



# Advanced Feature Controller

## Model 2527-0142

### INSTALLATION AND OPERATION MANUAL

Unit Serial Number _____
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All quality FoamPro products are ruggedly designed, accurately machined, carefully assembled, thoroughly inspected and tested. In order to maintain the high quality of your unit, and to keep it in a ready condition, it is important to follow the instructions on care and operation. Proper use and good preventive maintenance will lengthen the life of your unit. ALWAYS INCLUDE THE UNIT SERIAL NUMBER IN CORRESPONDENCE.

# 1 Safety

Please read all of the following safety precautions and follow carefully. They are important to the prevention of personal injury or damage to the equipment.

1. Do not pump at pressures higher than the maximum recommended pressure (400 psi [28 BAR]).
2. Do not permanently remove or alter any guarding devices or attempt to operate the system when these guards are temporarily removed.
3. **Always disconnect the power source before attempting to service any part of the pump.** Note this system contains a capacitor which will hold a charge for a time after power is disconnected. Take care to dissipate this charge by connecting a 12 or 24 volt test lamp from the pump base to the positive main power terminal.
4. **Release all pressure** within the system before servicing any of its components.
5. **Drain all concentrate and water** from the discharge system before servicing any of its component parts.
6. Check all hoses for weak or worn conditions after each use. Ensure that all connections and fittings are tight and secure.
7. From the foam pump outlet to the injector fitting, use only pipe, hose, and fittings that are rated at or above the maximum pressure (400 psi [28 BAR] minimum for 2001, 2002, 2024 and 3000 series systems, and 600 psi [41 BAR] for 2002HP) rating that the water pump system operates.
8. Any electrical system has the potential to cause sparks during service. Be sure to eliminate explosive or hazardous environments during service/repair.
9. **CAUTION:** Do not attempt to operate the system at or above a temperature of 160°F [71°C].
10. **CAUTION:** Be sure that the electrical source of power for the 2001, 2002, 2002HP, 2024 and 3000 series units are 12 or 24 volt, all with negative-ground DC. The systems require a minimum current rating as listed in the appropriate OIPM for that model.
11. **CAUTION:** Periodically inspect the pump and the system components. Perform routine preventive maintenance as required. Failure to perform routine maintenance may damage the pump. See the maintenance section of this manual for recommended maintenance procedures and intervals between maintenance work.
12. **CAUTION:** Read and understand the “Operating Instructions” section before attempting to operate the unit.
13. **CAUTION:** Always disconnect the ground straps and control cables from the Digital Display Control Module or other FoamPro equipment before electric arc welding at any point on the apparatus. Failure to do so will result in a power surge through the unit that could cause irreparable damage to the display or other system components.
14. **CAUTION:** The cables shipped with each FoamPro unit are tested at the factory. Improper handling and forcing connections can damage these cables which could result in other system damage.

## 2 Introduction & Operation

The FoamPro Advanced Feature Digital Display Control Module (AFC) is designed to add specific options to the functionality of your 2000 or 3000 Series FoamPro System. Basic installation, setup, calibration and operation are all the same as the standard controller (Reference Forms 829, 836, 860, 903 and 904). The basic operation of the controller remains the same as the standard controller with the following added features:

### **AUTOMATIC “ON” FEATURE**

This programmable feature allows the operator to remotely power up the 2000 or 3000 FoamPro system directly into the “ON” mode. In this mode, when power is supplied to the system, the system is powered and ready for operation without pressing the red “ON” button. There is an approximate 5-second delay before system operations will begin, which allows the system to run the self diagnostics programming. When water flow is present, the system will start to operate automatically. The “ON” button, when depressed, will turn the system on and off the same as the standard controller.

An example of when this feature would be used is when the operator always requires foam operations from the initial setup of equipment. The system may be powered up along with the engagement of the apparatus pump PTO. This would allow the FoamPro system to be active and running with the first water flow to the discharge from the initial engagement without adding extra operation procedures for the engineer.

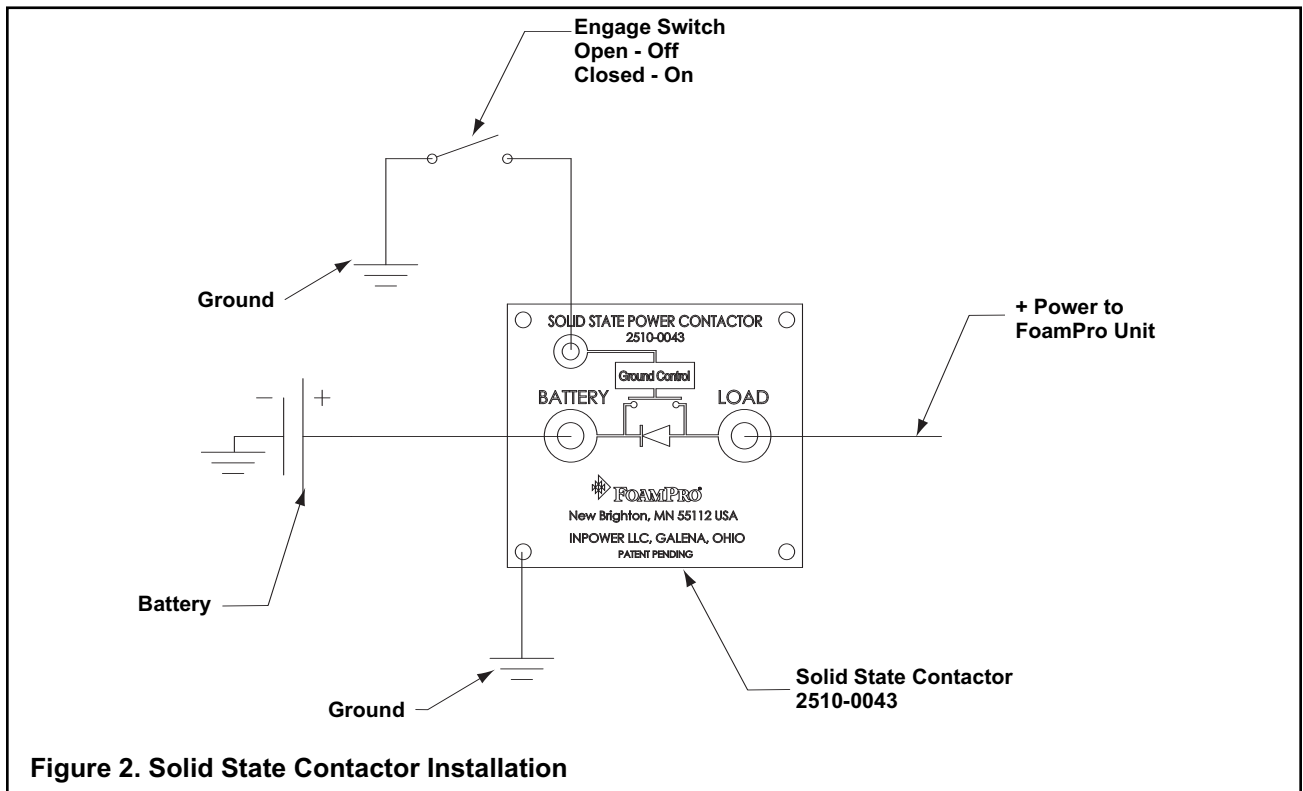
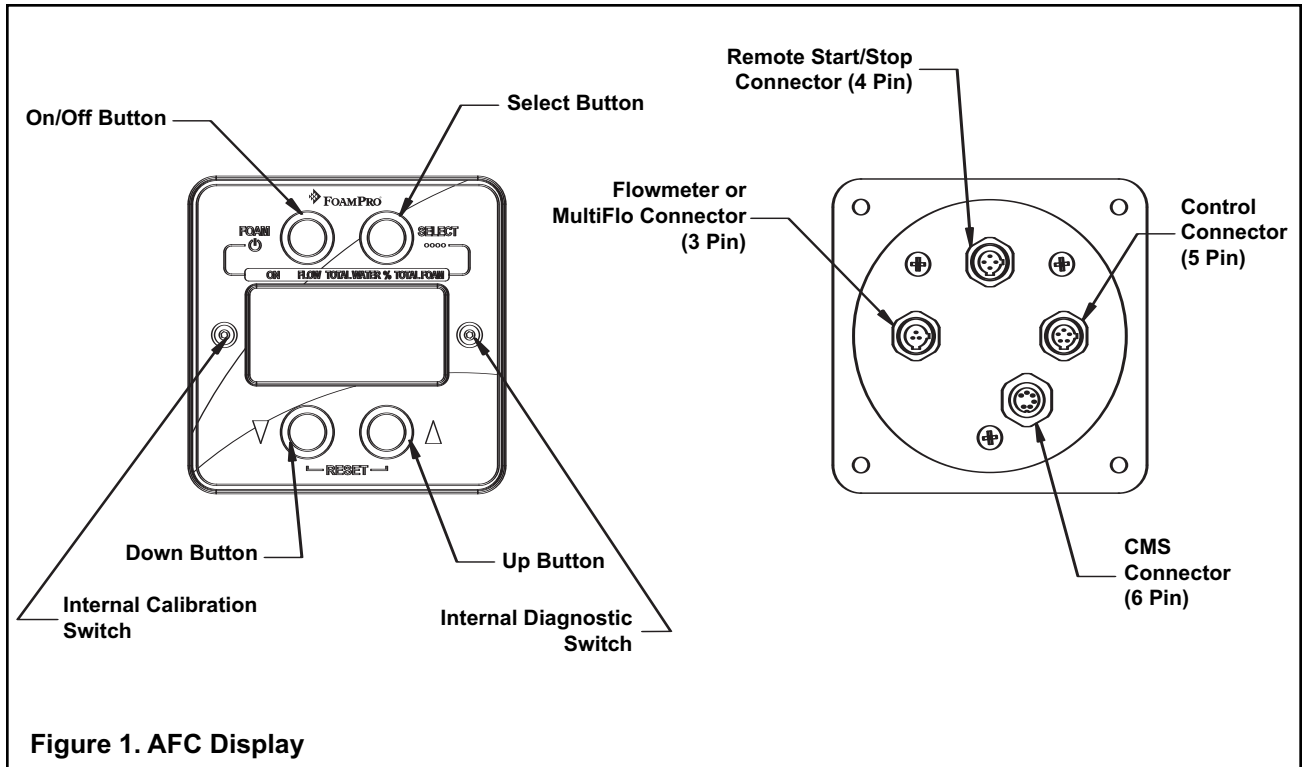
Another example of this type of operation would be in conjunction with the engagement of the compressor in a CAF system.

### **FULL TIME REMOTE START/STOP FEATURE**

This feature was changed from a programmable feature to a full-time feature. When using the Remote Start/Stop module with the FoamPro 2000 or 3000 system, the Concentrate Management System (CMS) can be operated at the same time. The Remote Start/Stop module will operate and install in the same manner as before, but it will not be a programmable feature. The FoamPro AFC will automatically recognize that this feature is being used when the 4-pin cable is attached to the receptacle on the back of the controller.

### **FULL TIME CONCENTRATE MANAGEMENT SYSTEM FEATURE**

This feature was changed from a programmable feature to a full-time feature. The CMS module can now be used concurrently with the Remote Start/Stop feature without changing or setting the defaults manually. When a CMS module is installed to the FoamPro AFC, it will automatically recognize that this feature is being used. The interface wiring has changed for this feature and is described in this manual. The CMS operation, set-up and calibration will remain the same as with the standard FoamPro system controller. When using this feature, you will need to purchase the 2520-0091 CMS interface cable.



# 3 Installation & Setup

Installation procedures for the FoamPro system and the AFC are identical to those of the standard controller with the exceptions that follow.

## AUTOMATIC “ON” FEATURE

Installation for the AFC, when using the Auto “ON” feature, is the same as for the standard system controller. The system must be installed as shown in the appropriate operator’s manual (Ref. Forms 829, 836, 860 or 903) except for the main power lead to the system itself. The main power lead will be switched remotely via a solenoid or a separate high load master switch. This lead must still originate from the battery or battery master disconnect switch. A solenoid or secondary high-load solenoid switch may be installed in this power line to turn on and off power to the system.

The usage of the FoamPro Solid State Contactor (SSC) is recommended to help protect the FoamPro system from excessive voltage surges that can take place in fire apparatus systems. The solid state contactor also has a higher life expectancy than mechanical relay options used for this application.

The SSC allows the operator to easily power the system up and to shut it down with the use of a simple switch. The following diagram depicts the installation of this accessory (see figure 2 on page 4).

The FoamPro AFC is factory defaulted to the automatic “ON” mode. To use the normal operating mode, the default must be reset to the AUTO OFF mode. This is done by following the procedure as listed:

1. Remove the cover screws for setup and diagnostics modes (see figure 1 on page 4).
2. Enter the set-up mode by pressing the internal switch button on the left side of the controller.

3. Enter default set mode by pressing the internal switch on the right side of the controller.
4. The display will flash “CONF” and “AS.ON” alternately.
5. Press the DOWN button once. The display will now flash “CONF” and “AS.OFF” alternately.
6. Press the setup internal switch on the left side of the controller once. This places you into the normal operational mode.
7. Replace both cover screws and O-ring seals.

**CAUTION: When exiting the setup mode and defaulting to the auto on mode, the system will be turned on upon exit.**

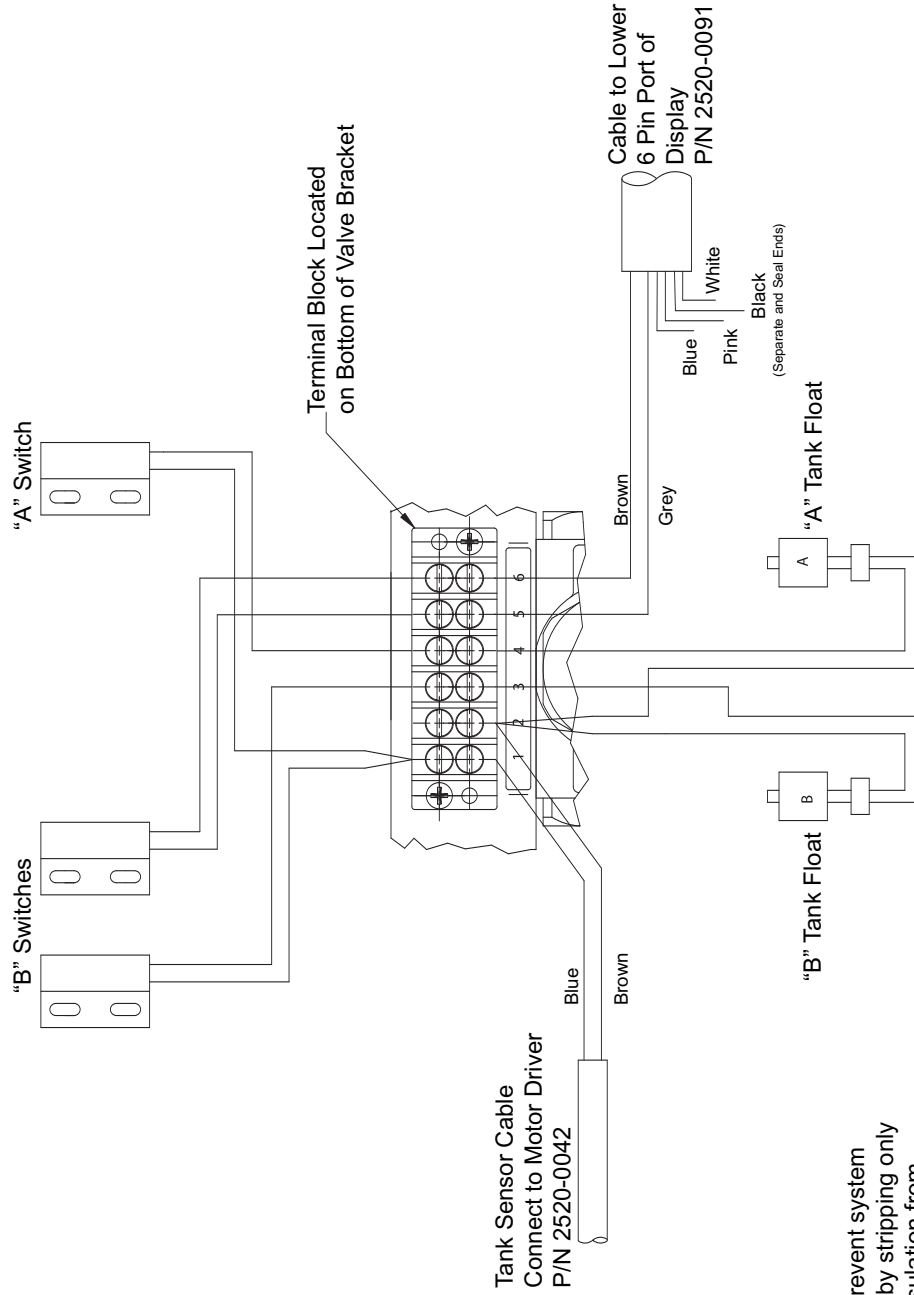
To reset the default to the AUTO ON mode of operation, follow the preceding procedure except press the UP button once.

## CONCENTRATE MANAGEMENT SYSTEM FEATURE

Installation for the AFC, when using the CMS feature, is the same as for the standard system controller. The system must be installed as shown in the appropriate operator’s manual, except for the interface between the controller and the CMS connections. Please reference the main operator’s manual (Form 828 or 887) that came with your CMS for the general installation notes and procedures.

Revised wiring diagrams are shown (see fig. 3 or 4) that reflect the wiring changes for the manual and electronic CMS systems. NOTE: The only changes to the wiring are to the interface connections between the controller and the CMS.

# Manual Dual-Tank Electrical Hookup for AFC



**CAUTION:** Prevent system short circuits by stripping only 1/4 inch of insulation from wire ends when making connections.

Figure 3

# Electronic Concentrate Management System Electrical Hookup for AFC

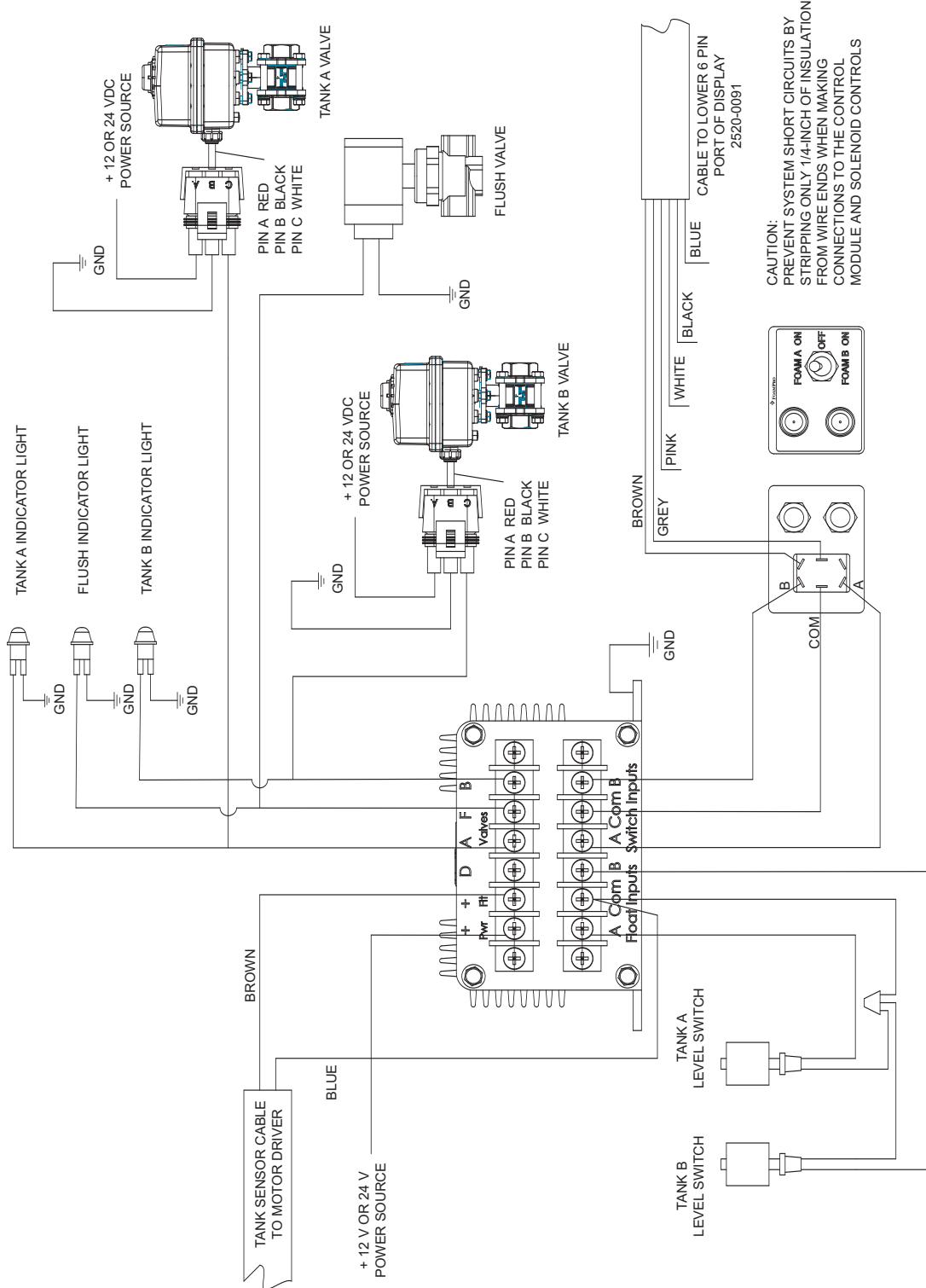


Figure 4

# 4 Warranty

FoamPro warrants to the original purchaser, each new pump, system or other product of its own manufacture, for a period of one year from the date of shipment from the factory, to be free from defects in material and workmanship under normal use and service. "Normal use and service" means not in excess of recommended maximum speeds, pressures, and temperatures, or handling fluids not compatible with components materials, as noted in applicable FoamPro product catalogs, technical literature, and instructions. This warranty shall not apply to any pump, system or other product which shall have been repaired or altered to adversely affect the performance or reliability of the pump, system or other product.

Neither this warranty nor any implied warranty apply to damage or harm caused by any or all of the following: (1) Freight damage; (2) Freezing damage; (3) Damage caused by parts and/or accessories or components not obtained from or approved by FoamPro; (4) ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, OTHER THAN INJURY TO THE PERSON, ARISING FROM THE USE OF ANY PUMP OR OTHER PRODUCT MANUFACTURED BY FOAMPRO EXCEPT in states that do not allow the exclusion or limitation of incidental or consequential damages; (5) Damage due to misapplication and/or misuse; (6) Normal wear of moving parts or components affected by moving parts.

The liability of FoamPro under the foregoing warranty is limited to the repair or replacement at FoamPro's option without charge for labor or materials of any parts upon return of the entire pump, system or other product or of the particular part to the FoamPro factory within the warranty period, at the sole expense of the purchaser, which part shall upon examination appear to FoamPro's satisfaction to have been defective in material and workmanship.

The liability of FoamPro under any theory of recovery (except any express warranty where the remedy is set forth in the above paragraph) for loss, harm or damage, shall be limited to the lesser of the actual loss, harm or damage or the purchase price of the involved pump, system or other product when sold by FoamPro to its customer.

FoamPro expressly warrants its pumps and other products as above stated. THERE ARE NO OTHER EXPRESS WARRANTIES. ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF PURCHASE BY THE ORIGINAL PURCHASER EXCEPT in states that do not allow time limitations on implied warranties. THERE IS NO IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY WHEN THIS PRODUCT IS PUT TO RENTAL USE.

No person including any dealer or representative of FoamPro is authorized to make any representation or warranty concerning FoamPro products on behalf of FoamPro, or to assume for FoamPro the obligations contained in this warranty. FoamPro reserves the right to make changes in design and other changes and improvements upon its products without imposing any obligations upon itself to install the same, upon its existing products then in process or manufacture.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## IMPORTANT NOTICE

It is imperative to package all FoamPro components properly, **before** shipment (with Return Goods Authorization attached) back to FoamPro. The FoamPro contains electronic components that may receive damage from improper shipping procedures! All FoamPro components shipped back to FoamPro will pass through Quality Control Inspection, and will be photographed after the box is opened. Any shipping damage, such as superficial scratches, nicks, etc., to the unit makes it unusable (even after the internal warranty problem is repaired) and thus must be refinished to "like-new" condition during the warranty process. *You are responsible for any physical damage occurring to FoamPro components at your facility and during shipment back to FoamPro.*

Package the FoamPro, complete with all the recommended parts the Customer Service representative requires (i.e., Digital Display control with all premolded wire cables etc.) in its original carton with the Styrofoam and other packaging materials, as it was received at your facility.

FoamPro appreciates your attention in this matter, as we feel it will help us to serve you in a better fashion, while keeping the cost of the FoamPro product competitive. Thank you.

