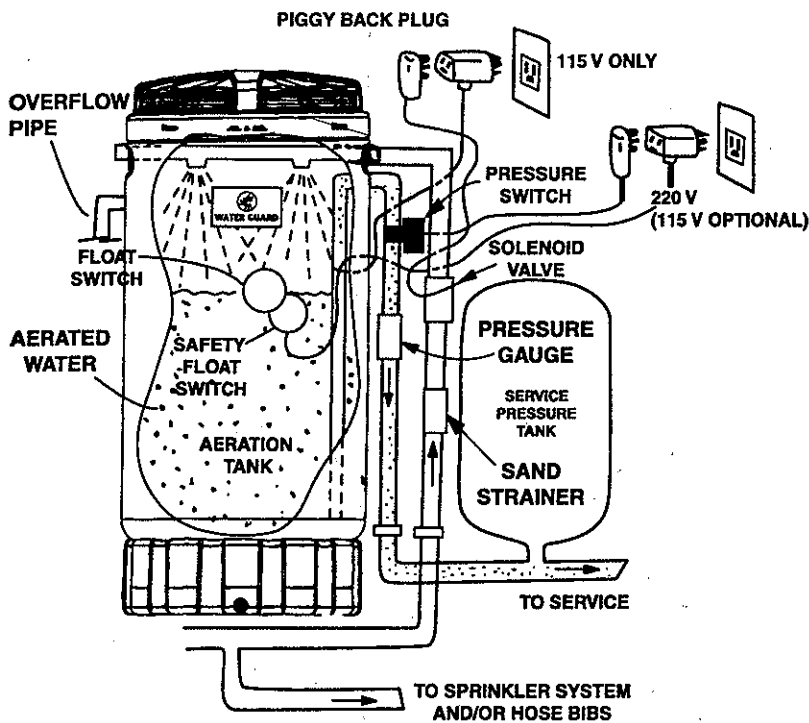


DUKE AERATOR INSTALLATION INSTRUCTIONS

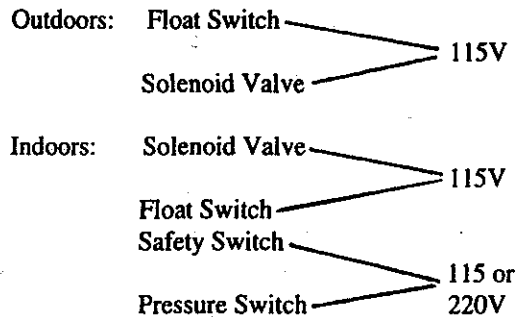
Please read these instructions carefully before starting the installation. By doing so, you will save time and perform the job in a workman-like manner worthy of this quality equipment.



IMPORTANT NOTICE: If local ground water contains a high percentage of dissolved iron and staining of bath fixtures is common, a suitable iron filtration system *must* be installed between the well pump and the aerator to prevent excessive sedimentation in the tank and staining of laundry when being washed. Prior to all installations, a water test must be performed to determine the exact condition of the water. For wells producing sand, a sand strainer should be installed upstream from the solenoid valve to prevent clogging of the valve.

TYPICAL OUTDOOR INSTALLATION IS SHOWN AT LEFT. For indoor installation, follow instructions 1 to 10 and see important information on pages 3 and 4.

ELECTRICAL CONNECTIONS - SCHEMATIC



FOR OUTDOOR INSTALLATION:

1. Tank Location: The aerator tank and the pressure tank must be installed on a *level* surface, and a surface which will support the weight of more than a *half ton of water* without settling. A poured concrete slab is best, but concrete paving blocks are satisfactory. **If the tanks are not level, they will not drain properly when being cleaned. CAUTION: DO NOT INSTALL TANK ON A WOOD-FRAMED FLOOR. TANK IS TOO HEAVY FOR NORMAL WOOD FRAME CONSTRUCTION TO SAFELY SUPPORT.**

2. Inspection: Remove the cover from the top of the aerator tank by twisting lid to the left. Do not lose the screws. Inspect the inside of the tank and the piping to assure there is no damage due to shipment. Other than the drain pipe which is placed inside of the tank for shipment, there should be no parts lying loose in the bottom of the tank. **If damage is discovered, contact the shipper immediately and file a damage claim.**

3. Tank Connections: The aerator and pressure tanks **MUST** be placed closely together so there is not more than 4 feet of pipe connecting them. Longer pipe connections may cause annoying air-hammer noise and may also cause frequent cycling of the well pump which could cause expensive pump damage.

A. Aerator Drain Pipe: This is the short length of 1-1/4" pipe with valve which was inside the tank lid during shipment. Elevate tank base on a brick or wood block to see where to insert pipe. Using PVC pipe cleaner and cement, coat the inside of the tank elbow and the long end of the drain pipe. Make certain the valve handle will be upward when the tank is set upright and that the valve will be *outside* the wall of the tank. Assemble the coated end of the pipe into the tank elbow. Close the valve. Connect the drain pipe to additional lengths of pipe necessary to conduct drain water to a suitable disposal area (a floor drain or exterior ground surface).

B. Pressure Tank: With the aerator in its desired location, move the pressure tank as close as possible to the aerator. Measure the lengths of pipe necessary to join the pressure tank to the aerator just below the tank pressure gauge. **Note that this pipe length must not exceed 4 feet in length.** To facilitate assembly and possible future disassembly for cleaning, use union fittings at each tank, rather than "hard pipe" the connections.

C. Well Pump: Connect the well pump to the aerator just below the solenoid using 1" PVC pipe. To facilitate future maintenance, use a union fitting at the tank connection. A sand strainer/filter must be installed at this location if sand/turbidity/or debris is found to be in the well. **NOTE:** If outside hose connections and/or lawn sprinkling system are present, connect these with a tee in the well pump line, prior to its connection with the aerator. Aerated water need not be used for lawns and other outdoor applications.

4. Electrical Connections: All electrical connections must meet local building codes.

A. Aerator Pump/Pressure Switch: The aerator pump is wired directly into the pressure switch. Plug this switch directly into the "piggy back" plug of the safety float switch, 110 Volt or 220 Volt, according to the rating shown on the pump name plate. If unsure what voltage is available at the aerator location, consult a qualified electrician.

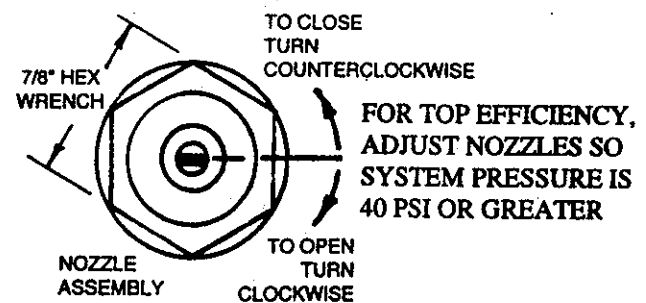
C. Solenoid Valve: The water entering the aerator is controlled by a solenoid valve which opens when low water line pressure is detected. Plug the solenoid cord into the "piggy-back" plug of the float switch cord. **Water should now start flowing into the aerator if the well pump has been turned on. If water does not flow into the aerator, check that the well pump is functioning properly and that all valves between the well pump and aerator have been turned on.**

5. Spray Nozzle Inspection: Now that water has started to flow into the aerator tank, check to see that all nozzles appear to be spraying equally. **After one minute of initial operation, unplug the solenoid to check that it is working properly by shutting off the water:**

- A. If water does not shut off, immediately turn off the well pump and check the condition of the solenoid.
- B. If the solenoid functions properly (shuts off water when unplugged), reconnect the plug and continue checking nozzle flow.
- C. If the well pump cycles on and off frequently before the tank is full, some or all nozzles must be adjusted to increase flow.
- D. Adjust using a screw driver in the slotted screw in the center of the nozzle: Turn screw counterclockwise to increase flow.

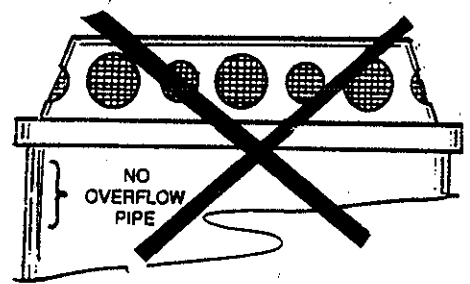
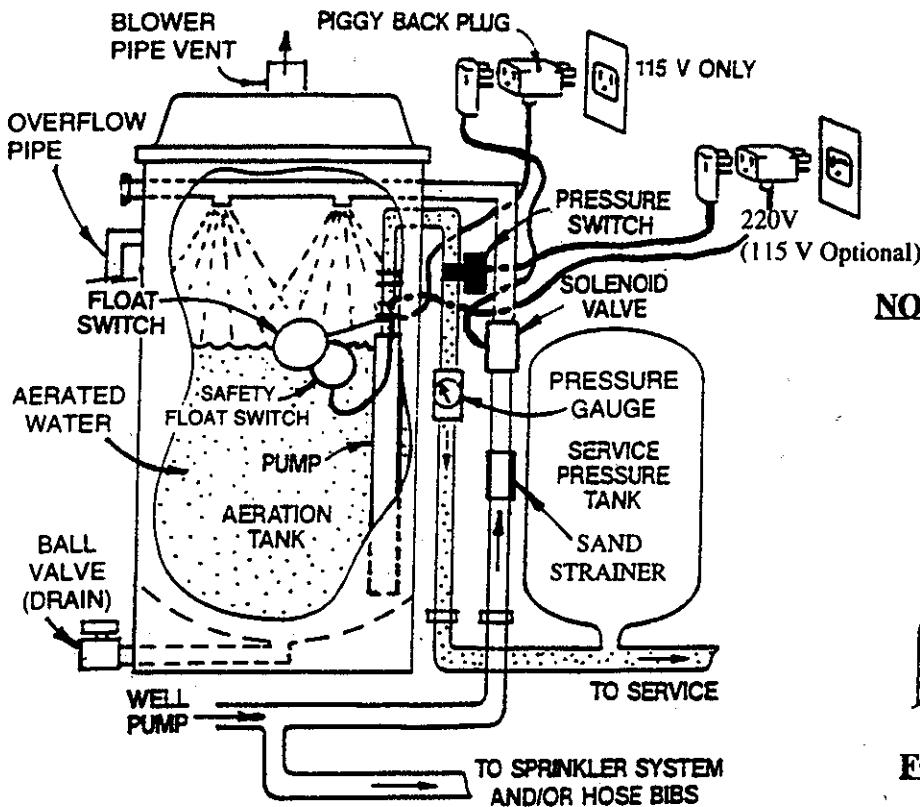
E. Take care not to open the nozzle too much because it is possible to unseat the adjustment screw inside the nozzle. If this occurs, stop the water flow immediately by unplugging the solenoid switch from the wall. Using a proper wrench, unscrew the nozzle carefully. **Be ready to catch the adjustment screw before it falls free into the bottom of the tank.** Insert the adjustment screw into the nozzle at least one full turn then reinstall the nozzle.

F. When the aerator is full, the float switch should shut off incoming water.

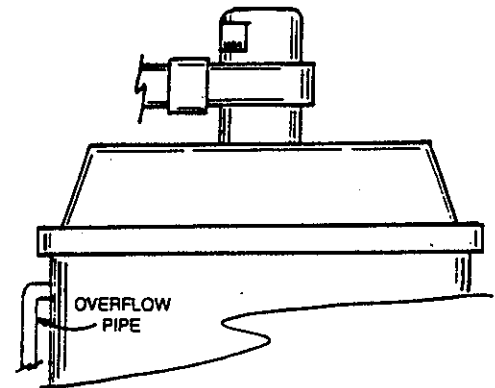


6. Lid Installation: When all plumbing and electrical connections have been made, and the nozzles are functioning properly, replace the lid on the tank. Align the arrow on the lid with the arrow on the tank wall and tighten firmly by hand. If your tank is fiberglass, align lid and replace four screws. Be careful not to overtighten. **SEE CLEANING INSTRUCTIONS ON PAGE 4, SECTION 10.**

FOR INTERIOR INSTALLATION: Aerators intended for indoor installation have one hole in the tank lid to which an electric blower is connected. If your tank lid has a series of 2" diameter holes around the outside of the lid, **STOP NOW! DO NOT INSTALL THIS UNIT INDOORS! AN ERROR IN ORDERING OR SHIPPING MAY HAVE OCCURRED. CONTACT YOUR SUPPLIER IMMEDIATELY. Lids with multiple holes can create a dangerous situation when used for indoor applications.** Your supplier can supply the proper lid quickly.



NOT FOR INTERIOR INSTALLATION



FOR INTERIOR INSTALLATION

Aerator installation indoors is similar to outdoor installation. Follow instructions 1 through 6 above plus the following:

7. Overflow Drain System: Aerators for indoor installation have an overflow drain pipe installed into the tank wall at the factory. Connect this drain pipe with sufficient PVC pipe to reach a floor drain. Alternatively, the overflow pipe can be extended to the exterior of the building where overflow water can be discharged with no problem. In this instance, a "J" trap should be installed at the aerator to prevent entrance of dust into the tank. The outdoor end of the overflow pipe should be screened to prevent entrance of vermin.

8. Exhaust Blower System: The lid of an indoor aerator is fitted with an exhaust blower which is electrically connected with the water solenoid valve. The blower operates only when the tank is filling with water.

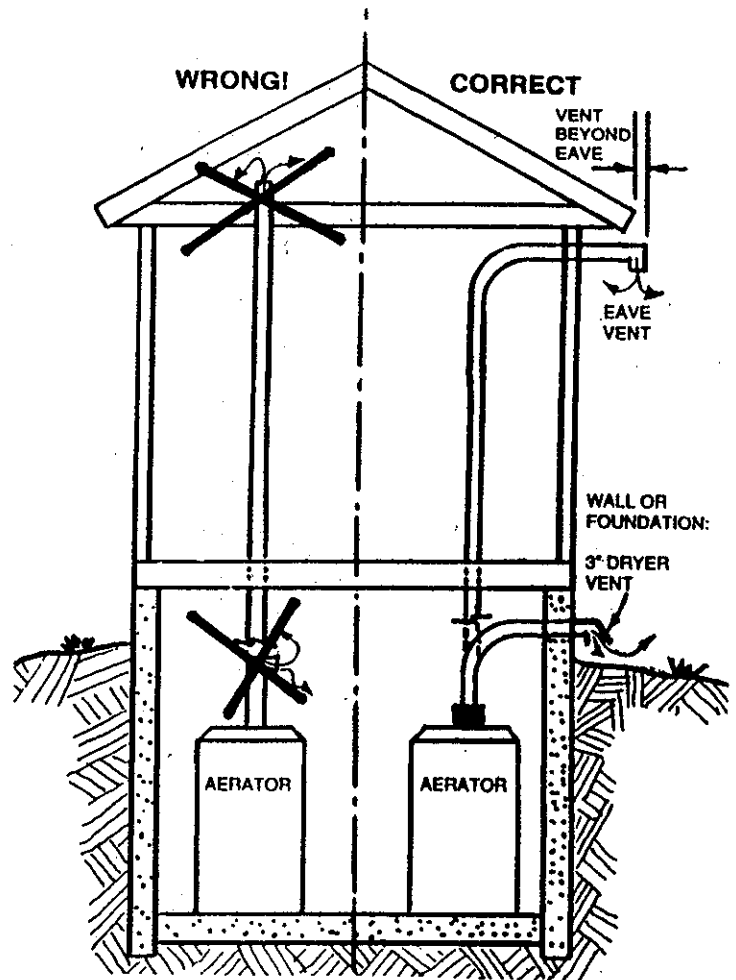
9. Exhaust Blower Venting: Exhaust gasses from the aerator tank must be carried to the exterior of the building using 3" PVC pipe with *cemented joints* to prevent leakage of gasses before being safely vented to the exterior. Install a union fitting at the blower to facilitate lid removal when cleaning the tank. Vent piping should be as short as possible, and use "sweep" fittings when 90 degree bends are needed. Sharp 90 degree bends should be avoided to assure unrestricted flow to the exterior. The exterior end of the vent pipe should have a 90 degree elbow down turned to prevent entrance of rain and snow, and screened to exclude vermin. A 3" clothes dryer vent is an acceptable alternative for exterior venting provided connection is cemented to prevent leakage of gasses into the building. **UNDER NO CIRCUMSTANCES SHOULD TANK GASSES BE VENTED INTO A CRAWL SPACE, UNDER A FLOOR, OR INTO AN ATTIC.**

WARNING!

TANK EXHAUST GASES *MUST* BE VENTED BEYOND THE EAVES OF THE ROOF TO PREVENT POSSIBLE ACCUMULATION OF POISONOUS AND/OR EXPLOSIVE GASES INSIDE THE BUILDING. FAILURE TO PROPERLY VENT GASES TO THE OUTSIDE OF THE BUILDING COULD POSSIBLY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

WARNING!

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



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

- A. Unplug the solenoid valve to shut off the water.
- B. Remove the lid from the tank. Do not lose the screws if fiberglass.
- C. Open the drain valve and empty the tank. Leave the valve open.
- D. Use a long handled brush to loosen accumulated deposits in the tank bottom.
- E. Plug in the solenoid valve to start flow of rinse water.
- F. Continue with brush until the tank is clean and deposits are rinsed down the drain pipe.
- G. Close drain valve and allow tank to start filling.
- H. Pour one cup of household bleach into the tank to disinfect.
- I. Inspect lid gasket for tears or broken sections. Repair or replace if necessary. Gasket must be in good condition to seal out vermin and to assure safe, proper seal in indoor applications.
- J. Inspect lid screens on outdoor tanks and replace or repair these needing attention.
- K. Replace lid. Align arrows on lid and tank, then replace screws carefully (if fiberglass).
- L. On indoor installations, assure tight connections of the vent pipe.
- M. Plug in solenoid valve and allow tank to fill.

11. Service, Parts, and Trouble-shooting Information: Call Action Manufacturing and Supply, Inc., Monday through Friday, between 8 AM and 5 PM Eastern time.

ACTION MANUFACTURING & SUPPLY, INC.
2602 NE 9th AVENUE, CAPE CORAL, FL 33909
Phone: (239) 574-3443 Fax: (239) 574-5809