

Marine *Elegance* Comfort Height

Model 241E with Smart Handle Installation and Maintenance Instructions

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

WARNING:



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

Marine Elegance Comfort Height Elongated Toilet is available in 12 VDC, 24 VDC, and 120/240 VAC.

Water Source Options:

Fresh Water Model uses pressurized onboard fresh water.

Raw Water Pump Model uses a remote intake pump to supply raw (outside) water to the bowl.

Sea/Fresh Model can switch between fresh and raw water source.

IMPORTANT: Discharge and Inlet Pump / Valve MUST BE wired for proper operation and programming.

"02" model:

The "02" model is designed to work as a momentary unit using only microswitches to activate the motors. It is also a "fail safe" mode for the toilet control in the 03 model.

"03" model:

The "03" model is a Smart Toilet Control Handle (STCH) which provides timed operation while still having momentary functionality if toilet control is removed.

Operation

Pull Handle Forward:

"02" Pull forward and inlet runs until handle is released.

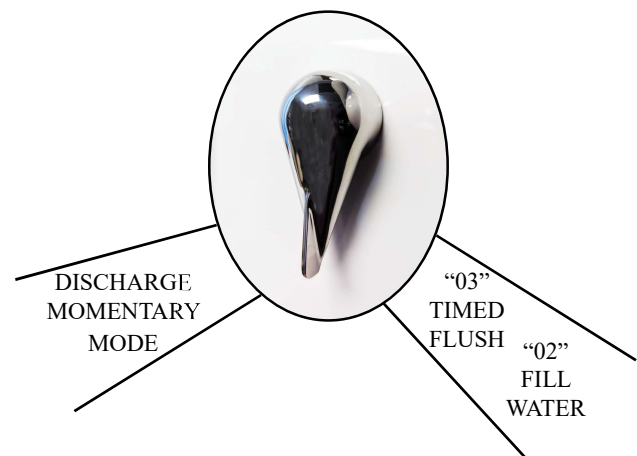
"03" Pull forward and release. This will start the timed flush cycle.

Push Handle Backward:

"02" and "03" Push and hold: runs just the discharge pump for a "dry bowl" flush.



FLUSH HANDLE POSITIONS



856-825-4900
www.raritaneng.com

IMPORTANT SAFETY INSTRUCTIONS:**Below-Waterline Installation Requirements**

Toilets installed at or below the vessel's waterline and equipped with an overboard discharge option must have a properly installed vented loop in the discharge line. The vented loop must be installed in accordance with the vented loop manufacturer's installation instructions.

Raw Water Intake Systems

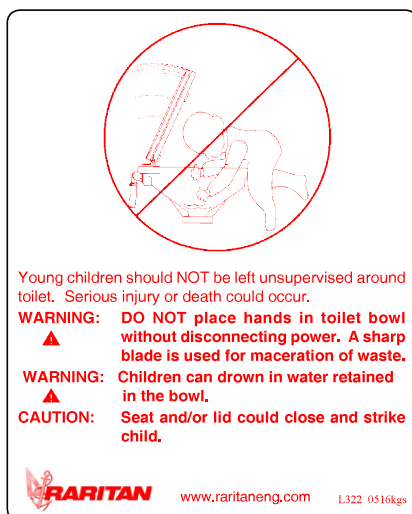
Units installed below the waterline and equipped with a remote raw water pump must also have a vented loop installed in the intake line between the discharge side of the raw water pump and the toilet bowl inlet connection. Double clamp all below waterline connections.

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. DO NOT place hands in toilet bowl without disconnecting power. 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.**

**FLUSH GUIDELINES****DO Flush**

Human Waste and Toilet Paper

DO NOT Flush

Feminine Products, Paper Towels, Wet Wipes or Trash

Raritan recommends:

- Kills Odor (K.O.) for holding tank treatment
- Cleans Potties (C.P.) for ceramic bowl cleaning
- Mild soap and water solution to clean all other components

DO NOT: use general purpose cleaners or other harsh chemicals. Damage to toilet may occur and void warranty.



L110 1225jlc

- No special toilet paper is required.
- Water should appear in the bowl within ten seconds. If not, see troubleshooting section.
- Do not flush feminine products, paper towels, wet wipes or trash.
- Always shut off seacock(s) before leaving the boat unattended.

CLEANING

Raritan C.P. (1PCP32) - Cleans Potties, a bio-enzymatic bowl cleaner, will keep the bowl clean and fresh smelling. It is the only factory-recognized cleaning product that may be used in the toilet. A mild soap and water solution can be used for all other components.

DO NOT ADD ANY OTHER CHEMICALS OR CLEANING PRODUCTS TO THE TOILET OR THE TREATMENT SYSTEM.

Recommend 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)

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 Flush 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 [1 m] long
- Two buckets
- Nontoxic antifreeze approximately 1 quart [1 L]

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 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 L]

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 toilet's 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 L] 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 [1.2 m] 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 5 gallons [19 liters] per minute. 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.

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" [13 mm] for Fresh Water model

3/4" [19 mm] for Raw Water model

DISCHARGE

1"[25 mm] or 1 1/2"[38 mm]

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 amps draw	Remote Pump Only 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 Water 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

Marine Elegance discharge Maximum recommended:

1" [25 mm] or 1 1/2" [38 mm] hose length

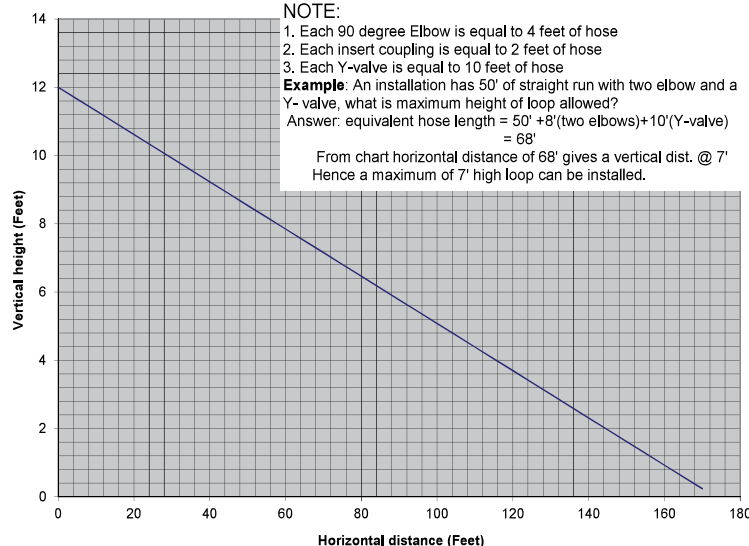
NOTE:

- Each 90 degree Elbow is equal to 4 feet of hose
- Each insert coupling is equal to 2 feet of hose
- 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.

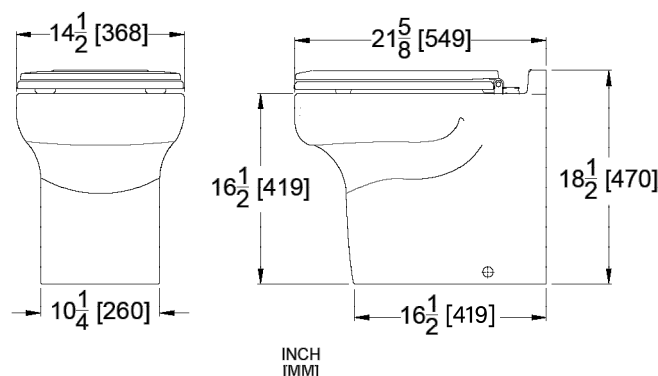


Water Consumption:

Water Saver : 2 pint* [0.95 L]

Regular Flush: 2 quarts [1.9 L]

* 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

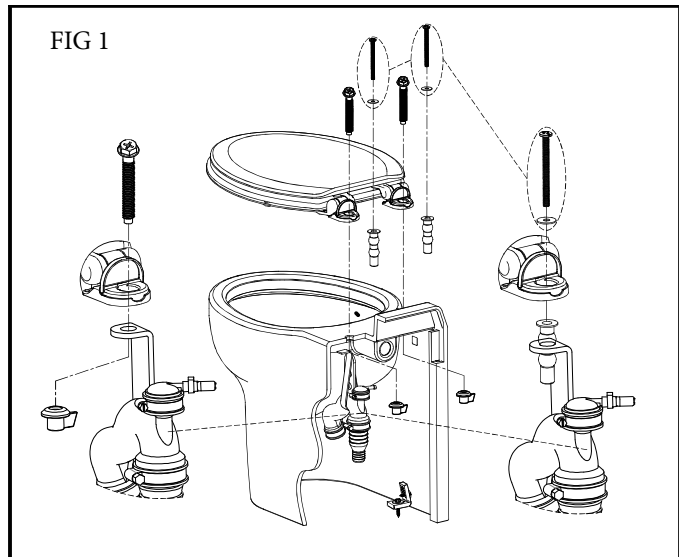
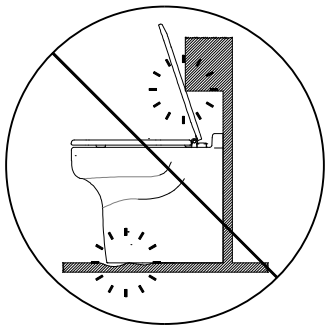
Additional parts required (not included):

- 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 (190601)
In-Line Strainer (163000)

MOUNTING

Mounting Toilet

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



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

Installing the seat and discharge hose support strapping

Discharge Hose Support Strap

Important: Discharge Hose must be supported. Attach support strap to seat bolt as shown in FIG 1.

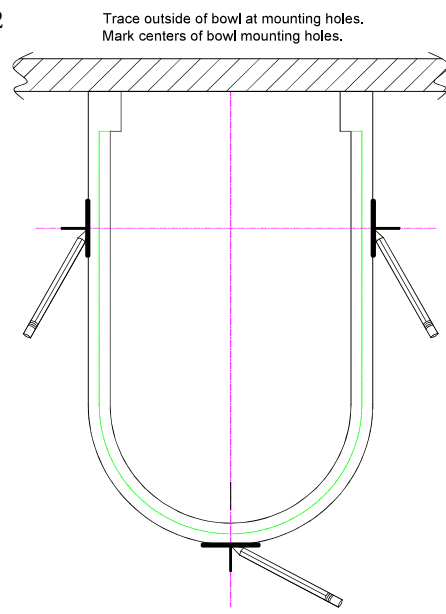
NOTE: For plumbing and wiring routed thru the deck.

Mounting Toilet to Deck

STEPS 1-5 See FIG 1 through FIG 5

1. Place toilet in location to be mounted.
2. Trace outside edge of bowl. Mark center of mounting holes (FIG 2).

FIG 2



3. Offset trace line.
(Lines indicated with A, B, & C)
SIDE HOLES: 1/2"
FRONT HOLE: 3/4"
4. To mount bracket, drill (3) 7/32" holes offset 1" from lines A, B, & C.
5. Drill holes, as indicated, for hoses and wires

NOTE: Check outside diameter of hoses and adjust if needed.

- **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]

Mount Bracket

Using lag bolt and washer, attach bracket, with upright edge, lined up with lines A, B, & C.

Mount Toilet

NOTE: Complete plumbing and wiring before attaching toilet to mounting brackets.

Use screw, with flat washer, through bushing to attach bowl to mounting bracket (FIG 6).

After screws are tightened, add cap to cover bushings.

FIG 3

IMPORTANT:
Holes for Wires and Hoses are for F and R Models through deck.

Offset traced lines.
Measure and mark centers of toilet mounting brackets, hoses, and wiring holes.

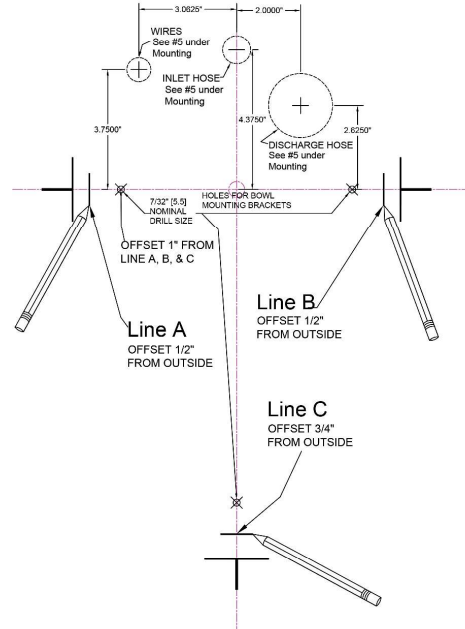


FIG 4

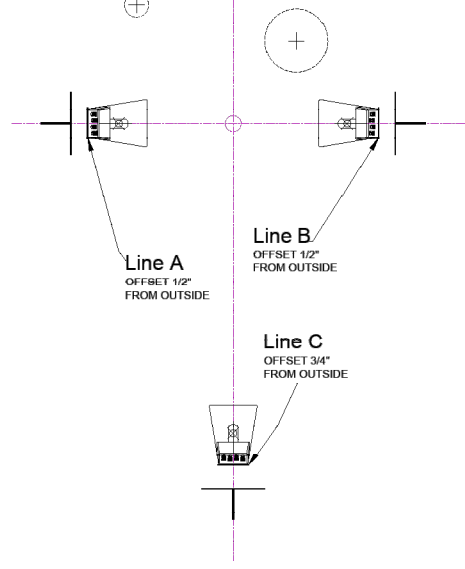


FIG 5

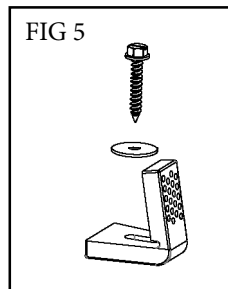
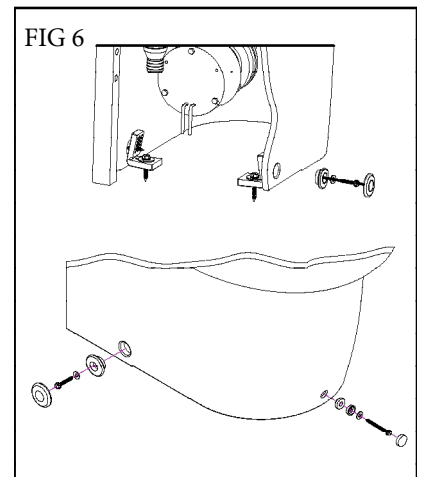


FIG 6



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 and 9 miles in Gulf of America.
- Fittings and 90° bends should be kept to a minimum.
- In-Line Strainer is recommended on raw water models to avoid 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 Marine Elegance toilet includes an integral vent that maintains up to 4" [10 cm] of water in the bowl. In most installations, this built-in feature does not require any adjustment. In the event the bowl water is being siphoned empty, removing of the vent cap (FIG 9) will help retain water in the bowl.

NOTE: If any portion of the discharge hose is routed higher than the internal integral vent, **DO NOT** remove the vent cap.

To enable Integral Vent, remove Vent Cap (FIG 9), connect 1/4" hose and connect hose to a deck vent fitting (Reference FIG 7C). Hose and deck fitting not included.

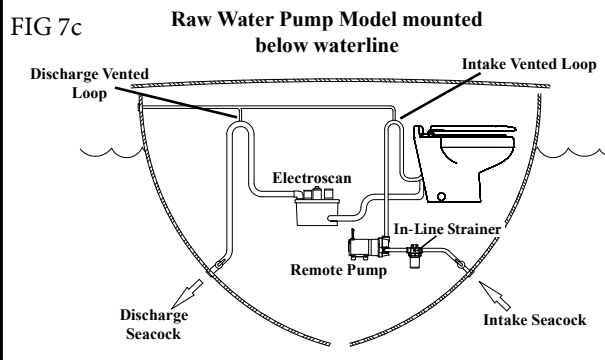
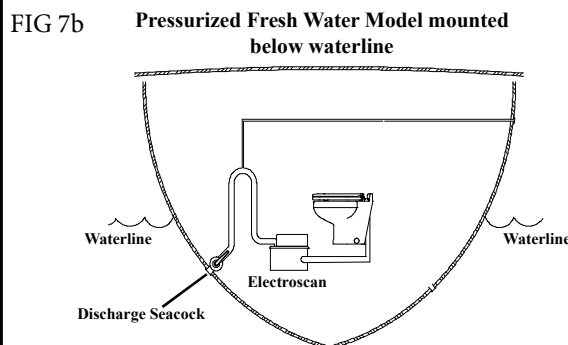
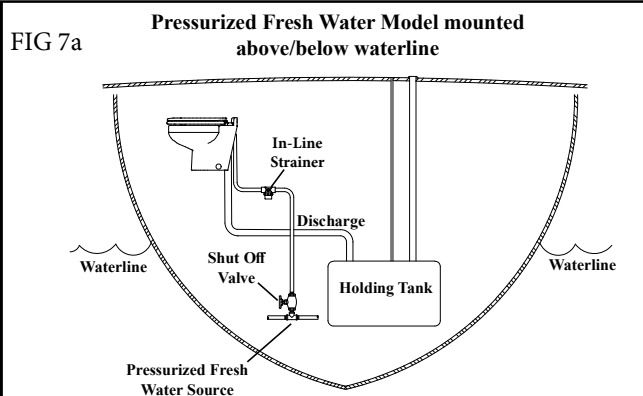
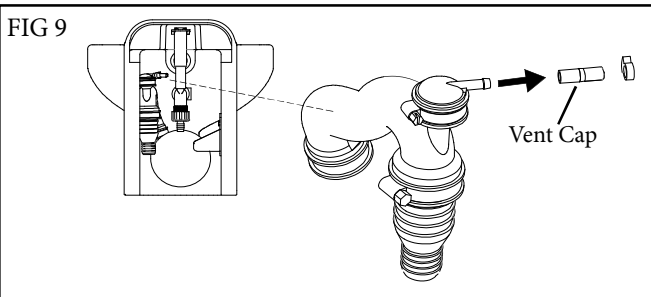
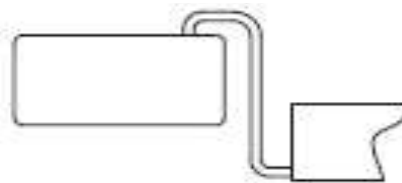


FIG 8 Toilet installed below waterline or below Treatment Device and or holding Tank = Upward discharge flow, **Do not remove vent cap**



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.
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 In-Line Strainer, 163000 (recommended) to avoid clogs.
5. Secure remote pump to the floor using four bolts through the pump base (FIG 11).

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 In-Line 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 13).

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 10

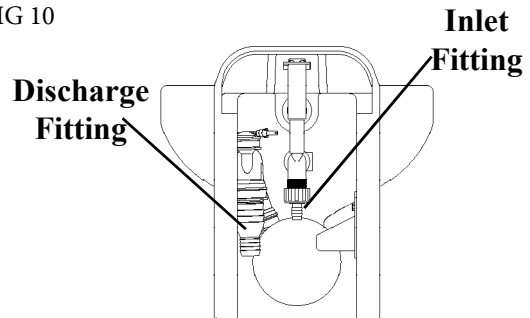


FIG 11

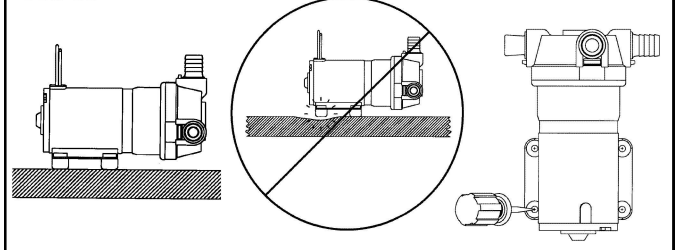


FIG 12

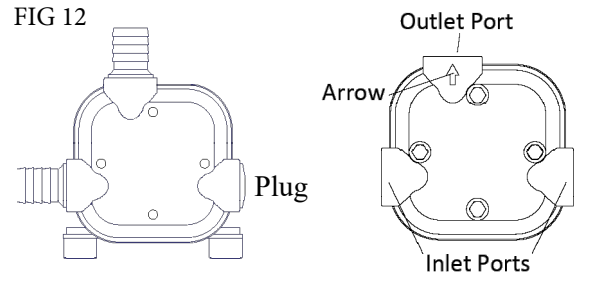
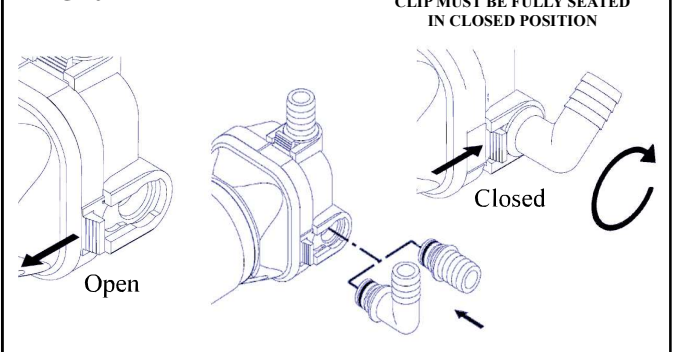


FIG 13



WIRING
WIRING CONTROLS
FOLLOW THE INSTRUCTIONS INCLUDED WITH FLUSH CONTROL

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 pump out, 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. Intake 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 Saniflex 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. Be sure the vented loop(s) are installed and vent is functional. If the water pressure from seacock is outside: 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 down and turning 1/4 turn clockwise. Remove cap and remove plastic piston, clean. Replace parts if needed.

Marine Elegance Comfort Height PARTS LIST - Smart Handle

Item#	Part No.	Description
1	241101SC	Seat & Cover (Slow Close)
2	241101W	ME Bowl, Comfort Height, White
3	M23A	#10 Lock Washer 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	221120	Bowl Throat Adapter
15	221130	Bowl Throat Adapter Clamp - Bowl
16	221158	Discharge Pump Support Bracket
17	F193VT	Screw 10-32 X 3/8 w/VT
21	221141W	Discharge Hose (Includes 22-28)
22	221135W	Joker Valve (2) (includes 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 Hose Clamp
29	221150	Spud Seal
30	F200	18-8 SS Flanged Hex Head #8X 2"
31	221210	ME Bowl Mounting Bushing (2)
32	241130M	ME Mounting "L" Brackets (3)
33	221215	ME Bowl Mounting Cap (2)
34	F196	ME White Snap Cap
35	F200A	18-8 SS Flanged Hex Head #8X 1.25"
36	F195	Washer: Cup, Flat Bottom, 1/4" Hole
37	RNI	Nylon Shoulder Washer
38	F321	Washer, Fender 1/4 ID X 1" OD, 18-8 SS
39	F189	ME Screw: Bowl Mounting
48	F144	#10 Washer SS Flat (4)

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 42-48)
42	162405	3/4" Hose Barb 90° Fitting
43	162410	3/4" Hose Barb Straight
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	PLA26	Elbow Adapter 3/4 x 1/2

PRESSURIZED FRESH WATER

60	221351	Solenoid Valve 12 VDC
60	221352	Solenoid Valve 24 VDC
61	221356	ME Nut 3/4 BSP
62	221357	ME Hose Adapter, Straight
67	221335	Hose 1/2"
68	221340	Hose Clamps 1/2" (2)
69	221300	Vacuum Breaker Assembly

PARTS NOT SHOWN

221175	L Bolt for Pump Mounting Bracket (2)
221170A	Discharge Hose Support Strap
F188	Well Nut 10-32 (2)

MOUNTING BRACKET ASSEMBLY

241130W	Mounting Bracket w/Hardware (includes 31 thru 39, 48)
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FLUSH CONTROL OPTIONS

SMART TOILET CONTROL

80	STC548W	Smart Toilet Control Circuit Board (12 & 24 VDC)
81	STC545	Control Cable 7 ft
83	STC543W	Touch Panel w/Back Plate

HANDLE ASSEMBLY

70	AM665W	Handle replacement with set screw
70a	F104	Brass Panel Nut
71	AV600W	Handle Flush Control Replacement
72	AM667	Microswitch V7 Series, 25A at 250 VAC
73	AM666	Spring .250 X 1.375, 316 S/S
74	ETB3	Terminal Block, 3 Poles, Push Connection
75	F108	Screw: #4 X 7/8 Phil. Flat Head, Type B Self Threading, 18-8 S/S (2)

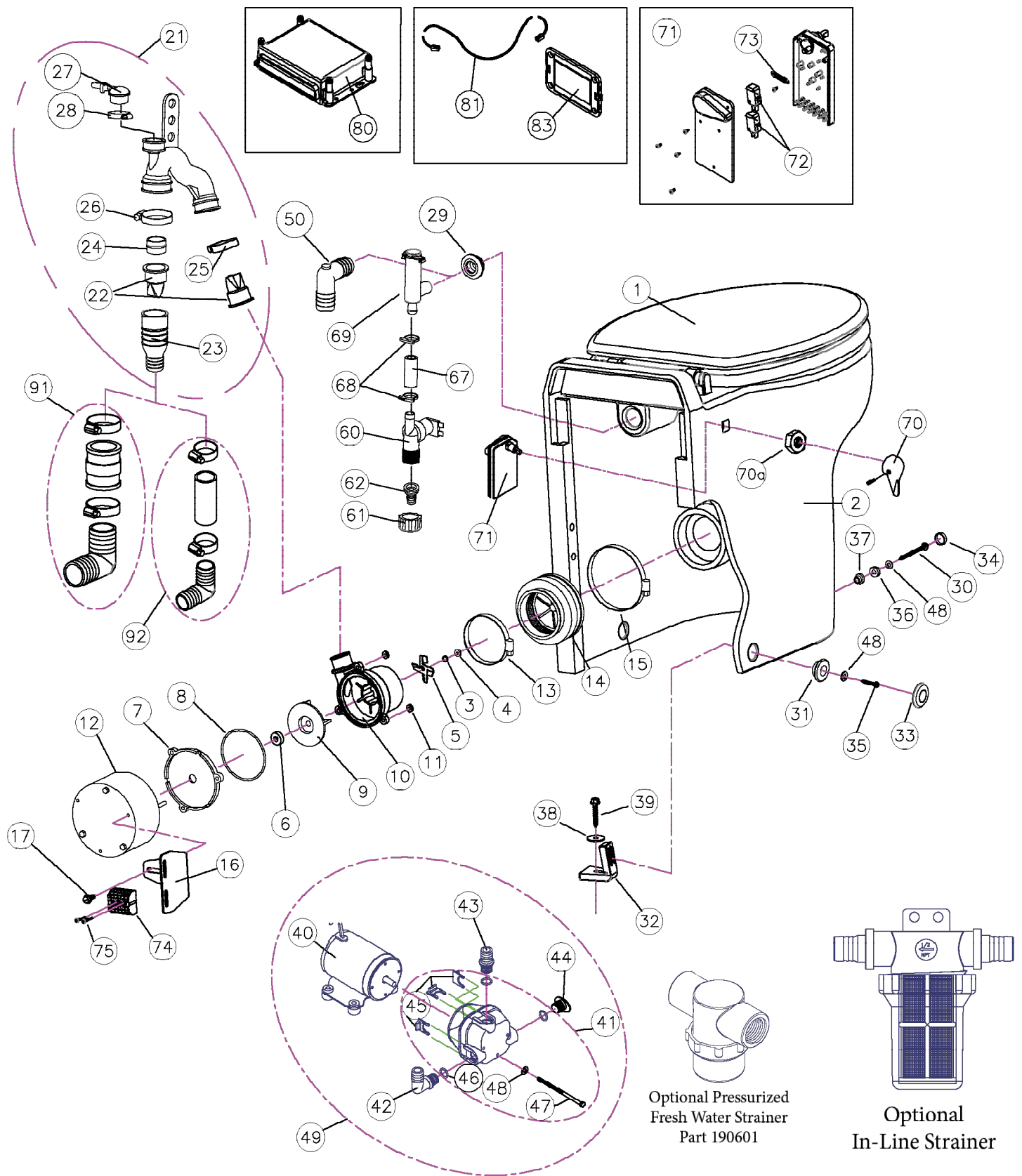
REPAIR / REPLACE KITS

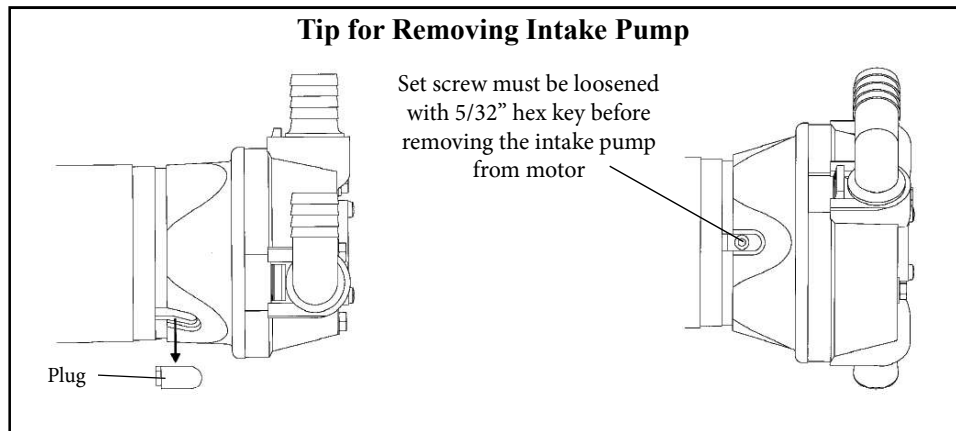
MERK	Discharge Pump Repair Kit (includes 6, 8 and 22)
2210012	Discharge Pump Assembly 12 VDC (includes 3-12 and 21-28)
2210024	Discharge Pump Assembly 24 VDC (includes 3-12 and 21-28)
FWK12	12 v Fresh Water Inlet Assy (includes 60-69)
FWK24	24 v Fresh Water Inlet Assy (includes 60-69)
162400	Fitting Kit (includes 42, 43, 44, 46)
DIAPUMPRK	Raw Water Pump Repair Kit

ADDITIONAL OPTIONAL ACCESSORIES AVAILABLE FROM RARITAN

91	221147	1 1/2 inch Thru Wall Discharge Kit
92	221148	1 inch Thru Wall Discharge Kit
1PCP32	C.P. Cleans Potties, 32 OZ	
1PCHGAL	Cleans Hoses, Tanks and MSD (gal)	
1PKO32	Kills Odors, 32oz	
KO2	Deodorant System (Seawater Models)	
SFH	Sanitation Hose 1 1/2" (sold by foot)	
SFH1	Sanitation Hose 1" (sold by foot)	
190601	Fresh Water Strainer	
163000	In-Line Strainer	
RTME12D	Power Converter for 120/240 VAC	
STCTSA	Holding Tank Full Sensor (Sensa Level TM) For use with STC Flush Control.	
STCFL	Holding Tank Full Sensor (Float Switch) For use with STC Flush Control.	

Marine Elegance Comfort Height Exploded View - Smart Handle





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.
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.
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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.



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www.raritaneng.com

Thank you for purchasing a Raritan

Marine *Elegance* Comfort Height

with Smart Handle Flush Control

SCAN for
Owners Manual



L442

Model and Serial #:
Please have this available if support is needed.

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



Do not return this product to store.

PLEASE RETAIN FOR YOUR RECORDS