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BARNSTEAD|THERMOLYNE CORPORATION

# EASYpure™ UV

## OPERATION MANUAL AND PARTS LIST

*Series 1053*

**Model D7401**  
120 Volts

**Model D7402**  
240 Volts

**Model D7403**  
100 Volts

**Model D7402-33**  
230 Volts

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# Safety Information

## Alert Signals



### Warning

Warnings alert you to the possibility of personal injury.



### Caution

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



### Note

Notes alert you to pertinent facts and conditions.

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

## Warnings

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 UV 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.

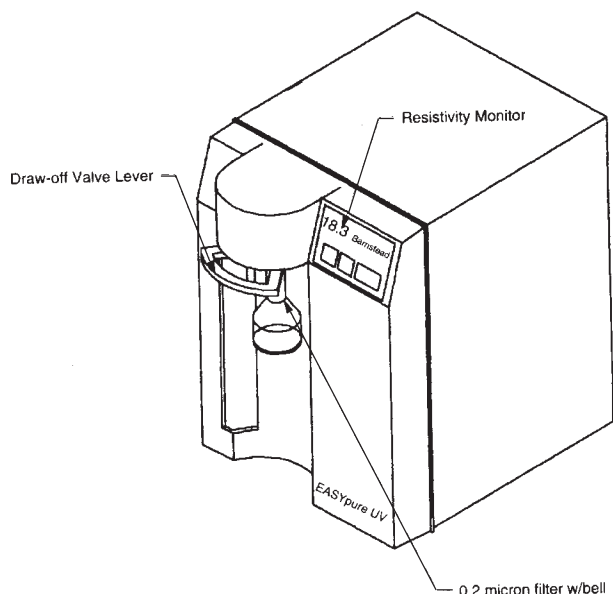
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## SAFETY INFORMATION

7. Depressurize system prior to opening cartridge access door.
8. Depressurize system prior to removing cover.
9. This unit is equipped with an ultraviolet lamp. Ultraviolet radiation may be harmful to the eyes and skin. Shut power off when lamp is exposed.
10. Ultraviolet radiation is harmful to the eyes. Do not attempt to observe the lamp directly.
11. Refer servicing to qualified personnel.

# Introduction

Congratulations on your purchase of a Barnstead|Thermolyne EASYpure™ UV.



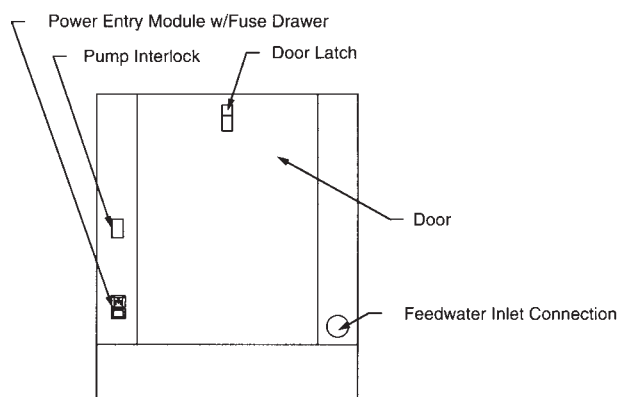
**Figure 1 EASYpure UV Front**

## Introduction

The unit is designed to do a number of jobs within your laboratory. Please read the instructions carefully to ensure that you receive maximum benefit from it. Also, be sure to fill out and return the enclosed warranty registration card. We would like to receive the information requested, and it will help us assure you of proper warranty coverage.

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 previous pages.

The Barnstead EASYpure UV 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 2 ppb. Water resistivity is continuously sensed by a resistivity cell and displayed on a digital display.



**Figure 2 EASYpure UV Back**

## Important Information

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

## General Usage

Do not use this product for any purpose other than its intended usage.

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# Specifications

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## Dimensions and Clearance Requirements

EASYpure UV 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 and UV lamp replacement.

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).

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## Feedwater Requirements

The EASYpure UV 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)

**Resistivity (Minimum):**

Distilled - 300,000 Ohms

Deionized - 1.0 Megohms

Reverse osmosis - 50,000 Ohms (100,000 recommended)

**Pressure:** Gravity - 100 PSIG

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## Product Water

### Quality

Resistivity: ASTM Type I > 18.0 Megohm-cm at 25°C

TOC: Less than 2.0 ppb

Flow rate: 1.0 LPM at 30 PSIG inlet feed water pressure at 60 Hz and with a new final filter.

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## Electrical Requirements

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

Model D7401 - 120 VAC ±5%, -10%, 47-63 Hz.

Model D7402 - 240 VAC ±5%, -10%, 47-63 Hz.

Model D7402-33 - 230 VAC ±10%, 47-63 Hz.

Model D7403 - 100 VAC ±5%, -10%, 47-63 Hz.

## **Environmental Conditions**

- Operating: 17°C - 27°C; 20% - 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: 2,000 meters.
- Storage: -25°C - 65°C; 10% - 85% 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 (applies to -33 model(s) only):

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.

# Installation



## Warning

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



## Note

Cartridges and the 0.2 micron final filter are not provided with the EASYpure UV and must be ordered separately. See Replacement Parts section.



## Warning

Do not locate the EASYpure UV 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 UV, refer to the Wall Mounting section of this manual.

## 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.
2. Place the EASYpure UV 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 UV until cartridges have been installed. You will connect the water supply to the quick disconnect in the Initial Operation section. Refer to the **Tubing Adapter Installation** section of this manual.

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## 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.

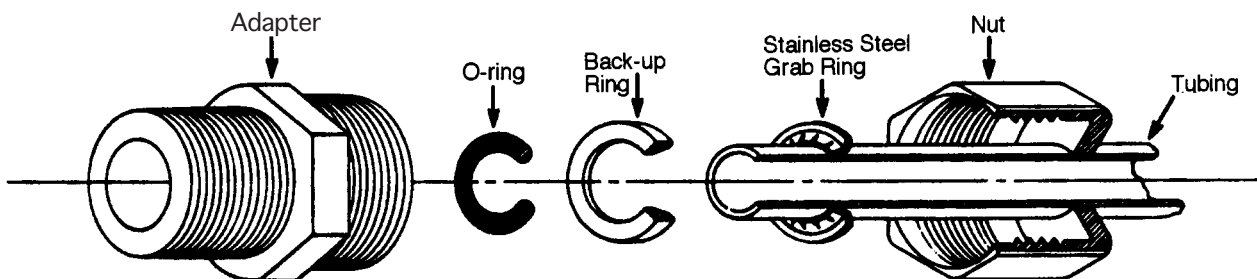


Figure 3 Typical Polypropylene Tubing Adapter Installation





**Note**

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

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



**Caution**

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



**Caution**

Do not rotate the cover, as this will loosen the water tight seal and thus damage the UV lamp.



**Caution**

Do not touch the glass portion of the UV lamp. We recommend that you wear lint-free gloves when handling the lamp. The glass portion must be free of fingerprints, perspiration, etc. Even one fingerprint will reduce the effectiveness of the lamp. If you accidentally touch the glass portion of the lamp, clean the lamp with a lint-free cloth; use isopropyl alcohol if required.

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.

## UV Lamp Installation

Before you mount the EASYpure UV, install the UV lamp as follows:

1. Remove the pump interlock plug. Remove the screws securing the EASYpure UV's cover. Remove the cover.
2. Locate the UV chamber. Carefully remove the black plastic cover from the UV chamber by pulling the cover straight up.
3. Remove the UV lamp from the packaging. Do not touch the glass portion of the lamp!
4. Clean the UV lamp with isopropyl alcohol and a lint-free cloth.
5. Carefully insert and hold the UV lamp partially into the UV chamber.
6. Connect the UV lamp to the receptacle in the black plastic cover on the UV chamber.
7. Replace the EASYpure UV cover and secure it with screws removed in step #1. Replace the pump interlock plug.

## INSTALLATION



### Warning

Do not locate the EASYpure UV 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

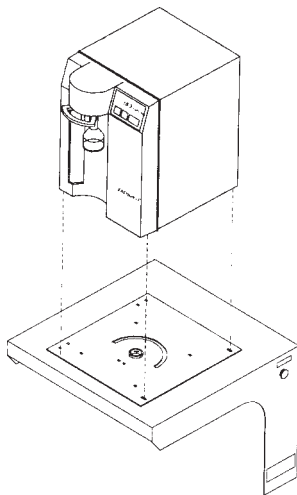
Wall composition, condition and construction, as well as fastener type, must be considered when mounting this unit. The mounting surface and fasteners selected must be capable of supporting a minimum of 150 lbs. Inadequate support and/or fasteners may result in damage to mounting surface and/or equipment.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



### Note

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

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



**Figure 4 Orientation of Swivel Base**

## 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.

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 UV 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 UV 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 in the hole by placing the inlet quick disconnect body into the hole and secure in place with the locknut inside. Replace the plug in the hole generated in the EASYpure UV (where the inlet quick disconnect body was installed).
7. Remove the four feet from the EASYpure UV and retain the screws.
8. Place the EASYpure UV 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 UV.
9. Install the four screws removed in step 7 through the bottom of the wall bracket and into the EASYpure UV.
10. Snake the tubing disconnected in step 4 through the hole in the EASYpure UV floor and the wall bracket and attach it to the inlet 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 UV cover.
13. Reinstall the pump interlock plug.

# Initial Operation



## Note

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

The EASYpure UV's cartridges must be installed in the proper order.

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.

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 UV to operate unless water is available to unit.



## Note

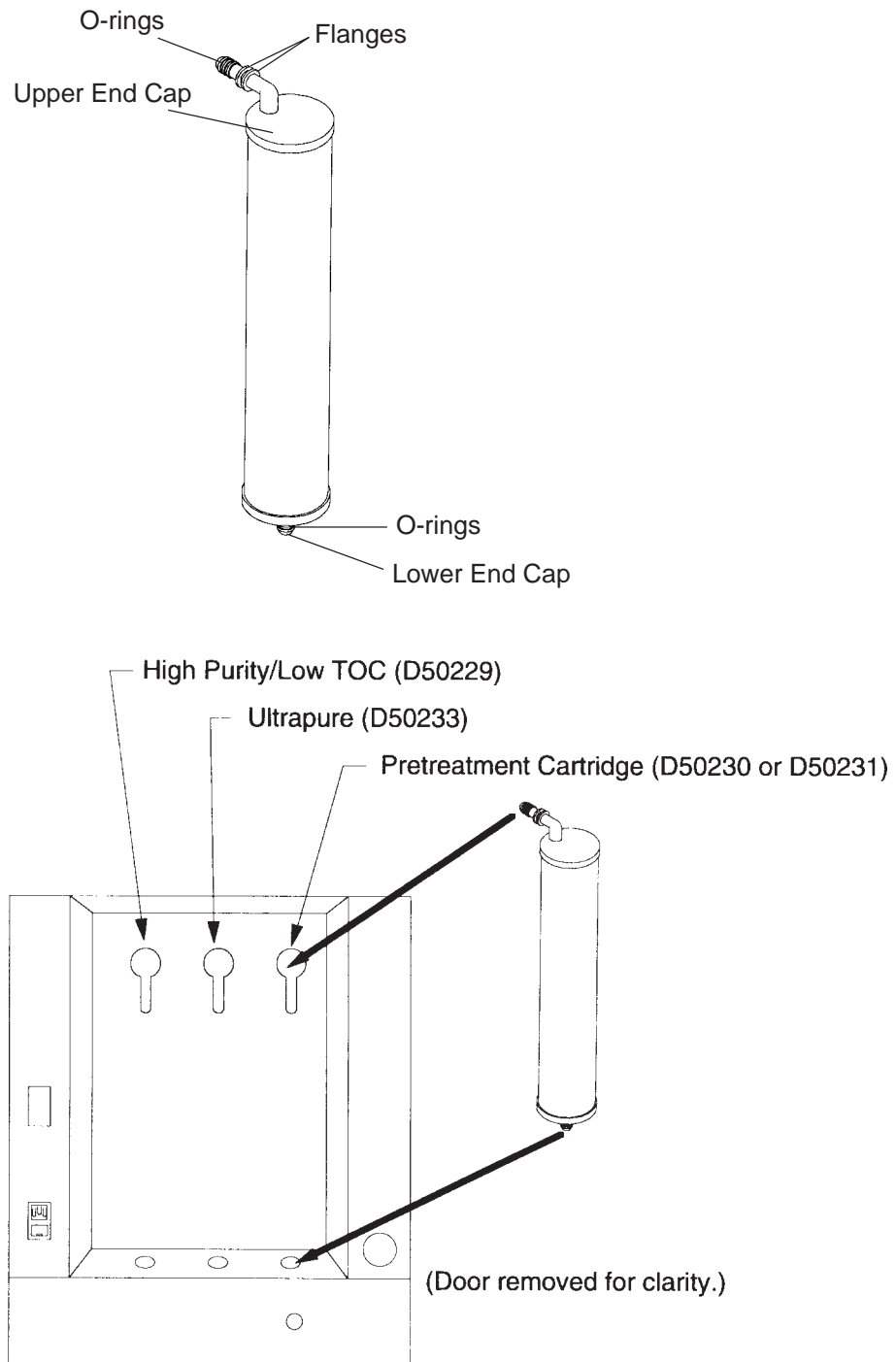
For more demanding applications where low TOC water is required, a rinse of 15-20 liters through the cartridges and filter may be necessary.

## Cartridge Installation and Rinse Up

Refer to Figure 5 on page 12 while installing the cartridges.

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 (D50233) and High Purity/Low TOC (D50229) 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. If the EASYpure UV is mounted on a wall bracket, rotate the EASYpure UV until the cartridge access door faces to the rear and the unit locks into place.
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 10-15 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. Flush 5-10 liters of water through the filter.

## INITIAL OPERATION



1. Wet O-rings on cartridge.
2. Insert upper cartridge end cap into upper socket in keyhole.
3. Slide upper cartridge end cap down in keyway.
4. Firmly insert lower cartridge end cap into lower socket.

**Figure 5 Cartridge Installation**

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# 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 UV is in operation, refer to the **Troubleshooting** section of this manual.

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## Normal Operation

1. Press the “START” button on the front of the EASYpure UV. The EASYpure UV’s pump will begin to run; the UV Lamp will be on, 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.

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## Water Draw Off

1. Remove the protective cap from the filter bell.
2. Depress the draw-off lever. Allow 50-100 ml of water flow to drain before collecting product water.
3. When draw off is complete, lift the draw-off lever and replace the protective cap on the filter bell.

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## 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 UV has two operational modes.

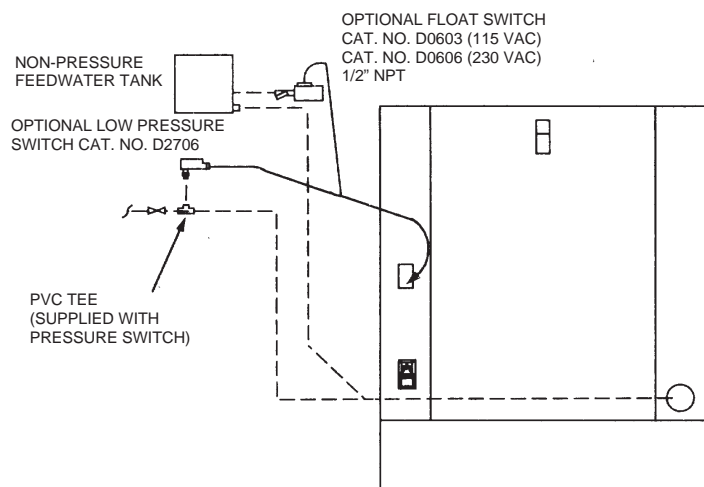
In the run mode, the pump continuously recirculates water through the cartridges and UV chamber. This is the mode that the unit enters upon startup. If water will be drawn from the EASYpure UV on a continuous basis throughout the day, it is recommended that the EASYpure UV be left in the run mode. In 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

Accessories D0603, D0606 (float switches) and D2706 (pressure switch) are designed to protect the EASYpure UV pump by alerting the EASYpure UV 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 D0603 or 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 UV with the remaining opening.
4. Route cable from float or low pressure switch to the rear of the EASYpure UV.
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.

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.

Refer servicing to qualified personnel.



## Note

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

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

Cartridges must be removed in the order described. Failure to do so will result in a large amount of water draining from the UV chamber.

Leave Draw-off valve open during cartridge installation. DO NOT recirculate until all new cartridges have been rinsed.



## Warning

Depressurize system prior to opening cartridge access door.

## 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 EASYpure UV 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 the pretreatment cartridge (D50230 or D50231). This is the cartridge located at the far right as you are facing the rear of the unit. Pull it straight up to disconnect from the lower socket. 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.
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 5-7 for the Ultrapure cartridge located in position two. DO NOT remove the High Purity/Low TOC cartridge until instructed to do so.
9. Install a new Pretreatment and Ultrapure cartridge according to the instructions for **Cartridge Installation** in the **Initial Operation** section.
10. Rinse approximately 5 liters of water through the system.
11. Remove the High Purity/Low TOC cartridge located in position #3 following steps 5, 6 & 7 in this section.
12. Install a new High Purity/Low TOC cartridge and rinse according to the instructions for **Cartridge Installation** in the **Initial Operation** section.
13. Discard the used cartridges. 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 UV may need to be sanitized to remove bacterial contaminants. See **System Sanitization**.

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## 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. For best results, rinse 50-100 ml of water through the filter prior to each use.

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## Replacing the Ultraviolet Lamp

The ultraviolet lamp requires changing every 90-120 days. Lamp life will vary according to the number of times the EASYpure UV unit is turned on and off. This estimated lamp life is based on the EASYpure UV being operated in the run mode during normal working hours (assumed to be 9 hours/day, 5 days/week) and then placed in the “STANDBY” mode during off hours (15 hours/day), weekends and holidays. Since the lamp turns on 10 minutes/hour during the “STANDBY” mode, this amounts to 15 run/off cycles per working day. If the EASYpure UV is cycled between the run and “STANDBY” modes during the work day, this will result in a shorter lamp life. Therefore, it is recommended that the EASYpure UV be left in the run mode during normal working hours.

Leaving the unit in the “OFF” mode at night and on weekends will lengthen UV bulb life but will compromise water quality. Higher rates of bacterial growth, as well as ionic and organic purity degradation, will occur, necessitating the EASYpure UV be placed in a recirculating mode for up to one hour to achieve organic content of 2 ppb TOC.





**Warning**

This unit is equipped with an ultraviolet lamp. Ultraviolet radiation may be harmful to the eyes and skin. Shut power off when lamp is exposed.

Ultraviolet radiation is harmful to the eyes. Do not attempt to observe the lamp directly.



**Note**

The UV Solid State Ballast in the EASYpure UV cabinet has a green light that will be lit if the lamp is illuminated. Also, an audible sound will alert you if the lamp is not lit or is disconnected.



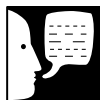
**Warning**

Depressurize system prior to removing cover.



**Caution**

Do not rotate the cover, as this will loosen the water tight seal and may damage the replacement lamp. Pull the cover straight up.



**Note**

Pay close attention to the orientation of the plug as it is attached to the UV lamp. It will be necessary to ensure that the plug is installed in the same manner as removed.

To replace the ultraviolet lamp:

1. Turn the EASYpure UV off.
2. Disconnect incoming water line at quick disconnect. Depressurize the system by opening the outlet valve.
3. Disconnect the EASYpure UV from the power.
4. Remove the power cord and the pump protector or interlock plug from the rear of the unit.
5. Remove the screws securing the EASYpure UV cover.
6. Remove the cover by lifting straight up.
7. Locate the oxidation chamber and pull the top black plastic cover off.
8. While holding on to the lamp, remove the plug from the lamp.
9. Remove the replacement lamp from its container. **DO NOT TOUCH THE GLASS PORTION OF THE LAMP.** It is recommended that lint free gloves be worn when handling the lamp. The glass portion must be free of fingerprints, perspiration, etc. Even a light coating of perspiration will reduce the effectiveness of the lamp. If the glass portion of the lamp is accidentally touched, clean the lamp with a lint free cloth; use isopropyl alcohol if required.
10. Install the lamp power cord removed in step 8 on to the replacement lamp in the same position as it was removed.
11. Slide the lamp into the chamber and resecure the black plastic cover.
12. Reinstall the EASYpure UV cover.
13. Reattach the power cord and the pump protector or the pump interlock.
14. Resupply water and power to the unit and operate normally.



### 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 water-proof container available to place them in after removal.



### Warning

Depressurize system prior to opening cartridge access door.



### Note

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



### Note

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

## 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 UV 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 UV, the purification cartridges must be replaced with a sanitization cartridge and the two empty cartridges supplied with your unit. The simple-to-use sanitization cartridge is available from Barnstead|Thermolyne (Catalog Number D50245). This is used in addition to the empty cartridges included with this unit to effect a complete sanitization.

1. Turn the unit off.
2. Disconnect the unit from the power supply. Disconnect the unit from the water supply.
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 the exhausted cartridge in the right-hand position by pulling it first up and then out. Used cartridges can be recycled; see the P.U.R.E. information packed with your new cartridges.
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 UV, 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.



**Warning**

Depressurize system prior to opening cartridge access door or prior to removing cover.



**Warning**

Replace fuses with those of the same type and rating.

---

## General Cleaning Instructions

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

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## Main 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 UV 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 UV cover.
6. Remove the cover by lifting it straight up.
7. Pull out the fuse drawer located in the power entry module.
8. Remove old fuses and replace with fuses of the same type and rating. (See Parts Listing.)
9. Replace fuse drawer.
10. Replace cover, power cord, and pump interlock plug.
11. Reconnect unit to power supply, and connect incoming water line at quick disconnect.

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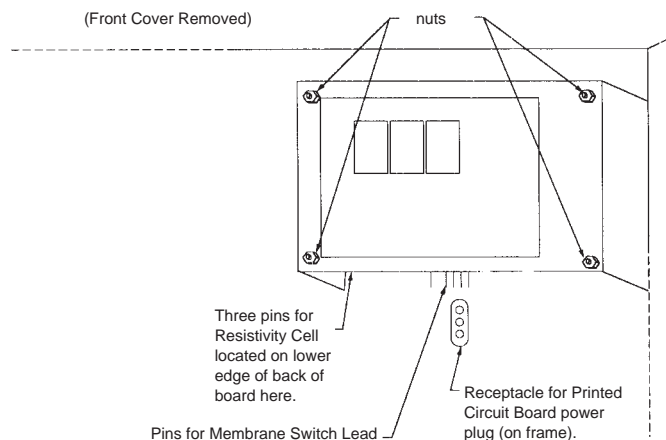
## Resistivity Monitor Circuit

### Board Replacement

1. Turn system off.
2. Disconnect incoming water line at quick disconnect. Depressurize system by opening outlet valve.
3. Disconnect the EASYpure UV 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 UV 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. Carefully 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 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<sup>®</sup> tape and reinstall fitting and filter.
19. Reinstall the EASYpure UV's cover.
20. Reconnect the power cord, the pump interlock plug and the incoming water line to the unit and reconnect the unit to the power supply.

**Figure 7 Resistivity Monitor Printed Circuit Board**





**Warning**

Depressurize system prior to removing cover.



**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 UV 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 UV 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 UV 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 manufacturer's 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.
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<sup>®</sup> 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.

## Shutdown

If the EASYpure UV 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

Problem	Possible Causes	Solutions
EASYpure UV completely inactive (pump not operating, control panel not lit, etc.)	No electrical power to EASYpure UV.  Fuses blown.	Ensure that the EASYpure UV power cord is connected to a live power source and completely plugged into electrical outlet.  Make sure power entry module is on.  Replace the fuses as indicated in the <b>Fuse Replacement</b> 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. Feedwater does not meet specified requirements.	Replace the cartridges as indicated in the <b>Cartridge Replacement</b> section. Install the cartridges in the proper order as indicated in the <b>Cartridge Installation</b> section. Ensure feedwater meets specification (see page 6). Contact Barnstead Thermolyne for free W.A.T.E.R. analysis.
Reduced or no product flow from the 0.2 filter assembly.	0.2 micron filter clogged. Cartridges improperly rinsed.	Replace the 0.2 filter assembly as indicated in the <b>0.2 Micron Filter Replacement</b> section. Rinse cartridges; install new filter.
0.2 micron filter clogs rapidly after replacement.	EASYpure UV contaminated with bacteria.	Sanitize EASYpure UV according to the instructions in <b>System Sanitization</b> . Replace the 0.2 filter assembly as indicated in the <b>0.2 Micron Filter Replacement</b> 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 UV feedwater reservoir. If feedwater is from a central water purification system, verify water quality and proper functioning of the system.
Water leakage inside EASYpure UV.	Cartridge not fully seated into sockets. Missing or defective cartridge O-rings.	Press cartridge firmly into sockets.  Install or replace cartridge O-rings.
Green light on UV Solid State Ballast not lit and audible alarm sounds.	UV lamp not plugged into UV power supply. UV lamp burnt out.	Plug UV lamp into UV power supply.  Replace UV lamp.

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# Replacement Parts

## 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.

<b>Description</b>	<b>Catalog No.</b>	<b>Recommended Quantity</b>
Pretreatment Cartridge DI Feed	D50230	1
Pretreatment Cartridge R/O - Distilled Feed	D50231	1
EASYpure High Purity/Low TOC Cartridge	D50229	1
Ultrapure Cartridge	D50233	1
0.2 Micron Filter and Bell Assembly	FL703X2	2
Fuse, Power Entry		
100-120 Volt (2a 250V Fast Acting)	FZX37	2
230 Volt (5X20mm, Time Lag (T), 250V, 1.0 Amps)	5120-0016	2
240 Volt (1a 250V Fast Acting)	FZX8	2
Empty Cartridges for sanitization (set of 2)	D7034	1
O-rings, cartridges	06162	12
Ultraviolet lamp	LMX13	1
Fuse - Solid State Ballast (1.6a 250V Slow Blow)	FZX47	1

## 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.

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



## 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
Resistivity Monitor PCB		
100-120 Volt	PC703X2	1
230-240 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
UV Power Supply		1
100V & 120V	PC733X1B	1
230-240V	PC733X3A	1
Solid State Ballast	PC733X2	1

# Wiring Schematics

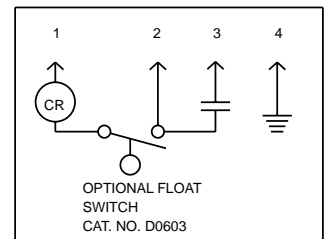
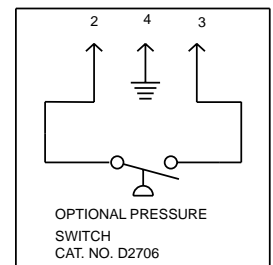
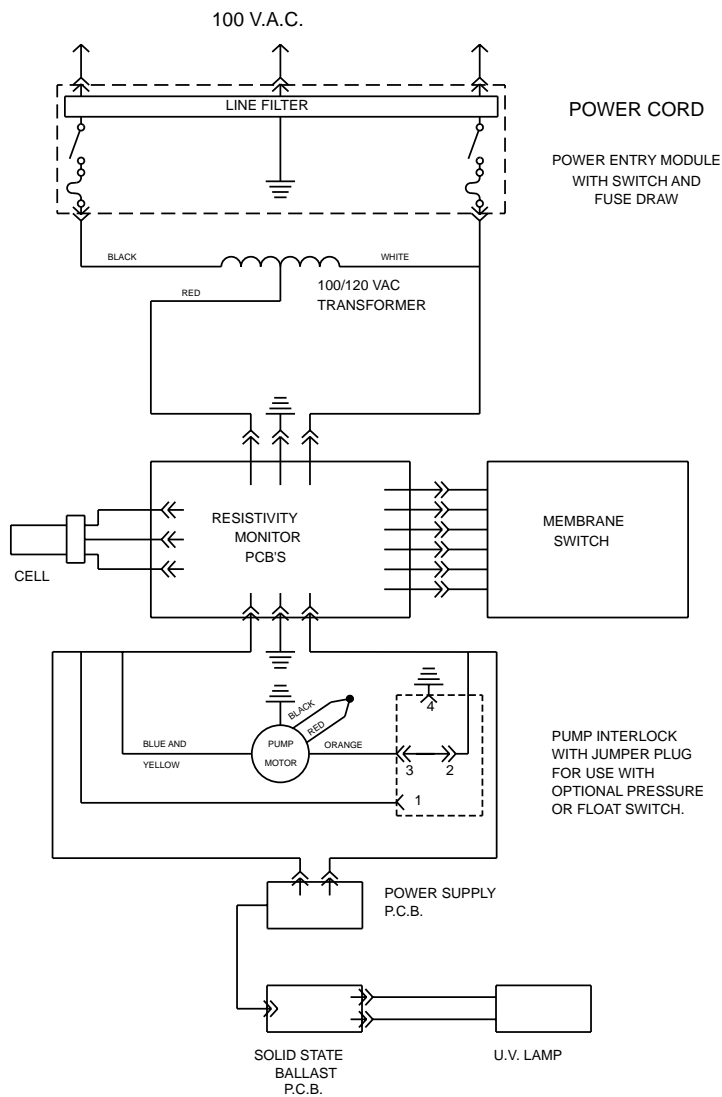


Figure 8 100 Volt Wiring Schematic

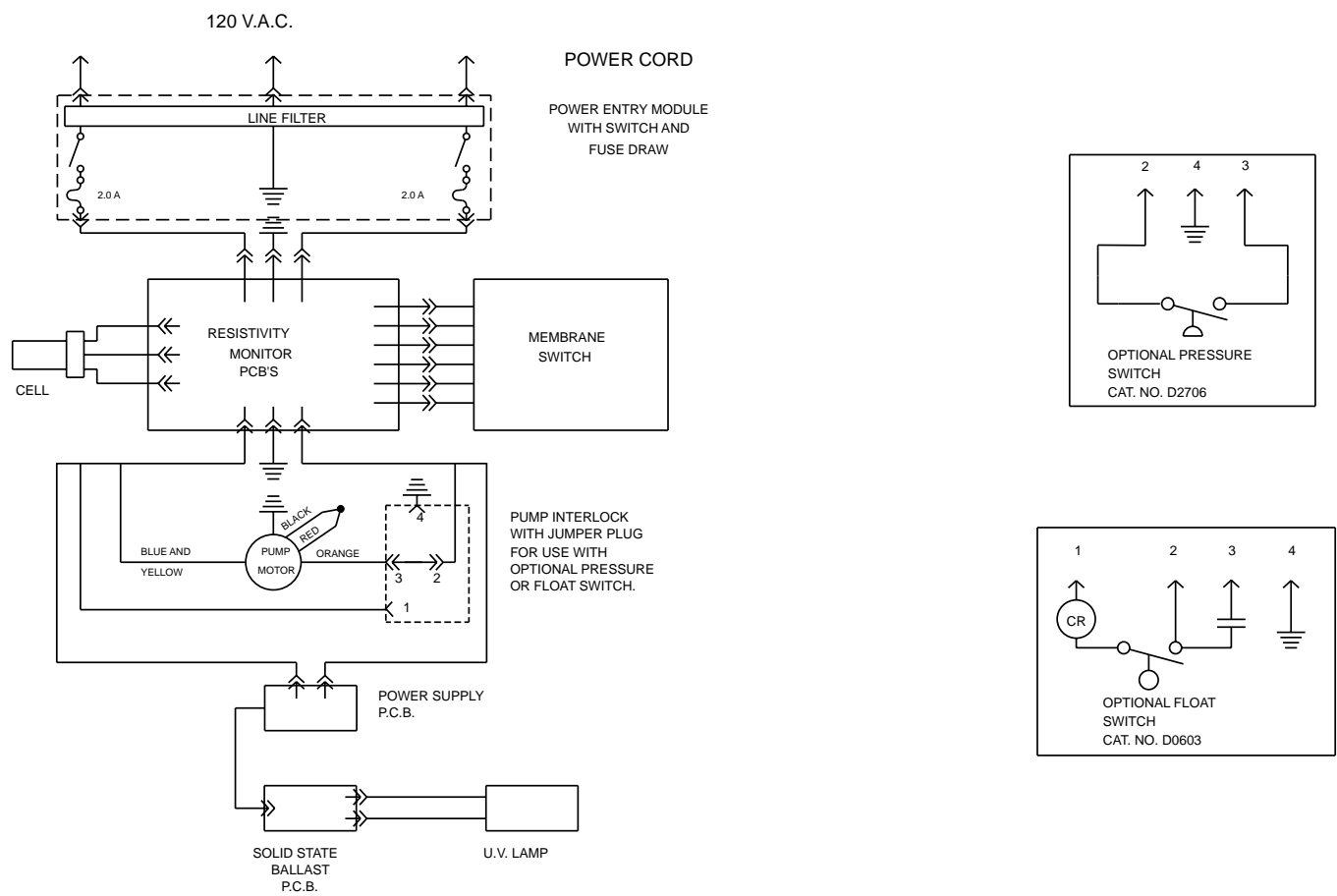


Figure 9 120 Volt Wiring Schematic

# WIRING SCHEMATICS

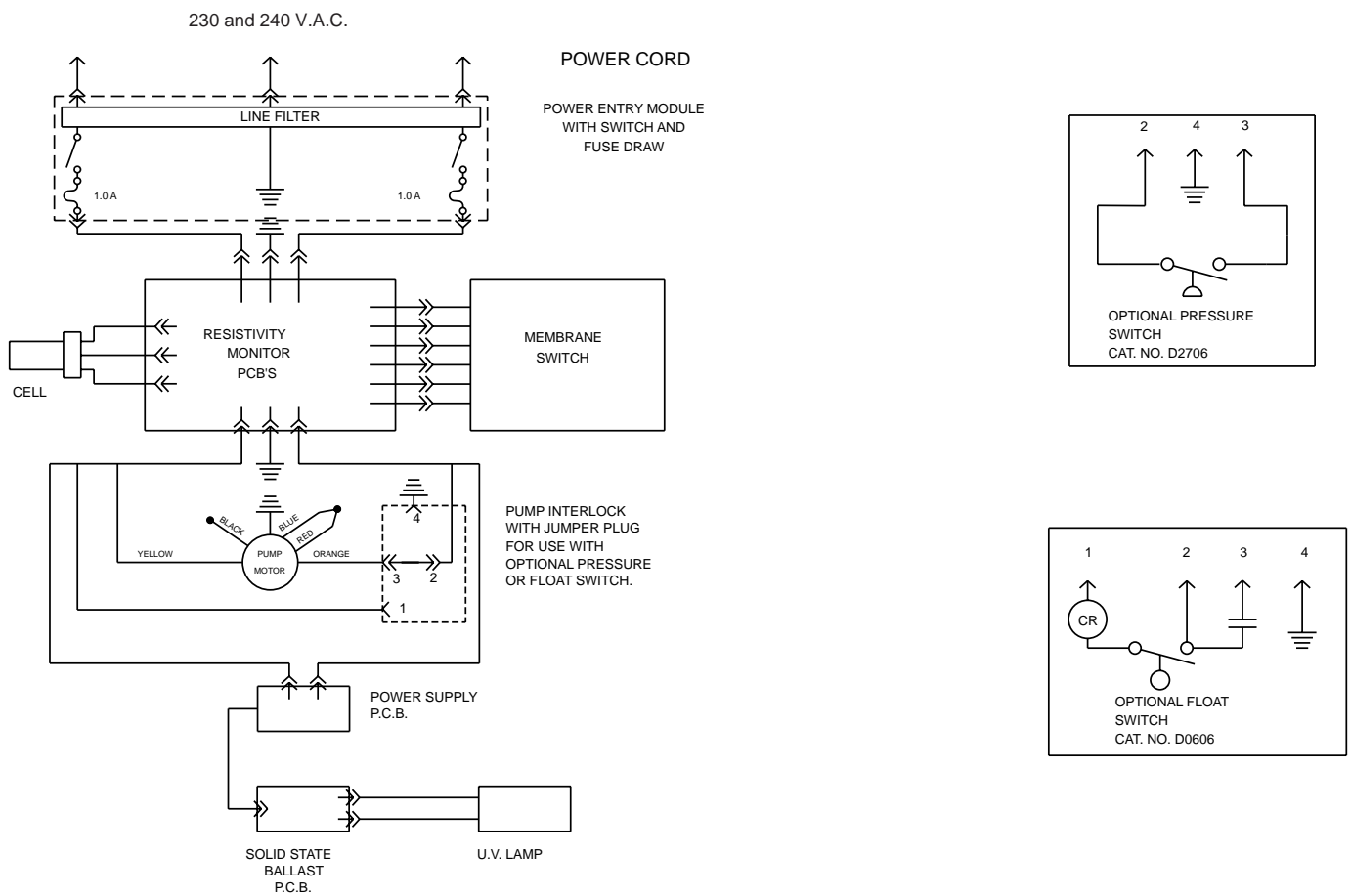


Figure 10 230 and 240 Volt Wiring Schematic

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# 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. Minimum invoice: \$25.



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# 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 ADDRESS: [mkt@barnsteadthermolyne.com](mailto:mkt@barnsteadthermolyne.com)

**Barnstead|Thermolyne's** sole obligation with respect to its product shall be to repair or (at its own discretion) 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 ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE.

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