

# FOUR GALLON SALT FEED SYSTEM WITH PUMP

## Part 32-3006 (12 VDC) or 33-3006 (24 VDC)

### Installation and Maintenance 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 technician 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: Hazard of Electrical Shock.**



#### INTRODUCTION

The Four Gallon Salt Feed System with pump is used in conjunction with Lectra/San MC or electroscan Type I Marine Sanitation Device (MSD) on boats that operate in fresh or brackish water. Salinity is monitored by the unit's Control Panel and salt solution will automatically be added to the MSD when needed.

**Additional parts included:** Strapping for mounting and tank lid adapter (31-325).

For Lectra/San MC only: Heat sink for transistor (FIG 5)

**Additional parts required:** Mounting hardware, shutoff valve, plumbing fittings, 1/2" (12.7 mm) hose for pressurized water and 1/2" (12.7 mm) hose for overflow. Pressurized fresh water is required. Minimum of 5 PSI (103kPa) working pressure.

#### OPERATION

Solar salt is added directly to the tank (see Refilling Salt in the System). Water supplied by the boats pressurized fresh water maintains the water level in the tank and continues to make saturated salt solution from the solar salt. **Water will be added to the salt feed tank when the MSD treatment tank is running and the water level is low in the salt feed tank.** A pump is used to add salt solution directly into the treatment tank when needed. The pump is controlled by the MSD circuit board that monitors the electrode current in the treatment tank and automatically turns on the pump when salt solution is required.

When the slow blink-extended cycle light (amber on Lectra/San MC; red on electroscan) is on and blinking (one blink per second) for an extended period, during the normal treatment cycle, check the salt feed system to see if more solar salt is needed. On the electroscan, the LCD display will also display a warning that system amps are low.

#### REFILLING SALT IN THE SYSTEM

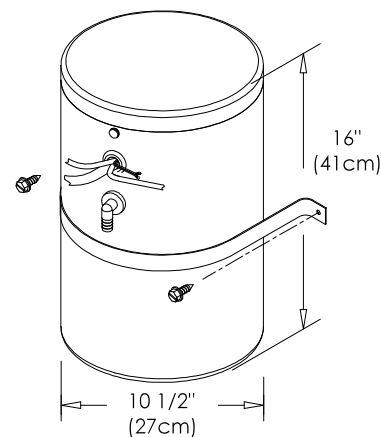
Add up to 20 lbs. (9 kg) of solar salt directly into the salt feed tank. Some water may be displaced through overflow tube. The water level will drop back to its normal level after a few uses.

#### INSTALLATION/ MOUNTING

Locate salt feed system within 12' (3.6 m) of and on the same level or lower than treatment tank. Make sure salt feed tank is accessible for refilling. Secure salt feed tank (FIG 1). Mount salt feed relay box within 5' of tank (FIG 3).

*If salt feed tank is higher than the treatment tank then a siphon break assembly, "VL3/8" (not included) must be installed to prevent the siphoning of the tank. (FIG 3a)*

**FIG 1 Four Gallon Salt Feed System Dimensions and Mounting**



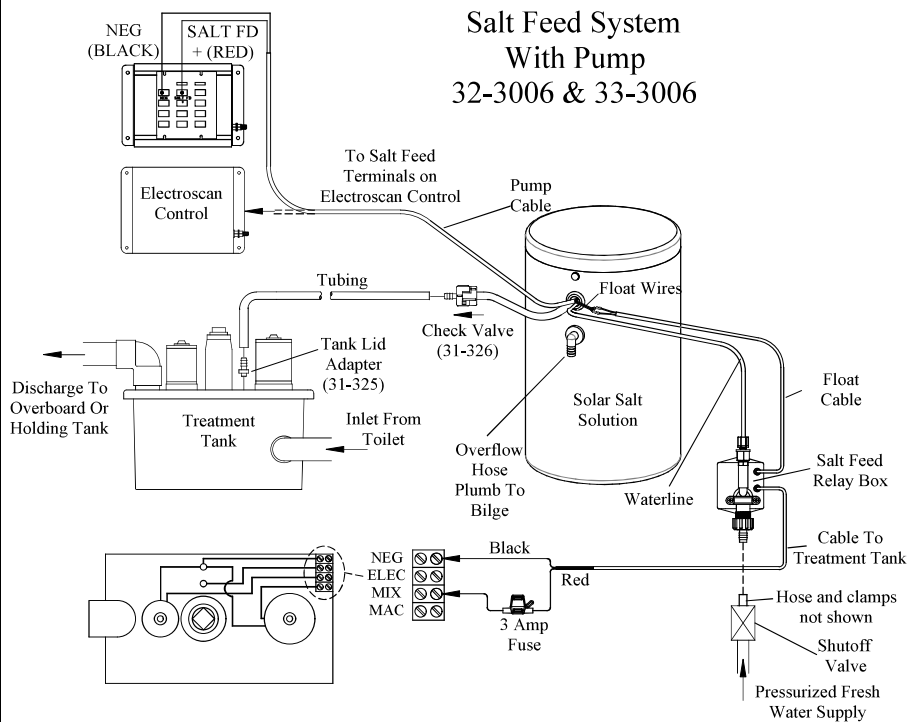
Lectra/San® is a trademark of Exceltec. LST/MC™ and electroscan™ are trademarks of Raritan Engineering Co., Inc.

## PLUMBING

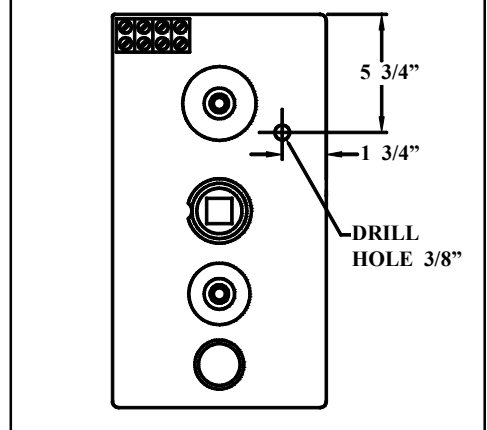
1. If an existing MSD system, drain the treatment tank. If new system, perform following steps before installing treatment tank.
2. Drill a 3/8" hole in treatment tank lid (FIG 2).
3. Glue tank lid adapter (31-325) in 3/8" hole drilled in treatment tank lid using PVC cement per PVC cement instructions.
4. Remove lid from salt feed tank by pulling sides of lid up.
5. Remove cap from 4" tube inside tank.
6. Make sure pump is sitting all the way to bottom. (FIG 6).
7. Route tubing, with check valve, coming from salt feed tank, to fitting on the treatment tank lid. Be sure arrow on check valve points toward the treatment tank (FIG 3 or 3a).

8. Install overflow hose to bilge.
  9. Mount salt feed relay box on or near salt feed tank. Connect 1/4" tubing between tank and water solenoid. Connect pressurized fresh water with a shutoff valve to the barbed nipple on water solenoid (FIG 3). Secure hoses as vibration and fluttering is normal on fill cycle.
  10. Turn on water and check for leaks.
- Water will be added to the salt feed tank when the MSD treatment tank is running and the water level is low in the salt feed tank.**
11. Fill tank with solar salt.

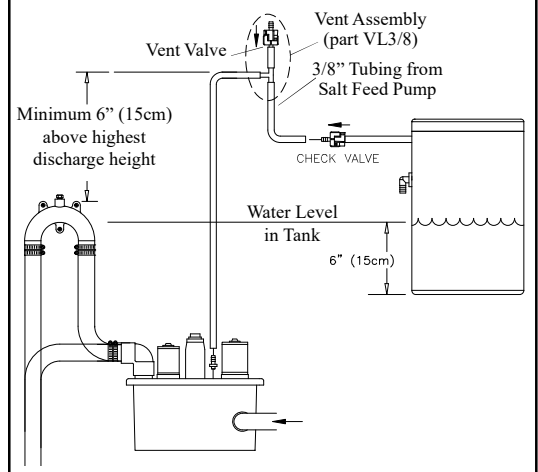
**FIG 3 Four Gallon Salt Feed System With Pump Installation**



**FIG 2 Locating Hole in Lid**



**FIG 3a Four Gallon Salt Feed System with pump installation above the treatment tank**



## WIRING

**WARNING: Hazard of Electrical Shock. Disconnect power at source before proceeding.**

**NOTE: All versions will connect 5' cable, on relay box, to float and 12' cable to mixer motor terminals on treatment tank.**

1. Connect float switch wires to 5' cable from relay box.
2. Connect fused power cable to mixer motor terminals on treatment tank.

### A. electroscan only:

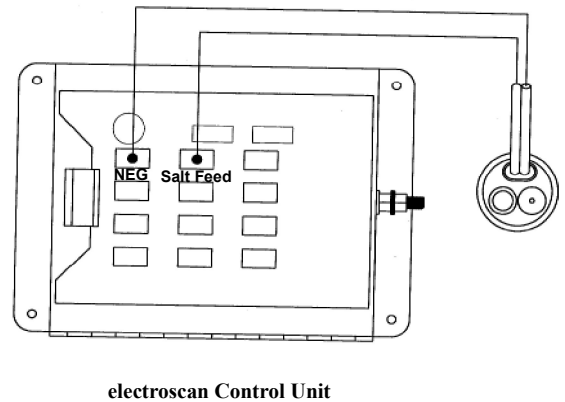
1. Open cover of electroscan control unit and connect one of the pump wires to the connection marked "Salt Feed" and the other pump wire to the connection next to it, marked "NEG."

The pump is not polarity-sensitive, so it makes no difference which wire goes to which connection.

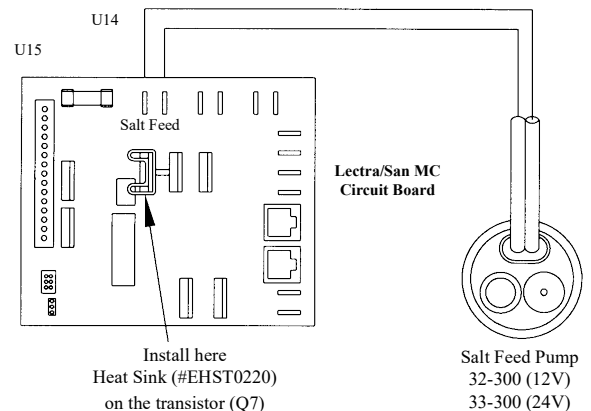
### B. Lectra/San MC only:

1. Remove control module cover (31-460) from treatment tank.
2. Touch ground frequently to discharge body static. Install heat sink (EHST0220) on transistor (Q7) located on the circuit board (FIG 5), making sure that the heat sink is not contacting any other component. Do Not use excessive force when installing the Heat Sink. The heat sink fits in only one position.
3. Connect salt feed pump cable to LST/MC circuit board (FIG 4). Connect red wire to terminal U14 and black wire to terminal U15.
4. Replace control module cover and reconnect electrical power.

**FIG 4 Wiring Diagram for Four Gallon Salt Feed System with Pump (w/electroscan series MSD)**



**FIG 5 Wiring Diagram for Four Gallon Salt Feed System with Pump (w/Lectra/San MC Series)**



## START UP

Refer to the Start Up procedure outlined in the Lectra/San MC or electroscan manual, as appropriate. The following instructions are supplementary to those instructions.

**Note:** If utilizing a VacuFlush® toilet, see Application Note (L286).

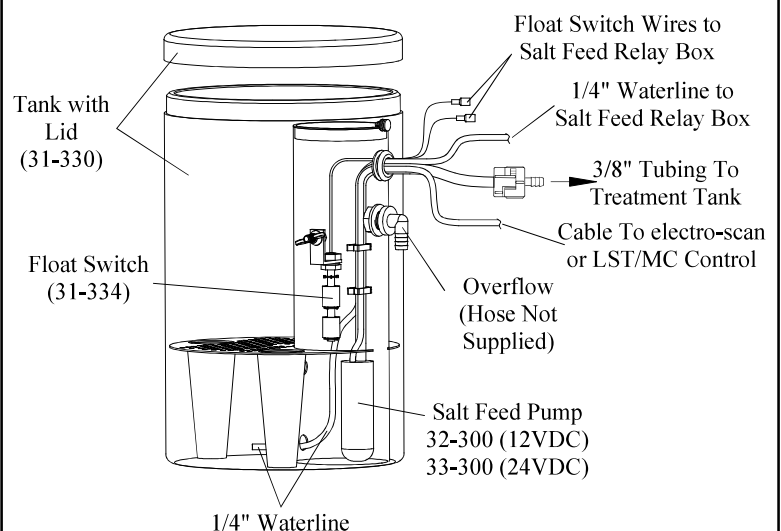
1. Check plumbing and electrical connections.
2. Turn on water supply.
3. Check for leaks.
4. Add up to 20 lbs. of Solar Salt.
5. Add 1 1/2 - 2 Gallons (5.5 - 7.5 L) of water to tank.

No adjustments are necessary with this system.

## WINTERIZING

1. Rinse tank thoroughly with fresh water and wipe out tank.
2. Shut off pressurized fresh water, disconnect and drain pressurized fresh water line.
3. Rinse salt feed pump, tubing and check valve thoroughly with fresh water.

**FIG 6 Four Gallon Salt Feed System with Pump, Exploded Parts**



## 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.
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