
BARNSTEAD|THERMOLYNE CORPORATION

EASYpure[®] RF
OPERATION MANUAL
AND PARTS LIST
Series 1051

Model D7032
100 Volts

Model D7031
120 Volts

Model D7033
240 Volts

Model D7033-33
230 Volts

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Safety Information

Safety Information

Your Barnstead EASYpure™ RF 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 Signals



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

WARNING

A. To avoid electrical shock, always:

1. Use a properly grounded electrical outlet of correct voltage and current handling capacity.
2. Do not place the EASYpure RF 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.

B. 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. Carefully follow manufacturer's safety instructions on labels of chemical containers and material safety data sheets.
6. Refer servicing to qualified personnel.

Introduction

Introduction

The Barnstead EASYpure RF is a batch-fed water purification system designed to provide Type I reagent-grade water with extremely low organic carbon content. It uses a two-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 5 ppb. Water resistivity is continuously sensed by a resistivity cell and displayed on a digital display.

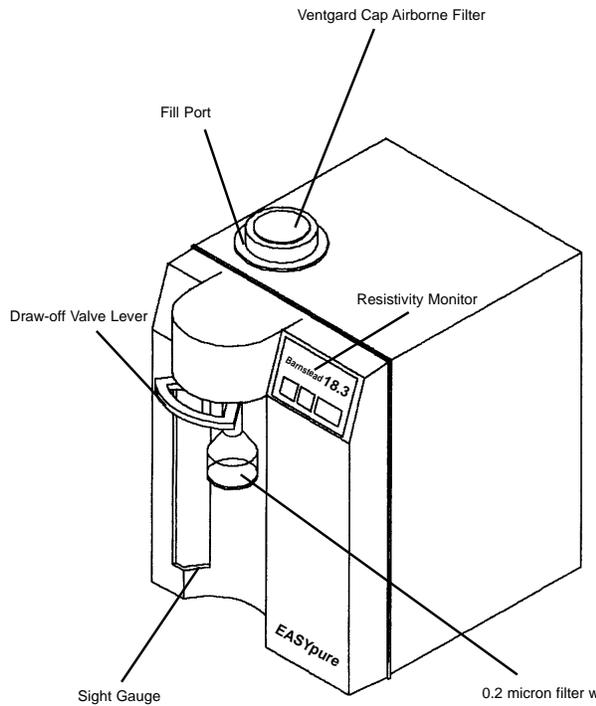


Figure 1 EASYpure RF Front

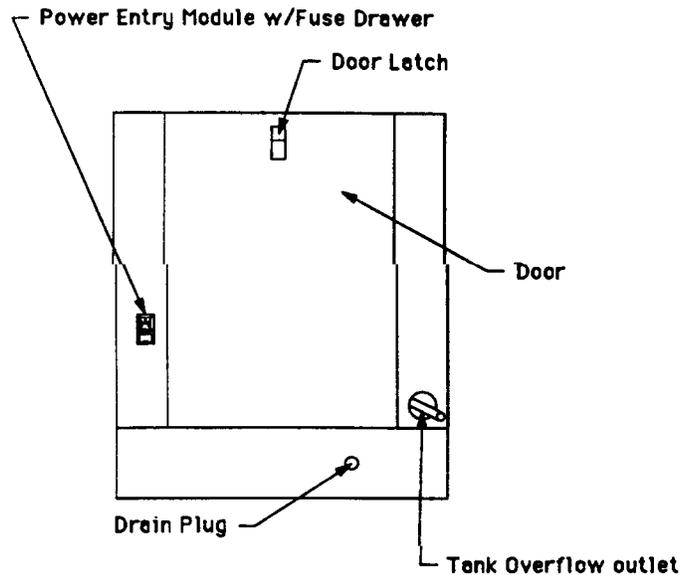


Figure 1 EASYpure RF Back

Specifications

Specifications

Dimensions and Clearance requirements.

EASYpure RF dimensions - 12" W X 19" D X 18 1/8" H (30.5 cm X 48.3 cm X 46.0 cm).

Clearances:

Sides - 4" (10.1 cm) minimum to allow air flow

Above - 12" (30.5 cm) minimum for reservoir replenishment

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).

Storage Reservoir Capacity - Approximately 6.5 liters usable, 7.0 liters total

Feedwater Requirements

The EASYpure RF requires water pretreated by either distillation, deionization or reverse osmosis.

TOC - Less than 1.0 ppm.

Turbidity - Less than 1.0 N.T.U.

Temperature - 40°F - 120°F (4.4°C - 48.9°C)

Resistivity (Minimum):

Distilled - 300,000 Ohm-cm

Deionized - 1.0 Megohms-cm

Reverse osmosis - 100,000 Ohm-cm

Product Water

Quality

Resistivity: ASTM Type I

TOC: Less than 5.0 PPB

Flow Rate: 0.5 LPM with a new final filter

Electrical Requirements

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

Model D7032 - 100 VAC +5% -10%, 47-63 Hz.

Model D7031 - 120 VAC +5% -10%, 47-63 Hz.

Model D7033 - 240 VAC +5% -10%, 47-63 Hz.

Model D7033-33 - 230 VAC +10% -10%, 47-63 Hz.

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; 10% to 85% relative humidity.

Declaration of Conformity (-33 models only)

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
Saabrückener 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 RF and must be ordered separately.



WARNING

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



NOTE

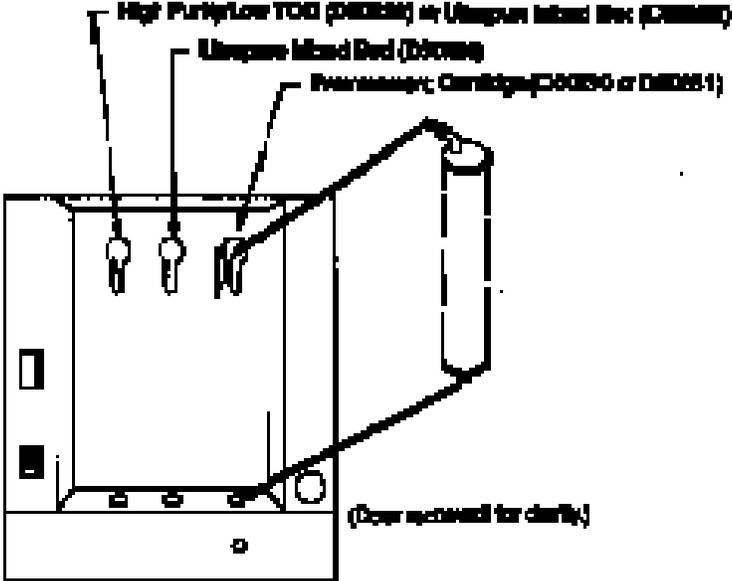
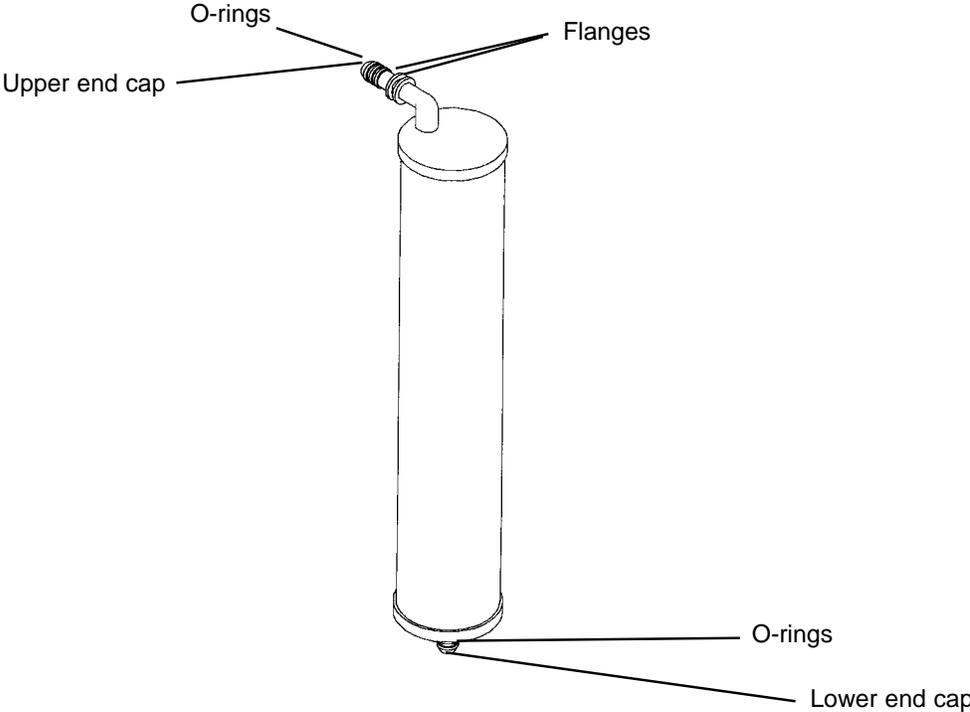
Overflow will occur only as a result of overfilling by the user.

Unpackaging and Installation

1. Remove the unit from its shipping container. Ensure that the Ventgard[®] reservoir cap and power cord are removed from the packaging materials before discarding.

EASYpure High purity/Low TOC Cartridge	D50229
Pretreatment Cartridge DI Feed	D50230
Pretreatment Cartridge R/O - Distilled Feed	D50231
Ultrapure Mixed Bed Cartridge	D50233

2. Place the EASYpure RF on a bench top convenient to your work area, noting the Clearance Requirements.
3. Using 1/2" I.D. tubing and tubing connectors (user supplied), connect the overflow drain tubing (lower right-hand corner of the rear of the unit) to an atmospherically vented sink or floor drain. If an atmospherically vented sink or floor drain is not accessible, a bucket or other container may be placed on the floor beneath the EASYpure RF's location and emptied when full.



- 1. Wet O-rings on cartridge.
- 2. Insert upper cartridge and cap into upper section in housing.
- 3. Push upper cartridge and cap down in housing.
- 4. Finally insert lower cartridge and cap into lower section.

Figure 3 Cartridge Installation

Initial Operation



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. (See Figure 3.)



NOTE

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



NOTE

Cartridge rinse up procedure must be followed after each cartridge and/or filter replacement.



NOTE

In the event that you overfill the feedwater reservoir, allow the excess water to drain from the reservoir through the overflow drain tubing before replacing the Ventgard cap. This will prevent wetting the filter element.

Initial Operation

Cartridge Installation

1. Open cartridge access door in the rear of the unit by pushing the door latch down.
2. Remove a new Pretreatment cartridge (part number 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 1 - 5 with the EASYpure High Purity/Low TOC or Ultrapure cartridge, placing it in the left-hand position.
7. Close cartridge access door.

Storage Reservoir Filling and Cartridge Rinse Up

To fill the reservoir:

1. Remove the molded plastic Ventgard cap.
2. Carefully pour pretreated feedwater into the reservoir until the water is level with the top of the sight gauge on the front of the unit. Replace the Ventgard cap.
3. Plug power cord into the power entry module on the left-hand side of the rear of the unit and plug into a live outlet. Turn on power entry module switch.
4. Press "START" and open draw-off valve.
5. Rinse one complete reservoir volume of water through the cartridges to drain.
6. 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.
7. Refill the reservoir with pretreated water.
8. Flush second reservoir volume of water through the filter.

Normal Operation



NOTE

For more demanding applications where low TOC water is required, a third reservoir volume rinse of the cartridges and filter may be necessary.



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

Normal Operation

1. Fill the feedwater reservoir with water and replace the cap.
2. Turn main power on at power entry module.
3. Press the "START" button on the front of the EASYpure RF.

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

4. 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.

Feedwater Replenishment

As water is drawn-off from the EASYpure RF, the feedwater reservoir will require refilling. To refill the reservoir:

1. Remove the Ventgard cap. Do not allow water to enter the Ventgard cap.
2. Pour pretreated feedwater into the feedwater reservoir until the water is level with the top of the sight gauge.
3. Replace the Ventgard cap.
4. Allow the water's resistivity to rise to the desired purity before drawing off water.

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 RF 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 RF on a continuous basis throughout the day, it is recommended that the EASYpure RF be left in the run mode. This will ensure that the feedwater added to refill the EASYpure RF's reservoir will be up to maximum purity when it is needed. 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 10 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.

Maintenance and Servicing



WARNING

Disconnect from the power supply prior to maintenance and servicing.

Disassembly of water lines and removal of cartridges will result in water spillage. Do not perform these operations where spilled water could contact equipment that requires electrical service. 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 waterproof container available to place them in after removal.



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.



NOTE

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

Maintenance and Servicing

Cartridge Replacement (See Figure 3, page 9)

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

Cartridge Removal

1. Disconnect the unit from the power supply.
2. 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.
3. Grasp one of the cartridges at the bottom and pull it straight up to disconnect the lower end cap from the lower socket.
4. Move cartridge upward until upper socket is in keyhole of keyway. (See Figure 3.)
5. Pull cartridge straight out from unit to disconnect upper end cap from upper socket.
6. Repeat steps 3 - 5 with the other cartridge.
7. Discard the used cartridges. (See note below.)
8. Install new cartridges and rinse according to the instructions for **Cartridge Installation** in the **Initial Operation** section (page 8).

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.



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 RF may need to be sanitized to remove bacterial contaminants. See **System Sanitization**, page 14.

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 the Luer fitting.
3. Rinse at least one reservoir volume of water through the filter to drain prior to using the product water.

Ventgard Cap Replacement

The purifying media and filter in the Ventgard filter element have a limited capacity. Therefore, the Ventgard cap should be replaced every 90 days. The Ventgard cap is shipped as a complete unit; replacement involves simply removing the new Ventgard cap from its plastic storage bag and placing it on the reservoir. A Ventgard cap can be stored in a cool, dry place almost indefinitely, provided its plastic storage bag has not been opened.

General Cleaning Instructions

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

System Sanitization

Frequency of cleaning is difficult to determine because of variability in feedwater and usage. Cleaning is necessary when residual deposits are evident inside the feedwater reservoir or if a new 0.2 micron filter clogs rapidly after installation even though the cartridges were properly rinsed before the 0.2 micron filter was installed. To sanitize the EASYpure RF, the 0.2 micron final filter and the purification cartridges must be removed. The purification cartridges must be replaced with empty cartridges. These must be ordered separately. Contact Barnstead|Thermolyne and order part number D7034.

1. Drain the system.
 - a. Place the filter over a sink or place a bucket or other suitable large container under the filter and draw off water as described under **Water Draw off** in the **Operation** section of this manual. Draw off water until the water level in the feedwater reservoir is lowered to the point that the pump protector switch disables the pump. Lift draw-off valve to closed position.
 - b. Disconnect the unit from the power supply.



NOTE

Drain plug is not attached to unit; use care when removing it over an open drain to avoid dropping it into the drain.



WARNING

Avoid splashing disinfecting solutions on clothing or skin.

Ensure all piping connections are tight to avoid chemical leakage.

Ensure that overflow drain tubing is directed to drain to avoid chemical leakage during disinfecting.

Ensure adequate ventilation.

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

- c. Turn the unit around to provide access to the drain plug on the lower edge of the back panel.
 - d. Place the drain plug over a sink, or place a bucket or other suitable large container under the drain plug. Remove the drain plug by turning it while pulling until it comes out.
 - e. Drain remaining water from the reservoir and system.
 - f. Replace the drain plug, taking care to fully insert it into the drain tubing.
 - g. Remove cartridges and filter and install empty cartridge tubes (part number D7034) according to the instructions in **Cartridge Replacement** (page 10).
2. Remove Ventgard cap and pour 6 liters of pretreated feedwater into reservoir.
 3. Add 10ml to 20ml of household chlorine bleach (5.25% sodium hypochlorite) to reservoir.
 4. Connect the unit to the power supply. Press the "START" button to turn unit on.
 5. Allow the unit to recirculate the disinfecting solution for thirty minutes. Cycle the draw-off valve to sanitize the valve.
 6. Drain the system as described in step 1 of this section.
 7. Refill the feedwater reservoir with feedwater and recirculate the water through the system for ten minutes.
 8. Drain the system as described in step 1 of this section.
 9. Remove the empty cartridge tubes according to the instructions in the **Cartridge Removal** section. Drain and retain the empty cartridge tubes for future use.

10. Install and rinse new cartridges according to the instructions in the **Cartridge Installation** section. *Do not reinstall used cartridges or 0.2 micron filter (they may contain large amounts of bacteria.)*
11. Reconnect to the power supply and press the "START" button.

Fuse Replacement

1. Disconnect the EASYpure RF from the power supply and remove the reservoir and cap assembly.
2. Remove the power cord from the power entry module.
3. Remove the screws securing the EASYpure RF's cover.
4. Remove the cover by lifting it straight up.
5. Pull out the fuse drawer located in the power entry module on the back left-hand side of the unit.
6. Remove old fuses and replace with fuses of the same type and rating. (See Parts Listing, page 18.)
7. Replace fuse drawer.
8. Replace cover and power cord and reservoir cap assembly.
9. Reconnect unit to power supply.

Printed Circuit Board Replacement (See Figure 6)

1. Disconnect the unit from the power supply.
2. Remove the power cord from the power entry module.
3. Remove the reservoir cap and the screws securing the EASYpure RF's cover.
4. Remove the cover by lifting it straight up.
5. The filter and the Luer fitting.
6. Remove the screws securing the front cover. Remove the front cover.

7. Disconnect the membrane switch lead from the printed circuit board. (See Figure 6.)
8. Disconnect the resistivity cell lead from the printed circuit board.
9. Disconnect the printed circuit board relay plug by squeezing the retaining clip while pulling the plug straight out from the frame.
10. Remove the nuts holding the printed circuit board in place.
11. Remove the printed circuit board. Disconnect power supply (3 wires) from printed circuit board.
12. Reconnect power supply to new printed circuit board and install the new printed circuit board. Refer to electrical diagrams.
13. Reconnect the resistivity cell lead and printed circuit board relay plug.
14. Reconnect the membrane switch lead.
15. Reinstall the front cover.
16. Retape the Luer fitting with new Teflon® tape and reinstall fitting.
17. Reinstall the EASYpure RF's cover.
18. Reconnect the power cord to the unit and the unit to the power supply.



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.).



CAUTION

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

Cleaning the Resistivity Cell

1. Disconnect the unit from the power supply.
2. Remove the power cord from the power entry module.
3. Remove the reservoir cap and the screws securing the EASYpure RF's cover.
4. Remove the cover by lifting it straight up. Remove the filter and Luer fitting. Remove the front cover.
5. Remove the screw holding the cell-cable retaining clip.
6. Disconnect the cell lead from the printed circuit board and gently pull the cable out of the EASYpure RF's frame.
7. Unscrew and remove the cell.
8. Carefully remove the O-ring before cleaning the cell. Remove the cell bushing.
9. Wash the cell in a mild detergent solution or a 10% Hydrochloric or Sulfuric acid solution (follow acid manufacturers recommended handling procedure). This may be done in an ultrasonic cleaner or with a soft brush.
10. Thoroughly rinse the cell in deionized or distilled water following the detergent or acid cleaning.
11. After cleaning, reinstall and check the o-ring on cell; replace if necessary.
12. Reinstall the cell into the cell well and hand tighten. Reroute the cable up through the housing and reconnect. Refer to Figure 6 for proper position.

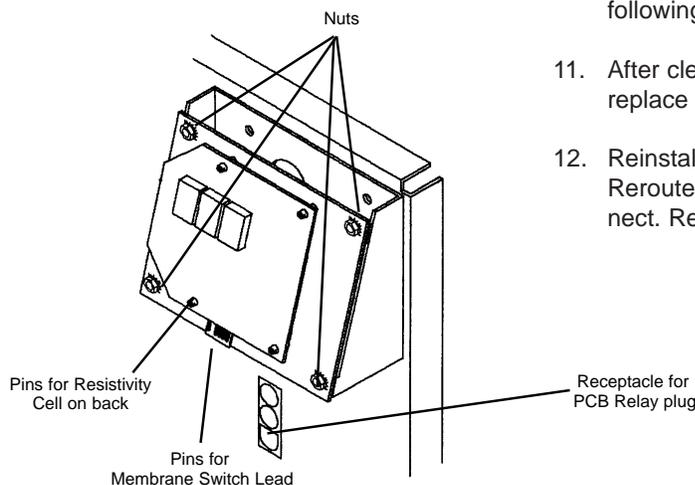


Figure 6 Printed Circuit Board

13. Reinstall the screw holding the cell-cable retaining clip. Replace the front cover. Retape the Luer fitting with new Teflon[®] tape and reinstall fitting. Replace the top cover.
14. Reconnect the power cord to the unit and the unit to the power supply.

Shutdown

If the EASYpure RF 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, then the unit should be drained, sanitized and new cartridges installed prior to use.

Troubleshooting

Troubleshooting

Problem	Possible Causes	Solutions
EASypure RF completely inactive. (pump not operating, control panel not lit, etc.).	No electrical power to EASypure RF. Fuses blown.	Ensure that the EASypure RF 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 (page 13).
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 level in feedwater reservoir. Pump worn out or defective.	Replenish feedwater. 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 (page 9). Clean cell and reinstall (page 15).
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 (page 10) Install the cartridges in the proper order as indicated in the Cartridge Installation section (page 8).
Reduced or no product flow from the 0.2 filter assembly.	0.2 micron final filter clogged.	Replace the 0.2 filter assembly as indicated in the 0.2 Micron Filter Replacement section (page 11).

Problem	Possible Causes	Solutions
0.2 micron final filter clogs rapidly after replacement.	<p>DI Pretreatment cartridge (Part Number D50230) not properly rinsed up before use.</p> <p>EASYPure RF contaminated with bacteria.</p>	<p>Rinse up DI Pretreatment cartridge as described in Cartridge Rinse-up Procedures on page 8. Replace the 0.2 filter assembly as indicated in the 0.2 Micron Filter Replacement section (page 11).</p> <p>Sanitize EASYPure RF according to the instructions in System Sanitization on page 12. Replace the 0.2 filter assembly as indicated in the 0.2 Micron Filter Replacement section (pages 11).</p>
Short cartridge life.	<p>Cartridges being used are beyond expiration date.</p> <p>Change in feedwater characteristics.</p>	<p>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.</p> <p>If a Barnstead ROpure is the feedwater source, check that the membrane is functioning properly.</p> <p>If a Barnstead Still is the feedwater source, ensure that the distillate temperature does not exceed 120°F when added to the EASYPure RF feedwater reservoir.</p> <p>If feedwater is from a central water purification system, verify water quality and proper functioning of the system.</p>
Water leakage inside EASYPure RF.	<p>Water spillage during reservoir replenishment.</p> <p>Cartridge connecting tubing not fully seated into sockets.</p> <p>Missing or defective O-rings.</p>	<p>Use greater care when pouring into reservoir.</p> <p>Press connecting tubing firmly into sockets.</p> <p>Install or replace O-rings.</p>

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 (pages 10-17) 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 (Type Fast-Acting, 250 Volt, 2.0 Amp)	FZX37	
240 Volt (Type 3AG, 250 Volt, 1.0 Amp)	FZX8	
230 Volt (Type T, 250 Volt, 1.0 Amp)	5120-0016	
Ventgard Cap	CV703X4A	2
Empty Cartridges for sanitization (set of 3)	D7034	1
O-rings, cartridges	06162	4

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

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
230-240 Volt	PC703X3	1
Pump and Motor Ass'y		
100-120 Volt	PU703X1A	1
230-240 Volt	PU703X2A	1
Resistivity cell	E703X1A	1
Outlet valve Ass'y.	PM703X9A	1
Float Switch	SW703X2A	1
Relay	RYX51	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.

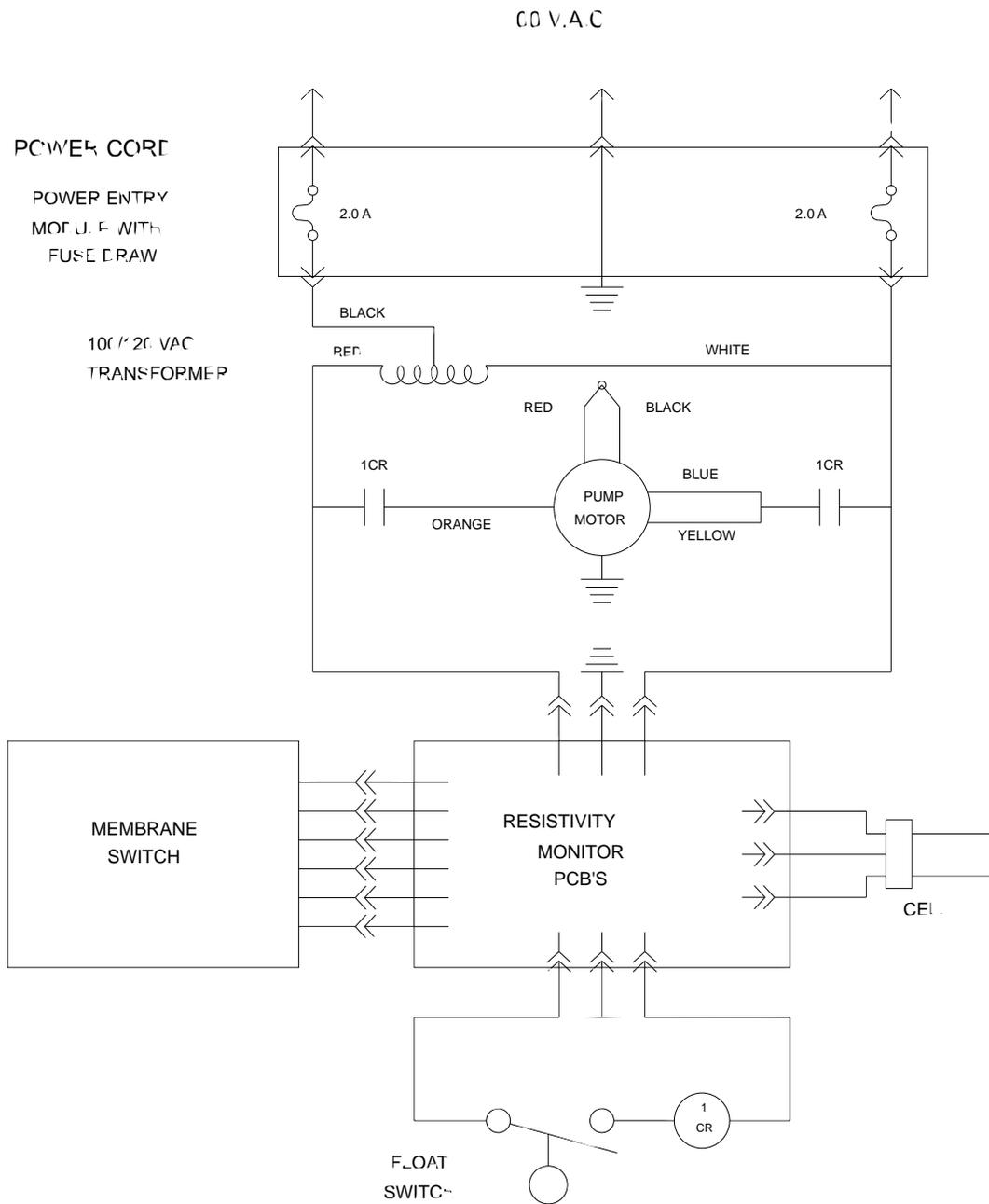


Figure 7 100 Volt Wiring Schematic

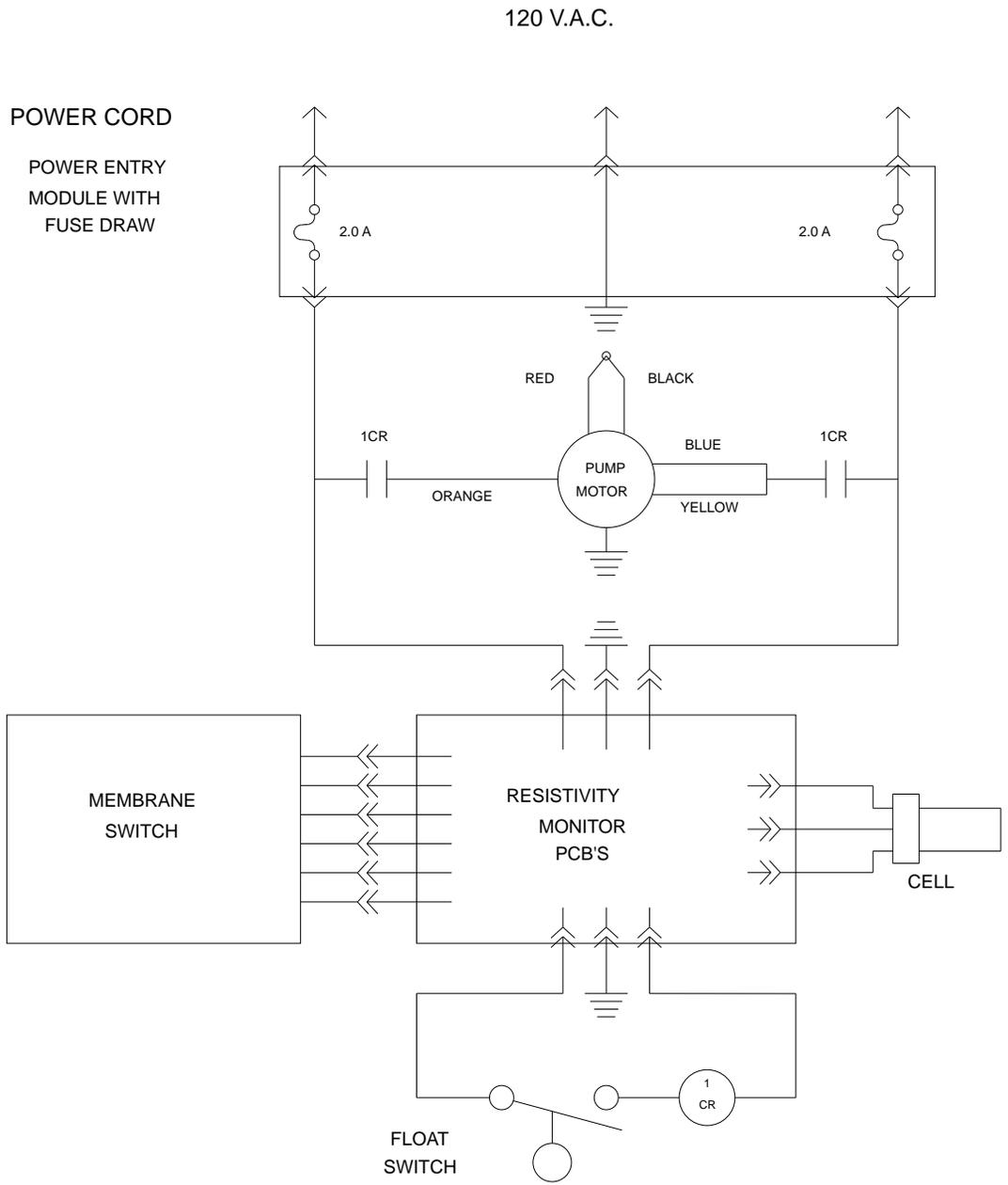


Figure 8 120 Volt Wiring Schematic

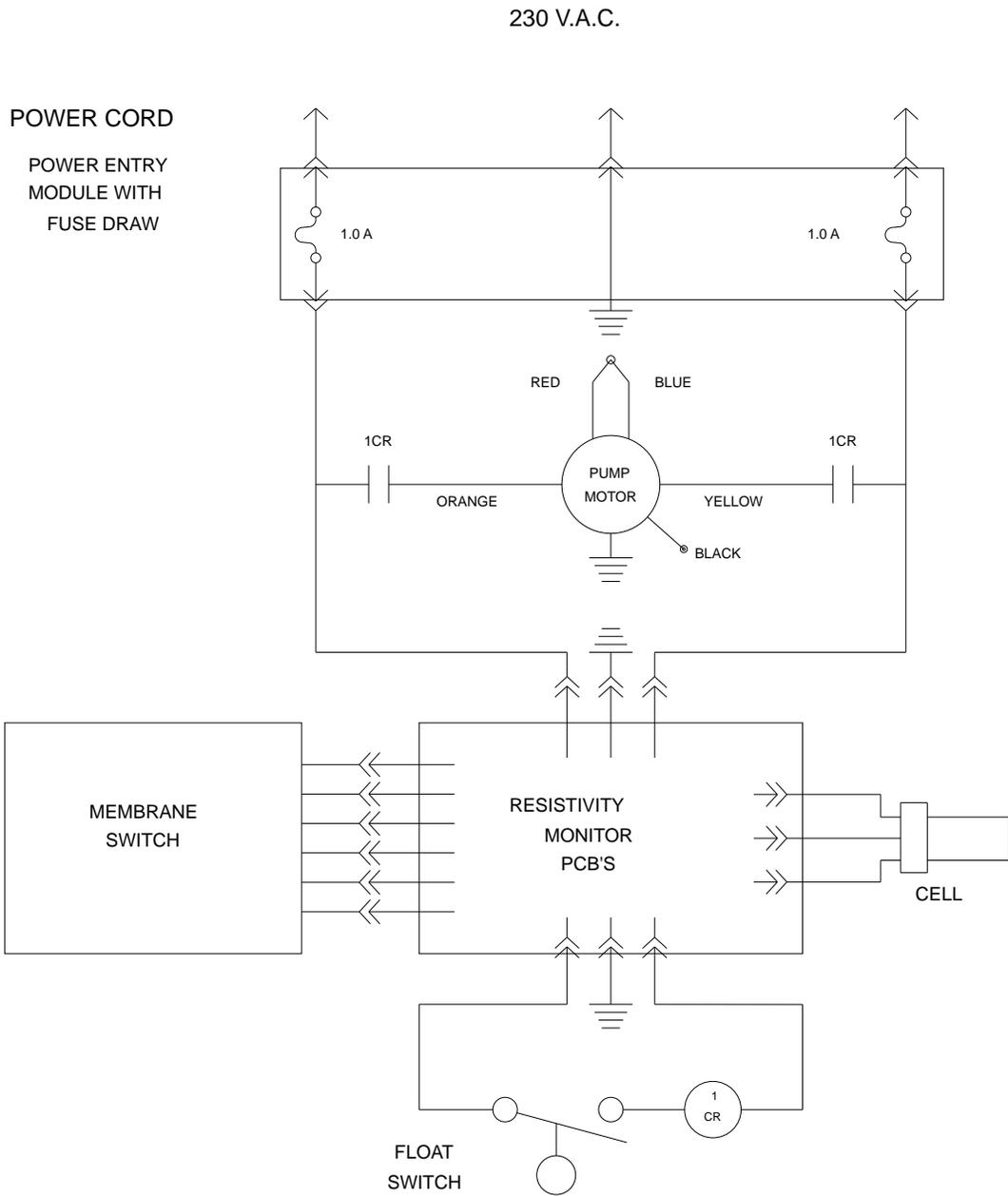


Figure 9 230/240 Volt Wiring Schematic

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 ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE.

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