Marine Elegance Toilet

Installation and Maintenance Instructions

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

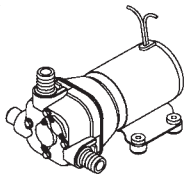Always use recommended fuse, circuit breaker and wire size.

Motors used with this product are "Ignition Protected". They are not however, explosion-proof as defined in 46CFR 110.15-65(e), Subchapter J-Electrical Engineering.

DO NOT run continuously for more than 30 seconds.

Pressurized Freshwater Model

Sea Water Model (Remote Pump)

Desription:
Marine elegance toilet is available in 12V or 24V DC. Bowls are available in four models: standard with angled back, standard with straight back, tall with angled back and tall with straight back.Fresh water model utilizes onboard freshwater, the Sea water model utilizes a remote pump installed between raw water source and bowl. Sea/Fresh model can switch between fresh and raw water source.

Three different control options are available:
1. **Smart flush control:** provides timed operation and independant control of water and discharge
2. **ME toilet control:** provides momentary operation and independant momentary control of water and discharge
3. **Push button switch:** providing only the ability to flush with no independant control of water or

RARITAN
The Most Dependable Name on the Water

IMPORTANT SAFETY INSTRUCTIONS:

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.

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" (10cm) above the waterline at the boats greatest angle of heel (see vented loop manufacturer's instructions).

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

Double clamp all below waterline connections.

 WARNING:

Young children should NOT be left unsupervised around toilet. Serious injury or death could occur.

Children can drown in water retained in the bowl.

Seat and/or lid could close and strike child.

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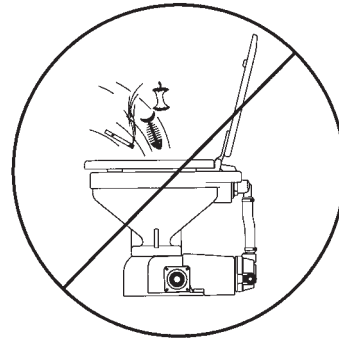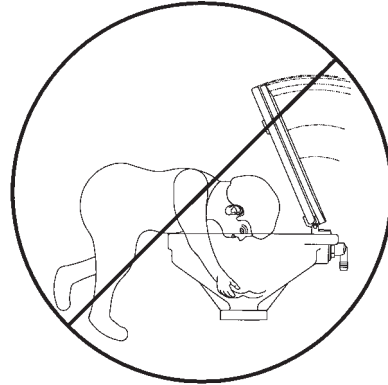
Recommended Visual Inspection

✓ For leaks at toilet and hose connections

✓ Hose clamps

✓ Condition of hoses

✓ Seacocks

✓ Condition of wires and connections

✓ In-Line Strainer (if you have one)

- 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, filter cigarettes, etc.) must not be thrown into the toilet as they will cause damage.
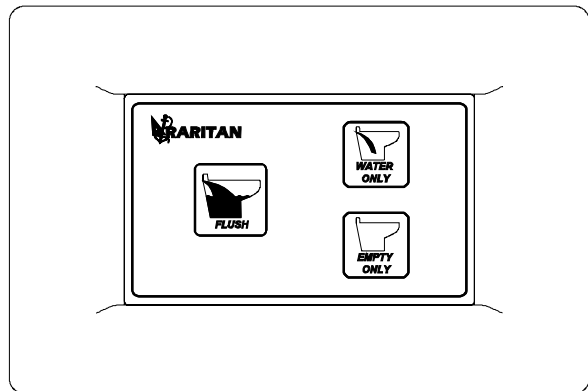- Always shut off seacock(s) before leaving the boat unattended.

A. Push Button Switch:

Press push-button switch and hold until all waste is cleared from the toilet bowl.

B. ME Toilet Control:

1. Press and hold "Water Only" to add water to the bowl
2. Press and hold "Empty" to evacuate the bowl
3. Press and hold "Flush" to bring water in while bowl is evacuating

C. Multifunction Smart Switch:

1. **Empty Only:** Press Empty Only button to evacuate the bowl. Discharge pump runs as long as this button is held.
2. **Water Only**: Press Water Only switch to add water in the bowl. Inlet water solenoid/pump runs as long as button is pressed with a seven seconds limit. After limit is reached Water Only button is disabled to prevent overflow of the bowl. To enable again, Empty Only button must be pressed.
3. **Normal:** Press normal button once and timed flushing cycle starts.
4. **Water saver:** Press the button and a water saver cycle starts.
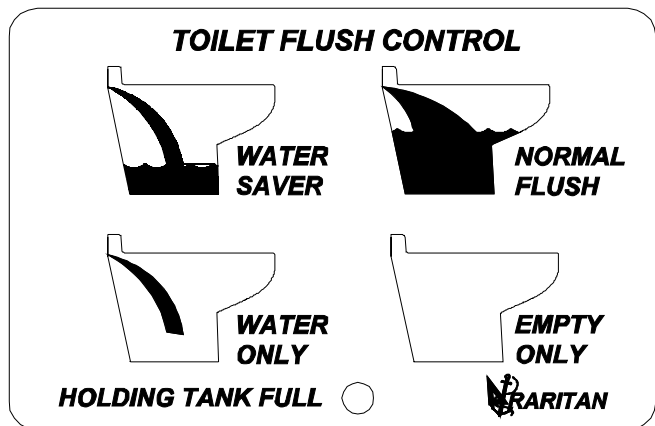
NOTE: Holding tank full light will only illuminate if the tank sensor has been added to the control.

Programming of Toilet Flush Control

NOTE: Flush control is set at factory to work in most installations and no additional programming is needed. Use following instructions to re-program if adjustment on water levels and timings are needed.

Programming timing for "NORMAL" flush cycle:

Normal cycle has initial fill time (T1), Discharge pump time (T2), and water retention fill time (T3). All three times (T1,T2 and T3) are programmable.

Factory setting : T1=3 sec, T2=2 sec, T3= 3 sec,

To change any of the above settings re-programming is needed

Step 1 – Placing the unit in program mode:

Hold the WATER ONLY & EMPTY buttons down together for three seconds. The Holding Tank Full LED will give three quick flashes indicating you have entered program mode - release both buttons.

Setting T1 initial fill time:

After placing the unit in program mode (Step 1 above) push the "Normal Flush" button the number of times required for the Water Valve/Inlet Pump time (one push = 1 sec's, two = 2 sec's., etc.) the Tank LED will flash once indicating a valid key push.

Note: If the button is pushed 9 times it will start back at 2 seconds. Once this is done, push the EMPTY button to store this value (the unit will flash three times indicating the time has been set and you have left program mode).

Setting T2 Discharge Pump Time:

After placing the unit in program mode (Step 1 above) push the EMPTY button the number of times required for the Discharge Pump time (one push = one second, etc.) the Tank LED will flash once indicating a valid key push.

Note: If the button is pushed 9 times it will start back at 1 second. Once this is done push the NORMAL button to store this value (the unit will flash three times indicating the time has been set and you have left program mode).

Setting T3 Water retention fill Time:

After placing the unit in program mode (Step 1 above) push the WATER ONLY button the number of times required for the Water Valve/Inlet Pump time (one push = ZERO sec's, two = 1 sec. three = 2 sec's., etc.) the Tank LED will flash once indicating a valid

key push. Note: If the button is pushed 9 times it will start back at zero.

Once this is done push the "NORMAL" button to store this value (the unit will flash three times indicating the time has been set and you have left program mode).

Programming the WATER ONLY Disable Features:

1. Hold the WATER ONLY & EMPTY buttons down together for three seconds. The holding tank full LED will give THREE flashes indicating you have entered program mode .

2. Push the WATER SAVER button. TheWATER ONLY and EMPTY buttons now can be disabled or enabled:

3. Pushing the WATER ONLY button will disable both WATER ONLY and EMPTY buttons. The holding tank full LED will give THREE flashes indicating you have left program mode.

Repeat steps 1 to 3 to re-enable these buttons.

The WATER ONLY button can be set to only work after the EMPTY button has been pushed: (prevents children from flooding the toilet)
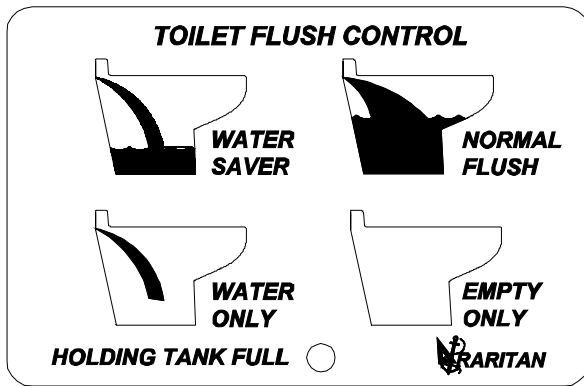
To program this feature

1. Repeat steps 1 and 2 above

2. Pushing the EMPTY button will enable this feature. The holding tank full LED will give THREE flashes indicating you have left program mode. Repeat steps 1 and 2 to disable these features.

Programming the Holding Tank Full Lockout Disable Features:

1. Hold the WATER ONLY & EMPTY buttons down together for three seconds. The holding tank full LED will give THREE flashes indicating you have entered program mode .

2. Push the WATER SAVER button. This will place control in disable/enable mode

3. Pushing the WATER SAVER button again. The holding tank full LED will give THREE flashes indicating you have left program mode.

Repeat steps 1 to 3 to re-enable Holding Tank Full Lockout feature..

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                TOILET FLUSH CONTROL

        WATER                    NORMAL
        SAVER                    FLUSH

        WATER                    EMPTY
        ONLY                     ONLY
    HOLDING TANK FULL  ◯        RARITAN
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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.

Pressurized Freshwater Models

Parts Required

• 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 discharge seacock (if one exists).
2. Shut off intake water at source.
3. Turn off power to unit.
4. Disconnect and drain discharge hose.
5. Disconnect intake hoses from water solenoid 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

Integral and Remote Intake Pump Models

Parts Required

3/4" (19 mm.) I.D. intake hose approximately 3 feet (1 m.) 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 intake hose and discharge hose .
4. Connect short hoses to toilet's 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 one 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.

SYSTEM START-UP

1. Open seacock(s).

NOTE: Pressurized freshwater models; open water source valve.

2. Turn on power to toilet.
3. Flush toilet per 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.

SPECIFICATIONS

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	flow rate of 2.5 gpm (9.4liters) at 10psi(70 K pa) shutoff pressure of 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 24VDC specifications from transformer to unit.

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

Hose Sizes
INLET

    1/2"(12.7 mm.) for freshwater model
    3/4" (19 mm.) for sea water model

**Discharge**

    1"(25.4 mm.) or 1 1/2"(38 mm.)

Sea Water Model - Recommended Wire and Fuse/Circuit Breaker Size

Units Voltage	Circuit Breaker/fuse size (amps)	Elegance toilet Amp. draw @ nominal Voltage/	Remote Pump Only Amp. draw @ nominal voltage	15 feet	20 feet	30 feet	40 feet	50 feet
12 VDC	**30**	**18**	**10**	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG
24 VDC	**20**	**10**	**5**	14 AWG	14 AWG	12 AWG	10 AWG	10 AWG

Pressurized Freshwater Model - Recommended Wire and Fuse/Circuit Breaker Size

Units Voltage	Circuit Breaker/fuse size (amps)	Amp. draw @ nominal voltage	10 feet	15 feet	20 feet	30 feet	40 feet	50 feet
12 VDC	**25**	**18**	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG	6 AWG
24 VDC	**15**	**10**	14 AWG	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG

**SIZE
See Table**
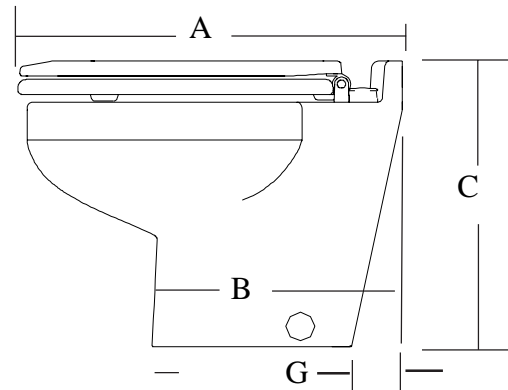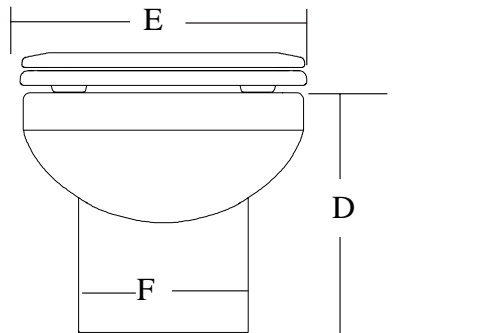
Parts included with all models

1. Toilet bowl assembly
2. Mounting bracket kit
3. Seat
4. One of the following flush controls:
       a. Push Button Control
       b. ME Toilet Control
       c. Multifunction Smart Control
5. User guide and Installation guide with labels

Additional Parts included with sea water model:
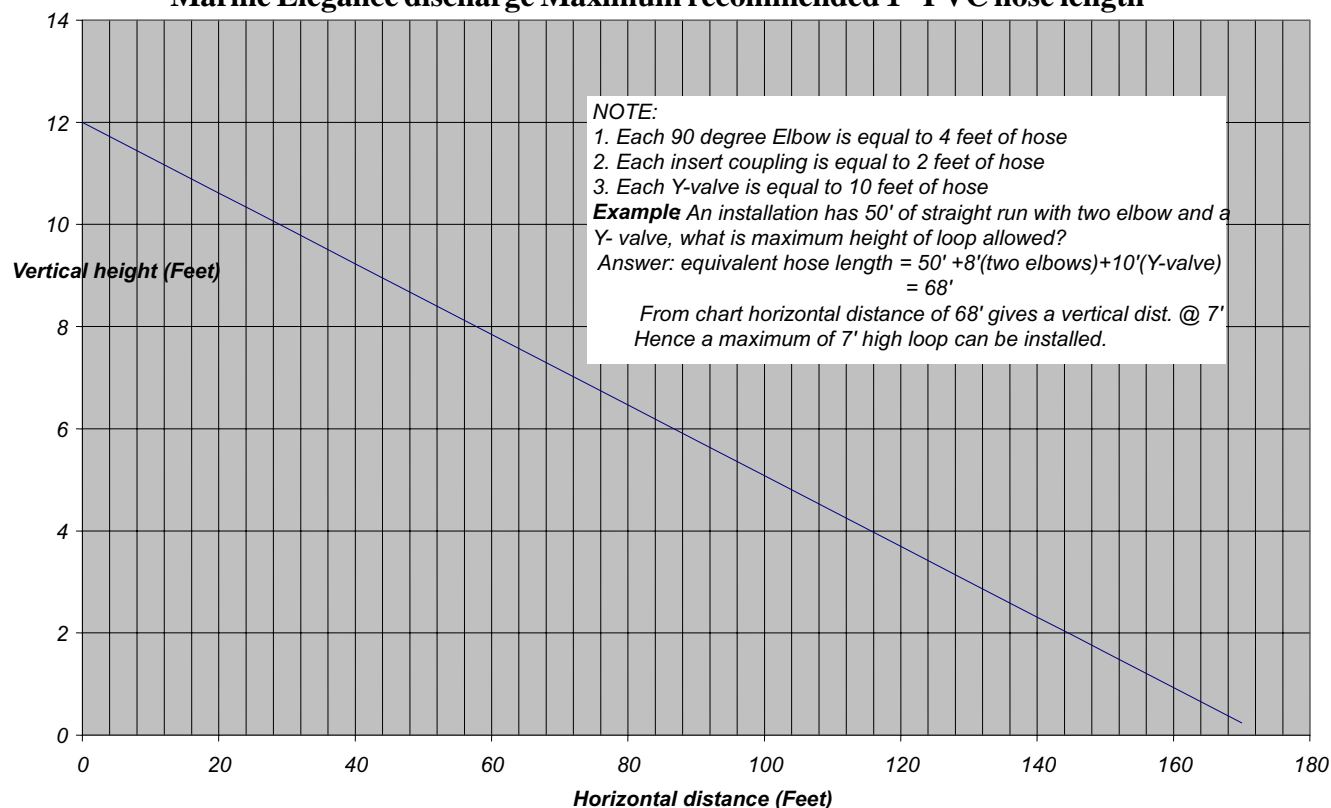
1. Remote pump assy.
2. Relay for remote pump

Additional Parts Required

- 1" (25 mm.) or 1 1/2" (38 mm.) I.D. discharge hose
- 3/4" (19 mm.) I.D. reinforced intake hose
- 3/4" (19 mm.) and 1" (25 mm.) or 1 1/2" (38 mm.) hose clamps (two for each connection below waterline)
- Wire
- Terminals
- Fuse/circuit breaker

Marine Elegance discharge Maximum recommended 1" PVC hose length

NOTE:
1. Each 90 degree Elbow is equal to 4 feet of hose
2. Each insert coupling is equal to 2 feet of hose
3. Each Y-valve is equal to 10 feet of hose
Example An installation has 50' of straight run with two elbow and a Y- valve, what is maximum height of loop allowed?
 Answer: equivalent hose length = 50' +8'(two elbows)+10'(Y-valve) = 68'
 From chart horizontal distance of 68' gives a vertical dist. @ 7'
 Hence a maximum of 7' high loop can be installed.

SIZE inch (mm.)

Bowl type	A	B	C	D	E	F	G
ME-angledback	18 3/8 (467)	12 1/4 (311)	14 (355)	12 (305)	14 (355)	8 1/2 (216)	2 1/8 (54)
ME-straightback	18 3/8 (467)	12 1/4 (311)	14 (355)	12 (305)	14 (355)	8 1/2 (216)	NA
ME-TALL angled back	18 3/8 (467)	12 1/4 (311)	17 (432)	15 (380)	14 (355)	8 1/2 (216)	2 1/8 (54)
ME-TALL Straight back	18 3/8 (467)	12 1/4 (311)	17 (432)	15 (380)	14 (355)	8 1/2 (216)	NA

MOUNTING

To install the toilet:

A. Prepare mounting location
B. Install plumbing
C. Install controls and complete wiring
D. Connect hoses and wiring to toilet
E. Mount toilet

Fig. 1

3/8"

A. Preparation for Mounting Toilet

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

1. Place the toilet and mark mounting holes'
   center line, and outside of the bowl
   (see FIG 1.) Draw a center line between two
   holes. Mark front hole outside and center and
   draw a line perpendicular to first center line.
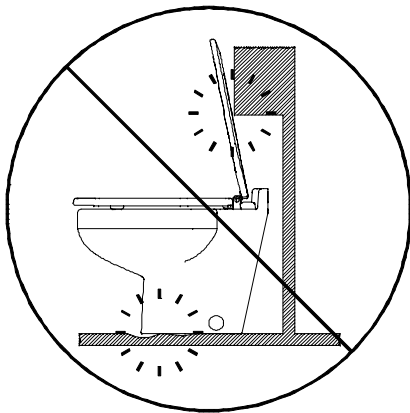
2. Mark three lines A, B, and C, 3/8" from outside
   lines.
3. Line up outside edges of the brackets with marked
   lines A, B, and C.
4. Secure the bracket assembly to deck using #14
   self threading bolts and flat washers.
   Note: place bolts as close to mark lines A, B,and
   C as possible
5. Drill holes for discharge (1 5/8" (41 mm.), inlet
   hose (7/8" (22 mm.) and wires (3/4"(19 mm.) using
   dimensions shown in Fig. 2.
   Note: check outside diameter of the hoses and
   adjust hole sizes accordingly.
6. Complete plumbing and wiring before installing
   toilet
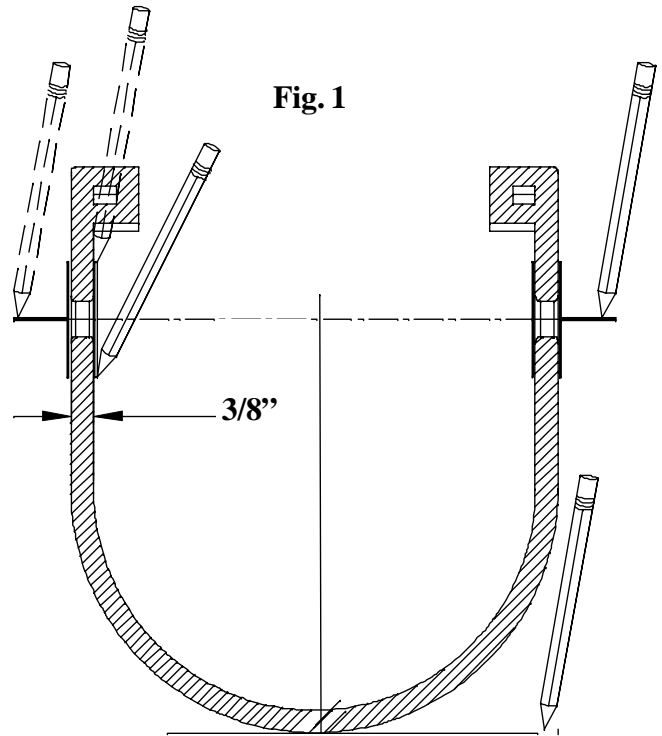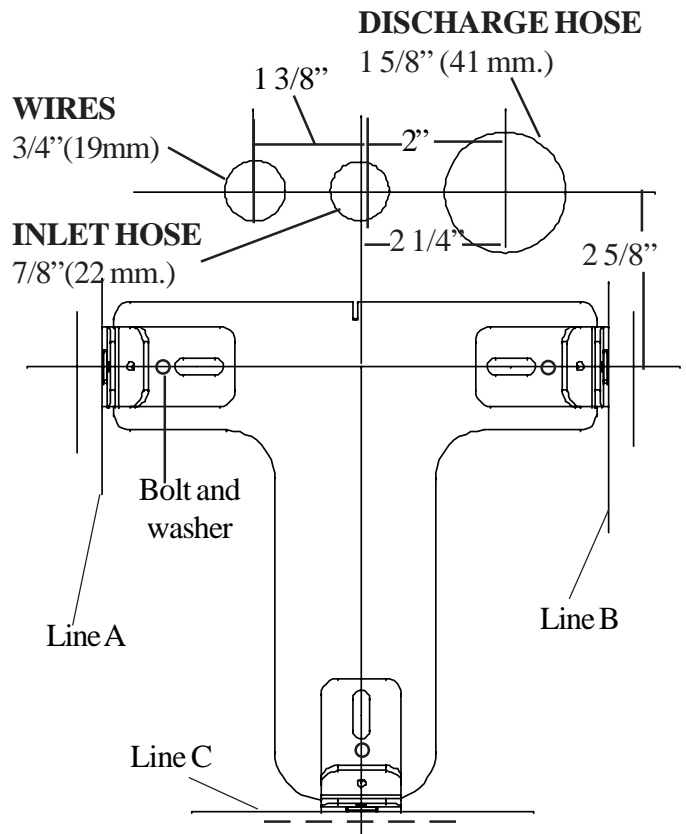
DISCHARGE HOSE
1 5/8" (41 mm.)

1 3/8"

WIRES
3/4"(19mm)

2"

INLET HOSE
7/8"(22 mm.)

2 1/4"

2 5/8"

Bolt and washer

Line A

Line B

Line C

Fig. 2

8

B. PLUMBING

WARNING: Hazard of Flooding

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 boats greatest angle of heel (see vented loop manufacturer's instructions).

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

Double clamp all below-waterline connections.

IMPORTANT

- **Fittings and 90° bends should be kept to a minimum.**
- **In-Line Strainer may be installed on Sea Water Models per Installation Instructions. This will prevent clogs.**
- **Discharging untreated sewage is forbidden in all U. S. waters within the three-mile limit.**
- **Thru-hull fittings and seacocks must be installed where they are easily accessible.**
- **Use only quality reinforced hoses such as Raritan SH.**
- **Secure all hoses properly.**

Pressurized Freshwater Model Installed Above/below Waterline

Pressurized Freshwater Model Installed below Waterline
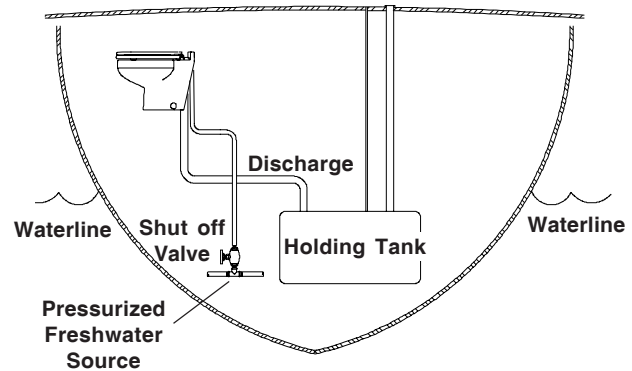

Remote Intake Pump Model Mounted below Waterline

Discharge Lines

1. Connect quality sanitation hose 1" (25 mm.) or 1 1/2"(38 mm.) discharge fitting on toilet.
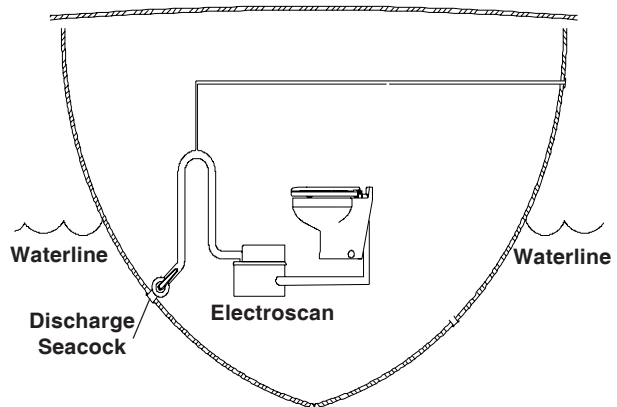2. Run hose to appropriate device (i.e.: treatment system, holding tank, etc.).

Inlet lines

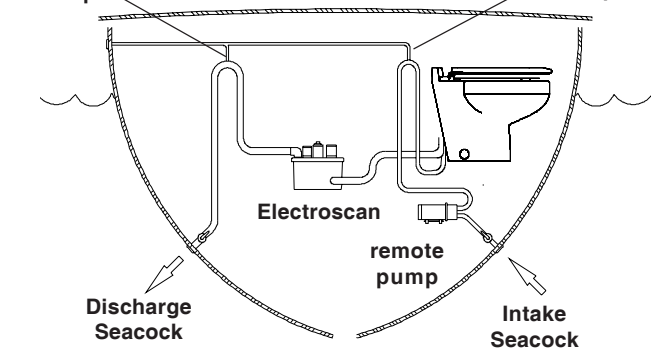1. Connect 1/2"(13 mm.) hose to pressurized supply or 3/4"(19 mm.) hose to remote pump
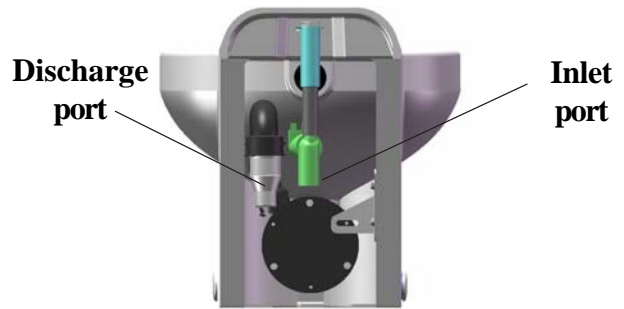
Intake Lines
Pressurized Freshwater Models

Install a shut off valve in intake line before water solenoid valve.

1. Connect hose from shut off valve to inlet port of water solenoid valve at the toilet.

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

Discharge port

Inlet port

Remote Sea Water Models

Intake 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.

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

1. Slide fitting clips to open position.

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: Be sure not to install plug fitting into outlet port! Damage to pump will occur!

5. Slide fitting clips back to closed position.

6. Connect hose from seacock to inlet port of optional In-Line Strainer if installed. Use hose clamp provided.

7. Connect hose from outlet port of In-Line Strainer to inlet port of intake pump. Use hose clamp provided.

IMPORTANT: Double clamp all below waterline hose connections!

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

Open

Closed

To Bowl

Arrow

Outlet Port

Plug

Inlet Ports

From Seacock

From Strainer

To Intake Pump
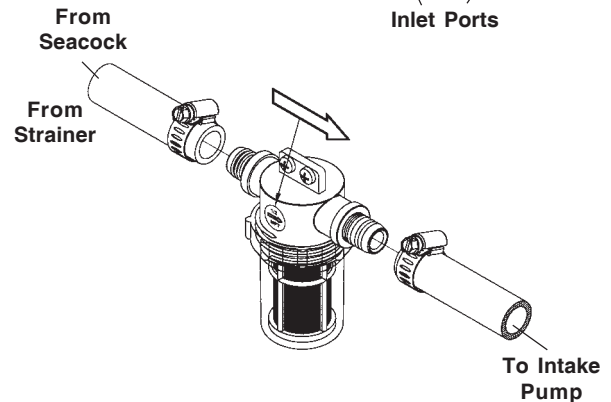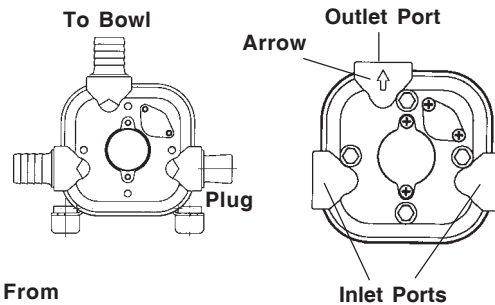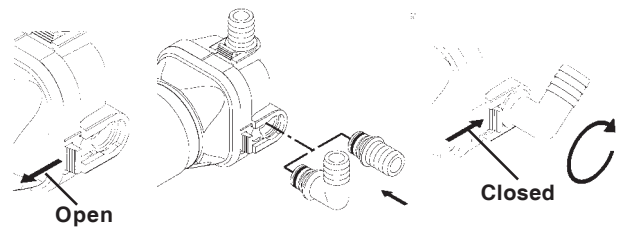
Mounting Remote Pump:

1. Locate remote pump between thru hull fitting and toilet bowl.
2. Locate in an area away from berth to keep noise level down.
3. Use Inline Strainer (optional) to avoid clogs.
4. Secure remote pump to the floor using four bolts through the pump base.
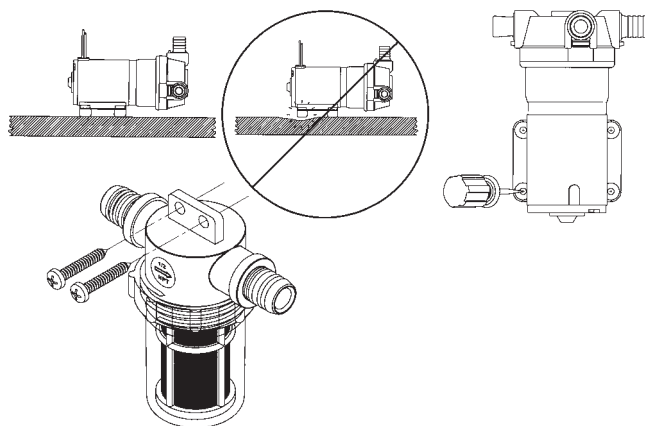
C. Mounting controls:

A. Push Button Switch: (see fig 11)

- Mount Push Button Switch in an accessible location.
- Make certain wires can be routed to Push Button Switch.
- Wire terminals must have clearance when installed.
  1. Drill 5/8" (16mm) hole.
  2. Attach wires to Push Button Switch terminals (see wiring section).
  3. Install Push Button Switch through back of mounting surface.
  4. Install waterproof nut on Push Button Switch.
  5. Secure in place with inner nut.
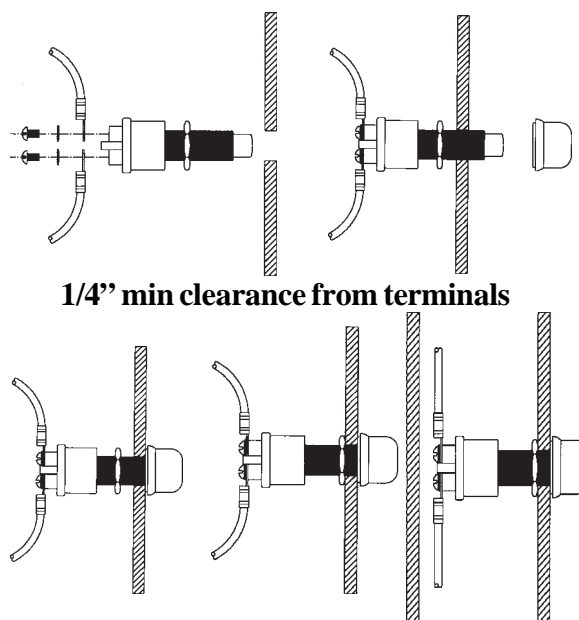
B. ME Toilet Control:

1. Cut out a hole per Fig. 12, mark mounting holes using wall plate as guide.
2. Route wire to the toilet and control.
3. Secure control with gasket using two screws.

C. Smart Flush Control:
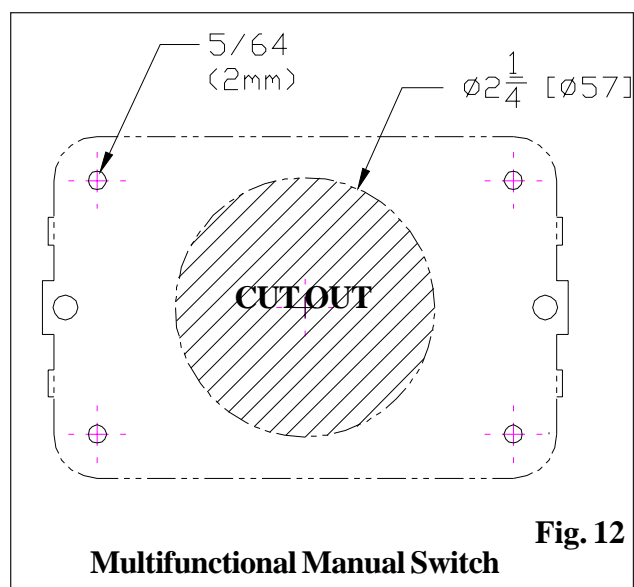
1. Cut out a hole per Fig. 13, mark mounting holes using wall plate as guide.
2. Route wire to the toilet and control.
3. Secure control using mounting screws

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

1/4" min clearance from terminals

Fig.11

5/64 (2mm)

$\varnothing 2\frac{1}{4}$ [$\varnothing 57$]

CUTOUT

Fig. 12

Multifunctional Manual Switch
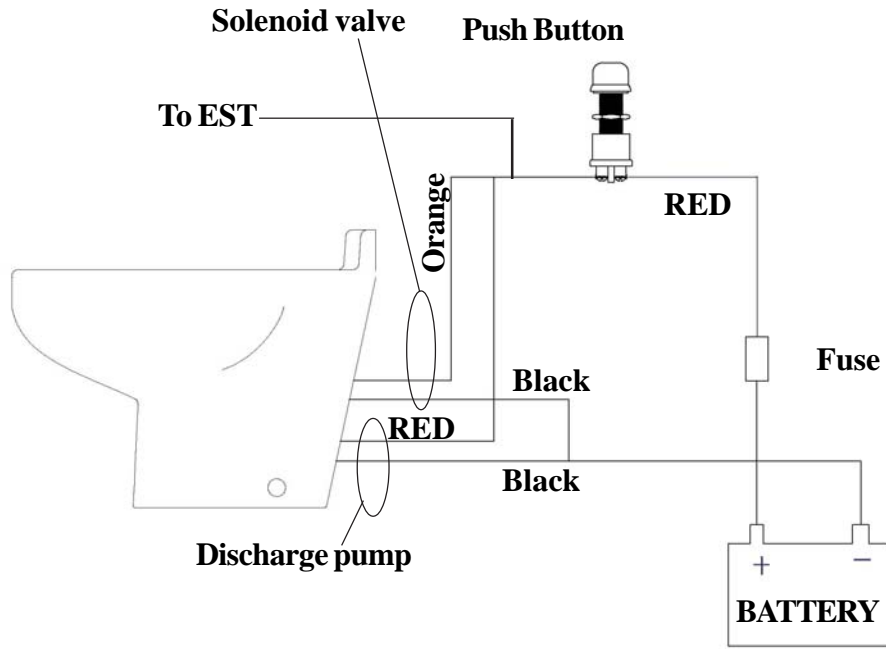
D. WIRING

WARNING: Hazard of Shock and Fire

- **Always use proper wire, wire connectors and fuse/circuit breaker. See Specification Chart.**
- **Secure wire properly.**
- **Do not connect appliances to toilet circuit.**
- **Make sure power is off before proceeding.**
- **Use proper wire terminals for all wire connections.**

1. Determine proper wire size by measuring distance from:

    - Power Source to push button to toilet motor and back to power source.
    - Remote pump units - also include distance from power source for remote pump to remote pump and back. Same wire gauge must be used for both lower base and remote pump.

2. Select proper wire and fuse/circuit breaker size from Specifications on Installation page.

3. Install fuse/circuit breaker in positive line at source.

4. Wire control to the toilet and battery using one of the following wiring diagrams.

Smart Flush Control   **Fig. 13**
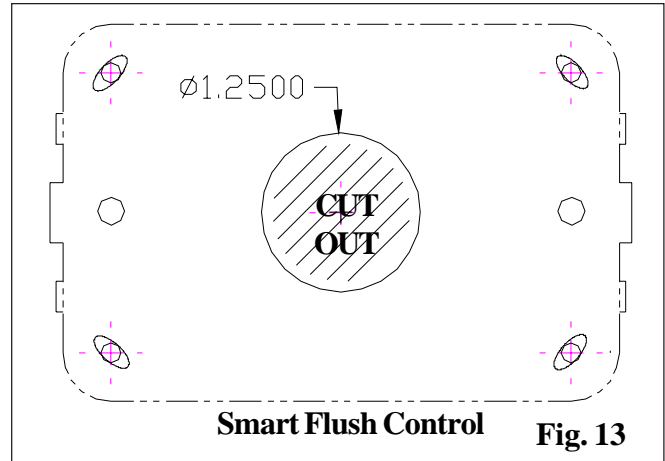
ELECTROSCAN OPERATION

To start Electroscan from toilet control, run a wire from "to EST " to terminal marked "EXT TRIG" inside Electroscan control module (black box).
To start Elegance equipped with Smart Switch from Electroscan, connect "Head1" to "FROM EST ".
For Lectra/San MC, call Raritan Customer Service

Solenoid valve

Push Button

To EST

Orange

RED

Black

RED

Fuse

Black

Discharge pump

BATTERY

+ −

**Fig. 14 Wiring for Push Button Switch
Fresh water model**

Push Button

To EST

RED

Pump

Blue

Relay

RED

Black

Blue

RED

Fuse

Black

Discharge pump

BATTERY

+ −
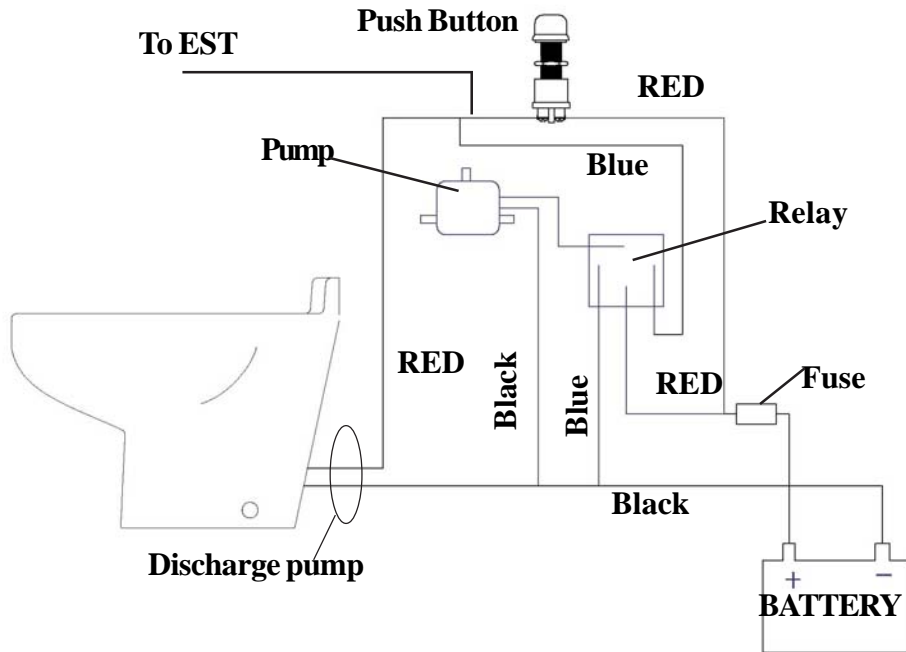
**Fig. 14A Wiring for Push Button
Switch Remote pump model**

Fig. 15 WIRING FOR SMART SWITCH FRESHWATER MODEL

FLUSH
CONTROL
PANEL

Solenoid Valve

orange

black

red

FUSE/BREAKER

red

black

black

to EST EXT TRIG

Discharge Pump

from EST

holding tank full

BATT -

GND

Valve-

Pump -

EST

valve +

pump +

BATT +

panel

+   −

BATT
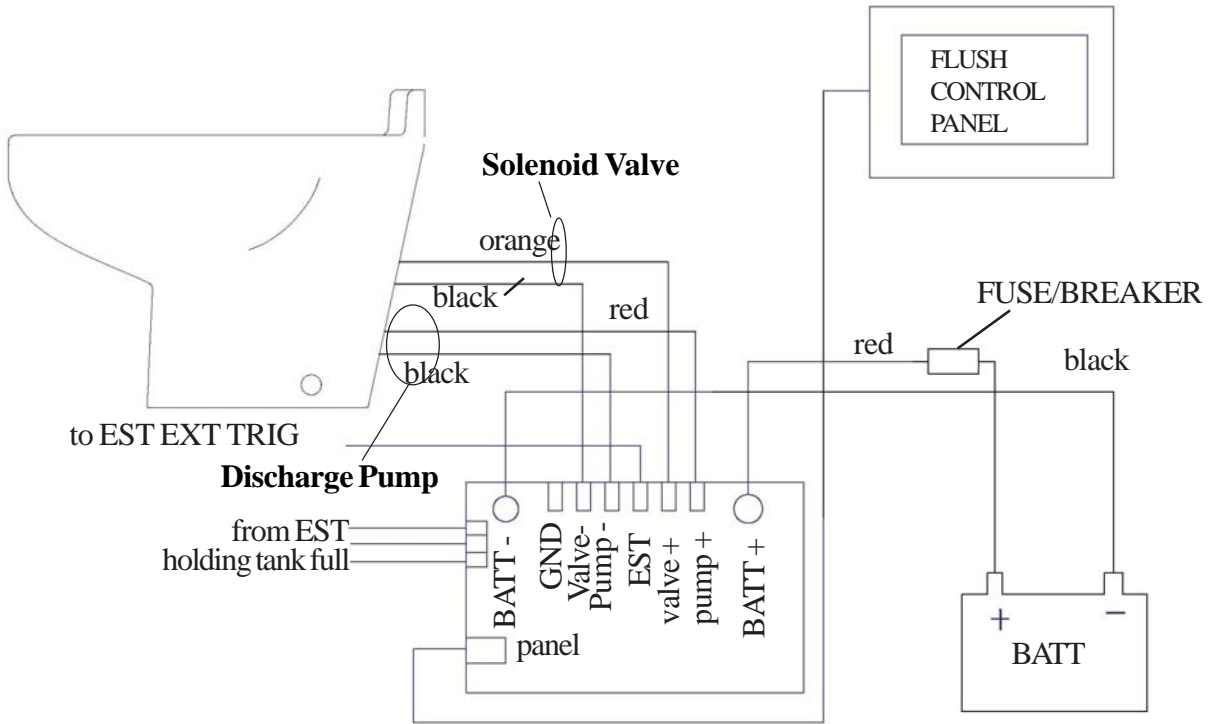
Fig. 16 WIRING FOR SMART SWITCH REMOTE PUMP MODEL

PUMP
remote

orange

black

Relay

FLUSH
CONTROL
PANEL

blue

blue

red

FUSE/BREAKER

red

black

black

to EST EXT TRIG

Discharge Pump

EST input

tank full switch

BATT -

GND

Valve-

Pump -

EST

valve +

pump +

BATT +

panel

+   −

BATT
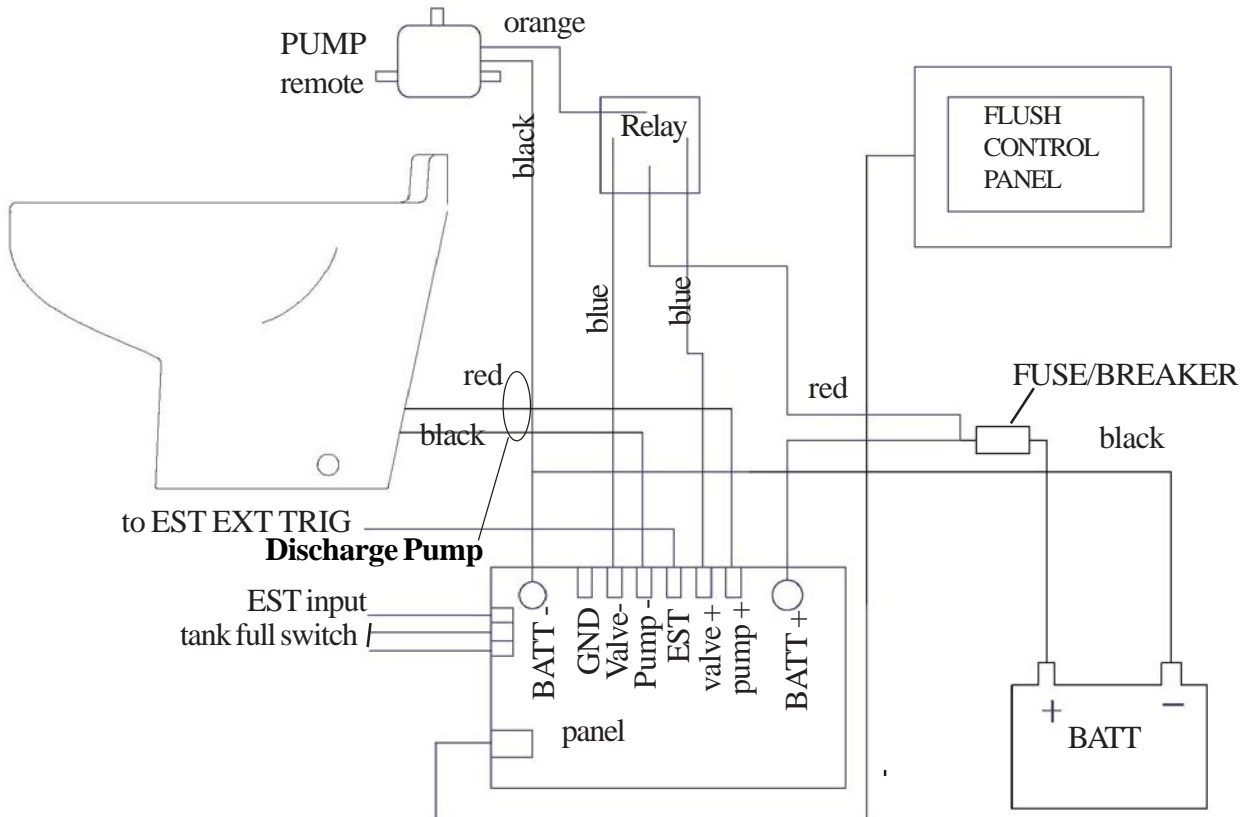
Fig. 17 WIRING FOR ME TOILET CONTROL FRESHWATER MODEL

FLUSH
CONTROL
PANEL

Solenoid Valve

orange

black

red

black

fuse/Breaker

red

black

To EST

Discharge Pump

-BATT
-INLET
-DISCHARGE
EST
+INLET
+DISCHARGE
+BATT

Panel

Control Box

+   −

BATT
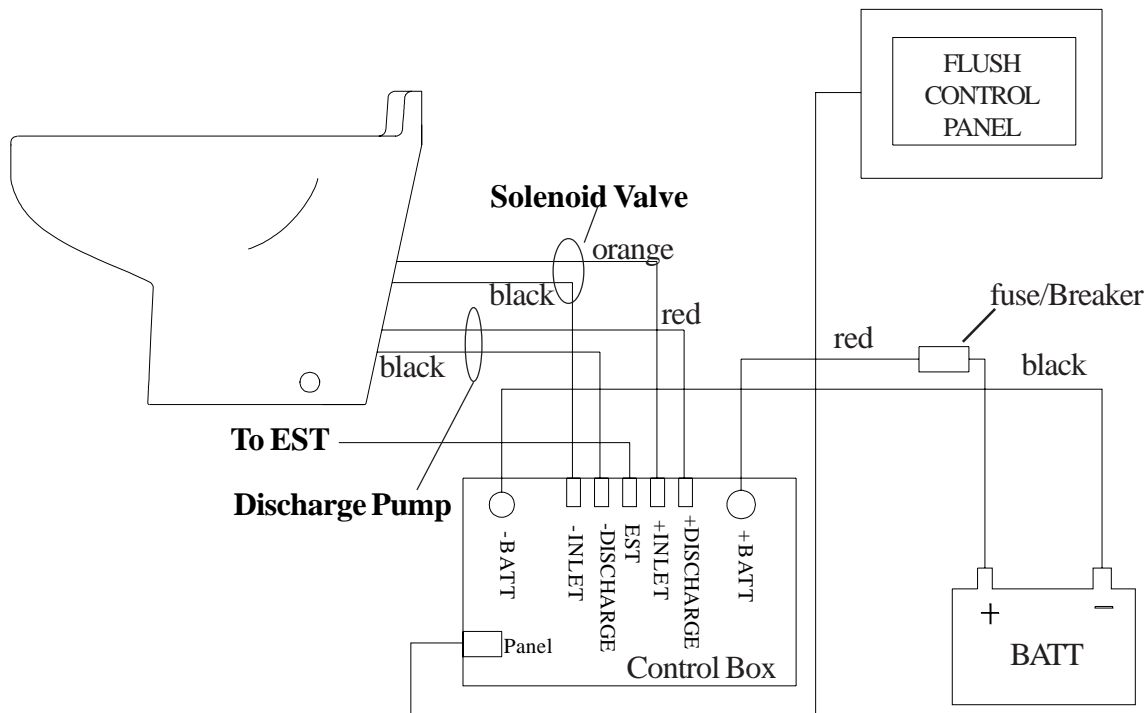
Fig. 18 WIRING FOR ME TOILET CONTROL WITH REMOTE PUMP

pump

orange   Relay

black

FLUSH
CONTROL
PANEL

blue

blue

red

red

fuse/Breaker

black

red

black

To EST

red

RED

Discharge Pump

-BATT
-INLET
-DISCHARGE
EST
+INLET
+DISCHARGE
+BATT

Panel

Control Box

+   −

BATT
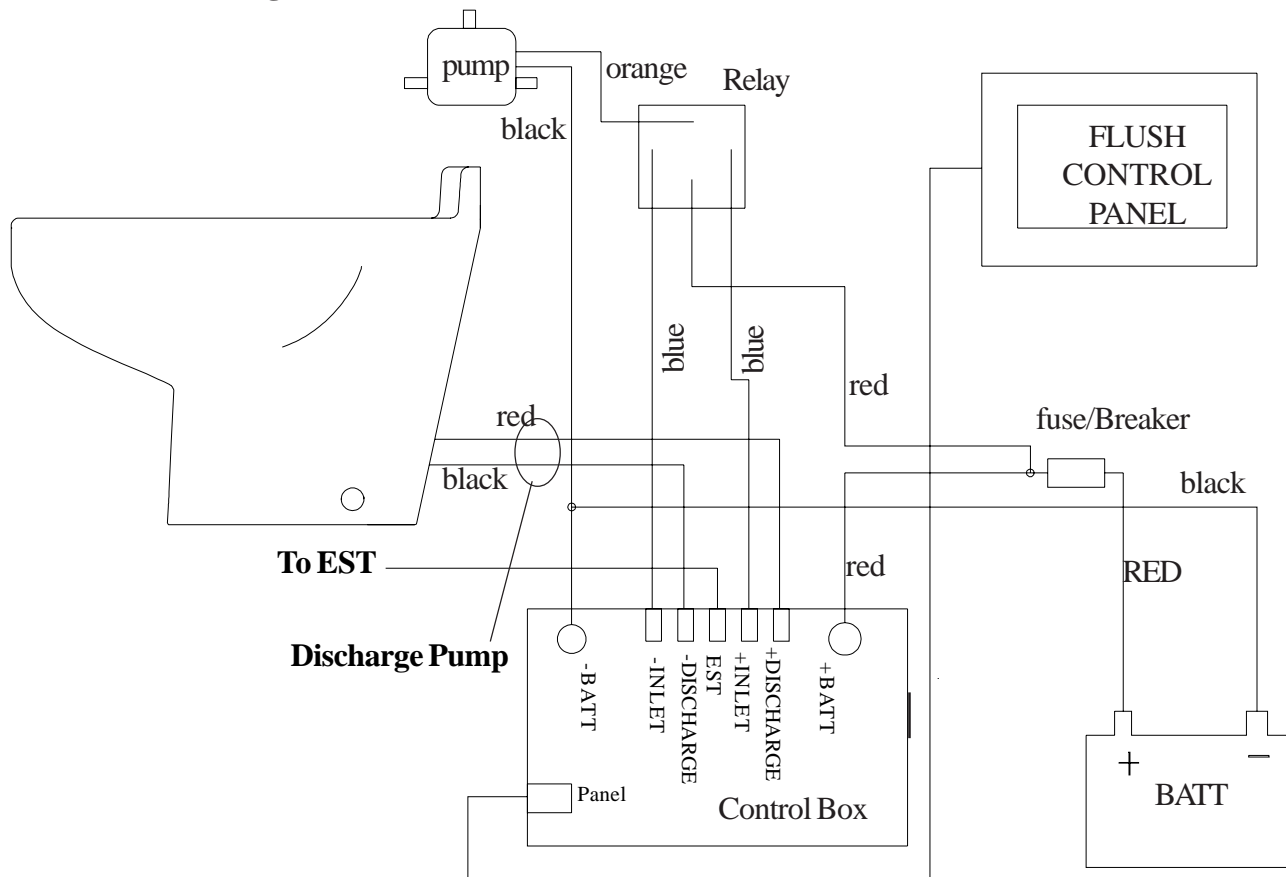
D. Connect Hoses and wiring to toilet

5. Route wire from control per wiring diagrams.
6. Install seat. I nstall discharge support strap between seat nut and the bowl per Fig. 19A.
7. Install toilet in place, connect hoses and wireplugs. (see Fig. 19)

Caution: Do not pull on the discharge hose to avoid kinking

Discharge support strap   **Fig. 19A**

Fig. 19

E. Mount toilet

8. Install mounting bushings, bolts. (See Fig. 20)
9. Tighten bolts being careful to not overtighten (Do not exceed 30 inch lb. when tightening)
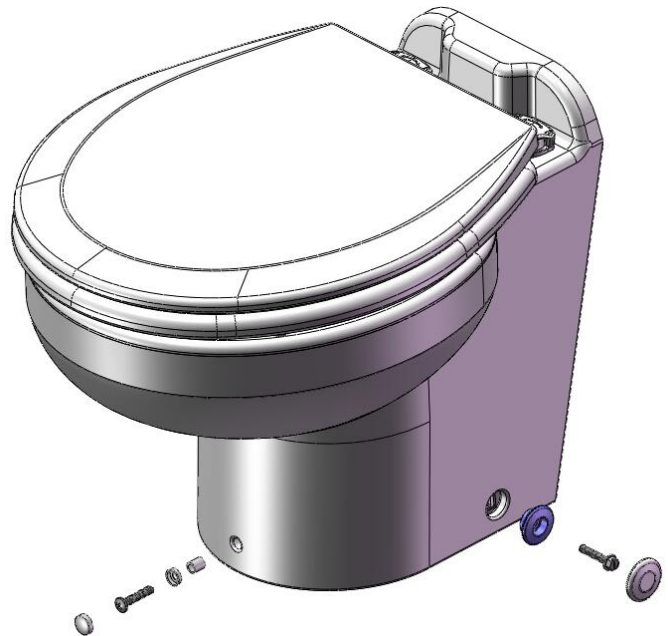10. Install caps over mounting bolts.

Fig. 20

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 or Ft. Lauderdale, FL. Please have model and serial number available before calling.
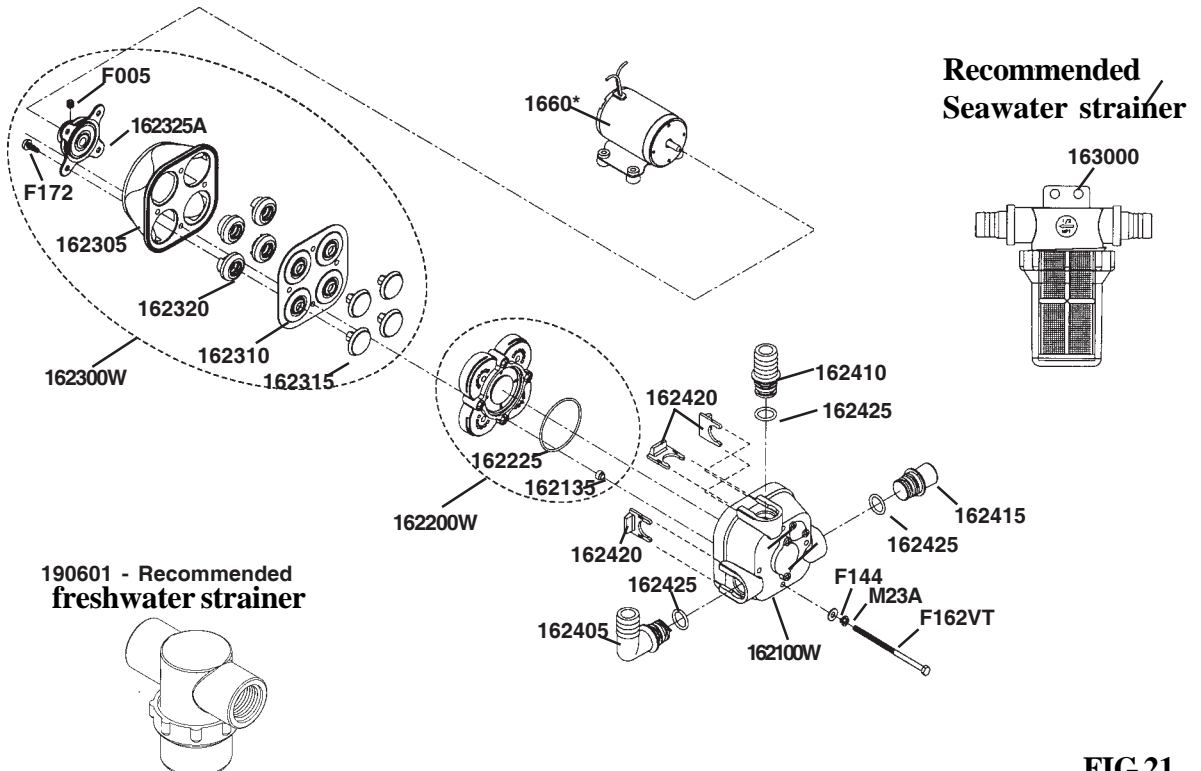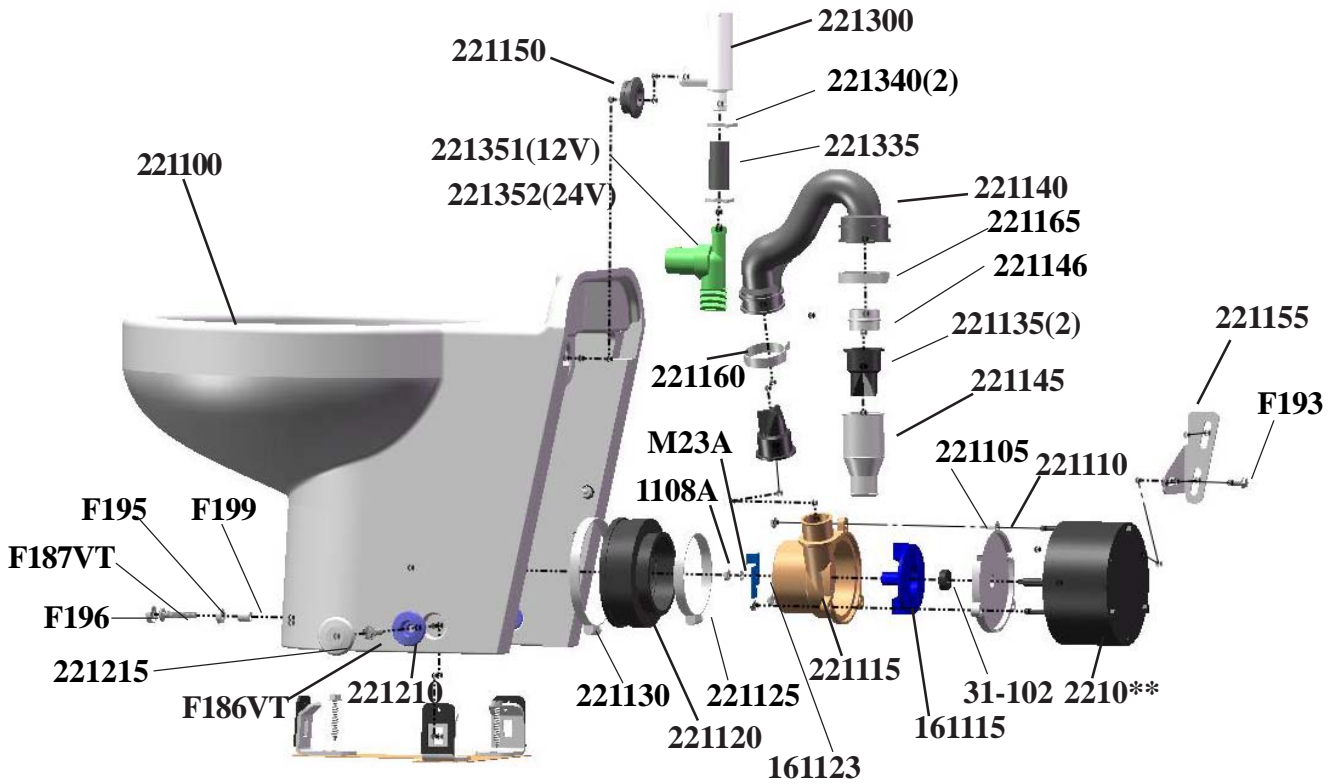
PROBLEM	POSSIBLE CAUSE	SOLUTION
1. Poor pumpout, especially solids.	1A. Clogged discharge line. 1B. Plumbing restrictions, bends and ells. 1C. Clogged vents. 1D. Mineral buildup in hoses and fittings. 1E. Low voltage.	1A. Be sure discharge seacock is open. Clear line, remove clog. 1B. Replumb to eliminate 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 (#SH). 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.	5A. Tighten adapter clamps. 5B. Check seal and motor shaft. 5C. Check and reseat bowl grommet

Marine Elegance PARTS LIST

221100   Toilet Bowl,standard, angled, White(1)
221100A   Toilet bowl Bone(1)
2210012 Discharge Pump Assembly (1)
221012   MOTOR: 12 VDC (1)
221024   MOTOR: 24V DC (1)
221105   O-RING (1)
221110   Discharge Pump Seal Plate (1)
221115   Discharge Pump Macerator Housing(1)
221120   Bowl Throat Adapter (1)
221125   Bowl Throat Adapter Clamp (small)(1)
221130   Bowl Throat Adapter Clamp - Large (1)
221135   JOKER VALVE (Custom) (2)
221140   Discharge Hose (Custom)(1)
221145   Discharge Adapter Fitting(1)
221150   Uni Seal 1/2" (1)
221155   Discharge Pump Mounting Bracket(1)
221156   Discharge Mtg Bracket Straight Back Model
221160   Discharge Hose Clamp - Small (1)
221165   Discharge Hose Clamp - Large (1)
221170   Discharge hose strap(not shown)
221175   L bolts2(2) (not shown)
221210   Bowl Mounting Bushing (2)
221215   Bowl Mounting Bushing Cap (2)
221300   Vacuum Breaker Assembly 1
221325   Vacuum Breaker Seal Washer (1)
221330   Vacuum Breaker O-Ring (#16)(1)
221351   Water Solenoid Valve (12V)(1)
221352   Water solenoid valve (24V)(1)
221355   Water Line Adapter (1)
221335   1/2" Hose 2.25" L (1)
221340   1/2" Clamps (2)
31-102   Motor Shaft Seal
31-114   Lock Nut 10-32 W/Nylon (3)
CH20B   #10 Lock washer (not shown)
F321   Fender washer (not shown)
F186VT Bowl Mounting Screw: (2)
F187VT Bowl Mounting Screw (1)
F188   Well Nut (2)
F189   Deck Mounting (3)
F193VT   Pump Mounting (1)
F195   Front mounting washer (1)
F196   Front mounting snap cap (1)
M23A   Lockwasher
166000 Remote pump complete 12v
166100   Remote pump complete 24V
1660** Motor, raw water pump
161115   Impeller
161123   Macerator Blade

* Specify DC Voltage (12, 24, 32)

162135   Cone Seal
162225   O-Ring
162305   Lower Housing includes #162315
162310   Diaphragm includes #162315
162315   Piston (4)
162320   Piston Seat (4) includes #162315
162325A   Bearing Plate Assembly includes #162315
162405   3/4" Hose Barb - 90° Fitting
162410   3/4" Hose Barb - Straight Fitting (2)
162415   Plug Fitting
162420   Fitting Clip (3)
162425   Fitting O-Ring (4)
F005   Set Screw
F172   Piston Fastener (4)
F144   Mounting Bolt Washer (4)
F162VT   Mounting Bolt
F199   Bushing
1108A   Nut
Optional:
190601 Fresh water strainer
163000 Raw water strainer
NOT SHOWN;
221101 Toilet Bowl ,Standard,Straight White
231101 Toilet Bowl Tall Straight White
231100 Toilet Bowl Tall Angled White
   Note: add suffics "A "for bone
1245   Seat and cover, white
1245A   Seat and cover , Bone
 214**   Relay
Control parts (not shown):
SSFC02 Smart Control Box
SSFC 03 Smart wall panel
SSFC04 Cable
31-603   Cable
For Momentary Multifunction control after 02/10
221549   Momentary Multifunction control box
221524   Momentary Multifinction Bazel White
221543   Momentary Multifinction wall panel
221545   Cable for Momentary Multifunctin control

Repair kits:

DIAPUMPRK   inlet pump repair kit
162400   Fittings and O-rings for inlet pump
166000   Diaphragm pump complete 12V
166100   Diaphragm pump complete 24v
MERK Discharge pump repair kit

221100

221150

221300

221340(2)

221351(12V)
221352(24V)

221335

221140

221165

221146

221135(2)

221145

221160

221155

F193

M23A

1108A

221105 221110

F195   F199

F187VT

F196

221215

F186VT   221210

221130   221125   221115   31-102   2210**

161115

221120

161123

F005

162325A

F172

1660*

Recommended
Seawater strainer

163000

162305

162320

162310

162315

162300W

162410

162420

162425

162225

162135

162200W

162415

162425

162420

190601 - Recommended
freshwater strainer

162405

162425

F144
M23A

F162VT

162100W

FIG 21

Marine Elegance Exploded Parts View

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, or 3101 SW 2nd Ave. Ft. Lauderdale, FL 33315. 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.

3. ANY EXPRESS WARRANTY NOT PROVIDED HEREIN, AND ANY REMEDY FOR BREACH OF CONTRACT WHICH BUT FOR THIS PROVISION MIGHT ARISE BY IMPLICATION OR OPERATION OF LAW, IS HEREBY EXCLUDED AND DISCLAIMED. ALL IMPLIED WARRANTIES SUCH AS THOSE OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IF APPLICABLE, AS WELL AS ANY IMPLIED WARRANTIES WHICH MIGHT ARISE BY IMPLICATION OF LAW, ARE EXPRESSLY LIMITED TO A TERM OF ONE YEAR. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG A LIMITED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

4. UNDER NO CIRCUMSTANCES SHALL RARITAN BE LIABLE TO PURCHASER OR ANY OTHER PERSONS FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT, OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

5. No other person or entity is authorized to make any express warranty, promise or affirmation of fact or to assume any other liability on behalf of Raritan in connection with its products except as specifically set forth in this warranty.

6. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

RARITAN
The Most Dependable Name on the Water

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