system.
3. Be certain all seacocks and in-line check valves are in correct operating position.

4. Flush water into system by depressing flush lever until water starts flowing to the vacuum pump, approximately 15 seconds. This wets the pump interior for efficient operation. If vacuum pump does not run, check for loose electrical connections and/or improper wire hookup. Refer to the wiring diagram at the end of Troubleshooting Section, page 19 & 20.

5. The vacuum pump will run for approximately 60 to 90 seconds until system reaches operating vacuum level and then will shut off.

If pump does not stop running, the system may have an extreme vacuum leak. Tighten all vacuum line connections and wait for pump to stop. If pump still does not stop running, shut off electrical power and water. Refer to the Troubleshooting Section of this manual, page 9.

**How To Use
The Toilet**

**Cleaning &
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6. Determine if the system is ready for use by checking for vacuum leak rate as follows:

- a. Make sure water is in toilet bowl.
- b. Flush toilet.
- c. When pump stops running, measure time before pump begins running again.

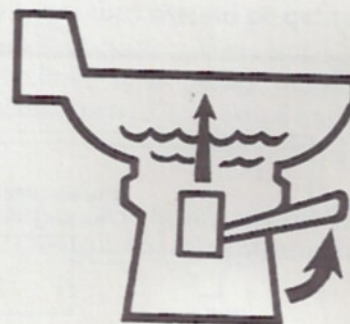
Pump should not run again for approximately one (1) hour or more after last flush.

7. If the system does not function properly, refer to the Troubleshooting Section of this manual and repair as necessary. If problem persists, contact your local SeaLand Technology dealer or see the Need Help section of this manual on page 30.

Normal Operation

To properly use the Vacu-Flush toilet, follow these simple instructions:

- 1.** To add water to the toilet before using, raise flush lever until desired water level is reached. Generally, more water is required only when flushing solids.



- 2.** To flush toilet, push flush lever all the way down until sewage clears toilet.

Toilet may make a sharp popping noise when vacuum seal is broken and flushing action begins. Be sure to hold lever down for about three (3) seconds. If flush lever is accidentally released before waste clears bowl, do not attempt to flush toilet again until vacuum pump stops running. A small

amount of water should remain in the bowl after flushing.



- 3.** Do not dispose of sanitary napkins or other non-dissolving items in toilet. Do not attempt to flush facial tissue, wet strength tissue, paper towels or excessive quantities of toilet tissue. These items do not dissolve and cause plugging of the system.

The best toilet tissue to use is a good grade of biodegradable type such as SeaLand Sani-Safe.



Cleaning

The Vacu-Flush System should be cleaned regularly for maximum sanitation and operational efficiency. Use the following procedure at least once a month if the system is in regular use or before leaving the boat for extended periods of time:

1. Block flush ball in open position by placing a screwdriver between the toilet bowl and the flush pedal.
2. Allow vacuum pump to circulate clean water throughout system for about four (4) minutes while adding approximately 1/4 cup of biodegradable powdered laundry detergent.
3. Close flush ball.
4. Completely pump out holding tank or treatment device.

Clean the toilet bowl with a mild bathroom cleaner. **DO NOT** use caustic cleaners (drain opening type) or abrasive powders (kitchen cleansers).

If an odor is apparent from the Vacu-Flush System:

1. Clean out system using above procedure.
2. Check to see that vent from holding tank to thru-hull fitting is not plugged.
3. Add odor control chemical in amount specified for your holding tank capacity after cleaning and add every few days during use.

Winterizing

7

At the end of each boating season, the Vacu-Flush system should be winterized for storage. The following procedure should be used:

CAUTION:

DO NOT use alcohol or alcohol based products in the system.

1. Thoroughly flush system with fresh water.
2. Pump out holding tank.
3. Shut off water supply to toilet(s).
4. Remove water line from toilet(s).
5. Depress flush lever until all water is drained from toilet.
6. For each head, flush 4 gallons of permanent type anti-freeze and water in a 50:50 mixture into toilet while flush lever is depressed. Each installation is different so amounts may vary. User discretion is required to assure adequate protection.
7. Turn off electrical power.

Commissioning for summer use

4. Check to make sure system is plumbed with hose marked with the "SeaLand" or "Mansfield" name.

Maintenance

SeaLand Technology has endeavored to provide the boatowner with a toilet system which provides "at home" convenience and reliability. As with any quality product, satisfactory use depends on proper maintenance.

To prepare the Vacu-Flush system for normal warm weather operation, connect water supply line to toilet base and follow instructions under initial Start-up in How to Use Section of this manual, page 4.

Maintenance intervals and normal parts replacement vary widely depending on numerous factors such as; type of vessel, frequency of system use, quality of flushing water, etc. The chart below is intended strictly as a general guideline. Owner discretion and consideration of actual usage must be the first basis for proper maintenance levels.

Maintenance Guideline Freshwater System		
Maintenance Procedure	Part Number	*Approximate Maintenance Interval
Follow cleaning procedures above.		Monthly
Tighten all hose clamps.		Annually
Check all wire connections.		Annually
Check & tighten water valve screws.		Annually
Clean filter screen in water valve.		Annually
Check pump and in-line valves.	390347802	2-3 years or as needed
Check Toilet seals.	385316140	3-5 years or as needed
Check Vacuum Breaker.	385316906	3-5 years or as needed
Check water valve.	385314349	3-5 years or as needed

*Note: When salt or raw water is used for flushing, maintenance intervals will be decreased approximately in half from the times shown above.

Cleaning &
Winterizing

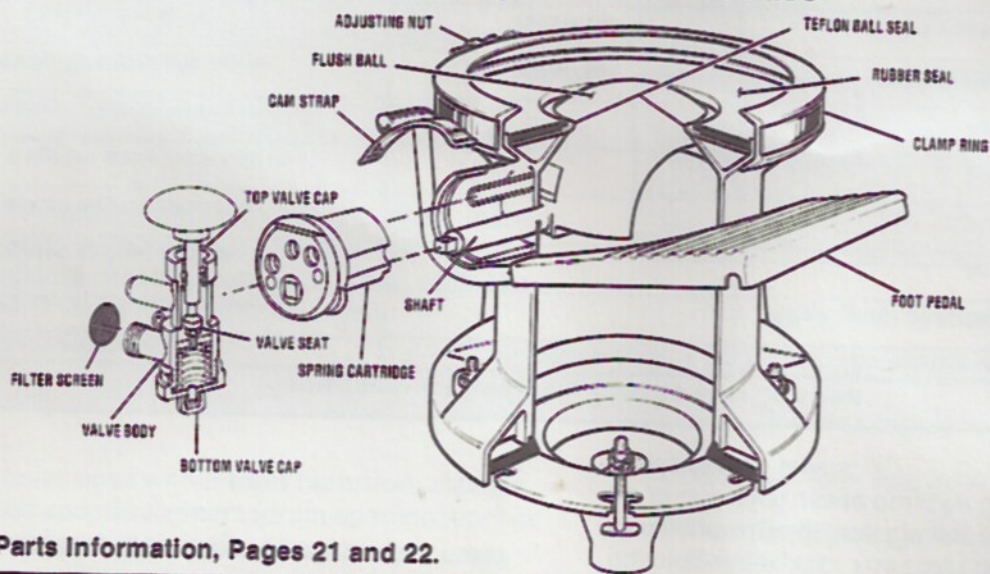
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Troubleshooting Guide

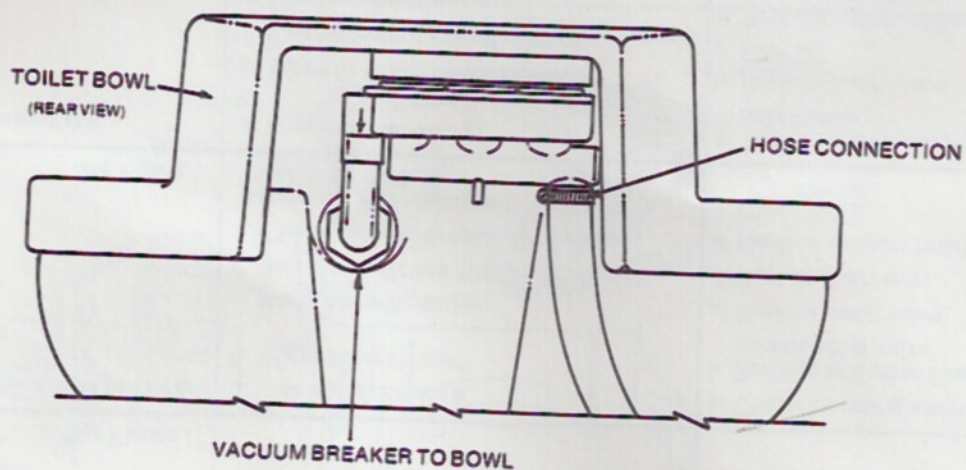
Figure - 1 Toilet base



Also see Parts Information, Pages 21 and 22.

Problem	Possible Cause	Service Instructions
1. Water will not stay in bowl. See Figure 1	a. Loose clamp ring b. Improper seal around flush ball due to dirt or debris on underside of teflon ball seal. c. Worn or damaged seals. d. Worn or damaged flush ball. e. Cracked half clamps.	a. Tighten clamp ring adjusting nut. b. Inspect flush ball and under side of teflon seal for foreign objects. c. Replace both seals. d. Replace flush ball. e. Replace half clamps.

<p>2. Plastic flush ball will not close completely.</p> <p>See Figure 1</p>	<p>a. Clamp ring overtightened causing too much tension on seal and flush ball.</p> <p>b. Weak or defective spring cartridge.</p> <p>c. Worn or damaged flush ball or shaft.</p>	<p>a. Loosen clamp ring.</p> <p>b. Check spring tension by letting up on flush lever suddenly. If lever does not "snap back", replace spring cartridge.</p> <p>c. If lever "snaps back" but flush ball does not close completely, replace flush ball and shaft.</p>
<p>3. Water doesn't shut off in toilet (toilet overflows)</p> <p>See Figure 1</p>	<p>a. Dirt lodged in water valve seal.</p> <p>b. Cam strap bent down holding water valve open.</p> <p>c. Worn or defective water valve.</p> <p>d. Worn or defective spring cartridge.</p>	<p>a. Disassemble and clean water valve.</p> <p>b. Bend front of cam strap up about 1/16".</p> <p>c. Replace valve assembly.</p> <p>d. Replace spring cartridge.</p>
<p>4. Water does not enter toilet bowl properly.</p> <p>See Figure 1</p>	<p>a. Low water pressure.</p> <p>b. Water valve clogged.</p> <p>c. Water valve defective.</p> <p>d. Worn or defective flush lever.</p> <p>e. Check vacuum breaker for leakage.</p> <p>f. Rim wash holes plugged.</p>	<p>a. Check incoming water pressure.</p> <p>b. Remove and clean filter screen located on inlet of water valve.</p> <p>c. Replace water valve.</p> <p>d. Replace flush lever.</p> <p>e. Replace vacuum breaker.</p> <p>f. Clean holes.</p>
<p>5. Water leaking from water valve.</p> <p>See Figure 1</p>	<p>a. Loose connection.</p> <p>b. Worn or defective water valve.</p> <p>c. Connector not seated properly.</p> <p>d. Stripped threads.</p> <p>e. Seal worn or missing.</p> <p>f. Valve body cracked.</p>	<p>a. Tighten bottom cap, inlet fitting and outlet hose clamp.</p> <p>b. Replace water valve.</p> <p>c. Correct</p> <p>d. Replace water valve.</p> <p>e. Replace water valve.</p> <p>f. Replace valve.</p>

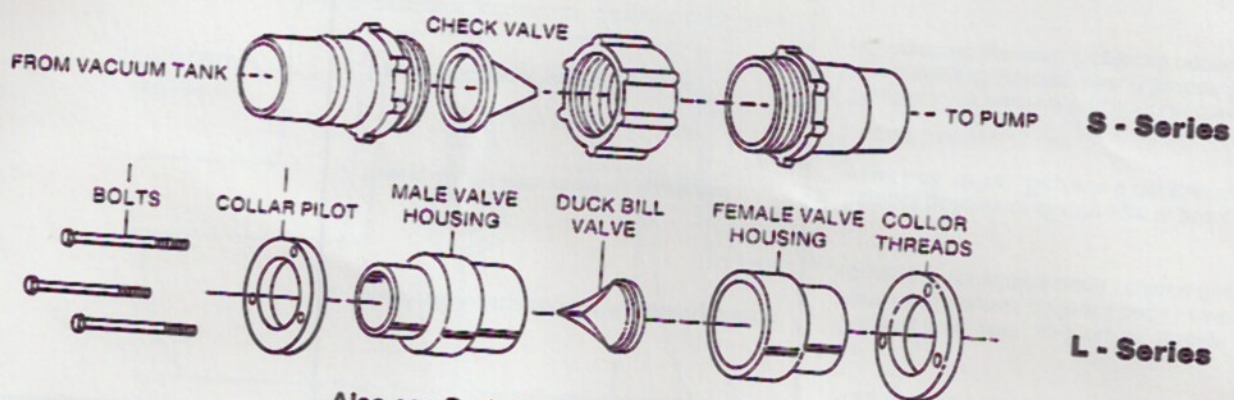
Figure - 2

Also see Parts Information, Pages 21 and 22.

Problem	Possible Cause	Service Instructions
<p>6. Water leaking from bottom of toilet base. (506, 806, 508, 808 toilets only)</p> <p>See Figure 1</p>	<p>a. Toilet loose. b. Worn or defective toilet mounting floor seal. c. Worn or defective base. d. Worn or defective floor flange.</p>	<p>a. Tighten toilet mounting bolts. b. Replace sponge rubber seal between floor flange and toilet base. c. Replace base assembly. d. Replace floor flange.</p>

<p>7. Water leaking from rear of toilet bowl.</p> <p>See Figure 2</p>	<p>a. Loose hose connection. b. Loose vacuum breaker. c. Worn or defective vacuum breaker. d. Cracked or defective toilet bowl.</p>	<p>a. Tighten hose connections. b. Tighten vacuum breaker to bowl connection. c. Replace vacuum breaker assembly. d. Replace toilet bowl.</p>
<p>8. Pump running too much between flushes.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>CAUTION Pump starts automatically. Turn off power before servicing.</p> </div> <p>See Figure 3,4 & 5</p>	<p>a. Flush ball leaks. b. Vacuum line leak. c. Check valves in pump stuck in open position. d. Pump diaphragm worn or damaged. e. Faulty vacuum switch.</p>	<p>a. Leave small amount of water in toilet. If water is "sucked" from bowl, see problems #1 and #2. b. Tighten all hose connections at pump, vacuum tank, toilet and check valve (when used). b. Look for holes or punctures in vacuum hose. Replace as required. c. Disassemble inlet and outlet fittings on pump and inspect all four check valves. If valves are remaining open replace them. d. Inspect bellows or diaphragm in pump for small hole or rip. Replace if necessary. e. To check vacuum switch, short across "B" terminals with jumper wire. (Caution 115V AC on some systems). Replace if necessary.</p>

Figure - 3
In Line Check Valve



Also see Parts Information, Page 25.

Problem	Possible Cause	Service Instructions
<p>9. Toilet will not flush. (no vacuum) Also see Problem #16.</p> <p>See Figure 3, 4 & 5</p>	<p>a. Pump will not run.</p> <p>b. Plugged vacuum line.</p> <p>c. Plugged pump valve or in-line check valve. (with two toilets)</p> <p>d. Check valves or pump installed backwards.</p> <p>e. Vacuum pump discharge or intake lines plugged.</p> <p>f. Plugged vacuum tank.</p>	<p>a. (See Problem # 10)</p> <p>b. Use toilet plunger. You may have to disconnect line and clear.</p> <p>c. Inspect and clean inline check valve, replace if necessary.</p> <p>d. Make certain pump and check valves are not installed backwards, or replace if stuck open.</p> <p>e. Disassemble lines and clean.</p> <p>f. Unplug vacuum tank by removing the vacuum switch assembly.</p>

10. Pump will not run.

CAUTION

Pump starts automatically. Turn off power before servicing.

See Figure 4 & 5
Also see Electrical Diagrams,
Pages 19 and 20.

- a. No power.
- b. Loose or broken electrical wiring.
- c. Improper electrical connections.
- d. Faulty vacuum switch.
- e. Worn pump brushes in S 12D, S 24D & S 32D pumps.
- f. Defective Motor Starter S 115A pump.
- g. Relay L12D, L24D, L32D or L115A burned out.
- h. Faulty motor.

- a. Check input power, circuit breaker & fuse.
- b. Tighten or re-connect connections at pump and vacuum tank.
- c. Make certain wires at vacuum switch are connected to the "B" terminals.
- d. To check vacuum switch, short across "B" terminals with jumper wire. (Caution 115V AC on some systems.)
- e. If pump does not run, check wiring. Replace brushes. Check motor starter (115V only), replace brushes or motor starter (115V only), replace gear motor.
- f. Check relay motor starter on S-Series pump and replace if necessary.
- g. Replace Relay
- h. Replace Motor

11. Pump will not shut off.

CAUTION

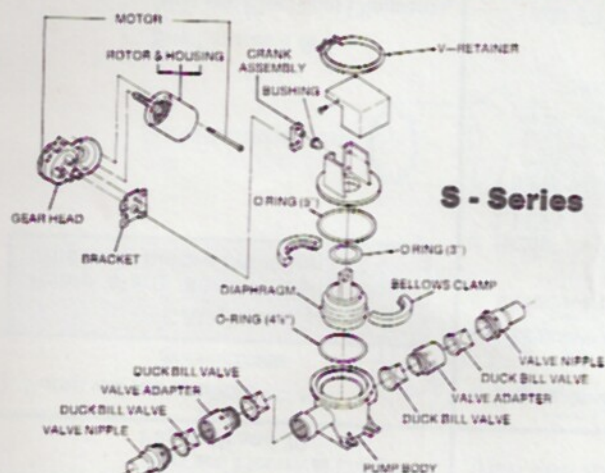
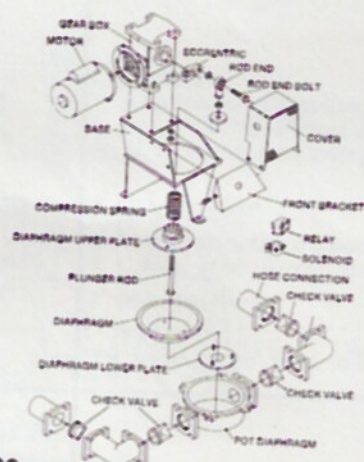
Pump starts automatically. Turn off power before servicing.

See Figures 4 & 5
Also see Electrical Diagrams,
Pages 19 and 20.

- a. Improper wiring.
- b. Excessive vacuum leak.
- c. Defective motor starter (S 115A pump)
- d. Relay Defective L12D, L24D, L32D or L115A
- e. Faulty vacuum switch.

- a. Check wiring, refer to wiring diagram or schematic.
- b. See problem 8.
- c. Check relay motor starter on S-Series pump and replace if necessary.
- d. Replace Relay
- e. To check vacuum switch, short across "B" terminals with jumper wire. (Caution 115 V AC on some systems.) Replace switch if necessary.

Figure - 4

**S - Series****L - Series**

Also see Parts Information, Pages 21 and 22.

Problem	Possible Cause	Service Instructions
<p>12. Pump making loud noise. (S-Series Pump)</p> <p>Note: If pump noise is disturbing at night, an "On-Off" switch may be easily added to the system. See pages 19 & 20.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p align="center">CAUTION</p> <p>Pump starts automatically. Turn off power before servicing.</p> </div> <p align="right">See Figure 4</p>	<ul style="list-style-type: none"> a. Loose setscrew in crank assembly. b. Teflon bushing worn. c. Dirt or debris in pump body. d. Improper lubrication. e. Worn or defective gear motor. f. Improper mounting. 	<ul style="list-style-type: none"> a. Remove cover from pump and check crank assembly setscrew for tightness. b. Check teflon bushing for wear. Replace if necessary. c. Remove V-retainer from pump body and inspect inside of pump body for foreign objects. d. Disassemble gear box and pack with new grease. e. Replace gear motor assembly. f. Contact SeaLand for proper mounting instructions.

12. Continued.
(L-Series Pump)

CAUTION

Pump starts automatically. Turn off power before servicing.

See Figure 4

- a. Eccentric worn or loose.
- b. Rod end worn or defective.
- c. Loose Rod end bolt.
- d. Broken compression spring.
- e. Defective gearbox.
- f. Low oil in gearbox.

- a. Tighten eccentric bolt if loose or replace eccentric.
- b. Inspect rod end for wear and replace if required.
- c. Tighten rod end bolt.
- d. Replace compression spring.
- e. Replace gearbox.
- f. Add oil to gear box.

13. Pump running too slow or overheating.

CAUTION

Pump starts automatically. Turn off power before servicing.

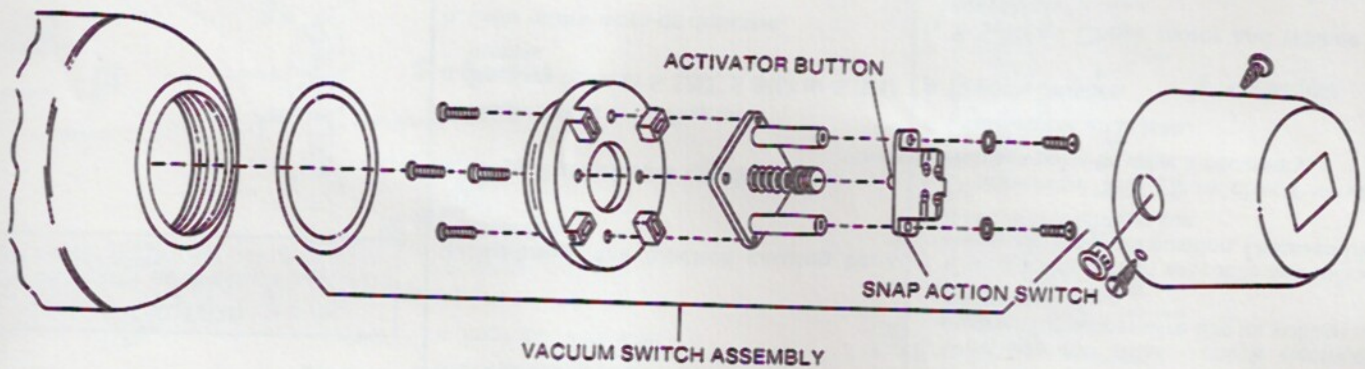
See Figures 3 & 4

Also see Electrical Diagrams,
Pages 19 and 20.

- a. Improper voltage.
- b. Loose connection.
- c. Improper wire size.
- d. Discharge line blocked causing back pressure.
- e. Plugged or defective check valve.
- f. Plugged vent in holding tank.
- g. Brushes worn in S 12D, S 24D or S 32D pumps.
- h. Gear motor worn or defective.

- a. Check input power for low voltage.
- b. Look for loose wire connections.
- c. Wire size too small - check electrical diagram for proper wire size for voltage of pump used.
- d. Check to be certain seacocks and in-line valves are in proper position. Disassemble and clean discharge line.
- e. Disassemble and clean check valve. Replace parts or valve if necessary.
- f. Disassemble and clean.
- g. Replace brushes.
- h. S-Series - Check motor and replace if necessary.
L-Series - Check gear reducer and motor and replace if necessary.

Figure - 5



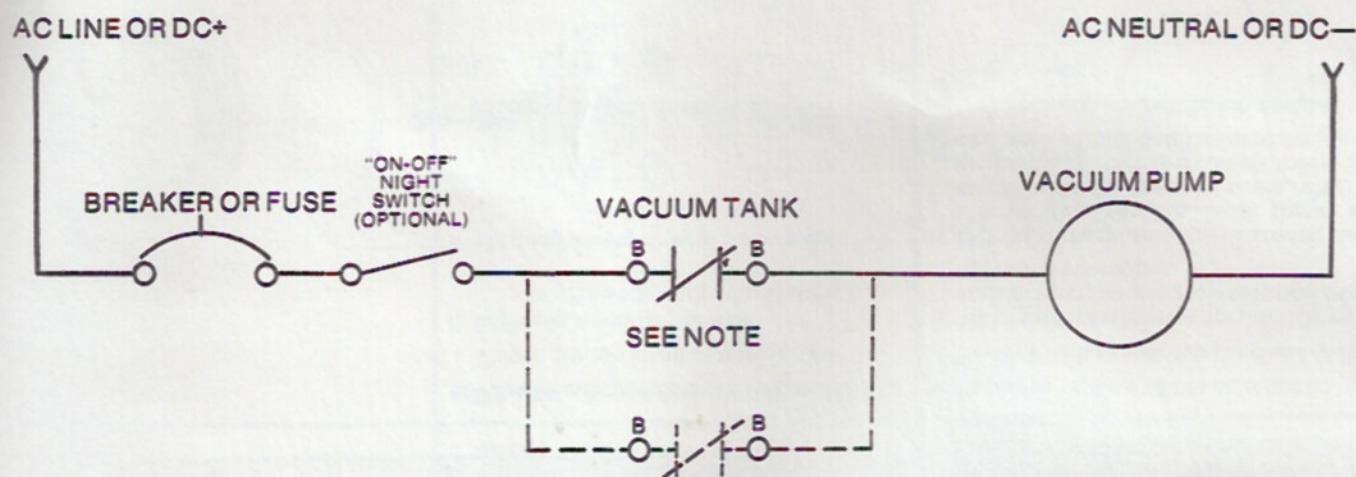
Also see Parts Information, Page 25.

Problem	Possible Cause	Service Instructions
14. Pump emits odor. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> CAUTION Pump starts automatically. Turn off power before servicing. </div>	a. Loose or defective hose connection on pump. b. Loose intake or discharge fittings on pump. c. Worn, torn or punctured pump diaphragm or bellows.	a. Tighten connections or replace hose and make new connections. b. Tighten intake or discharge fittings on pump. Replace nipples or adapters if necessary. c. Replace pump diaphragm.

See Figure 4

15. System emits odor.	a. Check for improper flexible hose.	a. Replace where necessary. Hose should be marked "SeaLand" or "Mansfield". a. Also see "Cleaning" instructions on page 7.
16. System plugs between toilet and vacuum pump.	a. Collapsed vacuum line. b. Wrong size vacuum line. c. Sharp bends or kinks in vacuum line. d. Vacuum tank mounted too far above level of toilet. e. Valves in vacuum line not fully open. f. Valves are too small or wrong type. g. Improper operation of toilet. h. Flushing wrong objects down toilet. i. Improper system installation.	a. Inspect vacuum line for collapsed condition and replace line if collapsed. b. Use 1 1/2" flexible hose or rigid pipe only. Replace any other size line with proper line. Use only approved SeaLand hose. c. Inspect vacuum line for kinks or bends with less than 5" radius on all bends. d. Re-position vacuum tank to within 3 feet vertically of toilet or below toilet level if possible. e. Repair or replace valves as required. f. Replace with proper type and size valves. g. Make sure toilet is being operated correctly and each person using toilet knows correct operating procedure. h. DO NOT flush any non-dissolving items (i.e. sanitary napkins, facial tissue, wet strength tissue, paper towels, etc.) or excessive toilet paper down toilet. Bio-degradable (Sani-Safe) toilet paper is best. i. Call SeaLand for installation manual.

S-Series Electrical Diagram



Note

Vacuum tank pressure switches are wired in parallel for multiple toilet installations. Wire to B connections only.

VOLTAGE	WIRE SIZE	BREAKER/FUSE
12 VDC	12 to 14 ga.	10 amp
24 VDC	14 to 16 ga.	5 amp
32 VDC	14 to 16 ga.	5 amp
115 VAC	16 ga.	3 amp

CAUTION

Pump starts automatically. Turn off power before servicing.

L-Series Electrical Diagram

AC LINE OR DC+

AC NEUTRAL OR DC-

BREAKER OR FUSE

VACUUM PUMP

VACUUM TANK

SEE NOTE

RELAY OR SOLENOID

Note

Vacuum tank pressure switches are wired in parallel for multiple toilet installations. Wire to B connections only.

CAUTION

Pump starts automatically. Turn off power before servicing.

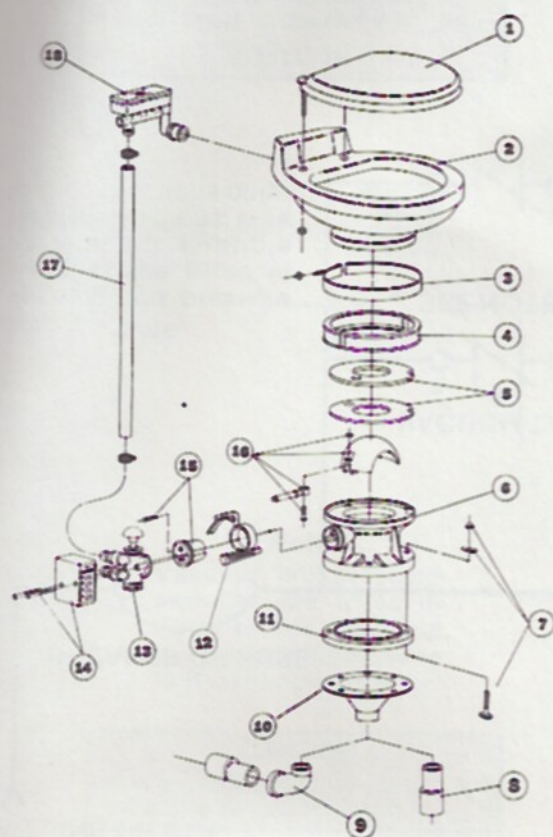
Power Source To Pump Motor

VOLTAGE	WIRE SIZE	BREAKER/FUSE
12 VDC	6 to 8 ga.	50 amp
24 VDC	8 to 10 ga.	25 amp
32 VDC	10 to 12 ga.	20 amp
115 VAC	12 to 14 ga.	10 amp
To Vacuum Tank		
All	16 to 18 ga.	

**Parts
Information**

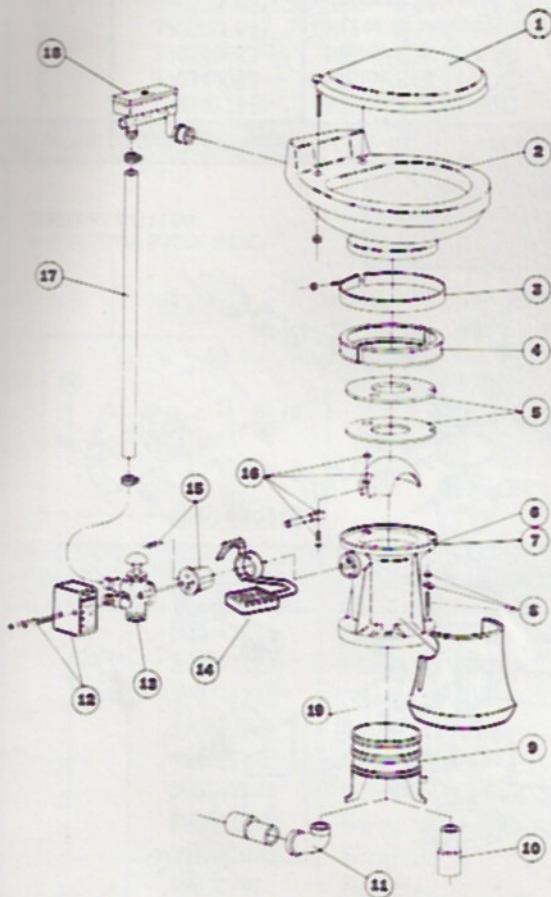
**Ordering Parts
& Spare Parts**

506 & 806 Head Parts List



Item No.	Part Numbers		Part Description
	Model 506	Model 806	
1	390341138	--	Seat and Lid White
1	390341915	--	Seat and Lid Bone
1	--	390341814	Seat and Lid White
1	--	390344430	Seat and Lid Bone
2	385310057	--	Kit, Bowl / Breaker White
2	385310058	--	Kit, Bowl / Breaker Bone
2	--	385310069	Kit, Bowl / Breaker White
2	--	385310070	Kit, Bowl / Breaker Bone
3-4	385310025	--	Kit Ring & Clamp White
3-4	385310048	--	Kit Ring & Clamp Bone
5	385316140	--	Kit Teflon & Rubber Seal
6	385310079	--	Kit Base Assembly White
6	385310078	--	Kit Base Assembly Bone
6	--	385310056	Kit Base Assembly White
6	--	385317310	Kit Base Assembly Bone
7	385315057	--	Kit, Mounting
8	390340380	--	Adapter Hose
9	390348370	--	Elbow
10	385318864	--	Kit, Funnel (7-8-9 & 11)
11	390343892	--	Seal, Floor Flange
12	381230198	--	Assembly Flush Lever
12	--	381234039	Assembly Flush Lever
13	385314349	--	Kit, Water Valve
14	385310077	--	Kit, Valve Cover & Screws Bone
14	385316126	--	Kit, Valve Cover & Screws White
15-16	385318162	--	Kit, Ball Shaft & Cartridge
17	385315902	--	Kit, Universal Tubing
18	385318065	--	Kit, Vacuum Breaker
18	--	385316906	Kit, Vacuum Breaker

508/548 & 808/848 Head Parts List



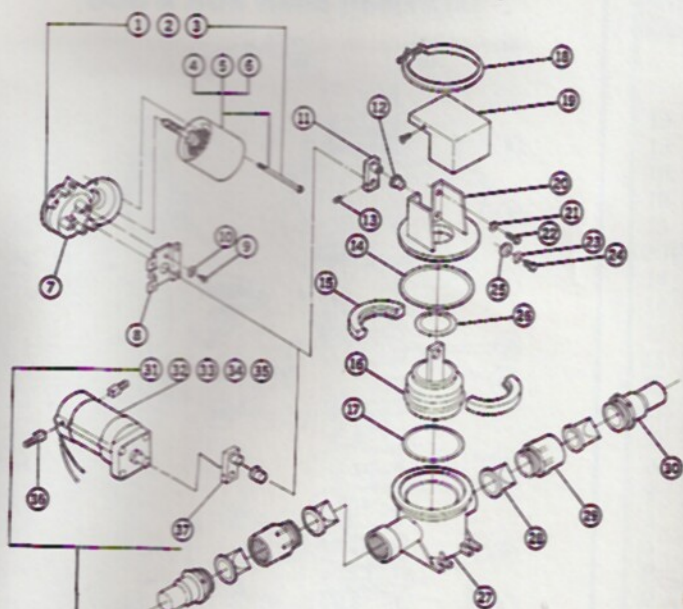
Item No.	Part Numbers		Part Description
	Model 508/548	Model 808/848	
1	390341138	--	Seat and Lid White
1	390341915	--	Seat and Lid Bone
1	--	390341814	Seat and Lid White
1	--	390344430	Seat and Lid Bone
2	385310057	--	Kit, Bowl / Breaker White
2	385310058	--	Kit, Bowl / Breaker Bone
2	--	385310069	Kit, Bowl / Breaker White
2	--	385310070	Kit, Bowl / Breaker Bone
3-4	385310025	--	Kit, Ring & Clamps White
3-4	385310048	--	Kit, Ring & Clamps Bone
5	385316140	--	Kit, Teflon & Rubber Seal
6	385310045*	--	Kit, Base 508/808 Bone
6	385318842*	--	Kit, Base 508/808 White
7	385310046*	--	Kit, Base 548/848 Bone
7	385318843*	--	Kit, Base 548/848 White
8	385316323	--	Kit, Mounting
9	385318741	--	Kit, Funnel
10	390348380	--	Adapter Hose
11	390348370	--	Elbow
12	385316126	--	Kit, Valve Cover & Screws White
12	385310077	--	Kit, Valve Cover & Screws Bone
13	385314349	--	Kit, Water Valve
14	390340234	--	Assembly Flush Lever, Bone Cover
14	390340233	--	Assembly Flush Lever, White Cover
15-16	385318162	--	Kit, Ball, Shaft & Cartridge
17	385315902	--	Kit, Tubing
18	385318065	--	Kit, Vacuum Breaker
18	--	385316906	Kit, Vacuum Breaker
19	390340123	--	Shroud, White
19	390340124	--	Shroud, Bone

*See Model Numbers In Part Description

Parts
Information

Ordering Parts
& Spare Parts

S-Series Pump

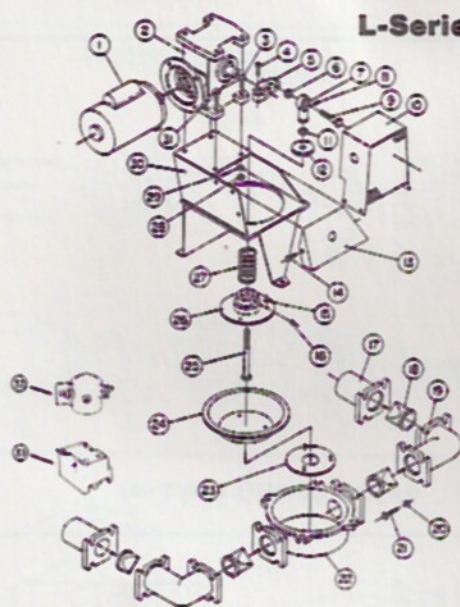


For Models S12D, S24D,
S32D and S115A

CAUTION

Pump starts automatically. Turn
off power before servicing.

Item No.	Part Numbers	Part Description
1	390342711	Motor S12 12VDC
2	390340082	Motor S24 24VDC
3	390340083	Motor S32 32VDC
4	390340064	Rotor & Housing 12VDC
5	390340085	Rotor & Housing 24VDC
6	390340087	Rotor & Housing 32VDC
7	390340063	Gear Head
8	390340008	Bracket
9	390340017	Screw, 1/4 - 28 x 1/2
10	390346615	Washer, Lock - Ext. Tooth
11	390340018	Eccentric S12, S24, S32
12	390347810	Bushing
13	390347788	Set Screw, 1/4 - 28 x 5/16
14	390347794	O-Ring, 5 3/4"
15	390347807	Bellows Clamp
16	390347804	Bellows Assembly
17	390347795	O-Ring, 4 7/8"
18	390347797	V-retainer
19	390348682	Pump Cover
20	390347799	Top Closure
21	390344087	Flat Washer #10 x 3/8
22	390340156	Screw, Self Tapping 10 - 32 x 3/4
23	390347790	Washer
24	390347785	Screw
25	390347792	Washer
26	390347793	O-Ring 3"
27	390347798	Pump Body
28	390347802	Duck Bill Valve
29	390347801	Valve Adapter
30	390347800	Valve Nipple
	390340196	Kit, Motor Conversion S12D to S12 (Includes Items 1,8,9,10,11,13,21,22)
	390340202	Kit, Motor Conversion S24D to S24 (Includes Items 2,8,9,10,11,13,21,22)
	390340203	Kit, Motor Conversion S32D to S32 (Includes Items 3,8,9,10,11,13,21,22)
	390341186	Pump Without Motor (Includes Item 12)
31	390347784	Motor, 12VDC
32	390347811	Motor, 24VDC
33	390347813	Motor, 115VAC
34	390347812	Motor, 32VDC
35	390347919	Relay, Motor Starter 115VAC
36	390348384	Brushes, Motor
37	381237809	Assembly, Crank



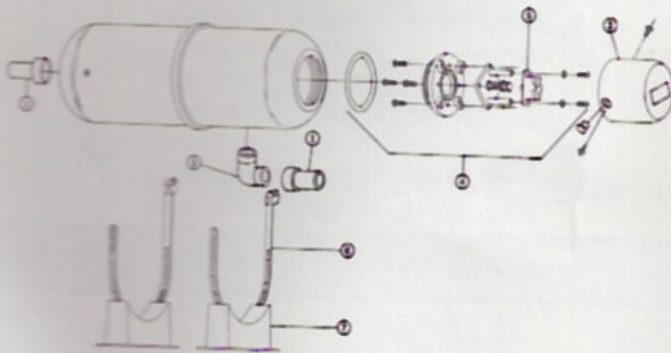
L-Series Pump

Item No.	Part Numbers	Part Description
8 & 16	N/A	Lube Fitting
9	390347914	Screw, Hex Head Cap
10	390347769	Guard, Eccentric
11	390347917	Nut, Jam
12	390347911	Washer, Spring Center
13	390347782	Bracket, Front
14	390347778	Screw, Self Tap (6)
15	390347915	Nut, Hex (3)
17	390348701	Connector, Valve Housing (2)
18	390348702	Valve, Duck Bill (4)
19	390348703	Housing, Valve (2)
20	390348704	Nut, Hex (20)
21	390348705	Screw, Hex Head (16)
22	390348706	Pot, Diaphragm
23	390347907	Plate, Diaphragm Lower
24	390347905	Diaphragm
25	390347906	Rod, Plunger
26	390347908	Plate, Diaphragm Upper
27	390347909	Spring, Compression
28	390347772	Nut, Hex (4)
29	390347777	Lockwasher (4)
30	381237761	Base Assembly
31	390347771	Key
32	390345831	Solenoid, 12VDC
32	390346900	Solenoid, 24VDC
32	390346530	Solenoid, 32VDC
33	390341431	Relay SPST 115V A.C.
	385317770	Kit, Plunger Rod (Includes Item No. 4,5,6,7,8,9,11,12,15,16,23,25,26,27)

Item No.	Part Numbers	Part Description
1	390341146	Motor, 12VDC
1	390341127	Motor, 24VDC
1	390341118	Motor, 32VDC
1	390347781	Motor, 115VAC
2	390347780	Gear Reducer
3	390347773	Screw, Hex Head Cap (4)
4	390347918	Screw, Socket Head Cap
5	390347910	Eccentric
6	390347912	Nut, Hex
7	390347913	End, Rod

**Ordering Parts
& Spare Parts**

Vacuum Tank



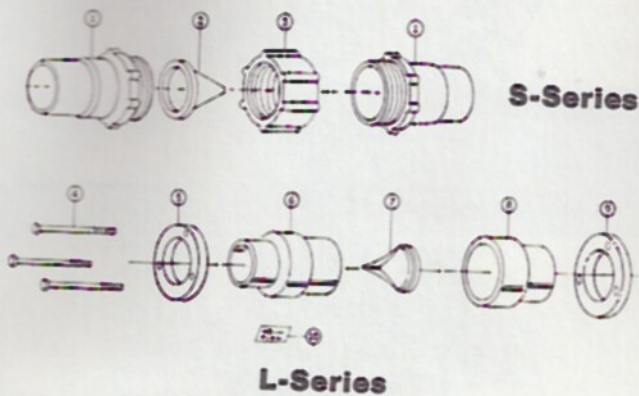
Item No.

Part Numbers

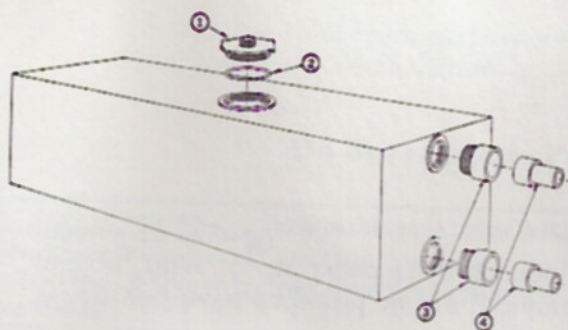
Part Description

1
2
3
4
5
6
7390341513
390341161
390348037
381238032
390347815
390346835
390348361Adapter, Insert
Elbow, Street
Cover, Vacuum Switch
Assembly, Vacuum Switch
Switch, Snap Action
Clamp, Snap Lock
Bracket, Mounting

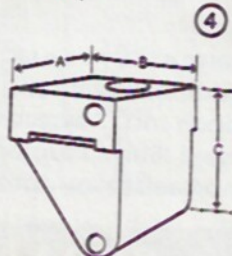
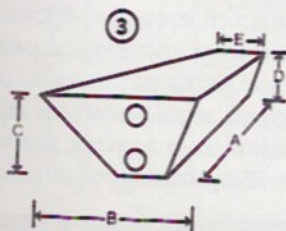
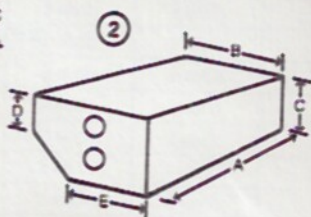
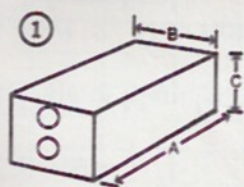
In-Line Check Valve

1
2
3
4
5
6
7
8
9
10390347800
390347802
390347839
390341015
390341092
381230082
390348702
390340034
390341103
390348724Nipple, Valve
Valve, Duck Bill
Adaptor, Valve
Bolts
Pilot Collar
Male Valve Housing Assembly
Duck Bill Valve
Female Valve Housing
Threaded Collar
Label

Holding Tank



Item No.	Part Numbers	Part Description
1	382250022	Cap
2	390346401	O-Ring, Cap
3	390341425	Adapter 1½" MPT x 1½" Socket (2)
4	390341513	Hose Adapter, 1½" Insert x 1½" Slip (2)



Item No.	Part Numbers	Capacity	Dimensions					Approx. Weight
			A	B	C	D	E	
1	4020	20 Gallon	28½"	14½"	11½"			24 lbs.
1	4030	30 Gallon	30"	20"	12"			36 lbs.
1	4040	40 Gallon	30"	21¼"	13¼"			39 lbs.
1	4055	55 Gallon	40"	20"	16"			45 lbs.
2	4015	15 Gallon	22"	19"	12½"	4"	6"	19 lbs.
3	4016	16 Gallon	23½"	29½"	13"	8"	12"	20 lbs.
4	4010	10 Gallon	17"	14"	16⅝"			11 lbs.

Ordering Parts

SeaLand Technology is ready to assist you in the event service is required. Before calling, please have the following information available. Your cooperation in reducing usage of our toll free number is appreciated and makes our Customer Service Department more readily available to others.

1. Model #
2. Serial #
3. Date of Manufacture
4. Part #, Description and Quantity (See Parts Information)

When you have gathered all the required information, refer to the Need Help section of this manual on page 30.

Model Identification

Model _____ S/N _____ Mfg. Date _____
 TYPE III FOR USE ON VESSELS REQUIRED TO BE INSPECTED AND
 CERTIFIED BY THE UNITED STATES COAST GUARD UNDER 46 CFR
 SUBCHAPTER T, #159.15/1014/2/III, #159.15/1014/6/III and
 #159.15/1014/10/III.
 348513

SeaLand
TECHNOLOGY INC.

The above label is located on the toilet base and will show the model number, serial number (S/N) and the date of manufacture. If not available please refer to the What's What section of this manual on page 2 for basic model and system identification.

Spare Parts

To calculate total spare parts required determine number and type of toilets and pumps. Refer to What's What section, page 2, to identify toilet series and pump series.

On Board Spare Parts Calculation Chart: (Per System)

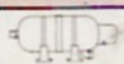
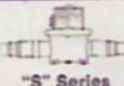






Type Of System				385316140	385314349	385310076	390348702	385318065	385316906	381238032	385310025Wh	385318162
Toilet Series & Quantity		Pump Series & Quantity		Seal Kit	Valve Kit	Valve Kit	Valves	Vacuum Breaker	Vacuum Breaker	Vacuum Switch	385310045Bn	Ball/Shaft & Cartridge Kit
"500"	"800"	"S"	"L"	"500 - 800"	"500 - 800"	"S" Pump	"L" Pump	"500" Toilet	"800" Toilet	Vac. Tank	Ring/Clamp Kit	
1		1		1 each	1 each	1 each						
2		1		1 each	1 each	1 each		1 each				
	1	1		1 each	1 each	1 each						
	2	1		1 each	1 each	1 each			1 each			1 each
1			1	1 each	1 each		4 each					
2			1	1 each	1 each		4 each	1 each				1 each
3			1	1 each	1 each		8 each	1 each		1 each	1 each	1 each
4			1	2 each	2 each		8 each	2 each		1 each	1 each	1 each
5			1	2 each	2 each		8 each	2 each		1 each	1 each	1 each
6			1	2 each	2 each		8 each	2 each		2 each	2 each	2 each
	1		1	1 each	1 each		4 each					
	2		1	1 each	1 each		4 each		1 each			1 each
	3		1	1 each	1 each		8 each		1 each	1 each	1 each	1 each
	4		1	2 each	2 each		8 each		2 each	1 each	1 each	1 each
	5		1	2 each	2 each		8 each		2 each	1 each	1 each	1 each
	6		1	2 each	2 each		8 each		2 each	2 each	2 each	2 each

Per Vessel: Vacuum Tester - 384530002 (1 each) & Owners Manual - (1 each)

**Ordering Parts
& Spare Parts**

What's What

Item	Product No.	Description
	317080601	806 Toilet, Below Floor Discharge, Short Base, White
	317080603	806 Toilet, Below Floor Discharge, Short Base, Bone
	317080801	808 Toilet, Below Floor Discharge, White
	317080803	808 Toilet, Below Floor Discharge, Bone
	317084801	848 Toilet, Above Floor Discharge, White
	317848803	848 Toilet, Above Floor Discharge, Bone
	317050601	506 Full Sized Toilet, Below Floor Discharge, White
	317050603	506 Full Sized Toilet, Below Floor Discharge, Bone
	317050801	508 Full Sized Toilet, Below Floor Discharge, White
	317050803	508 Full Sized Toilet, Below Floor Discharge, Bone
	317054801	548 Full Sized Toilet, Above Floor Discharge, White
	317054803	548 Full Sized Toilet, Above Floor Discharge, Bone

Item	Product No.	Description
Vacuum Tank		
	317729100	Tank, Vacuum
Vacuum Pumps		
 "S" Series	317001200	Vacuum Pump, 12 VDC
	317002400	Vacuum Pump, 24 VDC
	317003200	Vacuum Pump, 32 VDC
 "L" Series	317111500	Vac. Pump, 110 VAC, Includes Relay
	317101200	Vacuum Pump, 12 VDC, Includes Relay
	317102400	Vacuum Pump, 24 VDC, Includes Relay
	317103200	Vacuum Pump, 32 VDC, Includes Relay
Accessories		
	316409000	Tank Level Indicator, 12 VDC
	316409200	Tank Level Indicator, 32 VDC
	316409400	Tank Level Indic., 12 VDC (Universal)
	316409600	Tank Level Indic., 32 VDC (Universal)
	315210000	Treatment Device, WITHOUT Pump (Includes pumpout panel light. TDX-S may be ordered with S12D AB pump for electric discharge or 681-8880 diaphragm pump for manual discharge.)
	Refer To Page 26	Holding Tanks, from 10 to 55 gallon capacity in heavy duty polyethylene.
		Sealand offers a variety of care products for your system under the Waste-Be-Gone™ and Sani-Soft™ brand names.

**Do's & Don'ts
What's What**

**How To Use
The Toilet**

**Cleaning &
Winterizing**

**Trouble-
Shooting**

Information

& Spare Parts