


**NOTES**

1. Airline piping to FAST<sup>®</sup> may not exceed 100 FT [30m] total length and have a maximum of 4 elbows in the piping system. For distances greater than 100 FT [30m] consult factory. Blower must be located above flood levels on a concrete base 58" X 36" X 2.5" [150 X 90 X 7 cm] minimum.
2. Vent to desired location and cover opening with a vent grate with at least 20 sq in. [125 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 (see sheet 3 of 3).
3. All appurtenances to FAST<sup>®</sup> (e.g. tanks, access ports, electrical, etc.) must conform to all applicable country, state, province, and local plumbing and electrical codes. Pump out access shall be adequate to thoroughly clean out both zones.
4. All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
5. Tank, piping, conduit, etc. are provided by others. Blower control system by Bio-Microbics, Inc. See Installation Manual.
6. If less than the specified minimum is considered necessary, consult factory for guidance.
7. All piping and ancillary equipment installed after FAST must not impede or restrict free flow of effluent.
8. The tank(s) shall be designed to prevent air passage between the settling zone/tank and the treatment zone and preventing an air lock. Examples include a baffle wall sealed to the lid or treatment zone inlet line with a pipe cap. Consult factory for guidance.
9. The air supply line into the FAST<sup>®</sup> unit must be secured to prevent vibration induced damage. The air supply line should be secured with a non-corrosive clamp every 2' min [60 cm]. See additional details on sheet 3 of 3.
10. Specialized treatment levels may require specific features to be incorporated into the design. Consult factory for guidance.
11. Refer to sheet 3 of 3 for leg extensions requirements.
12. Secure provided support braces to prevent movement.

DO NOT SCALE		 BETTER WATER. BETTER WORLD. <sup>™</sup>		HighStrengthFAST 4.5 FAST Unit	
UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES $\pm$ 0.02 IN/IN [ $\pm$ 0.05 CM/CM]					
WEIGHT	lb	SIZE	DRAWING NUMBER		
		A	HSFAST 4.5 with feet		
DRAWN	CTC	DATE	5/10/2006		
CHECKED	PF	DATE	12/17/2014	REVISED	12/17/2014
				REV.	INI-07-T

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SHEET 1 OF 3


Specifications for HighStrengthFAST 4.5 Wastewater Treatment System

1. GENERAL  
The contractor shall furnish and install (1) HighStrengthFAST 4.5 treatment system as manufactured by Bio-Microbics, Inc. The treatment system shall be complete with all needed equipment as shown on the drawings and specified herein.  
The principal items of equipment shall include FAST System insert, leg extensions, blower assembly, blower controls and alarms. The MicroFAST 4.5 unit shall be situated within a 4,220 Gallon (16,000 L) minimum tank, as shown on the plans. Suggested maximum settling tank(s) equaling 1/2 to 1 x daily flow must be used prior to FAST. Tank(s) must conform to local, state, and all other applicable codes. The contractor shall provide coordination between the FAST system and tank supplier with regard to fabrication of the tank, installation of the FAST unit and delivery to the job site.
2. OPERATING CONDITIONS  
The HighStrengthFAST 4.5 treatment system shall be capable of treating the wastewater produced by non-residential or commercial facilities provided the waste contains nothing that will interfere with biological treatment. The FAST system is a biological treatment system not meant for non-biodegradable or industrial wastewater. Consult factory for proper sizing and usage.
3. MEDIA  
The FAST media shall be manufactured of rigid 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 wearing 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 septic tank.
4. BLOWER  
The HighStrengthFAST 4.5 unit shall come equipped with a regenerative type blower capable of delivering 90-140 CFM [185-238m3/hr]. The blower assembly shall include an inlet filter with metal filter element. Blower piping to the tank shall use non-corrosive material (Galvanized, or Stainless Steel). Do not run galvanized pipe in the treatment tank.
5. REMOTE MOUNTED BLOWER  
The blower elevation must be higher than the normal flood level. A two-piece, rectangular housing shall be provided with tamper-proof screws. The discharge air line from the blower to the MicroFAST shall be provided and installed by the contractor.
6. ELECTRICAL  
The electrical source should be within 150 feet [45 meters] of the blower. Consult local codes for longer wiring distances. All wiring must conform to code. Input power on 60Hz electrical systems 220/460VAC, 3Ø, 11/4.5 FLA, on 50 Hz electrical systems 230/380VAC, 3Ø, 13.4/7.2 FLA. Other voltages and phase are also available. Actual power consumption varies with site conditions. All conduit and wiring shall be supplied by contractor.
7. ALARMS  
The alarm system shall consist of a visual and audible alarm to indicate loss of power to the blower. A manual silence switch is included.
8. INSTALLATION AND OPERATING INSTRUCTIONS  
All work must be done in accordance with local codes and regulations. Installation of the HighStrengthFAST 4.5 shall be done in accordance with the written instructions provided by the manufacturer. An operation and maintenance manual shall be furnished, which will include a description of system installation, operation, and maintenance procedures.  
Treatment unit weighs approximately 1600 pounds [726kg]. Four holes for lifting the FAST liner are supplied. Spreader bars are to be used in lifting the unit. Place spreader bars between lifting holes.
9. FLOW & PIPE SIZING  
FAST systems have been successfully designed, tested and certified receiving gravity, demand-based influent flow. Consult factory for guidance when influent flow is controlled by pump or other means to help with highly variable flow conditions. Multiple dosing events should be used to maximize performance.
10. WARRANTY  
Bio-Microbics, Inc. warrants all new commercial FAST @ models (HighStrengthFAST@ 1.0, 1.5, 3.0, 4.5 and 9.0) against defects in materials and workmanship for a period of one year after installation or eighteen months from date of shipment, whichever occurs first. All are subject to the following terms and conditions below:

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. 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. 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.

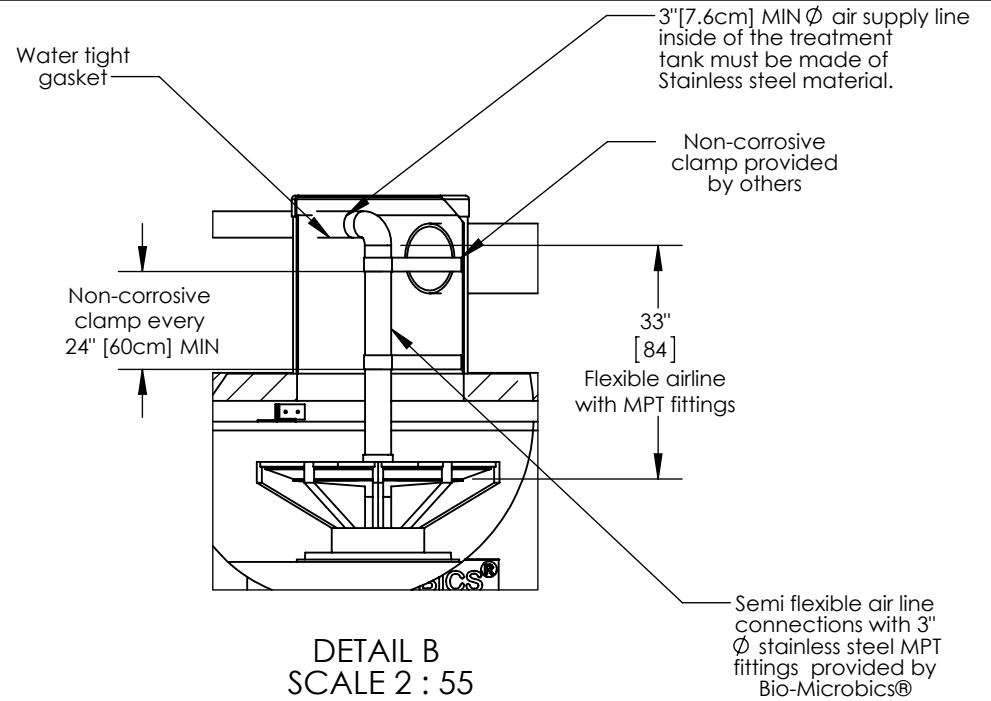
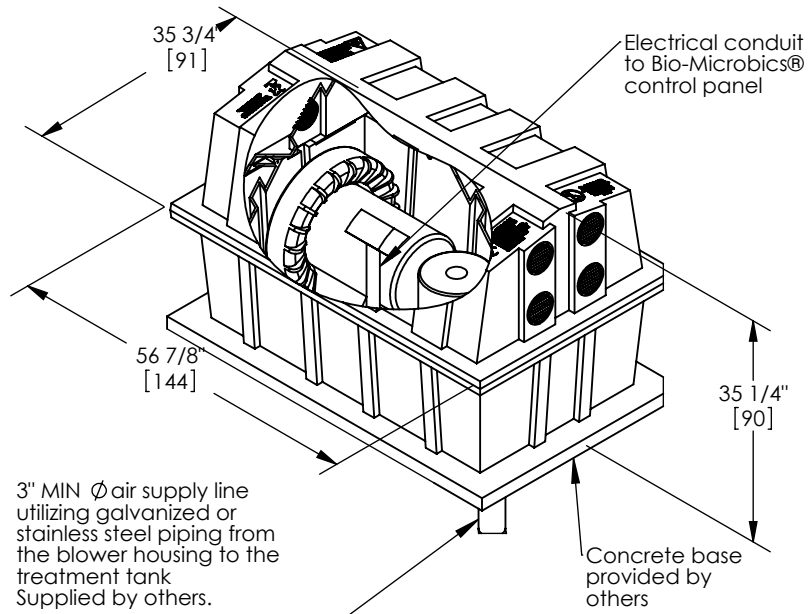
NO REPRESENTATIVE OR PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY OR TO ASSUME FOR BIO-MICROBICS, INC., ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. Contact your local distributor for parts and service.

DO NOT SCALE UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]		 <p>HighStrengthFAST 4.5 FAST Unit</p>	
WEIGHT	lb	SIZE	DRAWING NUMBER
		A	HSFAST 4.5 Specifications
DRAWN	5/10/2006	CHECKED	PF 12/17/2014
		REVISED	12/17/2014
		REV.	

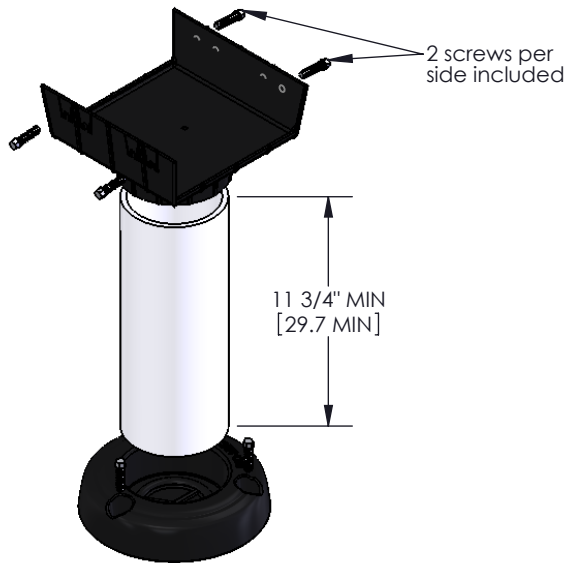
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SHEET  
2 OF 3



Minimum leg extension assembly see notes 1-4



Notes

- Secure leg extension to the FAST® unit by placing two screws on each side of the leg extension (4 screws per foot are included).
- Cut 4" schd. 40 PVC pipe (not included) to obtain the desired height. Minimum pipe length of 11 3/4" [29.7cm]. For heights greater than 18" [45.7cm] use schd. 80 PVC pipe (not included). Consult factory for extending leg beyond 36" [91 cm].
- Anchor the leg extensions to the tank with non-corrosive hardware (not included) at the provided mounting points.
- If less than the minimum of 12 inches [30.5 cm] is used between the lowest point of the insert and the base of the tank, consult factory for approval.
- The air supply line into the FAST® unit must be secured to prevent vibration induced damage. The air supply line should be secured with a non-corrosive clamp every 2ft [0.6m] minimum. The unit is supplied with 3" Ø semi-flexible airline connections with stainless steel MPT fittings and sample U-shape pipe clamps.
- Tank, anchors, liner brace, piping conduit, blower, housing pad and vents are provided by others.

DO NOT SCALE  
UNLESS NOTED  
DIMENSIONS  
ARE IN INCHES  
[CENTIMETERS]  
TOLERANCES  
± 0.02 IN/IN  
[± 0.05 CM/CM]



HighStrengthFAST 4.5 FAST Unit

WEIGHT	lb	SIZE	DRAWING NUMBER	SHEET 3 OF 3
NAME	DATE	A	H5FAST 4.5 Details	
DRAWN	CTC 5/10/2006			
CHECKED	PF 12/17/2014		REVISED 12/17/2014 REV. INI-07-T	