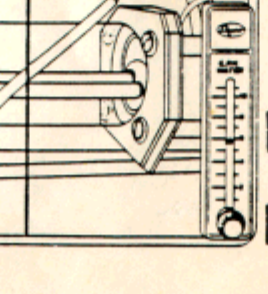
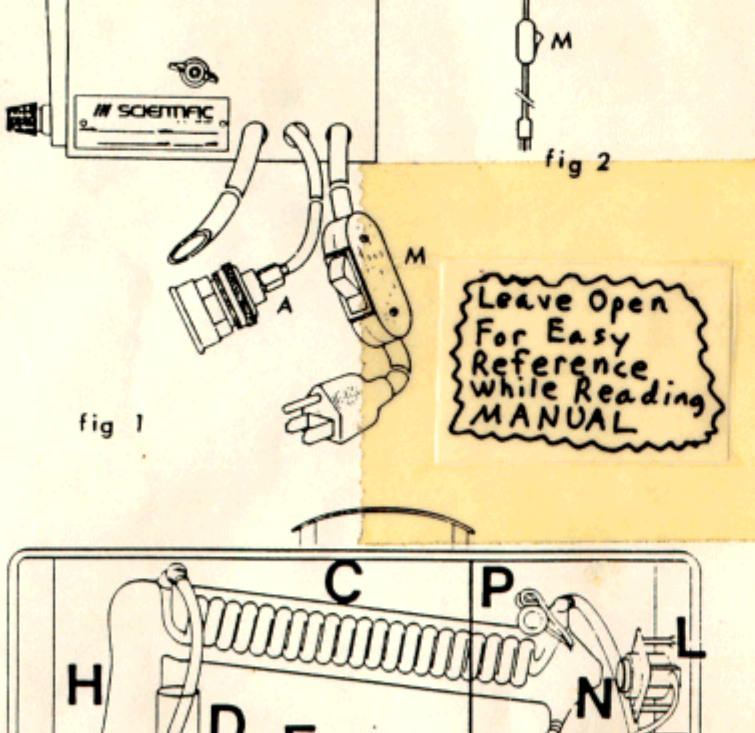
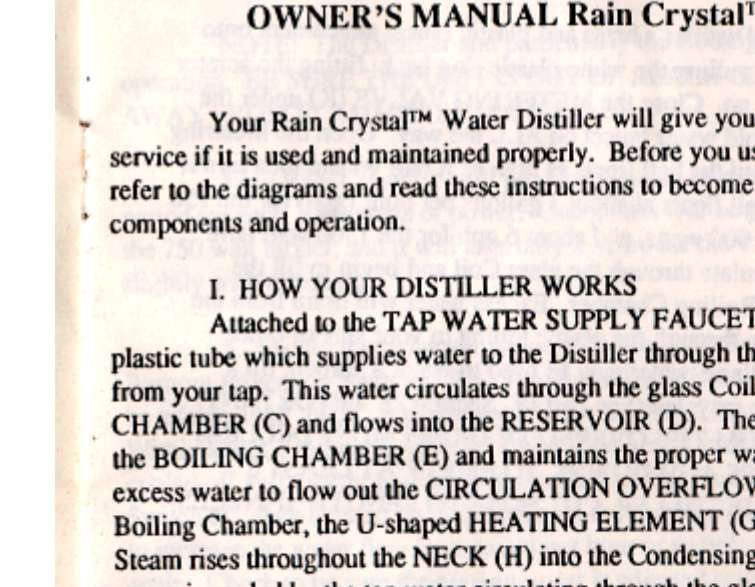


1980 "OCEANIC MANUAL"
J. J. ATON UNIT



Leave Open For Easy Reference While Reading MANUAL



CONTENTS

Section	Page
Distiller Parts Keyed	1
I. How Your Distiller Works	1
II. Instructions for Use	3
III. Cleaning	3
IV. Optional Equipment and Accessories	5
1. Water Pressure Regulation	5
2. Water Recirculation	5
3. Automatic Shutoff Timer	5
4. Activated Carbon Filter	6
V. Maintenance	6
1. Heating Element Replacement	7
2. Tubing Removal	7
3. Burnout Protection System	7
4. Metal Flange	7
5. Shipment of Your Distiller	8
VI. Troubleshooting	8
1. Heating Element will not Heat	8
2. Burnout Protection Switch Activator	8
3. Water Pressure Regulator Vibrates	8
4. Distiller Produces Water too Slowly	9
5. Distilled Water has Foreign Taste	9
6. Water Level Fluctuates or Unit Fails to Drain Properly	9
7. Tap Water in Boiling Chamber Foams into the Condensing Chamber	9
8. Distiller Leaks Water	10
VII. Guarantee	10

DISTILLER PARTS

Key Letter On Diagram	Part	Page
A	Tap Water Supply Faucet Connector	1
B	Flowmeter	1
C	Condensing Chamber	1
D	Reservoir	1
E	Boiling Chamber	1
F	Circulation Overflow Drain	1
G	Heating Element	1
H	Neck	1
I	Condensing Chamber Drain	1
J	Cleaning Drain	1
K	Metering Valve	2
L	Burnout Protection Switch	2
M	Power Switch	2
N	Vent	7
O	Flange Retaining Screws	9
P	Operation Indicator Lamp	11
Q	Water Pressure Regulator	5

OWNER'S MANUAL Rain Crystal™ Distiller

Your Rain Crystal™ Water Distiller will give you years of trouble-free service if it is used and maintained properly. Before you use your Pyrex® Distiller, refer to the diagrams and read these instructions to become familiar with the unit's components and operation.

I. HOW YOUR DISTILLER WORKS

Attached to the TAP WATER SUPPLY FAUCET CONNECTOR (A) is a plastic tube which supplies water to the Distiller through the FLOWMETER (B) from your tap. This water circulates through the glass Coil in the CONDENSING CHAMBER (C) and flows into the RESERVOIR (D). The Reservoir feeds water to the BOILING CHAMBER (E) and maintains the proper water level there, allowing excess water to flow out the CIRCULATION OVERFLOW DRAIN (F). In the Boiling Chamber, the U-shaped HEATING ELEMENT (G) boils the tap water. Steam rises through the NECK (H) into the Condensing Chamber where the steam is cooled by the tap water circulating through the glass Coil and trickles to the CONDENSING CHAMBER DRAIN (I) through the Silastic® Silicone Tube to your collection container.

To remove all wastes and gasses from tap water, the water must continually circulate through the Coil, Reservoir, and Boiling Chamber. Simply boiling water and condensing the steam does not insure the purest distilled water. Because your Model 48 uses circulating water, a small amount will overflow through the Circulation Overflow Drain through the plastic tubing to your sink or other household drain facility. Waste-water may be used to water a garden, fill a washing machine or can be recycled (See Part IV, Section 2). IMPORTANT: THE PLASTIC TUBE FROM THE OVERFLOW DRAIN MUST DECLINE STEADILY, WITH NO UPS AND DOWNS, TO EMPTY AT LEAST 8 INCHES BELOW YOUR DISTILLER. CUT HOSE TO LENGTH IF NECESSARY.

When the Boiling Chamber is filled to the water level line and begins to trickle out the Circulation Overflow Drain, plug the unit into a 120 volt grounded electrical outlet and press the red button on the BURNOUT PROTECTION SWITCH (L) located on the upper right side of the Distiller. Flip the cord-mounted POWER SWITCH (M) to the ON position and in a few seconds the water will begin to heat. Within 3 or 4 minutes it will be boiling.

After 4 or 5 more minutes adjust the flow of water with the Metering Valve and Flowmeter on the front of the unit. When properly adjusted, a small amount of very hot (140-160 degrees) water will trickle from the Overflow Drain in bursts. If the water flows continuously from the Drain and is not hot, it is entering the unit too quickly and will not operate at maximum efficiency. Coolant water amount depends on the tap water temperature (the colder the water, the less water your Distiller needs) and on slight variations in line voltage and element wattage.

Chemical pollutants are removed most effectively at high temperatures. If the Burnout Protection Switches, deactivates the Distiller, not enough water is being used and the flow will have to be increased as indicated on the Flowmeter. Turn the Power Switch off before resetting the Burnout Protection Switch. THE UNIT WILL REQUIRE ABOUT ONE MINUTE TO COOL OFF BEFORE THE RED BUTTON WILL STAY IN.

2. Now, snap the Distiller's brass and plastic faucet attachment onto your new faucet aerator by pulling the white plastic ring back, fitting the aerator inside, and letting the ring go. Close the METERING VALVE (K) under the Flowmeter and turn your cold water faucet on ALL the way. Open the Metering Valve counterclockwise until the ball floats as high as it will go and then turn it clockwise again until the ball floats at about 3 gallons per hour (gph) for the 750 watt model, 4 1/2 gph for 1000 watts, and about 6 gph for the 1500 watt unit. The water will quickly circulate through the glass Coil and begin to fill the Reservoir, and finally, the Boiling Chamber. Excess water will drain from the Circulation Overflow Drain through the plastic tubing to your sink or other household drain facility. Waste-water may be used to water a garden, fill a washing machine or can be recycled (See Part IV, Section 2). IMPORTANT: THE PLASTIC TUBE FROM THE OVERFLOW DRAIN MUST DECLINE STEADILY, WITH NO UPS AND DOWNS, TO EMPTY AT LEAST 8 INCHES BELOW YOUR DISTILLER. CUT HOSE TO LENGTH IF NECESSARY.

3. When the Boiling Chamber is filled to the water level line and begins to trickle out the Circulation Overflow Drain, plug the unit into a 120 volt grounded electrical outlet and press the red button on the BURNOUT PROTECTION SWITCH (L) located on the upper right side of the Distiller. Flip the cord-mounted POWER SWITCH (M) to the ON position and in a few seconds the water will begin to heat. Within 3 or 4 minutes it will be boiling.

After 4 or 5 more minutes adjust the flow of water with the Metering Valve and Flowmeter on the front of the unit. When properly adjusted, a small amount of very hot (140-160 degrees) water will trickle from the Overflow Drain in bursts. If the water flows continuously from the Drain and is not hot, it is entering the unit too quickly and will not operate at maximum efficiency. Coolant water amount depends on the tap water temperature (the colder the water, the less water your Distiller needs) and on slight variations in line voltage and element wattage.

Chemical pollutants are removed most effectively at high temperatures. If the Burnout Protection Switches, deactivates the Distiller, not enough water is being used and the flow will have to be increased as indicated on the Flowmeter. Turn the Power Switch off before resetting the Burnout Protection Switch. THE UNIT WILL REQUIRE ABOUT ONE MINUTE TO COOL OFF BEFORE THE RED BUTTON WILL STAY IN.

NOTE: The Distiller and particularly the Boiling Chamber are HOT during operation. BE SURE THE UNIT IS OUT OF REACH OF CHILDREN AND AWAY FROM FLAMMABLE MATERIALS.

Your Rain Crystal™ will produce 1 gallon of pure water during a 3 hour period for each 1000 watts of power. One gallon will be produced in 4 hours from the 750 watt model, and it will take only 2 hours for the 1500 watt unit. This varies slightly with elevation.

Should the tap water pressure drop and cooling become insufficient, the Burnout Protection Switch will be automatically activated. When tripped, there will be a fairly loud "click", and the water in the Boiling Chamber will cease to boil. Within about 1 minute a softer "click" will be heard, indicating that the switch has cooled off sufficiently to resume normal operation. Turn the cord-mounted Power Switch off; then depress the red button on the Burnout Protection Switch. Be SURE to increase the water flow by a gallon per hour or so before turning the unit on again. Check to be sure the coolant water is adjusted properly as outline in Section 4 above after the unit has run for a few minutes. Use the cord-mounted Power Switch to turn the unit off. Use of the Burnout Protection Switch as a shutoff will cause undue wear and premature failure of this component.

III. CLEANING

How often your Distiller will need cleaning will depend on local water conditions and frequency of operation. Even with daily use, a biweekly or monthly cleaning will be sufficient in most areas of the country. If your water has a high mineral content, more frequent cleaning may be wise as it is easier to remove a lighter mineral deposit than a heavy one. Your Distiller will operate more efficiently when clean, but it is not necessary or desirable to clean it until it looks new. The most important place to keep open is the Feed Water Hole between the Reservoir and the Boiling Chamber. Light mineral deposits on the glass of the Boiling Chamber or on the Heating Element will not hamper operation or quality of product water.

1. Lift the Overflow Drain Tube (F) and loop it through the handle on top of the unit to prevent loss of the cleaning solution while the Boiling Chamber (E) is filled.

IV. OPTIONAL EQUIPMENT AND ACCESSORIES

1. WATER PRESSURE REGULATOR WITH GAUGE

Your distiller is supplied with a water pressure regulator to reduce variations in tap water pressure. To set regulator open flow metering valve "K" to the 10 GPH setting. If gauge "Q" reads 15psi, setting is correct. To reset gauge, pull red collar on knob at left of gauge and adjust to 15psi, reset red collar. Turning black knob clockwise increases pressure. Then readjust flow metering valve as outlined in Section II, Paragraph 4.

2. WATER RECIRCULATION

In areas of water shortage or where it is desirable to reuse the coolant water, a Recirculation Pump may be used. We recommend a minimum of 50 gallons of water in your bathtub, a trash container, or a clean oil-type drum for each 1000 watts of electrical power. The water flow will have to be increased as the recirculated water will heat up during operation and may be warmer than tap water in the tank. Adjust the flow as outlined above and turn the flow up 2 gallons per hour to compensate for the recirculated water warming up.

3. AUTOMATIC SHUTOFF TIMER

When operating the unit while away from home, an electric timer may be useful to turn the unit off before the distilled water collection bottle overflows. Be sure to obtain a timer which is grounded to avoid possible shock and one that can be set so the unit will not turn on again until reset manually. The timer contacts must be rated for the wattage of your unit. Shutoff timers are available from Scientific Glass Company.

Tighten the Heating Element until the ring gasket is snug against the metal flange and the Heating Element lies flat or horizontal in relation to the operating position of the Distiller. Reattach the electrical wires tightly. Reinsert the Distilling unit in the Plexiglas® case being careful to position the electrical connector protection collar (made of clear plastic) correctly. Do not screw the brass nuts on tightly unless the limit nuts on the inside of the case are touching it, indicating that the protection collar and Distilling Unit are in proper position. Then, with washers under the brass nuts against the plastic, simply snap the nuts; DO NOT OVERTIGHTEN.

2. TUBING REMOVAL

If it is found necessary to remove the silicone or plastic tubing from the glass hosebibs, carefully cut them off with a sharp blade. Do NOT attempt to pull the tubing off as this may break the glass. To reinsert the tubing, square it off with the blade, wet the inside of the tubing with water, and carefully push the tubing on while holding the glass securely, using a twisting movement until the tubing is in the desired position.

3. BURNOUT PROTECTION SYSTEM

If the unit does not operate even though the red button on the Burnout Protection Switch is depressed, the unit is plugged in, and the Power Switch is in the ON position, it is possible the electrical connections on the Burnout Protection Switch are loose. Unplug the unit and carefully remove the slip-fit electrical connectors with needle-nose pliers from the metal tabs on the Burnout Protection Switch. Tighten them with pliers, and reinsert on the tabs. It is possible that the silver contacts inside the Burnout Protection Switch are not making contact. To reinstate contact, hold a match near the silver-colored disc next to the VENT (N) until the Switch snaps. Wait a minute or so for the Switch to reset and depress the red button sharply. If the unit still does not operate, the Burnout Protection Switch may need replacement.

4. METAL FLANGE CARE

For models with a metal flange holding the Heating Element in place, NEVER attempt to tighten or remove the metal flanges from the base of the Distiller. Danger of breaking the glass flare within the flange has made it necessary to return the unit to the Factory for repair. All warranties are void if the seals on the FLANGE RETAINING AND MOUNTING SCREWS (O) are dislodged.

2. Pull the silicone tube out of the Reservoir (D) and pour the cleaning solution into the top of the Reservoir directly from the bottle, or use a funnel. If the solution bubbles rapidly, filling the Boiler will have to be done in steps to prevent foaming into the Condensing Chamber. When filling is complete, the level of the solution should be to the bottom of the (cap) Neck (H).

We recommend the use of dilute phosphoric acid, dilute acetic acid, or vinegar ONLY. Do not use hydrochloric, nitric, or sulfuric acids as these will damage the heating element and metal flange, are hazardous, and not biodegradable. The effectiveness of dilute acetic acid or vinegar is limited with some types of chemical deposits.

3. Leave the cleaning solution in the Boiling Chamber (E) until the lime deposits have dissolved. If the encrustment is so thick as to use the solvent up before the deposits are gone, repeat the above procedure after draining the spent solution and consider cleaning more often. The solvents can be heated to increase effectiveness when all foaming has ceased. Heating can be accomplished by simply turning the unit on for one minute until the solution is hot or foams. If no bubbling is noticed when the solution is hot, the cleaning fluid is spent. If phosphoric acid solutions available through Scientific Glass Company lose their color when spent. If after cleaning the solution is still active and retains its color, it may be reused, but it is recommended that it be stored in a separate labeled container.

4. To drain the cleaning solution from the Boiling Chamber, release the pinch clamp from the Cleaning Drain Tube (J) and save the fluid if still active, or discard if spent. Attach the Tap Water Supply Tube (A) to your faucet, replace the silicone tube into the Reservoir (D), and flush and drain thoroughly several times before filling the Boiling Chamber (E) with fresh water for distillation. If the condenser becomes contaminated by the cleaner, rinse and operate the distiller for 1/2 hour before collecting the distillate.

Do NOT attempt to clean or remove any deposits by using metal wires or forcing any solid materials into the Boiling Chamber. Glass is fragile. Extreme cases may be returned to Scientific Glass Company for dismantling and complete cleaning. Call for prices of cleaning.

WARNING: IF UNIT IS ALLOWED TO ACCUMULATE A THICK ENCUSTMENT, DAMAGE MAY OCCUR TO BOILING CHAMBER (E).

4. ACTIVATED CARBON FILTER

An Activated Carbon Filter may be necessary in areas of high chemical pollution to assure complete removal of pesticides, preservatives, gasoline, or other hydrocarbon contaminants. Scientific Glass Company offers a glass filter filled with activated carbon granules. Depending on the severity of the pollution problem, replacement of the granules need be repeated every 100 gallons or so of pure water produced or if any taste appears in the distilled water. Remove the Neoprene stopper from the top of the filter, shake out the spent granules, and refill with fresh ones. Replace the stopper and rinse well with distilled water. The filter is placed in the distilled Water Discharge Tube by cutting the tube and inserting the filter.

V. MAINTENANCE

If used properly and cleaned periodically, your Rain Crystal™ will provide years of trouble-free service. The Heating Element or Burnout Protection Switch may need service or replacement if the unit fails to operate after following the above instructions. The Heating Element may need replacement if the unit is turned on with insufficient water in the Boiling Chamber. It may also need replacing if the output of distilled water drops noticeably even though the cooling water is adjusted correctly to emit hot (140-160 degrees) water from the Circulation Overflow Drain.

1. HEATING ELEMENT REPLACEMENT

New Heating Elements are available from Scientific Glass Company or from a plumbing supply outlet. Be sure to match the element stock numbers on the Bakelite electrical insulator exactly.

To replace the element, unplug the unit, then remove the brass nuts on the right side of the Plexiglas® case and carefully take the glass Distiller with metal flanges and Heating element out of the case. After labeling with tape, remove the electrical wires and hold the unit firmly but not tightly by the metal flange, not the glass. Use a 1-1/2 inch socket wrench to unscrew the Heating Element. Place a new ring gasket on the new Heating Element and wrap the threads several times with Teflon pipe sealing tape. Reinsert the Heating Element in the flange and screw in carefully to avoid crossing the thread.

5. SHIPMENT OF YOUR DISTILLER

TO PREVENT FREEZE DAMAGE TO GLASS DURING SHIPMENT PLEASE FOLLOW THESE INSTRUCTIONS. IT MAY NOT BE FREEZING WHERE YOU ARE BUT IT MAY BE HERE.

- 1) drain all water from the boiler "E".
- 2) remove valve "K" by unscrewing 12 turns and pulling out.
- 3) lift short flexible hose out "D".
- 4) stand distiller vertically on LEFT end.
- 5) blow all water from glass coil by blowing into "K" where knob was removed.
- 6) replace knob in "K", press and screw in until valve is closed.
- 7) pack as directed.

Place as directed the original shipping carton for storage and possible return of the unit to the Factory for repair or replacement, should the occasion arise. Scientific Glass Company assumes no responsibility for breakage due to inadequate packing or boxing. All units MUST be packed securely and double-boxed for shipment. The Boiling Chamber must be secured to the bottom of the Plexiglas® case with tape. Pack solid objects such as the Faucet Connector away from the glass. Pack both boxes, one inside the other, well with crumpled or shredded paper. We recommend shipping via United Parcel Service if possible.

VI. TROUBLESHOOTING

Problem: The Heating Element will not heat.
Solution: 1. Distiller is not plugged in, the house electrical breaker is tripped, or the Burnout Protection Switch is activated. Check electrical connections, turn Power Switch off, and depress the red button on the right side of the case. 2. Burnout Protection Switch leads are not tight or interior contacts poor. See Part V, Section 3. 3. Burnout Protection Switch is in need of replacement. 4. Heating Element in need of replacement. See Part V, Section 1.

Problem: Burnout Protection Switch activates frequently.
Solution: 1. Incoming water volume is too low. Readjust the Metering Valve to a higher level. See Part II, Section 4, or Part IV, Section 2 on water recirculation. 2. Water pressure varies excessively. Install or readjust Water Pressure Regulator. See Part IV, Section 1.

Problem: Water Pressure Regulator vibrates.
Solution: 1. Tap water faucet is not fully open. 2. Air in Regulator. Open Metering Valve fully and readjust to proper operating level. See Part IV, Section 1.

Problem: Distiller leaks water.
Solution: Turn unit off and determine the source of the leak. 1. If the unit is overflowing from the Reservoir, it may not be draining correctly. See Part II, Section 2. Part II on cleaning, or Part II, Section 4, regarding tap water flow adjustment. 2. If the leak is adjacent to the Heating Element or Metal Flange assembly, contact Scientific Glass Company for further instructions.

Scientific Glass Company is continually seeking improvement in design and operation. Your unit may have slight differences from the diagrams and descriptions contained herein.

*Pyrex® is a registered trademark of Corning Glass Works.
Plexiglas® is a registered trademark of Rohm and Haas Co.
Silastic® is a registered trademark of Dow-Corning Corp. for surgical grade implantation tubing.

GUARANTEE

Scientific Glass Company guarantees all Distilling units against defects in materials and workmanship as determined by the Manufacturer for 2 years following purchase by the original owner. Electrical components are excluded as is breakage of the glass flare contained within the Flange Assembly. Guarantee is voided by the use of unapproved Boiler Chamber cleaning solvents (see Part 3, Section 2). Guarantee is also voided for use of anything other than water used in the Distiller. Scientific Glass Company assumes no responsibility for return shipping damage due to inadequate packing and boxing. Units must be packed securely and double-boxed for shipment.

PLEASE SAVE THE ORIGINAL SHIPPING CARTONS FOR POSSIBLE RETURN SHIPMENT. REPLACEMENT COST \$15.00

FRAGILE: HANDLE WITH CARE!

Wishing you well with the spirits of your water.

