


crown head II™



ELECTRIC MARINE TOILET


OPERATION, MAINTENANCE and INSTALLATION INSTRUCTIONS

Manufactured after June 2002

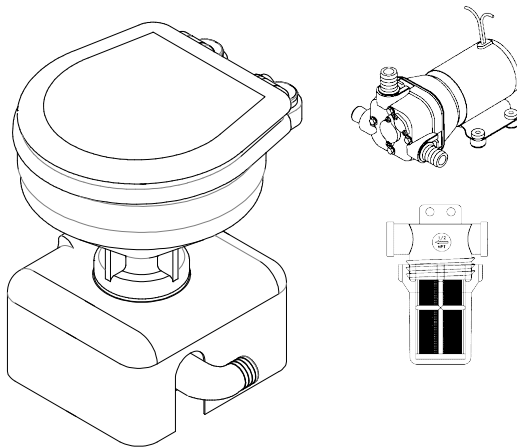
THE FOLLOWING ARE CAUTIONARY STATEMENTS THAT MUST BE READ AND FOLLOWED DURING BOTH INSTALLATION AND OPERATION.

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, or injury or death to personnel that may result from improper installation or operation of this product.*

WARNING:   **RISK OF SHOCK OR FIRE** - Always use recommended fuse/circuit breaker and wire size. Motors in this product are "Ignition Protected". They are not however, explosion-proof.

WARNING:  **RISK OF FLOODING**-Always shut off seacock(s) before leaving the boat unattended. Whenever possible hose connections should be secured using two stainless steel hose clamps. Integrity of clamps, hoses and fittings should be checked periodically.

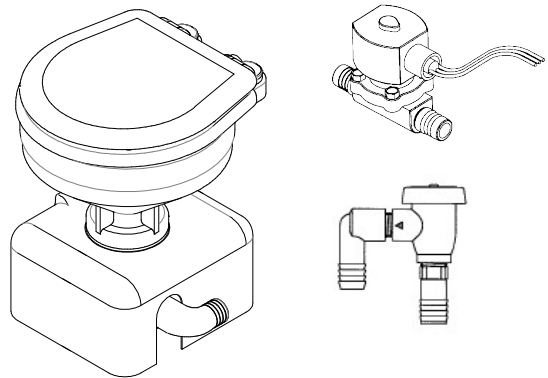
Crown Head II Sea Water Model



The Crown Head II is an automatic electric macerating toilet available in Freshwater or Sea Water flushing.

Model and Serial Number:

Crown Head II Pressurized Freshwater Model



Three different Flush Control options are available:
Included:

1. **PRS** - Momentary Flush Switch. Allows momentary operation of toilet by pressing switch.

Sold Separately:

2. **STC** - Smart Toilet Control. Timed Flush with wall mounted touch pad (available for 12 or 24 volt only).
3. **221600** - Multifunction Flush Panel. Ability to operate intake and discharge separately.



1-800-352-5630
www.raritaneng.com

OPERATION

- Momentary Flush Switch (PRS)
Press and hold switch until all waste is cleared from bowl.

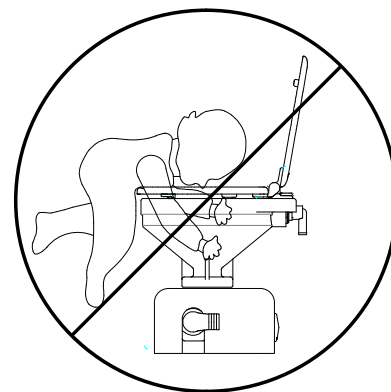
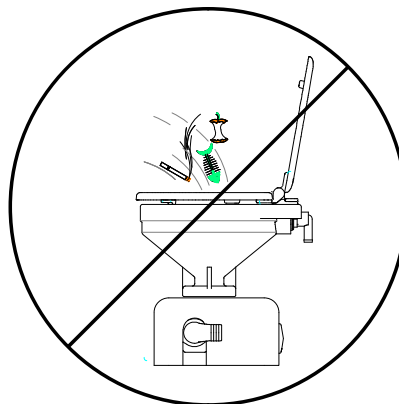
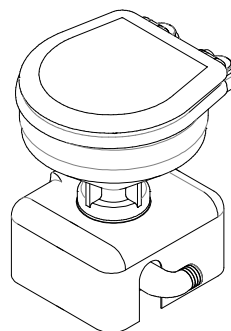
Refer to manuals included with Smart Toilet Control (STC) or Multifunction Flush Panel Control for operation instructions.

- No special toilet paper is required. Although, 1 ply toilet paper is recommended.
- Water should appear in the bowl within ten seconds of flushing. If not, see troubleshooting section (Pg 13).
- 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.

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

WARNING: Children can drown in water retained in the bowl.

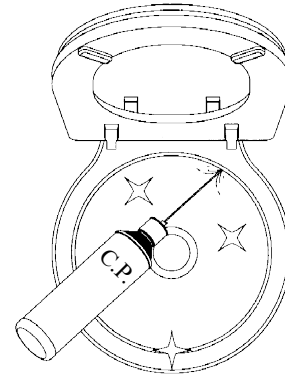
CAUTION: Seat and/or lid could close and strike child.



MAINTENANCE Cleaning Instructions

IMPORTANT: Do not use cleaners that contain ammonia, ethyl acetate, phosphoric acid or concentrated chlorine bleach. These will cause damage to the toilet.

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

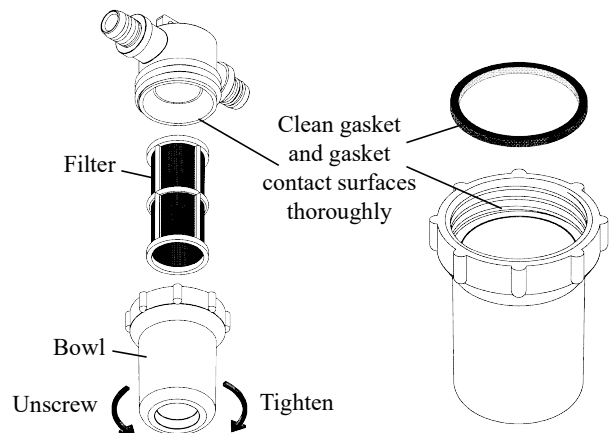


Recommend Visual Inspection

- ✓ No leaks at toilet and hose connections
- ✓ Hose clamps
- ✓ Condition of hoses
- ✓ Seacocks
- ✓ Condition of wires and connections
- ✓ In-Line Strainer

Cleaning In-Line Strainer - Optional (Sea Water Models only)

1. Shut off intake seacock.
2. Unscrew strainer bowl.
3. Remove filter.
4. Clean bowl and filter with a clean dry cloth.
5. Clean gasket and gasket contact surfaces thoroughly.
6. Replace gasket, filter and bowl.
7. Open seacock.
8. Check for leaks.



WINTERIZING

IMPORTANT

- **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.**

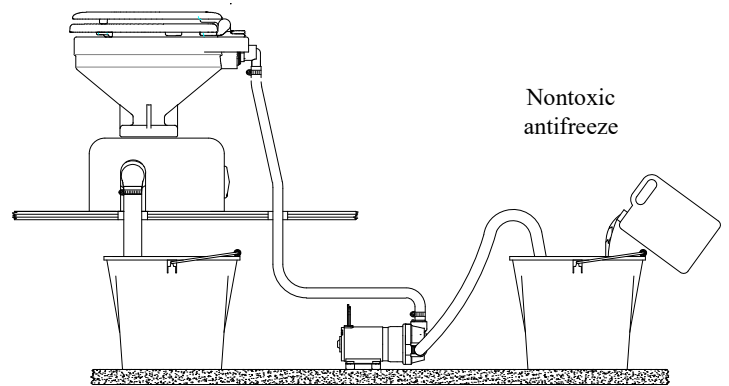
Sea Water Model

Parts Required

- 1 1/2" (38mm) I.D. piece of hose, approximately 3 feet (1m) long
- 3/4" (19mm) I.D. piece of hose, approximately 3 feet (1m) long
- Two buckets
- Nontoxic antifreeze approximately 1 quart (1 liter)

Steps

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



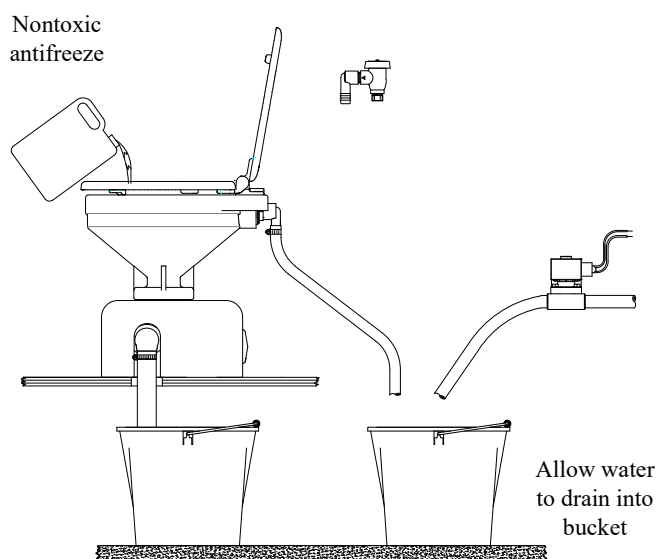
Pressurized Fresh Water Model

Parts Required

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

Steps

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



RECOMMISSIONING

1. Using buckets, hoses, and clean fresh water, flush antifreeze out of system (see Winterizing). Dispose of antifreeze in accordance with local and federal regulations.
2. Reconnect intake and discharge hoses and open both seacocks.
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.

INSTALLATION

Parts Included:

All Toilets

Toilet Bowl (Household or Marine)

Seat and Cover

Discharge pump assembly

Momentary Flush Switch (part# PRS)

Mounting pads

Lower Motor Cover

Sea Water Model

Remote Intake Pump

3/4" Hose Barb straight fitting

3/4" Hose Barb - 90° elbow fitting

Plug Fitting

3/4" Stainless Steel Hose Clamps (2)

Pressurized Freshwater Models

Atmospheric Vacuum Breaker with fittings

Solenoid Valve with fittings

Solenoid Valve Mounting Bracket

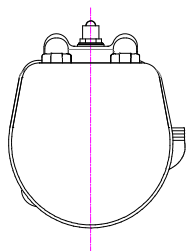
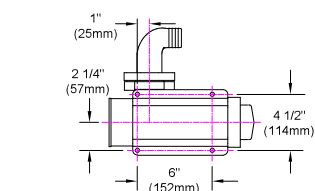
Additional Parts Required

- Four 1/4" (6mm) stainless steel mounting bolts or lag screws and washers (Sea Water Models)
- Two 1/4" (6mm) stainless steel mounting bolts or lag screws and washers (Freshwater Models)
- Four 5/16" (8mm) stainless steel mounting bolts or lag screws and washers
- 1 1/2" (38mm) I.D. discharge hose
- 3/4" (19mm) I.D. reinforced intake hose
- 3/4" (19mm) and 1 1/2" (38mm) hose clamps (two for each connection below waterline)
- Wire
- Terminals
- Fuse/circuit breaker

Tools Required

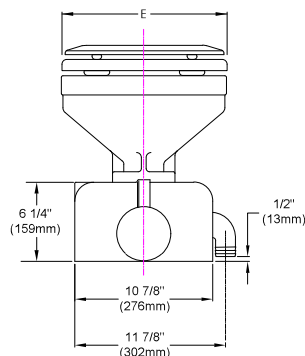
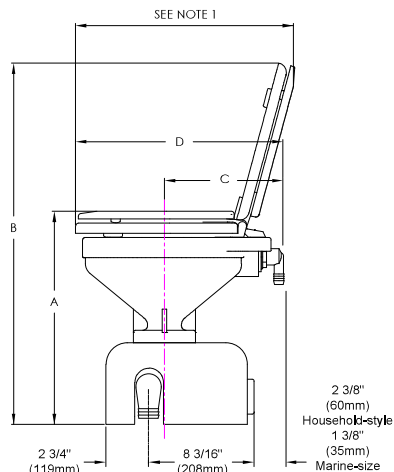
- 5/16" nut driver
- Wrench or screw driver (depending on mounting fastener)
- Bit for drilling mounting surface (depending on fastener used)
- Wire cutters
- Wire terminal crimpers
- Hose cutters
- Tape measure

** Specify Voltage



BOWL TYPE	A	B	C	D	E
MARINE	17 (432)	29 (737)	10 3/8 (264)	17 1/4 (438)	13 (330)
HOUSEHOLD	17 3/8 (441)	32 1/8 (816)	11 1/2 (292)	20 (508)	14 3/8 (365)

INCHES
(MM)



NOTE
1. THE SEAT WILL OPEN WITHIN THE DEPTH OF THE BOWL (D), HOWEVER, IT MAY BE DESIRABLE TO INCREASE THIS ANGLE BY ALLOWING MORE ROOM AT THE BACK OF THE BOWL FOR THE SEAT TO OPEN.
2. DIMENSIONS ARE FOR REFERENCE AS VITREOUS CHINA DIMENSIONS MAY VARY +/- 5%.

Plumbing

Maximum suction of Intake pump (Maximum height above waterline)	4 Ft. (1.2m) from Intake Pump
Maximum height of discharge vented loop	6 Ft. (1.8m) from base of toilet
Pressurized water source must provide a minimum flow rate of 3 gallons (11.3 liters) per minute at a minimum pressure of 5 psi (34.5 kPa).	

NOTES: for Wire Sizes

- Distances are from source (battery) to unit and back to source (battery).
- Recommended conductor wire minimum AWG (mm²) for 3% voltage drop.
- Recommended conductor sizes are based on 105°C rated insulation.
Refer to ABYC Standards for other insulation ratings.

Recommended Wire and Breaker Sizes for Crown Head II with Diaphragm Intake Pump

Units Voltage	Main Circuit Breaker/Fuse Amps	Discharge Pump Assembly Amps	Diaphragm Intake Pump Amps	Distance (feet) and Wire (AWG)						
				10'	15'	20'	25'	30'	40'	50'
12V DC	40	18	10	10	8	6	6	4	4	2
24V DC	20	9	5	16	14	12	12	10	10	8
32V DC	15	7	4	16	16	16	16	16	16	14

Recommended Wire and Breaker Sizes for Crown Head II with Pressurized Freshwater

Units Voltage	Main Circuit Breaker/Fuse Amps	Discharge Pump Assembly Amps	Water Solenoid Valve Amps	Distance (feet) and Wire (AWG)						
				10'	15'	20'	25'	30'	40'	50'
12V DC	25	18	1	10	10	8	8	6	6	4
24V DC	15	9	.5	16	16	14	12	12	10	10
32V DC	10	7	.5	16	16	16	14	14	12	12

Branch Circuit Wire to Water Solenoid Valve: use 16 AWG Wire

Wire Sizes Conversion Table

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

Feet to Meter Conversion Table

Feet	10	15	20	25	30	40	50
Meter	3.1	4.6	6.1	7.2	9.2	12.2	15.2

Mounting Toilet

Mounting surface must be flat and solid (FIG 1).

IMPORTANT: Do not mount where it may be subject to shower spray or other sources of external water.

1. Install seat on toilet.
2. Place toilet where it will be located.

Make sure there is room to route hoses.

Make sure seat will open properly.

3. Mark location of toilet base mounting holes on mounting surface.
4. Drill holes for toilet mounting bolts/screws.

NOTE: Hole size will depend on type of bolt/screws used (5/16" [8mm] size bolts/screws are recommended).

5. Mark locations for hoses where required.
6. Cut holes for hoses.
7. Place rubber mounting strips under base plate (FIG 2).
8. Secure toilet to surface.

FIG 1

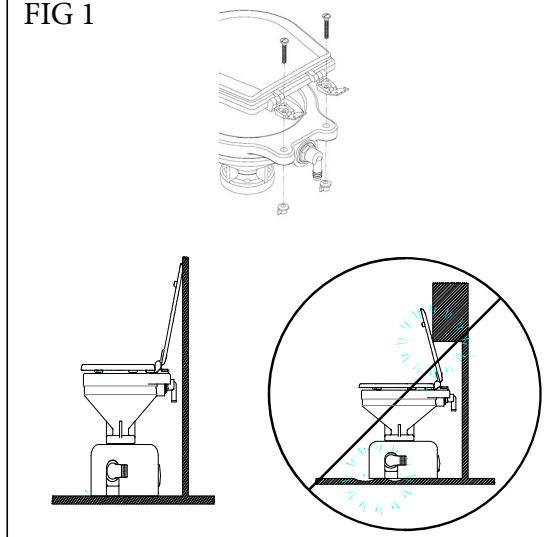
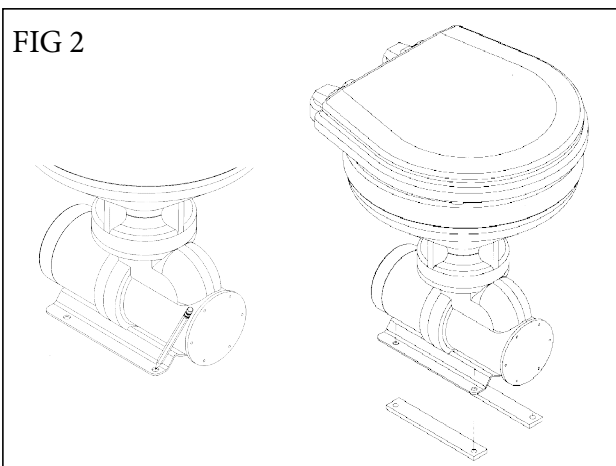


FIG 2



Mounting Water Solenoid Valve

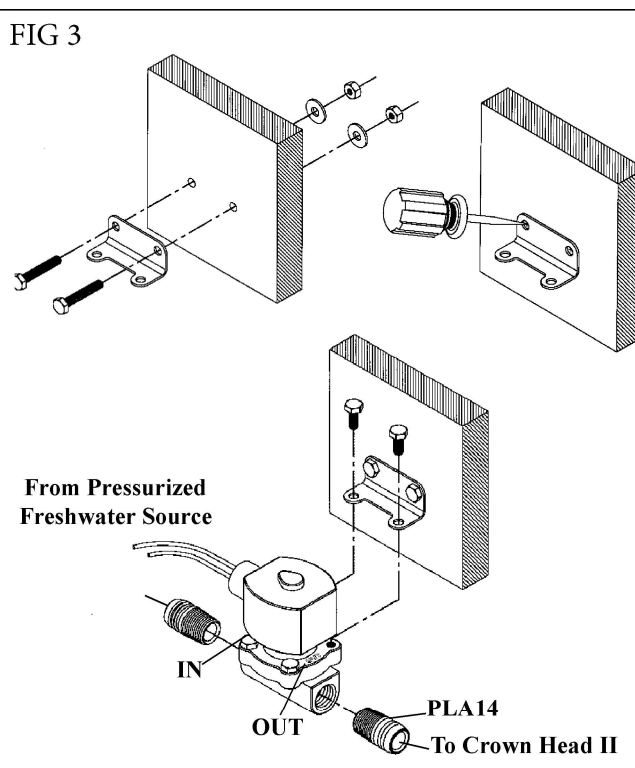
(Pressurized Freshwater Models Only)

1. Locate valve on a solid flat surface in an area that is dry and well ventilated.
2. Mark and drill holes for water solenoid mounting bracket (FIG 3).

NOTE: Hole size will depend on type of bolts/screws used (1/4" [6mm] size bolt/screws are recommended).

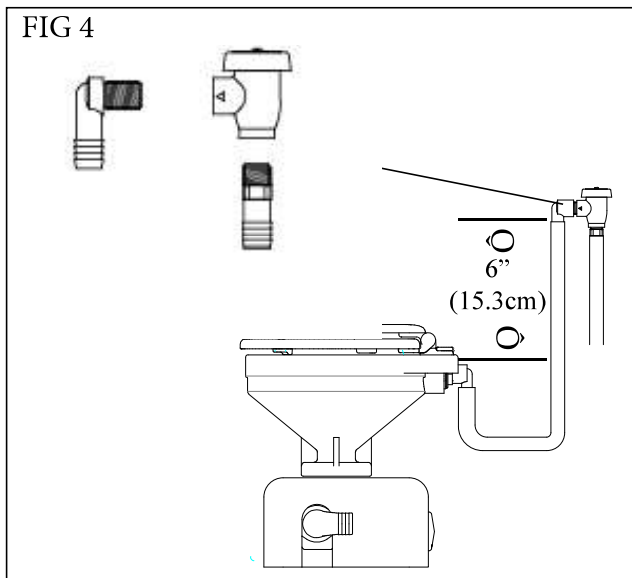
3. Mount bracket.
4. Install fittings provided (PLA14) on valve's inlet and outlet ports.
5. Attach valve to bracket. Valve must be mounted according to flow markings on valve body.

FIG 3



Mounting Atmospheric Vacuum Breaker (Pressurized Freshwater Model only)

1. Install fittings as shown (FIG 4).
2. Locate mounting area that is a minimum of 6" (15.3cm) above toilet.
3. Secure where top is in horizontal position.

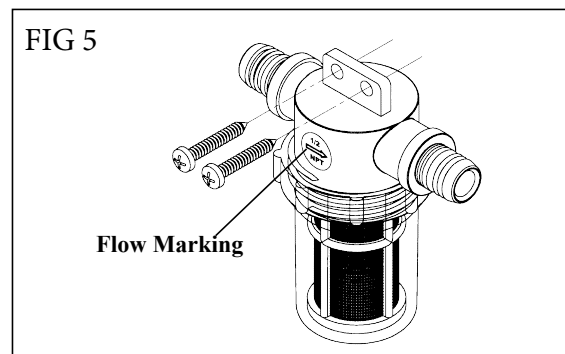


Mounting In-Line Strainer (Sold separately for Seawater Models Only)

Part # 163000

Make sure strainer bowl is tight.

1. Locate strainer where it will be accessible.
 2. Mark and drill mounting holes (FIG 5).
- NOTE:** Hole size will depend on type of bolts/screws used (1/4" [6mm] size bolts/screws are recommended).
3. Install fittings provided (#PLA14) on strainer's inlet and outlet ports.
 4. Mount strainer. Strainer must be mounted according to flow markings on strainer body.



Mounting Remote Intake Pump (Sea Models Only)

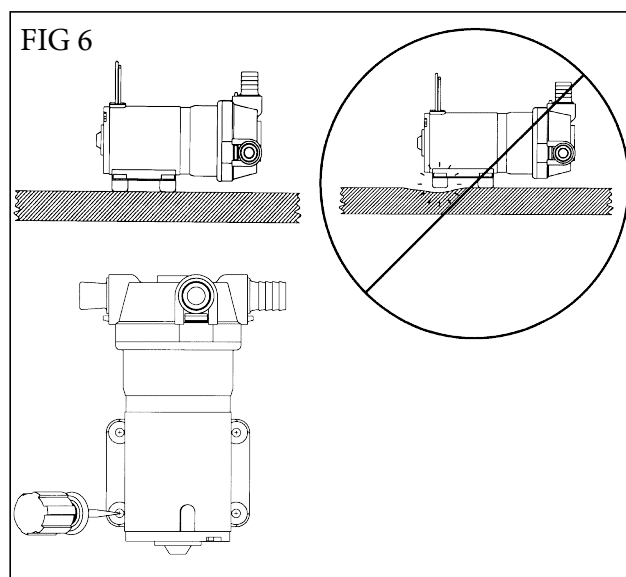
1. Locate on a flat solid surface in an area that is dry and well ventilated (FIG 6).

NOTE: Location should not be greater than 48" (122cm) above the waterline.

2. Mark and drill mounting holes.

NOTE: Hole size will depend on type of bolts/screws used (1/4" [6mm] size bolts/screws are recommended).

3. Mount pump. Do not over tighten bolts.



PLUMBING

WARNING: HAZARD OF FLOODING

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

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

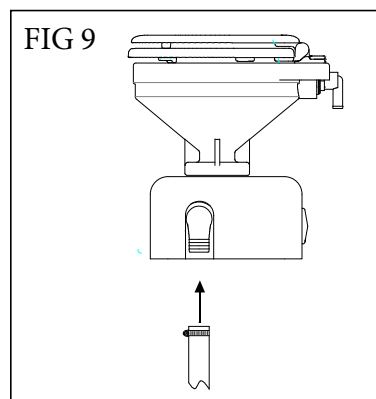
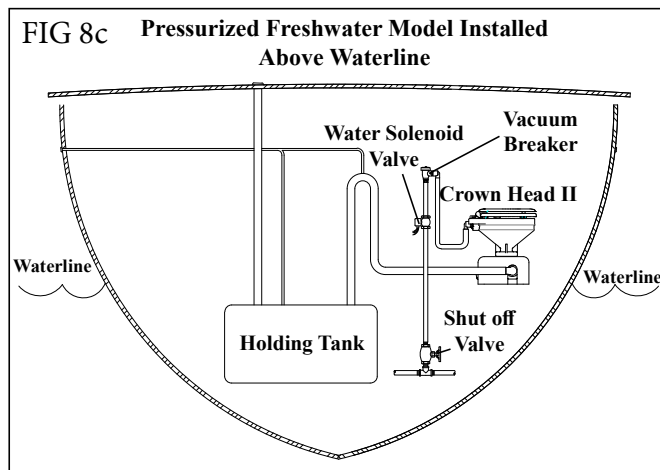
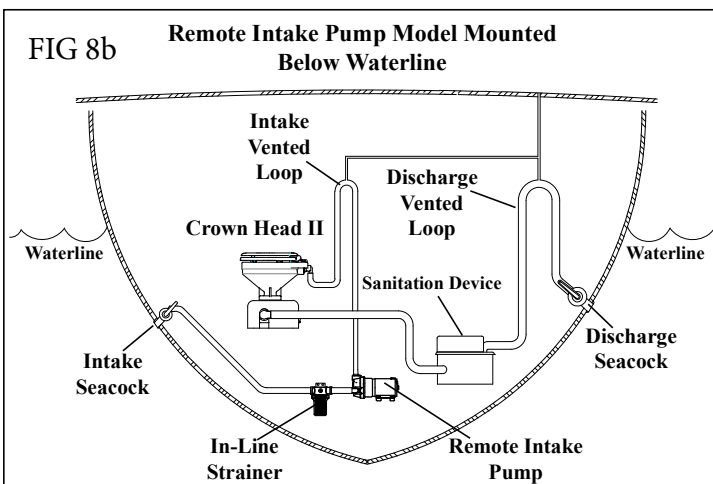
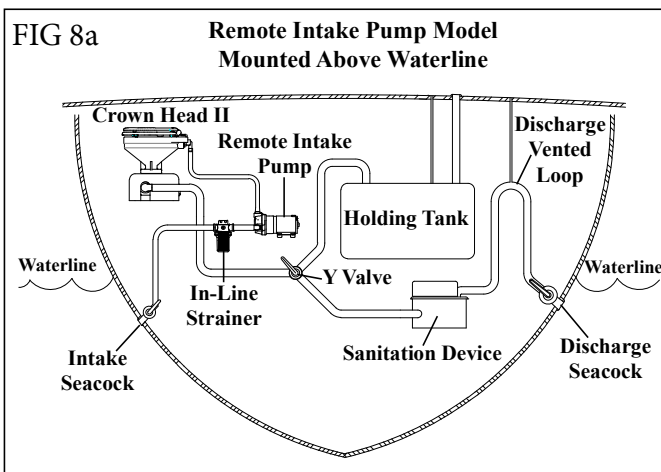
- Hazard of potable water contamination. Vacuum breaker must be installed with installations using potable water.

IMPORTANT:

- Fittings and 90° bends should be kept to a minimum.
- In-Line Strainer is recommended and should be installed before the Remote Intake pump.
- Discharging untreated sewage is restricted in all U. S. waters within the three-mile limit. If boating outside of U.S. Boundaries check with local authorities for their rules and regulations.
- Thru-hull fittings and seacocks must be installed where they are easily accessible.
- Use only quality reinforced hoses.
- Secure all hoses properly.

Discharge Lines

1. Connect quality 1 1/2" (38mm) sanitation hose to discharge fitting on toilet (FIG 9).
2. Run hose to appropriate device (i.e.: treatment system, holding tank, etc.).



Intake Lines

Pressurized Freshwater Models

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

1. Connect hose from pressurized freshwater source to a shut off valve (FIG 10).
2. Connect hose from shut off valve to inlet port of water solenoid valve.

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

3. Connect hose from outlet port of water solenoid valve to inlet port of vacuum breaker.
4. Connect hose from outlet port of vacuum breaker to toilet bowl.

FIG 10

From Pressurized Freshwater Source
(Shut Off Valve)

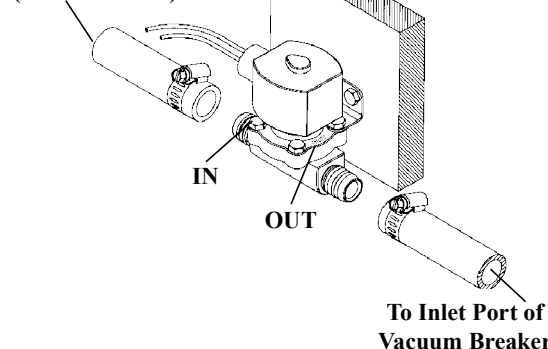
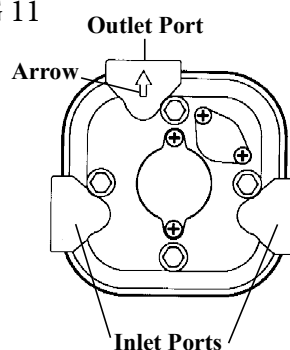


FIG 11



Sea Water Models

Intake pump fittings are interchangeable to allow more flexibility during installation. There are two inlet ports on either side of the intake pump (FIG 11). The outlet port (to toilet bowl) is at the top of the intake pump (Arrow).

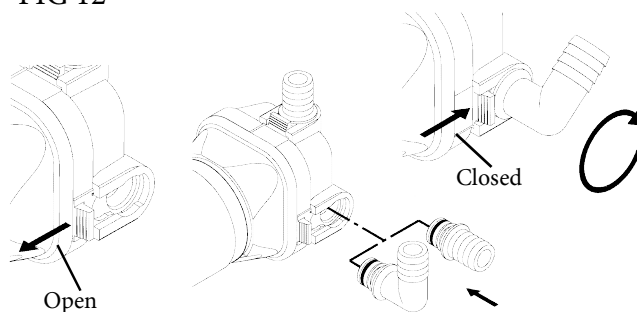
1. Slide fitting clips back (FIG 12).
2. Select inlet port to be used.
3. Install the appropriate fittings into inlet and outlet ports used.
4. Install the plug fitting into unused inlet port.

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

5. Reinstall fitting clips.

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

FIG 12



If In-Line Strainer is installed:

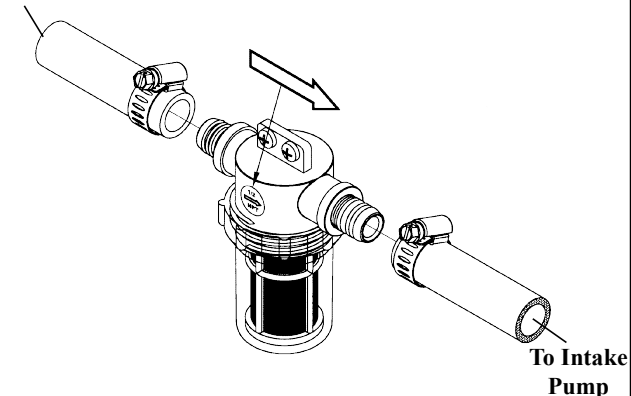
6. Connect hose from seacock to inlet port of In-Line Strainer (FIG 13).
7. Connect hose from outlet port of In-Line Strainer to inlet port of intake pump.

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.

FIG 13

From Seacock



WIRING

WARNING: Hazard of Shock and Fire

- Always use proper wire, wire connectors and fuse/circuit breaker. See Specification Chart on page 7.
- Secure wire properly.
- Do not connect other appliances to toilet circuit.
- Make sure power is off before proceeding.

NOTE: Figures shown with installation of Momentary Flush Switch (PRS).

Refer to manuals included with Smart Toilet Control (STC), Multifunction Flush Panel Control for wiring instructions.

For Remote Intake Pump Models (see FIG 14):

1. Determine proper size wire.
Measure distance from:
 - a) Power source to Pump Relay.
 - b) Pump Relay to toilet and Remote Intake Pump.
 - c) Toilet to ground source.
 - d) Determine total distance of wire needed.
 - e) Select proper size wire from Specification Chart on page 7.
2. Select proper size fuse/circuit breaker from Specifications Chart on page 7.
3. Install fuses/circuit breakers in positive line at source as shown in FIG 14.
4. Connect wire from fuse/circuit breaker to Red wire of Pump Relay.
5. Connect Pump Relay Orange wire to:
 - a) Orange/Red wire of Remote Intake Pump
 - b) Positive Terminal on Discharge Pump Motor
6. Connect wire from negative power source to:
 - a) Black wire of Remote Intake Pump.
 - b) Negative terminal on discharge pump motor.
7. Using 16 AWG wire, from Positive, connect 3 amp fuse, Momentary Flush Switch, to one of the Blue wires of Pump Relay.
8. Using 16 AWG wire, connect the other Blue wire from Pump Relay to Negative.

For Pressurized Freshwater Models (see FIG 15):

1. Determine proper size wire.
Measure distance from:
 - a) Power source to Pump Relay.
 - b) Pump Relay to toilet.
 - c) Toilet to ground source.
 - d) Determine total distance of wire needed.
 - e) Select proper size wire from Specification Chart on page 7.

2. Select proper size fuse/circuit breaker from Specifications Chart on page 7.
3. Install fuse/circuit breaker in positive line at source.
4. Connect positive wire from fuse/circuit breaker to Pump Relay Red wire.
5. Connect Pump Relay Orange wire to Positive terminal on Discharge Pump Motor.
6. Connect wire from Negative to Negative terminal on Discharge Pump Motor.
7. Using 16 AWG wire, connect Solenoid Valve with 3 amp fuse/circuit breaker to Orange wire from Pump Relay.
8. Connect the other Solenoid Valve wire to Negative.
9. Using 16 AWG wire, from Positive, connect 3 amp fuse, Momentary Flush Switch, to one of the Blue wires of Pump Relay.
10. Using 16 AWG wire, connect the other Blue wire from Pump Relay to Negative.

FIG 14

Remote Intake Pump Wiring

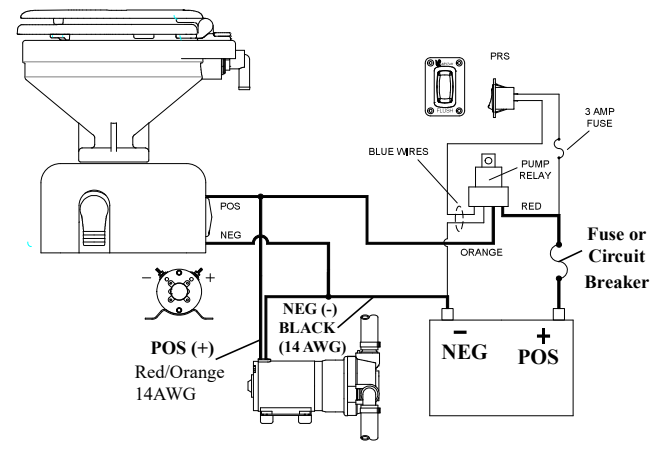
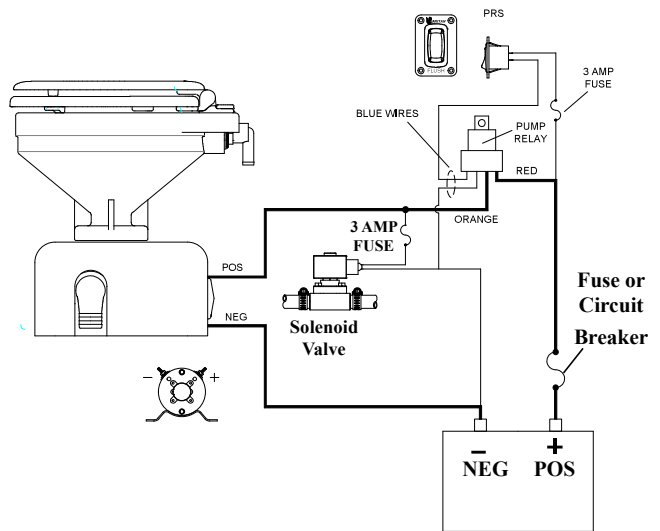


FIG 15

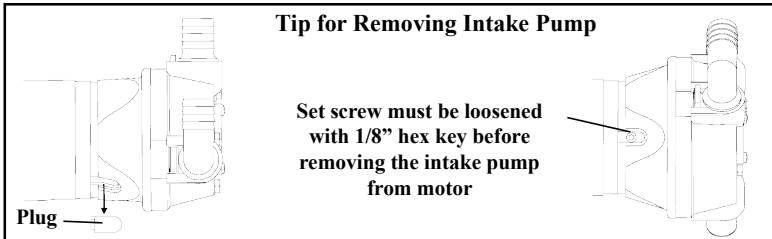
Pressurized Freshwater Wiring



TROUBLESHOOTING

Problem	Possible Cause	Conclusion
A. Poor Discharge, Especially Solids:	A1. Clogged or restricted discharge line. A2. Too many bends or ells in discharge line. A3. Clogged holding tank or vented loops. A4. Mineral buildup in hoses and fittings. A5. Low voltage. A6. Damage to pump wall. A7. Full holding tank.	A1. Be sure discharge seacock is open. Clean lines. Remove clog. A2. Replumb to eliminate bends and ells. A3. Clean vents and any vent valves. A4. Manually clean affected parts and/or replace hoses. A5. Check voltage at toilet while running . If less than nominal voltage of toilet (12, 24, 32, 120V), check condition of batteries. Check terminals and wire connections for corrosion (heat at terminals and junctions indicates a bad or corroded connection). Check gauge of wire to be sure it is not undersize, see Specification Table. A6. Replace CH120. A7. Find a pump out station.
B. Poor Water Flow, Especially at Front of Bowl (or no water flow):	B1. Head not level. B2. Restriction in line to Intake Pump or clogged strainer. B3. Intake Pump sucking air. B4. Low voltage to Intake Pump. B5. Intake pumps valves and diaphragm worn.	B1. Raise rear of toilet; check with level. B2. Be sure seacock is open. Clear line - remove clog. Clean strainer. B3. Check all connections from intake thru-hull to Intake Pump to be sure no air leaks are present. B4. See A5, above. B5. Replace valves and diaphragm.
For Pressurized Fresh-water toilets only. Poor intake water flow.	B1A. Inadequate water supply to water solenoid valve. B2A. Clogged water solenoid valve. B3A. Faulty or malfunctioning water solenoid valve or coil.	B1A. Check available water flow; requires minimum of three GPM at bowl elbow. 1) Increase line pressure. 2) Install larger piping. 3) Install higher capacity pressure pump. B2A. Disassemble and clean water solenoid valve. Install Fresh water strainer (190601) in supply line to water solenoid valve. B3A. Rebuild or replace water solenoid valve.
C. Foul Odors From Toilet Area:	C1. "Marine life" lodged in rim of bowl. C2. Improper discharge hose. C3. Sewage remaining in discharge line. C4. Clogged holding tank vent.	C1. Remove and flush bowl with pressure hose to remove all material. Install strainer in intake line to avoid recurrence. C2. Replace plastic hose with quality sanitation hose (SFH) with smooth interior. C3. Flush toilet long enough to insure waste has passed out of hose. Replace plastic hose with quality sanitation hose (SFH). C4. Clean vents and any vent valves.
D. Bowl Fills Up While Boat is Underway:	D. Pressure buildup at seacock(s).	D. Close seacocks one at a time to determine which one is causing problem. If intake, install vented loop between pressure side of pump and bowl. If discharge, install vented loop in discharge line. If problem continues, contact Raritan Technical Support.
E. Bowl Fills Up Whether or Not Boat is Underway:	E1. Freshwater models: Water solenoid valve not shutting completely off. E2. Raw water models: Below waterline toilet, vent of vented loop is clogged.	E1. Remove supply hose between toilet and water solenoid valve at water solenoid valve. If continuous dripping or seeping is noted, water solenoid valve should be disassembled and cleaned. If problem persists, rebuild or replace water solenoid valve. Water solenoid valve requires a minimum of 5 psi at all times at intake of the valve to stay closed. E2. Remove vent from vented loop. Clean out foreign matter. Install an In-Line strainer (#163000) in supply line to Intake Pump.
F. Water Leaking From Macerator:	F1. Leaking bowl gasket. F2. Leaking front cover. F3. Leaks at hoses or fittings. F4. Leaking macerator shaft seal.	F1. Tighten (4) bowl mounting nuts. F2. Remove front cover (#CH18) and inspect "O" ring for damage. Replace "O" ring if necessary using Super Lube or waterproof grease to reassemble. F3. Check all connections; be sure clamps are tight. F4. Return to factory for repairs or exchange.
G. Loud Noises Emanating From Toilet:	G1. Object jammed in macerator. G2. Motor bearings damaged by macerator seal leak.	G1. Remove front cover and remove object. G2. Return motor to factory for servicing or replacement.

Tip for Removing Intake Pump



CROWN HEAD II - Parts List

Part #	Description
1118	Lockwasher (4)
1222CW	90 Degree discharge
1222B	Straight discharge
1226B	1/4" - 20 S/S Hex Nut (4)
1234	Bowl Gasket
1236AW	Bowl Spud Assembly
1236E	Bowl Elbow
1237W	Marine-size Bowl Assembly (White)
1238SC	Marine-size Seat and Cover (Slow Close-Not shown)
1244AW	Household-style Bowl Assembly, (Almond) includes 1236AW
1244W	Household-style Bowl Assembly, (White) includes 1236AW
1245SC	Household-style Seat and Cover (Slow Close-Not shown)
1341	Discharge Screw (2)
161107	Front Cover O-Ring
221361	Sealing Washer
C2M**	Crown Head II Motor, 12, 24, 32 VDC
C247A	Shroud
C253	Joker Valve
CH119MW	Discharge Impeller Assy. (includes CH119M, F149VT [2])
CH120	Discharge Pump Wall
CH121	Macerator
CH18W	Front Cover w/"O" Ring
CH26	Front Cover Screw (6)
CH27	Mounting Screw (4) 10-32x5/8" S/S
CH34	Woodruff Key
CH38	Bowl Stud (4)
CH51	Base Mounting Screw (4)
CH52	Rubber Mounting Strip (2), (Not shown)
CH55	Base Plate
CH57	Rubber Slinger
CH58	Fillister Head Screw (4) 10-32x3/4" S/S
CH59	Seal
CH90	Discharge Adapter
CH92	Square Rubber Gasket
CR1	Discharge Impeller and Macerator Assembly includes CH120, CH121, F149VT(2), CH119MW
M23A	#10 Lockwasher (4)
M30	1/4" - 20 Brass Nut (4)
M31	#14 Brass Washer (4)
PRS	Momentary Flush Switch
RNI	Nylon Shoulder Washer (4)

REMOTE INTAKE PUMP MODELS

162000W	Intake Pump Assembly includes 162100W, 162200W, 162300W
162405	3/4" Hose Barb - 90° Fitting
162410	3/4" Hose Barb - Straight Fitting
162415	Plug Fitting
162420	Fitting Clip (3)
162425	Fitting O-Ring (3)
1660**A	Remote Motor
166000	Diaphragm Intake Pump Assembly 12V
166100	Diaphragm Intake Pump Assembly 24V
166200	Diaphragm Intake Pump Assembly 32V
214**A	Relay with Wiring Harness

PRESSURIZED FRESHWATER MODELS

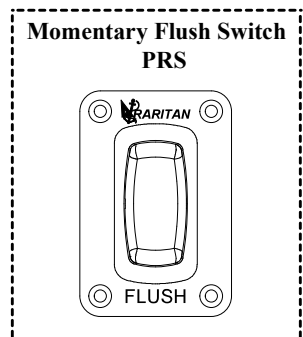
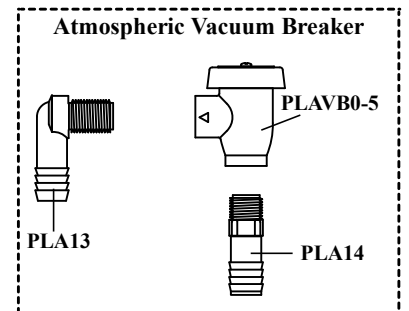
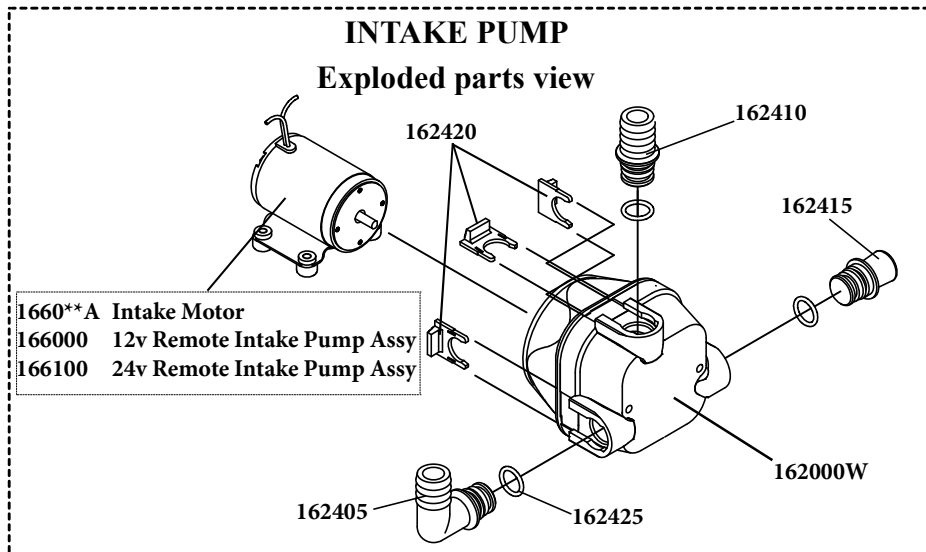
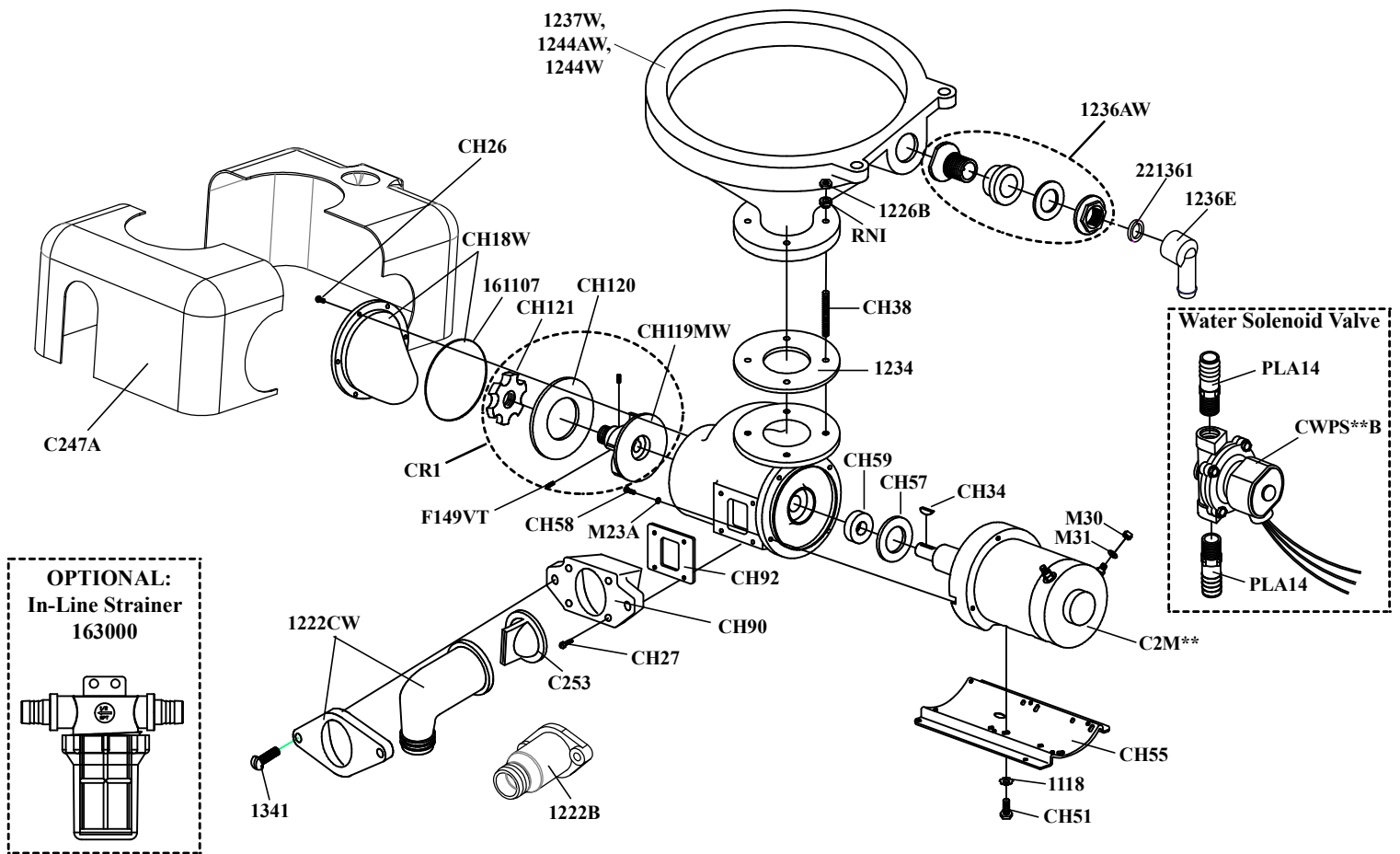
CWPS**B	1/2" GC Solenoid Valve
CWPSMB	Mounting Bracket for CWPS (Not shown)
PLA14	Male Adapter 1/2 MNPTx3/4 Barb (3)
PLAVB0-5	Atmospheric Vacuum Breaker
PLA13	Elbow, 1/2" NPT x 3/4" (1)

ADDITIONAL ACCESSORIES AVAILABLE

STC	Smart Toilet Control
163000	In-Line Strainer (shown, pg 15)
190601	Fresh Water Strainer
SFH	1 1/2" Saniflex Hose
SFH1	1" Saniflex Hose
KO2	Knocks Out Odors Kit
1PCP32	Cleans Potties

** Specify Voltage

CROWN HEAD II - EXPLODED PARTS VIEW



** Specify Voltage

Crown Head II Exchange Units

Crown Head II Exchange Units are remanufactured units available as a service to the customer. The old pump and motor assembly (LBA) are taken in trade on a remanufactured unit; the bowl, seat, lower cover and **discharge fittings** are kept and reused. When ordering directly from Raritan, a core charge is assessed until the old unit is received by Raritan.

Subject to parts and production availability, exchange units are not always available for shipment. Exchange units include the LBA along with a package of fasteners, new joker valve, mounting strips and a bowl gasket to remount the bowl to the LBA.

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.
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.



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