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.
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NOTE TO SYSTEM INSTALLER
IMPORTANT: Please provide a copy of the FoamPro manual to the end user of the equipment. For additional manuals, contact Hypro Corporation by FAX (651) 766-6614 or call (651) 766-6300. Ask for Form No. 825.
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 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 and 2002 units are 12 volt, the 2001/24 and 2002/24 are 24 volt, all with negative-ground DC. The systems require a minimum current rating of at least:
    - 22 amps for System 24 Volt 2001;
    - 41 amps for System 12 Volt 2001;
    - 56 amps for System 12 Volt 2002 & 2002HP;
    - 30 amps for System 24 Volt 2002 & 2002HP.
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 A QUICK LOOK AT HOW THE SYSTEM WORKS

The FoamPro 2001 and 2002 systems are electric motor-driven, flow-based proportioning systems that measure water flow and then inject the proportional amount of foam concentrate to maintain the preset percentage. The basic FoamPro 2001 and 2002 systems are shown in Figure 1. The systems will accurately deliver from 0.1% to 3.0% foam concentrate to the foam injector fitting. The flowmeter measures the water flow and sends a signal to the Digital Display Control Module. Another sensing device monitors the foam pump output. Constant comparison of these two information signals by the computer ensures maintenance of the desired proportion of foam concentrate at all times based on the water flow rate, independent of any variations in fire pump intake or discharge pressures. As water flow increases or decreases, the foam concentrate rate of injection is increased or decreased automatically to correspond to the water flow.

Foam concentrate is injected directly into the water stream on the discharge side of the water pump. It is then fed as foam solution by the main fire pump into a standard fog nozzle, an air aspirated nozzle, or CAFS equipment.

Since foam is injected on the discharge side of the fire pump and check valves are to be used at installation, contamination of the booster tank, fire pump and relief valve with foam concentrate is eliminated.

Order optional system components listed in Section 3 to accommodate system design and requirements.

---

Figure 1. FoamPro System Layout
3 SYSTEM COMPONENT DESCRIPTION

STANDARD FOAMPRO 2001 and 2002 EQUIPMENT

The following components are packaged with the FoamPro 2001 and 2002:
1. DIGITAL DISPLAY CONTROL MODULE
2. MOLDED CABLES
3. FOAM PUMP ASSEMBLY
4. INSTRUCTION PLATE
5. TANK LOW LEVEL SENSOR (One required. Not packaged with the unit. Order separately.)
6. CALIBRATE/INJECT VALVE with BUSHING (Attached to the pump outlet connection.)
7. INLET LINE STRAINER WITH NIPPLE

8. FOAMPRO PADDLEWHEEL FLOWMETER
(The flowmeter is a required component and must be ordered separately. When ordering the 2001 or 2002, specify the flowmeter size based on end use requirements. The flowmeters are available with 1-1/2 NPT x 1" Bore, 1-1/2, 2, 2-1/2, 3, and 4 inch NPT threads. (Part numbers and flow ranges for the various flowmeters can be found on Page 41.)

9. 1/2 INCH NPT FOAM INJECTION CHECK VALVE. This NFPA 1906 required check valve prevents water back flowing into foam systems.

---

To Operator:
1. Push red foam button. Light below switch will indicate unit is operating and will flash when foam is being injected.
2. Change foam percentage using keys.
3. Gray select button will display water flow, total water flowed, foam concentration and total foam flowed. Push keys together to reset total values.
4. To shut down, depress the red foam button.

---

Read and Understand Operating Manual

To operate:
1. Push red foam button. Light below switch will indicate unit is operating and will flash when foam is being injected.
2. Change foam percentage using keys.
3. Gray select button will display water flow, total water flowed, foam concentration and total foam flowed. Push keys together to reset total values.
4. To shut down, depress the red foam button.

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800-533-9511

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SYSTEM ACCESSORIES AVAILABLE

**Polypropylene Foam Tank(s)**
- 8 gallon, P/N 1530-0005
- 12 gallon, P/N 1530-0012
- 20 gallon, P/N 1530-0013

**Electronic Dual Tank System with Automatic Flush**
Provides automatic 8 second flush of foam pump and injection lines to prevent mixing of foam concentrates.
- 12 VDC P/N 3435-0104
- 24 VDC P/N 3435-0105

**System Specification Placards**
- System 2001 P/N 6032-0020
- System 2002 P/N 6032-0021
- System 2002HP P/N 6032-0035

**Remote Start/Stop (12-volt DC only)**
P/N 3435-0075

**Main Waterway Check Valve**
- 1-1/2" NPT thread P/N 3320-0030
- 2" NPT thread P/N 3320-0031
- 2-1/2" NPT thread P/N 3320-0032
- 3" NPT thread P/N 3320-0033
- 4" NPT thread P/N 3320-0034

**System Placard**
P/N 6032-0015 Single Tank or P/N 6032-0016 Dual Tank

**FoamPro MultiFlow Interface**
The basic system requires at least one flowmeter to sense water flow in the discharge piping. The FoamPro MultiFlow interface allows a total of four flowmeters to be used. The display will show the discharge flow on the selected flowmeter. (P/N 2527-0047)
4 INSTALLER SUPPLIED PARTS

The FoamPro 2001 and 2002 systems are provided with the major components and accessories required for installation. Due to differences in chassis and apparatus configurations, the installer must provide pipe, hoses, tubing, wire and fittings to satisfy installation requirements. The following paragraphs list the specifications for selection of these components. Before beginning system installation, read this section thoroughly to make sure the proper components are selected. For detailed system installation instructions, refer to Sections 5, 6 and 7.

FOAM CONCENTRATE SUCTION LINE
Fittings and hoses from the foam tank to the inlet of the foam pump must be used. Use 3/4 inch [19 mm] minimum inside diameter or larger hose dependent on the viscosity of the foam concentrate. Use components that are rated for 23 in [584.2 mm] Hg vacuum and 50 psi [3 BAR] pressure or greater. The components must be compatible with all foam concentrates to be used. Fittings used must be made of brass, 300 series stainless steel or other corrosion resistant material. Before selection of hose fittings, check for compatibility with foam concentrates to be used. The use of clear suction hose is required by NFPA to allow viewing foam priming operations. The foam pump must be positioned to allow gravity feed from the foam tank(s).

NOTE: When using a Dual Tank System, intake plumbing will be different. Refer to Dual Tank System Manual for foam pump inlet plumbing installation.

FOAM CONCENTRATE DISCHARGE LINE
Fittings and hoses from the discharge of the foam pump to the injector fitting must be supplied by the installer. Hoses and fittings of 1/2 inch [13 mm] minimum INSIDE diameter rated at 400 psi [28 BAR] minimum working pressure for the 2001 & 2002, 600 psi [41 BAR] for the 2002HP or maximum discharge pressure of the fire pump, whichever is greater, must be supplied by the installer. Fittings and hoses must be compatible with all foam concentrates to be used. Use fittings of brass, 300 series stainless steel or other corrosion resistant material compatible with all foam concentrates to be used.

CHECK VALVES
NFPA 1901 & 1906 requires installation of a check valve in the foam concentrate injection line. To prevent foam concentrate flow from the tank due to static head pressure, the foam concentrate check valve shall have a 4 to 6 psi [0.1 to 0.3 BAR] cracking pressure and shall be capable of withstanding the pressures that will be generated in the foam injection line.

A check valve is also required in all water piping locations where foam concentrate could drain back into pumps or other components of the fire apparatus. As a minimum, one check valve must be installed where the foam solution water piping connects to the fire pump discharge. (FoamPro main waterway check valve is recommended.)

Multiple drains that allow individual drain lines to communicate may allow foam to short circuit past the check valves; avoid this possibility. FoamPro recommends separate drain valve(s) for the discharge piping.

FOAM CONCENTRATE TANK(S)
Foam concentrate tank(s) must be supplied to suit the capacity required for the apparatus application. The tank(s) should meet NFPA minimum standards for the design capacity, including filler size, vapor pressure venting and drain facility. For example, to meet NFPA 1901 requirements using 1% AFFF foam concentrate, a 40 gallon foam tank is required.
ELECTRICAL REQUIREMENTS

Electrical wiring must be supplied from the main apparatus electrical system to the foam pump base unit. Use a minimum of 8 AWG wire because minimum electrical service is as follows:

- 2001 12 VDC requires 41 amps;
- 2002 or 2002HP 12 VDC requires 56 amps;
- 2001 24 VDC requires 22 amps;
- 2002 or 2002HP 24 VDC requires 30 amps.

The electrical power must be supplied directly from the battery or the battery master disconnect switch.

Braided flat ground straps are required for ground connections. The flat straps limit the RFI/EMI interference encountered with radios, computers or other sensitive electronic equipment.

**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.
5 INSTALLATION PLANNING

Because of the potential differences in apparatus plumbing and foam system configuration, it is not practical to depict exactly how each FoamPro unit can best be installed onto a particular apparatus. Figure 2 shows the relative location of the FoamPro system components. Most of the information contained in the following sections, however, will apply to any situation.

It is recommended that you read the following sections thoroughly before beginning installation of the FoamPro system. It is also recommended that you spend time planning and designing where and how you intend to install this unit in the apparatus before beginning the actual installation.

Determine the locations of the components to be installed such as; foam tank(s), foam pump and flowmeters. Try to place components in locations that require the least amount of hoses and fittings.

Locate the foam pump unit in an area that is protected from road debris and excessive heat buildup. Since the master power switch and CAL/INJECT valve are located on this unit, the foam pump unit should be installed in an accessible compartment located in the vicinity of the operators panel.

The foam pump unit should be located below the discharge of the foam tank(s) to provide for gravity feed to the foam pump. Locate the foam tank(s) where the refilling can be done with 5 gallon (19 liter) containers and other methods suitable to the end user. Most water tank manufacturers will build the foam tank(s) into the booster tank. When specifying integral foam tank(s), make provisions for installing the low tank level sensor as well as foam suction connections and tank drainage.

Determine a location for the Digital Display Control Module on the operator panel of the apparatus. Consider the routing path for the control cables from the Digital Display Control Module to the foam pump unit and flowmeter(s). If necessary, order longer or shorter cable assemblies to suit the location demands.

CAUTION: Never attempt to cut or lengthen the molded cables.

Figure 2. System Component Location
PLUMBING COMPONENT INSTALLATION

The following diagram (Figure 3) provides recommended guidelines for the location of the system components that handle water, foam concentrate and foam solution. Note that additional options such as dual tank systems, multiple flowmeters, etc., are covered by individual manuals included with those systems; consider potential interferences.

A. FOAM PUMP/MOTOR BASE ASSEMBLY
The foam pump/motor base assembly must be mounted in a horizontal position (See Figure 5). The base of the foam pump must be anchored to a surface or structure that is rigid and of adequate strength to withstand the vibration and stresses of apparatus operation. Figure 4 provides the mounting dimensions for the FoamPro 2001 and 2002 foam pump/motor base assembly. It is required to use flexible hose when making the hose connections to the FoamPro 2001 and 2002. **DO NOT** hard pipe the system.

Position the foam pump so the circuit breaker/on-off switch is easily accessible. Also, consider access requirements for checking and changing the oil in the crankcase of the foam pump. Be sure the foam concentrate hoses can be properly routed to the inlets and outlets on the foam pump. Foam concentrate should gravity feed to the foam pump inlet from the foam tank(s). The foam pump/motor base assembly must be mounted in an area to avoid excessive exhaust system heat buildup.

Protect the hoses and wiring from chafing and abrasion during operation of the foam system.

Protect the foam pump base unit from excessive road spray and debris. Although the system is sealed and designed to be resistant to the harsh environment of fire fighting apparatus, a
A protected location with easy operator access is the ideal installation location.

After the foam pump/motor base assembly is mounted, remove the shipping plug in the oil fill hole on the foam pump gear case and replace it with the vented oil dipstick (see Figure 6). Check the oil level by removing the vented dipstick; make sure the oil level is to the full mark on the dipstick. Proper oil level is also indicated when the oil is visible in 1/2 to 3/4 of the oil level sightglass. Add SAE 30 weight non-detergent oil if required. Replace the dipstick when the oil level is correct.

**B. DISCHARGE RELIEF VALVE**

The discharge relief valve is installed on the outlet port of the foam concentrate pump. It is provided to protect the foam pump from excessive pressures. The relief valve is factory set at 400 psi [28 BAR] (600 psi [41 BAR] for 2002HP model).

**C. CAL/INJECT VALVE**

The CAL/INJECT valve is mounted on the discharge side of the foam proportioner. This valve shall be accessible by the pump operator during normal operations. The valve is a 3-way directional valve that selects where the output of the foam pump will go.

Check to make sure the valve is installed properly. Look at the ports as you move the handle, the flow should go from the center port to each of the other ports.

The hose and fittings from the INJECT port to the foam injector fitting should have 1/2 inch [13 mm] inside diameter and be rated at 400 psi [28 BAR] for 2001/2002 models or 600 psi [41 BAR] for 2002HP models minimum working pressure or maximum discharge pressure of the fire pump.

---

**Figure 4. FoamPro 2001/2002 Mounting Dimensions**

**Figure 5. Foam Pump Mounting Position**

**Figure 6. FoamPro 2002 Foam Pump Oil Level Check**
The hose from the CAL/FLUSH port may have a lower pressure rating since it is plumbed to the atmosphere and will not receive high pressures. This hose is used for calibrating the foam pump, pumping the concentrate into a container to empty the tank or to assist in priming of the foam pump. The hose from the CAL/FLUSH port must be long enough to reach a container outside the truck. This hose must be coiled for storage when not in use.

**D. LINE STRAINER**

The line strainer that is provided with the FoamPro unit has ¾ inch NPT female threaded ports and is to be installed on the inlet port side of the foam pump. The hose from the foam tank should have adequate wall stiffness to withstand the vacuum of the foam pump while it is operating (23 in. [584 mm] Hg and 50 psi [3 BAR]).

**NOTE:** If a pressurized water flush from one of the discharges is incorporated, the plumbing and line strainer exposed to this pressure must be rated at or above the operating pressure of all other discharge plumbing components. (400 psi [28 BAR] minimum) (600 psi [41 BAR] for 2002HP models).

**E. FLOWMETER(S)**

The FoamPro System 2001 and 2002 are designed to accept flow reading signals from the FoamPro paddlewheel style flowmeter.

Proper flowmeter sizing is critical to system accuracy. Select a flowmeter size based on actual flows required, not standard pipe sizes. Refer to the installation drawing at the end of this manual (Page 39) for proper flowmeter sizing.

The flowmeters require that the amount of turbulence in the pipe being monitored is as low as possible. Excessive turbulence produces unstable and inaccurate flow readings. The following installation guidelines will help attain the best readings and maintain accuracy of the FoamPro system.

1. **A minimum 5 times the pipe diameter of straight run pipe without any fittings is necessary upstream of the flowmeter.**
2. **10 times** is better — the longer the straight run, the lower the turbulence. Here are some examples of required straight run:

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Recommended Straight Run Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/2 in. [38 mm]</td>
<td>7-1/2 to 15 in. [191 to 381 mm]</td>
</tr>
<tr>
<td>2 in. [50 mm]</td>
<td>10 to 20 in. [254 to 508 mm]</td>
</tr>
<tr>
<td>2-1/2 in. [64 mm]</td>
<td>12-1/2 to 25 in. [317 to 635 mm]</td>
</tr>
<tr>
<td>3 in. [76 mm]</td>
<td>15 to 30 in. [381 to 762 mm]</td>
</tr>
<tr>
<td>4 in. [100 mm]</td>
<td>20 to 40 in. [511 to 1016 mm]</td>
</tr>
</tbody>
</table>

b. The downstream plumbing of the flowmeter is not as critical; but again, straight runs without fittings help maintain accurate flow readings.

c. **Do not mount a flowmeter directly after an elbow or valve.** Valves create severe turbulence when they are “gated-down”.

d. Try to mount the flowmeters in a position that is accessible for routine inspection and maintenance.
FOAMPRO PADDLEWHEEL FLOWMETERS
The FoamPro paddlewheel style flowmeter fittings are specially designed tees that make inspection and maintenance of the flow sensor easy. The threads of the tees are NPT. In horizontal runs the tees should be mounted as close to upright as possible within the range shown in Figure 8.

With the use of a MultiFlo interface, two to four flowmeters may be monitored simultaneously. A single injection point that will supply foam agent to all foam discharge outlets is required.

F. INJECTOR FITTING
The brass injector fitting ensures foam concentrate is injected into the center of the water flow for better mixing. It is designed to fit into a 1 inch NPT threaded connection on a pipe tee that is installed in the discharge piping of the fire pump (See Figure 9). The inlet of the fitting is ½ inch NPT female thread and the outer threads are 1 inch NPT. The injector may also be inserted into a weld fitting with 1 inch NPT female threads. It MUST be mounted in a place that is common to all discharges which require foam capability. This fitting is not used if using a FoamPro Main Waterway Check Valve. A separate injection point is not possible for each discharge. If multiple flowmeters are used, the injector must be installed before the flow meters at the inlet to their common manifold (See Figure 10).

Most foam concentrates by nature mix with water very quickly, so each discharge from a manifold will receive equal concentrations if the manifold is properly designed and installed.

G. CHECK VALVES
A ½ inch NPT check valve meets NFPA requirements for a non-return device in the foam injection system. To prevent foam concentrate flow from the foam concentrate tank due to static head pressure, the foam concentrate check valve shall have a 4 to 6 psi [0.1 to 0.3 BAR] cracking pressure and shall be capable of withstanding the pressures that will be generated in the foam injection line. It is always a good idea to inject foam at a horizontal or higher angle to allow water to drain away.
from the check valve (see Figure 11). This will avoid sediment deposits or the formation of an ice plug.

The check valve in the water way is required to keep foam solution out of the main pump and allow pump priming without drawing foam into the piping. See Figure 12.

H. DRAIN LINES
On apparatus with multiple drain lines, the drains from the foam solution discharge line should not be piped into a multi drain system before the check valves. The standard multi drain system from most manufacturers will allow cross talk between the drain lines and the apparatus water tank, resulting in contamination of the water tank with foam. A separate drain system should be provided for the foam solution piping to prevent contamination of the water tank and fire pump.

I. FLUSHING SYSTEM
Depending on the corrosiveness of the foam concentrates to be used, a flushing system may be required in the foam concentrate injection system. Generally, all Class B foam concentrates must be flushed from the system after use. Most Class A foam concentrates are less corrosive and therefore may not require flushing. Fig. 12-4 is a recommended diagram for a flush circuit. When a dual tank system is installed on the apparatus, provision for flushing the foam concentrate injection system is built into the dual tank selector system.

**Flushing Foam Pumps**
When returning the apparatus to ready condition after foam operations, the FoamPro foam pumps should be flushed. The following procedures can be used to flush the foam pumps. Refer to Figure 12-4 and do the following:

1. Energize apparatus and establish water flow through foam solution discharge.
2. Close foam concentrate tank shut-off valve and open flush water supply valve.
3. Energize FoamPro 2000 and allow electric motor driven foam pump to run until discharge is clear.
5. Close foam solution discharge and shut down apparatus.
6. Open foam concentrate tank shut-off valve.
ELECTRICAL CONNECTIONS
Follow the system electrical diagram (Figures 13 and 14) for proper hookup of each of the electrical components. Complete molded cable sets are provided with each FoamPro system to make all the necessary connections. The cables are color coded and "indexed" so they only go in the correct receptacle and they can only go in one way. DO NOT FORCE MISMATCHED CONNECTIONS. The system can only perform when the electrical connections are sound, so make sure each one is right.

SOME THINGS TO KEEP IN MIND
• DO NOT hook up the main power cables until all connections are made to each of the electrical components. The last connection should be the power cable to the foam pump/motor base assembly.

WARNING: This system contains a capacitor on the input power. Connect the leads with the battery off or disconnected. Current will flow even with the master circuit breaker off.

DO NOT cut molded cables.

Provide at least the following amounts of electrical power from the battery to the main power terminal:
- 2001 requires 41 amps;
- 2002 requires 56 amps;
- 2001/24 requires 22 amps;
- 2002/24 requires 30 amps.

Use 8 AWG (minimum) wire directly to the battery or battery master disconnect switch.

The S105-2001, S105-2002 and S105-2002HP systems are designed for 12-volt, negative-ground systems only. The S205-2001, S205-2002 and S205-2002HP systems are designed for 24-volt, negative-ground systems only.
• Do not mount radio transmitter or transmitter cables in direct or close contact with the FoamPro unit.

• Use care when installing molded cables. Count pins or check color codes before connecting. Bent pins caused by improper hookup can prevent proper operation even when cables are reattached properly.

• Before connecting the molded cables, inspect the yellow seal washer in the female connector. If the seal washer is missing or damaged, water can enter the connector and cause corrosion of the pins and terminals that will cause system failure.

• CAUTION: The cables shipped with each FoamPro unit are tested at the factory with that unit. Improper handling and forcing connections can damage these cables, which could result in other system damage.

• 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.

A. DIGITAL DISPLAY/CONTROL MODULE
The Digital Display Control Module is designed to be mounted in the operator panel of the apparatus. The cutout that will be needed in the operator panel is a 3-7/8 inch [98 mm] diameter hole (the same as a 3-1/2 inch [89 mm] pressure gauge). The display is secured with four #10 socket head screws in the four holes in the face (See Page 40 for a mounting template). The display requires 5 inches [127 mm] minimum from the back of the operator panel to clear...
wires and connectors. Make sure there is enough clearance behind the operator’s panel for the cables. Once the Digital Display Control Module is mounted, connect the control cable (red coded cable end) from the motor driver box terminal to the 5 pin connector on the back of the Digital Display Control Module (see Figure 15). A color coded decal on the motor driver box identifies each cable connection (see Figure 16).

**NOTE:** Make sure the panel where the Digital Display Control Module is mounted has an adequate ground. For stainless steel and vinyl coated panels, a flat ground strap must be attached from one of the four screws holding the Digital Display Control Module in place, to the frame of the fire truck to ensure adequate grounding (see Figure 15).

**B. FLOWMETER(s) CONNECTIONS**

**FOAMPRO FLOWMETER**
If a single FoamPro paddlewheel type flowmeter is to be used, a molded cable that connects from the flowmeter to the 3 pin connector on the Digital Display Control Module is supplied.

**MULTIFLO FLOWMETER INTERFACE MODULES**
See the instructions supplied with the MultiFlo interface for installations requiring multiple Foampro flowmeters. Figure 17 shows the interconnection of the flowmeters with the Digital Display Control Module.

**C. FOAM TANK CONNECTIONS**
The foam tank low level sensor must be mounted into the bottom of the foam tank to monitor low foam concentrate level. The switch has 1/4 inch NPT threads. Mount the sensor in the bottom of the foam tank in an upright position. Use suitable sealant to prevent concentrate leakage. There must be space under the tank for the cable to be routed to the pump base assembly (See Figure 18). Be sure not to remove the float from the shaft on the sensor assembly. If installed in the reverse position, "LO CON" and "NO CON" will appear on the Digital Display Control Module, and the system will automatically shut down after two minutes, even if there is foam in the tank.

When the bottom of the foam tank is not accessible, the low level sensor float switch can...
be hung from a long nipple attached to the top of the tank. The nipple should be rigid enough to withstand the force of sloshing foam when the vehicle is in motion. Make sure the low level sensor does not contact the side of the foam tank when the vehicle is in motion (See Figure 18). Since wire connections must be made inside the nipple, a 3/8 inch NPT nipple with 3/8 by 1/8 inch NPT reducer at the lower end is the minimum size recommended.

CAUTION: The foam tank low level sensor must be utilized to protect the foam pump from dry running. Failure to do so will void the warranty.

A side mount low tank sensor is available to be used if both the top and bottom of the tank is not accessible (See Figure 18). The side mount low tank sensor has 1/2 inch NPT threads and the center of the switch must be located approximately 2 inches [51 mm] from the bottom of the foam tank with the float positioned on top of the switch to move up and down.

NOTE: When the side mount low tank sensor senses a low concentrate condition, the system will operate for two minutes unless the foam concentrate level is restored. If the foam concentrate level is not restored, the system will shut down after two minutes. When locating the side mount low tank level switch on the foam tank, sufficient foam volume must be present for two minutes of operation. This determination will be made using the most frequent foam concentrate injection rate and water flow.

The side mount low tank sensor must be sealed with a suitable sealant to prevent concentrate leakage. After installation, check operation of the side mount low tank sensor with a powered test light. With no foam in the tank, the light should be on. If light does not come on, rotate the side mount low tank sensor until the test light is on. The float should be allowed to swing up and down freely.

D. DC MOTOR
Provide adequate electrical power (see the listing on Page 15) from the battery. Use 8 AWG minimum wire directly to the battery or battery switch. Long wire runs may require 6 AWG wire for proper operation.
Recommended wire sizes

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Wire Length (approximate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 awg</td>
<td>10 feet or less</td>
</tr>
<tr>
<td>6 awg</td>
<td>10-20 feet or less</td>
</tr>
<tr>
<td>4 awg</td>
<td>20 feet or more</td>
</tr>
</tbody>
</table>

E. POWER SUPPLY

Electrical devices can be easily damaged by a weak or erratic power supply. The FoamPro 2001 and 2002 systems are no different — the better the power supply, the better the FoamPro 2001 and 2002 will perform and survive (see the listing on Page 15).

**ALWAYS** connect the primary positive lead from the terminal block to the master switch terminal or the positive battery terminal. Use 8 AWG or larger chemical resistant wire and protect with a loom.

Connect the ground lead from the chassis frame or the negative battery terminal to the ground stud located on the FoamPro 2001 and 2002 foam pump assemblies. Use the same size wire as the power lead and bore metal connections.

**DO NOT** connect the main power leads to leads that are supplying some other device such as a light bar, siren or primer pumps.

**CAUTION:** The wires between the terminal block, diode block and capacitor, as well as the input power wire, are not protected by the system circuit breaker. Make sure these wires are not damaged or short circuited.

F. EMI/RFI SUPPRESSION

An EMI/RFI (Radio Frequency Interference) suppression kit is included with each FoamPro system. The clamp-on beads included in the kit, when properly installed, along with proper grounding of components will reduce the potential for radio frequency interference. Additionally, make sure radio cables and hardware are not located in the immediate area where the FoamPro 2001 or 2002 equipment is mounted.

Install clamp-on beads at the locations indicated in Figure 19. Slide the beads as close as possible to the connectors on the cable. Use a small amount GE SILICONE II, electrical tape or heat shrink tubing to keep the beads from moving after installation.
FLOWMETER AND CABLES
The flowmeter tee must be grounded. If metal piping is used, sufficient grounding may be present. However, Victaulic joints, plastic pipe and rubber mounted pumps interfere with proper grounding and an additional ground strap is required. Connect a braided ground strap at least 1/4 inch [6 mm] wide from the flowmeter tee to the apparatus frame to ensure proper grounding. A #6-32 UNC tapped hole is provided on the flowmeter tee for attaching the ground strap.

Making round coils of extra control and flowmeter cables in the pump compartment can act as an antenna. While the flowmeter and control cables cannot be shortened, various lengths of cable are available to minimize the "extra" cable in the truck. (See the parts list in Section 13 for part numbers of different size control and flowmeter cables.) When routing control and flowmeter cables, avoid routing them next to antenna cables, radio power lines and radio components. When there is extra cable, double the cable back on itself and secure in a flat bundle with plastic wire ties instead of making a round coil (see Figure 20).
MAKING SURE EVERYTHING IS WORKING RIGHT

Electrical
- Tank level sensor is connected and the connections are sealed from moisture.
- Digital Display Control Module connectors are correct and tight.
- Cable connections at the motor driver box are correct and tight.
- Flowmeter cable(s) properly connected to the Digital Display Control Module or MultiFlo as required.
- All cables and wires are secured and protected by loom from damage during operation.
- RFI/EMI beads are installed; control and flowmeter cables are properly folded and secured; radio antennas, power lines and equipment are away from the control and flowmeter cables.
- All components, Digital Display Control Module, Flowmeter Tee, Pump Base, etc., are properly grounded with adequate size wire and bare metal connections.
- Adequate current capacity is available for the foam pump motor (see the listing on Page 15).
- Circuit breaker switch on the motor driver box is in the ON position.

Liquid
- Flowmeter is mounted with flow arrow in the correct direction for water flow.
- Check valves are properly mounted in water and foam concentrate lines.
- Strainer is properly mounted for the direction of concentrate flow in the foam tank to pump line.
- Foam tank to the foam pump valve is in place and open.
- Injector fitting lines are proper size and connections are tight.
- CAL/INJECT valve is properly mounted and oriented for direction of concentrate flow.
- The injector is in a common point to supply foam concentrate to all discharges specified to have foam capability.
- Fill foam tank(s) with a sufficient quantity of foam concentrate or water to allow system calibration. Minimum of 5 gallons required.
- Foam is properly primed.

FOAM PUMP
- Foam Pump gear case filled to proper level with SAE 30 weight non-detergent oil.

SYSTEM POWER CHECK
Turn the main power switch on the motor driver box to ON and check the digital display readout — “HYPRO” should appear for a few seconds while the computer checks itself (See Figure 21); then, a zero should appear on the digital readout. If no zero appears, refer to the “TROUBLESHOOTING” section for possible causes and solutions.

FOAM PUMP PRIMING CHECK
Turn the CAL/INJECT valve to the CALIBRATE or FLUSH position. Provide a container to
If you are still having difficulty priming the foam pump in your FoamPro system, do the following:

- Make sure foam concentrate tank shutoff valve is open.
- Check to make sure there are no restrictions from the concentrate tank to the inlet of the foam pump.
- Check to make sure there are no leaks in the plumbing where air can enter the pump.

Wet the foam pump to speed priming operations using the following procedures.

- Remove one of the valve caps from the head of the pump and remove the check valve under it (see Figure 23).

Engage the FoamPro system by pressing the red “FOAM” button.

Foam concentrate should begin flowing into the container. If concentrate is not being pumped, check first to make sure the foam pump is running. If the pump is running, but no concentrate is being delivered, then the pump is most likely not primed completely. If the pump does not prime within 20-30 seconds, disengage the system by pressing the red “FOAM” button.

If the system has been installed properly, foam concentrate should flow readily to the pump.

Once foam flow is established, turn the system off and turn the CAL/INJECT valve back to the inject position.
CALIBRATION AND SETUP

SYSTEM SETUP PROCEDURES
FoamPro systems permit easy calibration of the foam proportioning unit to assure accurate operation. The calibration process will make adjustments to the flowmeter(s) and foam pump display readings.

NOTE: FoamPro systems can be calibrated to any unit of measure, i.e. U.S., Metric, Imperial, etc. It is necessary to use the same unit of measure throughout the calibration process to ensure proper proportioning by the system.

IMPORTANT: Both the foam pump and flowmeter readings must be calibrated as a part of the initial setup after installation.

Recalibration should only need to be done after major repairs or changes to the foam system.

SETUP FOR DUAL TANK OPERATION
The FoamPro controller is factory defaulted to the dual tank option. If you are installing a remote start/stop system, you must change the default setting for proper system operation. The procedure for this new setting starting from the operational mode is as follows:
• Remove the screws to enter the setup and diagnostic modes.

- Enter the setup mode by pressing the internal button on the left side of the controller.
- Enter the diagnostics mode by pressing the internal button on the right side of the controller.
- The display will flash "CONF" and "DUAL.T" alternately.
- Press the DOWN button once. The display will now flash "CONF" and RSTART".
- Press the left internal button once. This puts you back into the operational mode.
- Replace internal button screws and o-rings.

CALIBRATION AND SETUP MODE
Calibration and Setup is done by using the Digital Display Control Module function buttons. To enter or exit the calibration and setup mode, remove the cover screw and o-ring to the left of the display readout panel on the Digital Display Control Module (see Figure 24). Use a 3/32 inch Allen wrench to remove the screw and also to operate the switch that is located beneath it.

To enter Calibration and Setup mode, use the Allen wrench to depress and release the switch inside the screw opening. The display will show “Elec Setup” until any function button is pressed.

Exit from Calibration and Setup mode is accomplished by pressing and releasing the switch again. The word “HYPRO” will appear followed by a zero after several seconds. REPLACE THE COVER SCREW AND O-RING WHEN DONE.

CAUTION: ALWAYS REPLACE THE COVER SCREW AND O-RING TO KEEP WATER AND DIRT FROM ENTERING THE DIGITAL DISPLAY CONTROL MODULE OR SERIOUS DAMAGE TO THE COMPONENTS MAY OCCUR.

Figure 24. Calibration Switch Location
SYSTEM RESET
During calibration procedures, it may be necessary to return the system to the original factory default settings. To return to the factory default values, enter calibration and setup mode as previously described. Immediately after entry into calibration and setup mode, prior to pressing any other button, depress the \( \uparrow \) and \( \downarrow \) simultaneously. This action will return the system to the factory default settings. Proceed with calibration and setup after performing this reset.

NOTE: If using the Dual Tank Option on the controller and Reset is used, the Dual Tank default will need to be reconfigured.

FLOWMETER CALIBRATION

NOTE: It is critical that an accurate flow measuring device be used to measure the water flow to calibrate the flowmeter(s). Use a suitable size smooth bore nozzle and an accurate Pitot Gauge instrument. Hand held pitot gauges are usually not very accurate. At the first available opportunity make sure the system is calibrated with an accurate flow measuring device. Determine the water flow normally expected from that flowmeter discharge outlet. For example, actually establish a flow of 150 gpm [568 L/min.] of water through a nozzle and Pitot system.

Enter Calibration and Setup mode using the method previously described. Press the "SELECT" button and illuminate the light under "FLOW". The current water flow rate will be displayed. Press the \( \uparrow \) or \( \downarrow \) button to set the reading to match the actual flow calculated from the Pitot gauge reading. Decrease fire pump pressure by approximately 1/2 and recalculate water flow rate. Verify that reading on the Digital Display Control Module is the same as the calculated value. Stop the water flow when the reading adjustments are completed.

To lock the settings, exit Calibration and Setup mode by depressing and releasing the switch inside the cover screw opening. The display will show a zero until any function button is pressed.

SIMULATED FLOW
The default Simulated Flow value should be adjusted while operating in Calibration and Setup mode. Enter Calibration and Setup Mode using the method previously described. Press the SELECT button until the light under FLOW is illuminated. Pressing both the \( \uparrow \) and \( \downarrow \) buttons simultaneously will display the default simulated flow reading. Adjust the setting by pressing the \( \uparrow \) or \( \downarrow \) buttons to set the desired rate, i.e., “\( \cong 100 \)”. After the rate has been set, press the \( \uparrow \) and \( \downarrow \) buttons simultaneously again to return to Calibration and Setup mode.

This setting will remain in the computer memory and be the default rate for all future Simulated Flow operations.

Exit Calibration and Setup mode as previously described.

FOAM CONCENTRATE INJECTION RATE
When power is supplied to the FoamPro system, the foam concentrate injection rate in memory will be the default injection rate setting. The default concentrate injection rate can be adjusted by entering Calibration and Setup mode as previously described.

Use the SELECT button to illuminate the lamp below “\%”. The display will show the current default concentrate injection rate stored in the computer memory as “\( PC \times x \)”. The \( \uparrow \) or \( \downarrow \) buttons can be used to set the desired concentrate injection rate. Set this rate to the foam concentrate injection rate used most frequently in operation.
If using a dual tank system, each concentrate can be separately defaulted to the concentrate injection rate individually, by selecting either tank "A" or "B" on the electric selector switch or the manual valve. The display will show PAx.x (Tank A) or Pbx.x (Tank B) depending which tank is selected. Set the desired injection rate using the ⬇ or ⬆ buttons. Using the electric selector switch or the manual valve switch to the other tank and set the desired injection rate for that concentrate.

Exit the Calibration and Setup mode as previously described.

**FOAM PUMP CALIBRATION**

*Note:* The viscosity of different foam concentrates may have an effect on the amount of foam concentrate that is injected into the water stream. When calibrating the foam pump, use the foam concentrate that will be used most frequently during normal operations. When different viscosity foam concentrates are used, the actual concentrate injection may vary by as much as 10%. When using the dual tank system, each foam concentrate should always be calibrated individually. Select tank "A" or "B" on the electric selector switch or the manual valve.

Enter the Calibration and Setup Mode using the method previously described. Press the SELECT button to illuminate the light below TOTAL FOAM on the Digital Display Control Module.

Turn the "CAL/INJECT" valve pointer to the Cal/Flush position. Place a graduated measure container beneath the outlet from the CAL/INJECT valve that can contain the expected volume of foam concentrate (minimum 5 gallons [19 liters]). If an accurate calibrated container is not available, a scale can be used to weigh the foam concentrate pumped. The total volume of foam concentrate can then be calculated from this weight.

Start the FoamPro foam pump by pressing the red "FOAM" button. The foam pump will operate and pump foam concentrate into the container. Stop the foam pump and measure precisely the amount of foam concentrate collected.

Adjust the reading on the Digital Display Control Module to the volume pumped by pressing the ⬇ or ⬆ button. Repeat the procedure two to three times to verify calibration.

If using a dual tank system, switch to the other tank by using the electric selector switch or the manual valve. Repeat the calibrating procedure using the method previously described.

Turn the CAL/INJECT valve back to “INJECT” position.

Exit Calibration and Setup mode as previously described. REPLACE THE COVER SCREW. The system is now calibrated to the actual flow from the foam pump.

These Setup and Calibration procedures complete the adjustment of the system. The FoamPro system is now ready to be placed in service.

If this system is installed and calibrated by an apparatus manufacturer or dealer, the end user may wish to adjust the default Foam Concentrate Injection Rate and/or Simulated Flow to their special needs. These changes can be made without altering the calibration by using the procedures for those functions only.
PRESSURE RELIEF VALVE ADJUSTMENT

The pressure relief valve is factory tested and preset at 400 psi [28 BAR] (600 psi [41 BAR] for model 2000HP). During normal installation and operation, the relief valve will not require adjustment. The following procedures are provided if adjustment is necessary in field installation. DO NOT set the relief valve above 400 psi [28 BAR].

Perform this adjustment after the foam pump has been primed.

1. Determine the maximum pressure that will be needed to discharge foam solution. (For example: The maximum foam injection pressure should be approximately 50 psi [3.5 BAR] higher than the maximum operating pressure as set forth by department policy.)
2. Gather the items required for reading concentrate injection pressure: a 0-500 psi [0 to 34.5 BAR] test quality gauge, 500 psi [34.5 BAR] hoses and fittings to connect to the injector line from the foam pump.
3. Disconnect the injector from the foam line and connect the pressure gauge to it.
4. Screw the Pressure Adjustment Nut on top of the valve all the way down until it stops.
5. Unscrew the Pressure Adjustment Nut counterclockwise 10 full turns. This will place it in a position to relieve at low pressure. **CAUTION:** DO NOT run the FoamPro 2001 or 2002 system more than one minute dead headed against the pressure gauge because the foam pump will overheat.
6. Operate the foam pump as described in the Foam Pump Priming Check Section.
7. While the foam pump is running, slowly screw the Pressure Adjustment Nut down clockwise until the desired pressure is reached. Apply tamper proof type sealant to pressure relief valve adjustment nut so that it does not move accidentally.
8. Stop the foam pump. **WARNING:** Slowly loosen the foam pressure line fittings and allow the pressure to escape. Protect your face and eyes from any potential spray which may occur.
9. Reconnect the foam line to the injector fitting. The pressure relief valve is now set.
OPERATING INSTRUCTIONS

NORMAL SYSTEM OPERATION
Once the system has been set up and calibrated, operation is very simple and is controlled by the buttons on the Digital Display Control Module (see Figure 26). For setup and calibration instructions, see Section 9.

When the “FOAM” button is pressed, the “ON” status lamp will illuminate, indicating that the system is ready. The “ON” status lamp will flash when foam is being injected. The FoamPro system will monitor the water flows and control foam injection at the specified concentrate injection rate. The system responds to variations in water flow by increasing or decreasing the speed of the foam pump. When the "FOAM" button is again pressed, the “ON” status lamp will extinguish, indicating that the system is in Stand-By mode and the pump will stop but other system monitoring functions will continue. Without foam concentrate injection, the water flowmeter will display the current flow rate of the water.

If water flow requirements exceed the capacity of the pump to deliver foam concentrate, the pump will run at maximum rate and “HI FLO” will flash on the Digital Display Control Module so the operator realizes that the system capacity is being exceeded.

If the flow decreases such that the required injection rate is less than the lowest rating of the pump, the pump will run at its minimum rate and “Lo. Flo” will flash on the display so the operator will know the system is running rich on foam percentage.

DISPLAY INFORMATION
The five digit display on the Digital Display Control Module shows the value of the selected display function or provides warnings to the operator.

Figure 26. Digital Display Control Module Operation
operator when the system is operating. A function is selected by pressing the grey “SELECT” button in the upper right hand corner of the Digital Display Control Module. Each time the button is pressed, a new function mode is selected and displayed. A LED lamp above the digital display denotes which function is being displayed. Pressing the SELECT button changes the value displayed but does not alter system operation.

The Display Functions include:

**Flow**
The display shows the current flow rate of water or foam solution per minute.

**Total Water**
The display shows the total amounts of water or foam solution pumped. This totalized value may be reset. See "Reset Functions" paragraph.

**% (Percent)**
The display will show the foam concentrate injection rate setting in the % mode.

**Total Foam**
The display shows the total amount of foam concentrate pumped. The value will be in the same unit of measure as the water flow. This totalized value may be reset. See "Reset Functions" paragraph.

**RESET FUNCTIONS**
The totalized values for water and foam concentrate pumped can be cleared from memory by performing a RESET function. Using the “SELECT” button, select either “TOTAL WATER” or “TOTAL FOAM”. By pressing and holding both the ↑ and ↓ buttons at the same time, the value shown is cleared and displayed as zero.

**FOAM PERCENTAGE (%)**
When the concentrate percentage (%) is selected, the ↑ and ↓ buttons will respectively increase or decrease foam concentrate percentage. The percentage can be changed anytime during normal operation. Whenever the ↑ or ↓ buttons are momentarily pressed, the display will switch to the “%” display and show the current percentage that is set, in any display mode. If either button is held down for a period of 2 seconds, the value will increase or decrease accordingly. Once released, the display will return to the last selected display. When a reset is performed in the % display mode (pressing both the ↑ and ↓ buttons at the same time) the foam concentrate injection rate is returned to the default value. The default value is set during calibration.

**DISPLAY MESSAGES**
Several safety features are provided to protect the foam concentrate pump and the electric motor.

**Low Foam Tank Level**
The pump is interlocked with the foam concentrate tank level switch. If the tank is empty, the pump will not run for more than 2 minutes. A low foam concentrate tank level is denoted by “Lo Con” blinking on the display. This code will alternate with the normal display value shown. If two consecutive minutes of low concentrate level is detected, the display will show “No Con”, the pump will stop, and the system will go to Stand By mode until the foam level is restored and the on button is depressed.

**Pump Error**
Motor stall protection is provided. In the event that the pump motor will not run or stalls for 10 seconds, the display will show “ERR.EL” to indicate that the pump is producing no feedback to the control signal. The system will return to off status to protect the electric motor and components.

**High/Low Flow Condition**
Whenever the foam pump cannot reach the selected level an indication of the status will blink in the background as:
“Lo.Flo” – Foam delivery rate is below pump capability.
“Hi.Flo” – The water delivery rate is too high for the foam pump’s capacity.
### Normal Operation Summary

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<thead>
<tr>
<th>How to</th>
<th>Display</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Turn FoamPro system on.</td>
<td><img src="image1.png" alt="Display Image" /></td>
<td>1. Operate the apparatus engine to develop hydraulic pressure. Turn the FoamPro Main Power circuit breaker switch on. HYPRO will appear on the display momentarily.</td>
</tr>
<tr>
<td>2. Make foam solution.</td>
<td><img src="image2.png" alt="Display Image" /></td>
<td>2. Establish water flow to the foam capable discharge. The Digital Display Control Module will indicate the water flow rate. Press the FOAM button (red upper-left button). The LED lamps below the ON and FLOW labels will illuminate and the lamp below the ON label will flash. The rate of water flow will be displayed in units per minute.</td>
</tr>
<tr>
<td>3. Read the total amount of water flowed during the operation.</td>
<td><img src="image3.png" alt="Display Image" /></td>
<td>3. Press the SELECT button (grey upper-right button) until the LED lamp below the TOTAL WATER label is illuminated. The total amount of water will be displayed. Reset this value to zero by pressing the ▼ and ▲ buttons at the same time.</td>
</tr>
<tr>
<td>4. Read % of concentrate.</td>
<td><img src="image4.png" alt="Display Image" /></td>
<td>4. Press the SELECT button (grey upper-right button) until the LED lamp below the % label is illuminated. The display will read percentage of foam concentration. Foam will continue to be injected.</td>
</tr>
<tr>
<td>5. Change the % of concentrate.</td>
<td><img src="image5.png" alt="Display Image" /></td>
<td>5. Press the button beside the ▼ or ▲. The display will show the new concentrate injection rate chosen. The proportion of concentrate injected will change immediately.</td>
</tr>
</tbody>
</table>

Normal Operation Summary Continued on Next Page
## Normal Operation Summary

<table>
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<tr>
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<th>Display</th>
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<tbody>
<tr>
<td>6. Read the total amount of foam concentrate used.</td>
<td><img src="image1.png" alt="Display" /></td>
<td>6. Press the <strong>SELECT</strong> button (grey upper-right button) until the LED lamp below the <strong>TOTAL FOAM</strong> label is illuminated. The total amount of foam concentrate used will be displayed. Reset this value to zero by pressing the ▼ and ▲ buttons at the same time.</td>
</tr>
<tr>
<td>7. Read water flow without foam injection.</td>
<td><img src="image2.png" alt="Display" /></td>
<td>7. If on, press the <strong>FOAM</strong> button, the foam injection will stop. Press the <strong>SELECT</strong> button (grey upper-right button) until the LED lamp below <strong>FLOW</strong> is illuminated. The water flow rate through the foam discharge(s) will be displayed whether foam is being pumped or not.</td>
</tr>
<tr>
<td>8. Turn the FoamPro system off.</td>
<td><img src="image3.png" alt="Display" /></td>
<td>8. Turn the apparatus Master or Battery switch off. The system can also be turned off by using the circuit breaker switch on the valve driver box.</td>
</tr>
</tbody>
</table>

**NOTE:** Any of these changes can be made at anytime during, before, or after water is flowing.
Simulated Flow Operation

The Simulated Flow function of the system allows the operator to control the foam pump manually. The water flow rate and the concentrate injection percentage rate can be set by using the display readout and the rate adjustment buttons on the Digital Display Control Module. This function provides the manual control requirement of NFPA. This function also allows the operator to empty the foam concentrate tank for cleaning or changing foam types. It also provides a means of checking the operation of the foam pump at all normal rates of flow and injection without running the water pump.

Warning: When operating the FoamPro in the Simulated Flow function, an outlet for the foam concentrate injection must be provided. Otherwise, dangerous excessive pressure may be built up in the apparatus water piping and or hoses. This outlet for the foam concentrate can be provided by turning the CAL/INJECT valve to the CAL position. A suitable container must be provided to collect the foam concentrate.

Simulated Flow Operation Summary

<table>
<thead>
<tr>
<th>How to</th>
<th>Display</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Begin Simulated Flow Function.</td>
<td></td>
<td>1. Make sure the lamp below FLOW is illuminated. Press both the ▼ and ▲ buttons at the same time. The FoamPro Display will read $ to the left of the flow, meaning the system will “simulate” the displayed water flow rate. (The default value of flow may be set to any value, see Section 11). CAUTION: Be certain that an outlet is provided for the foam concentrate when the foam pump is started.</td>
</tr>
<tr>
<td>2. Change the injection rate while in Simulated Flow Function.</td>
<td></td>
<td>2. Press the SELECT button (grey upper-right button) until the LED lamp below the % label is illuminated. The display will read the current percent setting. Press the ▼ or ▲ buttons to select the desired injection rate. The FoamPro will respond and immediately begin injecting concentrate at the new rate.</td>
</tr>
<tr>
<td>3. Change the Simulated Flow Rate while in the Simulated Flow Function.</td>
<td></td>
<td>3. Press the SELECT button (grey upper-right button) until the LED lamp below the FLOW label is illuminated. The display will show $ and current flow rate. Press the ▼ or ▲ to select the desired simulated water flow rate. The FoamPro will respond and immediately begin operating at the new flow rate.</td>
</tr>
</tbody>
</table>
Simulated Flow Operation Summary

<table>
<thead>
<tr>
<th>How to</th>
<th>Display</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Empty the Foam Tank.</td>
<td><img src="image1" alt="Display" /></td>
<td>4. Place a suitable container under the CAL/FLUSH outlet tube. Place the CAL/INJECT valve in the CAL/FLUSH position. Press the FOAM button. The foam pump will operate and foam concentrate will be discharged from the outlet tube. <strong>NOTE</strong>: FoamPro must be in Simulated Flow Mode.</td>
</tr>
<tr>
<td>5. Turn the Simulated Flow Function off and return to automatic operation.</td>
<td><img src="image2" alt="Display" /></td>
<td>5. Press both rate adjustment buttons at the same time. The (\pm) symbol will leave the display and the FoamPro will operate automatically from the flow sensor signal. Turning the apparatus Master or Battery switch off will also turn off the Simulated Flow Function. The next time the power is turned on, the FoamPro will return to the original automatic default settings.</td>
</tr>
</tbody>
</table>
PRIMING THE FOAM PUMP WHEN FOAM TANK HAS RUN DRY

In some instances, the foam tank may run dry while operating the FoamPro system. The foam pump is designed to pump liquid. When the fire pump is running, the foam pump cannot pump air efficiently against 100 to 150 psi back pressure. To re-establish foam concentrate flow quickly, the following procedure can be used.

1. Turn the CAL/INJECT valve to the Calibrate position.
2. With the fire pump flowing water from foam discharge and the FoamPro on observe the hose from the CAL/INJECT valve.
3. When foam concentrate flows from the unit turn the CAL/INJECT valve back to the INJECT position. The pump is now primed and ready for normal operation.
4. If the fire pump is not running, place the FoamPro into the simulated flow mode and proceed with above steps.

11 MAINTENANCE

1. Monthly: Inspect wiring, hoses, flow meters, and connections for tightness, corrosion, leaks and/or damage.

2. Monthly: Remove and clean the foam strainer screen(s). Flush as required.

3. Monthly: Check foam pump gear case oil level and refill as necessary with SAE 30 weight non-detergent oil.

4. Annually: Drain the pump oil and refill pump crankcase with SAE 30 weight non-detergent oil. Check for concentrate or water in the drain oil.

NOTE: Water quality, flushing & storage techniques, environment and usage may have an effect on your maintenance schedule. To ensure equipment longevity, it is recommended to adjust your schedule accordingly.

CAUTION: Release all pressure and drain all concentrate and water from the discharge system before servicing any of its component parts.
12 TROUBLESHOOTING

These FoamPro systems are designed to be easy to diagnose and service. There are several major components. Servicing the system involves isolation of the failed component and replacing it. There are no user serviceable internal components. Due to the reliable nature of modern electronics, most failures are traced to faulty cables or wiring problems. A diagnostic mode is built into the system to help isolate problems.

ENTERING DIAGNOSTIC MODE

Diagnostic mode is entered by removing the center screw and o-ring on the right hand side of the Digital Display Control Module (see Figure 28) using a 3/32 inch Allen wrench. Once the screw is removed, press and release the switch located under the screw.

To exit the diagnostic mode, press and release the switch again. The word "HYPRO" will appear on the display followed by a zero after several seconds. REPLACE THE COVER SCREW AND O-RING WHEN DONE.

Figure 29. FoamPro 2002 Electrical Wiring Diagram

Figure 28. Diagnostic Switch Location
NOTE: ALWAYS REPLACE THE COVER SCREW AND O-RING TO KEEP WATER AND DIRT FROM ENTERING THE DIGITAL DISPLAY CONTROL MODULE BECAUSE IT CAN CAUSE SERIOUS DAMAGE TO THE COMPONENTS.

The system will provide a full complement of diagnostic functions to enable verification of all system components. Refer to the electrical diagram in Figure 33.

DIAGNOSTIC MODE FUNCTIONS
On entry to diagnostic mode, the display will show “HELLO”. No other status indicator lights will be illuminated. “SELECT” will select the various modes, each indicated by the status indicator light by the label. These diagnostic modes include:

“None”
Pressing ‡ will illuminate all display segments and status indicator lights.

“Flow”
The value shown is the current number of flow pulses being received each second. If no water is flowing, the value should be zero. This is a function test for the flowmeter. Removing the flowmeter sensor from its tee and spinning the paddlewheel should produce a reading other than zero on the display. If there is no reading on the display, connect the sensor directly to the back of the Digital Display Control Module. This test will determine if the flowmeter sensor or extension cable is defective.

“Total Water”
The value shown reflects the level of the liquid foam concentrate in the tank. “Lo.Con” indicates that the tank is empty. “Hi.Con” indicates a satisfactory level for operation. This is a test of the low tank level sensor and wiring.

“%” (Percent)
The value shown reflects the duty cycle to run the foam pump. If “FOAM” is pressed, the pump will be run at the selected rate and the “ON” status indicator lamp will be illuminated. The value may be altered with ▲ or ▼. This is a test of the motor control box and pump hook up. Depressing the ▲ will increase pump speed, which should be audible and visible on the “TOTAL FOAM” display.

“Total Foam”
The value shown is the current number of pump pulses being received each second. If the pump is not running, the value should be zero. Increasing motor speed in “%” mode should increase displayed value. This is a test of the pump feedback sensor and wiring.
## TROUBLESHOOTING GUIDE

<table>
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<th>Probable Cause(s)</th>
<th>Corrective Action</th>
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</thead>
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<td>Pump runs but produces no flow</td>
<td>Pump is not primed.</td>
<td>See Foam Pump Priming Check section on Page 21.</td>
</tr>
<tr>
<td>Pump loses prime, chattering noise, pressure fluctuates.</td>
<td>Air leak in suction hose or inlet fittings.</td>
<td>Remove suction hose and test for leaks by pressurizing hose with water. Make sure thread sealant has been used on all fittings.</td>
</tr>
<tr>
<td></td>
<td>Suction line is blocked, collapsed or too small.</td>
<td>Remove suction line and inspect it for a loose liner or debris lodged in hose. Avoid all unnecessary bends. Do not kink hose.</td>
</tr>
<tr>
<td></td>
<td>Clogged suction strainer.</td>
<td>Clean strainer.</td>
</tr>
<tr>
<td>Pump runs for 8 to 10 seconds then shuts down, ERR.EL may be flashed on display.</td>
<td>Speed sensor circuit open.</td>
<td>Inspect wiring and connection to speed sensor</td>
</tr>
<tr>
<td></td>
<td>Sensor position incorrect.</td>
<td>Check to ensure that the speed sensor is within the proper sensing distance of .005 to .015 inches from the pulley teeth.</td>
</tr>
<tr>
<td></td>
<td>Speed sensor not functioning.</td>
<td>Replace speed sensor.</td>
</tr>
<tr>
<td></td>
<td>Inadequate ground or voltage.</td>
<td>Check connections &amp; voltage.</td>
</tr>
<tr>
<td>Pump runs full speed whenever the circuit breaker switch is in “ON”.</td>
<td>Poor ground to motor driver box on pump/motor bracket.</td>
<td>Make sure screws are tight and a good ground is maintained.</td>
</tr>
<tr>
<td>No characters are displayed on the digital display.</td>
<td>Note: The main switch is current limited to 41 amps for System 2001/12V DC; 56 amps for System 2002 &amp; 2002HP/12V DC; 22 amps for System 2001/24V DC; 30 amps for System 2002/24V DC.</td>
<td>Turn on the main power switch on the computer control module.</td>
</tr>
<tr>
<td></td>
<td>The main power switch is not “ON”.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cables not correctly connected.</td>
<td>Inspect and secure connections.</td>
</tr>
<tr>
<td></td>
<td>Control cable(s) defective.</td>
<td>Replace control cable(s)</td>
</tr>
<tr>
<td></td>
<td>Digital display has been damaged.</td>
<td>Replace the digital display.</td>
</tr>
<tr>
<td></td>
<td>Inadequate ground or voltage.</td>
<td>Inspect connections &amp; check voltage.</td>
</tr>
<tr>
<td>System is powered up and the Foam ON/OFF switch has been pressed but the foam pump doesn’t run.</td>
<td>No water is flowing in any of the foam discharges.</td>
<td>Flow water.</td>
</tr>
<tr>
<td></td>
<td>Flow meter wiring not correct.</td>
<td>Inspect wiring and connection to flow meter.</td>
</tr>
<tr>
<td></td>
<td>Flow meter obstructed.</td>
<td>Clear flow meter of debris.</td>
</tr>
<tr>
<td></td>
<td>Flow meter not functioning.</td>
<td>Replace flow meter.</td>
</tr>
<tr>
<td></td>
<td>Float is on plunger wrong—indicating tank is low.</td>
<td>Remove the snap ring at the top of the plunger and remove the float, turn it over and reinstall.</td>
</tr>
<tr>
<td></td>
<td>Float stuck on plunger—indicating tank is low.</td>
<td>Inspect and clean float switch.</td>
</tr>
<tr>
<td></td>
<td>Control cable(s) defective.</td>
<td>Check connections and replace control cable(s)</td>
</tr>
</tbody>
</table>
## TROUBLESHOOTING GUIDE (Cont'd.)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Probable Cause(s)</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>System returns to standby mode while pumping or HYPRO appears momentarily while pumping.</td>
<td>Insufficient power supply.</td>
<td>Inspect and correct power and ground connections, and wiring.</td>
</tr>
<tr>
<td></td>
<td>Current resistance in wiring circuits.</td>
<td>Make sure 8 AWG (minimum) wire is used for connection to battery terminal.</td>
</tr>
<tr>
<td>LO.CON appears on display.</td>
<td>Concentrate level in tank is low.</td>
<td>Fill concentrate tank.</td>
</tr>
<tr>
<td></td>
<td>Low tank level sensor or wiring is inoperative.</td>
<td>Repair or replace defective components.</td>
</tr>
<tr>
<td>ERR.SU on power up.</td>
<td>Set up parameter memory is not functioning.</td>
<td>Contact HYPRO for replacement. (NOTE: This unit will continue to operate using factory set up values.)</td>
</tr>
<tr>
<td>Display shows “?” for flow.</td>
<td>Flowmeter is sensing water flow, but the flow rate is too low for precise proportioning.</td>
<td>Check flowmeter.</td>
</tr>
<tr>
<td>CAL/INJECT valve is leaking</td>
<td>Valve seat is loose.</td>
<td>Remove hose and fitting from inject port of valve and tighten seat using 3/8 inch hex wrench. Reconnect fitting and hose.</td>
</tr>
<tr>
<td>System cannot be calibrated</td>
<td>Calibration values selected are out of range of system or setup memory is full.</td>
<td>Perform system reset as described in Calibration Section.</td>
</tr>
</tbody>
</table>
To Operator:

1. Push red foam button. Light below switch will indicate unit is operating and will flash when foam is being injected.
2. Change foam percentage using keys.
3. Gray select button will display water flow, total water flowed, foam concentration and total foam flowed. Push keys together to reset total values.
4. To shut down, depress the red foam button.

Read and Understand Operating Manual 800-533-9511
## PARTS IDENTIFICATION FOR SYSTEM 2002

### Ref. Part No. Description Qty.

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2345B-P-08</td>
<td>Foam Pump Assy-2002</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>2331B-P-01</td>
<td>Foam Pump Assy-2002HP</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3300-0092</td>
<td>Relief Valve</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>3304-0025</td>
<td>Cal/Inject Valve</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>2404-0271</td>
<td>Reducer</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>2401-0038</td>
<td>½ inch NPT Tee</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>3350-0135</td>
<td>Line Strainer (½ inch NPT)</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>0704-8600A1</td>
<td>Flange Adaptor</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>2530-0092</td>
<td>Speed Sensor</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>2738-2003</td>
<td>Coupling Body ½ inch [19 mm]</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>2728-0001</td>
<td>Rubber Disc</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>2738-2002</td>
<td>Coupling Body ½ inch [16 mm]</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>3900-0049</td>
<td>Gear</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>2570-0016</td>
<td>Electric Motor (.75 hp; 12 V)</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>2570-0017</td>
<td>Electric Motor (.75 hp; 24 V)</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>2840-0071</td>
<td>Shield</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>2527-0067</td>
<td>Digital Display Control</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>2530-0097</td>
<td>Terminal Block</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>2527-0031</td>
<td>Diode Block Assembly</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>2527-0069</td>
<td>Motor Driver Box</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>1700-0120</td>
<td>Grommet</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1450-0014</td>
<td>Plastic Cap</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>2910-0016</td>
<td>Clamp, Vinyl Coated</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>2530-0087</td>
<td>Capacitor (154000uF)</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>1510-0086</td>
<td>Mounting Bracket</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>2404-0182</td>
<td>Injector Fitting</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>2510-0028</td>
<td>Tank Level Sensor (Vertical)</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>2510-0032</td>
<td>Tank Level Sensor (Side)</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>2520-0042</td>
<td>Tank Sensor Cable</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>2520-0045</td>
<td>Flowmeter Cable (6 ft. [2 m] Lg)</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>2520-0046</td>
<td>Flowmeter Cable (12 ft. [3 m] Lg)</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>2520-0050</td>
<td>Control Cable (20 ft. [5 m] Lg)</td>
<td>1</td>
</tr>
<tr>
<td>31</td>
<td>2520-0047</td>
<td>Flowmeter Cable (12 ft. [3 m] Lg)</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>3320-0027</td>
<td>Check Valve, ½ inch</td>
<td>1</td>
</tr>
</tbody>
</table>

### Diagram:

- Digital Display
- Control Cable
- Flowmeter Connector Cable
- Vertical Mount
- Low Tank Switch Cable
- Optional Side Mount

---

**To Operator:**

1. Push red foam button. Light below switch will indicate unit is operating and will flash when foam is being injected.
2. Change foam percentage using keys.
3. Gray select button will display water flow, total water flowed, foam concentration and total foam flowed. Push keys together to reset total values.
4. To shut down, depress the red foam button.

---

Read and Understand Operating Manual

800-533-9511
14 INSTALLATION DRAWINGS

Display Requires 3-7/8" [98 mm] Dia. Hole

Cutout Dimensions for Display Control Module

Cutout Dimensions for System Spec. Placard

(Please make a photocopy for your use.)
**FoamPro Flowmeter**

* = Minimum sensor service clearance.

---

### FoamPro Flowmeter Specifications

<table>
<thead>
<tr>
<th>Assy. Part Number</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Maximum Accuracy Flow Range (gpm)</th>
<th>Maximum Operating Flow Range (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2660-0030</td>
<td>1-1/2&quot;—11-1/2&quot; NPT</td>
<td>2&quot; Pipe</td>
<td>7-3/8&quot; [188 mm]</td>
<td>3-7/8&quot; [99 mm]</td>
<td>5-110</td>
<td>3-145</td>
</tr>
<tr>
<td>2660-0031</td>
<td>1-1/2&quot;—11-1/2&quot; NPT</td>
<td>2&quot; Pipe</td>
<td>5-3/8&quot; [137 mm]</td>
<td>4-1/8&quot; [105 mm]</td>
<td>10-320</td>
<td>3-380</td>
</tr>
<tr>
<td>2660-0032</td>
<td>2&quot;—11-1/2&quot; NPT</td>
<td>2&quot; Pipe</td>
<td>5-3/8&quot; [137 mm]</td>
<td>4-1/8&quot; [105 mm]</td>
<td>10-320</td>
<td>3-380</td>
</tr>
<tr>
<td>2660-0033</td>
<td>2-1/2&quot;—8&quot; NPT</td>
<td>3&quot; Pipe</td>
<td>5-3/8&quot; [137 mm]</td>
<td>4-9/16&quot; [116 mm]</td>
<td>15-520</td>
<td>5-625</td>
</tr>
<tr>
<td>2660-0034</td>
<td>3&quot;—8&quot; NPT</td>
<td>4&quot; Pipe</td>
<td>5-1/2&quot; [140 mm]</td>
<td>4-7/8&quot; [124 mm]</td>
<td>30-1150</td>
<td>12-1380</td>
</tr>
<tr>
<td>2660-0035</td>
<td>4&quot;—8&quot; NPT</td>
<td>5&quot; Pipe</td>
<td>5-1/2&quot; [140 mm]</td>
<td>5-3/8&quot; [137 mm]</td>
<td>55-1980</td>
<td>20-2380</td>
</tr>
</tbody>
</table>

---

**NOTES:**
1. Use CAUTION not to damage sensor during assembly.
2. Use Loctite PST 565 or equivalent Teflon tape to seal pipe threads.
3. Maximum horizontal installation angle to allow proper water drainage. Unit may also be installed in vertical piping arrangement.
15 WARRANTY

Hypro Corporation, as supplier of 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 Hypro Corporation 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 Hypro Corporation; (4) ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, OTHER THAN INJURY TO THE PERSON, ARISING FROM THE USE OF ANY PUMP OR OTHER PRODUCT MANUFACTURED BY HYPRO CORPORATION 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 Hypro Corporation under the foregoing warranty is limited to the repair or replacement at Hypro Corporation’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 Hypro Corporation factory within the warranty period, at the sole expense of the purchaser, which part shall upon examination appear to Hypro Corporation’s satisfaction to have been defective in material and workmanship.

The liability of Hypro Corporation 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 Hypro Corporation to its customer.

Hypro Corporation 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 Hypro Corporation’s FoamPro products on behalf of Hypro Corporation, or to assume for Hypro Corporation the obligations contained in this warranty. Hypro Corporation 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 Hypro Corporation. The FoamPro contains electronic components that may receive damage from improper shipping procedures! All FoamPro components shipped back to Hypro 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 refurbished 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 Hypro.

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.

Hypro Corporation 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.