

COLLECTION OF EFFLUENT SAMPLE

Please contact your local distributor or BioMicrobics for a copy of the "Testing Protocol" document. **Important:** All samples must be collected, stored, transported and tested according to the "Testing Protocol" document by BioMicrobics and the most current version of **Standard Methods**.

OTHER SYSTEM COMPONENTS (if applicable)

- Check **LIXOR® PRE-AERATION DEVICE** blower, inlet filter, blower housing, and air delivery system for proper function.
- Check **INFLUENT BIOSTEP® PUMP(S)** for proper function. Clean the screening device by using built in swab or other method.
- Check **SANITEE® EFFLUENT SCREEN (FILTER)** or other screening device. Clean by using the built in swab or other method.
- DISPERSAL SYSTEM** (not by BioMicrobics) Follow manufacturer's recommendation.

TROUBLESHOOTING GUIDE

Contact factory or local distributor for all other issues: +1(913) 422-0707

PROBLEM	SITUATION	POSSIBLE CAUSE / SOLUTION
Alarm is activated (sounding)	Blower is NOT running <small>Please check the following. If problem persists, call service provider.</small>	<ul style="list-style-type: none"> ➢ Breaker has tripped – turn blower switch ON. If the switch will not stay ON, see next steps... ➢ Breaker trips after 2-3 seconds – blower is over amping – electrician needs to check blower wiring. ➢ Breaker trips immediately – electrical system has a short – electrician must investigate ➢ Blower is seized – cooling fan will not spin freely with power OFF – replace blower – call service provider
	Blower is running <small>Please check the following. If problem persists, call service provider.</small>	<ul style="list-style-type: none"> ➢ Water Level is high – check the water level in the unit. Water level should be 2-3 inches above the media. Water level high? YES: consult distributor NO: Go to next step. ➢ Liquid Level Switch Present – NO: Go to next step. YES: Check if wired in the same conduit as 90 VAC or higher wires (a violation of electric code NEC/IEC). If YES: Wires will need to be separated. – If NO: Switch may need adjusting. Turn switch's Allen screw clockwise, wait ~10 seconds for alarm to "catch up". ➢ Current Sensor Present – YES: Open panel and find "Diagnostic LED's" in the upper right hand corner. Note which light is lit and consult the distributor. NO: Consult distributor ➢ Vent is undersized or Vent(s) or airline is blocked or broken – Check specifications for vent sizing requirements. Remove blockage or repair vent(s) or airline.
Waste is backing up from tank	<ul style="list-style-type: none"> Blockage in pipe network. Mechanical failure of ancillary equipment 	<ul style="list-style-type: none"> ➢ Check all piping for blockage, including all interior tank piping and effluent piping. ➢ Pump is not running – have qualified person check pumping system for mechanical and/or electrical failures. ➢ Pump's Level Controls are improperly set, have failed, or pump too much volume per dose. Have service provider check/adjust pumping system.
System emits odor (rotten egg smell)	<ul style="list-style-type: none"> Mechanical failure/ Air line break Multiple issues can contribute, the cause is usually due to oversized settling tank. Multiple solutions possible. 	<ul style="list-style-type: none"> ➢ Blower operating – NO: check "blower is not running" above, YES: see next step ➢ Proper splash in reaction chamber – NO: air line is broken, YES: see next steps ➢ Decrease settling tank volume – easiest done with a pumping system which can then pump the tank ➢ Move vent – re-locate the vent to a location where the prevailing winds will catch odor. ➢ Place a carbon filter on the end of the vent pipe – only use a filter that will create less than 0.1 psi of back pressure. ➢ Create bio-filter vent - create a remote vent by placing a well perforated vent line in a trench with shredded bark mulch - contact local installer
Blower runs backwards	<ul style="list-style-type: none"> 3-Phase installed incorrectly power out of phase or Single-Phase (which can run counter-clockwise) installed incorrectly 	<ul style="list-style-type: none"> ➢ Switch any two "hot legs" at the panel or blower AFTER turning OFF the power. Only a QUALIFIED electrician can do this work. After rewiring, it may be necessary to dry the blower's internal parts. ➢ Some blowers have wires numbered "5" and "8". After turning OFF the power, switch these two wires. Only a QUALIFIED electrician can do this work. After re-wiring, it may be necessary to dry the blower's internal parts.
Blower is noisy	Blower noise is an annoyance at site	<ul style="list-style-type: none"> ➢ Blower housing can be supplemented with additional sound reducing measures, contact your service provider. ➢ Blower may be re-located from its current location and can be placed up to 100 ft away from unit.
Effluent is dirty	Blower is shaking or makes a loud, whiny noise	<ul style="list-style-type: none"> ➢ Vibration between the blower & housing – tighten or place rubber washers in mounting screws between blower & housing ➢ Blower bearings are going bad - replace blower now or wait for it to seize up
	Many solids detected in effluent	<ul style="list-style-type: none"> ➢ Toxic substance in system, check for even growth in reaction chamber ➢ Pump out required – refer to "Bio-Solids Levels" under "Maintenance Checklist" section

Water in blower/housing	Water entry from outside	➢ Other – call service provider
	Blower is siphoning	➢ Move blower above flood level
		➢ Check blower rotation – see "Blower runs backwards" section above
		➢ Move blower to location higher than the FAST® system

SEASONAL/INTERMITTENT USE PROPERTIES

The FAST® System will function normally even if there is no wastewater flowing during short periods of vacancy. Examples of seasonal/intermittent use and suggested operational procedures:

- **Summer use property** (shut down all winter) - blower should be turned off at 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** (used at least once every three weekends) - maintain normal operation or utilize FAST's SFR® blower timer feature on control panel.

Important: Consult your service provider and local regulations prior to any system changes.

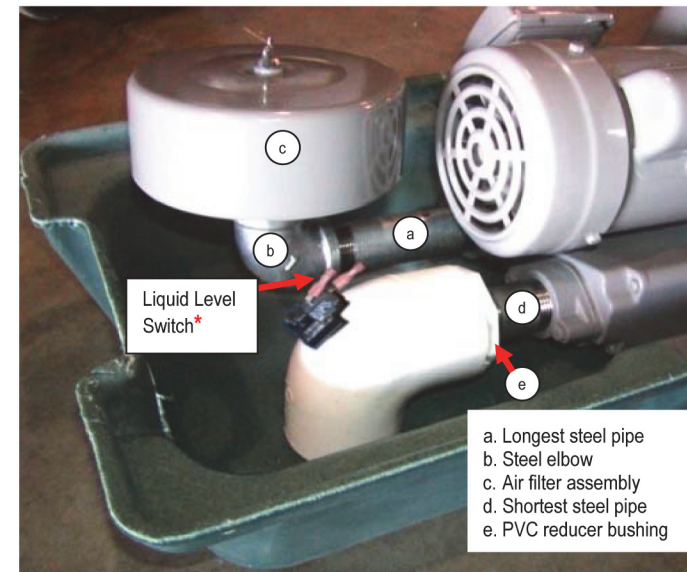
BLOWER REPLACEMENT

WARNING All electrical work shall be properly performed by a qualified electrician per all applicable codes. Failure to do so may result in severe bodily injury or death.

WARNING Hazards exist in confined spaces such as a septic tank. All confined space precautions must be followed if entering a tank. Always keep tank openings covered during storage and installation

When replacing a blower follow the steps below. If relocating the blower run the electrical supply conduit from the control panel to the desired blower location. Air line piping from the blower to the FAST® unit may NOT exceed 100 ft [30.5m] in total length and must have ≤ 4 elbows. The total electrical supply should NOT exceed 150 ft [45 m]. The blower and blower housing must be mounted on a solid base such as concrete to avoid settling.

CONNECT SUPPLIED PIECES (refer to picture below)



SECURE BLOWER ASSEMBLY to housing base using four supplied #14 x 1/2" self-tapping screws. Drill screws directly into blower base.

RECONNECT AIR LINE from FAST® unit to blower outlet using required piping. A "quick disconnect" is highly recommended to be installed in this location if it is not currently in place.

NOTE: ALL CONNECTIONS MUST BE AIR AND WATER TIGHT

CONNECT INCOMING POWER to the blower at junction box. Follow the FAST® Installation Manual for further instruction. Common wiring diagrams are located at the end of this manual.

***(OPTIONAL) LIQUID LEVEL SWITCH** – NOT required for most new systems. AMI control panel with current sensor replaces this switch. To replace this switch:

- a) Drill a 3/8" hole in the blower outlet pipe.
- b) **IMPORTANT:** Connect low voltage wires to switch before mounting in pipe.
- c) Insert the switch into the 3/8" hole (nipple first), then glue into place with PVC glue.
- d) Install low voltage pressure switch wiring back to the control panel according to applicable codes (must not be inside high voltage blower wiring).

CONTROL PANEL REPLACEMENT

CAUTION Always have all utility lines and equipment marked by a locating service prior to performing any work.

WARNING All electrical work shall be properly performed by a qualified electrician per all applicable codes. Failure to do so may result in severe bodily injury or death.

The FAST® systems, including all electrical parts, are ETL (UL equivalent) certified for electrical safety. The control panel meets NEMA4X standards for all weather use (not explosive or submerged environments). The total electrical supply should NOT exceed 150 ft [45m].

BioMicrobics also manufactures control panels that can control other systems, such as UV and sewage pumps. Call your distributor or BioMicrobics for more information.

When replacing a panel follow the steps below. If relocating the panel run the electrical supply conduit from the control panel to the blower location. Keep in mind the electrical supply line should NOT exceed 150 ft [45 m] total.

1. Turn all Power OFF.
2. Examine wiring directions inside the supplied FAST® control panel (also found at the end of this Manual).
3. A dedicated breaker is required in the building's master electrical panel. Make connections between the master panel and FAST® control panel.
4. Make connections between the blower and FAST® control panel per the electrical diagram.
5. For systems requiring the Liquid Level Switch- connect the switch to the control panel terminals labeled "FLOAT" or "HI Press Input". The newest AMI control panel with current sensor can be used to replace this switch.

CERTIFICATIONS

WARNING 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.

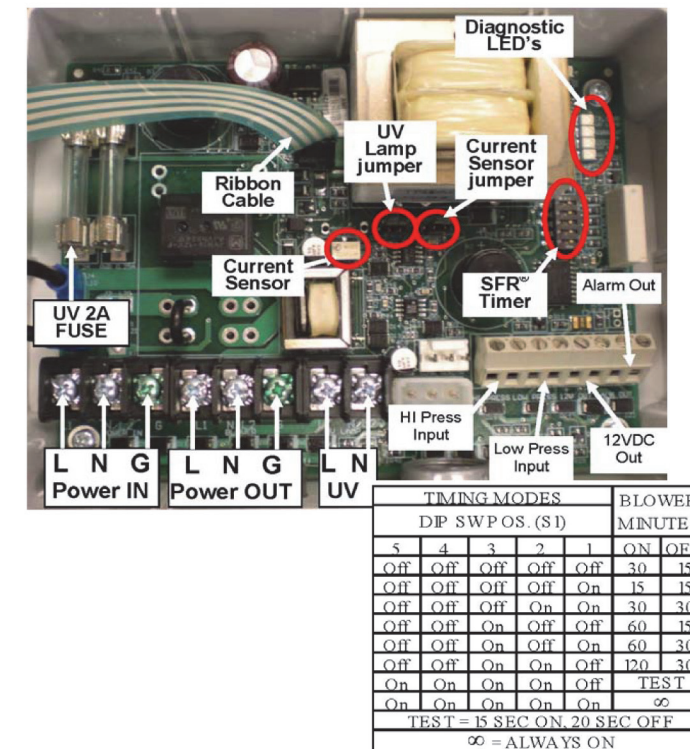
MicroFAST® 0.5, 0.625, 0.75, 0.9, and 1.5 systems are tested and certified to NSF®/ANSI® Standards 40 (Class I) and 245

PARAMETER	LIMIT
CBOD5	30 day avg. 25 mg/L
	7 day avg. 40 mg/L
TSS	30 day avg. 30 mg/L
	7 day avg. 45 mg/L
pH	6-9 s.u.
Total Nitrogen	50% reduction of influent

ELECTRICAL WIRING DIAGRAMS

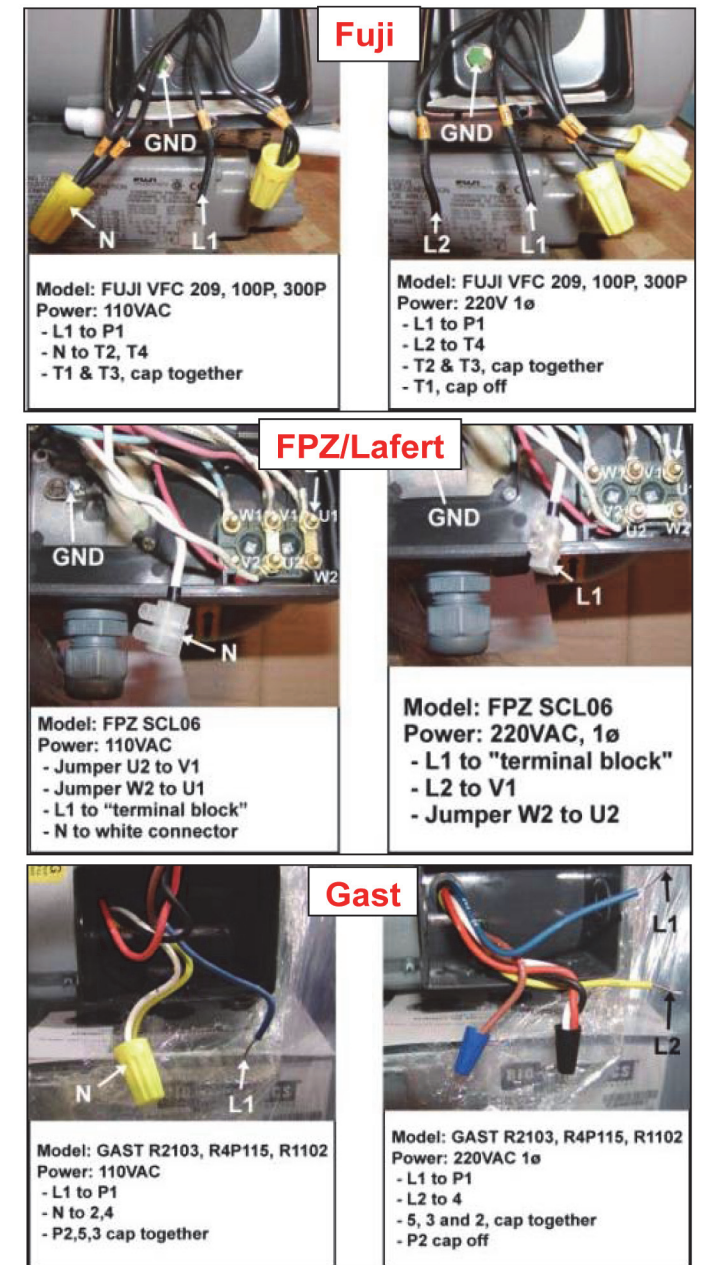
Only the MicroFAST® 0.5, 0.625, 0.75, and 0.9 system diagrams are displayed here. Information for larger FAST® systems accompanies those units and can be obtained from BioMicrobics.

AMI 110/220 PANEL



BLOWER DIAGRAMS

ATTENTION: Please refer to side of shipping box for correct Blower.



LIMITED WARRANTY

BioMicrobics, Inc. warrants every new residential FAST® system against defects in materials and workmanship for a period of two years after installation or three years from date of shipment, subject to the following terms and conditions, (Commercial FAST system 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):

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 provided by BioMicrobics, Inc., 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 and regular maintenance items such as filters or bulbs shall be borne by the owner. This warranty does not cover general system misuse, aerator components which 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 plant 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 FAST 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.

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Contact your local distributor for parts and service.