

NOTES

- Blower piping to FAST® may not exceed 100 FT [30.5m] total length and use 4 elbows maximum. For distances greater than 100 FT [30.5m] - consult factory. Blower must be located above flood/standing water levels on a concrete base 24" X 18" X 1" [61X45.7X2.6c] minimum.
- Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/at least 7.1 sq in. [45.8 sq. cm] open surface area. Secure with stainless steel screws (see sheet 4 of 4 *MicroFAST® 0.90 Details.*)
or
Run vent to desired location and cover opening with vent grate w/at least 7.1 sq in. [45.8 sq. cm] of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
- All appurtenances to FAST® (e.g. tank pump outs, etc.) must conform to all country, state, province, and local plumbing and electrical codes. The blower control system is provided by Bio-Microbics, Inc.
- Tank volume must be increased by 20% if minimum of 10 inches [25.5cm] is used between the unit and the base of tank. Consult factory for approval.
- The primary compartment may be a separate tank.
- Either the influent pipe tee shall be fitted with a pipe cap or the baffle separating the two zones shall be extended to the top of the tank. If choosing to use the pipe cap, then the baffle shall be at least 3" [8] higher than the water level as shown on the drawing.
- All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access
- Tank, anchors, piping, conduit, blower housing pad and vents are provided by others.
- All piping and ancillary equipment installed after FAST® must not impede or restrict free flow of effluent.
- No more than 4 FT [1.2 m] of fill may be placed over unit lid. Unit may stand inside tank (see sheet 2 of 4 *MicroFAST® 0.90 with feet*). Refer to installation manual for more details.

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

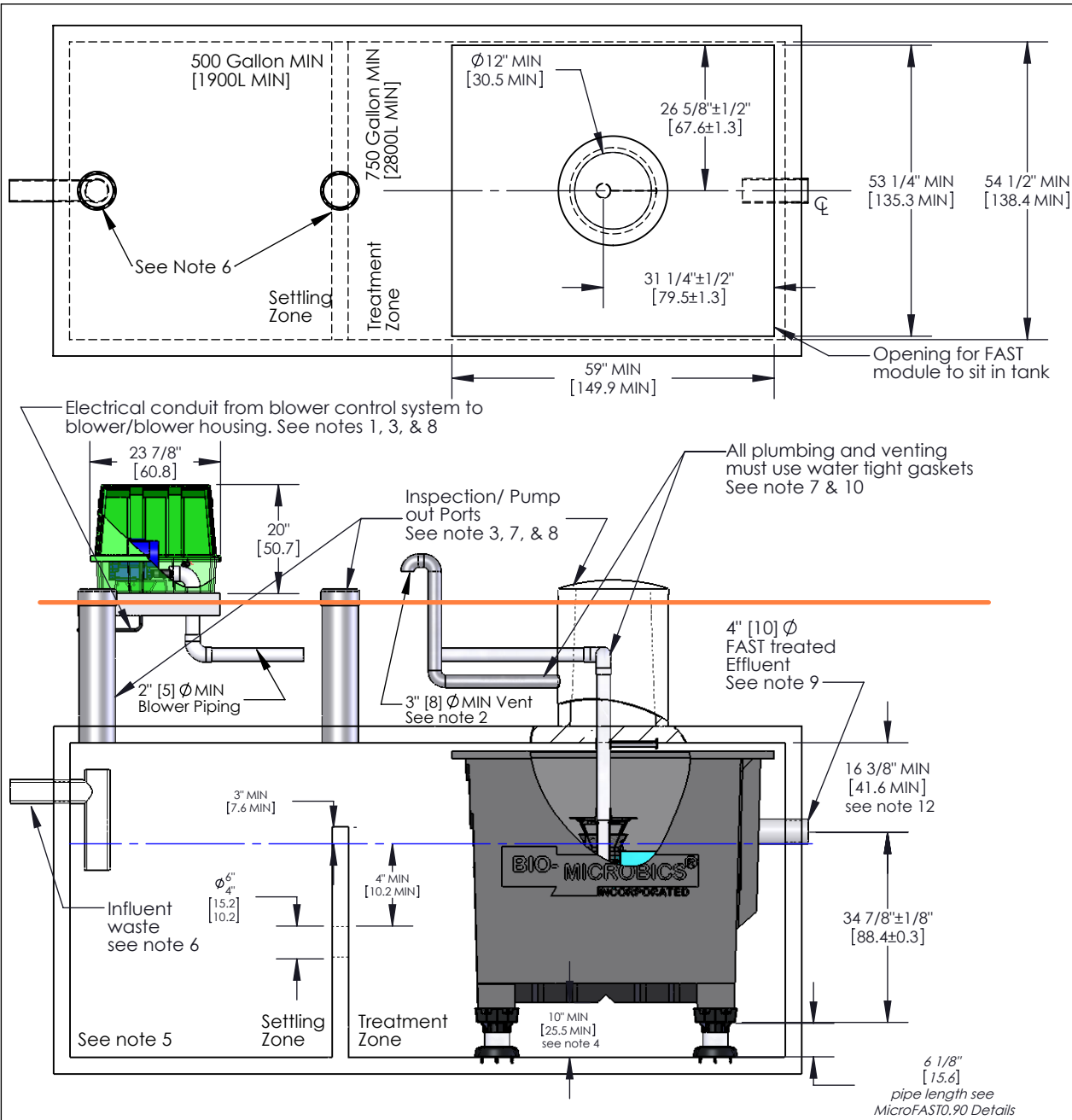


MicroFAST 0.90 FAST Unit

WEIGHT		lb	SIZE	DRAWING NUMBER		SHEET 1 OF 4
NAME	DATE		A	MicroFAST® 0.90 with lid		
DRAWN	CTC	12/18/2006				
CHECKED	PF	7/22/2008	REVISED	Tuesday, July 22, 2008	REV.	INI-01-E

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BIO-MICROBICS INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BIO-MICROBICS INC. IS PROHIBITED. DESIGN AND INVENTION RIGHTS ARE RESERVED. IN THE INTEREST OF TECHNOLOGICAL ADVANCEMENT, ALL PRODUCTS ARE SUBJECT TO DESIGN AND OR MATERIAL CHANGE WITHOUT NOTICE.

BIO-MICROBICS © 2008



NOTES

- Blower piping to FAST® may not exceed 100 FT [30.5m] total length and use a maximum of 4 elbows in the piping system (@ 100FT [30m]). For distances greater than 100 FT [30m] consult factory. Blower must be located above flood levels on a concrete base 24" X 18" X 1" [61 X 45.7 X 2.6cm] min.
- Vent to be located above finish grade or higher to avoid infiltration. Cap with a vent grate with at least 7.1 sq in.[45.8 sq. cm] open surface area. Secure with stainless steel screws (see sheet 4 of 4 MicroFAST® 0.90 Details).
or
Run Vent to desired location and cover opening with a vent grate with at least 7.1 sq in.[45.8 sq. cm] open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
- All appurtenances to FAST® (e.g. tank pump outs, etc.) must conform to all applicable country, state, province, and local plumbing and electrical codes. Blower control system by Bio-Microbics, Inc.
- Tank volume must be increased by 20% if minimum of 10 inches [25.5cm] is used between the unit and the base of tank. Consult factory for approval.
- The primary compartment may be a separate tank.
- Either the influent pipe tee shall be fitted with a pipe cap or the baffle separating the two zones shall be extended all the way to the top of the tank. If choosing to use the pipe cap, then the baffle shall be at least 3" [8cm] higher than the water level as shown on the drawing.
- All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
- Tank, piping, conduit, blower housing pad and vents are provided by others.
- All piping and ancillary equipment installed after FAST must not impede or restrict free flow of effluent.
- 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 2' min [5cm].
- Min height may be reduced, consult factory and reference "Short-FAST-Module-Procedure.pdf"
- Refer to sheet 4 of 4 MicroFAST® 0.90 Details drawing for leg extensions requirements.

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



MicroFAST 0.90 FAST Unit

WEIGHT		lb	SIZE	DRAWING NUMBER		SHEET 2 OF 4
NAME	DATE	A	MicroFAST® 0.90 with feet			
DRAWN	CTC	12/18/2006				
CHECKED	PF	7/22/2008	REVISED	Tuesday, July 22, 2008	REV.	INI-01-E

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BIO-MICROBICS INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BIO-MICROBICS INC. IS PROHIBITED. DESIGN AND INVENTION RIGHTS ARE RESERVED. IN THE INTEREST OF TECHNOLOGICAL ADVANCEMENT, ALL PRODUCTS ARE SUBJECT TO DESIGN AND OR MATERIAL CHANGE WITHOUT NOTICE.

6 1/8"
[15.6]
pipe length see
MicroFAST0.90 Details

BIO-MICROBICS © 2008

Specifications for MicroFAST 0.90 Wastewater Treatment System

1. GENERAL

The contractor shall furnish and install (1) MicroFAST@0.90 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, or lid, blower assembly, blower controls and alarms. All other items will be provided by others. The MicroFAST 0.90 unit shall be situated within a 750 Gallon[2800L] minimum compartment or tank as shown on the plans, or in a 1250 gallon [4700L] one compartment tank. Suggested maximum settling zone is (1X) the daily flow. 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 MicroFAST 0.90 treatment system shall be capable of treating the wastewater produced by typical family activities (bath, laundry, kitchen, etc.) ranging from (1) one to (11) eleven persons and not to exceed 900 US Gallons per day (3400LPD).

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 MicroFAST 0.90 unit shall come equipped with a regenerative type blower capable of delivering 17-25 CFM [31-46 m3/hr]. The blower assembly shall include an inlet filter with metal filter element.

5. REMOTE MOUNTED BLOWER

The blower shall be mounted , up to 100 feet [30.5 meters] maximum, from the MicroFAST unit on a contractor supplied concrete base. The blower must not set in standing water and its elevation must be higher than the normal flood level. A two-piece, rectangular housing shall be provided. The discharge air line from the blower to the MicroFAST System 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, 2.8/1.4 Amps. Input power on 50Hz electrical systems 127/230 VAC, single phase 0.352 kw/hr. All conduit and wiring shall be supplied by contractor.

7. CONTROLS

The control panel provides power to the blower with an alarm system consisting of a visual and audible alarm capable of signaling blower circuit failure and high water conditions. The control panel is equipped with SFR@ (Sequencing Fixed Reactor) timed control feature. A manual silence button is included.

8. INSTALLATION AND OPERATING INSTRUCTIONS

All work installation and connections of the MicroFAST 0.90 shall be done in accordance with the written instructions provided by the manufacturer and in accordance with all applicable local codes and regulations. Operations manuals shall be furnished which will include a description of installation, operation, and system maintenance procedures.

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 help ensure even flow.


10.WARRANTY

Bio-Microbics, Inc. warrants all new residential FAST@ models (MicroFAST@ 0.50, 0.75, 0.90, and 1.5) against defects in materials and workmanship for a period of two years after installation or three years from date of shipment, whichever occurs first, subject to the following terms and conditions, (all other FAST@ system models are warranted 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 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 house 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.

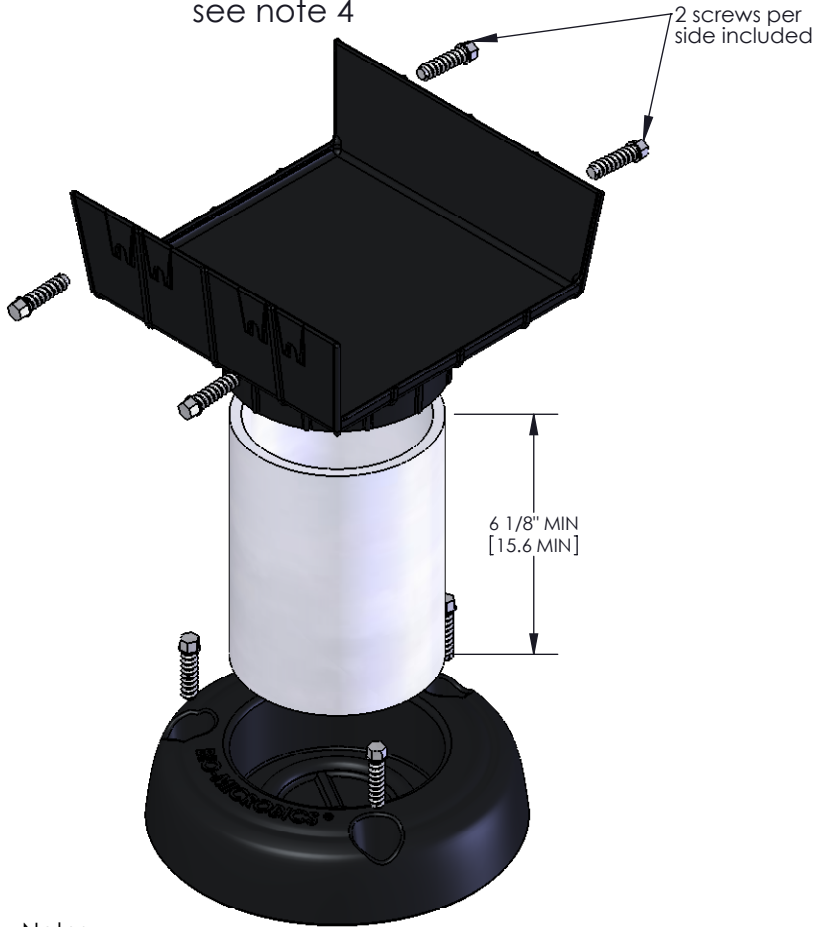
THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. BIO-MICROBICS SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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.

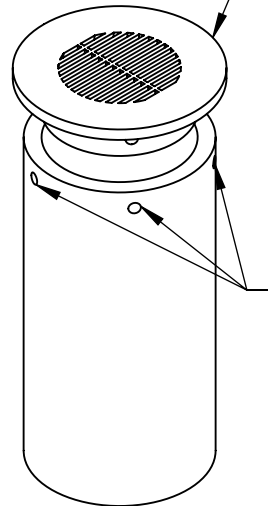
<p>DO NOT SCALE UNLESS NOTED DIMENSIONS ARE IN INCHES [CENTIMETERS] TOLERANCES ± 0.02 IN/IN [± 0.05 CM/CM]</p>	 <p>MicroFAST 0.90 FAST Unit</p>							
			<p>WEIGHT lb</p>	<p>SIZE A</p>				
<table border="1"> <tr> <td>NAME</td> <td>DATE</td> </tr> <tr> <td>DRAWN CTC</td> <td>12/18/2006</td> </tr> <tr> <td>CHECKED PF</td> <td>7/22/2008</td> </tr> </table>	NAME	DATE	DRAWN CTC	12/18/2006	CHECKED PF	7/22/2008	<p>DRAWING NUMBER</p> <p>MicroFAST@ 0.90 Specifications</p>	<p>SHEET 3 OF 4</p>
NAME	DATE							
DRAWN CTC	12/18/2006							
CHECKED PF	7/22/2008							
<p>REVISED Tuesday, July 22, 2008</p>		<p>REV. INI-02-E</p>						

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BIO-MICROBICS INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BIO-MICROBICS INC. IS PROHIBITED. DESIGN AND INVENTION RIGHTS ARE RESERVED. IN THE INTEREST OF TECHNOLOGICAL ADVANCEMENT, ALL PRODUCTS ARE SUBJECT TO DESIGN AND OR MATERIAL CHANGE WITHOUT NOTICE. BIO-MICROBICS © 2008

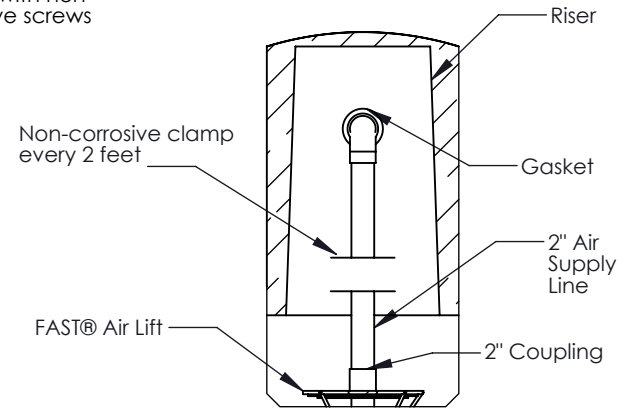
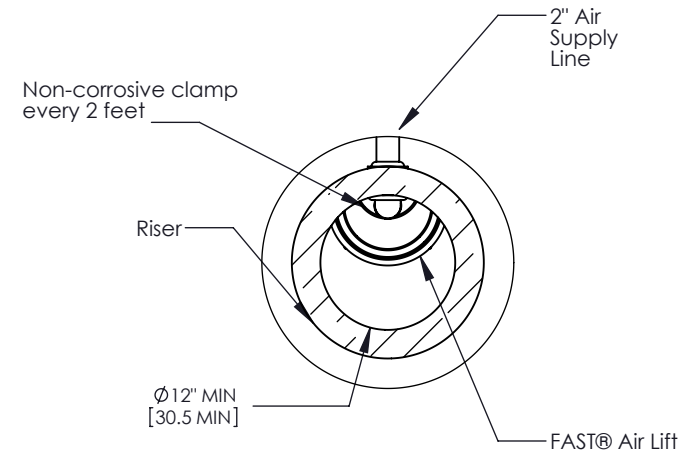
Minimum leg extension assembly
see note 4



NDS 6" Grate MIN 7.1 SQ
in open surface area



FAST® Lid
Vent Option



Alternate Air Supply Option

Notes

1. Secure leg extension to the FAST® unit by placing two screws on each side of the leg extension (4 screws per foot are included).
2. Cut 4" [10] schd. 40 PVC pipe (not included) to obtain the desired height. Minimum pipe length of 6 1/8" [15.56]; Original leg extension height requires a pipe length of 11 1/8" [28.26]. For heights greater than 18" [45.7] use schd. 80 PVC pipe (not included). Consult factory for extending leg beyond 36" [91].
3. Anchor the leg extensions to the tank with non-corrosive hardware not included at the provided mounting points.
4. Increase minimum tank volume by 20% if minimum leg extension is used.
5. The air supply line into the FAST® unit must be secured so as to prevent damage from pipe vibration. See all notes on *MicroFAST® 0.90 with lid* drawing.
6. 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 2' MIN.
7. Tank, anchors, 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]



MicroFAST 0.90 FAST Unit

WEIGHT	lb	SIZE	DRAWING NUMBER	SHEET 4 OF 4
NAME	DATE	A	MicroFAST® 0.90 Details	
DRAWN	CTC	12/18/2006		
CHECKED	PF	7/22/2008	REVISED Tuesday, July 22, 2008	REV. INI-02-E

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BIO-MICROBICS INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BIO-MICROBICS INC. IS PROHIBITED. DESIGN AND INVENTION RIGHTS ARE RESERVED. IN THE INTEREST OF TECHNOLOGICAL ADVANCEMENT, ALL PRODUCTS ARE SUBJECT TO DESIGN AND OR MATERIAL CHANGE WITHOUT NOTICE.

BIO-MICROBICS © 2008