

# TOILET PRESSURIZED WATER INTAKE KIT

## With Atmospheric Vacuum Breaker

MODEL #TPWK12 (12V DC) - TPWK24 (24V DC) - TPWK32 (32V DC)

### MAINTENANCE AND INSTALLATION INSTRUCTIONS

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

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



**WARNING: HAZARD OF SHOCK OR FIRE**



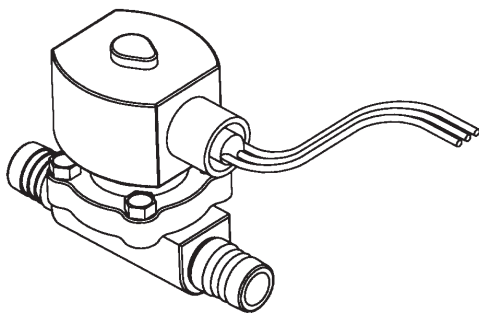
Always use recommended fuse, circuit breaker and wire size.

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

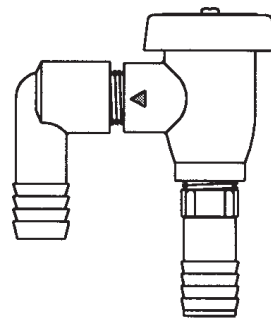


Double clamp all below waterline hose fittings and check frequently for integrity.

Water Solenoid Valve



Atmospheric Vacuum Breaker



The Toilet Pressurized Water Intake Kit is designed for use with the Crown Head II, SeaEra, Atlantes and Atlantes Freedom toilets. It can be used to convert a raw water flush toilet to freshwater flush.



1-800-352-5630

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## 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.

### Pressurized Freshwater Models

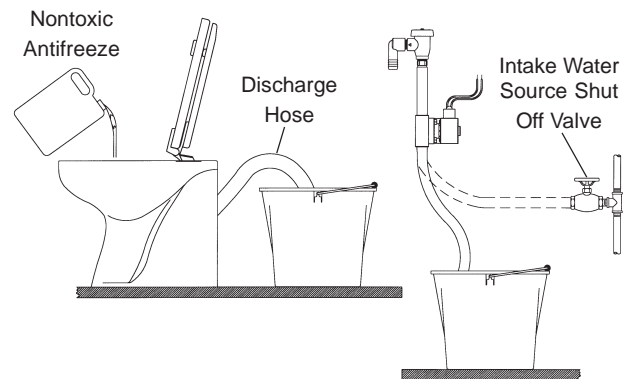
#### Parts Required

- 1 1/2" (38mm) I.D. discharge 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.  
It may be necessary to unbolt the toilet from the floor to gain access to the back of the unit.
5. Disconnect intake hose from intake water source shut off valve and place in one of the buckets.
6. Connect 3 feet (1m) long hose to toilet's discharge.
7. Place other bucket under hose connected to toilet's discharge.
8. Pour antifreeze in bowl.
9. Turn on power to unit and flush until antifreeze is removed from the bowl and water is drained from solenoid valve and hose.
10. Disconnect power to toilet.
11. Reconnect hose to intake water source shut off valve.

### Pressurized Freshwater Model



## Parts Included

- Vacuum Breaker with fittings
- Water Solenoid Valve with fittings
- Water Solenoid Valve Mounting Bracket

## Additional Parts Required

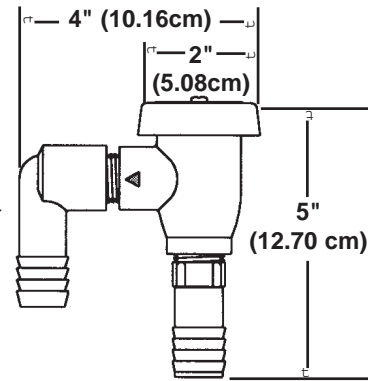
- Two stainless steel toilet mounting bolts or lag screws (1/4" [6mm])
- 3/4" (19mm) I.D. reinforced intake hose
- 3/4" (19mm) hose clamps
- Wire
- Terminals
- Fuse/circuit breaker

## Tools Required

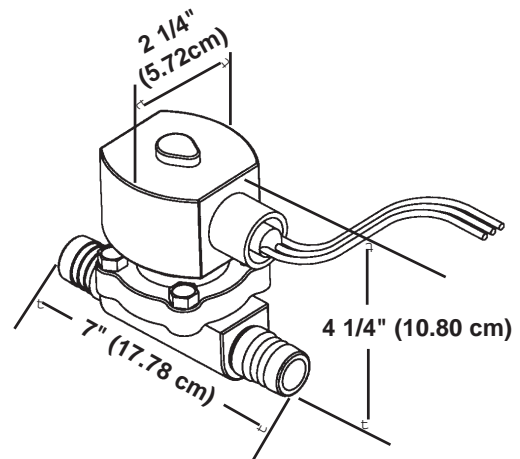
- Screw driver or nut driver (for hose clamps)
- Hose cutter
- Drill with bits (mounting the solenoid valve and vacuum breaker)
- Hole saw (routing the hose)
- Screwdriver or wrench (mounting the solenoid valve and vacuum breaker)
- Wire cutters
- Wire terminal crimpers
- Tape measure

## SPECIFICATIONS

### Atmospheric Vacuum Breaker with fittings



### Water Solenoid Valve with fittings



### Electrical

Nominal Voltage (Volts DC)	12	24	32
Amperage Draw Nominal Voltage	1	.5	.4
Circuit Breaker/Fuse Size (Amps)	3	3	3

### Wire Sizes

**IMPORTANT:** Wire sizes are for Intake Pump Branch circuit only.

NOTE: Recommended conductor sizes based on 105°C rated insulation. All voltages use 18 AWG (1.0 mm<sup>2</sup>) wire for water solenoid valve branch circuit.

### Plumbing

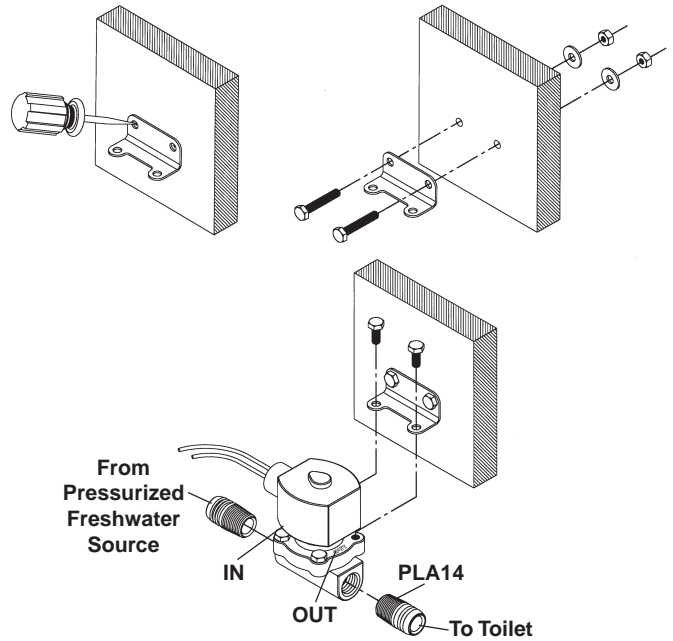
Operating Pressures	Minimum 5 psi (34 kPa) Maximum 150 psi (1,034 kPa)
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## Mounting Water Solenoid Valve

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.

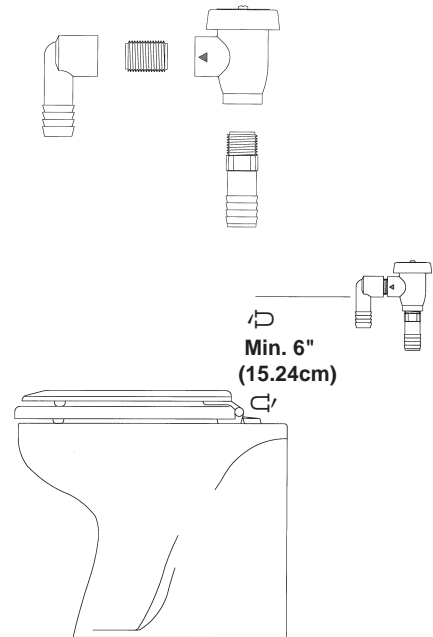
NOTE: Hole size will depend on type of bolts/screws used (1/4" [6mm] bolt/screws are recommended).

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.



## Mounting Vacuum Breaker

1. Install fittings as shown.
2. Locate mounting area that is a minimum of six inches (15.24cm) above toilet.
3. Secure in a horizontal position.



## PLUMBING

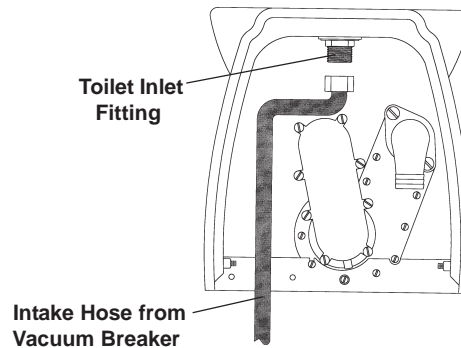
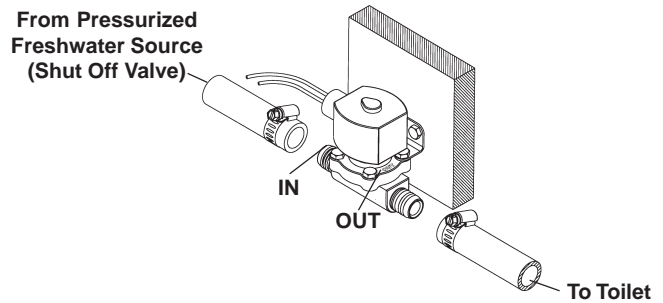
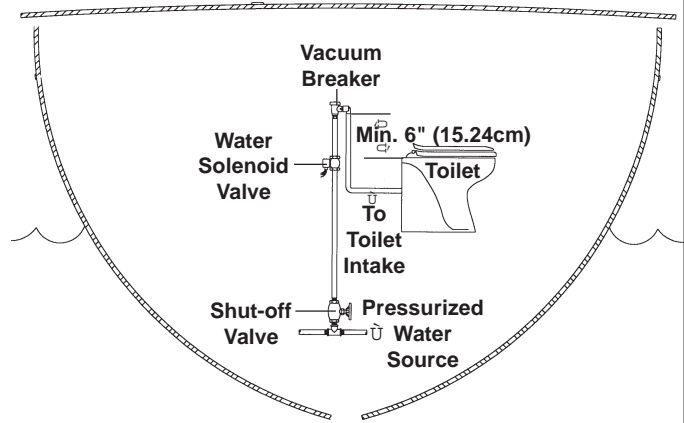
**WARNING:** Hazard of potable water contamination. The vacuum breaker must be installed with any installation using a potable water source.

### IMPORTANT

- Fittings and 90° bends should be kept to a minimum.
- Shut off valve must be installed where it is easily accessible.
- Use only quality reinforced hoses.
- Secure all hoses properly.

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

1. Connect hose from pressurized freshwater source to a shut off valve.
2. Connect hose from shut off valve to inlet port of water solenoid valve.
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 inlet fitting.



## WIRING

### WARNING: Hazard of Shock and Fire

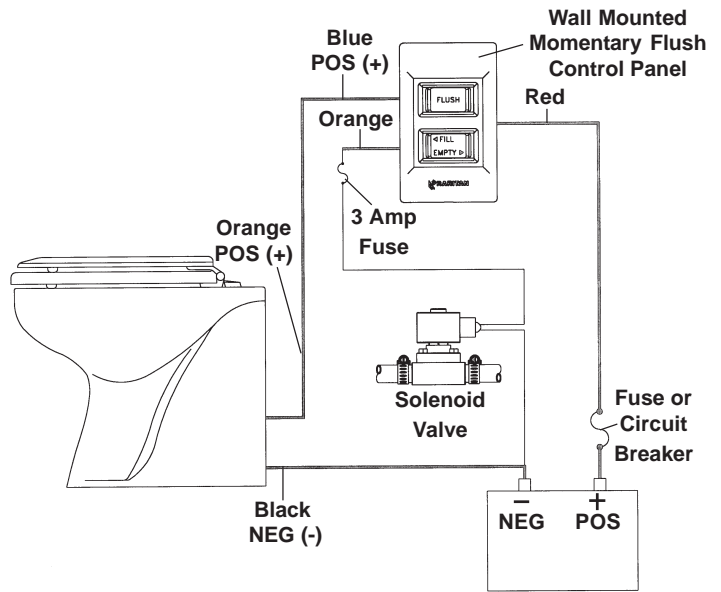
- Always use proper wire, wire connectors and fuse/circuit breaker. See Specification Chart on page 3.
- Secure wire properly.
- Do not connect appliances to toilet circuit.
- Make sure power is off before proceeding.
- Use proper wire terminals for all wire connections.

### IMPORTANT

Wire sizes specified on page 3 are for water solenoid valve. Wiring for other components, such as pumps, must be wired and fused per their specifications.

Wire as shown in diagram.

### Toilet Pressurized Water Intake Kit Wiring



## TROUBLESHOOTING

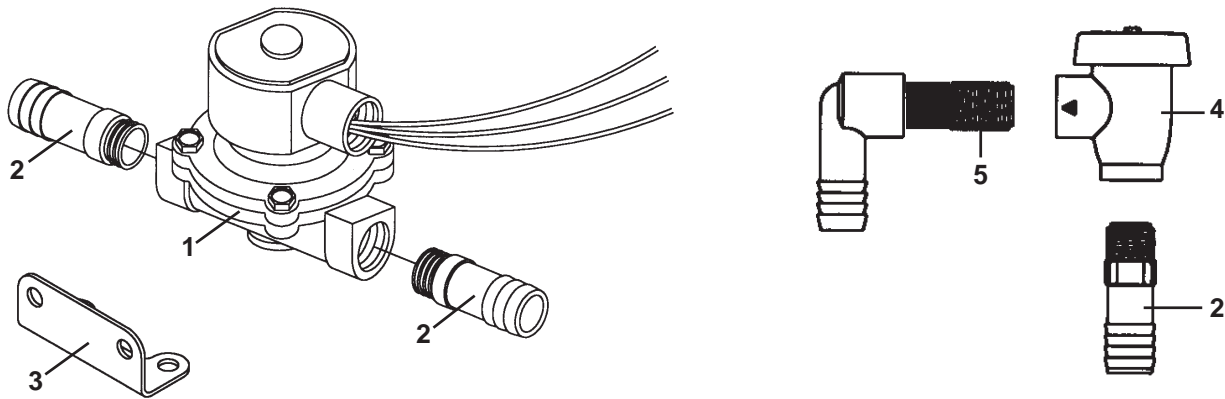
**WARNING: HAZARD OF ELECTRIC SHOCK - Before beginning any work, be sure that all power to the unit has been turned off.**

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

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

PROBLEM	POSSIBLE CAUSE	SOLUTION
1. Poor water flow from rim of bowl.	1A. Shut off valve closed. 1B. Circuit breaker or fuse open. 1C. Fresh water solenoid clogged. 1D. Faulty intake switch. 1E. Clogged strainer. 1F. Low voltage.	1A. Be sure intake shut off valve is open. 1B. Reset breaker or replace fuse. 1D. Remove solenoid and clean or replace. 1E. Replace switch. 1F. Check voltage at toilet while toilet is running. If less than normal voltage of toilet (12, 24, or 32); check condition of batteries, electrical system and connections.
2. Bowl fills with water from bowl rim.	2A. Less than 5psi (34 kPa) at water solenoid valve.	2A. Increase water system pressure to plus 5 psi (34 kPa).

**WATER SOLENOID VALVE AND ATMOSPHERIC VACUUM BREAKER  
EXPLODED VIEW AND PARTS LIST**



**(Quantities are one unless otherwise indicated)**

Before ordering, locate required part on exploded parts view to be sure you are ordering the correct part.

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	CWPS*A	1/2" Solenoid Valve	4.	PLAVB0-5	Atmospheric Vacuum Breaker
2	PLA14(3)	Male Adapter 1/2"MPT x 3/4" Barb	5	PLA13	1/2" NPT to 3/4" Barbed Elbow
3.	CWPSMB	Solenoid Valve Mounting Bracket			

**EXPLODED PARTS**

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## LIMITED WARRANTY

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

1. TO OBTAIN WARRANTY SERVICE, Consumer must deliver the product prepaid, together with a detailed description of the problem, to Raritan at 530 Orange St., Millville, N.J. 08332, or 3101 SW 2nd Ave. Ft. Lauderdale, FL 33315. When requesting warranty service, purchaser must present a sales slip or other document which establishes proof of purchase. **THE RETURN OF THE OWNER REGISTRATION CARD IS NOT A CONDITION PRECEDENT OF WARRANTY COVERAGE.** However, please complete and return the owner Registration Card so that Raritan can contact you should a question of safety arise which could affect you.
2. THIS WARRANTY DOES NOT COVER defects caused by modifications, alterations, repairs or service of this product by anyone other than Raritan; defects in materials or workmanship supplied by others in the process of installation of this product; defects caused by installation of this product other than in accordance with the manufacturer's recommended installation instructions or standard industry procedures; physical abuse to, or misuse of, this product. This warranty also does not cover damages to equipment caused by fire, flood, external water, excessive corrosion or Act of God.
3. ANY EXPRESS WARRANTY NOT PROVIDED HEREIN, AND ANY REMEDY FOR BREACH OF CONTRACT WHICH BUT FOR THIS PROVISION MIGHT ARISE BY IMPLICATION OR OPERATION OF LAW, IS HEREBY EXCLUDED AND DISCLAIMED. ALL IMPLIED WARRANTIES SUCH AS THOSE OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, IF APPLICABLE, AS WELL AS ANY IMPLIED WARRANTIES WHICH MIGHT ARISE BY IMPLICATION OF LAW, ARE EXPRESSLY LIMITED TO A TERM OF ONE YEAR. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG A LIMITED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.
4. UNDER NO CIRCUMSTANCES SHALL RARITAN BE LIABLE TO PURCHASER OR ANY OTHER PERSONS FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT, OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.
5. No other person or entity is authorized to make any express warranty, promise or affirmation of fact or to assume any other liability on behalf of Raritan in connection with its products except as specifically set forth in this warranty.
6. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



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