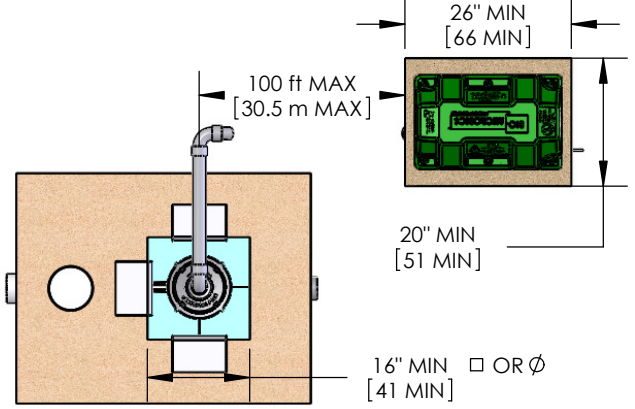
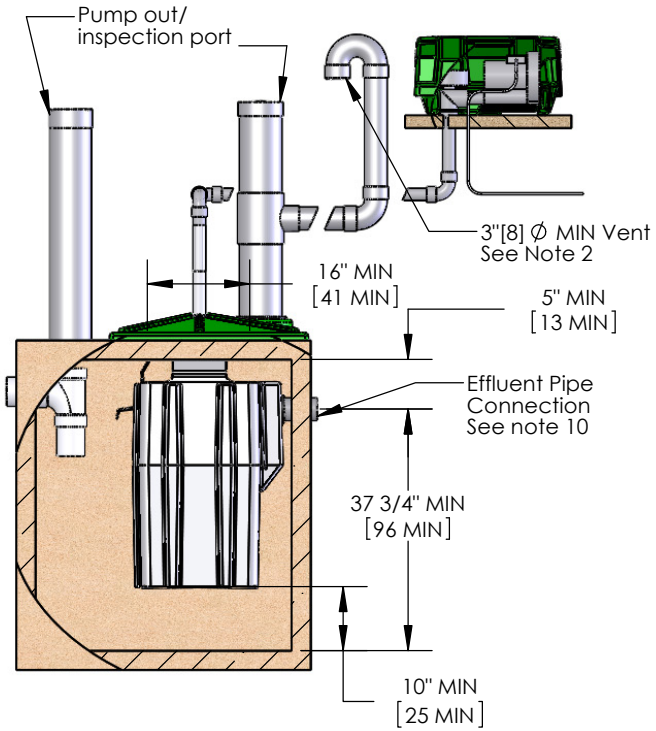
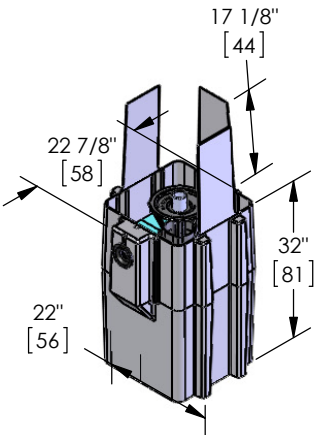



# RetroFAST® 0.150



**NOTES**

1. Airline piping to FAST® 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 26" X 20" X 2" [65 X 50 X 5cm] min.
2. 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.
3. All appurtenances to FAST® (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 the tank.
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 & optional blower control system by Bio-Microbics, Inc. See Installation Manual.
6. Fast® module must be secured by bolting through straps, then lid is bolted to the tank.
7. Any installation in which a RetroFAST lid is buried deeper than 3 feet, or where additional loading conditions may occur, a professional engineer should be consulted. Refer to Installation Manual for more details.
8. If less than the specified minimum is considered necessary, consult factory for guidance.
9. All piping and ancillary equipment installed after FAST must not impede or restrict free flow of effluent.
10. Specialized treatment levels may require specific features to be incorporated into the design. Consult factory for guidance.
11. Effluent hole will accept a 3" SCH 40 PVC pipe which can be then inserted into the existing 4" Discharge pipe in the septic tank. The RetroFAST® provides vigorous aeration in a septic tank which reverses the clogging process in a drain field.



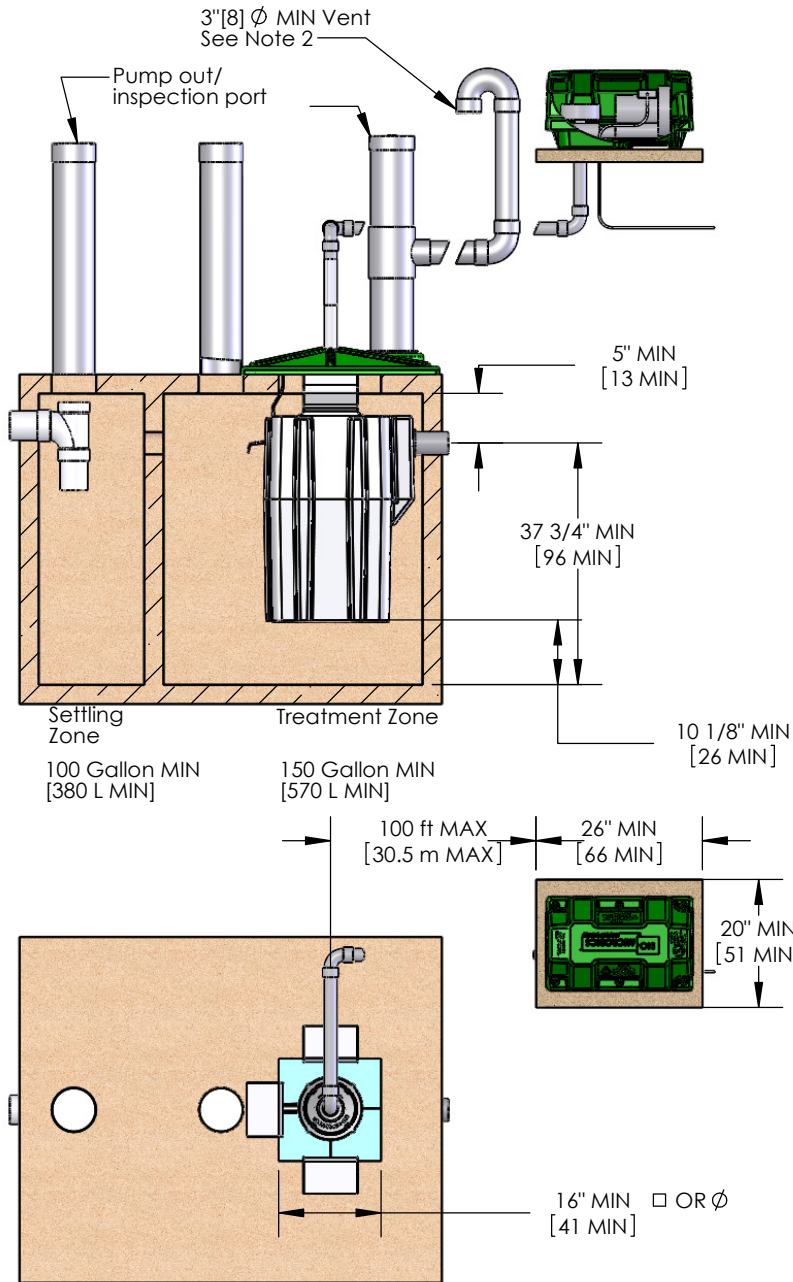
DO NOT SCALE		 BETTER WATER. BETTER WORLD.®		RetroFAST 0.150	
UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]					
WEIGHT	lb	SIZE	DRAWING NUMBER		
		A	RetroFAST®.15 Remediation		
DRAWN	CTC	DATE	5/5/2008		
CHECKED	PF	DATE	10/10/2013	REVISED	10/10/2013
				REV.	INI-02-B

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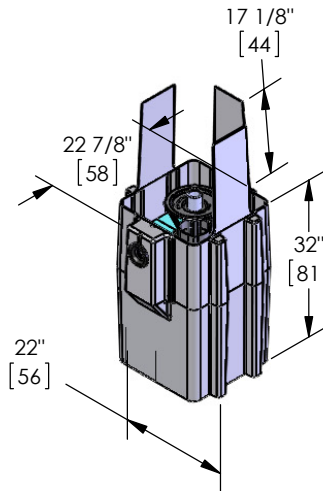
SHEET 1 OF 3


# RetroFAST® 0.150



## NOTES

1. Airline piping to FAST® 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 floor levels on a concrete base 26" X 20" X 2" [65 X 50 X 5cm] min.
2. 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.
3. All appurtenances to FAST® (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 the tank.
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 & optional blower control system by Bio-Microbics, Inc. See Installation Manual.
6. Fast® module must be secured by bolting through straps, then lid is bolted to the tank.
7. Any installation in which a RetroFAST lid is buried deeper than 3 feet, or where additional loading conditions may occur, a professional engineer should be consulted. Refer to Installation Manual for more details.
8. If less than the specified minimum is considered necessary, consult factory for guidance.
9. All piping and ancillary equipment installed after FAST must not impede or restrict free flow of effluent.
10. Specialized treatment levels may require specific features to be incorporated into the design. Consult factory for guidance.
11. Effluent hole will accept a 3" SCH 40 PVC pipe which can be then inserted into a 4" discharge pipe in the septic tank.



DO NOT SCALE UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]		 BETTER WATER. BETTER WORLD. <sup>®</sup> RetroFAST 0.150	
WEIGHT	lb	SIZE	DRAWING NUMBER
		A	RetroFAST®.15 New Construction
DRAWN	CTC	DATE	5/5/2008
CHECKED	PF	10/10/2013	REVISED 10/10/2013
		REV.	INI-02-B


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Specifications for RetroFAST 0.150 Wastewater Treatment System

1. GENERAL  
The contractor shall furnish and install (1) RetroFAST 0.150 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, insert lid, blower assembly, and blower housing. The RetroFAST 0.150 unit shall be situated within tank that exceeds the minimum dimensions and a 16" [41cm] tank opening. 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 RetroFAST 0.150 treatment system shall be capable of treating the wastewater produced by typical family activities (bath, laundry, kitchen, etc.) ranging from (1) one to (3) three persons and not to exceed 150 US Gallons per day (570 LPD). For systems installed for rejuvenation of a failed drainfield the flow can exceed the maximum flow rate by up to 30%. Consult factory for guidance.
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 RetroFAST 0.150 unit shall come equipped with a regenerative type blower capable of delivering 9-24 CFM [15-41m3/hr]. The blower assembly shall include an inlet filter with metal filter element. The blower shall be mounted outside the tank on a contractor supplied concrete base. Blower piping to the tank shall use non-corrosive material (PVC, Galvanized, or stainless Steel). Do not run galvanized pipe inside the treatment tank. Refer to Installation Manual for further details.
5. REMOTE MOUNTED BLOWER  
The blower shall be mounted up to 100 feet [30.5 meters] away from the RetroFAST unit on a contractor supplied concrete base. 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 RetroFAST shall be provided and installed by the contractor.
6. 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 110/220 VAC, single phase, 2.3/1.0 Amps. Input power on 50Hz electrical systems 127/230 VAC, single phase 0.253 kw/hr. All conduit and wiring shall be supplied by contractor.
7. INSTALLATION AND OPERATING INSTRUCTIONS  
All work must be done in accordance with local codes and regulations. Installation of the RetroFAST 0.150 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.
8. OPTIONAL ALARM PANEL  
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.
9. FLOW AND DOSING  
FAST@ systems have been successfully designed, tested and certified receiving gravity, 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. The flow rate shall not exceed 5 gpm (19 Lpm)
10. WARRANTY  
Bio-Microbics, Inc. warrants all new RetroFAST@ models (RetroFAST 0.150, 0.250, and 0.375) against defects in materials and workmanship for a period of two years after installation or three years from date of shipment, whichever 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 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		 BETTER WATER. BETTER WORLD. <sup>®</sup>	
UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]			
RetroFAST 0.150			
WEIGHT	lb	SIZE	DRAWING NUMBER
		A	RetroFAST@ 0.150 Specification
NAME	DATE		
DRAWN	5/5/2008		
CHECKED	PF	10/10/2013	REVISED 10/10/2013
			REV.

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