Waterite

RSM

GAS DIFFUSION SYSTEM

OWNER'S MANUAL

THIS MANUAL IS TO BE LEFT WITH THE OWNER OF THE EQUIPMENT FOR REFERENCE PURPOSES AND TECHNICAL GUIDANCE. IT IS STRONGLY RECOMMENDED THAT QUALIFIED DEALER SERVICE PERSONNEL BE CONTACTED IN THE EVENT OF AN UNKNOWN INTERRUPTION OF SERVICE OR APPARENT PRODUCT MALFUNCTION. AN ANNUAL PREVENTATIVE MAINTENANCE INSPECTION BY A WATER PROFESSIONAL IS RECOMMENDED TO ENSURE TROUBLE-FREE AND CONTINUOUS OPERATION.

Water Quality

Congratulations!

You have purchased the finest gas diffusion system available. It will provide years of reliable service if properly installed, operated and maintained. Please read this entire manual and the included manufacturer manuals before attempting installation and operation.

Section 1. Frequently Asked Questions

Before getting started, take the time to familiarize yourself with your new Waterite system by reading some FAQs listed below. Call us or ask your dealer if you have any other questions about your system's operation.

Q: What is aeration?
Aeration is the process of mixing air into water and venting the gas to the outside atmosphere. Aeration can remove methane, as well as other gasses such as hydrogen sulfide (rotten egg smell), CO2 and VOCs.
The aeration process (mixing of air and water) is the most effective technology for removing gasses from well water.

Q: How does the Waterite RSM work?
Spray aerators enclosed in the tank, spray a fine water mist, removing the dissolved gasses from the solution and allowing them to escape into the surrounding air. Retention times of several minutes are typically needed to allow the release of the gasses.
Aeration also may separate dissolved metals and VOCs through oxidation, the chemical combination of oxygen from the air with certain undesirable metals in the water. Once oxidized, these metals fall out of the solution and become particles in the water and can then be removed by filtration (Consult your dealer for the recommended Waterite filter system).

Q: What gasses are removed by the Waterite RSM?
- Ammonia
- Chlorine
- Carbon dioxide
- Hydrogen sulfide
- Methane
- Radon

Q: Where is the system installed?
The Waterite RSM is designed to be installed indoors, but it can be installed outside if it is sheltered from the elements and the climate is not prone to freezing.

Q: What is the standard warranty for the Waterite RSM Systems?
Every Waterite RSM system comes with a standard one-year limited warranty on all parts and shop repair labour, freight excluded.

Section 2. Installation

Inspection: Remove the cover from the top of the aerator tank by twisting the lid to the left. Inspect the inside of the tank and the piping to assure there is no damage due to shipment.

The system must be installed on a level surface that will support more than 1000 pounds (455 Kg.) without settling.
CAUTION: DO NOT INSTALL TANK ON A WOOD-FRAMED FLOOR. THE FULL TANK WILL BE TOO HEAVY FOR NORMAL WOOD FRAME CONSTRUCTION TO BE SAFELY SUPPORTED.

Placement
The unit should be placed close to a gravity floor drain and the raw water source.
A 3-way bypass valve arrangement should be incorporated into the feed line, to facilitate maintenance on the unit, without disruption of flow of water to the household.
Once the unit is placed, use the adjustable feet to level the unit.
Install the pressure tank within proximity of the system, to allow for easy connection to the unit.

Plumbing
The maximum flow rate of the RSM110GDS100 unit is 8 gpm at 50-60 psi.
A minimum of a 5/8" ID pipe or tubing will be required to supply the unit.
Connect the raw water to the ¾" FNPT Raw inlet ("**a.**" in Fig. 2) inlet line in the back of the unit. (Fig. 2)
Connect a 1.0" line to the bottom of the 1" FNPT ("**b.**"in Fig. 2) overflow line, and run to the floor drain. An air gap is required in most local plumbing codes to prevent back contamination into the system.
When connecting to an optional pressure tank, use a 1" tank tee: connect the 1" FNPT pump outlet to one side of the 1" MNPT tank tee.
Connect the other side of the tank tee to the household feed line.

FLOW SCHEMATIC

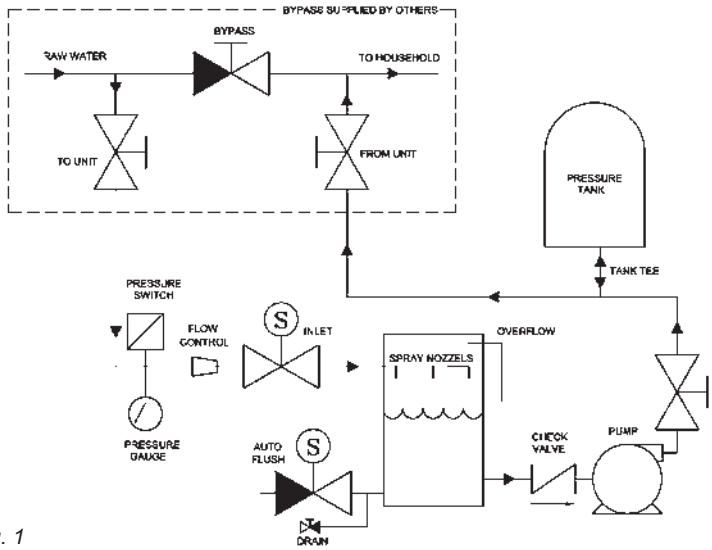


Fig. 1

WARNING!
TANK EXHAUST GASSES MUST BE VENTED BEYOND THE EAVES OF THE ROOF TO PREVENT POSSIBLE ACCUMULATION OF POISONOUS AND/OR EXPLOSIVE GASSES INSIDE THE BUILDING. (FIG. 3b) FAILURE TO PROPERLY VENT GASSES TO THE OUTSIDE OF THE BUILDING COULD POSSIBLY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

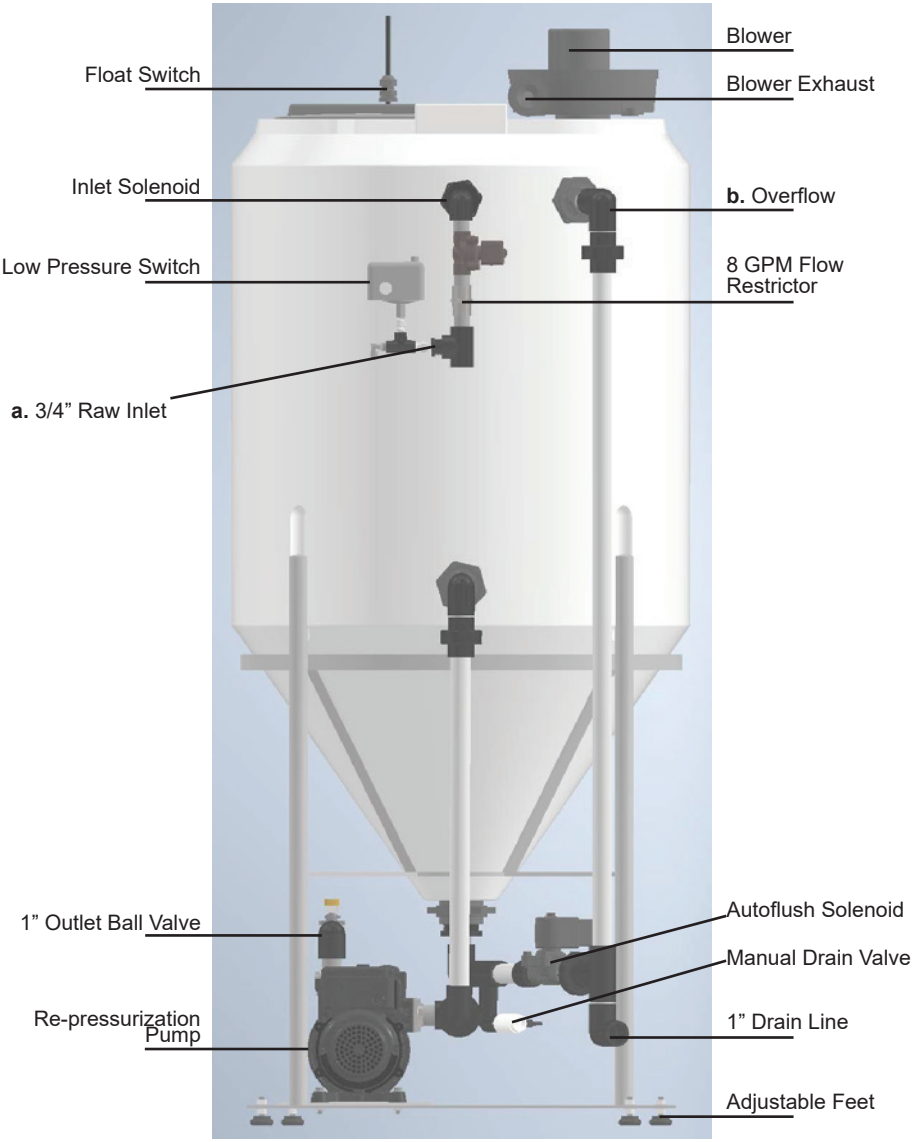


Fig. 2 - Back View

Exhaust gasses must be dispersed to the exterior of the building. It is recommended that CPVC be used when exhausting any kind of gas. The blower exhaust will accommodate a 2" CPVC pipe.

The clamp provided with the blower can be used to secure the piping to the unit. Configure the pipe to run directly to the exterior of the building. A 2” hole may need to be cut through the foundation wall to accommodate a direct run of piping.
The piping on the exterior should be directed up and away from the building.

UNDER NO CIRCUMSTANCES SHOULD TANK GASSES BE VENTED INTO A CRAWL SPACE, UNDER A FLOOR, OR INTO AN ATTIC.

WARNING!

VENT PIPE INSTALLATION MUST COMPLY WITH LOCAL BUIILDING CODES. FAILURE TO COMPLY WITH CODES COULD CAUSE ACCUMULATION OF DANGEROUS GASSES INSIDE THE BUILDING, RESULTING IN ASPHYXIATION, EXPLOSION OR FIRE AND SERIOUS PERSONAL INJURY OR DEATH.

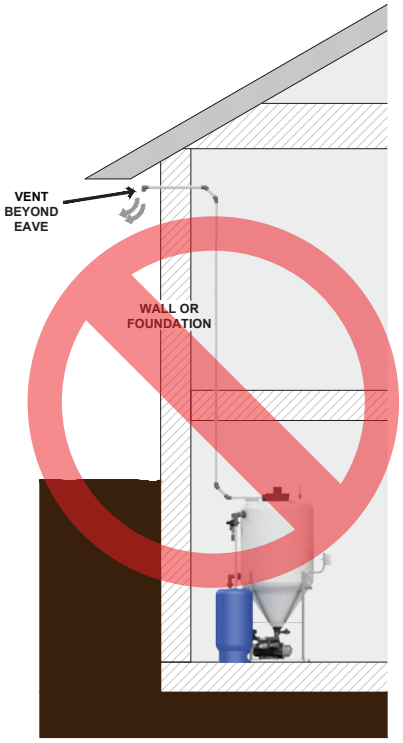


Fig. 3a INCORRECT VENTING

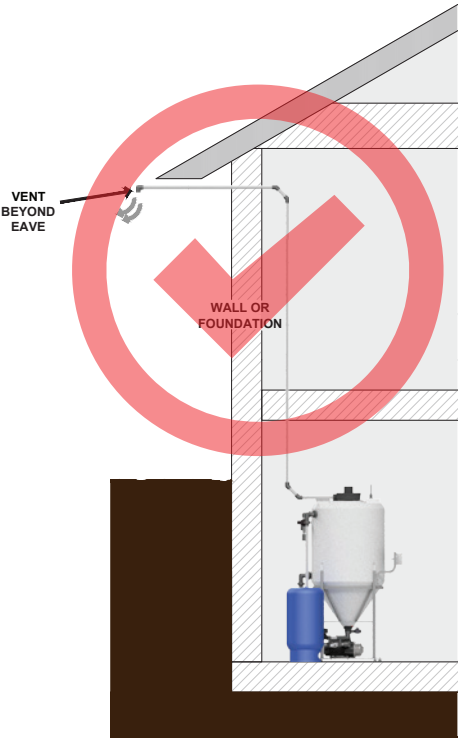


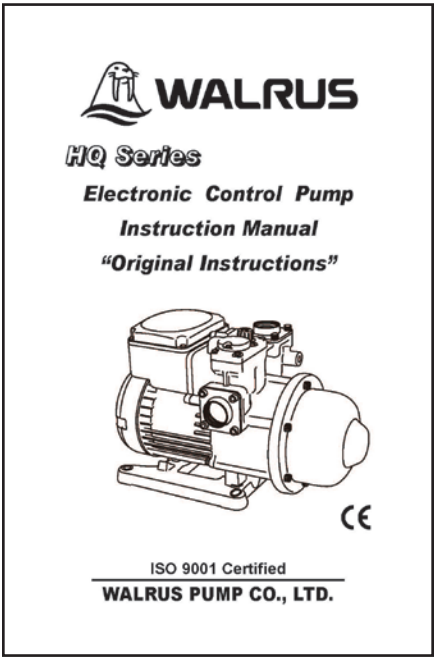
Fig. 3b CORRECT VENTING

Do not plug in the re-pressurization pump until the tank is full and the unit has shut down automatically.
Close the valve between the pressure tank and the household. Ensure that the valve located on the top of the re-pressurization pump is closed.
Turn on the raw water.
Check for leaks. Repair any leaks before proceeding.
Check that the inlet pressure is between 50-60 psi on the gauge on the front of the unit.

Section 3. Components

Re-pressurization Pump (Waterite Part Number HQ800H)

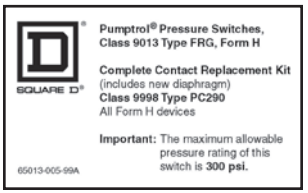
Please read the enclosed manual before operating the re-pressurization pump.



This pump will require priming upon first start-up and any time the tank is completely drained. Instructions for priming are provided in the enclosed manual.
The re-pressurization system will start at 31 psi and shut off at 64 psi. At 50 psi the pump is capable of delivering 15 gpm.

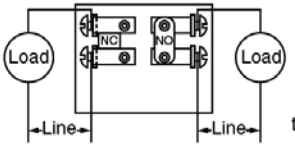
Low Pressure Switch (Waterite Part Number FRG22)

Please read the enclosed manual before operating the low pressure switch.

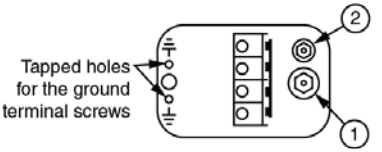


The switch is pre-set at factory at 28 psi.

Wiring Diagram



Adjustments



Adjust in proper sequence:

1. Turn nut 1 down to raise low operating point.
2. Turn nut 2 down to raise high operating point.

CAUTION: To avoid damage, do not exceed the maximum allowable pressure. Check the switch operation after resetting.

IMPORTANT:

When the raw water feed pressure drops below the set point of the low pressure switch, the controller will stop the unit after 15 seconds of a “low pressure” fault. The controller will illuminate the “Low Pressure” warning light.

If the pressure moves above the set point, the unit will resume after 30 seconds.

Should the pressure fall below the set point again, the controller will shut down the unit after 15 seconds.

This can happen 5 times in a 10-minute span before the controller shuts down the unit and the “Low Pressure” alarm light will start to flash.

The controller will try to start the unit again after 30 mins, and repeat its start-up protocol. It will continue to do this until the pressure is stabilized above the set point of 28 psi during a run condition.

Blower (Waterite Part Number FASA067)

Please read the enclosed manual before operating the blower.

Float Switch (Waterite Part Number RSLLS)

Please read the enclosed manual before operating the float switch.

The float switch is pre-set to stop filling when the tank reaches 75 gallons.

Automatic System Controller (Waterite Part Number ROSCONT001)

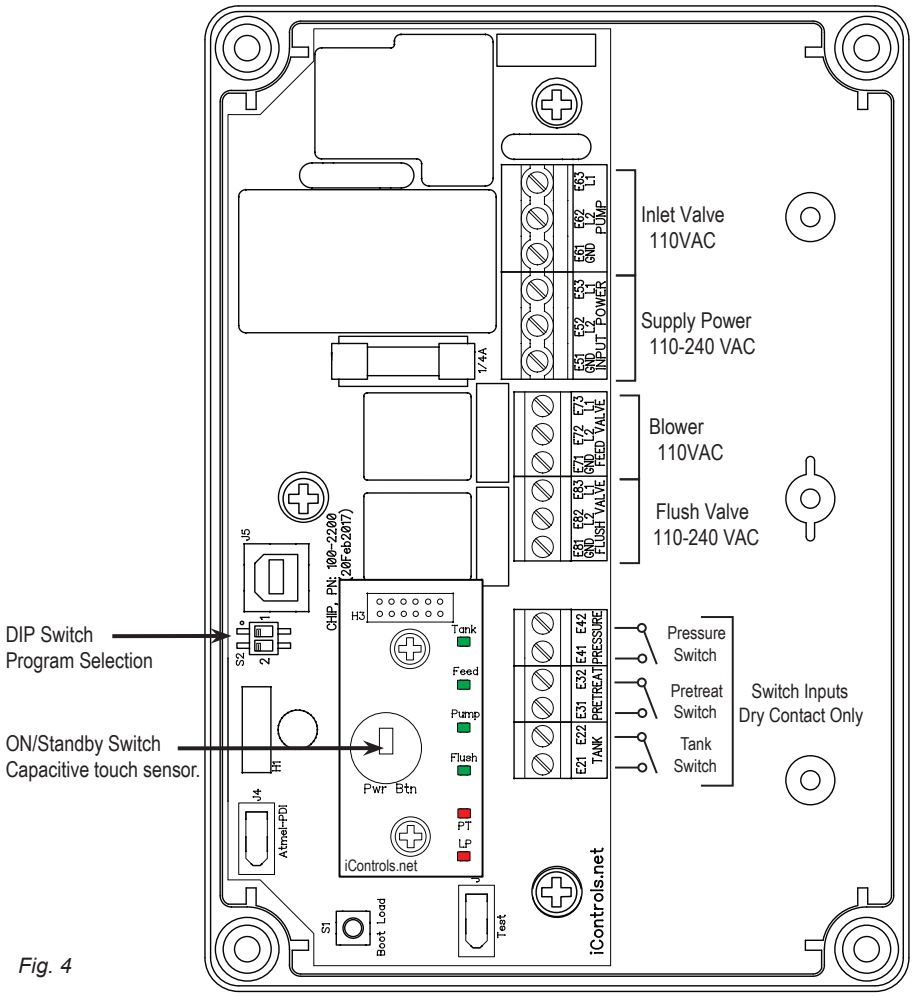


Fig. 4

The system controller will start/stop/flush your system automatically.

Section 4. Start-Up

Plug the unit into a dedicated 115vac wall socket.
The unit may turn on automatically. If it does not start, press and hold the power button on the front of the controller and hold for 2 seconds.
A green light will appear by the “Tank Full” indicator light, and it will start to flash indicating that the unit is in stand-by mode.

On initial start-up and every 4, 8, 12, or 16 hours, depending on the program selected, the unit will perform an automatic flush, the “System Flushing” light will be illuminated.
This flush allows particulate to be purged from the bottom of the holding tank on a regular basis. The auto-flush will take 20 seconds. (See table below for flush frequency).

When the auto-flush is finished, the blower will start. This will create a vacuum inside the tank, prior to the inlet solenoid opening, eliminating any gas build-up inside the tank while the unit is idle.

Changing the auto flush time (Dip Switch Program Selection - Fig. 4)
By using a small screwdriver, you can push the dip switches up or down to choose the desired auto flush time.

Flush Frequency Programing			
Switch 1	**Switch 2**	**Program #**	**Flush Frequency**
Off	Off	1*	240 mins
On	Off	2	480 mins
Off	On	3	720 mins
On	On	4	960 mins

*The contoller is factory pre-set with Program 1.

Ensure that he vent plug in the middle of the tank lid is fully extended.

After a 10 second delay, the inlet solenoid will open.
Once water starts flowing into the tank, open the lid and inspect the spray nozzles. The flow of water should be equal among all nozzles.

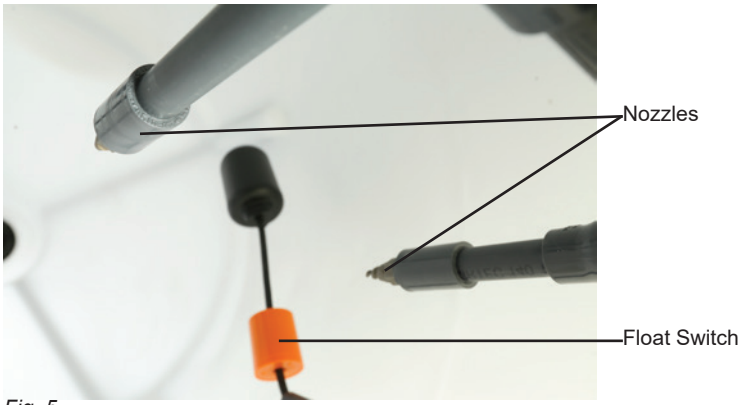


Fig. 5

When you have confirmed the nozzle flow, replace the lid and secure snugly.

In order to get an even spray from the nozzles, the incoming pressure should be 40 psi and above while the unit is running.

The inlet pressure switch is factory pre-set at 28 psi. No alarms will be triggered when the pressure is maintained above 28 psi (see low pressure switch section on page 7).

Allow the unit to fill. As the unit is filling, check for leaks. Repair any leaks before proceeding.

The float switch is factory pre-set to stop when the tank reaches 75 gallons. (The gallon level gauge is located on right side of the tank).
At 75 gallons, the nozzles are still above the water level and there is a sufficient air cap for proper operation of the blower.

IMPORTANT: If the unit does not shut off between 75 and 85 gallons, turn off the unit. (See included instructions to adjust float switch travel).
If the unit shuts off too early, the travel should be decreased. If the unit does not shut off, the travel should be increased or the float is too close to the weight.

When the unit is full, familiarize yourself with the priming instructions of the re-pressurization pump (Refer to Manufacturer's manual).
With a Phillips screw driver, plug in the pump. After 10 seconds, slowly open the bleed port by 1 full turn (located on the top center of the pump).
Wait until no air is left in the pump before closing the port snugly.
The pump has an internal pressure switch, which will turn off the pump once it is pressurized, provided all the air is removed from the system (see re-pressurization pump on page 6).
When the pump shuts off on its own, slowly open the ball valve on the pump to allow water to flow to the pressure tank.
Allow the system to charge and then shut it off. Check for any leaks.
Slowly open the valve between the house and the pressure tank, allow the system to fully charge again.
Your system is now ready to be used.

Section 5. Cleaning / Maintenance

Periodic cleaning will be necessary: The aeration tank should be inspected by the owner or tenant every 3 months. In dry, dusty locations, inspection and cleaning may be needed more often. Follow these instructions for cleaning:

1. Unplug the system.
2. Open a valve downstream of the pressure tank.
3. Open the tank lid and allow the tank to drain until the pump inlet is almost exposed.
4. Close the downstream valve. Unplug the pump.
5. Open the drain valve on the bottom of the tank, located under the auto flush solenoid.
6. Drain the tank completely.
7. Using a stiff bristle brush, scrub the tank walls to loosen debris and clean the walls. (using soap or a cleaner is not recommended as will leave a residue if not completely rinsed out)
8. Rinse the deposits out the drain line.
9. Close the drain valve.
10. Plug the unit back in and start the filling process.
11. Pour one cup of household bleach into the full tank and let it sit for 30 mins to disinfect.
12. Drain the tank again (steps 1-4) and then repeat filling process (steps #10-11).
13. Replace the tank lid and ensure there is a proper seal.
14. Check and tighten the vent pipe connection.
15. Plug in the pump, prime if necessary, and allow the pressure tank to fill.
16. Open the valve after the pressure tank

Section 6. Replacement Parts

DESCRIPTION	PART #
Blower	FASA067
Float Switch	RSLLS
System Controller	ROSCONT001
Pressure Gauge	LDU10025
Inlet Solenoid	DW51PN20EAC110V
Flush Solenoid	DW51PN25EAC110V
Re-Pressurization Pump	HQ800H
Nozzle	JY8034
Low Pressure Switch	FRG22
Pressure Tank	PM080LVSBE
Pressure Tank Tee	TTCK1111
Bulkhead - Tank Adapter - 1” Poly	3116B
Bulkhead -Tank Adapter - 3/4” Poly	3115B
Bulkhead - Tank Adapter 1/2” - Poly	3114B

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