

ATLANTES FREEDOM™ TOILET with VORTEX-VAC™

Installation and Maintenance Instructions MODEL AVL (ELONGATED BOWL)

THE FOLLOWING ARE CAUTIONARY STATEMENTS THAT MUST BE READ AND FOLLOWED DURING BOTH INSTALLATION AND OPERATION.

WARNING: *Raritan Engineering Company, Inc. recommends that a qualified person or electrician install this product. Equipment damage, injury to personnel or death could result from improper installation. Raritan Engineering Company, Inc. accepts no responsibility or liability for damage to equipment, injury or death to personnel that may result from improper installation or operation of this product.*



WARNING: HAZARD OF SHOCK OR FIRE

Always use recommended fuse, circuit breaker and wire size.



Motors used with this product are "Ignition Protected". They are not however, explosion-proof.

DO NOT run continuously for more than 30 seconds.

WARNING: HAZARD OF FLOODING



Always shut off seacock(s) before leaving the boat unattended. Double clamp all below waterline hose fittings and check frequently for integrity.

Description:

Our Atlantes Freedom with Vortex-Vac elongated toilet is available in white or bone, 12V, 24V DC, and 120V/240V AC. Fresh Water Model utilizes onboard pressurized fresh water. Raw Water Pump Model utilizes a remote intake pump to pump raw water to the bowl. The Sea/Fresh Model can switch between fresh and raw water source.

Flush control options available:

Flush Handle Control: Provides momentary operation of flush water and discharge. Available in momentary or timed.

Smart Toilet Control (STC): Provides timed operation and independent control of flush water and discharge with handle or wall switch.

Multifunction Flush Panel

(221600 [White] or 221600B [Black]): Provides momentary operation and independent momentary control of flush water and discharge.

Wireless Remote Bluetooth Control (STCBL):

Operate your Atlantes smart toilet control panel up to 50 ft. (15 m) away from the toilet. Eliminates the need to route wires through bulkheads and cabinetry.

Pressurized Fresh Water Model



Remote Raw Water Pump Model



1-800-352-5630

www.raritaneng.com

IMPORTANT SAFETY INSTRUCTIONS:

Toilets mounted at or below the waterline must have a vented loop installed in the discharge line. The top of the vented loop must be a minimum of 4" (10 cm) above the waterline at the boat's greatest angle of heel (see vented loop manufacturer's instructions).

Remote Raw Water Pump Models must also have a vented loop installed between the intake pump and the toilet bowl.

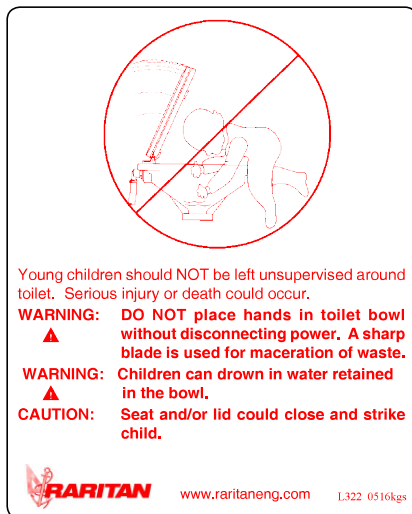
Double clamp all below waterline connections.

Always replace circuit breaker and fuses with same rating. Use Raritan parts to maintain ignition protection requirements.

WARNING:

Young children should NOT be left unsupervised around toilet. Serious injury or death could occur. A sharp blade is used for maceration of waste. Children can drown in water retained in the bowl. Seat and/or lid could close and strike child.

Install the Warning Label (L322) where it can be easily seen.

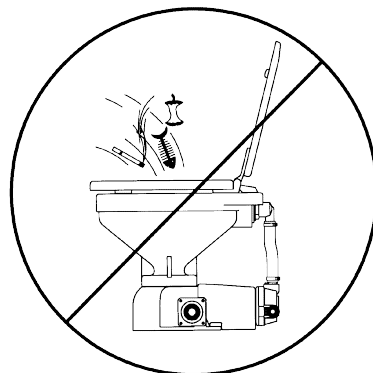
**Cleaning Instructions**

IMPORTANT: Do not use cleaners that contain ammonia, ethyl acetate, phosphoric acid or concentrated chlorine bleach. Do not allow acids, such as vinegar, and other cleaners to sit for extended periods of time in the toilet. These may cause damage to the toilet. Do not use abrasive cleaners or cleaning pads. Flushing fresh water through toilet when leaving for extended periods is recommended.

Using C.P. a bio-enzymatic toilet bowl cleaner (available from Raritan Engineering Part # 1PCP32) will keep the bowl clean and fresh smelling.

Recommended Visual Inspection

- No leaks at toilet and hose connections
 - Hose clamps
 - Condition of hoses
 - Seacocks
 - Condition of wires and connections
 - In-Line Strainer (if installed)
-
- No special toilet paper is required.
 - Water should appear in the bowl within ten seconds. If not, see troubleshooting section.
 - Hard objects or stringy substances (paper towels, feminine hygiene products, cigarette filters, etc.) must not be thrown into the toilet as they will cause damage.
 - Always shut off seacock(s) before leaving the boat unattended.



SYSTEM START-UP

1. Open seacock(s).

NOTE: Pressurized fresh water models; open water source valve.

2. Turn on power to toilet.
3. Flush toilet per Control Operation Instructions.
4. Check for leaks.

IMPORTANT: If toilet does not flush properly or if water does not enter the bowl within 10 seconds, refer to Troubleshooting.

WINTERIZING

- Improper winter lay up is a major cause of marine toilet failure.
- Use only nontoxic antifreeze.
- Flush toilet several times to clear waste from system.
- Dispose of all antifreeze in accordance with local and federal regulations.
- Winterize holding tanks, plumbing, treatment systems (MSD's), etc. independently following manufacturer's instructions.

Winterizing Pressurized Fresh Water Models

Parts Required

- 1" (25 mm) or 1 1/2" (38 mm) I.D. discharge hose, approximately 3 feet (1m) long
- Two buckets
- Nontoxic antifreeze approximately 1 quart (1 liter)

Steps

1. Close discharge seacock (if one exists).
2. Shut off intake water at source.
3. Turn off power to unit.
4. Disconnect and drain intake and discharge hose.
5. Disconnect intake hoses from toilet and place in one of the buckets.
6. Connect short hose to toilet's discharge and place in other bucket.
7. Pour antifreeze in bowl.
8. Turn on power to unit and flush until antifreeze is removed from the bowl and water is drained from the solenoid and hose.
9. Disconnect power to toilet.
10. Reconnect intake hoses to water solenoid.

Winterizing Raw Water Pump Models

Parts Required

- 3/4" (19 mm) I.D. intake hose approximately 3 feet (1m) long.
- 1" (25 mm) or 1 1/2" (38 mm) I.D. discharge hose approximately 3 feet (1 m) long.
- Two buckets
- Nontoxic antifreeze approximately 1 quart (1 liter)

Steps

1. Close the intake and discharge seacocks.
2. Turn off power to unit.
3. Disconnect and drain pump intake hose and discharge hose.
4. Connect short hoses to toilet's pump intake and discharge.
5. Place one bucket under hose connected to toilet's discharge.
6. Pour nontoxic antifreeze in other bucket.
7. Place hose connected to intake pump into bucket with antifreeze.
8. Turn on power to unit and flush toilet until antifreeze begins to be discharged from toilet.
9. Disconnect power from toilet.

RECOMMISSIONING

1. Using the buckets, hoses and approximately 1 gallon (3.8 liters) of clean fresh water, flush antifreeze out of the toilet (see Winterizing). Dispose of antifreeze in accordance with local and federal regulations.
2. Reconnect the intake and discharge hoses and open both seacocks and water source valve.
3. Check all connections for leaks with several test flushes.

Plumbing

Maximum suction of Intake pump (Maximum height above waterline)	4 Ft. (1.2m) from Intake Pump.
Maximum height of discharge vented loop	10 Ft. (3 m) from base of toilet.
Pressurized water source minimum requirements	Minimum fLow rate 3 gallons (11.5 liters)per minutes, Minimum Pressure 5 PSI(34.5 Kpa)

NOTES: for Wiring

1.	Distances are from source to unit and back to source.
2.	Distance from power source to remote intake pump MUST be included when determining total distance. Same wire size MUST be used for lower base and remote intake pump.
3.	Recommended conductor wire minimum AWG (mm²) for 3% voltage drop.
4.	Recommended conductor sizes are based on 105°C rated insulation. Refer to ABYC Standards for other insulation ratings.
5.	For 120/240 VAC units use 12VDC specifications from transformer to unit.

Hose Sizes

Inlet:

1/2" (13 mm) for Fresh Water Model

3/4" (19 mm) for Raw Water Model

Discharge:

1" (25 mm) or 1 1/2" (38 mm)

CONVERSIONS

Wire - AWG to mm²

AWG	16	14	12	10	8	6	4	2
mm²	1.5	2.5	4.0	6.0	10.0	16.0	25.0	35.0

Feet to Meters

Feet	10	15	20	25	30	40	50
Meter	3.1	4.6	6.1	7.6	9.2	12.2	15.2

Recommended Wire and Fuse/Circuit Breaker Sizes

Raw Water Model (sizes based on both remote intake and discharge pumps amps added together)

Units Voltage	Circuit Breaker/ Fuse size	Toilet Discharge Pump amp draw	Remote Intake Pump amp draw	10 feet	15 feet	20 feet	30 feet	40 feet	50 feet
12 VDC	30	18	10	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG
24 VDC	20	10	5	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG

Pressurized Fresh Water Model

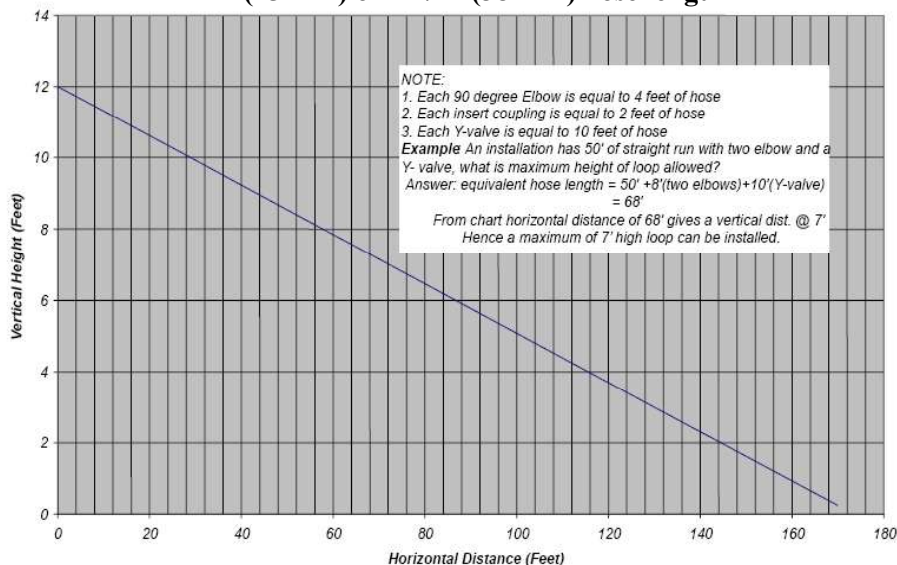
Units Voltage	Circuit Breaker/ Fuse size	Amp draw	10 feet	15 feet	20 feet	30 feet	40 feet	50 feet
12 VDC	25	18	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG
24 VDC	15	10	16 AWG	16 AWG	14 AWG	12 AWG	10 AWG	10 AWG

Remote Intake Pump Only (Raw and Sea/Fresh Models)

Units Voltage	Circuit Breaker/ Fuse size	Amp Draw	10 feet	15 feet	20 feet	30 feet	40 feet	50 feet
12 VDC	15	10	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG
24 VDC	10	5	16 AWG	16 AWG	16 AWG	16 AWG	14 AWG	12 AWG

Atlantes discharge Maximum recommended:

1" (25 mm) or 1 1/2" (38 mm) hose length

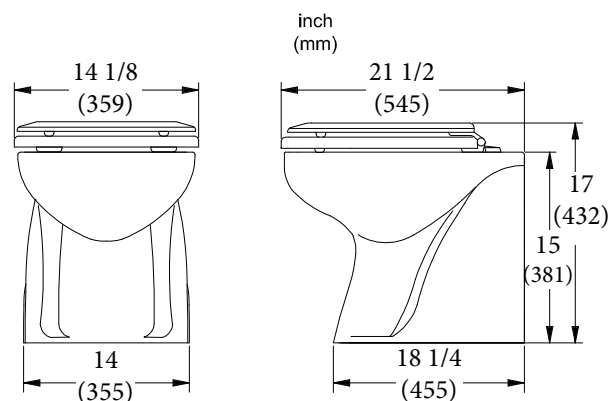


Water Consumption:

Water Saver : 2 pint*

Regular Flush: 2 quarts

* requires timing adjustment



Parts included with all models:

1. Toilet bowl assembly
2. Mounting bracket kit
3. Seat and Cover
4. Flush control - includes QR code for Operation and Installation Guides
5. QR code for Installation and Maintenance Guide
6. Warning Labels

Parts included with Raw Water Model:

1. Remote pump assembly
2. Sea/Fresh models include relay for remote pump

Additional parts required (not included):

- 1" (25 mm) or 1 1/2" (38 mm) I.D. discharge hose
- Reinforced intake hose:
Raw: 3/4" (19 mm)
Fresh: 1/2" (13 mm)
- 3/4" (19 mm) and 1" (25 mm) or 1 1/2" (38 mm) hose clamps (two for each connection below waterline)
- Wire (See specification chart)
- Terminals
- Fuse/circuit breaker (See specification chart)
- Strainers are optional and recommended:
Fresh Water Strainer part 190601
Raw Water Strainer part 163000

MOUNTING

1. Place toilet where it will be located.
Make sure there is room to route hoses.
Make sure seat will open properly.
2. Using a pencil, mark location of bowl mounting holes (FIG 2).
3. A. If hoses will be routed through floor, trace one side of toilet on floor.
B. If hoses will be routed through wall, trace one side of toilet on wall.
4. Remove toilet and mark location for hoses and wiring on deck or wall.
5. Cut necessary holes for hoses and wiring.

NOTE: Check outside diameter of hoses and adjust accordingly.

• Discharge Hose Opening:

- 1 1/2" Hose: 2" (51 mm)
- 1" Hose: 1 1/2" (38 mm)

• Inlet Hose Opening:

- FRESH: 7/8" (22 mm)
- RAW: 1" (25 mm)

• Wiring Hole Opening:

- 3/4" (19 mm)

6. Drill holes for toilet mounting bolts/screws.

NOTE: Use 1/4" (6 mm) size bolts/screws. To select proper screw or bolt length, measure thickness of deck plus 1 1/8" (29 mm).

TIP: Do not install until all wiring and plumbing is done. Secure toilet to floor after installation is complete.

Mounting Toilet

1. Connect plumbing and wiring before mounting toilet.
2. Tighten bolts being careful to not overtighten (Do not exceed 30 inch lb. when tightening).
3. Install caps over mounting bolts.

Mounting surface must be flat and solid.
Seat must open more than 90 degrees.

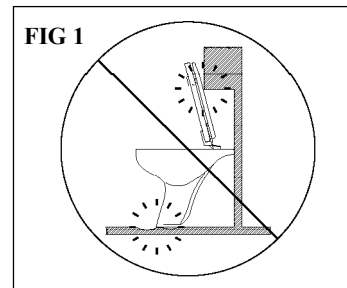
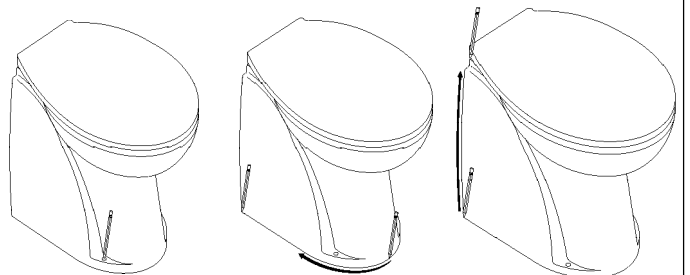
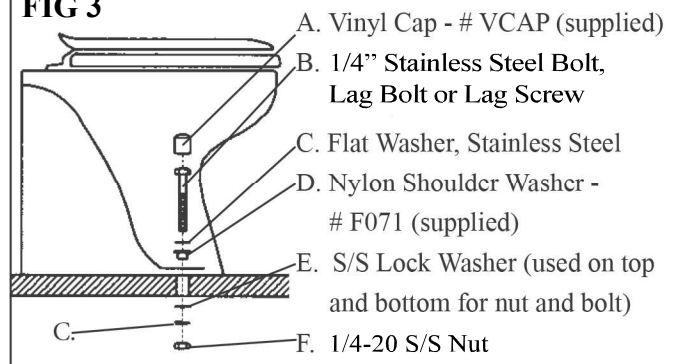


FIG 2



CAUTION: Do Not over tighten mounting bolts.
Damage to the toilet bowl may occur. Tighten both mounting bolts evenly and slowly.

FIG 3



PLUMBING

PLUMBING

WARNING: HAZARD OF FLOODING

Toilets mounted at or below the waterline, at greatest angle of heel, and connected to a Seacock/Thru Hull Fitting(s) **MUST** have **VENTED LOOPS** installed in toilet discharge plumbing and between raw water intake pump and toilet bowl.

Install vented loops per manufacturer's instructions. Double clamp all below-waterline connections.

IMPORTANT

- Discharging untreated sewage is forbidden in all U. S. waters within the three-mile limit.
- Fittings and 90° bends should be kept to a minimum.
- In-Line Strainer may be installed on raw water models to prevent clogs.
- Thru-hull fittings and seacocks must be installed where they are easily accessible.
- Use only quality reinforced hoses such as Raritan SANIFLEX HOSE.
- Secure all hoses properly.

Residual Water in the Bowl

The Atlantes Internal Discharge Hose is equipped with an integral vent to maintain water, up to 4" (10cm), in the bowl when the plumbing lines are routed downward (See FIG 7a and FIG 7b). A flush control that adds water at the end of the flush cycle, such as our Smart Toilet Control (STC), is required for optimal water retention. The toilet must be highest connection in the discharge plumbing when using this vent to retain water in the bowl. IF THE DISCHARGE PLUMBING IS ROUTED UPWARD (such as below water line installations).

DO NOT REMOVE THE VENT CAP (FIG 7b).

To enable Integral Vent, remove Vent Cap (FIG 8), connect 1/4" hose and connect hose to a deck vent fitting (Reference FIG 6). Hose and deck fitting not included.

FIG 5 Pressurized Fresh Water Model installed below waterline

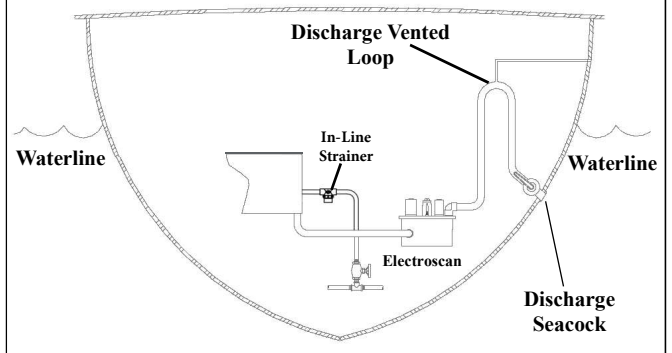


FIG 6 Remote Raw Water Pump Model mounted below waterline

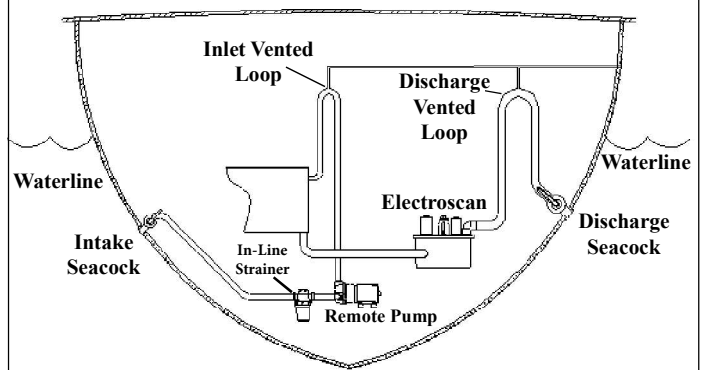
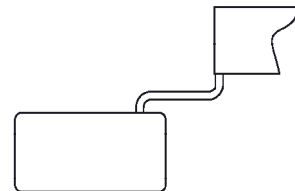


FIG 7a



Toilet Installed above waterline or above Treatment Device and or Holding Tank = Downward discharge flow
Remove vent cap

FIG 7b

Toilet installed below waterline or below Treatment Device and or holding Tank = Upward discharge flow
Do not remove vent cap

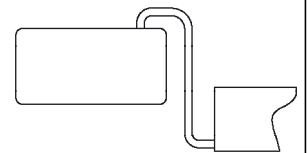
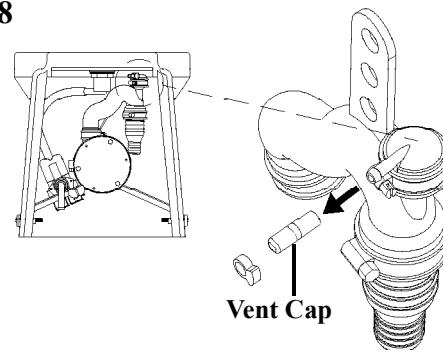


FIG 8



Discharge Lines

Raritan Sanitation Hose is recommended

SaniFlex Hose Part numbers:

SFH 1 1/2 inch (38 mm)

SFH1 1 inch (25 mm)

1. Connect sanitation hose to discharge fitting on toilet.

NOTE: Discharge fitting is designed for 1" (25 mm) or 1 1/2" (38 mm) hose. 1 1/2" (38 mm) hose is secured at top of fitting and 1" (25 mm) is secured at the bottom. It is not necessary to remove the 1" (25 mm) barb if using 1 1/2" (38 mm) hose. Use the fitting as is.

2. Run hose to appropriate device (e.g.: treatment system, holding tank, etc.).

NOTE: If installation requires routing through the backwall rather than the floor, 90 degree kits are available:

221147 for 1 1/2" (38 mm) hose

221148 for 1" (25 mm) hose.

Intake Lines

Pressurized Fresh Water Models

NOTE: To avoid malfunction of water solenoid due to debris in water, installation of Fresh Water Strainer (190601) is recommended.

1. Connect 1/2" (13 mm) I.D. hose to pressurized fresh water supply.
2. Install a shut off valve in intake line before toilet.
3. Connect hose from shut off valve to inlet fitting of water solenoid valve at the toilet.

Mounting Remote Pump

1. Remote pump uses 3/4" (19 mm) ID hose for connection. Preferably at or slightly above waterline.
2. Locate remote pump between thru hull fitting and toilet bowl.
3. Locate in an area away from berth to keep noise level down.
4. Use Inline Strainer, part 163000 (recommended) to avoid clogs.
5. Secure remote pump to the floor using four bolts through the pump base (FIG 10).

Connecting Remote Pump

Remote pump fittings are interchangeable to allow more flexibility during installation. Inlet ports are located on either side of intake pump. Outlet port (to toilet bowl) is at top of intake pump (FIG 11).

NOTE: To avoid poor pump performance installation of strainer (163000) is recommended

1. Slide fitting clips to open position (FIG 12)
2. Select inlet port to be used.
3. Install appropriate fittings into inlet and outlet ports.

NOTE: The 90° fitting can be rotated 360°.

4. Install the plug fitting into unused inlet port.

IMPORTANT: DO NOT install plug fitting into outlet port! Damage to pump will occur!

5. Slide fitting clips back to closed position (FIG 12).

6. Connect hose from seacock to inlet port of intake pump. If used, strainer is in-line. Use hose clamp provided.

IMPORTANT: Double clamp all below waterline hose connections!

7. Connect hose from outlet port of intake pump to bowl elbow located on back of toilet bowl.

FIG 9

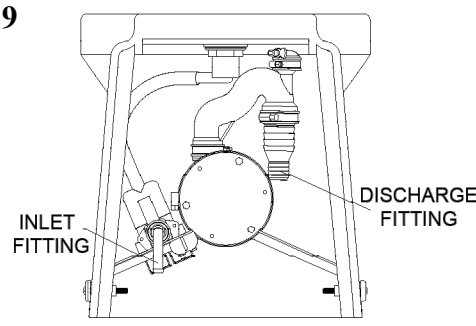


FIG 10

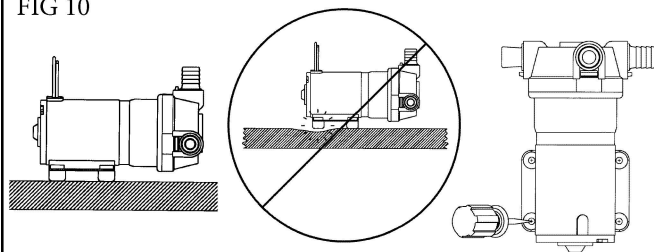


FIG 11

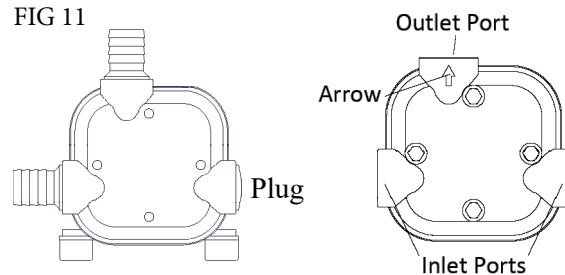
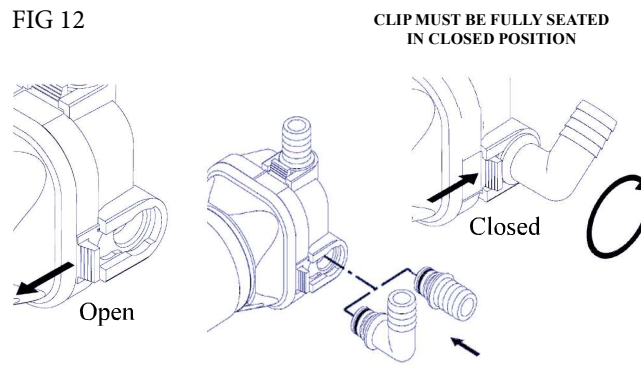


FIG 12



WIRING CONTROLS FOLLOW THE INSTRUCTIONS INCLUDED WITH FLUSH CONTROL

Connect Hoses and wiring to toilet

- Route wire from control per wiring diagrams.
- Install seat. Install discharge support strap between seat nut and the bowl (FIG 13).

Caution: To avoid kinking, do not pull on the discharge hose. Be certain there is no pressure on the discharge line.

Mount toilet

- Install mounting bushings, bolts. (FIG 14)
- Tighten bolts being careful to not overtighten (Do not exceed 30 inch lb. when tightening)
- Install caps over mounting bolts.

FIG 13

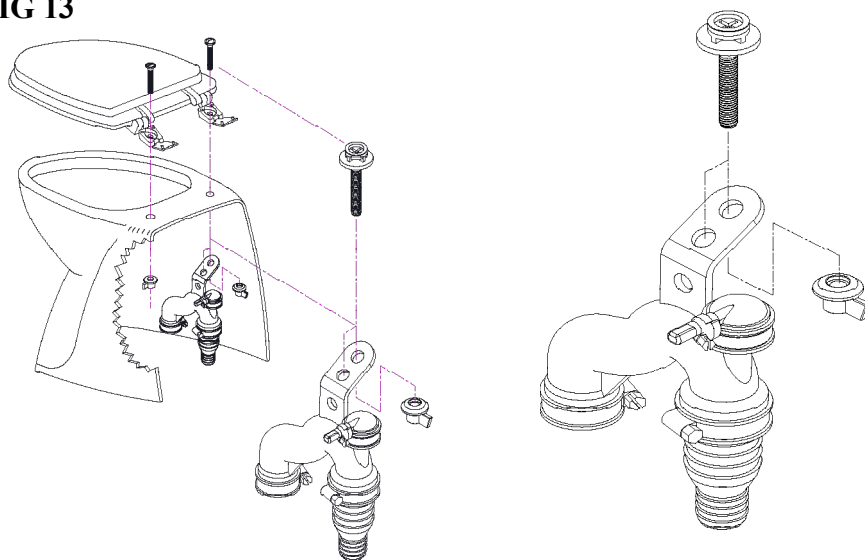
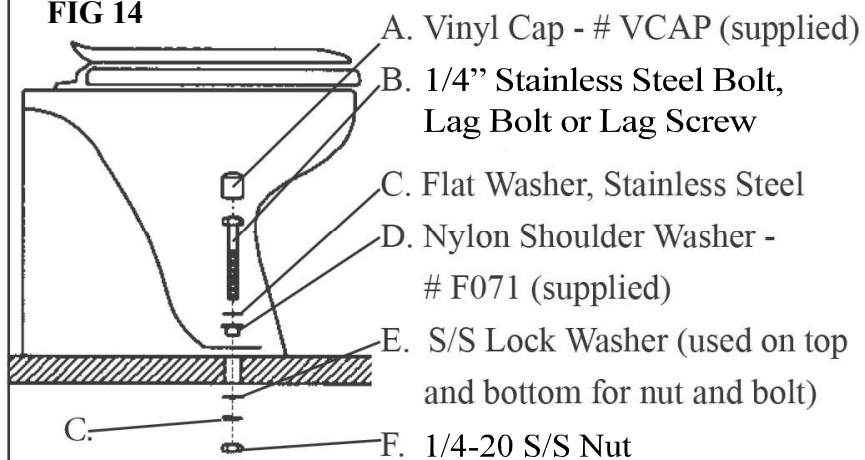


FIG 14



TROUBLESHOOTING

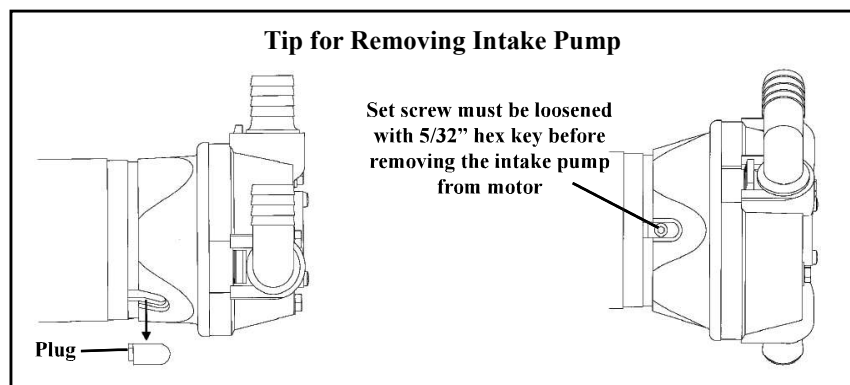
WARNING: HAZARD OF ELECTRIC SHOCK - Before beginning any work on the toilet, be sure that all power to the unit has been turned off.

WARNING: HAZARD OF FLOODING - Make sure seacocks are in the CLOSED or OFF position before working on toilet.

NOTE: The following information reflects the most probable causes and solutions to problems although not every possible cause and solution is provided.

Any questions regarding servicing or operation of the Marine Elegance should be directed to our Technical Support Department in Millville, NJ. Please have model and serial number available before calling.

PROBLEM	POSSIBLE CAUSE	SOLUTION
1. Poor pumpout, especially solids.	1A. Clogged discharge line. 1B. Plumbing restrictions, bends and ells. 1C. Clogged vents. 1D. Mineral buildup in hoses and fittings. 1E. Low voltage.	1A. Be sure discharge seacock is open. Clear line, remove clog. 1B. Replumb to eliminate bends and ells. 1C. Clean holding tank vent and vented loop vents 1D. Clean or replace affected parts. Replace hose if needed. 1E. Check voltage at toilet while toilet is running . If less than nominal voltage of toilet (12 or 24), check condition of batteries and wire sizes. Check terminals and wire connections for corrosion (heat at terminals and junctions indicates a bad or corroded connection).
2. Poor water flow, especially at front of bowl (or no water flow).	2A. Toilet not level. 2B. Restriction in intake line. 2C. Pump sucking air. 2D. Low voltage. 2E. Clogged strainer.	2A. Raise rear of toilet; check with level. 2B. Be sure seacock is open. Clear line-remove clog. 2C. Check all connections from intake thru-hull to intake pump to be sure no air leaks are present. 2D. See 1E, above. 2E. Remove or Clear debris from strainer.
3. Foul odors from toilet area.	3A. "Marine life" lodged in rim of bowl. 3B. Permeated discharge hose. 3C. Sewage remaining in discharge line	3A. Remove and flush bowl with pressure hose to remove all material. Install strainer in intake line to avoid recurrence. 3B. Replace hose with Raritan sanitation hose (#SFH). 3C. Flush toilet longer; replace hose if permeated; reroute hose making a shorter run if possible.
4. Bowl fills while underway.	4A. Pressure buildup at seacocks.	4A. Close intake, then discharge seacock to determine which is causing problem. If discharge, be sure the vent or vented loop is clean. If intake, there is too much pressure on seacock; contact Raritan Technical Support.
5. Water leaking from under unit.	5A. Leaking Bowl Throat adapter. 5B. Leak at shaft seal. 5C. Leak from bowl spud. 5D. Leak at vacuum breaker	5A. Tighten adapter clamps. 5B. Check seal and motor shaft. 5C. Check and reseal bowl grommet 5D. Clean by gently pressing downward and turn clockwise 1/4 and remove cap and remove plastic piston and clean. Replace if needed.



ATLANTES FREEDOM WITH VORTEX VAC PARTS LIST - ELONGATED

ItemNo.	Part No.	Description
1	241101SC	Seat & Cover Slow Close (White)
1	AL030ASC	Seat & Cover Slow Close (Bone)
2	AL002W	Atlantes Bowl Elongated (White)
2	AL002AW	Atlantes Bowl Elongated (Bone)
3	M23A	#10 Lockwasher SS
4	1108A	10-32 SS Nut
5	53145	Macerator Blade
6	31-102	Motor Shaft Seal
7	221110	Discharge Pump Seal Plate
8	221105	O-Ring
9	161115	Impeller
10	221115	Discharge Pump Macerator Housing
11	31-114	Lock Nut 10-32 W/Nylon(3)
12	221012	Discharge Motor 12 VDC
12	221024	Discharge Motor 24 VDC
13	221125	Bowl Throat Adapter Clamp-Pump
14	AM221120	Bowl Throat Adapter
15	221126	Bowl Throat Adapter Clamp-Bowl
16	F035	Well Nut (2)
17	CH57	Rubber Slinger
19	AM021	Pump Mounting Bracket
20	221127	Discharge Motor Mounting Clamp
21	221141W	Discharge Hose (includes items 22 thru 28)
22	221135W	Joker Valve (2) (includes item 24)
23	221145	Discharge Adapter Fitting
24	221146	Joker Valve Insert
25	221160	Discharge Hose Clamp (small)
26	221165	Discharge Hose Clamp (large)
27	VLVE	Vent Valve Assembly
28	FC001A	Vent Valve Clamp
29	1236AW	Spud Assembly w/ BLACK seal
29	1236AWR	Spud Assembly w/ RED seal
30	F089	Screw: 1/4-20 x 2" (2)
31	F196	ME: Front Mounting Cap (2)
32	F195	Washer: Cup (2)
33	F071	Nylon Shoulder Washer (2)

REMOTE RAW WATER PUMP

40	166012A	Intake Pump Motor 12 VDC
40	166024A	Intake Pump Motor 24 VDC
41	162000W	Remote Intake Pump w/o Motor (includes items 45 and 46)
42	162405	3/4" Hose Barb 90° Fitting
43	162410	3/4" Hose Barb Sraight
44	162415	Plug Fitting
45	162420	Fitting Retaining Clip (3)
46	162425	O-Ring (3)
47	F162VT	Inlet Pump Mounting Bolt (4)
48	F144	#10 Washer SS Flat (4)
49	166000	Complete Remote Pump 12 VDC
49	166100	Complete Remote Pump 24 VDC
50	1236E	Elbow Adapter 3/4 FPT x 3/4 Barb

PRESSURIZED FRESH WATER UNITS

60	221362	Y Fitting
61	221353	Solenoid Valve 12 VDC D90
61	221354	Solenoid Valve 24 VDC D90
62	221358W	Inlet Adapter Assembly 90 Degrees
63	221361	Sealing Washer
64	F201	Screw: M4 x 10mm SS Phillips
65	PLA29	Elbow: 3/4 FPT x 1/2 Barbed
66	SF50W	Sea/Fresh: Check Valve HG

BOWL MOUNTED FLUSH HANDLE

70	AM665W	Handle SS W/Set Screw
70a	F104	Brass Panel Hex Nut
71	AV600W	Flush Control & Wire Harness
72	ETB3	Terminal Block 3 Poles
73	F108	Screw #4 x 7/8" (2)
74	HLWQB	1/4" Split Lock Washer (4)
75	M31	1/4" Brass Flat Washer (8)
76	31-722	Nylon Shoulder Washer (2)
77	F069	1/4" Fiber Washer (2)
78	HSB1	1/4-20 Brass Screw (2)
79	M30	1/4-20 Brass Nut

SMART TOILET CONTROL

STC Complete Smart Toilet Control Kit (12 & 24 VDC)

STCBL Complete Bluetooth STC Kit (12 & 24 VDC)

80	STC548W	STC Circuit Board w/Enclosure (12 & 24 VDC)
80	STC566W	Bluetooth STC Circuit Board w/Enclosure (12 & 24 VDC)
81	STC545	Control Cable 7 ft
82	221524	Wall Switch Cover Plate (White)
82	221524A	Wall Switch Cover Plate (Bone)
83	STC543W	Touch Wall Panel w/Back Plate
83	STC564	Bluetooth Touch Wall Panel w/Back and Gasket
84	221525	Touch Panel Gasket

MULTIFUNCTION FLUSH PANEL (NOT SHOWN)

221600	Multifunction Flush Panel, White
221600B	Multifunction Flush Panel, Black
221524	Wall Switch Plate, White
221524B	Wall Switch Plate Black
<u>Black / White</u>	
221601 / 221601W	Fill/Empty Switch
221602 / 221602W	Flush Switch
221603 / 221603W	Switch Actuator-Flush, Horizontal Panel
221604 / 221604W	Switch Actuator-Fill/Empty, Horizontal Panel
221605 / 221605W	Switch Actuator-Flush, Vertical Panel
221606 / 221606W	Switch Actuator-Fill/Empty, Vertical Panel

REPAIR/ REPLACE KITS

MERK	Discharge Pump Repair Kit (includes items 6, 8 and 22)
DIAPUMPRK	Intake Pump Repair Kit
2210012	12 VDC Discharge Assy (includes items 3 thru 12 & 21 thru 28)
2210024	24 VDC Discharge Assy (includes items 3 thru 12 & 21 thru 28)
162400	Fitting Kit (includes items 42 thru 44 and 46)

PARTS NOT SHOWN

RTME12D	Power Converter for 120/240 VAC UNIT
221335	Hose, 1/2"
221340	Hose Clamps, 1/2"

ADDITIONAL (OPTIONAL) ACCESSORIES AVAILABLE FROM RARITAN

91	221147	1 1/2" (38 mm) Thru Wall Discharge Kit
92	221148	1" (25 mm) Thru Wall Discharge Kit
1PCP32	C.P. Cleans Potties, 32 oz	
1PCHGAL	Cleans Hoses, Tanks and MSD (gal)	
1PKO32	Kills Odors, 32 oz	
KO2	Deodorant System (Raw water models)	
SFH	Sanitation Hose 1 1/2" (38 mm) (sold by foot)	
SFH1	Sanitation Hose 1" (25 mm) (sold by foot)	
163000	Raw Water Strainer	
190601	Fresh Water Strainer	
RTME12D	Power Converter for 120/240 VAC	
STCTSA	Holding Tank Full Sensor (Stick on) For use with STC Flush Control	
STCFL	Holding Tank Full Sensor (Float Switch) For use with STC Flush Control	

This exploded view diagram illustrates the assembly of a toilet flush valve. The main assembly includes the toilet seat (1), bowl (2), and the internal flush valve mechanism (3-11). Key components shown in the exploded view include the flush valve handle (12), the valve body (13), the valve seat (14), and the valve ball (15). The handle is connected to the valve body via a long rod (16) and a bracket (17). The valve body is mounted to the bowl via a bracket (18) and a nut (19). The valve seat is mounted to the valve body via a nut (20) and a washer (21). The valve ball is mounted to the valve seat via a nut (22) and a washer (23). The valve body is also connected to the water supply line via a bracket (24) and a nut (25). The handle is connected to the bowl via a bracket (26) and a nut (27). The bowl is mounted to the toilet base via a bracket (28) and a nut (29). The toilet base is mounted to the floor via a bracket (30) and a nut (31). The diagram also includes two inset details: one showing the seat (1) and bowl (2) assembly, and another showing the handle (12) and valve body (13) assembly. The parts are numbered 1 through 92.

L476 0525 jlc

LIMITED WARRANTY

Raritan Engineering Company warrants to the original purchaser that this product is free of defects in materials or workmanship for a period of one year from the product's date of purchase. Should this product prove defective by reason of improper workmanship and/or materials within the warranty period, Raritan shall, at its sole option, repair or replace the product.

1. TO OBTAIN WARRANTY SERVICE, Consumer must deliver the product prepaid, together with a detailed description of the problem, to Raritan at 530 Orange St., Millville, N.J. 08332. When requesting warranty service, purchaser must present a sales slip or other document which establishes proof of purchase. THE RETURN OF THE OWNER REGISTRATION CARD IS NOT A CONDITION PRECEDENT OF WARRANTY COVERAGE. However, please complete and return the owner Registration Card so that Raritan can contact you should a question of safety arise which could affect you.
2. THIS WARRANTY DOES NOT COVER defects caused by modifications, alterations, repairs or service of this product by anyone other than Raritan; defects in materials or workmanship supplied by others in the process of installation of this product; defects caused by installation of this product other than in accordance with the manufacturer's recommended installation instructions or standard industry procedures; physical abuse to, or misuse of, this product. This warranty also does not cover damages to equipment caused by fire, flood, external water, excessive corrosion or Act of God.
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Please have this available if support is needed.

SCAN for
Owners Manual



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SCAN for
Warranty Form



If you prefer a printed version of the Owners Materials:
Email: info@raritaneng.com

Questions on installation?
Email: techsupport@raritaneng.com



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