

EN

Vacuum toilet system
Operation manual



4700 Series
VacuFlush[®]
Toilets

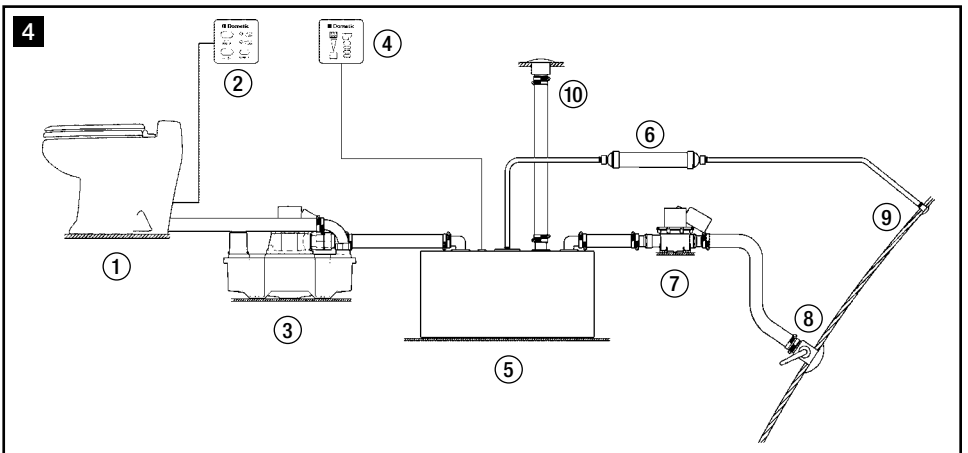
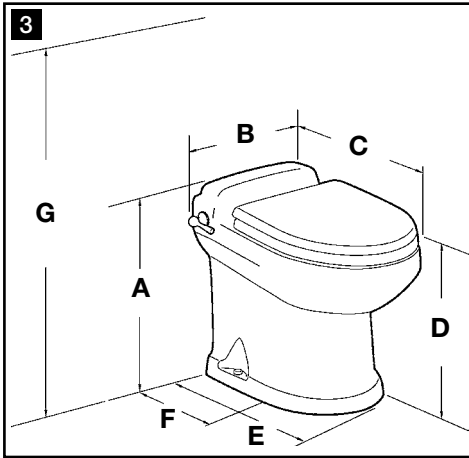
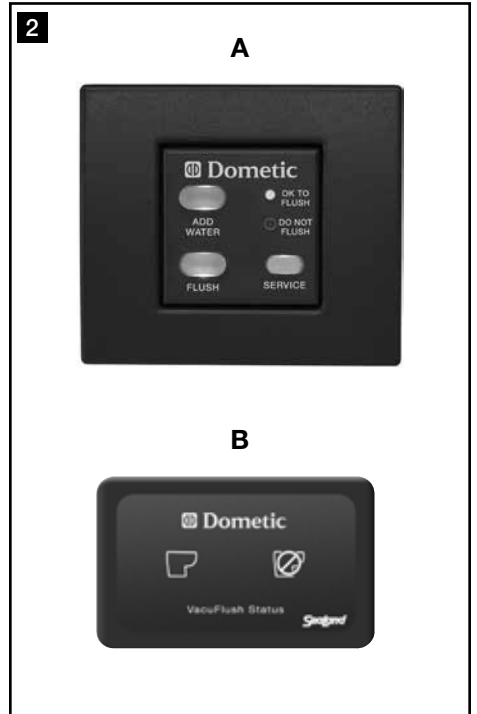
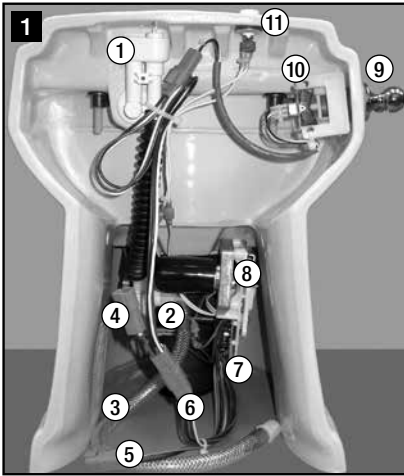


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1 Notes on using the manual



Caution!

Safety Instruction: Failure to observe this instruction can cause material damage and impair the function of the device.



Note

Supplementary information for operating the device.

fig. **1** 2, page 2 : This refers to an element in an illustration. In this example, item 2 in figure 1 on page 2.

2 General safety instructions

The manufacturer will not be held liable for claims for damage resulting from the following:

- Faulty installation or connection
- Damage to the unit from mechanical influences, misuse or abuse
- Alterations to the unit without express written permission from the manufacturer
- Use for purposes other than those described in this manual

2.1 Warnings – marine applications

The following statements must be read and understood before installing, servicing and/or operating this product on a boat. Modification of this product may result in property damage.

Dometic recommends that a qualified marine technician or electrician install or service this product. Equipment damage, injury to personnel or death could result from improper installation. **DOMETIC ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR DAMAGE TO EQUIPMENT, OR INJURY OR DEATH TO PERSONNEL THAT MAY RESULT FROM IMPROPER INSTALLATION, SERVICE OR OPERATION OF THIS PRODUCT.**



Caution! Hazard of Flooding

If toilet is connected to ANY through-the-hull fittings, ALWAYS close seacocks when toilet is not in use (even if boat is unattended for a brief period). All passengers MUST be instructed on how to close valves when the toilet is not in use. Failure to do so can result in flooding which can cause loss of property and life.



**Caution! Hazard of Flooding**

If the toilet uses fresh water for flushing and is connected directly or indirectly to a shore-side municipal water system at ANY time, shoreside water connections **MUST** be disconnected if the boat is unattended (even if boat is unattended for a brief period). Failure to do so can result in flooding which can cause loss of property and life.

**Caution! Hazard of Flooding**

Before beginning any work on this product, be sure that all electrical power to the unit has been turned off and that seacocks are in the **CLOSED** or **OFF** position. Failure to do so can result in flooding which can cause loss of property and life.

**Caution!**

Overfilling the holding tank can create serious damage to the sanitation system, such as rupturing the holding tank and releasing tank contents into the bilge. To prevent this possibility, Dometic recommends using the “full” tank shut-down relay in the toilet’s electronic control module. The “full” signal from the holding tank can be generated by an optional Dometic DTM01C tank monitor or DTM04 four-level tank monitor system.

3 Intended use

The SeaLand 4700 series VacuFlush toilet provides an electric-flush toilet that vacuums waste from the bowl and pumps it to a holding tank or other effluent storage/disposal system. Operated by a wall-mounted flush switch or electronic flush handle, the toilet allows the user to add water to the bowl (before using or flushing) and to flush the toilet. A status panel activates lights to indicate when the toilet is ready to flush, when the toilet is operating, and when the toilet is not ready to flush due to recharging vacuum or a full holding tank.

3.1 Benefits

Convenient electronic flush. Add water or flush with the touch of a button or by operating the flush handle. No need to continue pressing button or handle for full flush to occur.

Choice of two water consumption settings. “Normal” flush uses 2 quarts (1.9 liters) per flush and adds water to bowl after flush; “Dry Bowl” setting uses only 1 pint (0.5 liter) per flush and does not add water to the bowl – ideal for marine applications when boat is underway.

“OK to Flush” and “Do Not Flush” indicator lights. Green light indicates “OK to Flush” when proper vacuum is achieved and toilet is ready to flush. Red light indicates “Do Not Flush” when vacuum level is too low for a flush to occur. Vacuum recharges in about one minute after flushing.

Integrated fuse. Toilet circuitry includes built-in resettable fuse. If toilet fuse ever trips, just turn off electrical power to toilet for about 60 seconds, then turn electrical power on.

Automatic “full tank” shut-down. When connected to a holding tank level indication system and the tank reaches full level, electrical power to the toilet will become interrupted and the red “Do Not Flush” light will turn on. This safety feature prevents overfilling the holding tank, which may cause damage to the boat or vehicle.

Three-second “rough seas” shut-down delay. If motion of rough sea causes “full tank” indicator to activate toilet shut-down, a three-second signal delay allows tank contents to settle before completing shut-down process.

Service mode. Service mode keeps flush ball open for easier toilet cleaning or other service function.

4 Components

4.1 4700 series VacuFlush toilet

(fig. **1**, page 2)

Ref.	Description
1	Anti-siphon vacuum breaker
2	Electric water valve
3	Water supply line
4	Status panel cable connector*
5	Vacuum generator cable connector
6	Flush switch cable connector
7	Circuit board
8	Flush ball motor/drive linkage
9	Flush handle (alternate model)*
10	Flush handle switch*
11	Service mode switch

* Component of flush handle toilet model only.
Refer to complete parts list (packed separately) for additional information.

(fig. **2**, page 2)

Ref.	Description
A	VacuFlush switch/status panel
B	VacuFlush status panel (for toilet with flush handle only)

VacuFlush switch panel can be fitted with generic frame or one of several popular Vimar and Gewiss frames.

4.2 Typical VacuFlush toilet system (marine)

(fig. **4**, page 2)

Ref.	Description
1	4700 series VacuFlush toilet
2	VacuFlush switch/status panel
3	Vacuum generator
4	Holding tank status panel
5	Holding tank (waste)

Ref.	Description
6	Vent filter
7	Discharge pump
8	Overboard discharge fitting
9	Air vent fitting
10	Dockside discharge fitting

Some VacuFlush toilet systems combine the vacuum generator (3) and holding tank (5) into one unit (VacuFlush holding tank system). Contact boat or vehicle manufacturer for complete information on your toilet system.

5 Specifications

5.1 Materials

Toilet body: vitreous ceramic

Toilet seat: thermoset plastic resin or wood (seats vary according to toilet model)

Discharge fitting: PVC

5.2 Approvals

CE, REACH and ROHS compliant components

5.3 Toilet installation specifications

Electrical	Amp draw (average)	2 amps at 12 V DC; 1 amp at 24 V DC
	Fuse	2-amp internal fuse (resettable) *
Water Supply	Fitting	0.5 in. NPT
	Flow rate	4.0 gpm/15 lpm minimum required at toilet
Discharge	Size	1.5 in./38 mm ID PVC pipe or sanitation hose
	Horizontal run	50 ft./15 m maximum to vacuum source
	Vertical run	6 ft./1.8 m maximum to vacuum source
Required components	Electric flush switch	Dometic VFS or VFP switch (purchased separately)
	Status panel	VacuFlush status panel (for flush handle toilets only)
	Vacuum source	VacuFlush vacuum generator or VacuFlush holding tank system (purchased separately)

* Circuit board fuse resets by turning toilet's electrical power off, then back on.
Specifications subject to change without notice.

5.4 Dimensions (fig. **3**, p. 2) All dimensions may vary $\pm 3/8$ inch (10 mm)

Models with wall-mounted flush switch

Ref.	Dimension
A	19 in. / 483 mm
B	14.75 in. / 375 mm
C	21.5 in. / 546 mm
D	17.75 in. / 451 mm - seat height
E	17.125 in. / 435 mm
F	10 in. / 254 mm - centerline rough-in
G	33.75 in. / 857 mm - seat lid up

Models with flush handle

Ref.	Dimension
A	19 in. / 483 mm
B	15.875 in. / 403 mm
C	21.5 in. / 546 mm
D	17.75 in. / 451 mm - seat height
E	17.125 in. / 435 mm
F	10 in. / 254 mm - centerline rough-in
G	33.75 in. / 857 mm - seat lid up

6 Operation

6.1 Toilet system start-up

1. Fill freshwater tank.
2. Turn on electrical power and water supply to toilet.
3. Flush water through toilet system by flushing toilet five times (allow each flush cycle to complete until green light indicates system is ready for next flush). Each cycle takes about one minute.

6.2 Normal toilet operation

ADD WATER TO TOILET BOWL



Press “Add Water” switch or raise flush handle (depending on toilet model) until desired water level is achieved. More water is usually added only when flushing solids. (If switch is pressed too long, water flow will shut off automatically to avoid overflow.)

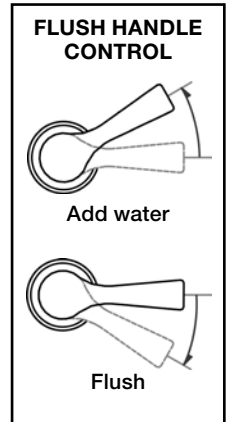
BACKLIGHTING: To turn switch panel backlighting effect off or on, push “Add Water” switch twice very quickly.

FLUSH TOILET



Press “Flush” switch or press flush handle down (depending on toilet model) for a moment, then release it. Flush only when the green “OK to Flush” light is on. Toilet will not flush until the green light is on. After flushing, it takes about one minute for vacuum to recharge for the next flush.

If the red “Do Not Flush” light is on, the system is either recharging the vacuum, or the holding tank is full. The toilet will not flush while the red light is on.



DO NOT FLUSH FOREIGN OBJECTS



CAUTION! Flush only water, bodily wastes and rapid-dissolving tissue paper. Do not flush wet wipes, sanitary napkins, condoms, diapers, razor blades paper cups, cotton swabs food, hair or liquids such as oils or solvents. Clogging or damage to the toilet system may occur.



Note
Make sure all guests understand toilet operation before use.

6.3 Changing flush modes

SeaLand 4700 series VacuFlush toilets offer two flush settings to help manage water consumption:

Normal flush – Uses 2 quarts (1.9 liters) per flush. Adds water to bowl after every flush.



Dry Bowl flush – Uses 1 pint (0.5 liter) per flush. Does not add water to bowl after flush.

To change from Normal to Dry Bowl flush setting, press “Flush” switch or flush handle for about five seconds. When green light on status panel begins flashing, release “Flush” switch. Flush mode has been changed to Dry Bowl setting. Change mode to Normal flush by following the same procedure.

6.4 Indicator lights

“OK TO FLUSH” GREEN INDICATOR


A steady green “OK to Flush” light indicates when the toilet is ready to flush. A momentary flashing green light indicates when flush mode is changing.

Wall Switch	DVS01 Panel
 OK TO FLUSH	

“DO NOT FLUSH” RED INDICATOR

A red “Do Not Flush” red light indicates two toilet system conditions:

1. Vacuum level in toilet system is not sufficient for complete flush.
2. Holding tank is full and should be pumped out (tank must be equipped with “full tank” sensor). When the red light is on, electrical power to the toilet is interrupted to prevent possible overfilling of the holding tank. Flush ball will open only in “Service” mode.

Wall Switch	DVS01 Panel
 DO NOT FLUSH	

VacuFlush vacuum status is monitored by VFS wall switch or DVS01 panel. Follow instructions for monitor installed with your toilet.

6.5 Service mode

To clean the toilet bowl or perform other service that requires keeping the flush ball open without running water, use the Service switch.

TOILET WITH VACUFLUSH WALL SWITCH

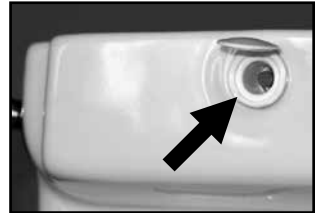


SERVICE

1. Push the Service switch for three seconds. The steady backlight will change to a flashing light while the toilet is in Service mode.
2. Perform the service operation. After the Service operation is complete, press the Service switch for three seconds to change back to normal toilet operation.

TOILET WITH FLUSH HANDLE

1. Open cap on top of toilet (fig. 1 11, p. 2), then insert pencil or screwdriver to push Service switch. This opens flush ball.
2. Perform the service operation. To close the flush ball and return to Normal operation, push the switch again.



7 Maintenance / winterizing / service

7.1 Cleaning the toilet

To maintain the toilet’s original, lustrous appearance, use SeaLand® Toilet Bowl Cleaner or other non-abrasive bathroom and toilet bowl cleaners. Please follow label directions.



Caution

To avoid damaging the toilet system’s seals and valves, do not clean toilet with abrasive cleaners, caustic chemicals, or lubricants and cleaners that contain alcohols or petroleum distillates.



7.2 VacuFlush system maintenance

Maintenance procedures vary widely and depend on factors such as frequency of use, quality of flushing water, etc. The chart provides a general guideline for keeping your toilet system ready for use at any time.

Maintenance procedure	Service interval	Notes
ROUTINE		
Check all clamped hose joints below water line for leaks.	Monthly	—
Check filter screen in water valve.	After first year of service, then as needed if water flow is noticeably slower.	Screen is located inside water valve inlet.
Replace vent filter (if installed in holding tank vent line).	Annually	—
MAJOR SYSTEM MAINTENANCE		
Replace duckbill valves in vacuum generator or vacuum pump.	Every three years	See vacuum generator or vacuum pump parts list for replacement kit part number.
Replace flush ball seal and flush ball (if required).	Every three years	See toilet parts list for replacement kit part number.

7.3 Recommended spare parts

When operating boat or other vehicle in remote areas, keep the following spare parts on hand to assure continuous toilet system operation.

Description	Where used
Flush ball seal	4700 series toilet. See parts list.
Flush ball	4700 series toilet. See parts list.
Electric water valve	4700 series toilet. See parts list.
Vacuum switch kit	Vacuum tank or vacuum generator. See parts list.
Duckbill valves	Vacuum tank or vacuum generator. See parts list.

To order spare parts, refer to **Customer Service** section.

7.4 During extended periods of non-use

Toilet system sanitation hoses should be cleared if toilet will not be needed for an extended period of time (more than two weeks).

1. Fill toilet bowl with water and add 4 oz. (120 ml) of liquid biodegradable laundry detergent (should NOT contain bleach).
2. Open flush ball in Service Mode (see directions in Section 6.5). Press the “Add Water” switch down, or raise flush handle up, until water stops flowing. Push Service Mode button to return to Normal mode, then push again to return to Service Mode. Repeat “Add Water” process about 12 times. Return to Normal mode.
3. Turn off water supply to toilet.
4. Flush the toilet without water, allowing the vacuum pump to shut off after the flush. Repeat three times. (This procedure will minimize any remaining water in the sanitation hoses.)

(continued on next page)

5. Turn off power to the vacuum pump.
6. Completely pump out holding tank.

If system will be subjected to freezing temperatures, please follow above procedure, then winterize system as described in Section 7.7.

TURN OFF ELECTRICITY AND WATER TO TOILET IF IDLE FOR LONG PERIODS OF TIME

If people will not be using the boat for a long time (vacation, maintenance, off-season, etc.), or in the event of a long electrical power interruption, electrical power and water supply to the toilet and vacuum generator should be shut off.

7.5 Clearing blockage in toilet base

1. Open the flush ball in Service Mode.
2. Pull the foreign material from the 1-inch diameter orifice at the bottom of the base or, using a small diameter blunt rod, attempt to push the blockage through the orifice.

7.6 Locating potential vacuum leaks in base assembly

The VacuFlush toilet is part of a vacuum system that includes a vacuum pump and vacuum tank (or a vacuum generator) and discharge plumbing lines. If a vacuum leak is suspected, special equipment will isolate the source of the leak. If the toilet is determined to be the source of the leak, there are three possible areas to investigate:

1. Flush ball and flush ball seal. See Problem 11 in Troubleshooting Guide.
2. O-rings on the rotor shaft.
3. O-rings around bottom of toilet base assembly.

Sources 1 and 2 will require the base assembly to be removed from the toilet and partially disassembled.

7.7 Winterizing

At the end of each season, the VacuFlush toilet system should be winterized for storage. Follow this procedure:

1. Pump out holding tank.
2. Thoroughly flush system with fresh water.
3. Drain freshwater tank.
4. Add freshwater antifreeze to freshwater tank.
5. Flush freshwater water antifreeze and water mixture through toilet and into the waste holding tank. Each installation is different, so amounts may vary. User discretion is required to assure adequate protection.
6. Empty holding tank.



Note

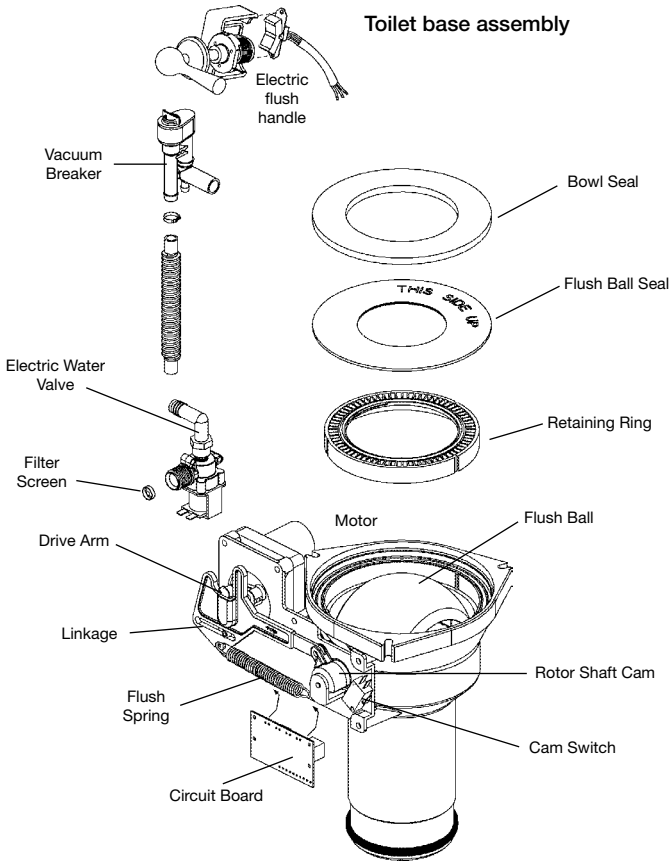
Use nontoxic antifreeze designated for potable water systems. (See boat or vehicle owner's manual.)



Caution

Never use automotive-type antifreeze in freshwater systems.

7.8 Troubleshooting guide

**Caution**

Use an ohmmeter and wiring diagrams of toilet and vacuum system when troubleshooting electrical problems.

Problem	Possible Cause	Service Instruction
1. Water does not enter bowl and toilet does not flush.	<p>a. Toilet fuse or circuit breaker is tripped.</p> <p>b. Loose wire connections.</p> <p>c. Incorrect wiring of toilet to incoming power.</p> <p>d. Defective circuit board on toilet.</p>	<p>a. To check toilet fuse, turn off electrical power to toilet, wait 60 seconds, then turn on power to toilet. Check circuit breaker at main distribution panel.</p> <p>b. Check for loose or defective wire at circuit board pins 8 and 9.</p> <p>c. Check for reverse polarity of incoming power at circuit board – pin 8 (positive) and 9 (negative).</p> <p>d. Replace circuit board on toilet.</p>

Problem	Possible Cause	Service Instruction
2. Water enters toilet bowl, but toilet does not flush.	<ul style="list-style-type: none"> a. Green "OK to Flush" light is not lit on status panel. b. Electrical failure from flush switch or flush handle to toilet. c. Flush switch or handle may be defective. d. Loose flush ball motor wires. e. Defective flush ball motor. f. Flush ball motor drive arm failure. g. Drive linkage failure. 	<ul style="list-style-type: none"> a. Check for loose/defective wires between vacuum switch (on vacuum generator) and wire 6 of toilet circuit board. b. Check for loose/defective wires between flush switch or handle and pins 2 and 4 of toilet circuit board. c. Replace if necessary. d. Check for loose wires between motor and toilet circuit board pins 17 and 18. e. Replace if necessary. f. See page 15 for replacement instructions. g. See page 15 for replacement instructions.
3. Water does not enter toilet bowl, but toilet flushes.	<ul style="list-style-type: none"> a. Blocked water supply. b. Loose/defective wires. c. Defective water valve. d. Defective circuit board on toilet. 	<ul style="list-style-type: none"> a. Clear blockage in water line or filter screen at water valve inlet. b. Check wires between water valve and toilet circuit board pins 15 and 16. c. Replace water valve. d. Replace toilet circuit board.
4. Water does not enter toilet when pressing "Add Water" switch or raising flush handle.	<ul style="list-style-type: none"> a. Electrical failure. b. Defective flush switch or handle. c. Defective circuit board on toilet. 	<ul style="list-style-type: none"> a. Check wires between "Add Water" switch or flush handle and toilet circuit board pins 1 and 4. b. Replace flush switch or handle. c. Replace toilet circuit board.
5. Water does not shut off and toilet bowl overflows.	<ul style="list-style-type: none"> a. Debris inside water valve or defective water valve. b. Defective circuit board on toilet. 	<ul style="list-style-type: none"> a. Replace water valve. b. Replace toilet circuit board.
6. Flush ball cycles constantly between open and closed position.	<ul style="list-style-type: none"> a. Cam switch needs adjusted to align flush ball. b. Defective cam switch. c. Defective drive linkage. d. Defective rotor shaft cam. 	<ul style="list-style-type: none"> a. See page 14 for cam switch adjustment instructions. b. Replace cam switch. c. Replace drive linkage. See page 15 for instructions. d. Replace rotor shaft cam. See page 15 for instructions.
7. Flush ball opens slowly.	<ul style="list-style-type: none"> a. Excessive drag between flush ball and seal. b. Defective spring assembly. 	<ul style="list-style-type: none"> a. Clean surface of flush ball and under edge of seal. Lubricate with silicone grease or alcohol-free cooking spray. b. Replace spring.
8. Flush ball does not close completely.	<ul style="list-style-type: none"> a. Cam switch needs adjustment/flush ball alignment or replacement. b. Rotor shaft cam is loose or defective. 	<ul style="list-style-type: none"> a. See adjustment/alignment or replacement instructions on pages 14-15. b. See replacement instructions on page 15.

Problem	Possible Cause	Service Instruction
9. Flush ball does not open completely.	<ul style="list-style-type: none"> a. Rotor shaft cam is loose or defective. b. Weak or defective spring assembly. c. Excessive drag between flush ball and seal. 	<ul style="list-style-type: none"> a. See instructions for repair or replacement on pages 14-15. b. Replace spring. c. Clean surface of flush ball and under edge of seal. Lubricate with silicone grease or alcohol-free cooking spray.
10. Squeaky noise occurs during flush cycle.	<ul style="list-style-type: none"> a. Lubrication needed between flush ball and seal. b. Lubrication needed between drive arm/linkage joint. 	<ul style="list-style-type: none"> a. Lubricate with silicone grease or alcohol-free cooking spray. b. Lubricate joint with silicone grease.
11. Water does not stay in toilet bowl (leaks between flush ball and seal).	<ul style="list-style-type: none"> a. Flush ball seal is worn and needs replaced. b. Flush ball is scratched or worn and needs replaced. c. Cam switch/flush ball alignment needs adjustment. d. Bolts that hold base to toilet need tightened to 20-25 in.-lbs. 	<ul style="list-style-type: none"> a. See instructions on page 14 for replacement. b. See instructions on page 15 for replacement. c. See instructions on page 14 for adjustment. d. DO NOT OVERTIGHTEN or damage to toilet may occur.
12. Toilet flushes in both "Add Water" and "Flush" positions.	<ul style="list-style-type: none"> a. Defective circuit board on toilet. 	<ul style="list-style-type: none"> a. Replace toilet circuit board.
13. Water leaks from toilet onto floor.	<ul style="list-style-type: none"> a. Loose water line connection. b. Defective water valve. c. Toilet bowl seal is defective. d. Mounting bolts holding base to toilet need tightened to 20-25 in.-lbs. 	<ul style="list-style-type: none"> a. Tighten water line connections. b. Replace water valve. c. Replace bowl seal. See instructions on page 14. d. DO NOT OVERTIGHTEN or damage to toilet may occur.
14. Green "OK to Flush" light does not illuminate, but toilet flushes.	<ul style="list-style-type: none"> a. Loose wire at circuit board on toilet. b. Loose wire at status panel. c. Defective green light. d. Defective circuit board on toilet. 	<ul style="list-style-type: none"> a. Check wire connected to pin 3 of toilet circuit board. b. Check green wire at status panel. c. Replace status panel. d. Replace toilet circuit board.
15. Red "Do Not Flush" light does not illuminate.	<ul style="list-style-type: none"> a. Loose wire at circuit board on toilet. b. Loose wire at status panel. c. Loose or defective wire from "full tank" shut-down relay. d. Defective circuit board on toilet. 	<ul style="list-style-type: none"> a. Check wires connected to pins 5 and 7 of toilet circuit board. b. Check red wire at status panel. c. Repair or replace wire. d. Replace toilet circuit board.
16. Flush ball opens and closes, but waste does not leave bowl (no vacuum).	<ul style="list-style-type: none"> a. No electrical power to vacuum pump. b. "Full Tank" shut-down relay prevents vacuum pump from operating. c. Blockage inside bottom of toilet base. 	<ul style="list-style-type: none"> a. Check power wires, fuse or circuit breaker to vacuum pump. b. Pump out holding tank. c. See instructions to clear blockage (section 7.5, p.10).

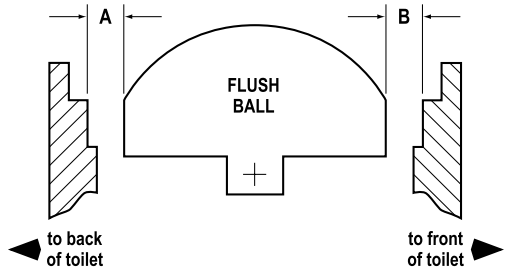
7.9 Servicing toilet base components

ALIGNING CAM SWITCH/FLUSH BALL

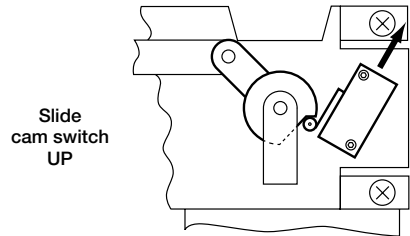
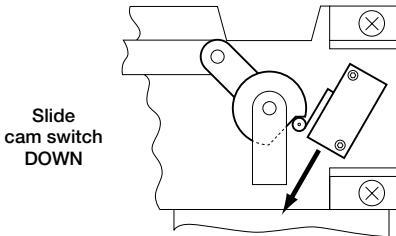
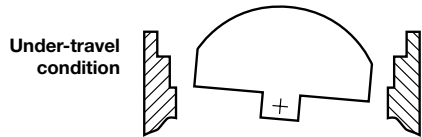
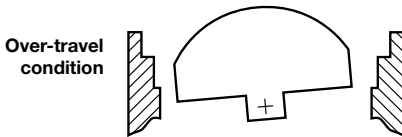
The flush ball should be properly positioned so that the "A" and "B" distances are equal (see illustration at right). If the flush ball becomes misaligned (resulting in water leaking from bowl or other flushing problems), follow instructions below to resolve problem.

REMOVING TOILET FROM FLOOR

1. Turn off water and electrical power to toilet.
2. Remove water inlet hose from toilet.
3. Remove toilet from floor and turn it upside down. **MAKE SURE POWER WIRES REMAIN SECURE.**
4. Loosen cam switch mounting screws with 3/32-inch hex tool and 1/4-inch box-end wrench. Slide cam switch up or down (see illustrations below) depending on flush ball position.



5. Tighten cam switch mounting screws, apply electrical power and check adjustment. Repeat as necessary.
6. After cam switch and flush ball are properly positioned, connect water line and reinstall toilet.



REPLACING THE FLUSH BALL SEAL

1. Turn off water and electrical power to toilet.
2. Remove water inlet hose from toilet.
3. Remove toilet from floor and turn it upside down. Disconnect Service Switch wires at in-line connectors.
4. Remove three nuts and flat washers securing base assembly to toilet bowl using a 1/4-inch drive ratchet wrench, 7/16-inch deep-well socket and extension.
5. Pull vacuum breaker out of the sealing grommet located in rear of toilet bowl.
6. Lift base assembly from toilet.
7. Replace old seals with a complete seal kit.
8. Reconnect base assembly to toilet with new mounting bolts (L-shaped) included with seal kit. Tighten nuts to 20-25 in.-lbs. torque.
9. Reconnect Service Switch wires. Reattach water inlet hose to toilet.
10. Reinstall toilet to floor.

REPLACING THE FLUSH BALL

1. Turn off water to toilet.
2. Open flush ball in Service Mode, then turn off power to toilet.
3. Disconnect water inlet hose.
4. Remove toilet from floor and turn upside down, and disconnect Service Switch wires at in-line connectors.
5. Pull vacuum breaker out of the sealing grommet located in rear of toilet bowl.
6. Remove three nuts and flat washers securing base assembly to ceramic toilet bowl using a 1/4-inch drive ratchet wrench, 7/16-inch deep-well socket and extension.
7. Lift base assembly from toilet.
8. Remove bowl seal, flush ball seal, and retainer plate to expose flush ball.
9. Loosen set screw in the rotor shaft cam using a 1/8-inch hex tool.
10. Remove the #8 x 1/4-inch long screw and flat washer from linkage slot.
11. Remove the four screws securing the mounting bracket to base.
12. Pull mounting bracket and rotor cam off base.
13. Rotate flush ball forward and remove flush ball retaining screw.
14. Replace flush ball and reverse disassembly through step 10.
15. Push rotor cam all the way onto rotor shaft. Tighten set screw.
16. Lubricate moving parts with silicone grease.
17. Before reassembling entire toilet, the cam switch may require adjustment. See "Aligning Cam Switch" on page 14.

REPLACING THE ROTOR SHAFT

1. Follow disassembly steps 1 through 14 under "Replacing the Flush Ball".
2. Pull rotor shaft out from inside of the base.
3. Lubricate O-rings on new shaft with silicone grease.
4. Align flat section on rotor shaft with flat section in cam during assembly. Push rotor shaft cam fully onto rotor shaft. Tighten set screw.
5. Lubricate moving parts with silicone grease.
6. Reverse the disassembly procedure.
7. Before attaching base to toilet, the cam switch may require adjustment. See "Aligning Cam Switch" on page 14.

REPLACING THE ROTOR SHAFT CAM

1. Follow disassembly steps 1 through 14 under "Replacing the Flush Ball".
2. Remove linkage pin clip and pin.
3. Attach new rotor shaft cam to linkage using pin and clip.
4. Lubricate moving parts with silicone grease.
5. Reverse the disassembly procedure.
6. Before attaching base to toilet, the cam switch may require adjustment. See "Aligning Cam Switch" on page 14.

REPLACING THE MOTOR DRIVE ARM

1. Follow disassembly steps 1 through 11 under "Replacing the Flush Ball".
2. Remove the four motor mounting screws.
3. Remove the motor from the mounting bracket.
4. Loosen the Drive Arm set screw using a 3/32-inch hex tool, then remove old Drive Arm.
5. Install new Drive Arm and push onto motor shaft as far as possible. Tighten the set screw.
6. Lubricate moving parts with silicone grease.
7. Reverse disassembly procedure.
8. Before attaching base to toilet, the cam switch may require adjustment. See "Aligning Cam Switch" on page 14.

REPLACING THE DRIVE LINKAGE

1. Follow disassembly steps 1 through 13 under "Replacing The Flush Ball".
2. Remove linkage pin clip and pin at rotor shaft cam.
3. Remove the flush spring retaining screw and washer from the retaining post.
4. Remove the flush spring from the old linkage.
5. Insert the flush spring into the new linkage and reattach the spring to the retaining post.
6. Attach linkage to rotor shaft cam using pin and clip.
7. Lubricate moving parts with silicone grease.
8. Reverse the disassembly procedure.

8 Warranty and product liability

North America and Rest of the World:

Manufacturer's One-Year Limited Warranty

Dometic Corporation, Sanitation Division warrants to the original purchaser only that this product, if used for personal, family or household purposes, is free from defects in material and workmanship for a period of one year from the date of purchase.

If this Dometic product is placed in commercial or business use, it will be warranted to the original purchaser only to be free of defects in material and workmanship for a period of ninety (90) days from the date of purchase.

Dometic reserves the right to replace or repair any part of this product that proves, upon inspection by Dometic, to be defective in material or workmanship. All labor and transportation costs or charges incidental to warranty service are to be borne by the purchaser-user.

EXCLUSIONS

IN NO EVENT SHALL DOMETIC BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, FOR DAMAGES RESULTING FROM IMPROPER INSTALLATION, OR FOR DAMAGES CAUSED BY NEGLIGENCE, ABUSE, ALTERATION OR USE OF UNAUTHORIZED COMPONENTS. ALL IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, ARE LIMITED TO A PERIOD OF ONE YEAR FROM DATE OF PURCHASE.

IMPLIED WARRANTIES

No person is authorized to change, add to, or create any warranty or obligation other than that set forth herein. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one (1) year from the date of purchase for products used for personal, family or household purposes, and ninety (90) days from the date of purchase for products placed in commercial or business use.

OTHER RIGHTS

Some states do not allow limitations on the duration of an implied warranty and some states do not allow exclusions or limitations regarding incidental or consequential damages; so, the above limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

To obtain warranty service, first contact your local dealer from whom you purchased this product or go to <http://www.dometic.com> to locate a dealer near you.

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Europe:**Warranty and Customer Service**

Warranty arrangements are in accordance with EC Directive 44/1999/CE and the normal conditions applicable for the country concerned. For warranty or other service, please contact our Dometic Customer Service department. Any damage due to improper use is not covered by the warranty.

The warranty does not cover any modifications to the product or the use of non-original Dometic parts; the warranty does not apply if the installation and operating instructions are not adhered to and no liability shall be entertained.

Product Liability

Product liability of Dometic Group and its subsidiary companies does not include damages which may arise from: faulty operation; improper alterations or intervention in the equipment; adverse effects from the environment which may impact the equipment itself or the direct vicinity of the equipment or persons in the area.

To obtain warranty service, first contact your local dealer from whom you purchased this product or go to <http://www.dometic.com> to locate a dealer near you.

9 Customer service

There is a strong, worldwide network to assist in servicing and maintaining your sanitation system. For the Authorized Service Center near you, please call from 8:00 a.m. to 5:00 p.m. (ET) Monday through Friday.

You may also contact or have your local dealer contact the Parts Distributor nearest you for quick response to your replacement parts needs. They carry a complete inventory for the SeaLand product line.

Telephone:	1 800-321-9886	U.S.A. and Canada
	330-439-5550	International
Fax:	330-496-3097	U.S.A. and Canada
	330-439-5567	International
Web site:	http://www.Dometic.com	

Notes

Dometic Group is a customer-driven, world-leading provider of leisure products for the RV, automotive, truck and marine markets. We supply the industry and aftermarket with a complete range of air conditioners, refrigerators, awnings, cookers, sanitation systems, lighting, mobile power equipment, comfort and safety solutions, windows, doors and other equipment that make life more comfortable away from home.

Dometic Group supplies a wide range of workshop equipment for service and maintenance of built-in air conditioners. Dometic Group also provides specially designed refrigerators for hotel rooms, offices, wine storage and transport and storage of medical products.

Our products are sold in almost 100 countries and are produced mainly in wholly-owned production facilities around the world.

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