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# HOOT AEROBIC TREATMENT SYSTEMS

## HOOT Aerobic Systems, Inc.

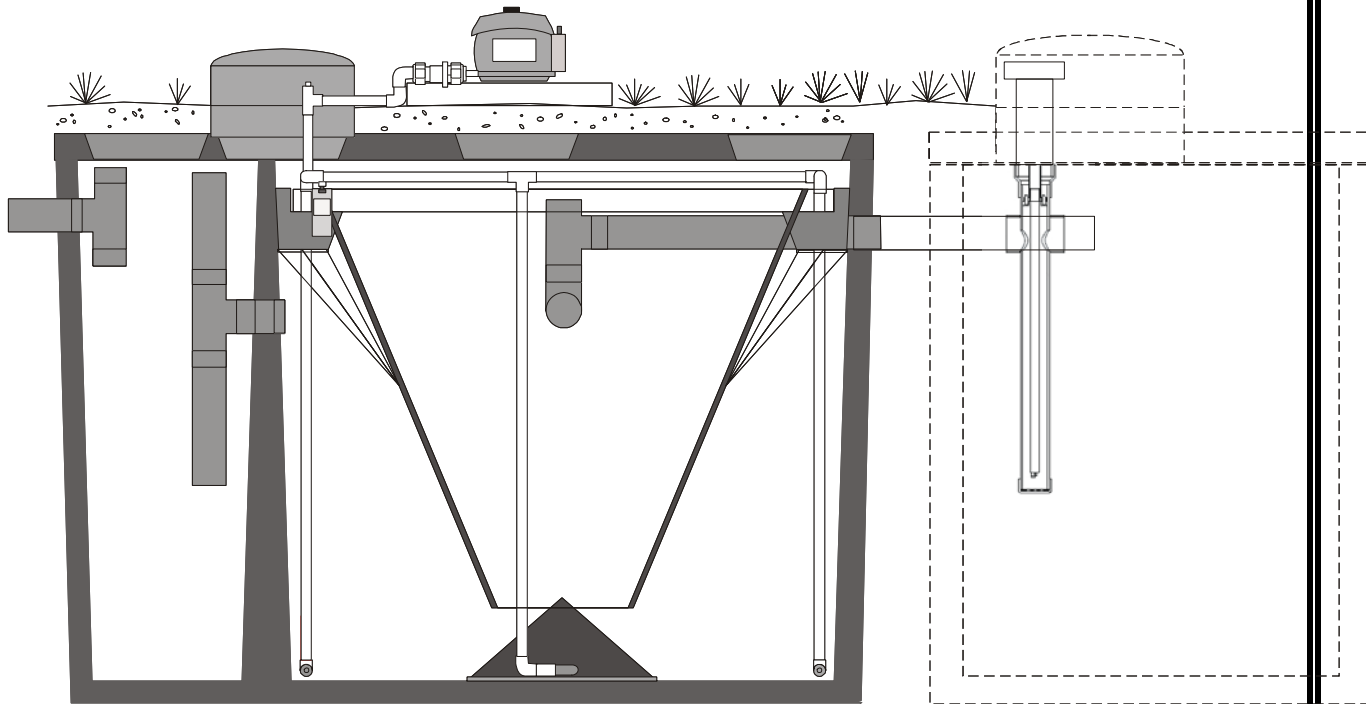
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# Homeowner's Manual

This manual covers the H-500A, H-600A, H-750A and H-1000A Models



This Product has been tested in accordance with the criteria set forth in the ANSI/NSF Standard 40 and is hereby certified as a Class I Aerobic Wastewater Treatment Plant.



# 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 • Paper towels • Large quantities of acids or caustics, soaps or cleaning materials which have a high or low pH factor (Use low suds detergents) • Throw-away Diapers • Rubber products • Kleenex, some toilet tissues which do not decompose readily in water • Rainwater from Gutters • Excess grease or fatty materials (Use garbage disposal sparingly) • Oily materials, motor oils, grease, kerosene, gasoline, Paints, etc. • Backwash water from any type of Water Softener • Other materials which do not disintegrate in water • A/C Discharge • Sump pump discharge • Automatic Toilet Disinfection Products

**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. 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.

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

# Table Of Contents

Declaration Of Warnings.....	Page 1
Table of Contents.....	Page 2
Overview of Sewage Treatment.....	Page 2
Electrical System Warning.....	Page 3
Explanation of Tank Diagram.....	Page 3
Tank Diagram.....	Page 4
Explanation of Service Policy.....	Page 5
Hoot Service Policy.....	Page 6
Homeowner Troubleshooting.....	Page 7
System Odors.....	Page 7
Electrical System Warning.....	Page 8
Residuals Pump Frequency.....	Page 8
Intermittent Use and Abandonment.....	Page 8
Re-Start and Change in Ownership.....	Page 8
Hoot Warranty and Registration.....	Page 9
Sample Inspection Form.....	Page 10

## Overview of Sewage Treatment

The treatment system is comprised of four components, namely a pretreatment tank, aeration chamber, final clarifier and a pump tank (optional). The pre-treatment tank aids in the anaerobic decomposition of the influent and provides a storage area for non-biodegradables which are inadvertently added to the system. The aeration chamber is the heart of the activated sewage treatment plant. By means of a blower, oxygen is incorporated into the sewage. This introduction of oxygen is done in such a manner as to intimately mix the organics of the sewage with the bacterial populations in the aeration chamber. Reduction of the organics is accomplished by these organisms. Movement of sewage in the aeration chamber causes the activated sludge that settled in the final clarifier to be re-introduced into the aeration chamber. As the solids settle out in the clarifier, a clear odorless effluent is produced which passes into the pump tank for discharge at a later time. All HOOT systems have a minimum of a ½ days flow above the alarm to give ample time for service personnel to arrive and correct any problem which may occur.

The ANSI/NSF Standard 40 requires a minimum removal efficiency for the performance of Aerobic Wastewater Treatment Systems. For a system to be certified as a Class I Treatment unit the arithmetic mean of all effluent samples collected in a seven day period must be less than 45 mg/L. The HOOT Aerobic System had an average CBOD<sub>5</sub> of 2.4 and a Suspended Solids average of 1.8 with both averaging 99% removal efficiency. Properly installed and maintained, the Hoot System should be capable of producing this quality of effluent.

The effluent quality was found to meet or exceed state and federal standards for all other required parameters. According to these results, the HOOT unit is the most efficient wastewater treatment system on the market today.

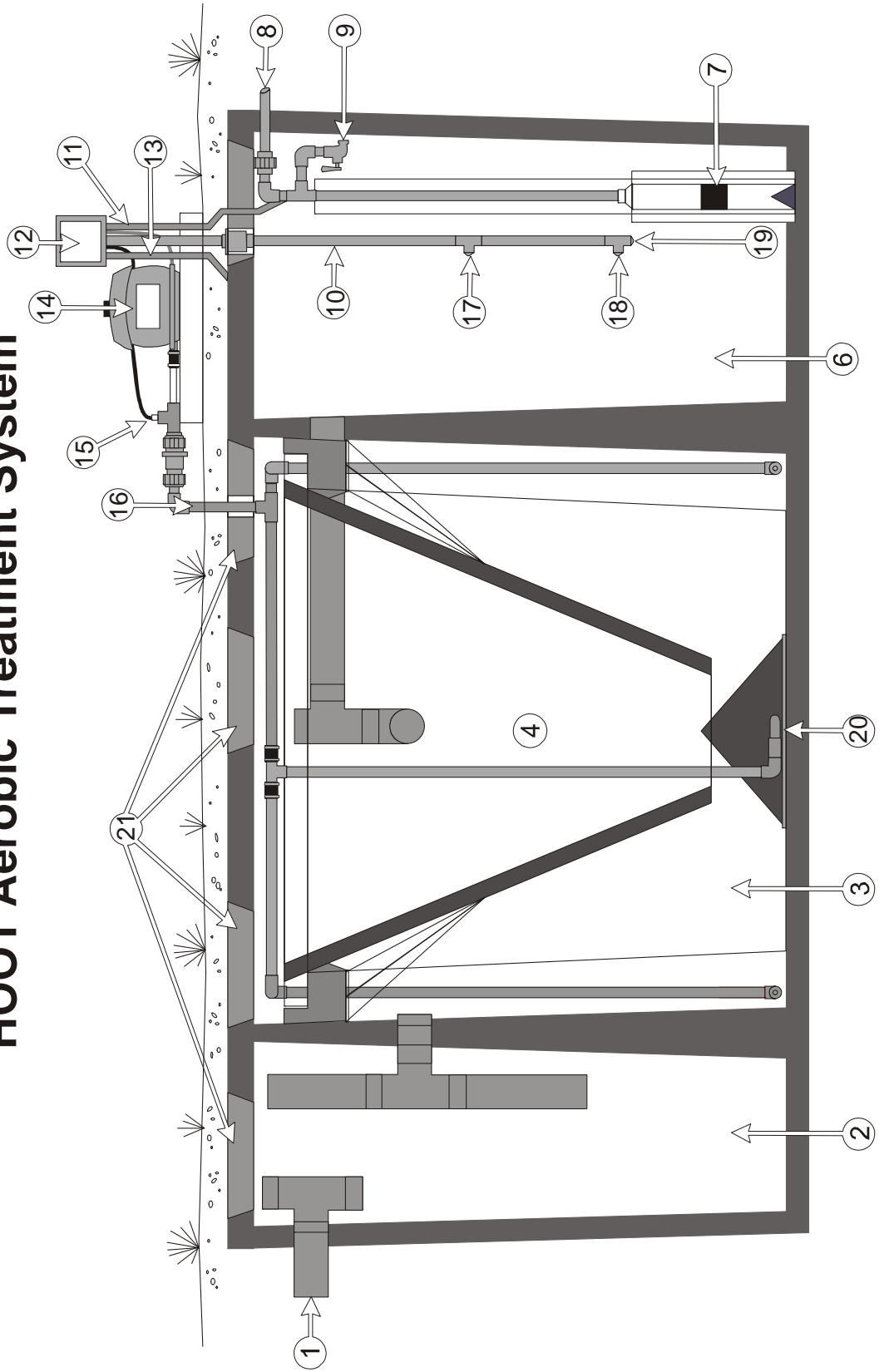
## Electrical System Warning

The HOOT Aerobic System features a custom designed control panel made of proprietary parts. Just like the rest of the treatment system, it may only be serviced by a certified HOOT Installer/Service Provider. Although an electrician may be employed by an installer to make the final hook-up, an electrician is not qualified to do service on our control panel unless under the direct supervision of a HOOT Certified Service provider. Electrical diagrams are made available only to our authorized service personnel for their use in servicing our system.

## 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
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. **Sampling Port** - used by service personnel to inspect effluent quality
10. **Probe** - turns on and off the pump based on water level
11. **Pump Wire** - from pump to the control panel
12. **HOOT System Controller** - operates and regulates the control of the system
13. **Power Line (30 Amp)** - independent breaker provided by homeowner, builder or qualified electrician, necessary for proper operation of 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** - turns the pump on - also alarm probe if pump fails to come on
18. **Low Water Probe** - the off switch for the pump
19. **Probe Ground** - generates the low level signal in the water which is sensed by the probes
20. **Aeration Stone** - air is finely diffused from the stone into the aeration chamber
21. **15" Covers** - provide access to each component of the system for service. Are usually brought to grade level to meet local regulations and for serviceability.

# HOOT Aerobic Treatment System



## **Service Policy**

The initial service policy, which covers the first two years of system operation, is included in the purchase price of every HOOT Aerobic Treatment System. During the first two years of system ownership, the homeowner is entitled to all service, sampling and inspection calls required by local regulatory officials. This will include a complete inspection of each component of the system, and any adjustments or servicing necessary to any electrical, mechanical and other component parts to ensure proper function. During the inspection, an effluent quality observation will be made as well. If there are any items which need correction and can not be immediately remedied, you, the installer/inspector, will inform the home owner, in writing, of the conditions and the estimated repair date. Following the initial two year service policy, the installer, must make available, for purchase, a continued service policy comparable to the initial service policy. Our manufacturers will stock any and all replacement parts necessary to ensure that the HOOT Aerobic Treatment System will operate properly as long as you own your home. To service a HOOT System, a service representative must be certified on an annual basis by HOOT Aerobic Systems, Inc., or their qualified representatives.



# TREATMENT SYSTEM INITIAL SERVICE POLICY

Our Company, \_\_\_\_\_, will operate and maintain the Hoot Aerobic System located at \_\_\_\_\_, (legal description only) Permit # \_\_\_\_\_, for the period of 2 years beginning \_\_\_\_\_ and ending \_\_\_\_\_.

This contract will provide for all required inspections, testing and service of your HOOT Aerobic Treatment System. The policy will include the following:

1. \_\_\_\_\_ inspections a year/service calls (at least one every \_\_\_\_\_ months), for a total of \_\_\_\_\_ over the two-year period including inspection, adjustment and servicing of the mechanical, electrical and other applicable component parts to ensure proper function. This includes inspecting the control panel, air pumps, air filters, diffuser operation, and replacing or repairing any component not found to be functioning correctly.
2. An effluent quality inspection consisting of a visual check for color, turbidity, scum overflow and examination for odors.
3. If any improper operation is observed, which cannot be corrected at the time of the service visit, you will be notified immediately in writing of the conditions and estimated date of correction.
4. Any additional visits, inspections or sample collections required by specific Municipalities, Water/River Authorities, County Agencies the State or any other regulatory agency in your jurisdiction will be covered by this policy.

At the conclusion of the initial service policy, the Service Provider will make available, for purchase on an annual basis, a continuing service policy to cover labor for normal inspection, maintenance and repair. According to state law, all owners of aerobic systems must maintain a factory authorized service provider for the lifetime of the system.

With 48 hours of a request for service (weekends and holidays excluded), your system will be visited by the service provider listed below or their authorized agent. If there are any items which need correction and can not be immediately remedied, the service provider will inform the home owner, in writing, of the conditions and the estimated repair date.

The HOOT Homeowners Manual must be strictly followed or warranties are subject to invalidation. Pumping of sludge build-up, for reasons other than due to warranted mechanical failure, are not covered by this policy and will result in additional charges. By signing this form, both Installer and Homeowner agree to the terms of this policy. By signing this form, both the Installer and the Homeowner agree that the Homeowner has received a copy of the Homeowners Manual and the Installer has made a reasonable effort to explain all pertinent information to the Homeowner.

HOOT is not responsible for service, it is the SERVICE PROVIDER indicated below.

## HOME OWNER

## SERVICE PROVIDER

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name of Service Company Representative

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

\_\_\_\_\_  
City

\_\_\_\_\_  
City

(\_\_\_\_) - \_\_\_\_\_  
Phone

(\_\_\_\_) - \_\_\_\_\_  
Phone

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Signature of Home Owner

\_\_\_\_\_  
Signature of Service Provider and License #.

# Homeowner Troubleshooting

If **AERATION PROBLEM** occurs there has been a problem with your air delivery system. This is the most critical part of the treatment system and the problem must be corrected as quickly as possible. There are two problems that a homeowner can correct:

1. The air line from the blower to the control panel has come loose or been disconnected. Check first to see if the black line from the aerator is not pinched, and is properly installed into each end of the compression fittings. If this has been pulled loose, then turn off the power to the system at your panel box for 10 seconds and then turn it back on. If an aeration problem occurs again, then call for assistance.

If a **WATER LEVEL PROBLEM** and an audible alarm occurs,

There are no homeowner repairs that can be made to the effluent delivery system. Please look directly at the panel and note whether the light is steady, slow or fast flashing. This will aid the installer in coming to the quickest resolution of your problem.

Discontinue use of Water in the home until corrected.

If **POWER FAILURE ALARM** occurs

- 1). Circuit Breaker to system - from house - is tripped.
- 2). Circuit Breaker at house panel box for remote breaker is tripped.

## System Odors

During the first few weeks of system operation, the system must establish itself and it is common for odors to develop around the system and its components. After the first month of operation, these should go away. A normally functioning system will have a damp, musty type odor. Foul odors can be present and the system indicate that the mechanical components are properly functioning. Please be certain that you are not using any of the materials specifically mentioned to cause problems with the system on the first paragraph of page one of this manual. If you are, discontinue their use and the problem within a few weeks should clear up by itself. If you are not using any of the items, or you have discontinued their use and the problem has not corrected itself, then call your service provider for assistance.

## Residuals Pump Out of System

The Hoot Aerobic System is a sewage digestion system that uses a mechanical process of aeration to accelerate the digestion process that would normally take place in the soil. Over time, there will be a build up of non-biodegradable materials or residuals that will necessitate the system being pumped out. The pump out of the system will be based on a level of settleable solids in the aeration chamber or evidence of solids carry over into the pump tank. Qualified service personnel will check for these levels during their



inspection and will advise you when the system will need pump out. This level will be affected by the number of residents in the home, their health and eating habits, use of paper products, quantity of garbage disposal use and non-biodegradable added to the system.

Most systems that are plumbed to single family residences, and are properly designed, will go for a period of 2 to 4 years between pump outs. Factors mentioned above, and others not anticipated can cause the frequency between service to be longer or shorter. In all cases, it is advised to have the system pumped out when it is recommended. If the solids level is ignored, the system may malfunction, fail to treat the sewage properly and cause damage to pump and other components that will likely cost 2 to 3 times what a pump out would cost. Damage to these components from failing to pump out the system regularly would not be covered by any initial or extended warranty.

### **Intermittent use and Abandonment**

Intermittent use of the system is not recommended. These systems are biological reactors and to maintain proper function must be used on a regular basis. If the system is not to be used for an extended period of time it should be abandoned using the following procedure. To properly abandon a system, you need to have the system pumped to remove all solids from the system. The system must then be refilled with water to the normal operating level and then disabled electrically.

### **Re-Start**

If the system has been abandoned and power has been shut off to the system at any time, the system must be thoroughly pumped, filled with water and an inspection of all of the system components, including diffuser operation and backpressure on the system. If the system, with clean water reads a high back pressure, then the stones must be replaced or flushed according to our procedures for flushing.

### **Change of Ownership**

Any time the system changes ownership and new residents are to use the system, even if there is no electrical interruption, it is strongly recommended that the system be pumped, cleaned out and restarted. The biological flora and fauna of the aerobic system are particular to the individuals using the system and a drastic change to the influent characteristics and load may seriously affect the performance of the system. Please note that this will also provide for a complete inspection of the system and its components and an opportunity to educate the new system owner of the type of system that they have, along with their duties and limitations of their system.



# LIMITED WARRANTY AND REGISTRATION

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## HOOT Aerobic Systems, Inc.

2885 Highway 14 East Lake Charles, Louisiana 70607  
(337) 474-2804 phone (337) 477-7904 fax

**NO GENERAL WARRANTY:** HOOT AEROBIC SYSTEMS, INC. DISCLAIMS ANY AND ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, AND **EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

**HOOT LIMITED WARRANTY:** HOOT Aerobic Systems, Inc. ("HOOT") warrants faulty workmanship or construction of the HOOT treatment system for three (3) years from the date of purchase, subject to the following condition: If HOOT determines that the fault in workmanship or construction of the HOOT treatment system is not the result of improper installation, improper maintenance, failure to service, natural disaster, an act of God (including flood, lightning or fire ants), or tampering by any means, then, at HOOT's discretion, HOOT has the right to provide a replacement for such faulty component. The faulty component will be replaced with a rebuilt or new component to the Service Provider for the first three (3) years from the date of purchase. This Warranty extends to the HOOT Service Provider ONLY. During the initial 2 year service policy, the component will be replaced at no charge to the Homeowner. During the third year, components will be provided only to a qualified HOOT Service Provider, at no charge, however any and all installation charges will be the responsibility of the homeowner.

### SOLE REMEDY

HOOT's liability for any accident, injury, or damage to any person or property shall be limited to the purchase price of the HOOT Aerobic Treatment System. HOOT is not and shall not be liable for any incidental or consequential damages or injury, regardless of fault, to any person or property resulting from misdesign or mismanufacture of the HOOT Aerobic Treatment System, failure to warn, failure to label, or inadequate instructions in the manual. This clause is effective to the full extent allowed by law and shall be void where prohibited.

### WARRANTY REGISTRATION

FOR THE ABOVE WARRANTY TO BE EFFECTIVE, THE HOMEOWNER AND ANY USER ATTEMPTING TO CLAIM ANY RIGHT UNDER THIS WARRANTY MUST COMPLETE THIS FORM AND RETURN A SIGNED COPY TO HOOT WITHIN THIRTY (30) DAYS FROM THE DATE OF INSTALLATION. The cost of pumping or cleaning of any component or compartment of the sewage treatment system, which becomes necessary for causes other than malfunction of the equipment, is the responsibility of the homeowner.

By signing this Service Policy, the Home Owner and the Service Provider agree to the terms of this policy. HOOT is not responsible for service, it is the SERVICE PROVIDER indicated below.

#### HOME OWNER

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
City  
( ) -

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Signature of Home Owner

#### SERVICE PROVIDER

\_\_\_\_\_  
Name of Service Company Representative

\_\_\_\_\_  
Address

\_\_\_\_\_  
City  
( ) -

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Signature of Service Provider and License #.

# Service and Inspection Form

(This is an example only, please check State and Local Requirements)

This testing and reporting shall be completed, signed and dated after each inspection. One copy shall be retained by the maintenance company. The second copy is sent to the local permitting authority and the third copy is sent to the system owner along with an invoice for services by the maintenance company.

1. Actual Date of Visit: \_\_\_\_\_
2. System Inspection of: \_\_\_\_\_
- Owner: \_\_\_\_\_
- Address: \_\_\_\_\_
- City, St., Zip: \_\_\_\_\_

Inspected Items:	Operational	Inoperative	Not Applicable
Aerator.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aeration Plumbing.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Filter.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effluent Pump (optional).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OK System Light.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Probe.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UV System.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Battery must be replaced once each year. Air Filter must be cleaned each service visit. Operation of effluent disposal system must be made each visit, including chlorine residual test, effluent pump operation and sprinkler operation/ drip backwash.

3. Repairs to system (list all components replaced): \_\_\_\_\_
4. Tests Required and Results:

Test	If Required	Results	Test Method
BOD (Grab)	<input type="checkbox"/>	_____	_____
TSS (Grab)	<input type="checkbox"/>	_____	_____
Fecal Coliform	<input type="checkbox"/>	_____	_____

5. Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature of Inspector: \_\_\_\_\_ Installer or O&M # \_\_\_\_\_

For Additional Information, Please Contact:



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