

## NOTES

- Blower piping to LIXOR® may not exceed 100 FT [30.5m] in total length and use a maximum of 6 elbows, to get to the LIXOR air inlet. For distances greater than 100 FT [30.5m] consult factory. Blower must be located above flood/standing water levels on a concrete base 36" X 58" X 2" [91X147X5cm] minimum.
- 2. The air supply line must be secured with a non-corrosive clamp every 2' [0.6m] minimum to prevent vibration induced damage.
- 3. Refer to sheet 7 of 8 & 8 of 8 for additional details.
- 4. Installation of the LIXOR® shall be done in accordance with the written instructions provided by the manufacturer. Refer to LIXOR® Installation Manual for more details.

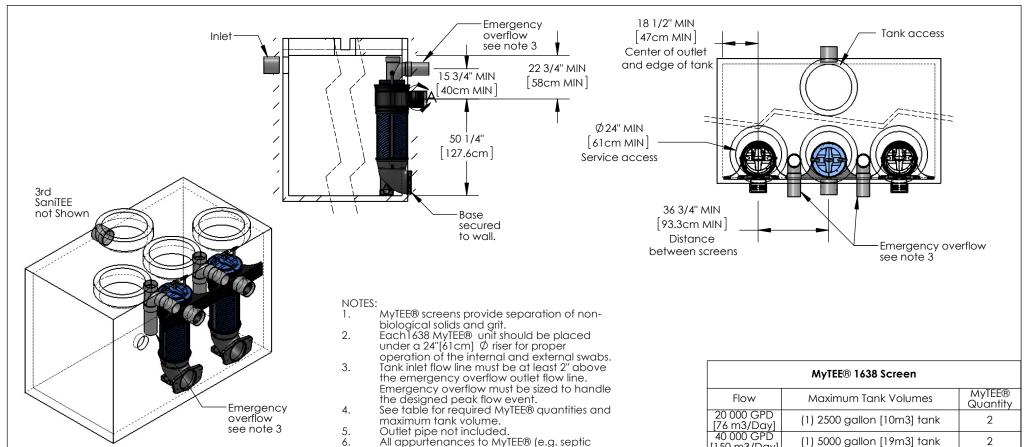
DO NOT SCALE

UNLESS NOTED
DIMENSIONS
ARE IN INCHES
[CENTIMETERS]
TOLERANCES
± 0.02 IN/IN
[± 0.05 CM/CM]



MyFAST 4.0

WEIGHT	lb	SIZE	DRAWING NUMBER		
NAME	DATE	Δ	Optio	ons	SHEET
DRAWN CTC	3/27/2009	′`	Ophons		4 OF 8
CHECKED PF	9/19/2013		REVISED 9/19/2013	REV. INI-10-T	



All appurtenances to MyTEE® (e.g. septic tank, access risers, etc) must conform to all applicable codes.

7. See additional details in MyFAST® Installation Manual.

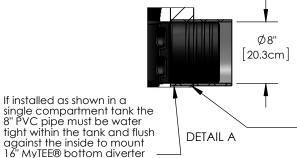
MyTEE® 1638 Screen							
Flow	Maximum Tank Volumes	MyTEE® Quantity					
20 000 GPD [76 m3/Day]	(1) 2500 gallon [10m3] tank	2					
40 000 GPD [150 m3/Day]	(1) 5000 gallon [19m3] tank	2					
60 000 GPD [230 m3/Day]	(1) 7500 gallon [28m3] tank	3					
80 000 GPD [300 m3/Day]	(1) 10000 gallon [38m3] tank	4					
120 000 GPD [454 m3/Day]	(1) 15000 gallon [55m3] tank	6					
160 000 GPD [600 m3/Day]	(1) 20000 gallon [75m3] tank	8					

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[CENTIMETERS]
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[± 0.05 CM/CM]



MyFAST 4.0



Outlet
optional 8" PVC pipe
provided by others
to connect outlet to
secondary tank

# Specifications for MyFAST® 4.0 BASIC Wastewater Treatment System

### 1. GENERAL

The MyFAST® 4.0 treatment system is designed to treat approximately 40,000 GPD (151 m3/day) of residential strength wastewater. For non-residential or mixed use applications, consult the factory for guidance. The principal items of equipment shall include four (4) FAST® interconnecting liners with leg attachments, airlifts, hoses, biosolids collection manifold, sludge pump, four (4) SaniTEE® screens, blower assembly, and control panel. The MyFAST®4.0 treatment unit shall be situated within a 40,000 gallon (151 m3) minimum tank, as shown on the plans. Settling tank(s)/AMS Zone equaling ½ to 1x daily flow must be used prior to MyFAST®. Tank(s) provided must conform to local, state, and all other applicable codes. The tank is to be supplied by others according to Bio-Microbics dimensions.

The blower shall be capable of delivering 400 to 700 CFM [680 - 1190 m3/hr]. The blower assembly shall include an inlet filter with metal filter element. The blower shall be mounted outside the tank adjacent to the Treatment Zone on a contractor supplied concrete base. The blower elevation must be higher than the water level in the tank and above any normal flood level. A two-piece, blower housing shall be provided with tamper-proof screws. Blower piping to the tank shall use non-corrosive material (Galvanized or Stainless Steel). Do not run aglvanized pipe inside the treatment tank. Refer to installation manual for further details. The 4 inch NPT Steel discharge air line, MyFAST® 4 inch NPT air header and connections shall be provided and installed by others.

#### 3. VENTILATION

Vent to desired location and cover opening with a vent grate with at least 120 sq in. [775 sq. cm] open surface area. Secure with Stainless Steel screws. Vent piping must not allow condensate build up or create back pressure. Vent must be above finished grade or higher.

# 4. ELECTRICAL/CENTRAL CONTROL PANEL

All wiring must conform to code and provide the specified power to the blower. Input power on 60Hz electrical system is 208-230/460 VAC, three phase, 63/34.8 FLA, Input power on 50Hz electrical systems 220/400 VAC, three phase 60/34.8 FLA. All conduit and wiring required on the project shall be supplied by others. The standard control panel shall utilize motor starters and overloads to be housed in a NEMA 4 X enclosure. The control panel shall be equipped with a visual and audible glarm to indicate loss of power to the blower. A manual silence switch is included.

### 5. BIOSOLIDS COLLECTION ASSEMBLY

A Biosolids Collection Assembly will be located underneath the MyFAST® 4.0 liners. The collection assembly consisting of; a collection grid, (trunk line, valves, five lateral lines with engineered orifices), biosolids manifold, and biosolids pump. The contractor shall supply piping to connect the grid to the biosolids pump and to construct the manifold. A field adjustable event timer will control the duration and frequency of the biosolids wasting from the Treatment Zone. The biosolids collection system is reversible to facilitate back flush operations.

The MvFAST® media shall be manufactured of riaid PVC, polyethylene, or polypropylene and it shall be supported by the polyethylene insert. The media shall be fixed in position and contain no moving or wegring parts and shall not corrode. The media shall be designed and installed to ensure that sloughed solids descend through the media to the bottom of the tank.

Each MvFAST® 4.0 has two (2) six (6) inch gasketed effluent connections. Each effluent connection has a maximum unrestricted flow of 250 US GPM (945 LPM with a 2.0 design safety factor. MyFAST® systems have been successfully designed and tested receiving gravity and demand-based influent flow. When influent flow is controlled by pump or other means to help with highly variable flow conditions, then multiple dosing events should be used to maximize performance. For residential strength waste the flow rate shall not exceed 140 gpm (530 Lpm) and a maximum hourly flow not to exceed 10% of the design daily flow. For non-residential or mixed use applications, consult the factory for guidance.

### 8. WARRANTY

Bio-Microbics, Inc. warrants all new MyFAST® models (MyFAST® 2.0, 4.0, 6.0, 8.0, 12.0, and 16.0) against defects in materials and workmanship for a period of one year after installation or eighteen (18 months) from the 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 Bio-Microbics, Inc., Bio-Microbics, Inc. will repair or replace at its discretion such defective parts free of charge. Defective parts must be returned by owner to Bio-Microbics, 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. Bio-Microbics, Inc. is reserves the right to revise, change or modify the construction and/or design of the MyFAST system, or any component part or parts thereof, without incurring any obligation to make such changes or modifications in present equipment. Bio-Microbics, 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. BIO-MICROBICS 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 BIO-MICROBICS, INC., ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS.

Contact your local distributor for parts and service.

**DIMENSIONS** ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN

DO NOT SCALE

**UNLESS NOTED** 

MyFAST 4.0

BETTER WATER, BETTER WORLD.

[± 0.05 CM/CM] lb WEIGHT SIZE DRAWING NUMBER DATE SHFFT NAME Α **BASIC Specifications** 6 OF 8 3/27/2009 DRAWN CHECKED PF 9/19/2013 REVISED 9/19/2013

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# **AERATION MANAGEMENT SYSTEM (AMS) OPTION**

### 1. GENERAL INSTALLATION INSTRUCTIONS

All work must be done in accordance with local codes and regulations. Installation of the Aeration Management System (AMS) Option shall be done in accordance with the written instructions provided by the manufacturer. Manuals which include descriptions of system installation, operation, and maintenance procedures shall be furnished. For further details refer to the Installation Manúal.

### 3. LIXOR® 4.0XD

The LIXOR® 4.0XD system shall provide mixing to reduce primary sludge settling prior to the Treatment Zone. The contractor shall furnish and install (1) LIXOR® 4.0XD aeration system in the AMS Zone of the MyFAST®. The system shall be complete with all needed equipment as shown on the drawings and specified herein. The principal items of equipment shall include LIXOR® aerator, blower assembly, blower controls and alarms. All other items will be provided by others.

The LIXOR® 4.0XD system shall be evenly distributed within the AMS Zone as shown on the plans so as to maximize mixing and reduce settling. The AMS Zone Tank(s) must provide adequate access for service activities and comply with all state and local codes.

The LIXOR® gerator shall be manufactured of rigid PVC and ABS. The gerator shall be fixed in position anchored by non corrosive fasteners supplied by others and contain no moving or wearing parts and shall not corrode.

The LIXOR® 4.0XD system shall come equipped with a regenerative type blower capable of delivering 60-140 CFM [102-238 m3/hr]. The blower assembly shall include an inlet filter with metal filter element. The blower shall be secured on the walkway or perimeter, of tank on a contractor supplied base. The blower must not set in standing water and its elevation must be higher than the normal flood level and higher than the tanks operating level. A two-piece, blower housing shall be provided. The discharge air line from the blower to the LIXOR® unit shall be provided and installed by others.

The electrical source should be within 150 feet [45.7 meters] of the blower. Consult local codes for longer wiring distances. All wiring must conform to all applicable codes (IEC, NEC, etc.). Wiring distances must prevent significant voltage loss. Input power on 60Hz electrical system is 3Ø 208-230/460 VAC, and 19.7/11.4 FLA. Input power on 50Hz electrical system is 3Ø, 230/400 VAC, and 19.7/11.4 FLA. All conduit and wiring shall be supplied by others.

#### CONTROLS

The standard control panel provides power to the blower with an alarm system equipped with a visual and audible alarm capable of signaling blower circuit failure. A manual silence button in included.

### **VENTILATION**

If the AMS Zone is covered vent to desired location and cover opening with a vent grate with at least 13 sq in. [80 sq. cm] open surface area. Secure with Stainless Steel screws. Vent piping must not allow condensate build up or create back pressure. Vent must be above finished grade or higher.

#### 4.WARRANTY

Bio-Microbics, Inc. warrants all Bio-Microbics supplied AMS components against defects in materials and workmanship for a period of one year after installation or eighteen months from date of shipment which ever 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 Bio-Microbics, Inc. Bio-Microbics, Inc. will repair or replace at its discretion such defective parts free of charge. Defective parts must be returned by owner to Bio-Microbics, 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, gerator 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 AMS components and does not include any of the structure wiring, plumbing, drainage, septic tank or disposal system. Bio-Microbics, Inc. reserves the right to revise, change or modify the construction and/or design of the components, without incurring any obligation to make such

changes or modifications in present equipment. Bio-Microbics, 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. BIO-MICROBICS 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 BIO-MICROBICS, INC., ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. Contact your local distributor for parts and service.

DO NOT SCALE **UNLESS NOTED DIMENSIONS** ARE IN INCHES [CENTIMETERS] BETTER WATER, BETTER WORLD.\* TOLERANCES ± 0.02 IN/IN

[± 0.05 CM/CM]

MyFAST 4.0

WEIGHT lb DRAWING NUMBER SIZE SHEET NAME DATE **AMS Specifications** 7 OF 8 3/27/2009 DRAWN CHECKED PF 9/19/2013 REVISED 9/19/2013

# **BIOSOLIDS MANAGEMENT SYSTEM (BMS) OPTION**

### 1. GENERAL INSTALLATION INSTRUCTIONS

All work must be done in accordance with local codes and regulations. Installation of the BMS Option shall be done in accordance with the written instructions provided by the manufacturer. Manuals which include descriptions of system installation, operation, and maintenance procedures shall be furnished. For further details refer to the Installation Manual.

### 2. DECANT PUMP AND JIB CRANE

A decant pump is provided for pumping the supernatant from the BMS Zone to the MyFAST® Treatment Zone. The standard decant pump will be controlled by a manual start/stop controller. The jib crane is provided for adjusting the height of the decant pump. The jib crane is designed to handle a lifting capacity of 500 Lbs. and a lifting range of 160 inches [305cm]. All wiring must conform to all applicable codes (IEC, NEC, etc.). Wiring distances must prevent significant voltage loss.

PUMP DETAILS

- The standard 60 Hz decant pump shall be capable of pumping 100 to 125 gpm [380 to 470 Lpm] at 10 feet [3m] of total dynamic head. Input power on 60Hz electrical system is 3Ø, 208-230/460 VAC, and maximum 3.8/1.7 FLA. All conduit and wiring shall be supplied by others.
- The standard 50 Hz decant pump shall be capable of pumping 300 to 400 Lpm at 3m of total dynamic head. Input power on 50Hz electrical system is 3Ø, 380 VAC, and 1.5 FLA. All conduit and wiring shall be supplied by others.

### 3. LIXOR 2.0®

The LIXOR® 2.0 system shall provide oxygen and mixing to reduce biosolids quantity prior to final disposal. The contractor shall furnish and install (1) LIXOR® 2.0 aeration system in the BMS Zone of the MyFAST®. The system shall be complete with all needed equipment as shown on the drawings and specified herein. The principal items of equipment shall include LIXOR® aerator, blower assembly, blower controls and alarms. All other items will be provided by others.

The LIXOR® 2.0 system shall be evenly distributed within the BMS Zone as shown on the plans and spaced for maximum mixing and aeration. The BMS Zone Tank(s) must provide adequate access for wasting of solids, and must conform to local, state, and all other applicable codes.

- LIXOR® AERATOR
  - The LIXOR® aerator shall be manufactured of rigid PVC and ABS. The aerator shall be fixed in position anchored by non corrosive fasteners supplied by others and contain no moving or wearing parts and shall not corrode.
- BLOWER

The LIXOR® 2.0 system shall come equipped with a regenerative type blower capable of delivering 20-50 CFM [34-85 m3/hr]. The blower assembly shall include an inlet filter with metal filter element. The blower shall be secured on the walkway or perimeter of tank on a contractor supplied base. The blower must not set in standing water and its elevation must be higher than the normal flood level and the tank's operating level. A two-piece, blower housing shall be provided. The discharge air line from the blower to the LIXOR® unit shall be provided and installed by others.

- ELECTRICAL
  - The electrical source should be within 150 feet [45.7 meters] of the blower consult local codes for longer wiring distances. All wiring must conform to all applicable codes (IEC, NEC, etc.). Wiring distances must prevent significant voltage loss. Input power on 60Hz electrical system is 3Ø, 208-230/460 VAC, and 6.3/2.9 FLA. Input power on 50Hz electrical system is 3Ø, 230/400 VAC, and 6.1/3.5 FLA. All conduit and wiring shall be supplied by others.
- CONTROLS
  - The standard control panel provides power to the blower with an alarm system consisting of a visual and audible alarm capable of signaling blower circuit failure. A manual silence button in included
- VENTILATION
  - If the BMS zone is covered vent to desired location and cover opening with a vent grate with at least 7 sq in. [45 sq. cm] open surface area. Secure with Stainless Steel screws. Vent piping must not allow condensate build up or create back pressure. Vent must be above finished grade or higher.

## 4. WARRANTY

Bio-Microbics, Inc. warrants all Bio-Microbics supplied BMS components against defects in materials and workmanship for a period of one year after installation or eighteen months from date of shipment which ever 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 Bio-Microbics, Inc., Bio-Microbics, Inc. will repair or replace at its discretion such defective parts free of charge. Defective parts must be returned by owner to Bio-Microbics, 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 BMS components and does not include any of the structure wiring, plumbing, drainage, septic tank or disposal system. Bio-Microbics, Inc. reserves the right to revise, change or modify the construction and/or design of the components, without incurring any obligation to make such changes or modifications in present equipment. Bio-Microbics, 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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NAME	DATE	Α	BMS Specifications		SHEET
DRAWN	3/27/2009	]′`	Bittle opecimeations		8 OF 8
CHECKED PF	9/19/2013		REVISED 9/19/2013	REV.	