



SludgeHammer®

nature called. we answered.



commercial
& industrial



communities



marine



residential

1.800.426.3349

Model S-400/600
NSF/ANSI Standard #40



Owner's Manual



The latest
advance in
wastewater
treatment

CONGRATULATIONS!

You just bought a NSF-40 certified SludgeHammer® ABG

The SludgeHammer® is certified to have met the Class 1 treatment standards when tested by NSF International. The SludgeHammer® S-400 model treats domestic wastewater loads up to 400 gallons per day and consists of the basic SludgeHammer® ABG column installed in the inlet chamber of a 1,500 gallon standard septic tank. The S-600 model treats up to 600 gallons per day and is installed in the inlet chamber of a 2,000 gallon standard septic tank.



Components

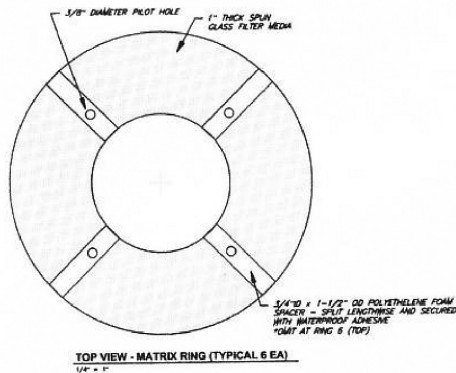
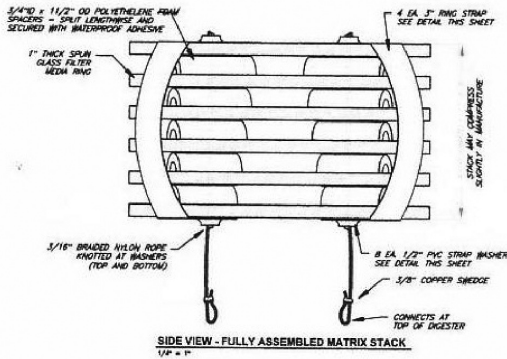
SludgeHammer® ABG

The SludgeHammer® Aerobic Bacterial Generator is an air-driven column that houses a microfine bubble diffuser at the bottom. Inside the unit are a coiled matrix and a refuge to insert a packet of an enhanced bacterial blend. The treatment capacity of the standard SludgeHammer® unit is further enhanced with the addition of three separate fixed film elements.

These items include:

1. Matrix Stack—

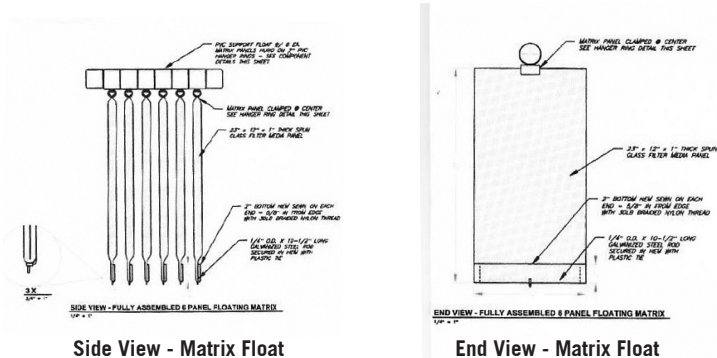
This element is attached to the top of the SludgeHammer® column and provides a large surface area of porous fixed film media for bacterial attachment within the turbulent aeration zone of the unit.



Components (continued)

2. Matrix Float—

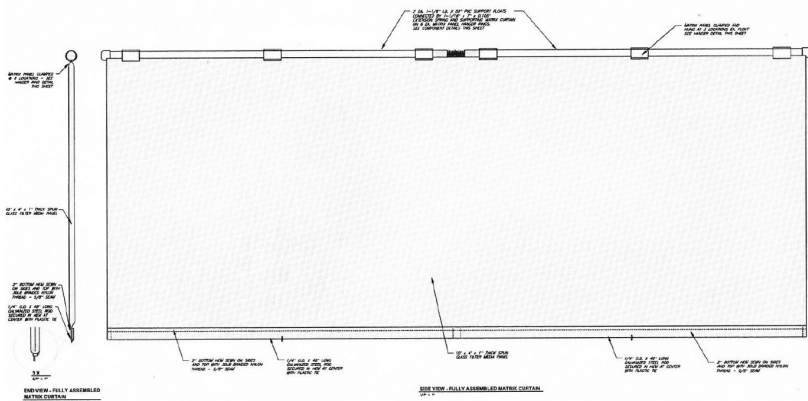
This element consists of a number of filter matrix pads suspended in the effluent such that aerated turbulent flow can pass over the matrix.



For the S-600 model, the matrix float is larger consisting of ten 25" x 30" elements and is associated with an extra air diffuser to accommodate a larger air pump.

3. Matrix Curtain—

This element consists of two filter matrix curtains connected at the vertex located immediately upstream of the outlet from chamber 1 to chamber 2. The curtain floats at the top and extends to the bottom such that flow loaded to the chamber passes through it as it passes to the next chamber.



4. Effluent Filter—

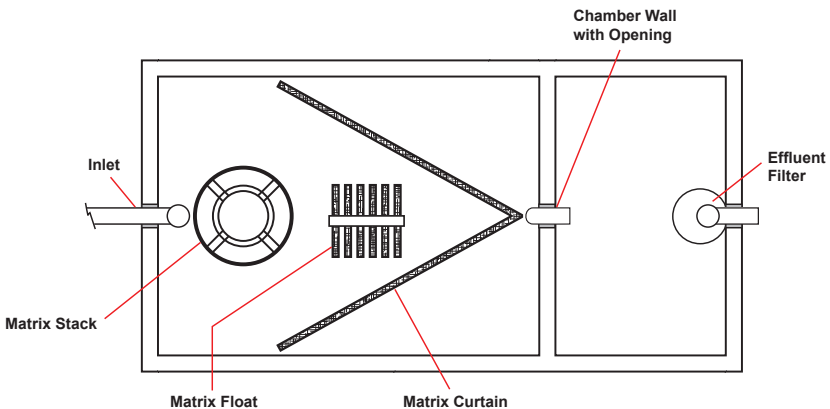
Each SludgeHammer® S-400 and S-600 system will have a “Best” filter, manufactured by Polylok, attached to the outlet pipe of the second chamber to filter all treated effluent leaving the system.

Operation

Air is delivered to the SludgeHammer® column where it is distributed into the column through a microfine-bubble diffuser. As the air rises it displaces liquid in the column setting up circulation through the column with liquid entering the column at the base and leaving at the top. A rough filter at the base keeps toilet paper or fecal matter out of the unit. A packet of proprietary “SludgeHammer® Blend” bacteria and enzymes is introduced into the unit and held in a central refuge where it is supplied with a continuous stream of aerated liquid.

Inside the column is an extra matrix of approximately 120 ft² of cusped plastic for bacterial colonization.

All mixing and circulation within the system is contained in the first chamber of the septic tank and the only moving part in the system is the diaphragm of the air pump. The air pump is held in a basin outside of the tank and air is delivered via a ½" PVC pipe that enters through the riser and down into the SludgeHammer® column.

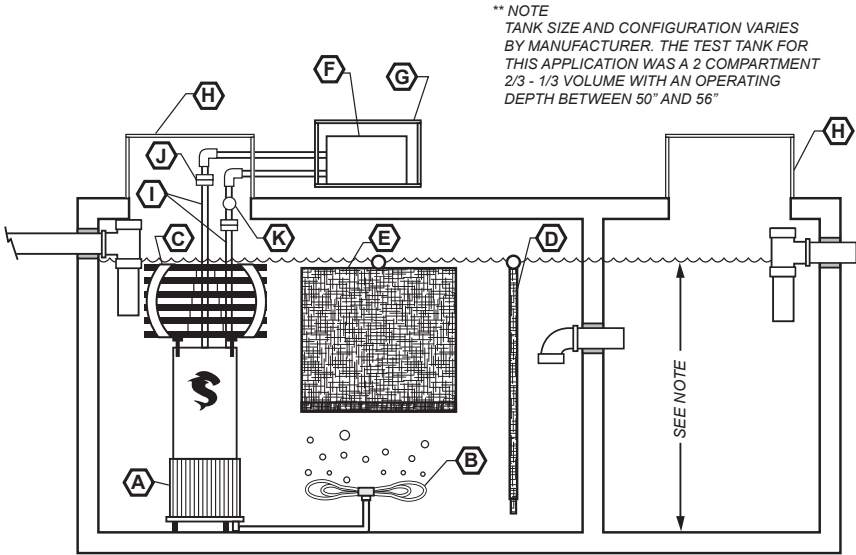


TOP VIEW
S 400 (1,500 GALLON)
SLUDGEHAMMER SEPTIC TREATMENT SYSTEM

NOT TO SCALE

Top View of Tank with Matrix Elements – Flow in the system moves over and through matrix elements for filtration and digestion before it leaves chamber 1.

Operation (continued)



S 600 (2,000 GALLON) SLUDGEHAMMER SEPTIC TREATMENT SYSTEM

NOT TO SCALE

KEY:

- A. SludgeHammer® column
- B. Extra aerator (Used on S-600 model only)
- C. Matrix stack
- D. Matrix curtain (See TOP VIEW for arrangement)
- E. Matrix float
- F. Air pump
- G. Air pump protective basin
- H. Tank risers
- I. Air lines

Side View

Operation (continued)

Operation of the SludgeHammer® is simplicity itself. Your authorized installer will have already set up and started the SludgeHammer® for you. The unit is installed in a conventional septic tank so the homeowner needs only to follow practices that would be acceptable for a conventional septic system.

These include:

1. The SludgeHammer® system digests organic matter—human or animal waste, toilet tissue, anything that has an animal or vegetable origin. Do not put plastics, synthetics or metals into the system.
2. Pharmaceutical use is a reality in our culture—in the event any member of the household being served by the SludgeHammer® requires long-term pharmaceutical medication (over ten days) you must notify your SludgeHammer® certified installer. He will monitor the SludgeHammer® system the period of medical treatment.

The only moving part to a SludgeHammer® system is the air pump. This will be located in the plastic basin placed by the side of the house near the septic system or adjacent to the septic tank. The lid on the basin should be secured with tamper-proof screws to insure that the pump is not tampered with.

The alarm will be attached to the side of the pump basin or at a convenient location near the septic system. Press the test button on the alarm to insure the alarm is operational. The alarm will sound if for any reason the power to the pump is on but the pump is not delivering air at the appropriate pressure to the SludgeHammer®. In the event the alarm sounds, press the buzzer shutoff button and call your SludgeHammer® certified installer. The alarm light should remain on. Let the certified installer determine the nature of the problem. **DO NOT ATTEMPT TO REPAIR THE SLUDGEHAMMER® YOURSELF!**

In order to maintain the warranty protection for the SludgeHammer® the homeowner must contract with their local certified installer for a maintenance service. This involves two inspections annually during which the maintenance contractor will inspect the operation of the SludgeHammer® in the treatment tank. During this inspection the bacterial applicator stick will be removed and a new packet of SludgeHammer® Blend will be attached and reinserted into the bacterial receptacle in the SludgeHammer® unit.

The air-pump diaphragm will be checked and if the diaphragm shows signs of wear it will be replaced with a new diaphragm.

Operation (continued)

The water level in the tank will be observed to see that it is at the base of the outlet pipe leaving the tank. If accumulated sludge or scum is seen in either chamber of the tank, it will be measured and if greater than 12" is present the maintenance contractor will recommend pumping the tank. Should a homeowner decline to have the tank pumped at that time the warranty shall be void.

Homeowners should be aware that the SludgeHammer® is a biological system. This means that care should be taken with the types of things that get flushed into the treatment system. Do not rinse any painting materials into any sink or toilet in the home, including sinks in the garage. Such rinsing should always be done outside on the ground.

Similarly, do not add concentrated disinfectants such as chlorine or other organic solvents beyond the normal usage of chlorine for dishwashing or laundry. Do not drain hot-tubs into any drainage system connected to the septic system. Again, drain such tanks onto the ground.

The SludgeHammer® is designed to treat the flow of a typical family residence. The hydraulic capacity of the S-400 system will operate at flows up to 400 gallons per day and the S-600 will operate at flows up to 600 gpd. The homeowner should conduct some investigation within the home to assure that excessive water consumption, leaks, etc., are not releasing excessive volumes of water to the treatment system.

Similarly, overloading the system with organic material is also not recommended. Homeowners should take care not to conduct cottage industry type operations involving food preparations that lead to excessive food waste flows to the treatment system. Garbage disposals are acceptable for use with the SludgeHammer® system so long as the number of residents in the home is consistent with the original design load.

For vacation or temporary residences, the homeowner should inform the SludgeHammer® certified maintenance provider of the annual residence schedule. The provider can then turn on the system and add a bacterial packet within one week of the anticipated habitation of the home. The homeowner should also notify their service provider if they plan on being away from the home for longer than one month.

Potential Problems

The homeowner should not attempt any remedial action if the system exhibits problems. The alarm should sound if either the air pump fails or if for some reason the system overflows. If the alarm sounds the homeowner should turn the sound off, but leave the alarm light on.

The data plate on the system will provide the model number and serial number of the system. This information should be provided to the service provider. The name and phone number of the service provider will be on the service contract. They should be contacted immediately.

Extended Service Policy

The SludgeHammer® S-400 or S-600 systems have a two-year warranty on performance and equipment. Any problems encountered during this period that result from product or installation malfunctions will be rectified as part of the warranty. The bi-annual service visits during the first two years will be charged to the homeowner as described in the service contract.

Extended service is recommended and should be contracted with the service provider who installed the system, or the homeowner can contact SludgeHammer® Group Ltd. for information on other service providers in the area.



SludgeHammer®

nature called. we answered.

SludgeHammer® Group Ltd.
336 S. Division Rd.
Petoskey, MI 49770

Ph: 1.231.348.5866
Toll Free: 1.800.426.3349
Fax: 1.720.834.3102
www.SludgeHammer.net



SludgeHammer®— Putting Nature to Work. Naturally.

Septic systems have successfully treated household waste for hundreds of years. Soil absorbs the waste and microbes in the ground consume organic material. As long as there is oxygen, the microbes thrive. Without oxygen they produce biomat—a slime that clogs the soil. It is estimated that 95% of all septic system failures are caused by biomat clogging. Eliminate it and you extend the life of new leachfields or drip irrigation systems and drastically reduce the need for septic tank pumping or destructive property repair.

Enter the SludgeHammer®, an Aerobic Bacterial Generator that fosters the growth of a curative biomat of specialized bacteria right in the septic tank. As the SludgeHammer® eliminates waste in the tank, it sends out an endless stream of microbes that keep the soil open and porous. These powerful bacteria help control nitrates and fecal bacteria that contaminate the soil and nearby groundwater. Most importantly, they preserve the soil's health as long as the SludgeHammer® operates.

