

INTAKE PUMP

166000 (12vdc), 166100 (24vdc), 166200 (32vdc)

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 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 run continuously for more than 30 seconds.

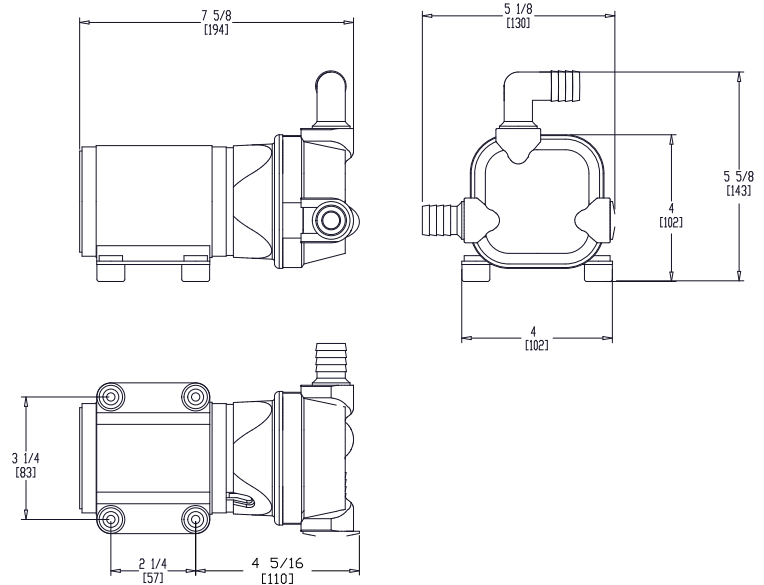
WARNING:

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.

Raritan Intake Pump is a rugged multi-port diaphragm pump designed to be used with fresh or seawater.



Inches [mm]

Specification:

Internal Thermal Protection

Water Connections: 3/4 inch barb

Maximum Lift: 4 ft (1.2m)

Maximum Discharge Head: 6 ft (1.8m)

Flow Rate: 4½ GPM (17 LPM)

Voltage: 12, 24 and 32 VDC available

Wire Leads: 24" long, 14 AWG

Ignition Protected



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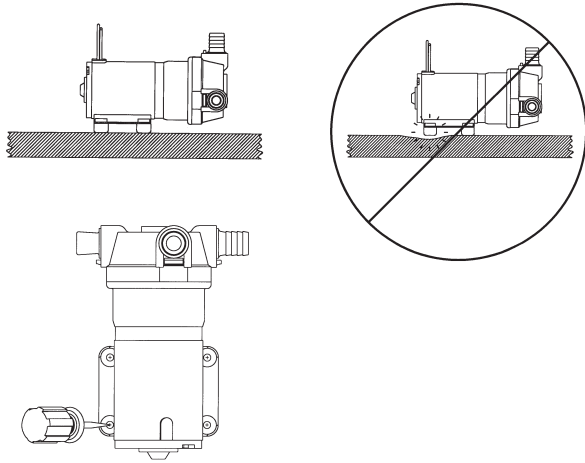
MOUNTING

Mount on a flat solid surface in an area that is dry and well ventilated.

1. Mark and drill mounting holes.

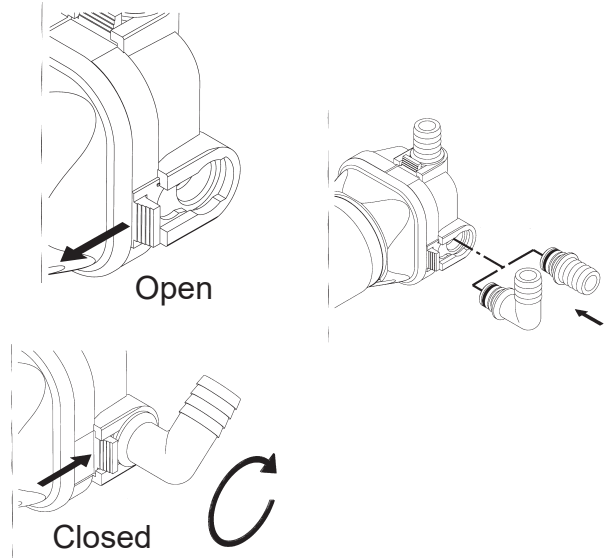
NOTE: Hole size will depend on type of bolts/screws used (1/4" [6mm] size bolts screws are recommended)

2. Mount pump. Do not over tighten bolts.



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

1. Slide fitting clips to open position.
2. Select inlet port to be used.
3. Install appropriate fittings into onlet 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.

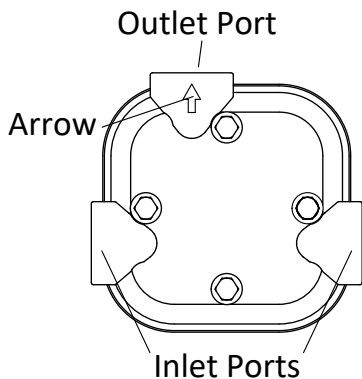
5. Slide fitting clips to closed position.
6. Connect hose from seacock to inlet port of optional In-Line Strainer, if installed. Use hose clamps provided.
7. Connect hose from outlet port of In-Line Strainer to inlet port of intake pump. Use hose clamp provided.

IMPORTANT: Double clamp all below waterline hose connections!

8. Connect hose from outlet port of intake pump to bowl elbow located on back of toilet bowl or to any other equipment requiring a water source.

HOSE FITTINGS

The intake pump comes with two 90° barb fittings, two straight fittings and one plug. 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.



WIRING

For wiring specifics, refer to the switch device to be used.

Notes for wiring

1. Total length of wire is measured from power source to unit and back to power source.
2. Recommended conductor minimum AWG is based on 3% voltage drop.
3. Recommended conductor sizes are based on 105C rated insulation. Refer to ABYC Standards for other insulation ratings.

Intake Pump - Wire (AWG) and Fuse/ Circuit Breaker Sizes

Voltage (VDC)	Amp Draw	Fuse/Circuit Breaker	10 feet	15 feet	20 feet	30 feet	40 feet	50 feet
12	10	15	14	12	10	10	8	6
24	5	10	16	16	16	16	14	12
32	4	7	16	16	16	16	14	12

TROUBLESHOOTING

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

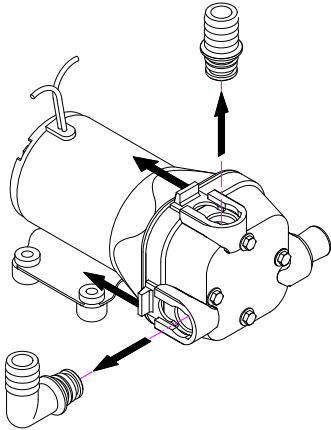
WARNING:  **HAZARD OF FLOODING - Make sure seacocks are in the CLOSED or OFF position before working on Intake Pump.**

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 SeaEra 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 water flow, especially at front of bowl (or no water flow).	1A. Restriction in intake line. 1B. Pump sucking air. 1C. Low voltage. 1D. Clogged strainer.	1A. Be sure seacock is open. Clear line-remove clog. 1B. Check all connections from intake thru-hull to intake pump to be sure no air leaks are present. 1C. Check voltage at toilet while toilet is running . If less than nominal voltage of toilet (12, 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). 1D. Remove or clear debris from strainer.
2. Erratic operation/sluggish running.	2A. Worn motor brushes. 2B. Motor bearings damaged by seal leak. 2C. Low or inconsistent voltage.	2A. Return motor to factory for servicing or replacement. 2B. Return motor to factory for servicing or replacement. 2C. See 1C above.

DIAPHRAGM PUMP ASSEMBLY REMOVAL

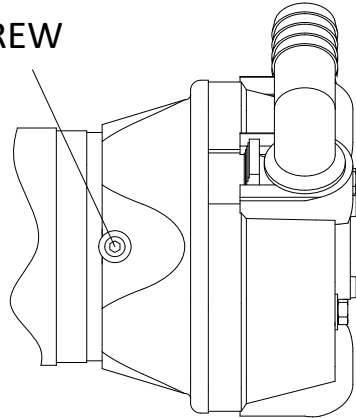
1. Disconnect Power.
2. Close Seacocks.
3. Slide Fitting Clips to Open position and remove fittings (hoses and remain connected).



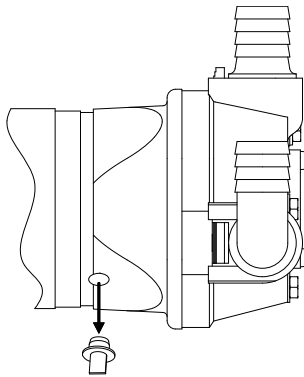
7. Using 5/32" hex key, loosen screw.

NOTE: Use 1/8" hex key on intake pumps manufactured prior to February 2014

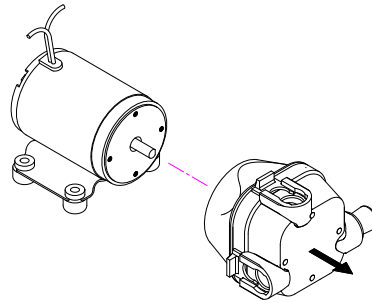
HEX SCREW



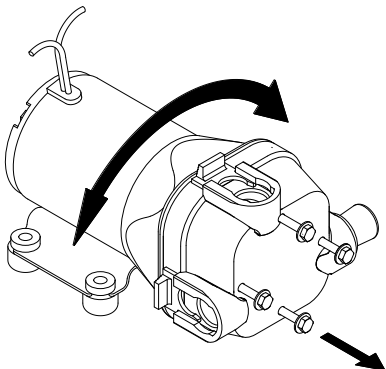
4. Remove Pump from mounting surface.
5. Remove round plug from pump assembly.



8. Slide pump assembly off motor shaft.



6. Remove four screws mounting pump assembly to motor and rotate pump assembly until hole is aligned with set screw securing pump assembly to motor shaft.



9. To reassemble, reverse procedure. Be certain that hex screw is aligned with flat on motor shaft.



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