Model 241E with Smart Handle

Installation and Maintenance Instructions

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

WARNING:

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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 as defined in 46CFR 110.15-65(e), Subchapter J-Electrical Engineering.

DO NOT Install in the area requiring ignition protected devices.

DO NOT run continuously for more than 30 seconds.

Description:

Our Marine Elegance Comfort Height Elongated Bowl is available in 12V or 24V DC. 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.

Smart Toilet Control: provides timed operation and independant control of water and discharge.

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

Operation of handle:

Pull Handle Forward:

Pull handle forward and release: starts a timed flush, intake pump starts followed by discharge pump.

Push Handle Backward:

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

Model and Serial Number:

Link to online Warranty Registration







IMPORTANT SAFETY INSTRUCTIONS:

WARNING: HAZARD OF FLOODING - Always shut off seacock(s) before leaving the

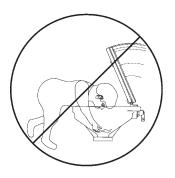


shut off seacock(s) before leaving th boat unattended.

Double clamp all below waterline hose fittings and check frequently for integrity.

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.



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.

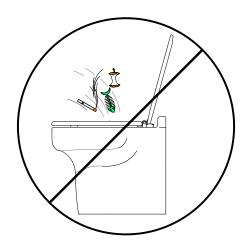
Toilets mounted at or below the waterline must have a vented loop installed in the discharge line. The top of the vented loop must be a minimum of 4" (10cm) above the waterline at the boats greatest angle of heel (see vented loop manufacturer's instructions).

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

Double clamp all below waterline connections.

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.



Operation: Please see instructions included with control to see how to operate your unit.

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.

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.

3

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	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 mm ²												
	AWG	16	16 1		14 12		10		8		6	4	2
	mm²	m ² 1.5 2		.5	4.0		6.0		10.0	0.0 16.0		25.0	35.0
•	Feet to Meters												
	Feet	10		15		20		25	5	3	0	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.)

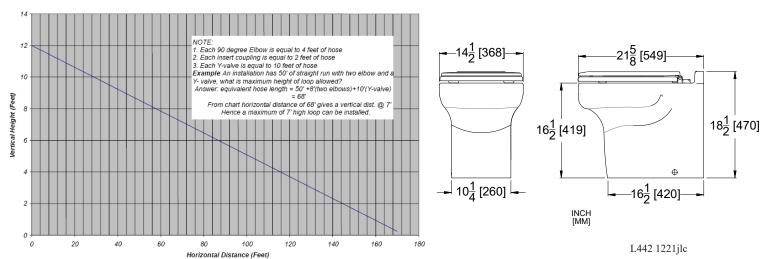
Sea Water Model - Recommended Wire and Fuse/Circuit Breaker Size

Units Voltage	Circuit Breaker/ fuse size (amps)	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 Freshwater Model - Recommended Wire and Fuse/Circuit Breaker Size

Units Voltage	Circuit Breaker/fuse size (amps)	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

Discharge maximum recommended 1" or 1 1/2" PVC hose length



Parts included with all models:

- 1. Toilet bowl assembly
- 2. Mounting bracket kit
- 3. Seat
- 4. Flush control includes User and Installation guides. (In some cases distribution points may package and sell controls separately.)
- 5. User guide and Installation guide with labels

Additional Parts included with sea water model:

- 1. Remote pump assy.
- 2. Relay for remote pump (SeaFresh models only)

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

Installing the seat and discharge hose support strapping

Discharge Hose Support Strap

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

For pressurized fresh water and remote intake pump models, using through deck plumbing

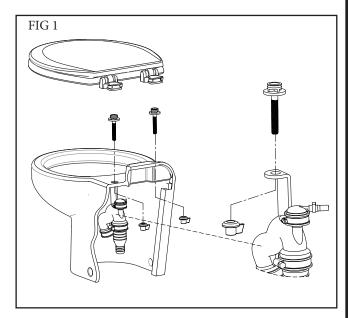
Mounting toilet to deck

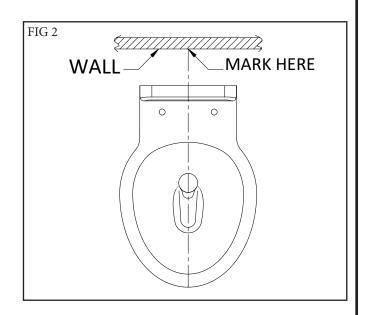
1. Mark deck and walls where center of bowl will be, FIG 2

Mounting Toilet

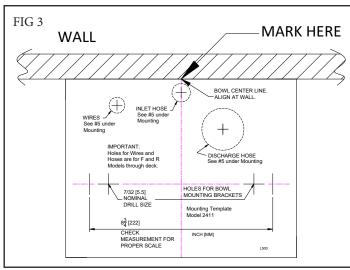
Mounting surface must be flat and solid. Seat must open more than 90 degrees.

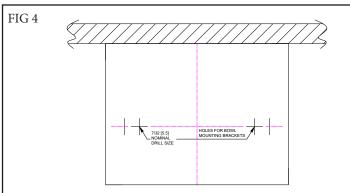


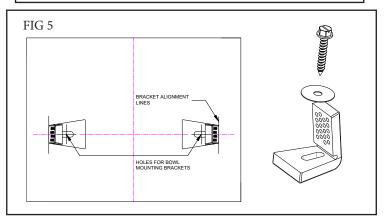


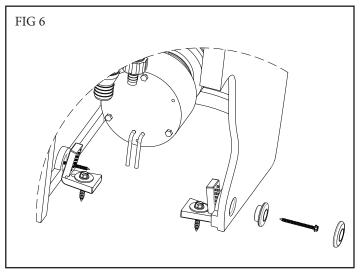


- 2. Place Mounting Template on deck, against the wall with arrow located on center mark and secure with tape (FIG 3)
- 3. Drill holes for floor mounting brackets at location (FIG 4)
- 4. Line up outside edges of floor mounting brackets with adjacent lines on mounting template. Secure brackets to deck using mounting screws and flat washer (FIG 5)
- 5. Drill holes for discharge hose (2"(51 mm.) for 1 1/2" hose; 1 1/2"(38 mm) for 1" hose), inlet hose (7/8" (22 mm.) and wires (3/4"(19 mm.) **Note:** check outside diameter of the hoses and adjust hole sizes accordingly.
- 6. Complete plumbing and wiring before installing toilet.
- 7. Mount toilet to mounting bracket as shown in FIG 6









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.

Sea Water Models installed below the waterline MUST have a vented loop installed between the intake pump and the toilet bowl.

Double clamp all below-waterline connections.

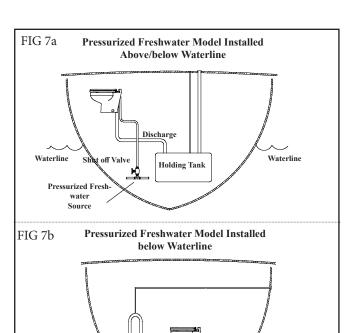
IMPORTANT

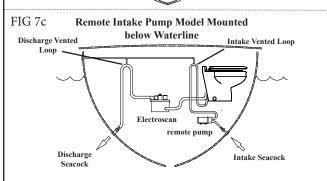
- Fittings and 90° bends should be kept to a minimum.
- In-Line Strainer may be installed on Sea Water Models per Installation Instructions. This will prevent clogs.
- Discharging untreated sewage is forbidden in all U. S. waters within the three-mile limit.
- Thru-hull fittings and seacocks must be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

Residual Water in the Bowl

The Marine Elegance is equipped with an integral vent to maintain water in the bowl when the plumbing lines are routed downward (See FIG 8a and FIG 8b). The Smart Toilet Control (STC) is designed to add water at the end of the flush cycle. The toilet will not hold more than about 4" in the bowl. If any of the discharge hose runs higher than the internal integral vent, DO NOT REMOVE THE VENT CAP. For vent to work properly in downward installation, the vent cap must be removed (see FIG 9).

To enable Integral Vent, remove Vent Cap (FIG 9), connect ½ hose and connect hose to a deck vent fitting (Reference FIG 7C). Hose and deck fitting not included.

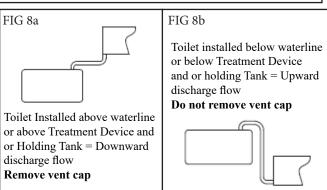


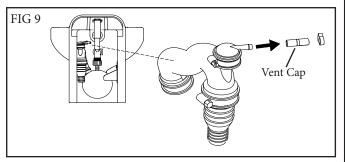


Waterline

Waterline

Discharge Seacock





Discharge Lines

Raritan Sanitation Hose is recommended. Use part number SFH for 1 ½" hose or SFH1 for 1" hose

- 1. Connect sanitation hose to discharge fitting on toilet. **NOTE:** Discharge fitting is designed for 1" or 1½" hose. 1½" hose is secured at top of fitting and 1" is secured at the bottom. It is not necessary to remove the 1" barb if using 1½" 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:

Use part# 221147 for 1½" hose or 221148 for 1" hose.

Intake Lines

Pressurized Freshwater Models

- 1. Connect ½ (13mm) I.D. hose to pressurized freshwater supply.
- 2. Install a shut off valve in intake line before water solenoid valve.
- 3. 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.

Mounting Remote Pump

- 1. Remote pump uses ³/₄" (19mm) 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 Inline Strainer (optional) to avoid clogs.
- 5. Secure remote pump to the floor using four bolts through the pump base (FIG 13).

Connecting Remote Pump

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 (FIG 12).

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

- 1. Slide fitting clips to open position (FIG 11).
- 2. Select inlet port to be used.
- 3. Install appropriate fittings into inlet and outlet ports.

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

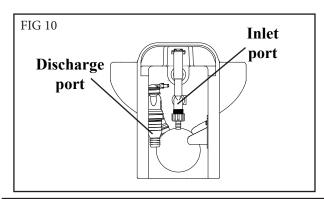
4. Install the plug fitting into unused inlet port.

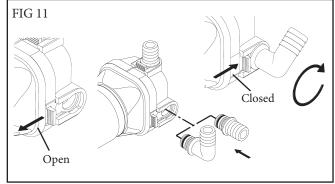
IMPORTANT: Be sure not to install plug fitting into outlet port! Damage to pump will occur!

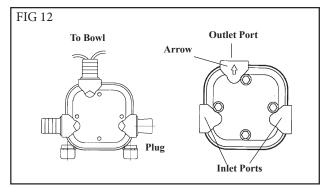
- 5. Slide fitting clips back to closed position (FIG 11)
- 6. Connect hose from seacock to inlet port of intake pump. If used, strainer is in-line. Use hose clamp provided.

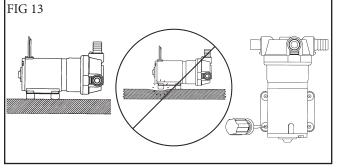
IMPORTANT: Double clamp all below waterline hose connections!

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









Mounting controls:

Refer to instruction enclosed with control.

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

WIRING

WARNING: Hazard of Shock and Fire

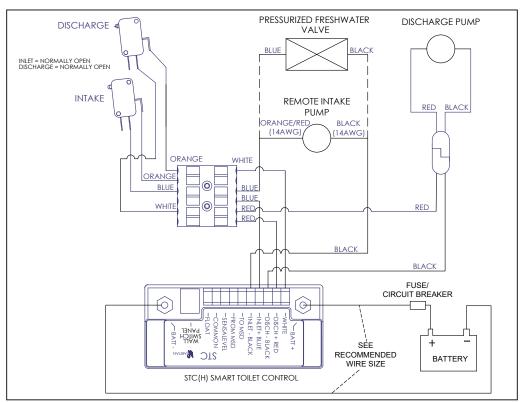
- Always use proper wire, wire connectors and fuse/circuit breaker. See Specification Chart.
- Secure wire properly.
- Do not connect appliances to toilet circuit.
- Make sure power is off before proceeding.
- Use proper wire terminals for all wire connections.
- 1. Determine proper wire size by measuring distance from:
- Power Source to toilet and back to power source.
- Remote pump units also include distance from power source for remote pump and back to power source.
 Same wire gauge must be used for both lower base and remote pump.

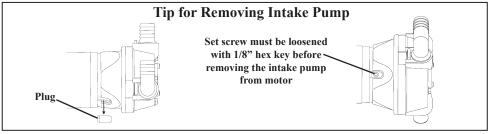
- 2. Select proper wire and fuse/circuit breaker size from Specifications on Installation page.
- 3. Install fuse/circuit breaker in positive line at source.
- 4. Wire control to the toilet and battery using one of the wiring diagram supplied with the Smart Toilet Control.

Connect Hoses and wiring to toilet

5. Route wire from control per wiring diagrams.

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

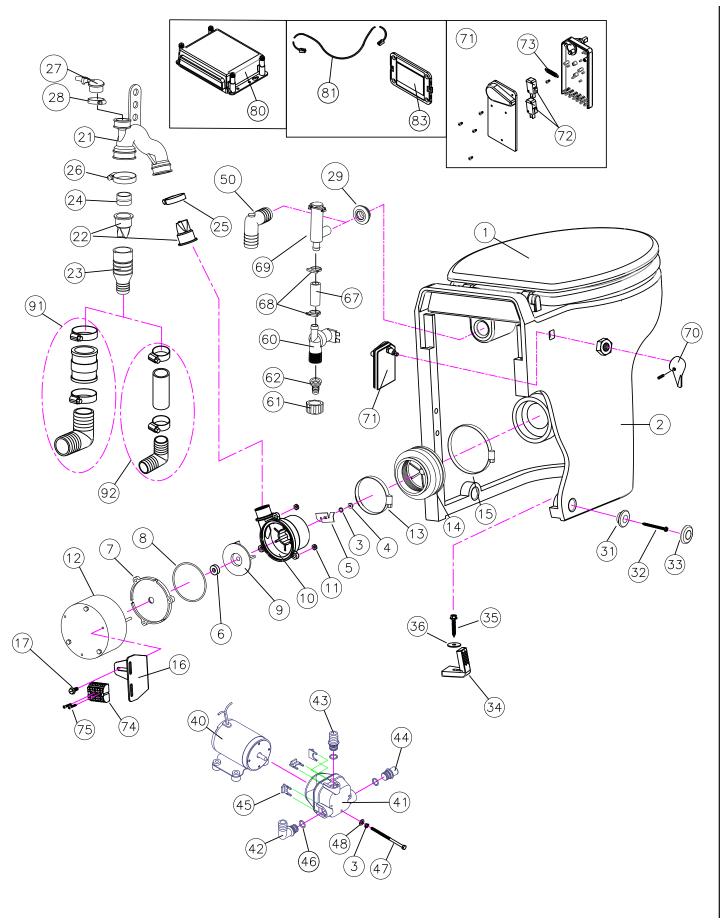




Marine Elegance Comfort Height PARTS LIST - Smart Handle

Seat & Cover (Slow Close) ME Bowl, Hgt, White #10 Lockwasher SS (5) 10-32 SS Nut Macerator Blade Motor Shaft Seal Discharge Pump Seal Plate O-Ring Impeller Discharge Pump Macerator Housing Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2) Screw Mtg, 18-8 SS Hex	SMAR 7 80 81 83	221230W	Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate
#10 Lockwasher SS (5) 10-32 SS Nut Macerator Blade Motor Shaft Seal Discharge Pump Seal Plate O-Ring Impeller Discharge Pump Macerator Housing Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	SMART 80 81 83 HANDL 70 71 72 73	F188 F144 TING BRACKE 221230W FLUSH CONT TOILET CONT STC548W STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Well Nut 10-32 (3) Washer #10L 18-8 SS (2) ET ASSEMBLY Mounting Bracket w/Hardware (includes items 31-36) TROL OPTIONS NTROL Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
10-32 SS Nut Macerator Blade Motor Shaft Seal Discharge Pump Seal Plate O-Ring Impeller Discharge Pump Macerator Housing Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	SMART 80 81 83 HANDL 70 71 72 73	F144 TING BRACKE 221230W FLUSH CONT TOILET CONT STC548W STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Washer #10L 18-8 SS (2) ET ASSEMBLY Mounting Bracket w/Hardware (includes items 31-36) TROL OPTIONS NTROL Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
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O-Ring Impeller Discharge Pump Macerator Housing Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	SMART 80 81 83 HANDL 70 71 72 73	FLUSH CONTITOILET CONSTC548W STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Mounting Bracket w/Hardware (includes items 31-36) TROL OPTIONS NTROL Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Impeller Discharge Pump Macerator Housing Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	SMART 80 81 83 HANDL 70 71 72 73	FLUSH CONTITOILET CONSTC548W STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Mounting Bracket w/Hardware (includes items 31-36) TROL OPTIONS NTROL Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Pump Macerator Housing Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	SMART 80 81 83 HANDL 70 71 72 73	FLUSH CONT TOILET CON STC548W STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	(includes items 31-36) TROL OPTIONS NTROL Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Lock Nut 10-32 W/Nylon(3) Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	SMART 80 81 83 HANDL 70 71 72 73	STC548W STC545 STC543 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	TROL OPTIONS NTROL Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Motor 12 V Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	80 81 83 HANDL 70 71 72 73	STC548W STC545 STC543 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Motor 24V Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	80 81 83 HANDL 70 71 72 73	STC548W STC545 STC543 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Bowl Throat Adapter Clamp - Pump Bowl Throat Adapter Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	80 81 83 HANDL 70 71 72 73	STC548W STC545 STC543 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Bowl Throat Adapter Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	80 81 83 HANDL 70 71 72 73	STC548W STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666	Smart Toilet Control (12 & 24 VDC) Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Bowl Throat Adapter Clamp - Bowl Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	81 83 HANDL 70 71 72 73	STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Pump Support Bracket for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	81 83 HANDL 70 71 72 73	STC545 STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Control Cable 7 ft Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
for part 241101 Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	83 HANDL 70 71 72 73 74	STC543 LE ASSEMBLY AM665W AV600W AM667 AM666 ETB3	Touch Panel w/Back Plate Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Screw 10-32 X 3/8 W/VT Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	HANDL 70 71 72 73	AM665W AV600W AM667 AM666 ETB3	Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Hose Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	70 71 72 73	AM665W AV600W AM667 AM666	Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Joker Valve (2) (Also includes #24) Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	70 71 72 73	AM665W AV600W AM667 AM666	Handle replacement with set screw Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Adapter Fitting Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	71 72 73	AV600W AM667 AM666 ETB3	Handle Flush Control Replacement Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Joker Valve Insert Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	72 73 74	AM667 AM666 ETB3	Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Hose Clamp (small) Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	72 73 74	AM667 AM666 ETB3	Microswitch V7 Series, 25A at 250 VAC Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Discharge Hose Clamp (large) Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	73 74	AM666 ETB3	Spring .250 X 1.375, 316 S/S Terminal Block, 3 Poles, Push Connection
Vent Valve Assembly Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)	74	ETB3	Terminal Block, 3 Poles, Push Connection
Vent Valve Hose Clamp Spud Seal ME Bowl Mtg Bushing (2)			
Spud Seal ME Bowl Mtg Bushing (2)	75	F108	
ME Bowl Mtg Bushing (2)			
			Self Threading, 18-8 S/S (2)
OCICW Wilg, 10-0 00 FICA			· · · · · · · · · · · · · · · · · ·
Slotted #8 x 2" (2)			
ME Bowl Mounting Cap (2)	REPAI	D KITS	
ME Mounting "L" Brackets (2)			5
ME Screw: Bowl Mounting (2)	MERK		mp Repair Kit (includes #6, 8, 22 and 24)
ME Washer Fender Style (2)	22100**	•	mp Assembly (includes #3 thru 12 and 21
(2)		thru 28)	
PUMP UNITS	ΔΠΠΙΤΙ	IONAL ACCES	SSORIES AVAILABLE FROM RARITAN
Pump Motor 12VDC	וווטטא	NOT INCLUD	
Pump Motor 24VDC			
Remote Intake Pump w/o Motor	91	221147	1 1/2 inch Thru Wall Discharge Kit
3/4" Hose Barb 90° Fitting	92	221148	1 inch Thru Wall Discharge Kit
3/4" Hose Barb Straight		1PCP32	C.P. Cleans Potties, 32 OZ
Plug Fitting		1PCHGAL	Cleans Hoses, Tanks and MSD (gal)
Fitting Retaining Clip (3)		SFH	Sanitation Hose 1 1/2" (sold by foot)
O-ring (3)			Sanitation Hose 1" (sold by foot)
Inlet Pump Mounting Bolt (4)			Seawater Inline Strainer
#10 Washer SS Flat (4)			Power Converter for 120/240 VAC
Elbow Adapter 3/4 X 1/2		KO2	Deodorant System (Seawater Models)
·		1PKO32	Kills Odors, 32oz
RESH WATER UNITS			
Solenoid Valve 12VDC		STCTSA	Holding Tank Full Sensor (Sensa Level TM)
Solenoid Valve 24VDC			For use with STC Flush Control.
SOICHOIG VAIVE ZTVDO			
ME Nut 3/4 BSP		STCFL	Holding Tank Full Sensor (Float Switch)
ME Nut 3/4 BSP			For use with STC Flush Control.
ME Nut 3/4 BSP ME Hose Adapter, Straight			
	O-ring (3) Inlet Pump Mounting Bolt (4) #10 Washer SS Flat (4) Elbow Adapter 3/4 X 1/2 RESH WATER UNITS Solenoid Valve 12VDC Solenoid Valve 24VDC ME Nut 3/4 BSP ME Hose Adapter, Straight	O-ring (3) Inlet Pump Mounting Bolt (4) #10 Washer SS Flat (4) Elbow Adapter 3/4 X 1/2 RESH WATER UNITS Solenoid Valve 12VDC Solenoid Valve 24VDC ME Nut 3/4 BSP ME Hose Adapter, Straight Hose 1/2"	O-ring (3) Inlet Pump Mounting Bolt (4) #10 Washer SS Flat (4) Elbow Adapter 3/4 X 1/2 RESH WATER UNITS Solenoid Valve 12VDC Solenoid Valve 24VDC ME Nut 3/4 BSP ME Hose Adapter, Straight Hose 1/2" SFH1 163000 RTME12D KO2 1PKO32 STCTSA STCTSA STCTSA

EXPLODED PARTS



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
Poor pumpout, especially solids.	1C. Clogged vents.	 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.	 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. Low voltage.2E. Clogged strainer.	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.	 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
	3C. Sewage remaining in discharge line.	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 vented loop(s) are installed and vent is functional. Outside water pressure from 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

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.

- 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 CON-DITION 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.
- 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.
- 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.
- UNDER NO CIRCUMSTANCES SHALL RARITAN BE LIABLE TO PURCHASER OR ANY OTHER PERSONS FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER ARIS-ING 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.
- 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.
- This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



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