
BARNSTEAD|THERMOLYNE CORPORATION

EASYpure™ LF
OPERATION MANUAL
AND PARTS LIST
Series 1052

IMPORTANT INFORMATION

This manual contains important operating and safety information. You must carefully read and understand the contents of this manual prior to the use of this equipment.

Water purification technology employs one or more of the following: chemicals, electrical devices, mercury vapor lamps, steam and heated vessels. Care should be taken when installing, operating or servicing Barnstead products. The specific safety notes pertinent to this Barnstead product are listed on the following page.

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Safety Information

Safety Information

Your Barnstead EASYpure LF has been designed with function, reliability, and safety in mind. It is your responsibility to install it in conformance with local electrical codes. For safe operation, please pay attention to the alert boxes throughout the manual.

Alert Boxes



WARNING

Warnings alert you to a possibility of personal injury.



CAUTION

Cautions alert you to a possibility of damage to the equipment.



NOTE

Notes alert you to pertinent facts and conditions.

Warnings

Warnings

WARNING

To avoid electrical shock, always:

1. Use a properly grounded electrical outlet of correct voltage and current handling capacity.
2. Do not locate the EASYpure LF directly over equipment that requires electrical service. Routine maintenance of this unit may involve water spillage and subsequent electrical shock hazard if improperly located.
3. Replace fuses with those of the same type and rating.
4. Do not disassemble water lines or remove cartridges where spilled water could contact equipment that requires electrical service. Disassembly of water lines and removal of cartridges will result in water spillage. Electrical shock hazard could result.
5. Disconnect from the power supply prior to maintenance and servicing.

To avoid personal injury:

1. Do not use in the presence of flammable or combustible materials; fire or explosion may result. This device contains components which may ignite such materials.
2. This device is to be used with water feeds only. Sanitizing/cleaning agents must be used in compliance with instructions in this manual. Failure to comply with the above could result in explosion and personal injury.
3. Avoid splashing disinfecting solutions on clothing or skin.
4. Ensure all piping connections are tight to avoid chemical leakage.
5. Ensure adequate ventilation.
6. Carefully follow manufacturer's safety instructions on labels of chemical containers and material safety data sheets.
7. Depressurize system prior to opening cartridge access door.
8. Refer servicing to qualified personnel.

Introduction

Introduction

The Barnstead EASYpure LF is a line-fed water purification system designed to provide Type I reagent-grade water with extremely low organic content. It uses a three-stage deionization process combined with a 0.2 micron filter to polish pretreated water (distilled, deionized, or reverse osmosis) to produce water with a resistivity of up to 18.3 megohms-cm and with a total organic carbon content of less than 15 ppb. Water resistivity is continuously sensed by a resistivity cell and displayed on a digital display.

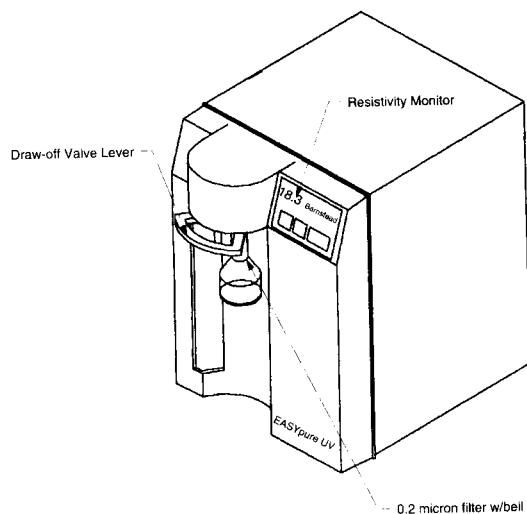


Figure 1 EASYpure LF Front

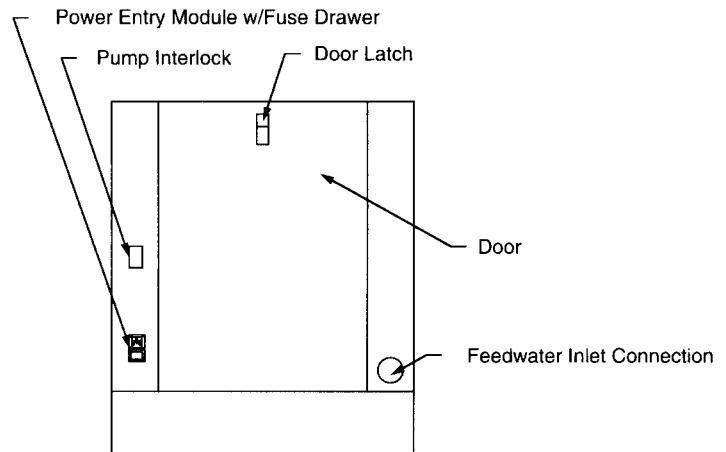


Figure 2 EASYpure LF Back

Specifications

Specifications

Dimensions and Clearance Requirements.

EASYpure LF dimensions - 12 7/8" W X 19" D X 17 1/8" H (32.7 cm X 48.3 cm X 43.5 cm).

Clearances:

Sides - 4" (10.2 cm) minimum to allow air flow.

Above - 12" (30.5 cm) minimum for removal of the top cover.

Cartridge replacement requires that you be able to access the back of the unit and open the cartridge access door (total depth, unit + open door, = 34") (86.4 cm).

Feedwater Requirements

The EASYpure LF requires water pretreated by either distillation, deionization or reverse osmosis meeting the following criteria.

TOC - Less than 1.0 ppm.

Turbidity - 1.0 N.T.U. maximum

Temperature - 40°F - 120°F (4.4°C - 48.8°C)

Pressure: Gravity - 100 PSIG

Resistivity (Minimum):

Distilled - 300,000 Ohms-cm

Deionized - 1.0 Megohms-cm

Reverse osmosis - 100,000 Ohms-cm

Product Water

Quality

Resistivity: ASTM Type I

TOC: Less than 15.0 ppb

Flow Rate: 1.5 LPM at 30 PSIG inlet, feedwater pressure at 60Hz and with a new final filter.

Electrical Requirements

The EASYpure LF is equipped with a power cord to be plugged into an electrical outlet of the appropriate voltage.

Model D7383 - 100 VAC +5%, -10%, 47-63 Hz.

Model D7381 - 120 VAX +5%, -10%, 47-63 Hz.

Model D7382-33 - 230 VAC +10%, -10%, 47-63 Hz.

Model D7382 - 240 VAC +10%, -10%, 47-63 Hz.



WARNING

Use a properly grounded electrical outlet of correct voltage and current handling capacity.

Environmental Conditions

Operating: 4°C - 49°C; 20% to 80% relative humidity, non-condensing. Installation Category II (over-voltage) in accordance with IEC 664. Pollution Degree 2 in accordance with IEC 664.

Altitude limit: 5,000 meters.

Storage: -25°C to 65°C; 20% to 80% relative humidity.

Declaration of Conformity

Barnstead|Thermolyne hereby declares under its sole responsibility that this product conforms with the technical requirements of the following standards:

EMC: EN 50081-1 Generic Emission Standard;
EN 50082-1 Generic Immunity Standard;

Safety: IEC 1010-1-92 Safety requirements for electrical equipment for measurement, control, and laboratory use; Part I: General Requirements per the provisions of the Electromagnetic Compatibility Directive 89/336/EEC, as amended by 92/31/EEC and 93/68/EEC, and per the provisions of the Low Voltage Directive 73/23/EEC, as amended by 93/68/EEC.

The authorized representative located within the European Community is:

European Manager
Barnstead|Thermolyne
Saarbrückener Str. 248
D-38116 Braunschweig
Germany

Copies of the Declaration of Conformity are available upon request.

Unpackaging and Installation



NOTE

Cartridges and the 0.2 micron final filter are not provided with the EASYpure LF and must be ordered separately.



WARNING

Do not locate the EASYpure LF directly over equipment that requires electrical service. Routine maintenance of this unit may involve water spillage and subsequent electrical shock hazard if improperly located.

Do not use in the presence of flammable or combustible materials; fire or explosion may result. This device contains components which may ignite such materials.

This device is to be used with water feeds only. Sanitizing/cleaning agents must be used in compliance with instructions in this manual. Failure to comply with the above could result in explosion and personal injury.



NOTE

If you purchased a wall mount bracket for the EASYpure LF, refer to the Wall Mounting section of this manual.



NOTE

The outlet of your storage reservoir must be level with the inlet of the EASYpure LF.



NOTE

To disrupt the flow of water to the EASYpure LF, press the stainless steel thumb pad on the quick disconnect fitting. The insert with the valve is easily removed. To resupply the EASYpure LF with water, push the insert into the coupling body and listen for the click that indicates full closure.

Unpackaging and Installation

1. Remove the unit from its shipping container. Ensure that the tubing, adapter and power cord are removed from the packaging materials before discarding.

Description	Catalog Number
EASYpure High Purity/Low TOC Cartridge	D50229
Pretreatment Cartridge DI Feed	D50230
Pretreatment Cartridge R/O - Distilled Feed	D50231
Ultrapure Mixed Bed Cartridge	D50233
Filter, 0.2 Micron	FL703X2

2. Place the EASYpure LF on a bench top convenient to your work area, noting the Clearance Requirements.
3. Tape the 1/4" OD x 1/4" NPT tubing adapter using 1 1/2 to 2 turns of Teflon® tape, and install it on your incoming water line or your storage reservoir.
4. Install one end of the tubing to this adapter, but do not install the other end on the EASYpure LF until cartridges have been installed. You will connect the water supply to the quick disconnect body in the Initial Operation section. Refer to the **Tubing Adapter Installation** section of this manual.

Tubing Adapter Installation



CAUTION

Do not tighten tube fitting hex nut with a wrench.
Tight connections can be easily made by hand.

Tubing Adapter Installation

1. Completely disassemble the fitting. Refer to Figure 3 to familiarize yourself with the names of the component parts.
2. Make sure the tubing is cut off reasonably square and that no plastic burrs or ridges are present.
3. Place the grab ring and back-up ring in the hex nut in the order and orientation shown in Figure 3. Thread the nut onto the adapter. DO NOT use the o-ring at this time.
4. Push the tubing through the nut until it bottoms out in the adapter.
5. Remove the adapter nut and tubing. Place the o-ring over the tubing. Be careful not to push the back-up ring or grab ring further back on the tubing when installing the o-ring.
6. Install the hex nut on the adapter and hand tighten.

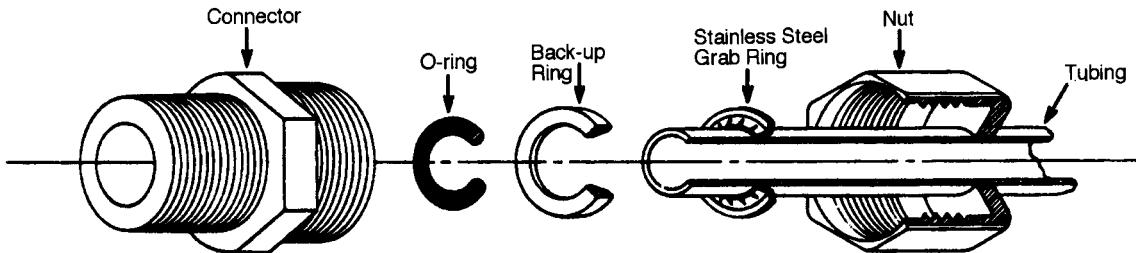


Figure 3 Typical Polypropylene Tubing Adapter Installation

Wall Mounting

Wall Mounting

Install the wall bracket on the wall in a location that is accessible to water and convenient to use. A minimum of 4 fasteners must be used.



WARNING

Do not locate the EASYPure LF directly over equipment that requires electrical service. Routine maintenance of this unit may involve water spillage and subsequent electrical shock hazard if improperly located.



CAUTION

Wall composition, condition and construction, as well as fastener type, must be considered when mounting this unit. The mounting surface and fasteners selected must be capable of supporting a minimum of 150 lbs. Inadequate support and/or fasteners may result in damage to mounting surface and/or equipment. If you are unsure of mounting surface composition, condition and construction or correct fasteners, consult your building maintenance group or contractor.

1. Remove the pump interlock plug from the rear of the unit.
2. Open cartridge access door in the rear of the unit.
3. Remove the cover of the EASYPure LF by removing the screws that secure it to the unit and lifting it straight up.
4. Remove tubing attached to quick disconnect body.
5. Remove the inlet quick disconnect body from the rear of the EASYPure LF cabinet.
6. On both sides of the wall bracket there are plugs. Remove the plug from the side that is most accessible to your feedwater source. Install the inlet quick disconnect body fitting into the hole by placing the inlet quick disconnect into the hole and secure in place with the locknut inside. Replace the plug in the hole generated in the EASYPure LF (where the disconnect body was installed).
7. Remove the four feet from the EASYPure LF and retain the screws.
8. Place the EASYPure LF on the wall bracket swivel base so the screw holes where the feet were attached line up with the holes in the wall bracket. There are guides on the wall bracket that will mate with the EASYPure LF.

WALL MOUNTING



NOTE

Ensure there are no kinks in the tubing that could restrict water flow.



NOTE

Outlet of feedwater storage tank must be above or at the same level as the inlet valve on the EASYpure LF.

9. Install the four screws removed in step 7 through the bottom of the wall bracket and into the EASYpure LF.
10. Snake the tubing removed in step 4 through the hole in the EASYpure LF floor and the wall bracket and attach it to the quick disconnect body installed on the side of the bracket.
11. Installing feed tubing from the water source to the quick disconnect body on the outside of the bracket cannot be done until cartridges have been installed. You will connect the water supply to the quick disconnect body in the Initial Operation section of this manual.
12. Replace the EASYpure LF cover.
13. Reinstall the pump interlock plug.

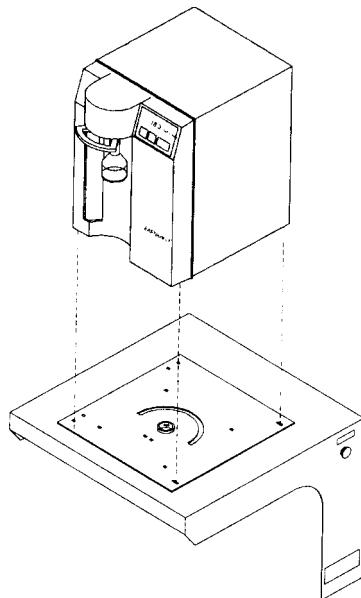
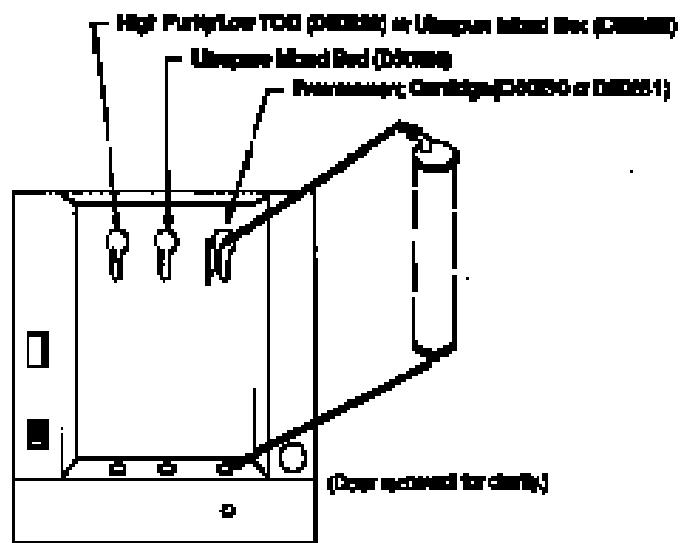
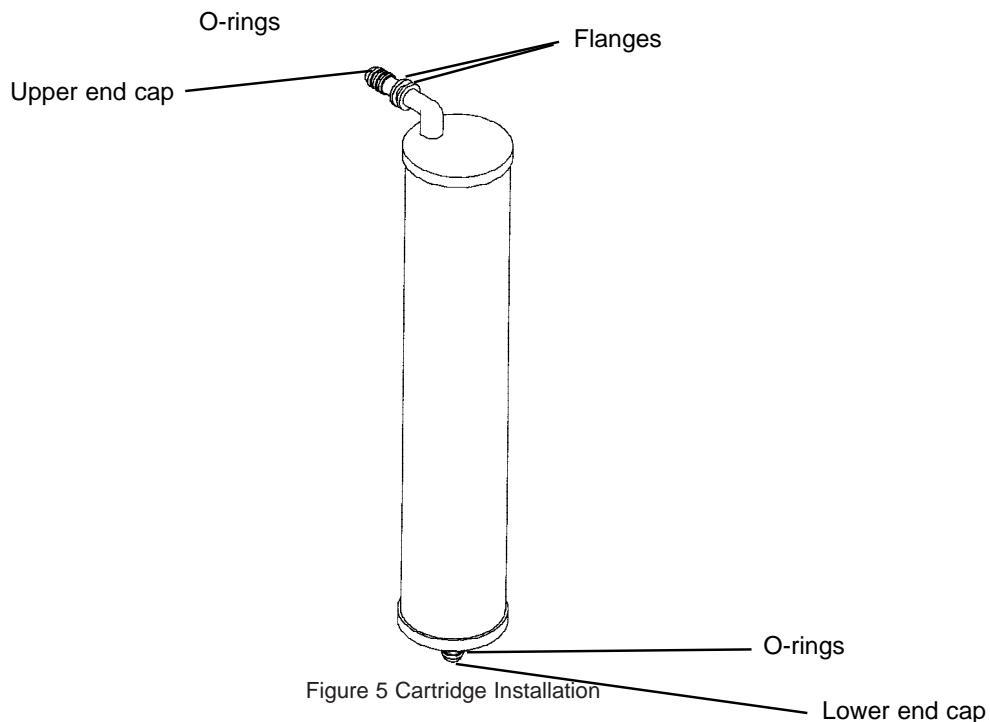


Figure 4 Orientation of Swivel Base

WALL MOUNTING



1. Wet O-rings on cartridge.
2. Insert upper cartridge and cap into upper socket in housing.
3. Discard old cartridge and cap assembly.
4. Finally insert lower cartridge and cap into lower socket.

Initial Operation



NOTE

If the EASYPure LF is wall mounted, rotate the EASYPure LF until the cartridge access door faces forward and the EASYPure LF locks into place.



NOTE

The EASYPure LF's cartridges must be installed in the proper order.



NOTE

The upper end cap is the one with the right-angle turn and the two flanges. The lower end cap extends straight out from the cartridge.



NOTE

The two flanges on the end cap should be able to slide down on each side of the keyway wall.



WARNING

Use a properly grounded electrical outlet of correct voltage and current handling capacity.



CAUTION

Do not allow EASYPure LF to operate unless water is available to unit.



NOTE

For more demanding applications where low TOC water is required, a rinse of 15-20 liters through the cartridges and filter may be necessary.

Initial Operation

Cartridge Installation and Rinse Up

1. Open cartridge access door in the rear of the unit by pushing the door latch down.
2. Remove a new Pretreatment cartridge (Catalog No. D50230 or D50231) from its plastic bag.
3. Wet the o-rings on both end caps.
4. Press the upper end cap into the upper right position until it bottoms out.
5. Lower the cartridge and insert the lower end cap into the lower socket until it is firmly seated.
6. Repeat steps 2 - 5 with the EASYPure ULTRApure and High Purity/Low TOC cartridges, placing them in the center and left-hand positions. *Do not install 0.2 micron filter and bell assembly at this time.*
7. Close cartridge access door.
8. Open draw-off valve.
9. Connect water supply to quick disconnect body.
10. Plug power cord into the unit's power entry module and plug into a live outlet. Turn on power entry module switch.
11. Press "START".
12. Rinse 5-10 liters of water through the cartridges to drain.
13. Remove a new 0.2 micron filter and bell assembly from its bag and insert it into the Luer fitting. Gently turn it clockwise until it is fully seated in the Luer fitting.
14. Remove the protective cap from the filter bell.
15. Flush 5-10 liters of water through the filter to waste.

Normal Operation



NOTE

On initial startup, the purity meter may display “ERR.” This is caused by air in the cell and should be replaced by a resistivity reading almost immediately. If “ERR” does not go out after the pump has run for a minute or if it appears any time while the EASYpure LF is in operation, refer to the **Troubleshooting** section of this manual.



NOTE

For low organic applications, draw off 50 to 100 ml of water from system and discard prior to drawing water for use.

Normal Operation

1. Press the “START” button on the front of the EASYpure LF.

The EASYpure LF’s pump will begin to run and the Purity meter will display the resistivity of the water in megohm-cm.

2. Allow the water’s resistivity to rise to the desired purity before drawing off water.

Water Draw Off

1. Remove the protective cap from the filter bell.
2. Depress the draw-off lever.
3. When draw off is complete, lift the draw-off lever and replace the protective cap on the filter bell.

Run and Standby Modes

Since not all qualities of permissible feedwater will reach maximum resistivity after one pass through the unit’s cartridges (especially as the cartridges near exhaustion), the EASYpure LF has two operational modes.

In the run mode, the pump continuously recirculates water through the cartridges. This is the mode that the unit enters upon startup. If water will be drawn from the EASYpure LF on a continuous basis throughout the day, it is recommended that the EASYpure LF be left in the run mode. In the run mode, the purity meter display indicates the resistivity of the water available for draw off.

In standby mode, the pump runs for ten minutes out of every hour (i.e. ten minutes on, fifty minutes off). If water will be drawn from the unit only infrequently, it is recommended that the unit be put into standby mode. To put the unit into standby mode, press the “STANDBY” button on the front of the unit. The purity meter’s digital display will display “Sby” to indicate that the unit is in standby mode.

Installing Float or Pressure Switch

Installing Float or Pressure Switch

Accessories D0606 (float switch) and D2706 (pressure switch) are designed to protect the EASYpure LF pump by alerting the EASYpure LF of an inadequate feedwater condition so that the pump can be shut down. Use the following instructions for installation.

1. Disconnect electrical power.
2. If using D0606 float switch, follow the installation instructions included with the float switch for installation to tank.
3. If using D2706 low pressure switch, install the PVC tee (supplied with D2706) in incoming water line. Screw the switch into the top of the tee, then connect the inlet tubing to the EASYpure LF with the remaining opening.
4. Route cable from float or low pressure switch to the rear of the EASYpure LF.
5. Remove jumper plug and save for future use.
6. Plug cable into jumper plug outlet.
7. Reconnect electrical cord.

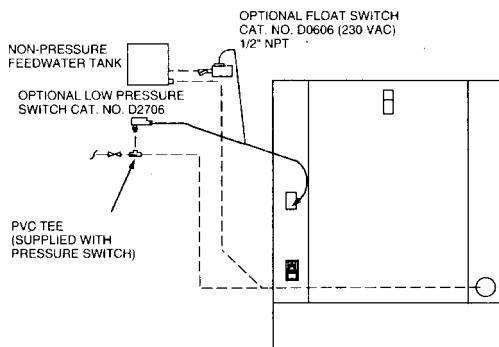


Figure 6 Float and Pressure Switch Installation

Maintenance and Servicing



WARNING

Disconnect from the power supply prior to maintenance and servicing.

Refer servicing to qualified personnel.

Do not disassemble water lines or remove cartridges where spilled water could contact equipment that requires electrical service. Disassembly of water lines and removal of cartridges will result in water spillage. Electrical shock hazard could result.



NOTE

The cartridges will still contain water when removed. Therefore, you will want to have a sink, bucket or other waterproof container available to place them in after removal.



WARNING

Depressurize system prior to opening cartridge access door.



NOTE

If the EASYpure LF is wall mounted, remove the power cord and rotate the EASYpure LF until the cartridge access door faces forward and the EASYpure LF locks into place.



NOTE

A small amount of water will drain from the cartridge when it is disconnected from the lower socket. Plug the cartridge's lower opening with your finger to minimize water spillage while you finish removing the cartridge.

Maintenance and Servicing

Cartridge Replacement

The frequency with which you will need to replace cartridges is dependent on your feedwater's characteristics, your purity requirements and your usage. Replace the cartridges when the product water purity drops below acceptable levels of resistivity or when organic levels become too high.

Cartridge Removal

1. Turn unit off.
2. Disconnect the unit from the power supply.
3. Disconnect incoming water line at quick disconnect. Depressurize system by opening outlet valve.
4. Open the cartridge access door in the rear of the unit by sliding the latch down and pulling the door toward you. The door will swing down.
5. Grasp one of the cartridges at the bottom and pull it straight up to disconnect the lower end cap from the lower socket.
6. Move cartridge upward until upper socket is in keyhole of keyway.
7. Pull cartridge straight out from unit to disconnect upper end cap from upper socket.
8. Repeat steps for the other cartridges.
9. Discard the used cartridges. (See note below.)
10. Install new cartridges and rinse according to the instructions for **Cartridge Installation** in the **Initial Operation** section.

**NOTE**

Used cartridges may be recycled. See P.U.R.E. information packed with new cartridges.

**CAUTION**

Do not overtighten the 0.2 micron filter assembly onto the Luer fitting or use excessive force in seating it. The filter and/or Luer fitting can be damaged by overtightening or excessive force.

**NOTE**

If a newly installed 0.2 micron filter clogs rapidly after installation, the EASYPure LF may need to be sanitized to remove bacterial contaminants. See **System Sanitization**.

**WARNING**

Disconnect from the power supply prior to maintenance and servicing. Refer servicing to qualified personnel.

Avoid splashing disinfecting solutions on clothing or skin.

Ensure all piping connections are tight to avoid chemical leakage.

Ensure adequate ventilation.

Carefully follow manufacturer's safety instructions on labels of chemical containers and material safety data sheets.

**NOTE**

The cartridges will still contain water when removed. Therefore, you will want to have a sink, bucket or other waterproof container available to place them in after removal.

0.2 Micron Filter Replacement

Replace the 0.2 micron filter whenever any of the following conditions occur: every 30 days, the product water flow rate is reduced or bacteria break through. The 0.2 micron filter is shipped assembled with a bell. To replace the 0.2 micron filter assembly:

1. Remove the old 0.2 micron filter assembly by turning it counter-clockwise until it is free from the Luer fitting.
2. Remove the new 0.2 micron filter assembly from its bag and insert it into the Luer fitting. Gently turn it clockwise until it is fully seated in the Luer fitting.
3. Rinse at least 10 liters of water through the filter to drain prior to using the product water.

General Cleaning Instructions

Wipe exterior surfaces with lightly dampened cloth containing mild soap solution.

System Sanitization

The frequency with which you will need to clean your unit and replace your cartridges is dependent on your feedwater's characteristics, your purity requirements and your usage. Sanitize your EASYPure LF and replace the cartridges when the product water purity drops below acceptable levels of resistivity, when organic levels become too high, or if a new 0.2 micron filter clogs rapidly after installation even though the cartridges were thoroughly rinsed before the 0.2 micron filter was installed. To sanitize the EASYPure LF, the purification cartridges must be replaced with a sanitization cartridge and the two empty cartridges. The simple-to-use sanitization cartridge (Catalog Number D50245) and two empty cartridges (D7034) are available from Barnstead|Thermolyne or your local representative.

1. Turn the unit off.
2. Disconnect the unit from the power supply. Disconnect the unit from the water supply.

MAINTENANCE AND SERVICING



WARNING

Depressurize system prior to opening cartridge access door.



NOTE

If the EASYpure LF is wall mounted, remove the power cord and rotate the EASYpure LF until the cartridge access door faces forward and the EASYpure LF locks into place.



NOTE

The two flanges on the end cap should be able to slide down on each side of the keyway wall.



WARNING

Depressurize system prior to opening cartridge access door.

3. **Depressurize system by opening the draw-off valve.**
4. Open the cartridge access door in the rear of the unit by sliding the latch down and pulling the door toward you. The door will swing down.
5. Remove exhausted cartridge in the right-hand position by pulling it first up and then out.
6. Remove a D50245 sanitization cartridge from its packaging. Press the upper end cap of the D50245 sanitization cartridge into the upper right position until it bottoms out.
7. Lower the cartridge and insert the lower end cap into the lower socket until it is firmly seated.
8. Repeat steps 2 - 6 with the two empty cartridges supplied with your EASYpure LF, placing them in the center and left-hand positions.
9. Close the cartridge access door. Remove the 0.2 micron filter and bell assembly.
10. Sanitize, install new cartridges and rinse according to the instructions for Cartridge Installation and Rinse Up in the Initial Operation section.

Fuse Replacement

1. Turn the system off.
2. Disconnect incoming water line at quick disconnect. Depressurize system by opening outlet valve.
3. Disconnect the EASYpure LF from the power supply.
4. Remove the power cord from the power entry module, and remove the pump interlock plug from the rear of the unit.
5. Remove the screws securing the EASYpure LF cover.
6. Remove the cover by lifting it straight up.
7. Pull out the fuse drawer located in the power entry module.

**WARNING**

Replace fuses with those of the same type and rating. (See Parts Listing)

**WARNING**

Depressurize system prior to opening cartridge access door.

8. Replace fuse drawer.
9. Replace cover, power cord, and pump interlock plug.
10. Reconnect unit to power supply, and connect incoming water line at quick disconnect.

Printed Circuit Board Replacement

1. Turn system off.
2. Disconnect incoming water line at quick disconnect. Depressurize system by opening outlet valve.
3. Disconnect the EASYpure LF from the power supply.
4. Remove the power cord from the power entry module, and remove the pump interlock plug from the rear of the unit.
5. Remove the screws securing the EASYpure LF cover.
6. Remove the cover by lifting it straight up.
7. Remove the filter and the Luer fitting.
8. Remove the screws securing the front cover. Remove the front cover.
9. Disconnect the membrane switch lead from the printed circuit board.
10. Disconnect the resistivity cell lead from the printed circuit board.
11. Disconnect the printed circuit board relay plug by squeezing the retaining clip while pulling the plug straight out from the frame.
12. Remove the nuts holding the printed circuit board in place.
13. Remove the printed circuit board. Disconnect power

MAINTENANCE AND SERVICING

supply (3 wires) from printed circuit board.

14. Reconnect power supply to new printed circuit board and install the new printed circuit board. Refer to electrical diagrams.
15. Reconnect the resistivity cell lead and printed circuit board relay plug.
16. Reconnect the membrane switch lead.
17. Reinstall the front cover.
18. Retape the Luer fitting with new Teflon tape and reinstall fitting.
19. Reinstall the EASYpure LF's cover.
20. Reconnect the power cord and the pump interlock plug to the unit, and reconnect the unit to the power supply. Connect the incoming water line at quick disconnect.

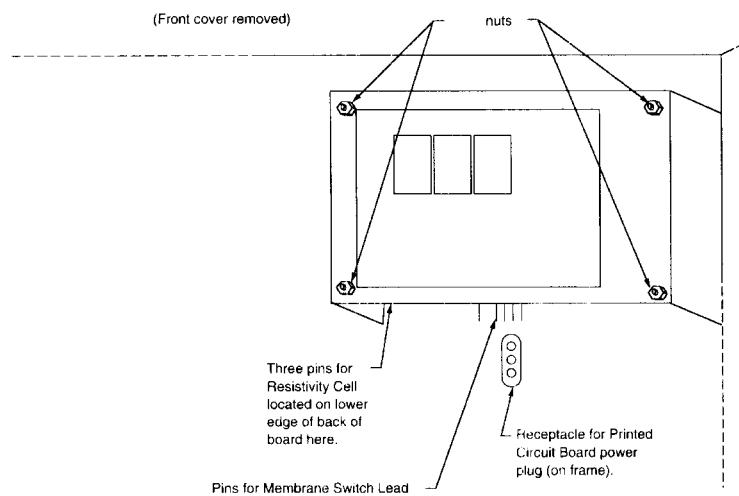


Figure 7 Printed Circuit Board

**WARNING**

Depressurize system prior to opening cartridge access door.

**CAUTION**

The cell electrodes are etched to improve wetting characteristics. Do not mechanically abrade or damage this surface (i.e. do not clean with a wire brush, sandpaper, etc.).

**WARNING**

Carefully follow manufacturer's safety instructions on labels of chemical containers and material safety data sheets.

**CAUTION**

Do not immerse the entire cell assembly in cleaning solution, only the electrode portion.

Cleaning the Resistivity Cell

1. Turn unit off.
2. Disconnect incoming water line at quick disconnect. Depressurize system by opening outlet valve.
3. Disconnect the EASYPure LF from the power supply.
4. Remove the power cord from the power entry module, and remove the pump interlock plug from the rear of the unit.
5. Remove the screws securing the EASYPure LF cover.
6. Remove the cover by lifting it straight up. Remove the filter and Luer fitting. Carefully remove the front cover. Disconnect membrane switch lead from the printed circuit board.
7. Remove the screw holding the cell-cable retaining clip.
8. Disconnect the cell lead from the printed circuit board and gently pull the cable out of the EASYPure LF frame.
9. Unscrew and remove the cell.
10. Carefully remove the O-ring before cleaning the cell.
11. Wash the cell in a mild detergent solution or a 10% Hydrochloric or Sulfuric acid solution (follow acid manufacturers warnings and recommended handling procedure). This may be done in an ultrasonic cleaner or with a soft brush.
12. Thoroughly rinse the cell in deionized or distilled water following the detergent or acid cleaning.
13. After cleaning, reinstall and check the o-ring on cell; replace if necessary.

MAINTENANCE AND SERVICING

14. Reinstall the cell into the cell well and hand tighten. Reroute the cable up through the housing and reconnect.
15. Reinstall the screw holding the cell-cable retaining clip. Reinstall membrane switch lead. Replace the front cover. Retape the Luer fitting with new Teflon tape and reinstall fitting. Replace the top cover.
16. Reconnect the power cord and the pump interlock plug to the unit, and reconnect the unit to the power supply. Connect incoming water line at quick disconnect.

Shutdown

If the EASYpure LF is to be shut down for an extended period of time, the unit should be completely drained and the cartridges removed to prevent the growth of bacteria.

If the system has remained inactive and full of water for more than 96 hours, the unit should be drained, sanitized and new cartridges installed prior to use.

Troubleshooting

Troubleshooting

Problem	Possible Causes	Solutions
EASYPure LF completely inactive. (pump not operating, control panel not lit, etc.).	No electrical power to EASYPure LF. Fuses blown.	Ensure that the EASYPure LF power cord is connected to a live power source and completely plugged into electrical outlet. Make sure power entry module switch is on. Replace the fuses as indicated in the Fuse Replacement section.
Pump runs, but no display (no digital display).	Main PCB and display PCB not connected.	<i>Disconnect unit from power.</i> Check and reconnect boards.
Pump does not run. Display lit.	Low water in feedwater tank or low inlet water pressure. Jumper or devices not installed in pump interlock. Pump worn out or defective.	Replenish feedwater. Check inlet water line for constrictions, blockages or closed valves. Install. Replace pump.
Display reads "Err" when checking resistivity.	Resistivity cell lead disconnected. Air in system. Resistivity cell dirty.	Check resistivity cell lead. Purge air from system by drawing off water according to the instructions in the Operation section. Clean cell and reinstall.
Recirculated water will not rinse up to desired purity level.	Exhausted cartridge. Cartridges out of order.	Replace the cartridges as indicated in the Cartridge Replacement section. Install the cartridges in the proper order as indicated In the Cartridge Installation section.
Reduced or no product flow from the 0.2 filter assembly.	0.2 micron final filter clogged. Cartridges improperly rinsed.	Replace the 0.2 filter assembly as indicated in the 0.2 Micron Filter Replacement section. Rinse cartridges; install new filter.

TROUBLESHOOTING

Problem	Possible Causes	Solutions
0.2 micron final filter clogs rapidly after replacement.	EASYpure LF contaminated with bacteria.	Sanitize EASYpure LF according to the instructions in System Sanitization . Replace the 0.2 filter assembly as indicated in the 0.2 Micron Filter Replacement section.
Short cartridge life.	Cartridges being used are beyond expiration date Change in feedwater characteristics.	Check the expiration date. Cartridges begin to lose capacity after being stored two years from the date of manufacture. Replace the cartridges with unexpired ones. If a Barnstead ROpure is the feedwater source, check that the membrane is functioning properly. If a Barnstead Still is the feedwater source, ensure that the distillate temperature does not exceed 120°F when added to the EASYpure LF feedwater reservoir. If feedwater is from a central water purification system, verify water quality and proper functioning of the system.
Water leakage inside EASYpure LF.	Cartridge connecting tubing not fully seated into sockets. Missing or defective cartridge O-rings.	Press connecting tubing firmly into sockets. Install or replace cartridge O-rings.

Parts and Supplies

Parts and Supplies

Consumables

Consumable parts are those *required* to support the day-to-day operation of this equipment.

Barnstead|Thermolyne establishes two types of consumables; those items that *must* periodically be replaced to maintain performance (filters, resin cartridges, etc.) and other items of limited life (indicator lights, fuses, etc.) that you can expect to replace on a more or less random basis. Where practical, Barnstead|Thermolyne recommends the frequency of replacement, or provides information on life expectancy from which you may calculate a replacement interval compatible with your usage pattern.

The replacement of consumable parts is discussed in the MAINTENANCE AND SERVICING section to assist you in accomplishing your own service.

Consumables may be ordered separately and in some cases, as an expendables kit. Check with your Barnstead|Thermolyne representative for additional information on the expendables kit.

Description	Catalog No.	Recommended Quantity
Pretreatment Cartridge DI Feed	D50230	1
Pretreatment Cartridge R/O - Distilled Feed	D50231	1
EASYPure High Purity/Low TOC Cartridge	D50229	1
Ultrapure Mixed Bed Cartridge	D50233	1
0.2 micron Final Filter and Bell Assembly	FL703X2	2
Fuse		2 each
100 - 120 Volt	FZX37	
230 Volt	5120-0016	
240 Volt	FZX8	
Empty Cartridges for sanitization (set of 2)	D7034	1
Sanitization Cartridge	D50245	1
O-rings, cartridges	06162	8

General Maintenance

General maintenance parts are defined as laboratory level repair parts which do not require great expertise or special tools for installation. Barnstead|Thermolyne recommends that you stock the general maintenance parts as an aid to ensuring the continued operation of this equipment.

Description	Catalog No.	Recommended Quantity
Check valve	02214	1
Luer Fitting	PM703X3	1
Pressure Regulating Valve	02280	1
Quick Disconnect, body	CUX12	1
Quick Disconnect, insert	CUX10	1

PARTS AND SUPPLIES

Safety Stock

For critical applications where performance with *minimum* downtime is required, Barnstead|Thermolyne recommends that you maintain a local stock of those parts listed in the GENERAL MAINTENANCE PARTS and SAFETY STOCK sections.

Description	Catalog No.	Recommended Quantity
Display PCB	PC703X1	1
Main PCB		
100-120 Volt	PC703X2	1
230-230 Volt	PC703X3	1
Pump and Motor Ass'y.		
100-120 Volt	PU738X1A	1
230-240 Volt	PU738X2A	1
Resistivity cell	E703X1A	1
Draw-off valve Ass'y.	PM703X9A	1

Ordering Procedures

Ordering Procedures

Please refer to the Specification Plate for the complete model number, serial number, and series number when requesting service, replacement parts or in any correspondence concerning this unit.

All parts listed herein may be ordered from the **Barnstead|Thermolyne** dealer from whom you purchased this unit or can be obtained promptly from the factory. When service or replacement parts are needed we ask that you check first with your dealer. If the dealer cannot handle your request, then contact our Customer Service Department at 319-556-2241 or 800-553-0039.

Prior to returning any materials to **Barnstead|Thermolyne Corp.**, please contact our Customer Service Department for a "Return Goods Authorization" number (RGA). Material returned without a RGA number will be refused.

Flow Diagram

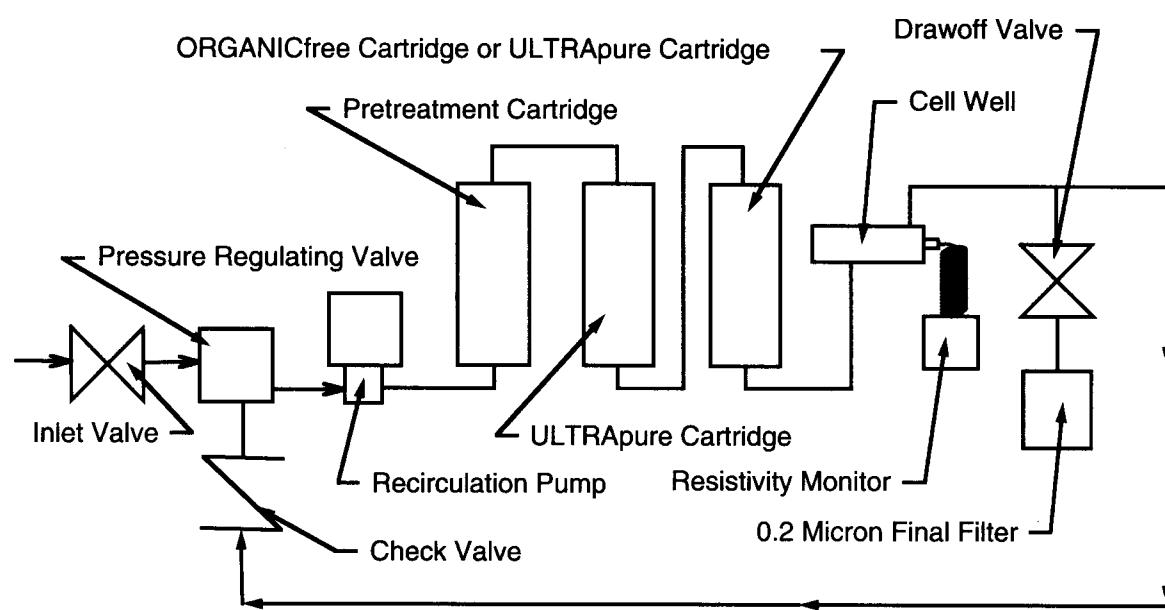


Figure 8 Flow Diagram

Wiring Diagram

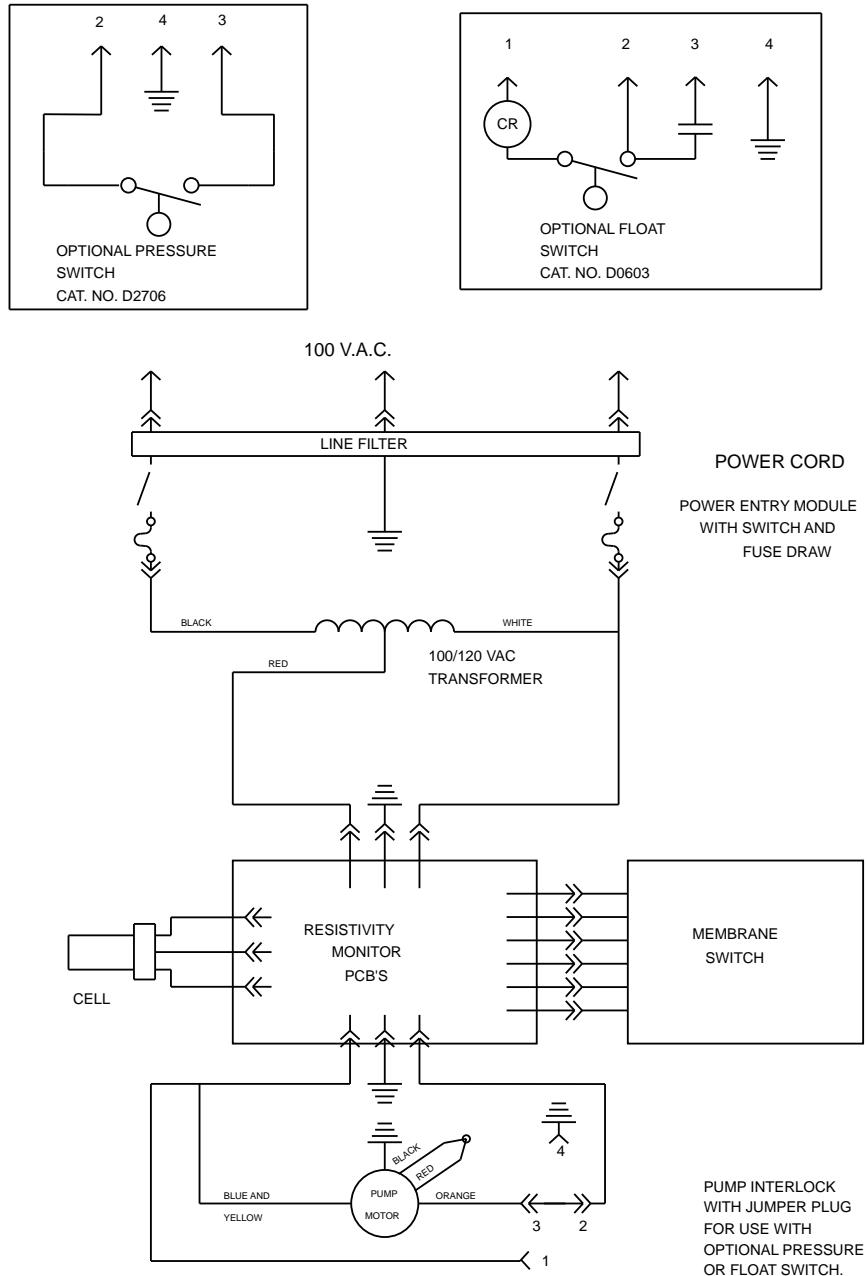


Figure 9 100 Volt Wiring Schematic

WIRING DIAGRAM

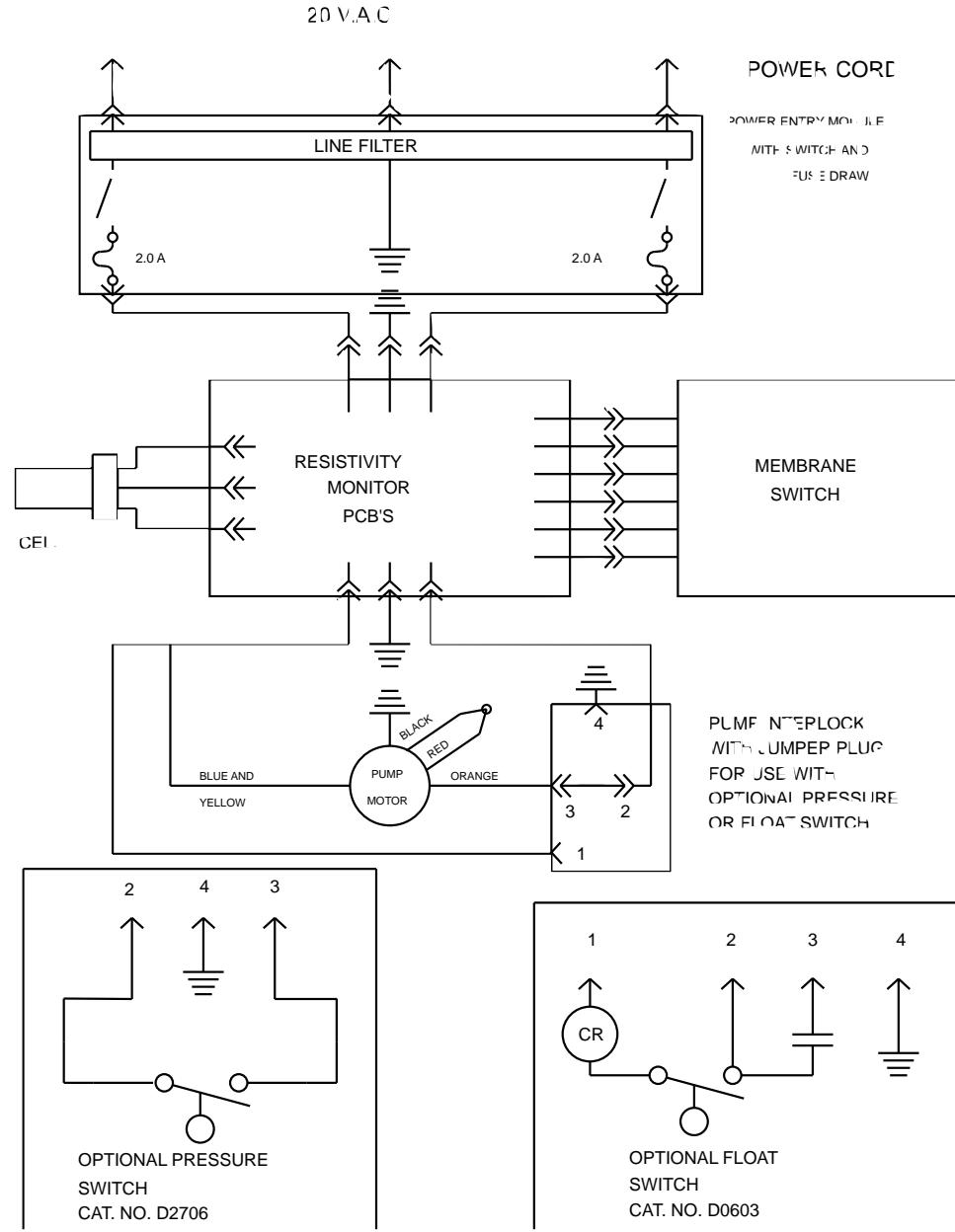


Figure 10 120 Volt Wiring Schematic

WIRING DIAGRAM

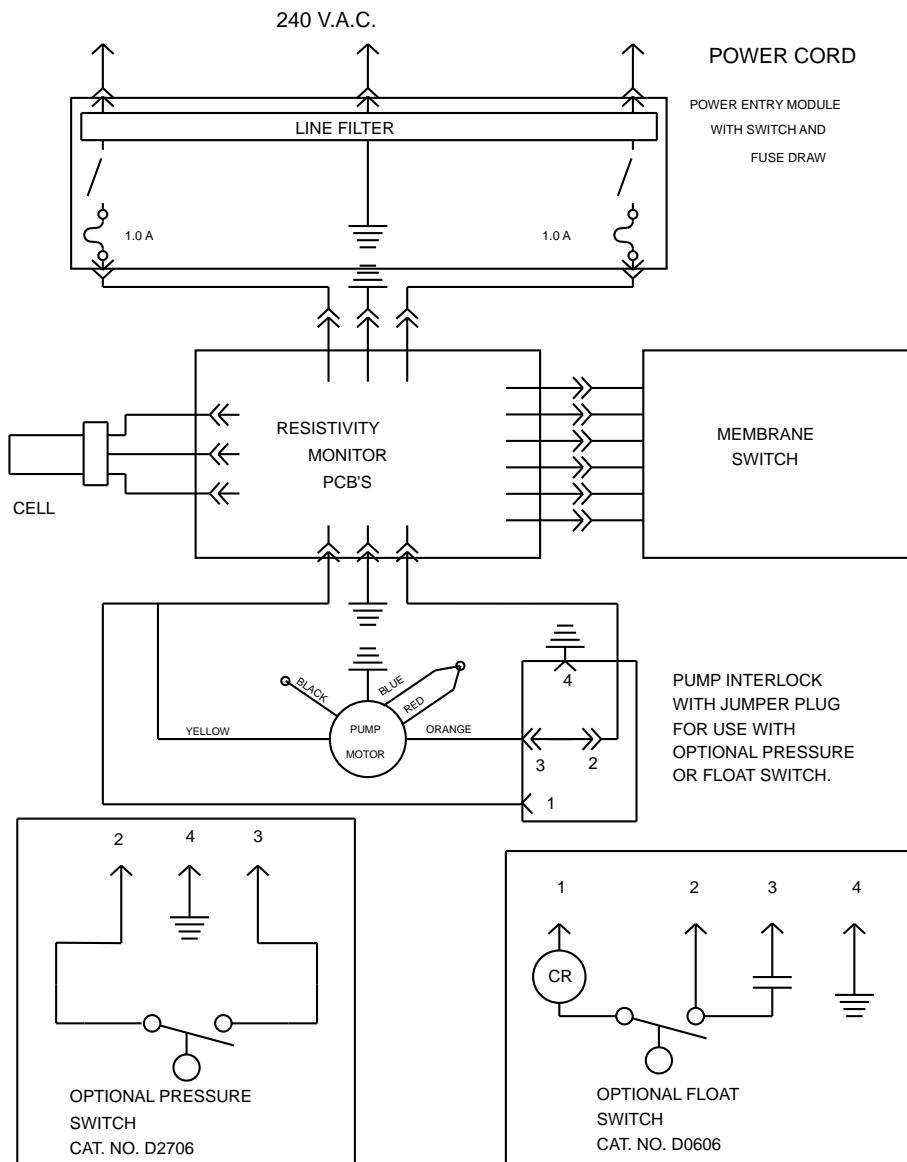


Figure 11 240 Volt Wiring Schematic

WIRING DIAGRAM

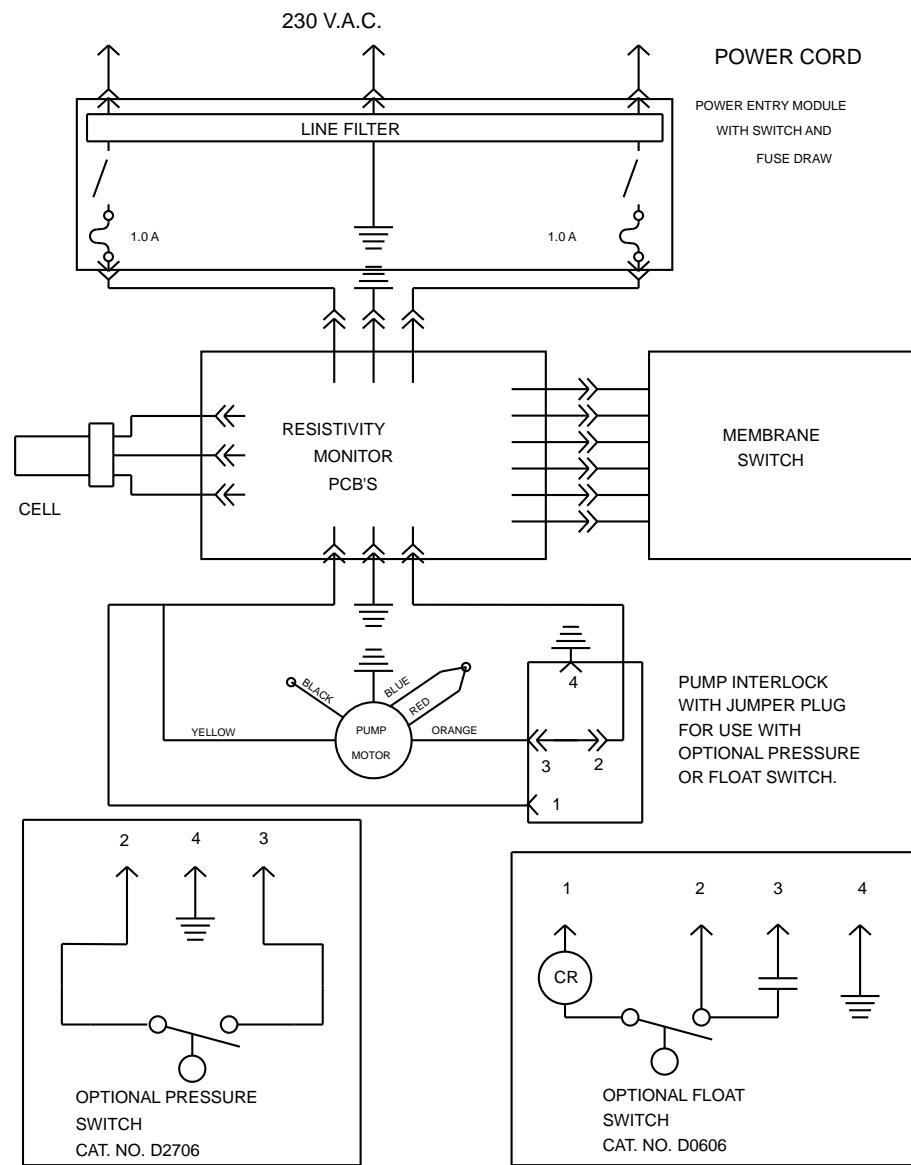


Figure 12 230 Volt Wiring Schematic

One Year Limited Warranty

Barnstead|Thermolyne Corporation warrants that if a product manufactured by **Barnstead|Thermolyne** and sold by it within the continental United States or Canada proves to be defective in material or construction, it will provide you, without charge, for a period of ninety (90) days, the labor, and a period of one (1) year, the parts, necessary to remedy any such defect. Outside the continental United States and Canada, the warranty provides, for one (1) year, the parts necessary to remedy any such defect. The warranty period shall commence either six (6) months following the date the product is sold by **Barnstead|Thermolyne** or on the date it is purchased by the original retail consumer, whichever date occurs first.

All warranty inspections and repairs must be performed by and parts obtained from an authorized **Barnstead|Thermolyne** dealer or **Barnstead|Thermolyne (at its own discretion)**. Heating elements, however, because of their susceptibility to overheating and contamination, must be returned to our factory, and if, upon inspection, it is concluded that failure is not due to excessive high temperature or contamination, warranty replacement will be provided by **Barnstead|Thermolyne**. The name of the authorized **Barnstead|Thermolyne** dealer nearest you may be obtained by calling 1-800-446-6060 or writing to:

Barnstead|Thermolyne
P.O. Box 797
2555 Kerper Boulevard
Dubuque, IA 52004-0797
USA
FAX: (319) 589-0516
E-Mail: mkt@barnsteadthermolyne.com

Barnstead|Thermolyne's sole obligation with respect to its product shall be to repair or replace the product. Under no circumstances shall it be liable for incidental or consequential damage.

THE WARRANTY STATED HEREIN IS THE SOLE WARRANTY APPLICABLE TO
Barnstead|Thermolyne PRODUCTS. **Barnstead|Thermolyne** EXPRESSLY DISCLAIMS
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