

# **FAST<sup>®</sup> Owner's Manual**

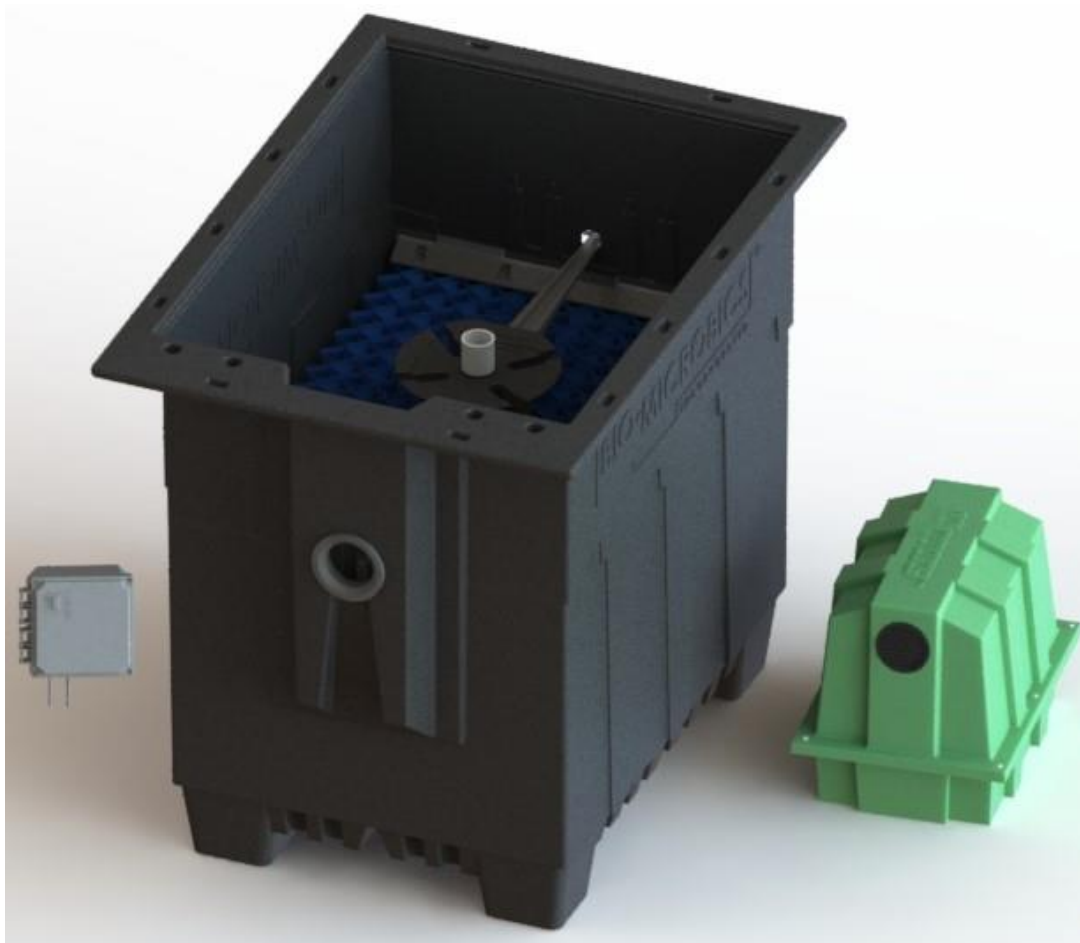
## **For use with:**

**MicroFAST<sup>®</sup>** 0.5, 0.625, 0.75, 0.9, 1.5, 3.0, 4.5 & 9.0

**HighStrengthFAST<sup>®</sup>** 1.0, 1.5, 3.0, 4.5, 9.0

**NitriFAST<sup>®</sup>** 0.5, 0.625, 0.75, 0.9, 1.5, 3.0, 4.5, 9.0

**RetroFAST<sup>®</sup>** 0.15, 0.25, 0.375





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Dear FAST® Owner,

**Congratulations! You have a FAST® Wastewater Treatment System installed on your property.**

At the forefront of green technology, the FAST® System by BioMicrobics meets the highest industry treatment standards. Based on *environmentally sound practice* and *simple scientific principles*, the FAST® process represents our continued commitment to improve small onsite treatment capabilities. You can take pride in knowing that, with the FAST® system, you will help ensure a clean environment for future generations.

Please take time to read this FAST® Owner's Manual, where you will find important safety precautions and information on proper use and care of your system. Designed for minimal operator attention, the FAST® system contains only one moving part – the blower. By consistently following a maintenance schedule and being mindful of what can go down your drains, you can enjoy the lasting benefits of the FAST® Wastewater Treatment System for decades to come.

If you need any further assistance, please contact BioMicrobics at [sales@biomicrobics.com](mailto:sales@biomicrobics.com) or call us at 1-800-753-FAST (3278).

**Thank you for using FAST®!**

Sincerely,

The BioMicrobics Team



16002 West 110<sup>th</sup> St  
Lenexa, KS 66219  
USA

Ph: 913-422-0707  
800-753-FAST (3278)  
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## GENERAL INFORMATION

Thank you for purchasing a BioMicrobics FAST® system. One or more of the following patents protects this process: 3,966,599; 3,966,608; 3,972,965; 5,156,742. Certified by NSF International, the MicroFAST® 0.5, 0.625, 0.75, 0.9 and 1.5 systems meet NSF Standard 40, Class 1 and Standard 245 certifications for wastewater treatment devices.

If you have questions regarding any BioMicrobics products, contact your local distributor or us:

**1-800-753-FAST (3278) or +1-913-422-0707**

**e-mail: [onsite@biomicrobics.com](mailto:onsite@biomicrobics.com)**

## ABOUT FAST®

The FAST® (Fixed Activated Sludge Treatment) system uses naturally occurring bacteria (biomass) to treat sewage for dispersal into the environment. This continuous process provides the biomass with food (waste) and air in a suitable environment. Dead bacteria and non-biodegradable waste settle and accumulate in the bottom of the tank for periodic removal.

The FAST assembly consists of two components: the treatment module and blower. The blower provides air to the system via the air supply pipe. The air supply pipe and draft tube create an airlift, which mixes oxygen and waste throughout the media inside the tank. Bacteria, supported by air from the airlift, grows on the media and digests the waste. Finally, a vent pipe expels vapors created by the process.



***DO NOT ENTER THE SEPTIC TANK. Hazards exist in a septic system. All precautions must be followed when inspecting the system. Keep tank openings covered at all times. Failure to do so could result in severe sickness or death.***



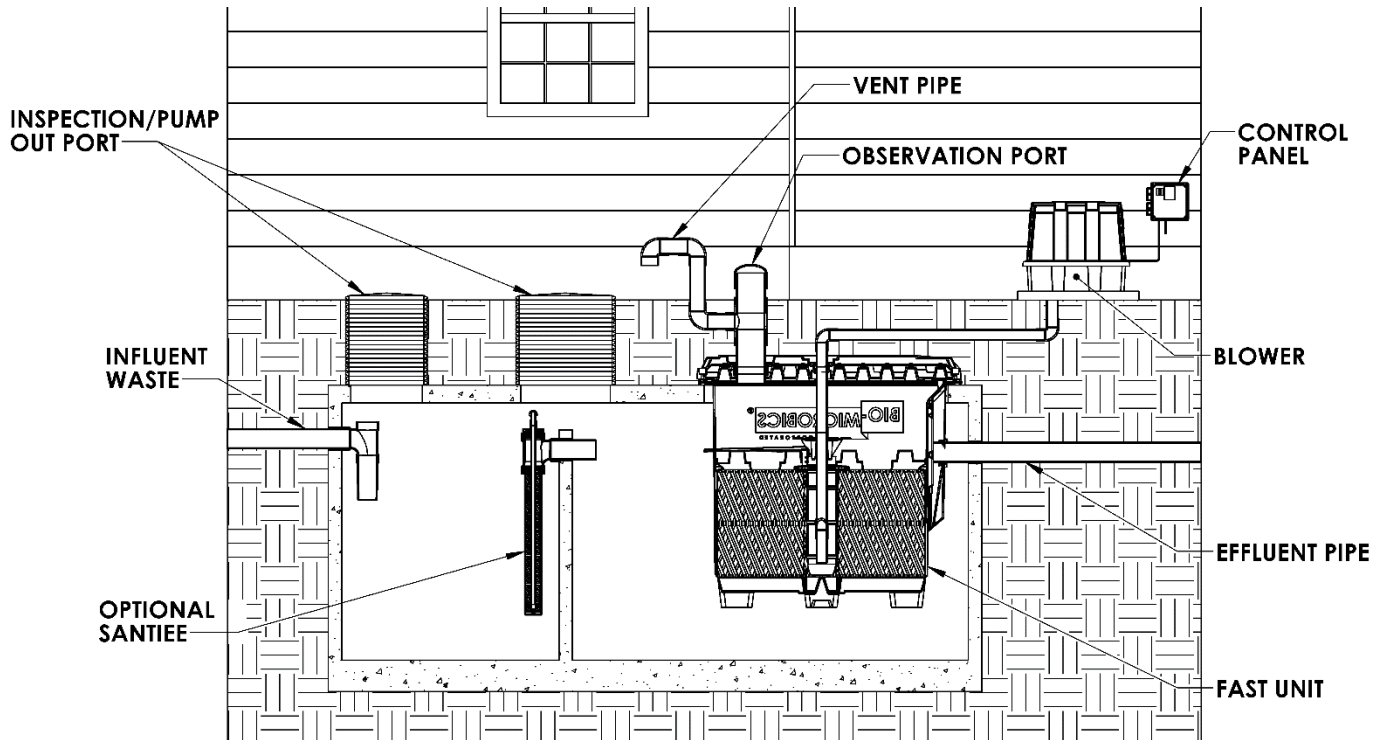
***DO NOT use an open flame or cause a spark near a septic tank's access points. Gases emanating from septic tanks can explode if ignited or deadly if inhaled.***



***Only authorized, qualified service personnel should service a septic system; open access ports; and/or open covers to a septic tank.***



***Infectious organisms exist in a septic tank. If any contact with wastewater occurs, immediately wash and disinfect all exposed areas and contact personal physician.***



**Shown:** A MicroFAST unit installed with the lid option. Consult your Installation or Service Manual for representations of other units covered by this Owner’s Manual.

**NOTE:** There may be ancillary equipment associated with your system: pump(s) (before and/or after the FAST® unit), a distribution box, a disinfection system, an irrigation system, a remote alarm, or auto dialer, etc.

## INTRODUCING SUBSTANCES INTO THE SYSTEM

While the FAST® wastewater treatment system will process most waste produced by the average household, introducing certain substances into the system may reduce the efficiency of the system or stop the treatment process by destroying the biomass. These substances can be grouped as: prohibited substances and limited-use substances. Refer to the “Septic Dos and Don’ts” section below to learn how to maximize the system’s efficiency, reduce the time period between septic tank pump-outs, and prevent costly repairs.

### Prolong the life of your system:

1. Have the FAST® system inspected and tank pumped as necessary.
2. Keep track of the substances entering your system. Review the list of Dos & Don’ts below.
3. Keep the FAST® system operating: do NOT turn off the blower.
4. Care for your drain field or irrigation system (if incorporated into your FAST® System).

**Note:** If you have a question regarding the effect of a particular substance on the FAST® system, call a BioMicrobics service technician.

## SEPTIC DOS AND DON'TS

**General Rule #1:** If a substance is harmful to humans or is antibiotic in nature, it should not be put into any septic system, including FAST®. Septic systems rely on “good bacteria” to break down waste, and those bacteria can be killed by the chemicals and toxins listed below.

**General Rule #2:** Keep debris out of your septic system, including FAST®. Septic systems need to move water through various tanks and pipes, so indissoluble debris (cloth, plastic, wood, etc.) can clog the system.

### Don't Do These Things

DON'T put these substances down any drain (toilet, sink, etc.):

<b>FOOD WASTES</b>	Animal bones, coffee grounds, corn cobs, egg shells, fruit peels, melon rinds, home brewery waste
<b>PERSONAL PRODUCTS</b>	Wet wipes (including ones labeled “disposable”), bandages, sanitary napkins, disposable diapers, condoms
<b>CHEMICALS / TOXINS</b>	Drugs/medicines, oil-based paints, automotive fluids, herbicides, pesticides, floor stripper, ammonium chloride cleaners, caustic cleaners, harsh detergents, solvents, thinners
<b>OTHER PRODUCTS</b>	Cat litter, cigarette butts, cloth towels, paper towels, plastic bags, plastic objects, rags and scraps, RV waste, film developing waste, metal objects, modeling clay, etc.

### Do These Things

<b>RECORD KEEPING</b>	Keep copies of all system drawings, plans of the site, installed equipment, and service records and record all applicable information.
<b>LAUNDRY</b>	Spread wash loads throughout the week. Avoid liquid fabric softeners. Use low-suds, biodegradable, low-phosphate detergents, like Mighty Mike® from Scienco/FAST ( <a href="http://www.sciencofast.com">www.sciencofast.com</a> ).
<b>LEAKY FIXTURES</b>	Watch out for and repair leaking fixtures, such as a toilet constantly “running,” because leaks add large quantities of water to your wastewater system and negatively affect the drain field.
<b>WATER SOFTENERS</b>	Be cautious in using water softeners as the discharges can damage parts of the septic system. The FAST® process can tolerate discharge from properly operating softeners that backwash as needed based on water usage (DIR), as opposed to timer-operated systems. Check if these are allowed by your local regulatory authority.

<b>FOOD WASTES</b>	Plan for more frequent removal of solids from your septic tank if you have a garbage disposal unit (check with your local regulatory authority about whether garbage disposal is allowed). Please dispose of large quantities of food in the garbage.
<b>FATS, OILS &amp; GREASE</b>	Pour excess cooking grease (animal fats, vegetable oils, lard, etc.) in the garbage rather than down the drain. Too much grease can overload your septic system, preventing the bacteria from fully breaking down the waste.
<b>DISINFECTANTS/CLEANERS</b>	Do not use cleaning products that contain quaternary ammonia or pine oil-based cleaners. Instead, use cleaners that contain citric acid, chlorine, or other biodegradable substances (always use cleaners according to manufacturers' recommendations).
<b>GARAGE &amp; WORKROOM</b>	Divert drainage from work rooms away from your septic system. Petroleum-based products and sawdust should not enter the septic system.
<b>MEDICATIONS</b>	<b>DO NOT FLUSH UNUSED MEDICATIONS DOWN THE DRAIN.</b> Please dispose properly by returning unused medication to the pharmacy or doctor. <b>NOTE:</b> Because the human body absorbs $\leq 20\%$ of typical medications, please notify Service Provider of medications taken; doing so could ease disruption of service for your system.
<b>SEPTIC ADDITIVES / ENZYMES</b>	Check with your Service Provider before adding chemical additives to your tank. The wastewater in the system typically contains all the required bacteria for proper operation. Commercial additives are most often unnecessary and may do more harm than good.
<b>PAPER PRODUCTS</b>	Use single- or double-ply, non-quilted, white toilet paper products. Avoid paper with color, as some color dyes in the paper cannot be eaten by natural bacteria. Non-bleached paper (brown in color) takes longer to break down and can therefore increase the pump-out frequency of your tank. Do not flush paper towels, napkins, wipes, or other thick paper material.



## MAINTENANCE AND SERVICE

### TANK PUMPING PROCEDURE

#### **WARNING**

*Only qualified service staff should open access ports and/or covers. Infectious organisms exist in a septic tank. If any contact with wastewater, immediately wash and disinfect all exposed areas and contact personal physician. Failure to do so could result in severe sickness or death.*

#### **CAUTION**

*Avoid pumping down a tank after periods of heavy rain or when the ground water is likely to be above the bottom of the concrete tank. Emptying the tank under these conditions could cause the tank to float up and become dislodged.*

As the FAST® system processes the raw domestic waste (producing sludge and sloughed-off bacteria), the dead bacteria and non-biodegradable waste settle and accumulate in the bottom of the septic tank for periodic removal. The periodic removal time interval will change depending on the size of the system and varying load conditions.

#### **Measuring sludge depth**

The Service Provider should measure the sludge or residual level in the FAST® system every service visit. When the sludge level exceeds the limits set by BioMicrobics (see Service Manual), the Service Provider will recommend that the FAST® system be pumped out by the Septic Tank Pumper. The Service Provider should provide the owner with a recommendation for the Septic Tank Pumper, but any Pumper who is certified by the local authorities can pump the tank. In contracting with a Septic Tank Pumper, make sure that the Pumper knows there are two compartments of the FAST® system that need to be pumped.

The basic procedure for pumping is given below for your information.

#### **CAUTION**

*Always pump out both zones of the system even if only one zone requires it.*

Open the access ports/cover(s) and insert the hose. Be sure to **pump out both settling and treatment chambers.**

Note: The “settling chamber” may also be called the “primary zone”, “trash tank,” or “settling tank.”

The “treatment chamber” may also be called the “secondary zone”, “FAST® tank”, or “ATU tank”.

1. Once the unit has been pumped out, **immediately refill the tank with clean water** to reduce the risk of the tank floating and to minimize the impact on treatment. Close the access ports/cover(s) making sure it is watertight.
2. **Properly dispose of the solids** in compliance with local and state regulations.

## SEASONAL OR INTERMITTENT USE

The FAST® wastewater treatment system will function normally during short periods of inactivity, even if there is no wastewater flowing to the system. The power to the system should be left on during this time.

Here are some typical examples of intermittent use and suggested operational procedures:

- **Summer use property** (i.e., shut down all winter): Blower should be turned off at the end of summer and restarted at least a week before returning. Please contact your local Service Provider to restart the system and check with local regulations.
- **Weekend property** (i.e., used at least one weekend out of three): Maintain normal operation or use FAST®'s SFR® blower timer feature on the control panel.

**Check with local regulations before attempting:** If property is seldom used and blower is shut down completely for an extended period of time (i.e., summer-use only), we suggest you get your local Service Provider's help restarting the blower a week or two prior to returning to the property.



***Only authorized service personnel should service a septic system and its components. Deadly hazards such as lethal gases and high voltage electricity are associated with the system.***



***Introducing harmful or damaging substances into the FAST® system may void the warranty.***

## ALARMS

Your FAST® system has an audible and visual alarm on the control panel. If you find the alarm going off on the control panel, you can silence the audible alarm by pressing the "Silence" button. The visual alarm light will remain on after the audible alarm is silenced. A label on the control panel should provide the contact information for your Service Provider. Please call your Service Provider and tell them that your system is alarming and ask for 48 hour service to resolve the alarm condition.

NORMAL OPERATING CONDITIONS	
<b>SOUND</b>	The FAST® system's blower makes a continuous humming sound. If you hear an unusual noise, call your Service Provider.
<b>ODOR</b>	A musty, earthy-type of odor is normal. However, if you smell a sewage odor (rotten egg smell), call your Service Provider.
<b>SIGHT</b>	A properly loaded and operated FAST® system should produce clear effluent. If the effluent is cloudy, opaque, or suddenly changes, call your Service Provider.
<b>CONTROL PANEL</b>	The on-off switch should be in the ON position, and the power light indicator should also be on. The alarm light indicator and the alarm buzzer should be off.

## LIMITED WARRANTY

BioMicrobics, Inc. warrants the following systems

**\*Residential MicroFAST® 0.5, 0.625, 0.75, 0.9, and 1.5**

**\*RetroFAST® 0.15, 0.25, 0.375**

**\*BioBarrier® 0.5, 1.0, 1.5, 0.5-N, 1.0-N, and 1.5-N**

**\*STAAR® 0.5, 0.75, 1.0, 1.2, and 1.5**

against defects in materials and workmanship, for a period of two years after installation or 30 months from date of shipment. For all other systems and spare parts, BioMicrobics Inc. warrants against defects in materials and workmanship for a period of one year after installation, or eighteen months from date of shipment, whichever occurs first, subject to the following terms and conditions.

## TERMS AND CONDITIONS

**Note:** *For this warranty to be effective, BioMicrobics must receive the product registration for the system.*

During the warranty period, if any part is defective or fails to perform as specified when operating at design conditions, and if the equipment has been installed and is being operated and maintained in accordance with the written instructions that BioMicrobics, Inc. has provided, BioMicrobics, Inc. will repair or replace at its discretion such defective parts free of charge. Defective parts must be returned by owner to BioMicrobics, Inc.'s factory postage paid, if so requested. The cost of labor and all other expenses resulting from replacement of the defective parts and from installation of parts furnished under this warranty shall be borne by the owner. This warranty does not cover general system misuse, aerator components that have been damaged by flooding or any components that have been disassembled by unauthorized persons, improperly installed or damaged due to altered or improper wiring or overload protection. This warranty applies only to the treatment system and does not include any of the structure wiring, plumbing, drainage, septic tank or disposal system. BioMicrobics, Inc. reserves the right to revise, change or modify the construction and/or design of the BioMicrobics system, or any component part or parts thereof, without incurring any obligation to make such changes or modifications in present equipment. BioMicrobics, Inc. is not responsible for consequential or incidental damages of any nature resulting from such things as, but not limited to, defect in design, material, or workmanship, or delays in delivery, replacements or repairs.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. BIOMICROBICS, INC. SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO REPRESENTATIVE OR PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY OR TO ASSUME FOR BIOMICROBICS, INC. ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS.

## KEEP FOR YOUR RECORDS

Manufacturer Name: BioMicrobics, Inc.

Manufacturer Phone: 1-800-753-FAST (3278)

FAST® System Serial Number: \_\_\_\_\_

System Designer Name: \_\_\_\_\_

Designer Phone: \_\_\_\_\_

Health Official Name: \_\_\_\_\_

Health Official Phone: \_\_\_\_\_

Installed By: \_\_\_\_\_

Installer Phone: \_\_\_\_\_

Maintenance Provider Name: \_\_\_\_\_

Maintenance Provider Phone: \_\_\_\_\_