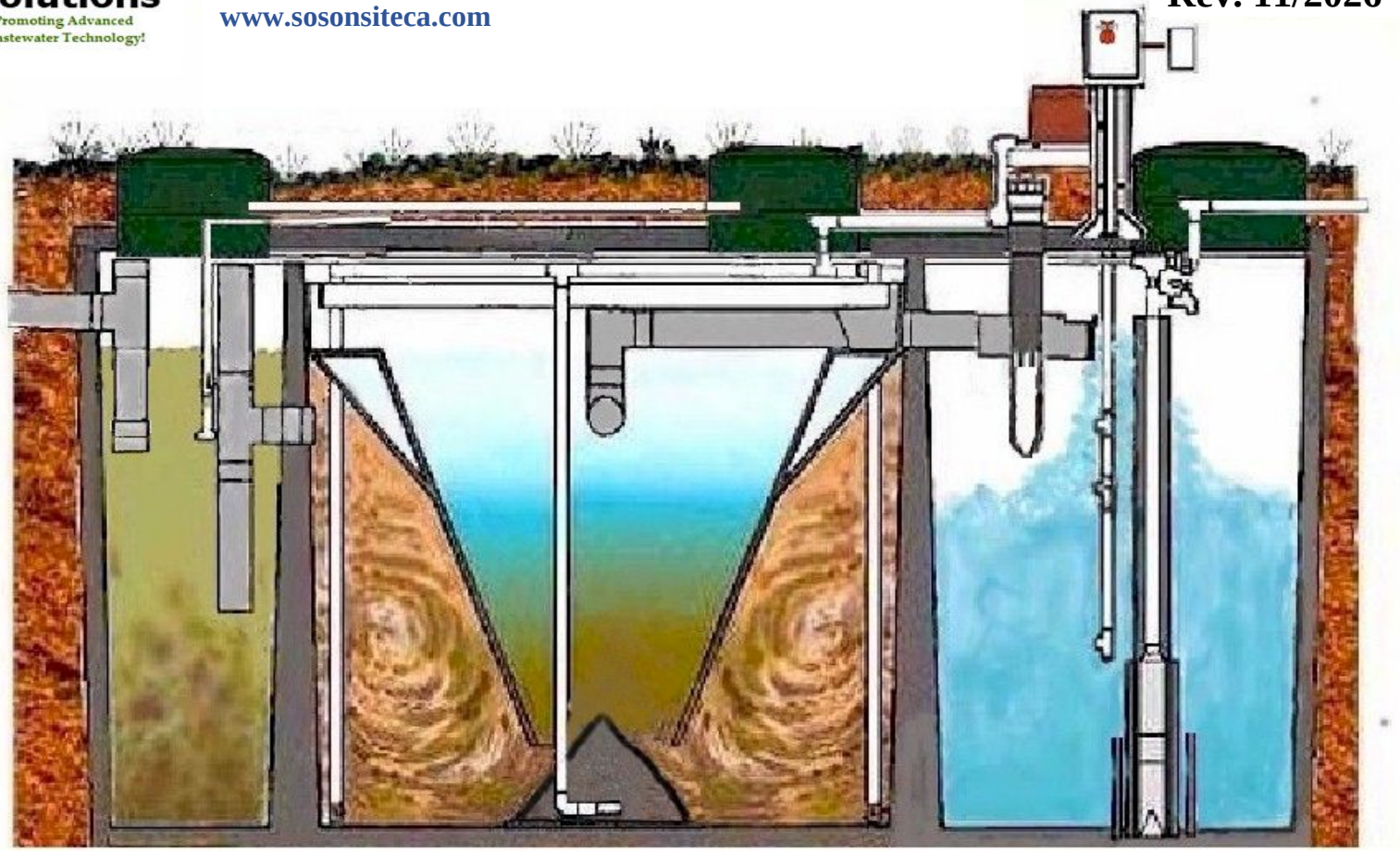
SUPERIOR ON-SITE SOLUTIONS

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Toll Free 877-669-4668

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HOOT
Wastewater Treatment
Installer's Guide

Rev. 11/2026



MATERIALS LIST

_____ Hoot Tank System: H600 1-piece_____ H600 2-piece_____ H750_____ H1000_____

_____ Tank System: Pump Tank Size:_____ Trash Tank Size:_____ Manufacturer:_____

_____ HOOT computer controller: chip:_____ controller#:_____

_____ Aeration blower (w/ check valve, rubber hose, clamps) Blower #:_____

_____ Concrete cover "dog house" aeration blower

_____ Blower hose clamp

_____ Concrete blower pedestal (16" x 16" paver)

_____ Sensor probe (w/ parts bag)

_____ Sensor probe offset conduit

_____ Aeration system flush valve

_____ Franklin pump #_____

_____ 1 /14" PVC pump adaptor

_____ Headwork's riser

_____ Riser Adaptor Ring: _____20"_____24"

_____ Riser covers: 24" (#_____) 20" (#_____)

_____ Safety Screws:_____

_____ Risers: (2" riser) _____20" _____24" (6" riser) _____20" _____24" (12" riser) _____20" _____24"

_____ Grommets: 1/2"_____ 1"_____ 1 ¼"_____

_____ Drip Tubing for field: Type:_____Linear Feet:_____

_____ Drip Tubing: Sliploks:_____Couplers:_____

_____ Air Relief Valves: #_____ Canisters (6") _____

_____ Concrete Probe Holder (remote sensor probe holder, bottom of tank)

_____ Geoflow tubing 2' end hoops#:_____

_____ UV Disinfection Light: Type:_____

_____ PVC sensor probe clips: #_____

_____ Pump Collar Retrofit Kit and epoxy

_____ H750/H1000 Chlorinator hole plug

_____ Flow Meters: #:_____ Digital:_____ Mechanical:_____

_____ Pressure regulators

_____ Sanitary "T"

_____ Ramneck

_____ Sekaflex Sealant

_____ Leak Stop/Jet Set

_____ _____

_____ _____

Owner:_____

Address:_____

_____

Installer:_____

Delivery Date:_____

_____

_____

_____

_____

_____

_____ _____ _____ _____

Installer Representative, Date SOS Representative, Date

The HOOT Aerobic Treatment System

Declaration of Warnings

WARNING! TO PREVENT MALFUNCTION OF YOUR SEWAGE SYSTEM, DO NOT DISCHARGE THE FOLLOWING MATERIALS INTO THE SYSTEM: PLASTIC MATERIALS. CLOTH. CIGARETTE STUBS. LARGE QUANTITIES OF ACIDS, CAUSTICS, SOAPS OR CLEANING MATERIALS WHICH HAVE A HIGH OR LOW PH FACTOR (USE LOW SUDS DETERGENTS) • THROW-AWAY DIAPERS .BABY WIPES, PAPER TOWELS. KLEENEX & SOME TOILET TISSUES, WHICH DO NOT DECOMPOSE READILY IN WATER. RUBBER PRODUCTS. AUTOMATIC TOILET DISINFECTION PRODUCTS • EXCESS GREASE OR FATTY MATERIALS (USE GARBAGE DISPOSAL SPARINGLY) • OILY MATERIALS, MOTOR OILS, GREASE, KEROSENE, GASOLINE, PAINTS, ETC .• BACKWASH WATER FROM WATER SOFTENERS (IN ACCORDANCE WITH LOCAL REGULATIONS) • ANY OTHER MATERIALS WHICH DO NOT DISINTEGRATE READILY IN WATER. SUMP PUMP DISCHARGE

WARNING! TO FUNCTION PROPERLY, THE HOOT SYSTEM MUST BE MAINTAINED BY A QUALIFIED PROFESSIONAL AT LEAST EVERY SIX (6) MONTHS FOR THE LIFE OF THE SYSTEM. FAILURE TO MAINTAIN THE HOOT SYSTEM VOIDS THE LIMITED WARRANTY AND MAY CAUSE SERIOUS BODILY INJURY OR ILLNESS TO PEOPLE AND PETS AND MAY CAUSE SERIOUS DAMAGE TO THE HOOT SYSTEM OR OTHER PROPERTY.

DANGER! ONLY A QUALIFIED PROFESSIONAL SHOULD ATTEMPT TO REPAIR OR FIX THE HOOT SYSTEM. ATTEMPTED REPAIR BY ANYONE OTHER THAN A QUALIFIED PROFESSIONAL MAY CAUSE SERIOUS BODILY INJURY OR DEATH TO THE HOMEOWNER OR OTHER PERSONS AND MAY CAUSE SERIOUS DAMAGE TO THE HOOT SYSTEM AND OTHER PROPERTY.

DANGER! DO NOT DISCONNECT THE POWER TO THE HOOT SYSTEM. DISCONNECTION OF THE POWER FROM THE SYSTEM MAY CAUSE SERIOUS ILLNESS OR DEATH TO THE HOMEOWNER AND OTHER PERSONS AND MAY CAUSE SERIOUS DAMAGE TO THE HOOT SYSTEM AND OTHER PROPERTY.

WARNING! IN CASE OF IMMINENT FLOOD, IMMEDIATELY TURN OFF THE ELECTRICAL POWER TO THE HOOT SYSTEM AT THE INDEPENDENT BREAKER LOCATED ON THE HOUSE. FAILURE TO TURN OFF THE ELECTRICAL POWER MAY CAUSE SERIOUS INJURY OR DEATH TO THE HOMEOWNER AND OTHER PERSONS AND MAY CAUSE SERIOUS DAMAGE TO THE HOOT SYSTEM AND OTHER PROPERTY.

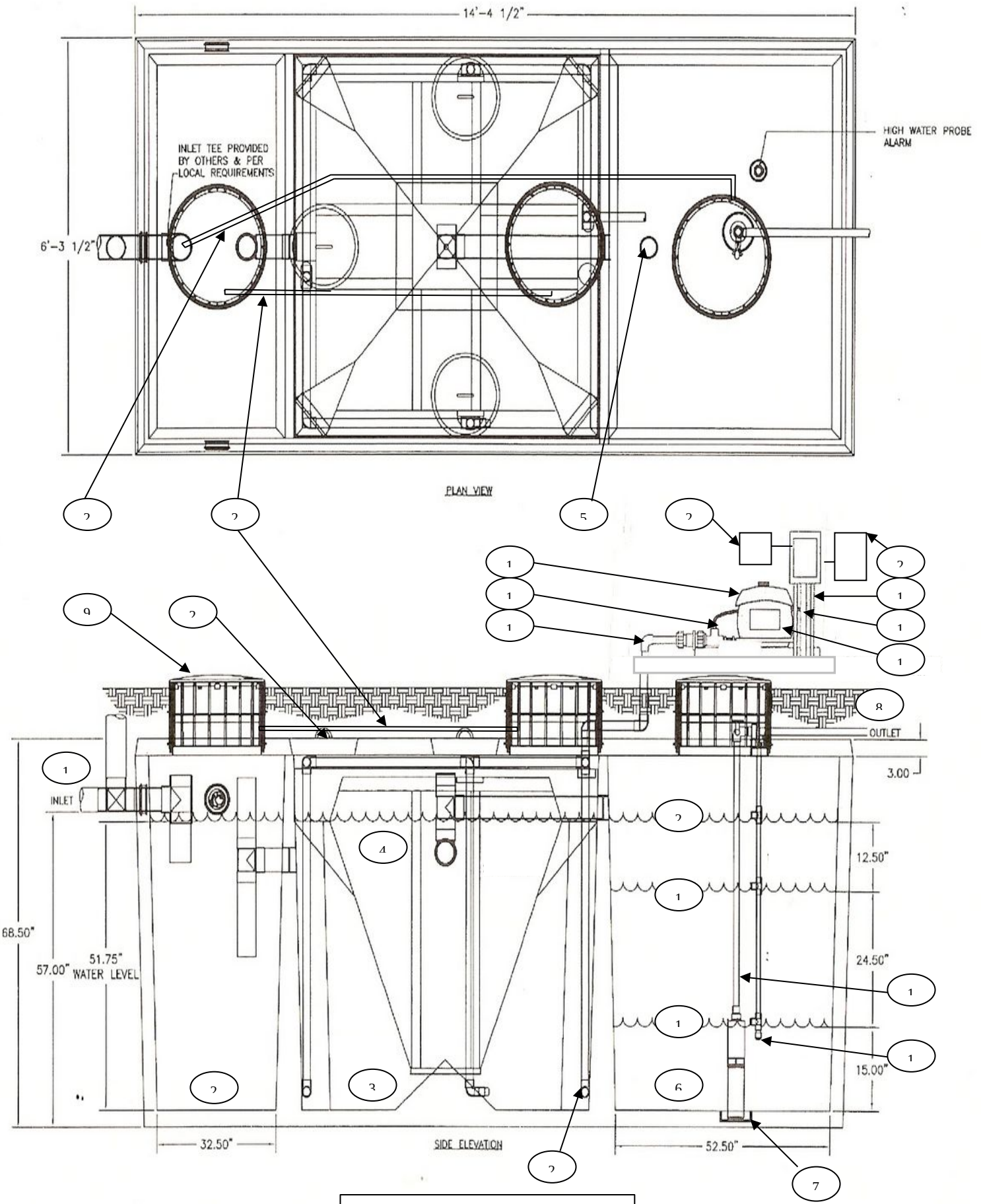
WARNING! IF THE UNIT FAILS TO FUNCTION PROPERLY, DO NOT USE THE BATHROOM FACILITIES UNTIL QUALIFIED PERSONNEL FIX THE PROBLEM. USE OF THE BATHROOM FACILITIES DURING A SYSTEM FAILURE MAY CAUSE SERIOUS INJURY, ILLNESS, OR DEATH TO PERSONS AND MAY CAUSE SERIOUS DAMAGE TO THE HOOT SYSTEM AND OTHER PROPERTY.

WARNING! DO NOT ALLOW CHILDREN TO PLAY ON OR AROUND THE AEROBIC TREATMENT SYSTEM, THE SPRINKLER SYSTEM, OR OTHER OVER-LAND DISCHARGE AREA. ALLOWING CHILDREN TO PLAY IN THESE AREAS MAY CAUSE SERIOUS BODILY INJURY, ILLNESS, OR DEATH TO THE CHILDREN AND OTHER PERSONS AND MAY CAUSE DAMAGE TO THE HOOT SYSTEM AND OTHER PROPERTY.

DANGERI DO NOT OPEN CONTROL PANEL WITHOUT ELECTRICITY DISCONNECTED AND LOCKED OUT ON THE SYSTEM. FAILURE TO DO SO COULD CAUSE SEVERE INJURY OR DEATH.

Manual is for reference purposes only, check WWW.HOOTSYSTEMS.COM web page for installation Instruction

Hoot H600AN Aerobic Treatment Unit



For Equipment Reference Only

The HOOT Aerobic Treatment System Diagram

1. **Inlet** - where the wastewater enters the system from the home
2. **Pretreatment Tank** - where anaerobic digestion occurs and storage for non-biodegradable materials
3. **Aeration Chamber** - where air is introduced into the sewage for digestion
4. **Clarifier** - a still chamber where solids settle out and the clear effluent rises
5. **UV Disinfection Light** - disinfects fecal coliform activity in the water entering the pump tank (optional)
6. **Pump Tank** - where the treated and disinfected effluent is stored prior to discharge
7. **Effluent Pump** - how the treated water is discharged from the system
8. **Discharge Line** - to the disposal method prescribed by law or chosen by installer
9. **Access Port** - used by service personnel to service and inspect system
10. **Probe** - used to determine the water level in the tank
11. **Pump Wire** - provides power to operate the effluent pump
12. **System Controller** - Monitors and operates the treatment system
13. **Power Line** - provides the power to the controller to operate the system
14. **Troy Air Linear Air Blower** -long life, efficient linear blower which compresses atmospheric air and under pressure delivers it to the tank
15. **Air Manifold** - delivers the air from the line to the stones for diffusion into the sewage
16. **Aeration Line** - delivers the air from the pump to the manifold
17. **High Water Probe** - lets the panel know of a high water condition in the pump tank
18. **Low Water Probe** - lets the panel know of the minimum water level to turn on the pump, also used as the pump shut off during pump down.
19. **Probe Ground** - used to provide a sensing current to the tank for water level determination
20. **Aeration Stone** - air is finely diffused from the stone into the aeration chamber
21. **15" Covers** - Provide access to each of the critical components of the treatment system
22. **Alarm Output – connection point for optional remote alarm monitoring equipment**
23. **30 Amp Disconnect** – Power source, follow local codes and ordinances
24. **Third Probe Input** –Allows drip system to automatically increase or decrease dosing
25. **Recirculation Line** –allows for unused discharged effluent to return to the pre-treatment tank
26. **Pressure Equalization Line** –allows blower air to circulate back to trash tank & house vent

Tank Installation Instructions

All Hoot Aerobic Systems are constructed of Steel Reinforced Concrete with a minimum P.S.I. Strength of 4000 P.S.I. at a 28 day cure. Our manufacturer uses a fiber reinforcement that provides equivalent strength to that of steel. Our tanks are periodically tested to ensure quality and meet the requirements of the ASTM C-1227, the industry standard for structural integrity of concrete tanks.

Hoot Tank Dimensions:

Hoot System	Gallons (Capacities)		Weights (+/-)	Bottom	Bottom to	Tank	Tank	Tank
	Trash	Treatment	Pounds (LBs)	to Inlet	Outlet	Lentgh	Width	Height
H600AND	775	1240	12,000	57"	54.75"	115"	76"	68.5"
Pump	1000		Check with local precaster					

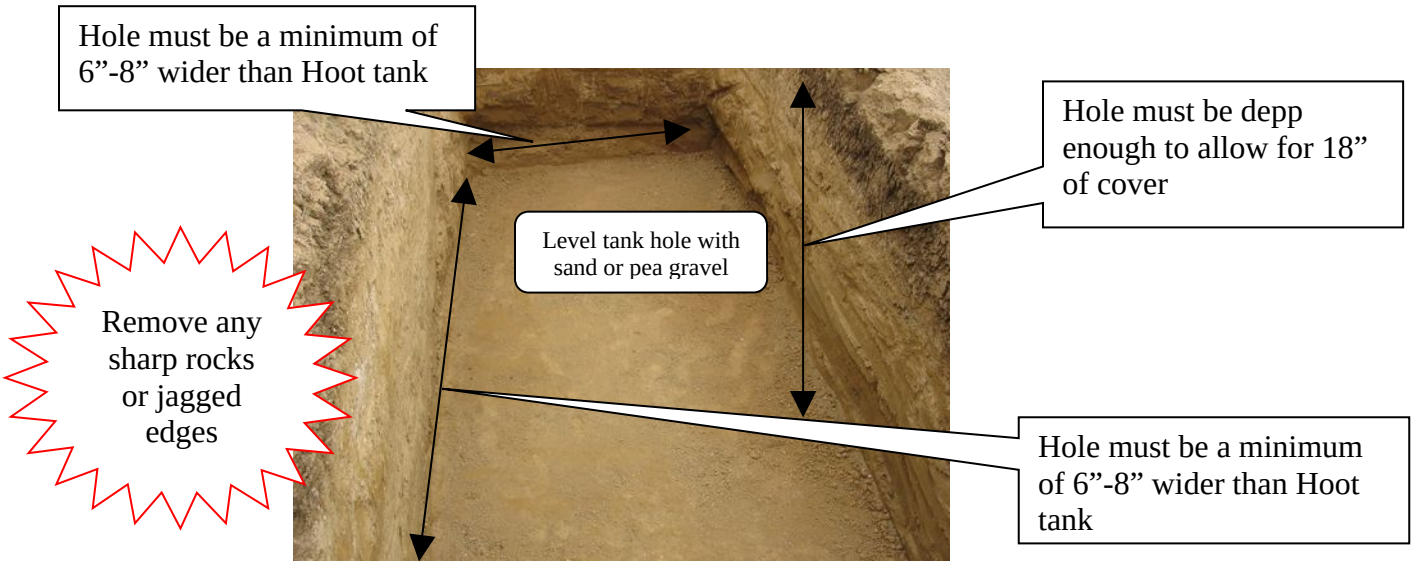
Hoot System	Gallons (Capacities)		Weights (+/-)	Bottom	Bottom to	Tank	Tank	Tank
	Treatment	Pump	Pounds (LBs)	to Inlet	Outlet	Lentgh	Width	Height
H750AND	1373	1700	17,000	62"		179"	83.5	72"
Septic	1250		Check with local precaster					

Hoot System	Gallons (Capacities)		Weights (+/-)	Bottom	Bottom to	Tank	Tank	Tank
	Treatment	Pump	Pounds (LBs)	to Inlet	Outlet	Lentgh	Width	Height
H900AND	1373	1700	17,000	62”		179"	83.5	72"
Septic	1500		Check with local precaster					

Hoot System	Gallons (Capacities)		Weights (+/-)	Bottom	Bottom to	Tank	Tank	Tank
	Treatment	Pump	Pounds (LBs)	to Inlet	Outlet	Lentgh	Width	Height
H1000AND	1840	1469	17,000	69.25		157"	89"	78”
Septic	1250		Check with local precaster					

Hoot System	Gallons (Capacities)		Weights (+/-)	Bottom	Bottom to	Tank	Tank	Tank
	Treatment	Pump	Pounds (LBs)	to Inlet	Outlet	Lentgh	Width	Height
H1200AND	1840	1469	17,000	69.25”		157"	89"	78”
Septic	1500		Check with local precaster					

1. Dig hole approximately 6” to 8” larger than the tank all the way around - proper grade with smooth and level bottom. Be sure to check the depth of the excavation to the bottom of the inlet to ensure tank will be deep enough for your inlet to flow into the tank.



2. Check with local regulations regarding the bedding of the excavation with sand or pea gravel.



Prepare level approach to tank hole for HOOT delivery truck or crane. Provide adequate access clear of trees, branches, electrical wires or other utility.

2. Delivery driver will place tank in hole - and confirm it is level within 1 inch from center of tank to any corner.



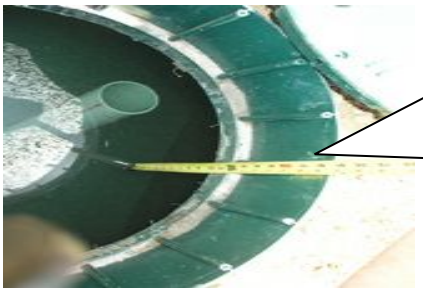
Conduct visual inspection of the tank IMMEDIATELY UPON ARRIVAL for damage. Make any repairs or seal seams prior to tank being placed in the tank hole.

Tank Water Tightness Procedures

Below you will find a procedure for water testing Hoot tanks in California. Although each county may have a unique methodology for conducting their tank water tightness test, the procedures listed below should help provide some guidelines for a successful Hoot tank water tightness test. I have also included the ASTM C1227 requirements for water testing. Please insure that your County has proper justification for varying from ASTM water testing criteria. Filling tank into riser does not meet with any protocols established by ASTM or Hoot Systems. Improperly water testing a Hoot tank could void the warranty.

Tank Water Tightness Procedures

A) The tank hole must be level and at proper depth in preparation for the tank delivery
B) Provide safe and easy access for tank delivery driver
C) Inspect tank prior to placing system in hole
D) Place tank in 6" sand/pea gravel bed
E) Insure tank is level
F) Partially backfill tank hole to allow for lateral support (when allowed)
G) Apply weight to tank lid to simulate engineers designed lid weight load (lid to grade depth)
H) Distribute weight load equally across lid
I) Remove any access ramneck and prepare surface for sealant
J) Seal all unused tank openings as required (traffic rated discharge hole, sanitary line hole, tank chamber drain holes)
K) Slowly fill tank from center chamber with garden hose or with three hoses one in each chamber
L) Allow for concrete to hydrate
M) Check all sides of tank for leakage
N) Bring water to bottom of lid
O) Apply sealant (Jet set, etc)
P) Allow for sealant to fully cure
Q) Call for inspection
R) Fill tank water level to required leve
S) Mark and measure water height
T) Place riser covers over each opening for safety, this will also help prevent evaporation and waves.
U) After 24 hours, visually inspect tank for any signs of leakage
V) Remove risers lids and measure any notable water loss



Measure water level from top of riser. Allow for minor water drop as concrete will absorb minor amounts on moisture.

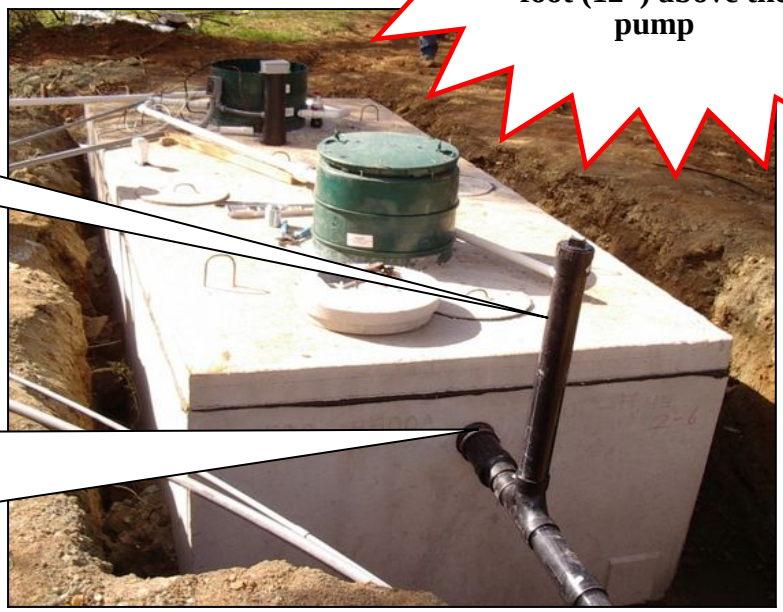
ASTM water tightness procedure

The exact wording out of the ASTM C1227 for water testing reads as follows----

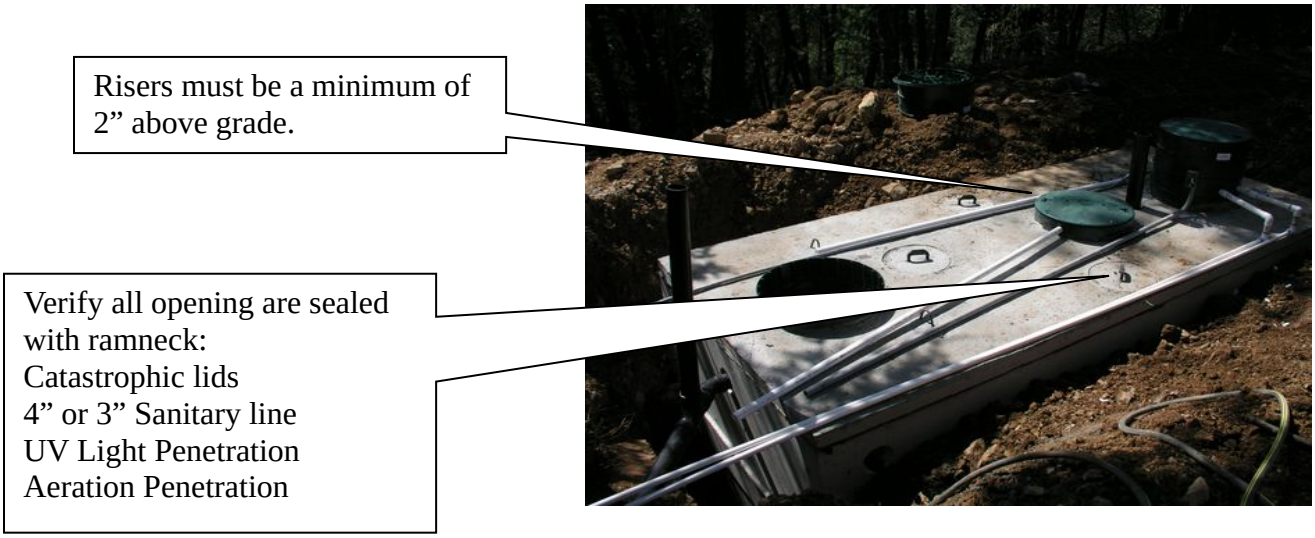
*9. **Performance Test Methods***
9.1 Proof testing is used to demonstrate the strength of the tank to resist anticipated external and internal loads.
9.1.1 Proof testing, when required by the purchaser, shall be performed in such a way as to simulate the actual anticipated loads.
9.2 Testing for leakage is performed using either vacuum testing or water-pressure testing.
9.2.1 Vacuum Testing—Seal the empty tank and apply a vacuum to 4 in. (100 mm) of mercury. The tank is approved if 90 % of vacuum is held for 2 min.
9.2.2 Water-Pressure Testing—Seal the tank, fill with water and let stand for 24 hour. Refill the tank. The tank is approved if water level is held for 1 hour.

4. Back fill tank hole 50% immediately with “clean” dirt and Compact following inspection
5. Inventory all material delivered to homeowner or contractor, sign inventory list
6. Tank pictures of equipment and installation
7. Bring in 4” Schedule 40 Pipe into the inlet end of tank through one or more openings to the Pre-Treatment tank
8. Install a sanitary “T” far enough into trash tank so it can be seen through riser opening.

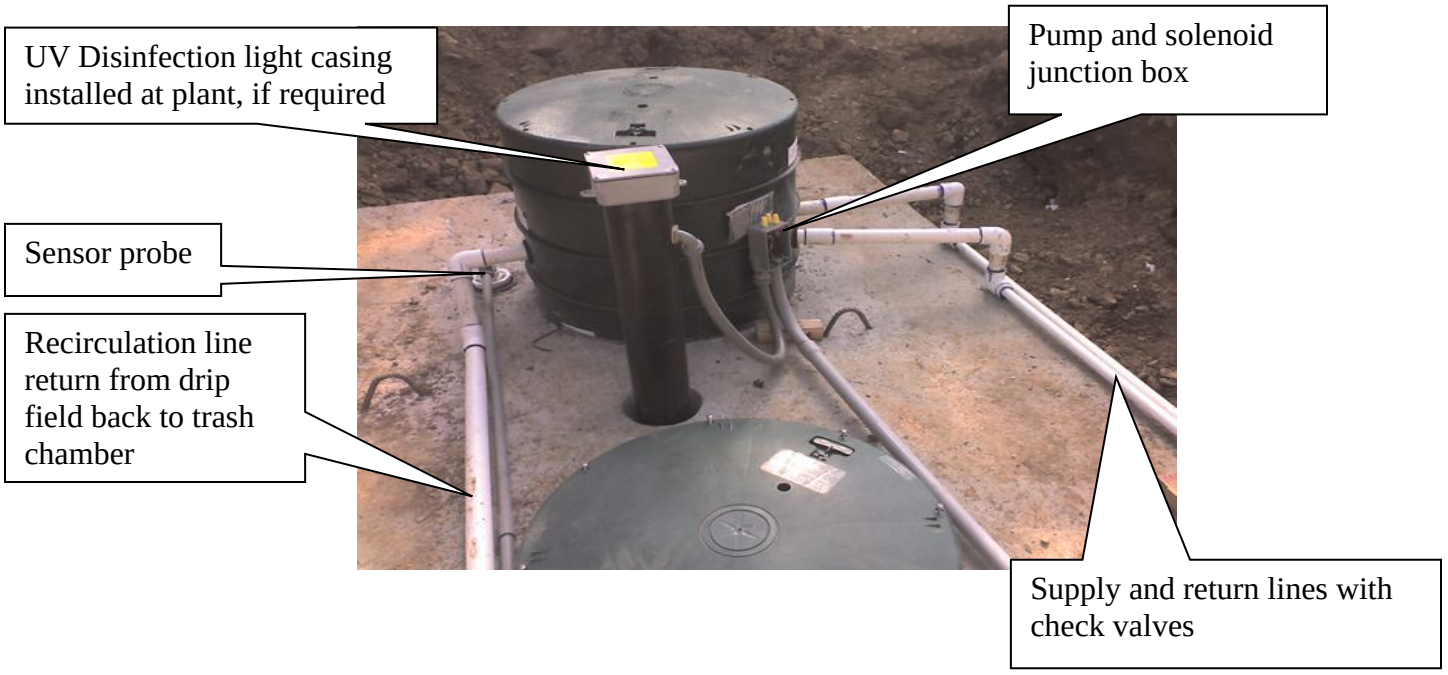
Fill tank by running water into the aeration tank until it fills both the pretreatment tank and raises the water level in the pump tank to at least one foot (12”) above the pump

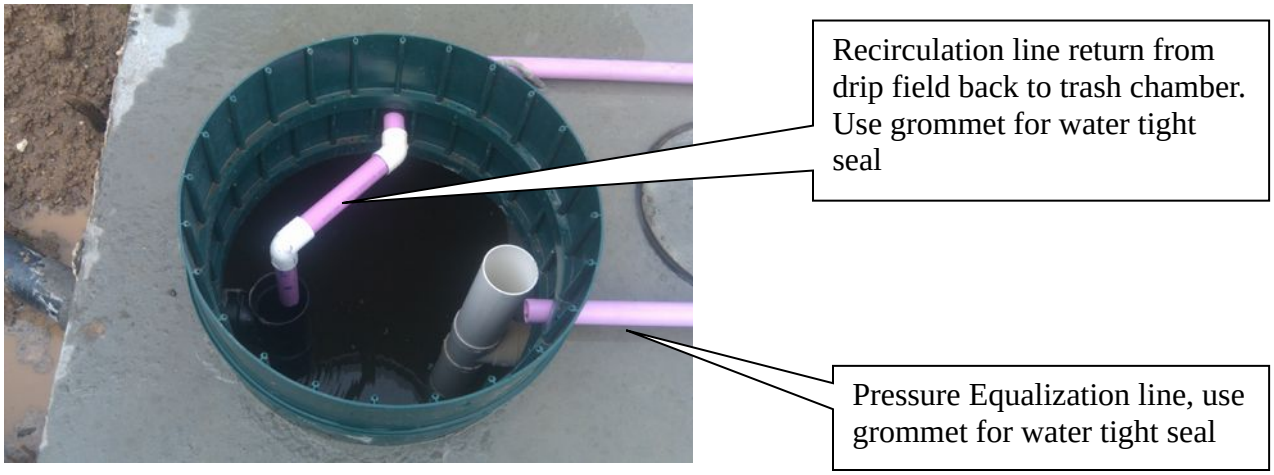


9. Back-fill with dirt and fill tank with water. Be certain that any seals that are not used are fully intact. If there is any question, remove the seal and install a piece of 4” schedule 40 pipe with a cap or grout the opening to prevent infiltration into the tank.
10. If regulations permit, fill between excavation walls and tank with a flowing material such as sand or non-compacted soil. (this makes working on the excavation safe) If regulations do not allow, then use care around the excavation area and fill immediately following inspection.
11. Bring required access ports to final grade.



Tank Top Layout





****Seal all LBs and connectors with Silicone II (Failure to apply Silicone II (provided) will void the warranty!)**

Pump Installation & Connections

Pump:

1. Install the provided 1 ¼" male adapter in to the pump, use Teflon tape.
2. Glue the 1 ¼" pvc pipe in to the adapter



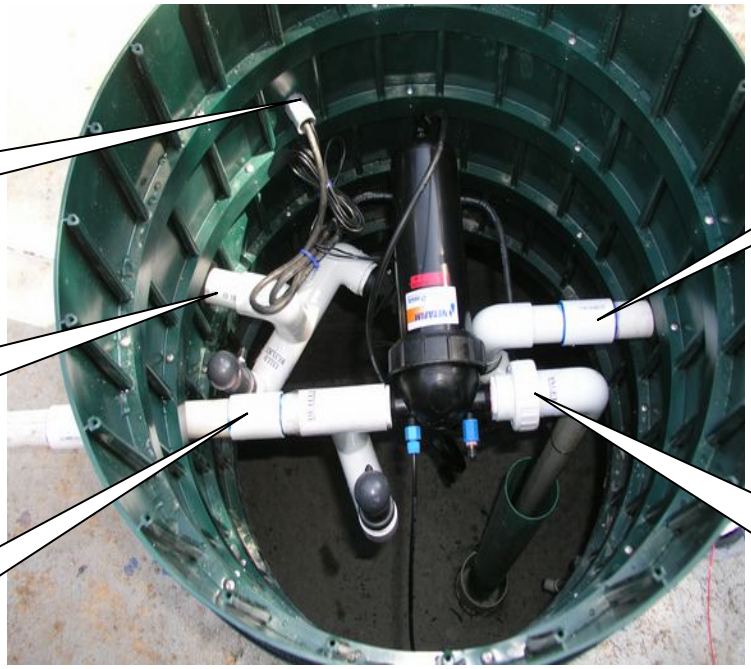
Ty-rap power cord to measured pvc pipe

Install the provided 1 ¼" male adapter in to the pump using Teflon tape

Place pump inside provide tube (located inside the chamber that the pump will be install into). You have to BEVEL the top or the bottom of the tube so you won't cut the power cord on the pump



3. Measure the length of the pump and the 1 ¼" pvc pipe so that you can make the connection to the headwork's filter or drop the pump into the chamber measure the height of the connection keeping the connection level.
4. Place pump inside provide tube (located inside the chamber that the pump will be install into). You have to BEVEL the top or the bottom of the tube so you won't cut the power cord on the pump.
5. Tie the power cord to the 1 ¼"pvc pipe by using ty-rap
6. When installing the pump in to the tube leave about ¾" of the tube from the bottom of the pump.



Silicone tank penetration

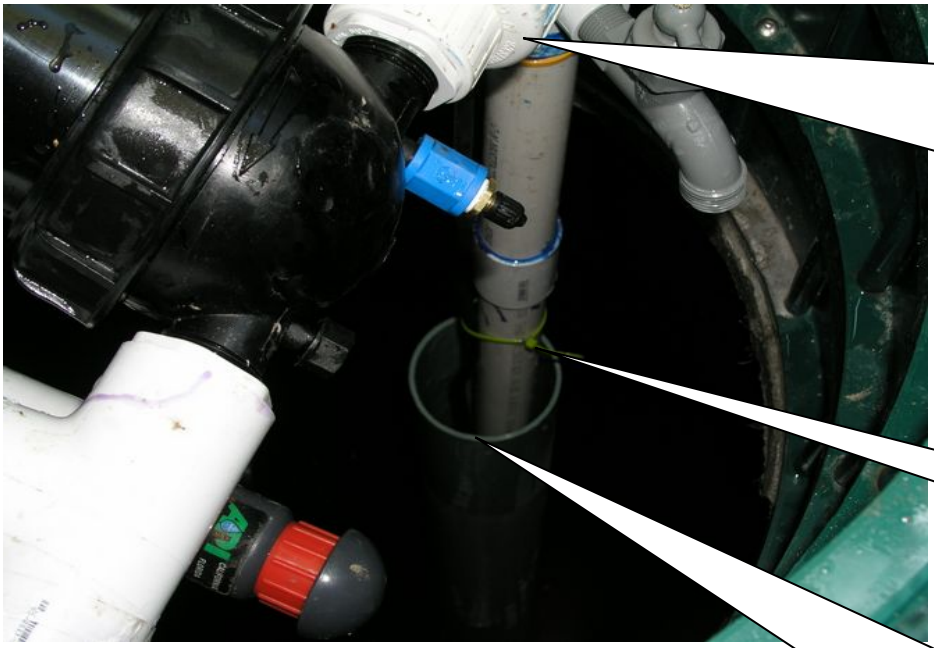
Recirculation line, back to trash tank

Return line from drip field

Keep connection level from pump to headwork's box supply line.

Supply line to drip field

7. Install the pump and the tube into the collar a the bottom of the effluent tank
8. Connect the pump to the filter, insure that connection is level.
9. Locate filter properly. Insure filter can be easily removed for future service & maintenance.



Glue the 1 ¼" PVC pipe into provided adapter. Measure length of the pump and the 1 ¼" PVC pipe by dropping the pump into the chamber measure the height of the connection keeping the connection level.

Tie the power cord to the 1 ¼" PVC pipe by using ty-rap

Bevel the top of tube provided by manufacturer. Failure to bevel may cause power cord to be damaged.

Pressure Equalization Line



1 ¼” grommets installed on the trash tank riser and the aeration riser. Connect both chambers using PVC piping.

Lubricating the grommets will allow the PVC piping to slide easier

Sensor Installation & Connections

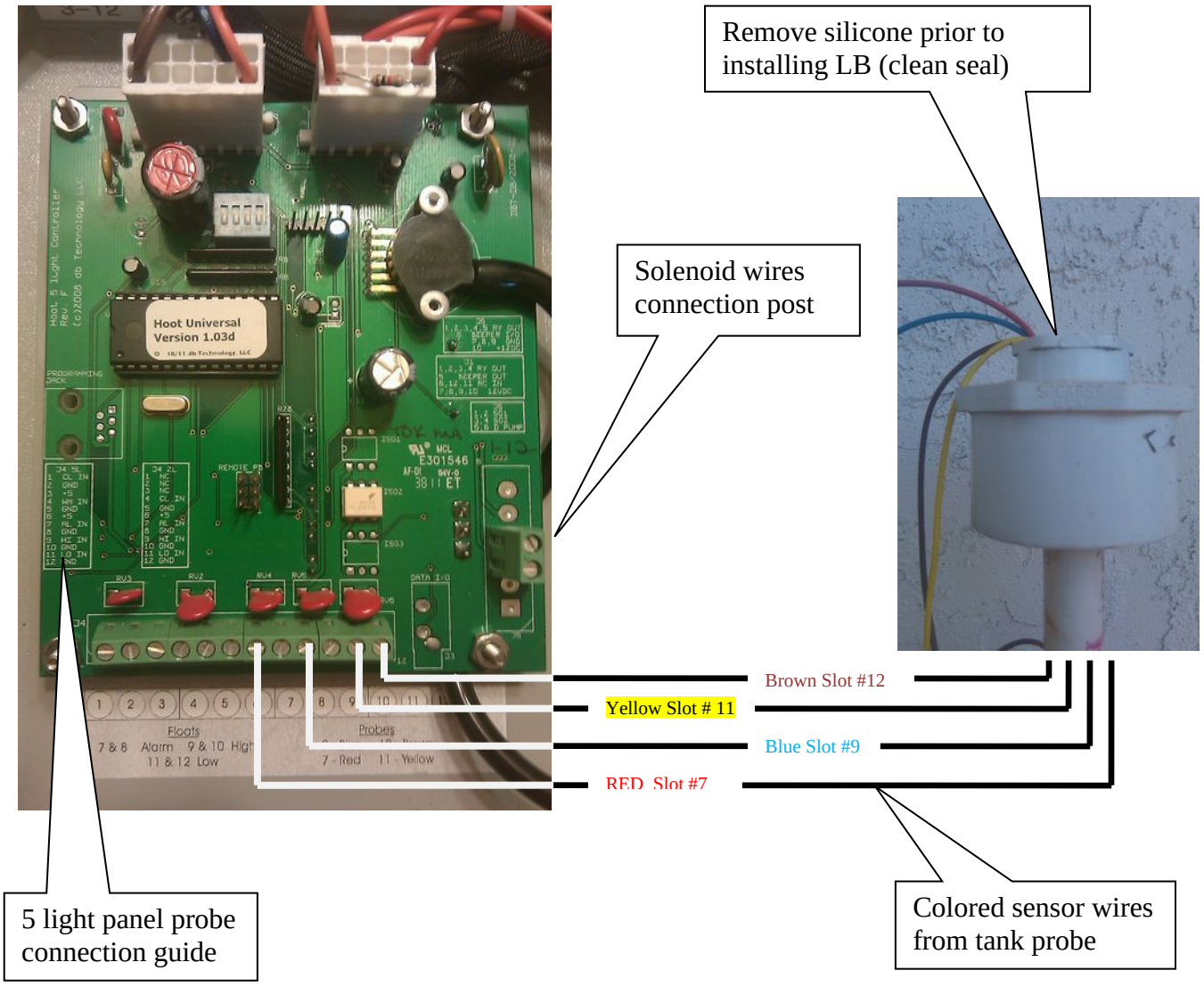
Sensor:

1. The sensor can be installed at a maximum of 50’ total from the tank to the controller, no splicing wires.
2. Before installing sensor make sure that the hole is clean.

#16 awg wire extends a maximum of 50’



3. The sensor should be installed so that you can see the contracts on the sensor thru the headwork's riser.
4. The sensor is a compression fitting. Push it down or step on the fitting, be caution not to step on the wires.
5. Clean out the fitting where the wires come thru, remove the silicone from around the edge of the fitting,
6. There is a 1" to a ½" reducer needed to be install into the fitting, cut a small pieces of ½" pvc conduit about 3" long to fit into the reducer to LB that comes with the package.
7. From the LB run 1"pvc conduit to the base of controller and reduce to ½" to enter controller.



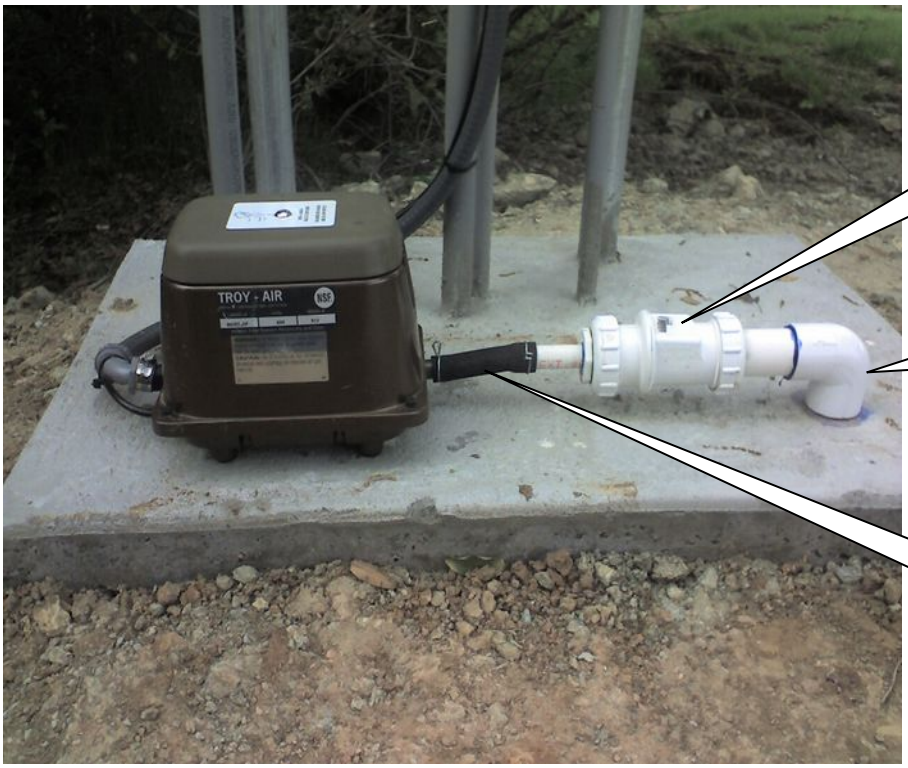
8. Pull the sensor wires through the 1.5” pvc fitting and conduit to the controller leaving 12” of wire to connect to the door of the controller.
9. Cut the probe wires so that there is approx. 12“ of wire coming out of the box.
10. Be careful when opening the connection point they are very delicate.
11. Strip back each of the wires, lift lever and insert wires according to the sticker under the board
12. Match the color of the wire to the connection on the door (brown, yellow, blue and red).
13. Seal all LBs and connectors with Silicone II (Failure to apply Silicone II (provided) will void the warranty!)

Blower Installation & Connections

Blower:

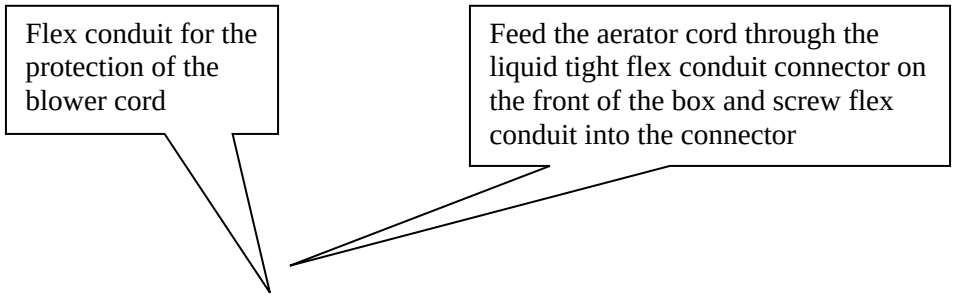
1. Remove the plug from the end of the cord (cut off)
2. Place the blower close to or at final location.
3. With the blower in the correct location you can start to install the 1 ¼” pvc pipe from the tank to the blower.
4. Install the rubber hose on to the ½” pvc nipple.
5. Glue the ½:” pvc nipple into the reducer on the check valve.
6. Install rubber hose on to the pump using the two hose clamps

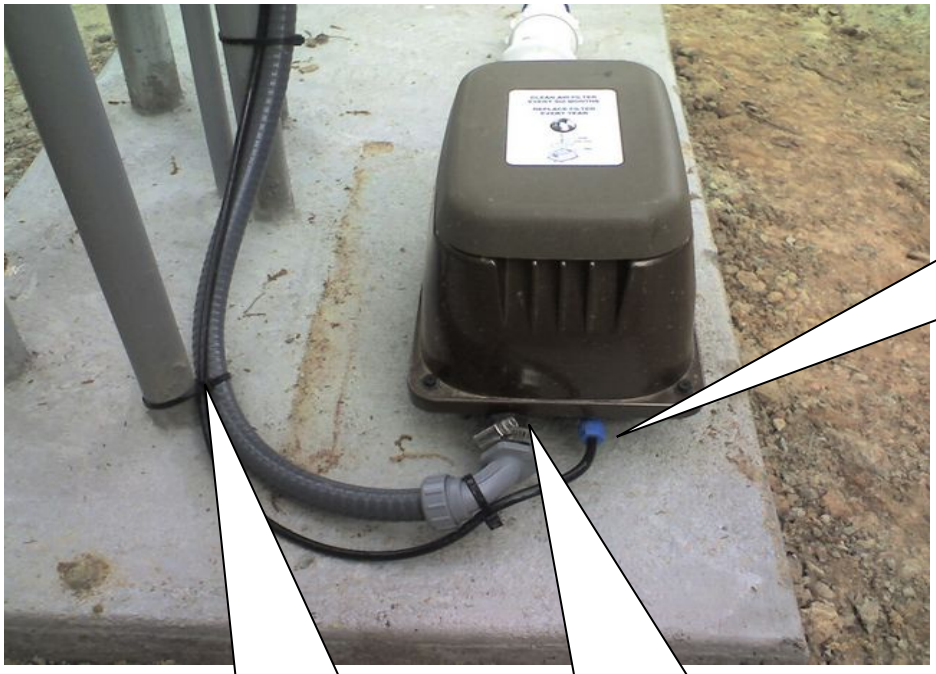
7. Connect the 1 ¼' pvc pipe that comes from the tank.
8. Secure hose clamps that come with the blower to the small rubber hose and the check value and insure check valve is level.



9. Measure the length of the liquid flex from the blower to the controller using on of the ½" opening and cut liquid flex to size.
10. The flex connect is slipped onto the aerator cord first followed by the piece of flexible conduit.
11. Feed the aerator cord through the liquid tight flex conduit connector on the front of the box and screw flex conduit into the connector. Install the connectors on both ends of the liquid flex.
12. Pull the cord through the liquid flex from the bower to the controller leaving about 6" of wire in the controller.
13. Connect the blower up to the terminal block in the controller. (3 wires)
14. Install a hose clamp on to the rubber connection on the back of the blower to hole the fitting into the rubber mount

.





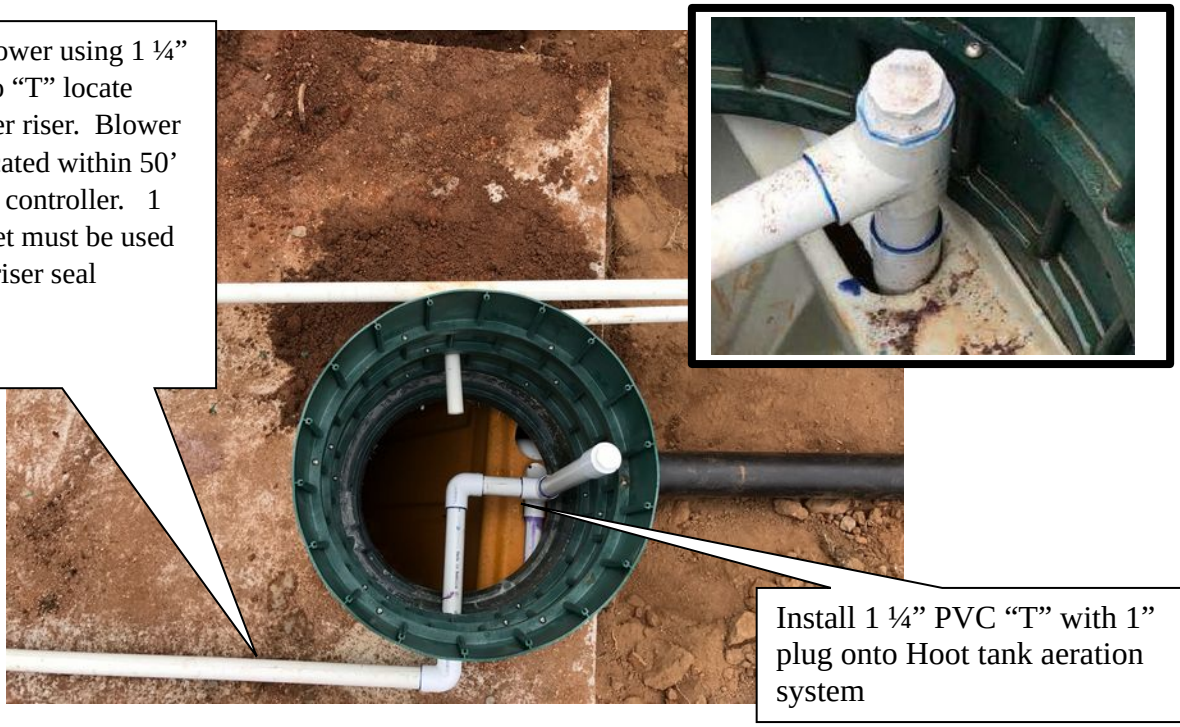
Connect ¼" tube coming from the controller to the back of blower

Ty-raps tying the tubing to the liquid flex

Flex connect is slipped onto the aerator cord first followed by the piece of flexible conduit.

15. Cut the tube, to fit the back of the blower, connect ¼" tube coming from the controller to the back of blower. **DO NOT PULL THE TY-RAPS TIGHT TO SHUT OF AIR MOVEMENT**
16. Connect black pump wires + Pump screw on the terminal strip.
17. Connect white pump wires - Pump screw on the terminal strip
18. Connect green pump wires to ground screw located near terminal strip

Connect blower using 1 ¼" PVC line to "T" locate inside center riser. Blower must be located within 50' of tank and controller. 1 ¼" grommet must be used for proper riser seal



Install 1 ¼" PVC "T" with 1" plug onto Hoot tank aeration system

UV DISINFECTION LIGHT WIRING (IF USED)

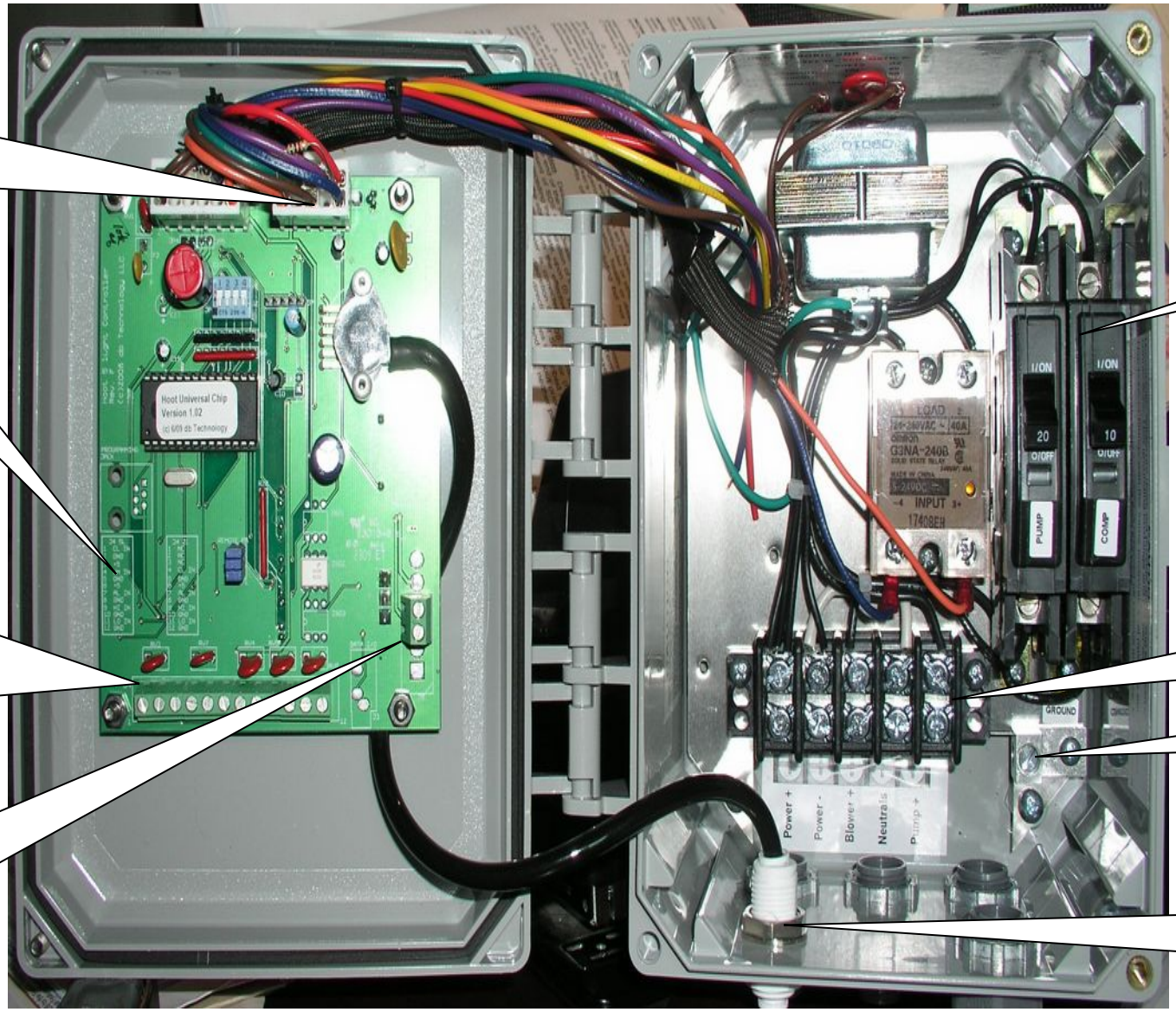
1. Pull the wiring from the UV light directly to the disconnect (5 amp breaker side). Wire thru the controller thru utility box to uv light junction box. There you will need about 3‘of wire so that you will have enough to remove the lamp from the holder tube. (When replacing the lamp)
2. Make all the connection at the disconnect, controller and the uv lamp junction box
3. There is a 1” pvc pipe inside the tube for the uv lamp, that pipe has to cut to length before installing the lamp.

HOOT SYSTEMS 5 LIGHT ADVANCED CONTROLLER

H-Series Only


WARNING:
ELECTRICAL SHOCK HAZARD
Failure to disconnect all power before servicing could result in injury or death.
HOOT
AEROBIC TREATMENT SYSTEM CONTROLLER
This product has been tested in accordance with the criteria as set forth in the ANSI/NSF Standard 40 and is hereby certified as conforming with requirements for classification as a CLASS 1 Waste Water Treatment Plant.
NSF
SYSTEM CONTROL CENTER
SYSTEM OK
SYSTEM ALARM
WATER LEVEL PROBLEM
AERATION PROBLEM
SILENCE ALARM
DON'T POLLUTE, INSTALL A HOOT!
Hoot Aerobic Systems, Inc.
2885 Highway 14 East
Lake Charles, LA. 70607
(337) 474-2804
www.hootsystems.com

HOOT Drip Controller



Auto dialer connector harness Connect Orange to orange……

5 Light Panel Connector Guide

(4) Sensor wires from probe. Match color to controller panel

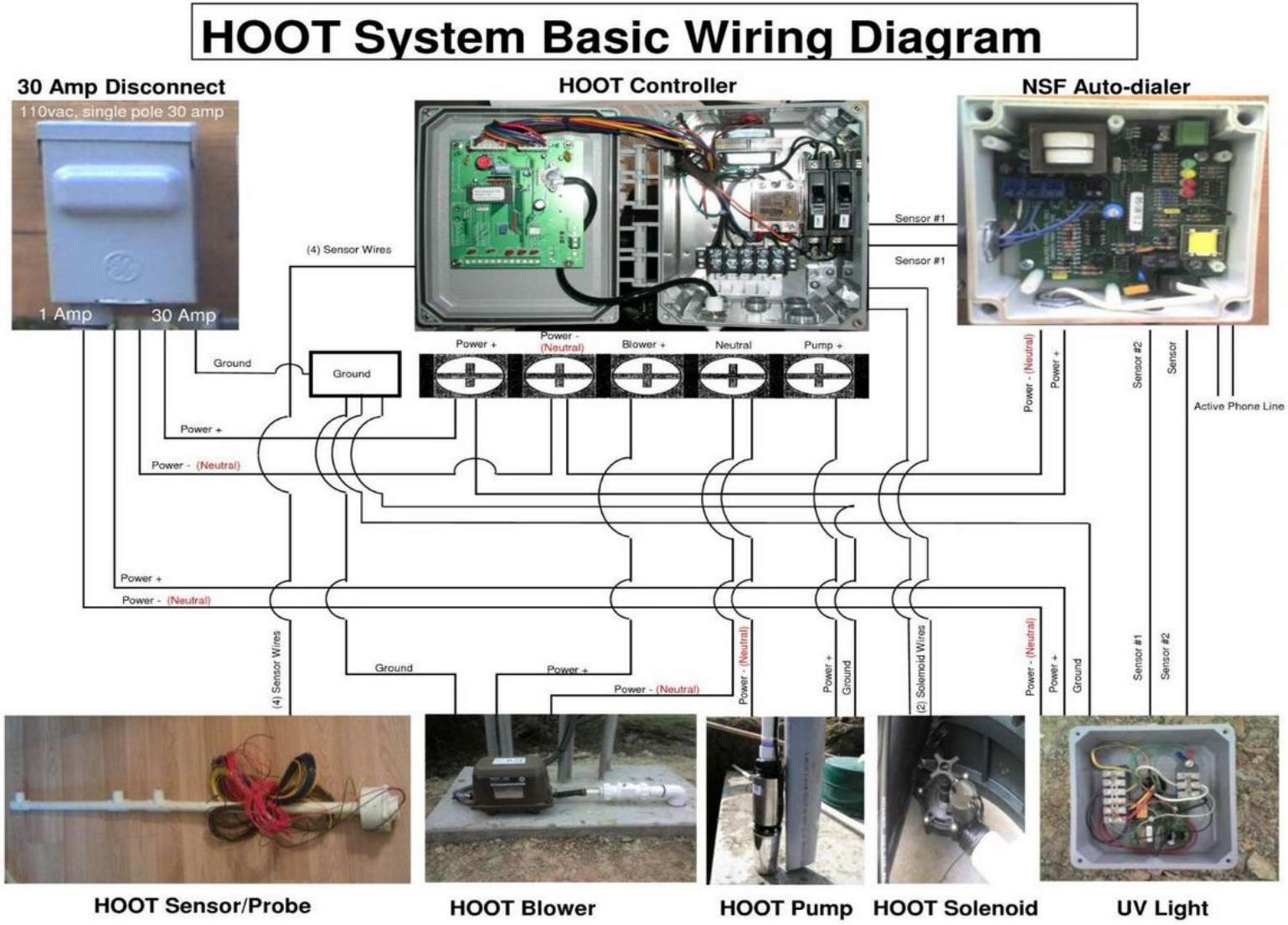
Solenoid connectors to connect to solenoid in headworks riser

Blower and Pump breakers

Power bar, blower and Pump connect to power source

Ground screw

Aeration back pressure hose attach to back of blower

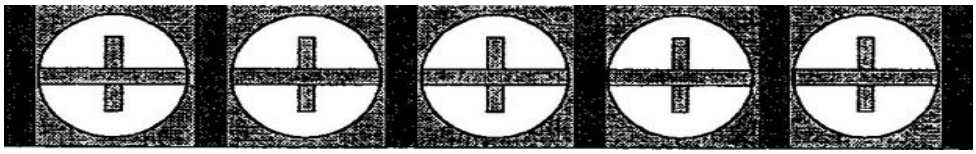

HOOT System Basic Wiring Diagram
30 Amp Disconnect
110vac, single pole 30 amp
1 Amp
30 Amp
HOOT Controller
NSF Auto-dialer
(4) Sensor Wires
Sensor #1
Sensor #1
Power +
Power - (Neutral)
Blower +
Neutral
Pump +
Ground
Ground
Power +
Power - (Neutral)
Power - (Neutral)
Power +
Sensor #2
Sensor
Active Phone Line
Power +
Power - (Neutral)
(4) Sensor Wires
Ground
Power +
Power - (Neutral)
Power - (Neutral)
Power +
Ground
(2) Solenoid Wires
Power - (Neutral)
Power +
Ground
Sensor #1
Sensor #2
HOOT Sensor/Probe
HOOT Blower
HOOT Pump
HOOT Solenoid
UV Light

HOOT System Controller Installation & Connections

System Controller Diagram

1. Controller Chip
2. Nickel Metal Hydride 9 volt battery
3. Probe & CL hook-up
4. Dip Switches
5. Grounding Lug
6. Terminal Strip
7. 10 Amp Compressor Breaker
8. 20 Amp Water Pump Breaker
9. Transformer
10. Aeration Relay

*A 30 Amp Service Box - within sight of the unit, must be provided by the homeowner before the unit can be installed. Installer must have a qualified electrician bring a line out to the area where the unit is being installed for hook-up. Make certain box has a hot, neutral and independent ground. Failure to have all three will result in problems.



Power + **Power -** (Neutral) **Blower +** **Neutrals** (Equipment) **Pump +**

Electrical Hook-Up

- Connect the Hot Lead (+) from 30 Amp service provided to he system and the Neutral (-) to the Terminal strip located in the bottom of the box. Use #10 wire to complete connection.
- All of the grounds (from house, aerator, and water pump) are hooked up to the grounding lug located in the bottom left hand corner of the control box. To hook-up the grounds, it is easiest if you unscrew the lug from the metal plate, twist your wires together, insert them in the grounding lug, and tighten. Then, re-install the ground lug using the Phillips screw you just removed.

Component Mounting

- All of the components in the box are surface mounted to an aluminum heat sink that covers the entire back of the box. They are all mounted using #8 self-tapping Phillips head sheet metal screws. The metal plate is fastened to the box using #10 x 32 machine screws and can be removed entirely from the box if you feel necessary.

Board Hook-Up

- The only wires that get hooked to the board are sensor probe wires solenoid wires

Alarm Silence

- To silence alarm, simply push the red **SILENCE ALARM** button. will silence the alarm until power is restored or problem corrected
- Stray wires or tools could short out or trip up the computer if they come in contact with the board. Powering down the controller is not enough.
- All normal errors will be cleared by powering down, however, if you see an error not mentioned in the installer's manual, wait 5 second and power everything back up



Audible Alarm Silence Button

Start Up Procedure

1. Fill tank by running water into the aeration tank until it fills both the pretreatment tank and raises the water level in the pump tank to at least one foot (12”) above the pump (Failure to fill tank in this manner will result in an aeration problem within 30 seconds after start-up
2. Check all LBs and connectors are sealed with provided Silicone II (Failure Silicone II will void the warranty!)
3. Make sure 30 amp circuit breaker, (power from house, supplied by owner) is turned off.
4. Check the hot wire (+) connection to terminal on the terminal strip.
5. Check the neutral (-) from power line to the space on the terminal strip.
6. Check aerator connection to the neutrals space on the terminal strip.
7. Check the ground connection from the power line and aerator to the grounding lug.
8. Check the hook up for black air line to the brass compression fitting on the aeration tee.
9. Turn on 30 amp breaker at the house
10. Turn both breakers in control box off, then on again to reset.
11. Install the 9 volt battery into the connector on the board.

    - The green system okay light will flash during the first 20 seconds while the aerator is pressurizing the system. If after 20 seconds the pressure switch indicates low air pressure the **SYSTEM ALARM** light along with **AERATION PROBLEM** light will come on. This indicates that either the center tank is not full, or you have a problem with the aeration plumbing. Contact SOS personnel for additional support.
    - With a green **SYSTEM OK** light on, if you get a solid, or flashing with beeping **AERATION PROBLEM** light, this indicates high aeration pressure (In 5.02 or Earlier only-This does not occur on 6.0 version or higher). If this occurs after start up, this could indicate clogged stones, or the system needs pumped out.
    - If after first 20 seconds of operation you get an audible alarm with a solid green **SYSTEM OK** light and a chirping alarm and flashing red **SYSTEM ALARM** light, the battery has not been installed, or is completely dead. Either install the battery or allow the battery to charge. If the battery has been installed, the alarm will go off in less than 5 minutes. In either case, silence the alarm, and the **SYSTEM ALARM** light will continue to flash indefinitely. When the battery reaches 9 volts, alarm & light will clear.

Chip Replacement or Board Work

- Please contact your SOS representative.
- If it is ever necessary to work on the board (ie: Making connections to probes, for chip replacement, etc.) it is necessary to both power down the controller and remove the battery. Failure to do so will short out the board, components or the chip and will not be covered by warranty. If you are working on the board, remove the battery and you won't have a problem.

Tank Pump Down

- You have a variety of ways to lower the water in the pump tank. As long as there is water in the pump tank, you can turn the pump on to lower the level. The easiest way is to fill the tank until it reaches the high water probe. If the system is a day pumper, it will confirm the water

level for 30 seconds and will come on and lower the tank to the low probe. If the system is a night pumper, it will confirm the water level for 30 seconds, put on the night pumper warning alarm (a double beep every two seconds) for 30 seconds and run the pump for 4 minutes after clearing the high probe.

- You can also lower the tank to the low probe by breaking loose the aeration line and create an aeration failure. It will pump the system till it clears the low probe.
- If the water is between the probes, you can force the pump on by unplugging the harness on the board, waiting 5 seconds, and while depressing the **SILENCE ALARM** switch, plug the harness back in. Wait approximately 3 seconds and you will hear a beep, release the switch and the pump will start. If you wait greater than 8 seconds to release the switch, you may hear additional beeps, this will not start the pump, unplug the harness and repeat the procedure above.

Aeration Sensor

- The controller has a solid-state pressure sensor. This sensor has no moving parts and has a silicone seal internally against moisture and gases. Using this sensor, the controller can measure the air pressure on the Hoot system, and will warn of low air pressure.
- The low air pressure indication is a red **SYSTEM ALARM** light and a yellow **AERATION PROBLEM** with a beeping alarm. If this occurs during startup, likely your aeration tank is not filled with water. Back pressure cannot be maintained if there is no water in the system. This is a system failure and the controller will shut down the air pump and the pump tank is emptied one time. This will shut down the controller system until reset by powering down and back up.
- The high air pressure indication was indicated by a yellow light only, followed by a yellow light with beeping in chips prior to the release of 5.0. The 5 series of chips would only indicate high pressure once the system reached 160 water column inches and was indicated by a flashing **AERATION PROBLEM** light. If this occurs, the stones need flushed. In Version 6.0 or above, the only indication of high pressure is in the trouble shooting modes.
- **If high air pressure occurs shortly after initial operation.** A slime coating on the aeration stones may be causing the problem. Once the bacteria flock has had time to establish itself the stones will clear and the air pressure should normalize. This is can happen to systems that have been left in the ground and the homeowner begins use prior to system start-up or systems that receive only occasional use. Follow the stone flush method to clear the stones.
- After the flock is established you can use the pressure switch as a reference point to determine the solids level in the tank. Do a settleable solids test on a sample from the aeration chamber. If after 45 minutes you still have greater than 70% solids, the system needs pumped out. You should also be able to observe carry over of solids in the pump tank. If this is not the problem, as a last resort remove and clean or replace the aeration stones.

Third Probe Input

- In the drip system the three probes allow automatic increase and decrease dosing of the drip field based on water usage. If you get a spray controller with a third probe input labeled (yellow) or a 4 wire probe, then you likely have the wrong equipment for your job. Confirm the chip is correct. If you have a 4 wire probe, you have the wrong probe and should replace it with the correct one.

Other Features of New System Controller

Switch 1	Not used on 5.0 software or higher			
Switch 1 on 4.X chips	Off	500 Gallon Systems		
Switch 2	Off	Standard Pumping	On	750/1000 Gallon
Switch 3	Reserved for Future Use		On	Systems Hydrotek Valve Pumping

Turning on switch number 2 sets the pump to control a Hydrotech/K-rain valve. The pump will run 12 minutes on and 4 minutes off until the tank is empty for a maximum of 96 minutes run time. Switch number 3 does not do anything.

Hooking up to temporary power

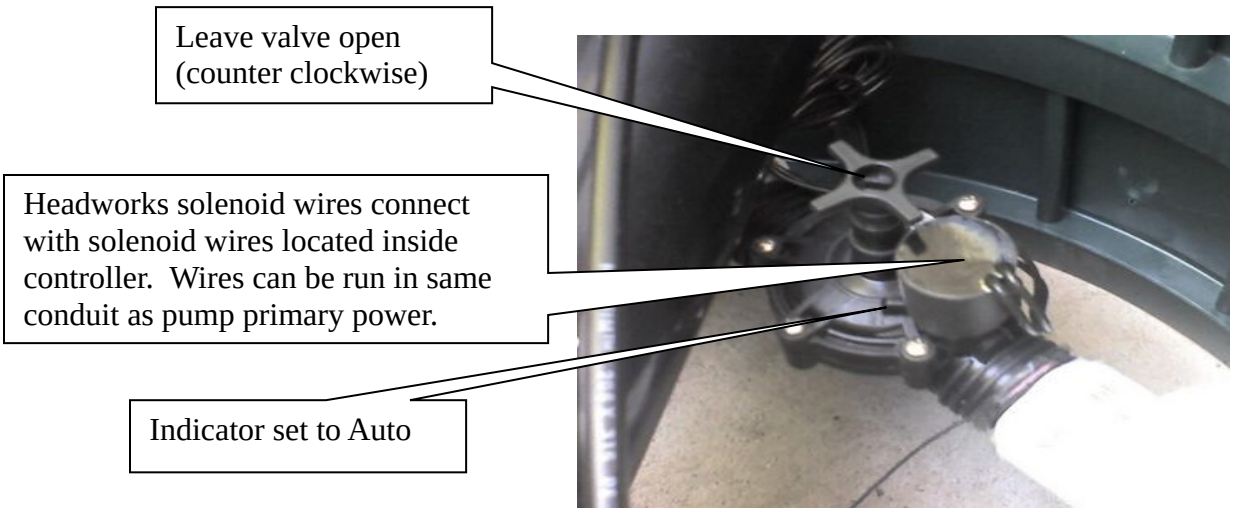
- If the controller is connected to a line voltage of more than 130 volts *NC* (for example, a generator), the red and green light will alternate and the alarm will beep rapidly. This indication is also displayed when the controller is connected to 220 volts or sometimes when connected to an unloaded generator with a high line voltage. This is usually done to check out the system before the power is turned on at a new house. Try loading the generator by plugging in a couple of 100 Watt light bulbs to lower the line voltage.
- If the line voltage is less than 100 volts *AIe* the controller will reset. If the controller resets when the pump turns on, then look for a bad connection (especially the neutral) in the breaker box or wiring to the controller.
- Operating the controller on a long extension cord for check out can cause above listed problem (>200 feet)

Chip Information

- Do not remove the computer chip from warranty boards. All replacement Hoot 2000 boards will come with the latest computer chip installed.
- If a warranty board is returned without a chip you will be charged for the chip.
- If the system contains a chip that starts with either 4.X or 5.X there is a more recent version available that may eliminate or reduce alarms, contact Hoot for more details.

Solenoid Information

- The solenoid located in headwords box should be left open (turned counter clockwise) with small indicator pointing to automatic.



Troubleshooting Modes: Advanced Controller

CONTROLLER OPERATION:

CONTENTS:

- Controller Operation
  - Time Dose/Drip Control
  - Demand Dose Control
- Resetting Controller
- Enter Modes
- Mode 1 – Probe/Photocell Status
- Mode 2 – Force Pump
- Mode 3 – Air Pressure/Chip Version
- Mode 4 – Error/Alarm Codes
  - Error/Alarm Codes
- Mode 5 – Clear Memory & Restart
- Mode 6 – Set Dose Time & Frequency
- Disable Air Pressure Monitoring

Time Dose/Drip Control

- Designed to time dose effluent from the treatment system throughout the 24 hour day. The system doses effluent based on the programmed settings of Dose Frequency and Dose Time.
- Water must be present over the **Low Probe** for the effluent pump to turn on (can be jumpered for inspection).
- When water is above the **Low Probe** and below the **High Probe**, the Dose Frequency and Dose Time settings will be in effect.
- When water is over the **High Water Probe**, the pump will run in a Demand Configuration (continuous operation).
- If the water "clears" or goes below the **High Water Probe** the pump will operate for one "complete" dose (according to your set Dose Time between 1 and 20 minutes), then turn off.
- If the water does not clear the **High Water Probe** and continues to fill the tank, when water touches the **Alarm Probe**, the visual and audible Alarm will sound.
- When water is above **High Water** and **Alarm Probe**, Pump will remain in continuous operation.
- Default Dose Time is 8 minutes and Dose Frequency is 24 times per day.

Field Flushing (If equipped for Drip)

- If a Solenoid Valve is present on the return line, automatically every 2 weeks, or 256 doses, the Solenoid will open during the dose, for 4 doses in a row.
- This allows for the field flushing of up to 4 zones on a hydraulic zone valve.

Demand Dose Control

- Designed to dose effluent from the treatment system whenever the probe contacts the **High Water Probe**.
- When water is over the **High Water Probe**, the pump will run in a Demand Configuration (continuous operation).
- If the water "clears" or goes below the **High Probe** the pump will operate for up to 1 hour or until it clears the "low" probe, then turn off.
- If it does not clear the **Low Probe** in 1 hour, it will set Alarm Code #5
  -Pump could not pump below low probe in > 60 minutes.

- If the water does not clear the **High Probe** and continues to fill the tank, when water touches the **Alarm Probe**, the visual and audible Alarm will sound.
- When water is above **High Probe** and **Alarm Probe**, Pump will remain in continuous operation.

RESETTING THE CONTROLLER:

- You can restart the controller by either 1) powering down the system or 2) holding the silence alarm switch for 16 seconds.
- This works at any time in the controller operation.
- After the sixteen seconds timeout, you will hear two quick chirps, at that time release the switch to restart the controller.

ENTER MODES:

- After Reset, to enter one of the Troubleshooting Modes press and hold the switch again before the lights go out on the lamp test and the system sounds the startup beep.
- Restarting the controller this way will not clear the error memory.
- If there are error codes in memory, the controller will chirp three times followed by a beep at startup.
- If there are no errors in memory, the controller will sound a single beep at startup.

MODE 1 – PROBE/PHOTOCELL STATUS:

- When you hear one chirp, release the switch.
- In this Mode the controller will check the status of the probes and the photocell.
- The green light will be on if the photocell is illuminated and off if it's dark (close the door when performing this test to keep light off of the photocell from the rear).
- The yellow lights on the controller are used to indicate the probe status. If the probe is in contact with water, the light is ON. If the probe is NOT in contact with water, the light is OFF.
    - The bottom light (blank) is for the **Low Probe**
    - The second from the bottom (Aeration Problem) is for the **High Probe**
    - The third from the bottom (Water Level Problem) is for the **Alarm Probe**:

SYSTEM OK -	Green Light - Steady if daylight is present
SYSTEM ALARM -	Red Light - On (to indicate it is in this Mode)
WATER LEVEL PROBLEM -	Yellow Light - if water over **Alarm Probe**
AERATION ALARM -	Yellow Light - if water over **High Probe**
BLANK -	Yellow Light - if water over **Low Probe**

- To exit this mode, press the silence alarm switch the controller will restart.

MODE 2 – FORCE PUMP:

- When you hear one chirp then two chirps release the switch.
- This is the "Force Pump" Mode.
- This is a good method to find a blower line air leak, as the controller will not power off the air pump/blower, because of low air pressure.
- If water is present over the **Low Probe**, the controller will start the water pump (the air pump/blower will also be running.)
- The water pump will run for up to 16 minutes and then restart the controller. Switch off the water pump circuit breaker if you do not need to check the water pump.

- If you press the Silence Alarm Switch at any time during this mode, the water pump will stop and the controller will restart. (Remember to switch the water pump circuit breaker back on if switched off earlier.)
- If water drops below the low probe at any time the system will exit this mode and reset.

MODE 3 – AIR PRESSURE/CHIP VERSION:

- When you hear one chirp, then two chirps, then three chirps release the switch.
- This Mode indicates the blower's air pressure in Water Column Inches and displays the software chip version on exit.
- The controller will turn on the aeration problem lamp to indicate the air pressure Mode and chirp/flash the air pressure in Water Column Inches (WCI).
- A chirp indicates a number, a longer beep indicates a zero (0).
    - For example 65in/water = 6 chirps pause 5 chirps long pause repeat.
    - For example 102in/water = one chirp pause beep pause 2 chirps long pause repeat.
- Normal air pressure for a sized Hoot System
    - 600GPD is 65 WCI
    - 750GPD is 72 WCI
    - 1000GPD is 78 WCI
- Pressure must be between 28 and 100 for the system to operate normally without an alarm.
- To exit this mode, press and hold the switch until the aeration light turns off, then the red light will flash & chirp the software chip version number.
- Release the switch to restart the controller.

MODE 4 – ERROR/ALARM CODES:

- When you hear one chirp, then two chirps, then three chirps, then four chirps release the switch.
- This Mode will flash and chirp the last four Error Codes. If there are no errors the controller will chirp once and repeat.
- If there are stored errors then the controller will chirp out the Error Code for the last error then light the bottom yellow light and chirp out and then three lights for a total of the last four error codes.
- Then the sequence will repeat.
- If error codes are stored, the controller will chirp three times followed by a beep at startup. If all of the errors are clear the controller will sound the normal beep at startup.

ERROR/ALARM CODES

1 = no error
4 = could not pump below High Probe *(after 6 minutes)*
5 = could not pump below Low Probe *(after 60 minutes)*
7 = water over Alarm Probe
8 = low air pressure
9 = high air pressure
11 = pump jog
12 = connected to 220 volts
13 = probe error

MODE 5 – CLEAR MEMORY & RESTART:

- When you hear one chirp, then two chirps, then three chirps, then four chirps continue holding 8 more seconds. When you hear five chirps release the switch.
- The controller will then chirp "beep-beep" and will repeat.
    - You have 2 options:

1) **CLEAR MEMORY & RESTART**: Press and hold switch for 2 seconds, the controller will "triple beep" and restart. This indicates the "error" memory and "bullet" mode was erased. Your run time settings will be kept.

- or –

2) **EXIT MODE 5**: You can "quickly" press and release the button to "escape" out of this mode in case you accidentally entered this Mode before reading the service codes.

- **Memory will no longer be erased by powering off and removing the battery.**

MODE 6 – SET DOSE TIME & FREQUENCY

- When you hear one chirp, then two chirps, then three chirps, then four chirps continue holding 8 more seconds until you hear five chirps, then six chirps, then release the switch.

Time Dose/Drip Control

- This Mode sets the Dose Time or converts the panel to Demand Control.
- The controller can be set for timed doses, in 1 minute increments from 1 to 20 minutes per dose.
- **The default, factory setting is 8 minutes per dose, 24 times per day.**
- You can change the setting by "quickly" pushing and releasing the button WHILE the controller is beeping out the current setting.
- The next "display" of the setting will "add" in the number of times you pressed and released the button.
    - A zero is indicated by a long beep
    - Eight is indicated by 8 chirps. 10 is indicated by a chirp and a long beep. 12 is indicated by a chirp a delay and two chirps then a long delay and repeat.
    - If you want to increase from 8 to 10, push twice, from 8 to 20, push 12 times.
    - Verify you have the setting you want, then store the change by holding the button for 2 seconds.

Demand Dose Control

- With the controller set to "0" - (a long beep) time dose settings are cleared.
- In this mode the pump will not come on until the water reaches the **High Probe**.
- After a 30 second delay, the pump will turn on and run until it clears the **Low Probe**.
- If an hour elapses and the pump has not “cleared” the **Low Probe**, it will turn off the pump and store the maintenance code of “5” Pump Ran > 60 minutes.
- In both Timed Dose/Drip and Demand Dose Control Settings, the “Alarm” runs independent of pump control which is on the low and high probes only.

Dose Frequency

- When controller is set for Timed Dosing, the panel dipswitches set the Dose Frequency to 12, 24 or 36 times per day. Currently, *only switches 3 & 4* are used to set Dose Frequency.

Switch 3 AND 4 OFF (down) = 24 times per day (DEFAULT)
Switch 3 AND 4 ON (up) = 36 times per day
Switch 3 OR 4 ON (with other OFF) = 12 times per day

- Pump will only activate for scheduled dosing if water is present over the **Low Probe**.
- After a new Dose Frequency setting is made, Reset Controller or power down and back on and the new settings will take effect.

DISABLE AIR PRESSURE

- It may be necessary to disable air pressure monitoring on a system for several reasons. Among these are:
    1. Broken air pressure switch
    2. Failing compressor (overheats and shuts down)
    3. Leaking pressure sensor hose
- The panel computer monitors the Pressure Transducer and can not be “jumpered” around to keep the system operating. However, we have provided a “Software” disable to the switch for emergencies to keep the system operating if one of the above, or other conditions occur, Please note that this should be used only in case of an emergency and that the system is in violation of the NSF-Standard 40 while in this Mode.
- To Disable Air Pressure Sensing, Reset Controller.
- During Startup while Green Light is Flashing press and hold silence alarm switch until green light stops flashing (20 Seconds)
- Yellow light (Aeration Problem) will light
- Release switch, System is no longer monitoring Air Pressure
- To Clear, Reset Controller and clear memory in Mode 5.

5 Light System Troubleshooting Chart

RED **SYSTEM ALARM** YELLOW **AERATION PROBLEM** YELLOW **WATER LEVEL PROLEM**	This is a Photocell Problem - First check for over-head light - (see below) if not- see (page 38)
RED **SYSTEM ALARM** YELLOW **AERATION PROBLEM**	Yellow Light is: **Steady** - Is Aeration Tank Full? Check for Air leaks, then see Aeration Problem (page 25) **Fast Flashing** - Air pump is dead headed - reverse check valve or stones completely clogged. (page 33)
RED **SYSTEM ALARM** YELLOW **WATER LEVEL**	Yellow Light is: **Steady** - Pump unable to lower below high probe **Slow Flashing** - Pump ran greater than 1 hour **Fast Flashing** - Wiring problem, bad probe or board. (page34)
RED **SYSTEM ALARM**	Will occur on start-up or after power failure if water is above high probe (page 31)
GREEN **SYSTEM OK** YELLOW **WATER LEVEL**	System has received greater than its daily rated capacity of water, will clear yellow light at pump out.
GREEN **SYSTEM OK** YELLOW **AERATION PROBLEM**	Aeration pressure is too high. Check for excessive solids build up or clogged stones.
RED FLASHING **SYSTEM ALARM**	Power is off to system or bad transformer. (Pg. 34)
GREEN **SYSTEM OK** RED FLASHING **SYSTEM ALARM**	Battery not installed/not yet charged or battery cannot hold charge and needs replacement.

Typical Hoot System Equipment Installation



















Do Not Use

SEPTIC SYSTEM
NOT ACTIVE

Contact Superior On-Site Solutions at (877) 669-4668, ext #210 for septic tank activation prior to occupancy or use of any plumbing fixtures.