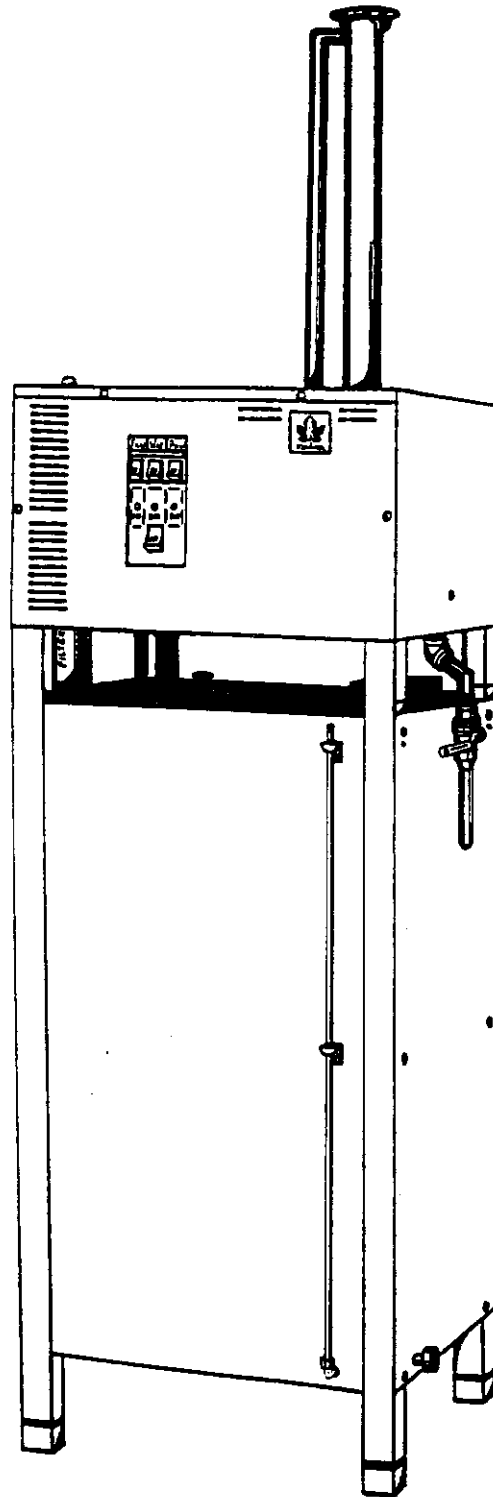


POLAR BEAR WATER DISTILLERS

MFG. CO. LTD.

MODEL 180-L

INSTRUCTION MANUAL



'We Care About the Water You Drink'

The Model and Serial Numbers are located on the left rear of the distiller.

Model No. _____ Serial No. _____ Purchase Date: _____

Purchased from: _____

Installation Date: _____ Installed by: _____

Pump Serial No. _____ Purchase Date: _____

Auto Drain Serial No. _____ Purchase Date: _____

To obtain the optimum performance capability engineered into your Polar Bear water distiller, please read this manual thoroughly before attempting to assemble or use. Please keep this reference guide in a safe place!

SECTION I - INTRODUCTION

Congratulations! You are now the owner of one of many fine products manufactured by **Polar Bear Water Distillers Mfg. Co. Ltd.**, a world leader in the pure water industry. We take pride in our solid reputation for product quality and industry-proven performance.

This product has been carefully inspected to comply with rigid factory quality control standards, as well as those of the Canadian Standards Association (CSA) and Underwriters Laboratories (UL), before shipment to you. We are sure that, with reasonable care, it will provide you with years of reliable performance.

We - at **Polar Bear Water Distillers** - compliment you on your choice - and know you will enjoy the purest and healthiest water available ... because *'We care about the water you drink!'*

SECTION II - DISTILLATION USES, BENEFITS AND PROCESS

USES:

- Provides the *purest drinking water* - free from chemicals, impurities, pollutants and bad taste.
- *Clear ice cubes* - not only are they more clear and shiny due to the absence of impurities in the water, but they are also harder. Distilled water freezes quicker than tap water because there are no impurities to lower the freezing point.
- Better tasting *tea and coffee* - and more economical. Using distilled water to make coffee or tea requires approximately 1/3 less grounds or tea leaves. There will be a somewhat lighter color, but just as rich a flavor, as well as a less-bitter taste. For better *juices and drinks* - distilled water provides a taste much closer to the fresh product. Normally, you may add about 25% more water, and because the distilled water is free from chlorine, there will be no interaction between the chlorine and the Vitamin C.
- Use it for all *cooking and baking*, for standard results from favorite recipes. Flavours come through naturally, and because distilled water absorbs slightly more flour than tap water, baked goods have a better texture. *Pasta products* will absorb more distilled water than tap water, producing better texture and flavour, as well as less tendency to cling together. *Vegetables* - less discoloration in potatoes, etc. and there is no introduction of contaminants into organically-grown foods. Because distilled water boils at a lower temperature than tap water, there is also a saving of time and energy costs. *Canning fruits and vegetables* - not only do they retain a more natural color, but the flavor is better. There is more success in the sealing of jars and a much lower spoilage rate due to the fact that the water is sterile. *Do not use distilled water in aluminum pots, as it will 'leech' the aluminum into the food.*
- *Eliminates scale buildup* on pots, tea kettles, coffee pots, humidifiers, vaporizers, steam irons, etc. Any appliance that requires water will last longer.
- Use it for all *infant care and formulas*.
- *Promotes growth for seeds* - a higher degree of germination and quicker. Sprouts may then grow free of contamination and retain their crispness for a longer period of time. Use for *watering plants* to eliminate chemical buildup in the soil. Distilled water leaves no spots on plants when they are sprayed or misted.
- Use it for all *personal hygiene* - *final rinse* for softer hair; *rinsing the face* before applying makeup; *brushing teeth*, as well as a *mouthwash* and for *gargling*. Perfect for *feminine hygiene*. Distilled water is also used for *contact lens care*.
- *Wine making or mixing drinks* - less alcohol can be used to achieve the same flavour. Chlorinated tap water can react with alcohol to form dangerous by-products.
- Excellent *drinking water for pets* and for *topping off aquariums*.
- Use it for all *medical needs* - cleaning cuts and abrasions, dialysis machines, sterilizers, respirators, vaporizers and humidifiers.
- *Automobile care* - for batteries, as well as windshield washers - leaves no spotting.
- *Photographic equipment and laboratories*.

BENEFITS:

Distillers are more effective than reverse osmosis in contaminant reduction, even on very high levels of contaminants such as nitrates, sodium, bacteria, pesticides, and herbicides. Independent laboratory testing has proven **Polar Bear** water distillers remove more than 99% of harmful contaminants from water. The distillation process does not rely on physical barriers which can break down or fail and let contaminants through without the user realizing it; nor does it require a complicated disinfection process when used on water containing bacteria. The prolonged boiling process of water distillers is critical for killing and eliminating bacteria and viruses. No other process is as effective or as reliable.

Our distillers are highly effective on low or varying water pressures, temperatures and pH, without optional costly equipment. Consistent, high quality water will be produced for the life of the appliance and this quality of water will not decline with use. **Polar Bear** water distillers are extremely durable, trouble-free appliances that require a minimum of service and maintenance for efficient and complete operation.

PROCESS:

The process of distillation duplicates Nature's hydrologic cycle. In nature, the heat of the sun vaporizes the water and draws it from the earth's surface into the atmosphere, leaving the impurities behind. As the vapor cools, it condenses and falls back to earth as rain, snow and other forms of precipitation. Unfortunately, as it falls back toward earth again, it picks up many forms of contamination.

Distillers are designed to duplicate Nature's hydrological cycle, but they take it a step further by producing high purity water in a chamber, essentially free from pollution. Distillers boil the feed water, creating steam. The steam rises, leaving virtually all impurities behind in the feed water chamber. The steam is collected and condensed as clean, distilled water. The impurities that remain in the feed water chamber are run to the drain.

Distillation is the only water treatment process that does not rely on physical barriers to separate good, clean water from contaminants. Provided the instruction manual is followed, our distillers will reject contaminants just as effectively ten years after installation as they do the day they are purchased.

Our distillers also include a charcoal filter, designed to handle the contaminants that boil at lower temperatures very close to the boiling point of water. These need to be changed on a routine basis.

Our water distillers do not require constant monitoring. The process itself is so simple, little can go wrong. All units are constructed from high-grade stainless steel for assured purity.

SECTION III - ANSWERS TO FREQUENT QUESTIONS

Question: Is tap water really safe for drinking?

Answer: Many tap water supplies are, for the most part, safe in terms of being free of disease-causing bacteria. However, tests of water supplies throughout the world now show varying degrees of contamination by modern chemical pollutants. In many cases, the chlorine used to rid water supplies of bacteria is now interacting with these chemicals, creating additional pollutants. Water supplies may also be contaminated by asbestos, copper, cadmium and lead from water pipes. Drinking water from wells can be very dangerous, particularly when located on 1/2-acre plots where it is almost impossible to keep seepage from the cesspool or septic tank out of the well.

Question: Why is distilled water the safest water to drink?

Answer: Distillation is more effective than any other purification system in removing bacteria, chemicals and inorganic minerals from the water, including toxic compounds which may be present. Test results show a *greater than 99% efficiency removal of contaminants, such as chlorine, nitrate and sodium, when water is distilled using a Polar Bear water distiller*. Distilled water is virtually pure H₂O and the safest of all drinking water.

Question: Does distillation remove minerals from water that our bodies need?

Answer: Distillation does remove minerals from water; however, these minerals are *inorganic* and cannot be used by the body. The body assimilates the *organic* minerals found abundantly in the foods we eat, not *inorganic* minerals found in water.

Question: Are water softeners considered water purifiers?

Answer: No, not in any sense of the word. The public has been misled into thinking water softeners are purifiers. It has been proven that water softeners do not kill bacteria or take out mineral impurities, but add salts to the water, as treatment is based on a salt-operated unit. No one on a sodium (salt) restricted or sodium-free diet should drink 'soft water'.

Question: What are some of the fringe benefits of distilled water?

Answer: Tea has more flavor. Coffee requires 1/2 less granules. Ice cubes are crystal clear, foods digest much better and distilled water enhances the flow of nutrients into the blood stream. A glass of cold, distilled water tastes 'clean'. Everything remains pure, as there is nothing left in the water to interfere with or change the original, natural flavor.

SECTION IV - FEATURES OF THE MODEL 180-L

- Exclusive energy saving system - water is drawn into the boiling tank in one filling. Boiling is continuous until water level reaches the element. This results in an uninterrupted distilling cycle which means more water is produced in less time -25% lower operating costs; also prevents line hammering. Up to five (5) gallons of water can be used from the distilled water storage tank without the distiller starting up. This allows continuous distillation which is more efficient than running the distiller for small amounts of water.
- Automatic start / stop float system.
- The Model 180-L has a 2-foot highrise evaporation tower and a taller boiling tank, which allows for a higher steam rise. This system eliminates any foaming or impure water from entering directly into the condensing coils, forcing substances of heavier molecular weight (toxic chemicals, dissolved solids, etc.) to fall back into the boiling chamber, while allowing the lighter H₂O molecules to pass through into the fractional tower, then into the cooling coils. This produces purer water and better separation of steam and inorganic particles.
- Volatile gas release vent for purer water.
- Unit has a preheat chamber, which preheats the water before it enters the boiling tank. This produces more water with less time and energy spent for heating.
- V-shaped bottom in boiling tank for easy draining and cleaning of the boiling tank. Optional electronic Auto-Drain is available for the unit.
- Large lid openings with polished edges make the boiling and storage tanks easier to clean.
- Made from high-grade surgical stainless steel, including heating element, storage and boiling tanks and cooling coils.
- Hook-up kit to water line is included with this Model.
- Electrical components are up-front serviceable for easy access. A built-in safety system shuts off the distiller should it overheat. The unit will also automatically shut off when the storage tank is full. Lighted switches improve the external appearance and allow the user to see at a glance what the distiller is doing.
- The Model 180-L has an accessory appliance plug should a UV light or ozonator be added.
- A demand pump may be installed on the unit - this pump is required for taking water from the storage tank. When the Model 180-L is ordered with this accessory, the distiller also has a built-in safety switch to shut off the pump when the storage tank is empty. This prevents the pump from running dry.
- A series of units can be hooked together when one unit will not fill the demand for water. One Model 180-L should have the demand pump built in - the additional Models may just be the units and storage tanks.

SECTION V - SPECIFICATIONS

- Height - 88 in. Width - 28 in. Depth - 21 in. Weight - 110 lbs. 21 Amps - 5,000 Watts
- 208 or 240 volt units available
- Distills approximately 48 gallons every 24 hours
- Storage tank capacity is 65 gallons of distilled water.
- CSA-Certified, with One Year Warranty Parts and Labour.

SECTION VI - GENERAL INSTRUCTIONS

1. It is important to fill out and return the warranty card in this manual. The information is necessary should parts or repairs be needed during the warranty period.
2. Each distiller is checked at the factory for leaks, proper working procedure, etc. Therefore, the distiller may have a water ring inside the boiling tank. Testing is done by the actual running of the unit.
3. **Proper cleaning is important! Keep the distiller clean at all times to ensure pure water!**
4. The boiling tank is hellarc welded and as water is distilled, the mineral content may cling to the hellarc weld, *appearing as rust. This does NOT affect the quality of the water!* As the boiling tank is manufactured from stainless steel, the discoloration on welded seams in the tank is caused by the heat needed to fuse the two metals together.
5. Distilled water may have a different taste. This is actually not a 'taste' but a lack of taste. You will become accustomed to this the same as you did to the water in your area.
6. After initial installation of the distiller, the unit will run from 24 to 48 hours. *This is normal!* Depending on the storage tank capacity, the distiller will run until it has made enough water to fill it. Once the storage tank is full, the distiller will shut off automatically. When water is taken and the level in the storage tank drops, the unit will automatically begin distilling again.

SECTION VII - SAFEGUARDS

1. Unplug unit from power source before putting on or removing any electrical parts.
2. Plug unit directly into a firm-fitting grounded electrical outlet. If there is any doubt as to the outlet being grounded properly, have an electrician check it out! *Never use an extension cord!*
3. If the electrical cord becomes damaged or cut, have it changed *immediately!*
4. This unit should be operated *indoors*. Do *not* expose the unit to any natural elements (rain, sun, snow).
5. The Model 180-L requires electrical power of 208 or 240 AC, 60 Hz (220 volt) and not less than 30 AMP breaker capability with ground (4-wire plug).

SECTION IX - ASSEMBLY INSTRUCTIONS

The Model 180-L is shipped in two boxes (one containing the distiller and one containing the storage tank), or three boxes if the pump was included. When unpacking the boxes, save everything until the unit is in operation. Save the boxes in the event the distiller should someday require factory repair.

CONTENTS OF BOXES:

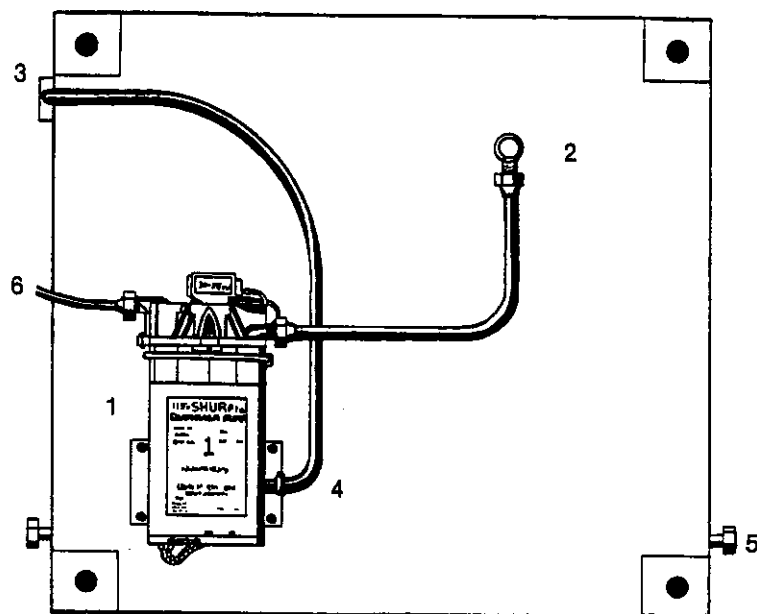
- main distillation unit
- distilled water storage tank
- bag containing 3½ ft. sterilization drip tube, one saddle valve kit and one charcoal filter
- lid for boiling tank
- 3 lids for storage tank (if pump was ordered, there will be only 2 lids)
- direct feed water feed line (white)
- one P.B.W.D. Cleaner & Descaler sample
- boiling tank drain extension and ball valve
- Instruction Manual and Warranty Card

PARTS LIST FOR OPTIONAL PUMP KIT:

- demand pump
- electric float shut-off
- cord bracket cover
- four 10/24 nuts
- two ¼ in. plated washers
- three 7/16 in. nuts
- tap and tap bracket
- 5 ft. of ½ in. plastic line
- two plastic line clips
- three nut and cone sets
- one elbow water fitting

ASSEMBLING THE STORAGE TANK:

1. Remove the plastic from around the storage tank and tape from the float arm, being careful not to bend the arm.
2. Wash storage tank with a cloth, using hot, soapy water and rinse thoroughly before use.
3. If the optional pump package is included, turn storage tank upside down and install the pump. Refer to **Figure 1**. *If you have not ordered the pump package, omit Steps 3 through 6.*
 - There will be four 10/24 nuts and two plated washers. On the left side of the pump, place a ¼ in. washer and nut on each of the two 10/24 studs. On the other side, place on the cord bracket and fasten down with the other two 10/24 nuts. Tighten firmly.
 - To hook up the pump to the bottom of the distiller tank, you will need the following parts: one nut, spring and cone set; 11 in. cut from the ½ in. water line (enclosed); and one ½ in. female to ½ in. compression elbow fitting. This fitting can be threaded and tightened to the tank. Be sure that it faces the same direction as shown in **Figure 1**.
 - On each end of the ½ in. line, install the nut first, then ring and cone. Be sure ring is placed on properly. See **Figure 1-A**.
 - Install the line on the pump and to the elbow fitting and tighten until snug. Be careful not to overtighten. Turn tank right side up. Install the water tap on the enclosed bracket. Refer to **Figure 3, Nos. 13 and 14**. Before mounting the bracket on the distiller, an adjustment may be made on the right front leg with the pre-punched holes, so the tap is the desired height. The remainder of the ½ in. white water line connects from the tap to the pump. See **Figure 1, No. 6**. Install the nut, ring and cone on each end (refer to **Figure 1-A**). Be sure this is done carefully, as this is the pressure side of the pump. If the water line is too long, trim it to desired length and tighten the fittings. There are two ½ in. line clips. These are to clip the line as you go up the leg to the first and second studs with acorn nuts.
4. Install the pump cord and guard on left rear side of distiller with three 7/16 in. x 20 plated nuts. Refer to **Figure 3, No. 9**.
5. The pump shut-off should be lowered in the tank. Loosen the 7/16 in. nuts on the centre of the lid and slip the lid bracket under the lip of the tank and tighten the nut until the float switch is tight. *Do not over-tighten.*
6. Plug the pump cord into the side of the float box. Refer to **Figure 2, No. 6**.
7. Place the distiller unit on top of the holding tank (**Figure 3**).



Front View

FIGURE 1

1. Pump
2. 1/2 in. pipe elbow to 1/2 in. compression
3. Pump cord protector
4. Cord bracket
5. Tank-to-tank 1/2 in. water hookup
6. Line to tap

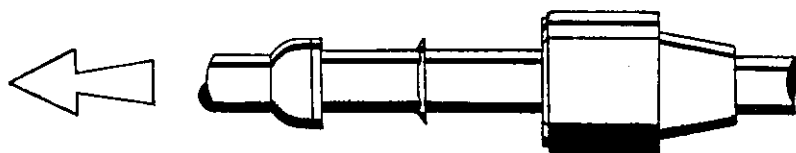
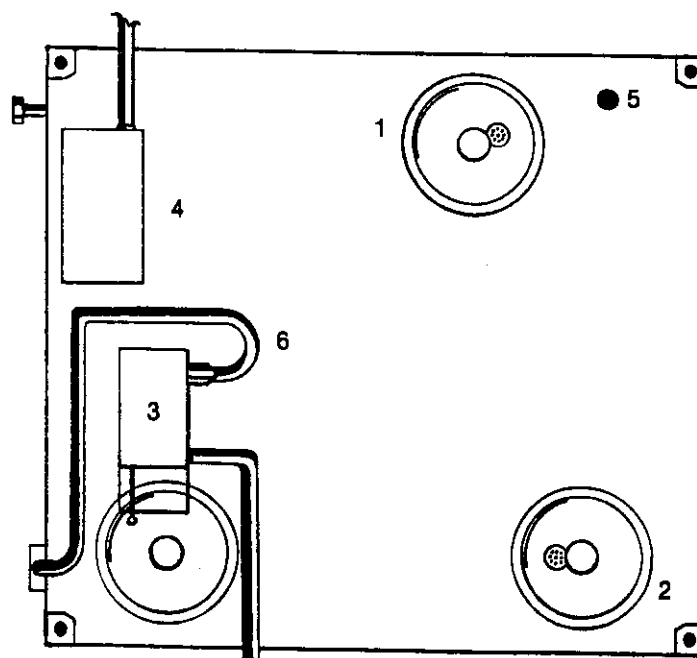


FIGURE 1 - A

FIGURE 2

1. Front lid
2. Rear lid
3. Automatic pump shut-off
4. High - low shut-off switch
5. Charcoal filter drip hole
6. Pump cord



Rear Side of Distiller - Top View

FIGURE 3

1. Main power switch
2. Fan switch
3. Water fill switch
4. Distilled water pump switch
5. Steam tower
6. Boiling tank lid
7. Volatile gas release vent
8. Impurities drain valve
9. Pump cord guard
10. Charcoal filter
11. Storage tank lid
12. High-low float shut-off switch box
13. Distilled water tap
14. Adjustable tap bracket
15. ½ in. line from tank-to-tank connection

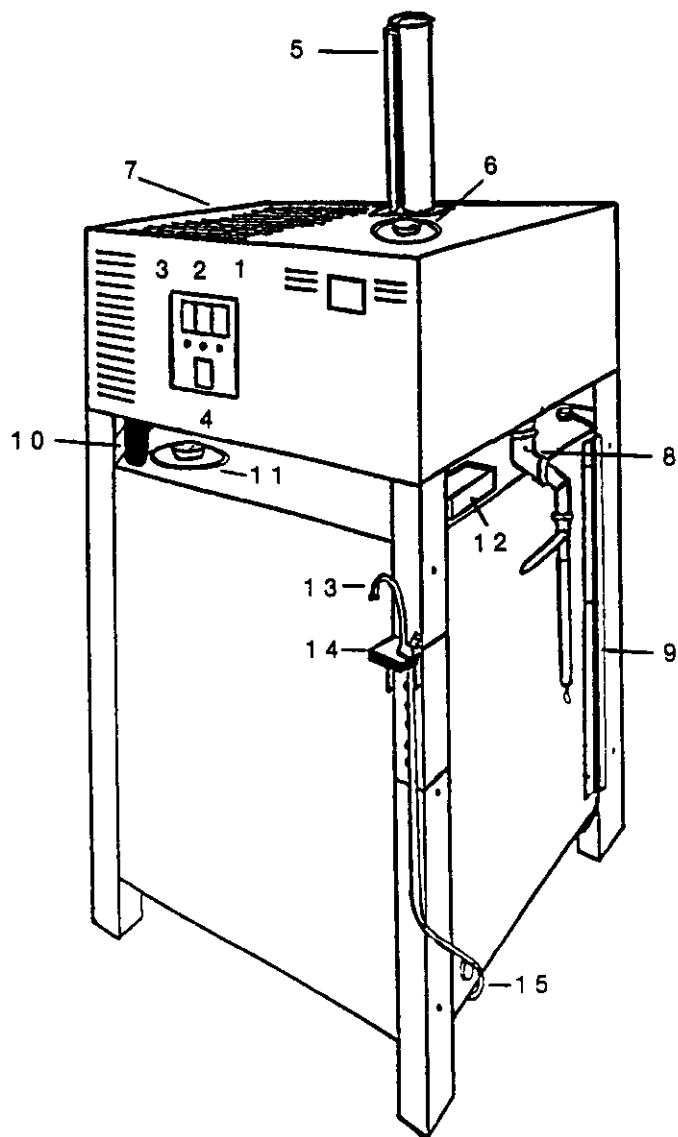


FIGURE 3 - A

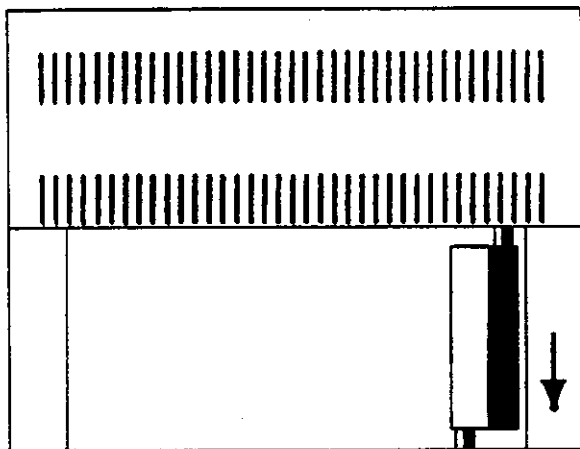


FIGURE 4

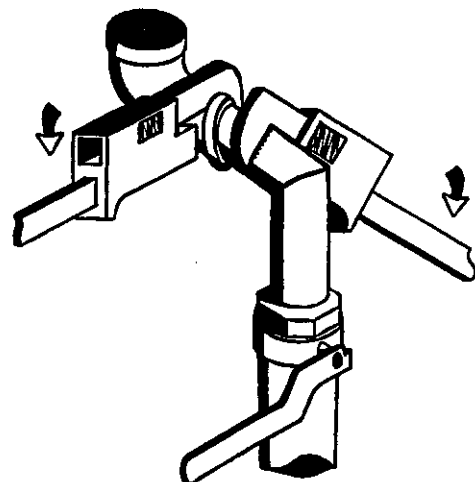
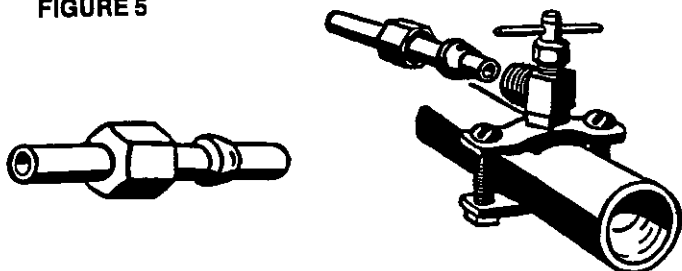


FIGURE 5



8. The plug for the holding tank double float shut-off is in the bottom front, right corner of the distiller. Plug the pump into the rear bottom right-hand side of the distiller unit.
9. Install the 1 in. impurities drain valve assembly. It is suggested that a pipe wrench be used with another for a backup tightener. Make sure there is Teflon tape on the first three threads. Refer to **Figure 4**. The stainless steel steam tower is then mounted on the rear centre of the top of the unit. *Do not over-tighten the nuts.* Refer to **Figure 3, No. 5**.
10. The Model 180-L water feed hook-up is at the bottom rear centre of the distiller unit. Take the white direct feed line and place the end into the 1/4 in. brass nut; then place the large end of the ferrule onto the line. Push this into the water feed connection on the distiller, as far as it will go. Tighten the nut. The white feed line must be cut square so it makes a good compression fit. Connect the saddle valve onto the direct feed water line. This should be connected to the cold water supply. The boiling tank drain valve should be closed before proceeding. If there is a soft water unit on the premises, the cold water line from it may be used.
Check for leaks; should any occur, carefully tighten all connections. Areas where leaks may occur are where the saddle valve connects to the white direct feed line; where the saddle valve attaches to the existing water line; where the white feed line attaches to the water feed connection on the distiller; or the nut around the valve stem on the saddle valve.
11. Plug distiller into a power source, ensuring it has a grounded 30-Amp breaker capacity. If unsure, have an electrician check it out.
12. At this stage, it is advisable to run the unit through a steam sterilization cycle prior to distilling water for usage. Follow instructions in **SECTION X**.
13. Place charcoal filter between distiller and storage tank. Refer to **Figure 3, No. 10**. *Change the filter every 500 to 1,000 gallons of water distilled.* This will depend on the quality of the water in the area.
14. There are four (4) switches located on the front panel of the distiller. Functions of these switches are:
 - Red - Power to complete unit - ON / OFF
 - White - Fan Switch - ON / OFF
 - Blue - Automatic water supply - ON / OFF
 - Blue - Water pump switch - ON / OFF - this switch will control the pump even if distiller main switch is in OFF position

SECTION X - OPERATION OF THE MODEL 180-L

STEAM STERILIZATION:

This unit has been run several times at the factory in order to test its operation, parts and assembly; however, the distiller should be run through a steam sterilization cycle prior to distilling water for usage. This is to clean and remove any impurities from the cooling coils (dust, cleaning solutions, etc.).

1. Turn power (red) switch to OFF.
2. Remove charcoal filter from between the distilling unit and the storage tank.
3. Attach the 3 1/2 in. sterilization drip tube to the cooling coil drain exit.
4. Place the drip tube end into a pail to collect any condensation which will form. Should you choose to sterilize the storage tank, unplug the demand pump (if unit has one) and drain the storage tank of any distilled water. Place the drip tube end into the storage tank lid opening. Leave the lid open and put a shallow pail under the 1/2 in. nipples on the tank side to catch any condensation which will form.
5. Turn fan (white) switch to OFF position. This will allow steam to pass through the condensing coil and sterilize the unit.
6. Turn automatic water fill (blue) switch to ON position. The red switch should now be turned ON and the white switch OFF.
7. Put lid on boiling tank and tighten.
8. Allow distiller to run for 60 minutes (1 hour) after water comes to a boil.
9. Drain water (if any) from storage tank and recap the 1/2 in. fitting on the tank (only if sterilized).
10. Remove sterilization drip tube and save for later use.
11. Replace filter between distiller and storage tank.
12. Turn fan (white) switch to ON position. The water fill (blue) switch and power (red) switches should remain ON. The distiller is now sterilized and ready to produce more distilled water.

After the initial sterilization, this may be done periodically to ensure cooling coils remain sterile.

CHANGING THE COCONUT CHARCOAL FILTER:

Refer to **Figure 3, No. 10** for placement of charcoal filter between the distiller head and the tank. Over the sink, remove stainless steel screen and fill filter 3/4 full of coconut charcoal. Replace screen by using four fingers to evenly slide the screen until it is placed firmly on the charcoal. Rinse this refill with one cup of distilled water and place filter back on distiller.

Change the charcoal at least once a month or every 1,000 gallons of distilled water made.

SECTION XI - DISTILLATION

AUTOMATIC FILLING AND OPERATION:

1. Place lid on distiller and tighten.
2. The water fill (blue) switch, the fan (white) switch, and the power (red) switch should *all* be in the ON position. The distiller will fill itself and run until the storage tank is full. Then, as water is removed from the storage tank, the distiller will automatically start up again to refill the storage tank.
To prevent a concentration of chemicals and pollutants from building up in the bottom of the boiling tank, drain the boiling tank at least once a day, or have an Electronic Auto-Drain system installed on the distiller.
3. The water fill (blue) switch will be on only when the distiller is filling the boiling tank with water. The fan (white) switch goes on only when the unit is in operation. The power (red) switch will stay on as long as the distiller is plugged into a power source.

SECTION XII - MAINTENANCE AND CLEANING

1. **Proper cleaning is important!** The boiling tank of the distiller should be drained daily, unless an electronic automatic impurities drain valve (Auto-Drain) has been installed. The distiller should be cleaned whenever there is a noticeable amount of mineral buildup around the inside of the boiling tank and on the outside of the heating element. Frequency of cleaning will vary, depending on mineral content of the water and how much water has been distilled. *Improper cleaning may shorten the life of the unit and particularly that of the heating element.*
2. In addition to draining the boiling tank, it is recommended that the Model 180-L be cleaned approximately every two weeks (depending on the quality of the water in the area):
 - Unplug the distiller.
 - Remove boiling tank lid and charcoal filter.
 - Install the sterilization drip tube.
 - Drain the boiling tank and rinse. Remove all loose scale buildup (if any) from inside the boiling tank.
 - Close the drain valve.
 - Fill boiling tank half full of fresh tap water (preferably hot).
 - Add 4 or 5 tablespoons of P.B.W.D. Cleaner & Descaler per gallon. The amount of cleaner may need to be increased, depending on the kind and type of mineral deposits in the holding tank. Mix well to dissolve the cleaner.
 - Continue filling the boiling tank with hot water to just above the water level ring inside the tank. *Do not overfill the boiling tank!*
 - Let the solution stand overnight or until the mineral content is soft.
 - The next morning, or when mineral content is soft, drain and rinse the boiling tank thoroughly.
 - At this time, it is advisable to run the unit through a steam sterilization cycle prior to distilling water for usage.
 - Replace lid on boiling tank and tighten.
 - Plug distiller into electrical outlet. Both the fan (white) and water fill (blue) switches should be in ON position.

Leave the boiling tank lid open during descaling, so that traces of the descaler do not enter the condensing coils. The two foot steam tower system prevents descaler from entering coil if the lid is left open.

SECTION XIII - TROUBLE SHOOTING

There are two float mechanisms in the distilling unit. One switch is located in the upper part of the unit, which operates the 'ON / OFF' of the heater, fan and solenoid valve. The other switch is located in the storage tank and, according to the amount of water in the tank, activates the distilling unit or turns off the heating element when the storage tank is full. The switches are preset at the factory and should not require adjustment.

Caution: The distiller surface is very hot when water is distilling and remains warm for 8 - 10 hours after distillation stops.

Problem: Boiling tank will not fill with water automatically.

Cause:

- Water fill switch is turned 'OFF'.
- Ensure that the water supply (saddle valve) is turned on. If the unit has been running for some time, make sure that the water supply is not plugged. If it is, the water should be turned off, the valve unplugged, and replaced if necessary.
- Check for kinks in the water feed line.
- Float in the boiling tank may be stuck.
- Water solenoid valve may be damaged.

Problem: Fan does not operate automatically.

- Cause:**
- Fan switch is in 'OFF' position.
 - Fan may have dropped on motor shaft. Steam, not water, will then be produced through the condensor coil.
 - Fan motor may have seized.

Problem: Fan operates, but little or no water is distilled.

- Cause:**
- Heating element may be defective.
 - Reset button may be defective.

Problem: Distiller does not operate.

- Cause:**
- Line current (220 or 208 volt) is off or unit is not plugged into wall securely.
 - Thermostat button needs to be reset. Unit must be cool before the button can be reset. The reset button is for your safety. It is designed to stop all operation should the distiller overheat. This will happen if the water level is too low in the boiling tank. If the button requires resetting, it indicates that the float mechanism may need adjustment.
 - Thermostat button needs replacing.
 - Storage tank is full.
 - Float switch on storage tank is not functioning properly.
 - Float in storage tank may still be taped in its shipping position.
 - Power may have been interrupted during distilling cycle. The storage tank level will have to drop to refill height before the distiller will start up again.

Should problems arise that are not covered in this Section, please contact a qualified service person.

HOW TO ORDER REPAIR PARTS:

Distiller repair parts may be ordered by contacting your **Polar Bear** water distiller representative, your area dealer or the manufacturing plant in Pickardville, Alberta, Canada. *Please include the Model Number, Serial Number and a brief description of the problem.*

Please refer to the warranty on the back page for coverage by the manufacturer.

SECTION XIV - ACCESSORIES FOR WATER DISTILLERS

P.B.W.D. CLEANER & DESCALER:

Dissolves minerals in water distillers, coffee pots, dishwashers, humidifiers and most metal products where water scale is a problem. Two to three tablespoons per gallon of water does the job! More descaler may be used if scale buildup is excessive.

POLAR BRITE STAINLESS STEEL POLISH

An odorless liquid polish for stainless steel. May also be used on laminated plastics, porcelain or wood.

REPLACEMENT COCONUT CHARCOAL:

Activated coconut charcoal has the ability to absorb over 40% its own weight in gases and odors. Non-toxic, it may be taken internally without any ill effect. The coconut charcoal will not breed bacteria, as only distilled water passes through the filter. Made from 100% pure coconut shells. *Do not use aquarium charcoal!*

PUMP KIT:

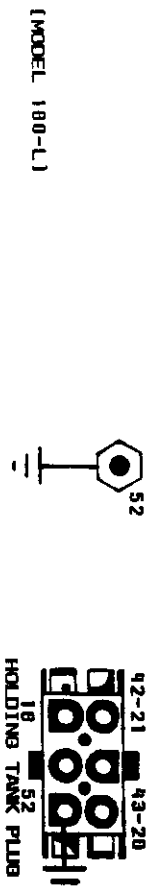
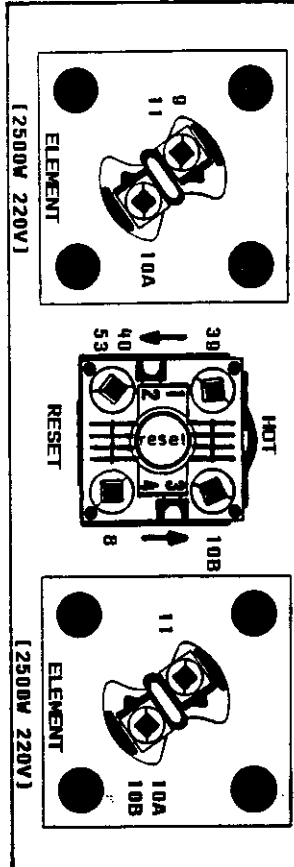
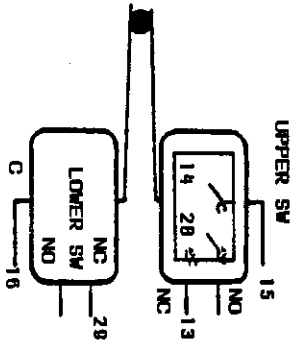
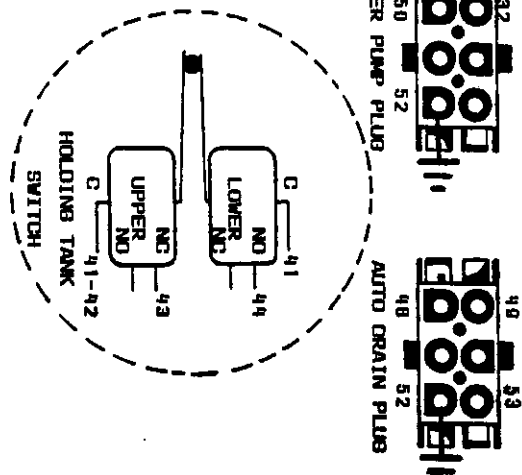
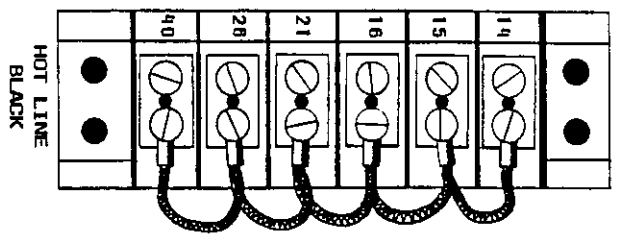
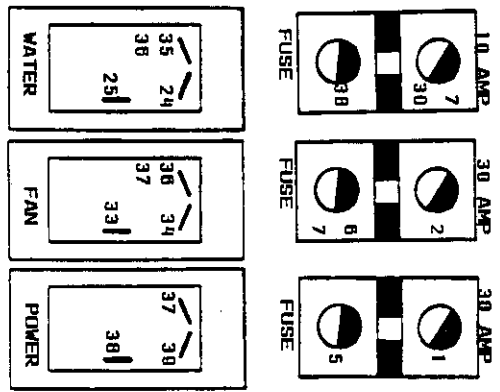
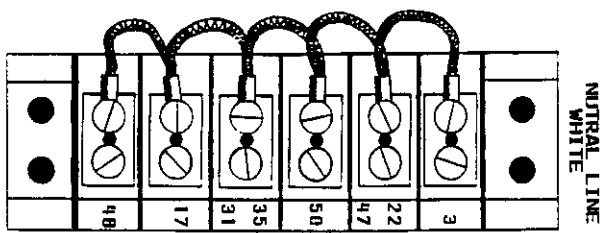
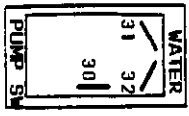
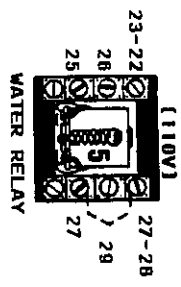
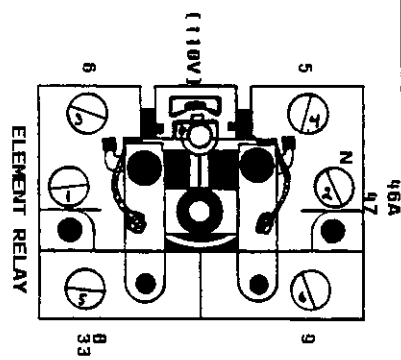
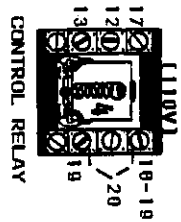
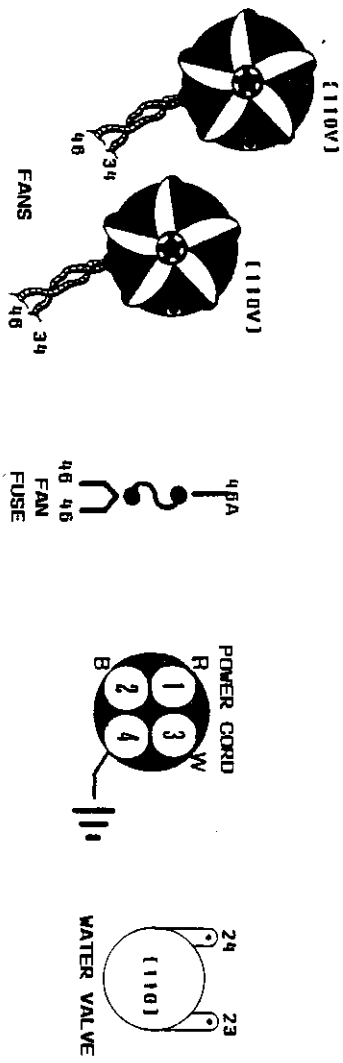
Optional feature that enables you to receive distilled water at your kitchen sink, through the use of an accessory faucet which aerates and oxygenates the water. The distilling unit is installed in the basement or laundry room, pumping water to the sink. The pump kit can also be hooked up to ice makers, water dispensers and humidifiers. The pump has sufficient pressure to deliver distilled water to one or more locations; and in dwellings up to three storeys high. Comes with complete instructions for easy installation and can be installed by a Polar Bear dealer or yourself. Includes all supplies for basic hook-up.

PRESSURE TANK:

The pressure tank should be used on all optional pump hook-ups to extend the life of the pump. It is a bladder type pre-charged hydro-pneumatic tank for residential and commercial water distillation systems, designed to deliver water under pressure between pump cycles to provide sufficient flow to meet demands. The water is contained in a butyl bladder and the exterior has a blue epoxy finish.

ELECTRONIC AUTO-DRAIN:

The electronic drain valve fits all Polar Bear automatic distillers, reducing cleaning of the distiller to approximately once or twice a year (depending on the quality of the feed water). The Auto-Drain automatically drains impurities from the boiling tank every 24, 12 or 6 hours of distillation. Easily installed, the electronic Auto-Drain is equipped with a 1/2 inch through-drain, which reduces possible plugging of the drain.



MODEL 180-L WIRES

- E* = Element

- SW = Switch

No.	Length	Gauge	Color	Terminal to & from	Term - type
1	34½"	10	R	Power - Fuse #10	Ring - Bare
2	36"	10	B	Power - Fuse #11	Ring - Bare
3	36½"	10	W	Power - Block #1	Ring - Bare
5	11"	10	B	Fuse #10 - Relay #3	Ring - Ring
6	7"	10	B	Fuse #11 - Relay #3	Ring - Ring
7	3"	14	B	Fuse #11 - Fuse #12	Spade - Spade
8	11"	10	B	Relay #3 - Bottom E* #16	Ring - Bare
9	11"	10	B	Relay #3 - Top E* #16	Ring - Bare
10A	7"	10	B	Bottom E* #16 - E* #17	Ring - Ring
10B	6"	10	B	Bottom E* #16 - Top Reset	Ring - Ring
11	7"	10	B	Top E* #16 - Top E* #17	Ring - Ring
12	8"	16	B	Relay #4 - Relay #3	Spade - Bare
13	26"	16	B	Relay #4 - Boiling Tank Top Micro Switch	Faston 175 - Bare
14	23"	14	B	Block #2 - Boiling Tank Top Micro Switch	Faston 175 - Spade
15	22"	16	B	Block #2 - Boiling Tank Top Micro Switch	Faston 175 - Spade
16	18"	16	B	Block #2 - Boiling Tank Bottom Micro Switch	Faston 175 - Spade
17	9"	16	W	Block #1 - Relay #4	Ring - Bare
18	22"	14	B	Plug - Relay Control	Bare - Mini Female
19	2"	16	B	Relay #4 - Jumper	Bare - Bare
20	21"	14	B	Plug - Relay Control	Bare - Mini Female
21	18"	14	B	Block #2 - Plug Control	Spade - Mini Female
22	7"	16	W	Relay #5 - Block #1	Spade - Bare
23	25"	16	W	Relay #5 - Water Valve	Faston 250 - Bare
24	33"	16	B	Water Val. - Water SW	Faston 250 - Faston 250
25	10"	16	B	Relay #5 - Water Switch	Faston 250 - Bare
26	12"	16	B	Relay #5 - Block #2	Spade - Bare
27	2"	16	B	Jumper for Relay #5	Bare - Bare
28	23"	16	B	Relay #5 - Boiling Tank Top Micro Switch	Faston 175 - Bare
29	22"	16	B	Relay #5 - Boiling Tank Bottom Micro Switch	Faston 175 - Bare
30	3"	16	B	Fuse #12 - Water Pump SW	Faston 250 - Spade
31	5"	16	W	Block #1 - Water Pump SW	Flag 250 - Spade
32	34"	14	B	Plug #23 - Water Pump SW	Flag 250 - Mini Female

33	12"	14	B	Fan Switch - Relay #3	Flag 250 - Flag250
34	Motor	Motor	B	Fan Switch - Motor	Flag - Bare
35	4"	16	W	Water Switch - Block #1	Spade - Piggi
36	3"	16	W	Water Switch - Fan SW	Faston 250 - Faston 250
37	3"	16	W	Fan Switch - Power SW	Faston 250 - Piggi
38	7"	14	B	Power Switch - Fuse #12	Spade - Flag 250
39	23"	14	B	Power Switch - Reset	Faston 250 - Spade
40	15"	14	B	Reset - Block #2	Spade - Spade
47	10"	14	W	Block #1 - Relay #3	Spade - Spade

HOLDING TANK - SWITCH PLATE - WIRING DIAGRAM

41	3"	16	W	C for Upper & Lower SW	Faston 175 Join to #42
42	16"	Cord	W		Faston 175 - Mini Male
43	16"	Cord	R	NC Upper Switch	Faston 175 - Mini Male
44	16"	Cord	B	NO Lower Switch	Faston 175 - Mini Male
45	4"	16	G	Ground	Faston 175 - Spade
48	42"	14	W	Plug #22 - Block #1	Spade - Mini Female
49	33"	14	B	Plug #22 - Join to #18	Mini Female
50	39"	14	W	Plug #23 - Block #1	Spade - Mini Female
46A	9"	14	W	Fan Fuse - Relay #3	Spade - Faston 250
52	4"	16	G	Ground for Plugs	Spade - Mini Female
53	33"	14	R	Reset - Plug #22	Spade - Mini Female

MOTORS

NO. 1 Motor

Total length from motor to end of wire - 31" - Faston 250 - White

Total length from motor to end of wire - 3" - Piggi - Black

INSULATION - 19"

NO. 2 Motor

Total length from motor to end of wire - 21" - Piggi - White

Total length from motor to end of wire - 23" - Faston 250 - Black

INSULATION - 7"

ONE YEAR WARRANTY

Polar Bear Water Distillers Mfg. Co. Ltd. guarantees their products against defects in materials or workmanship for a period of one (1) full year on all stainless steel parts and stainless steel parts manufactured by **Polar Bear Water Distillers Mfg. Co. Ltd.** and one (1) full year warranty on all electrical components and other parts and labour, to the original purchaser only.

Any defective part or parts shall be repaired or replaced without charge, at any factory authorized service centre across Canada and the U.S.A.. Any unit being returned to a service centre, via transport, for service, must be packed *extremely well*. **Polar Bear Water Distillers Mfg. Co. Ltd.** will not be responsible for damage incurred by shipping. A note should be enclosed with the unit describing why repairs are needed, along with the sender's name, address, telephone number and date of purchase. The purchaser remains responsible for delivery *to* and *from* a service centre. This warranty is not transferable and shall not cover damages incurred from shipping, accidents, alterations, misuse or abuse, or Acts of God.

Polar Bear Water Distillers Mfg. Co. Ltd.

P.O. Box 113, Pickardville, Alberta T0G 1W0 Canada

Phone: (403) 349-4872

Fax: (403) 349-5904

