

Model **PBD**
200-L

Owner's Guide

This Manual Applies To:	
Part #	Series #
102001	0008
102002	0008
102003	0008
102013	0008
102014	0008
102015	0008

- **Assembly**
- **Operation**
- **Maintenance**
- **Troubleshooting**
- **Accessories**
- **Parts List**



\$10.00 CDN

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3/6/2015

Polar Bear Water Distillers
Mfg. Co. Ltd.

99048-

Polar Bear Distiller Warranty

POLAR BEAR WATER DISTILLERS MFG. CO. LTD. warrants to the original purchaser, their products against defects in materials for a period of one (1) full year on all electrical components, other parts and labor, and one (1) year on all stainless steel parts.

If the unit is found to have defective stainless steel components within the first year or electrically defective parts within the first year, the parts will be repaired or replaced at no cost to the customer. If the unit is found to have been consumer damaged or abused, the warranty does not obligate POLAR BEAR WATER DISTILLERS MFG. CO. LTD. to bear any transportation charges in connection with the repair or replacement of defective parts.

This warranty is invalid if the damage or defect is caused by accident, Act of God, customer abuse, unauthorized alteration or repair, vandalism or misuse.

This warranty is made in lieu of any other express warranty and except for the foregoing warranty which is exclusive, there is no other express warranty being made.

The purchaser is responsible for all shipping charges to and from the service center. The manufacturer, dealer or service center is not responsible for damages incurred during shipping.

POLAR BEAR WATER DISTILLERS MFG. CO. LTD. believes the information contained in this manual to be accurate. Parts, specifications, and instructions are subject to change without notice.

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Distiller Information

Model: _____

Series: _____

Serial Number: _____

Purchase Date: _____

Purchased From: _____

Telephone: _____

Installation Date: _____

Installed By: _____

Pump Serial Number(Optional): _____

Purchase Date: _____

Auto Drain Serial Number(Optional): _____

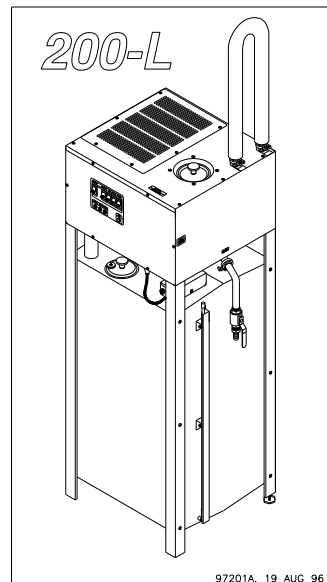
Purchase Date: _____

Shipping Weight 75 Kg (166 lb.)
 Machine Height 2240 mm (89")
 Machine Width..... 650 mm (25½")
 Machine Depth..... 560 mm (22")

Electrical Ratings:
 208 Volts, 24 Amps, 5300 Watts
 220 Volts, 24 Amps, 5300 Watts
 240 Volts, 24 Amps, 5300 Watts

Distilling Capacity:...190 Litres/Day
 or 50 US Gal./Day
 (Based on 24 hours continuous operation under ideal
 conditions - actual production may vary)

Holding Tank: 280 Litres
 or 75 US Gal.



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Introduction

Congratulations! You are now the owner of one of the many fine products manufactured by **Polar Bear Water Distillers Mfg. Co. Ltd.**, a world leader in the water purification 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, where applicable, those of the Canadian Standards Association(CSA), Underwriters Laboratories (UL)*, and National Sanitation Foundation International (NSF)**. We are sure that, with reasonable care, it will provide you with years of reliable performance.

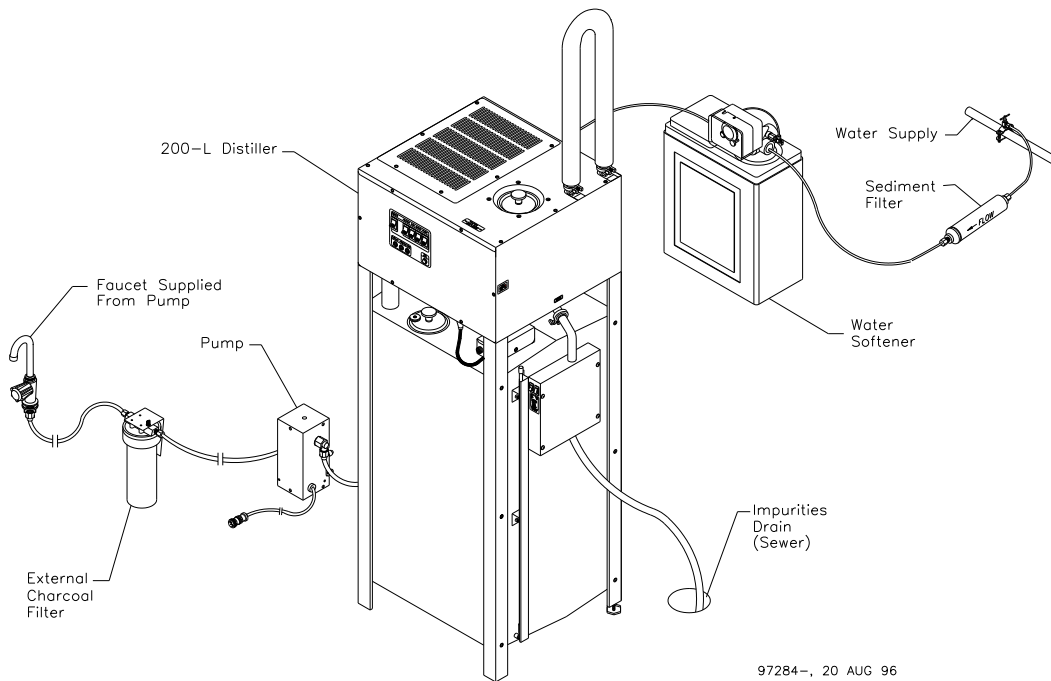
Polar Bear Water Distillers Mfg. Co. Ltd. compliments you on your choice - and know you will enjoy the purest and healthiest water available, because...

"We care about the water you drink!"

* Note: The physiological effects of the operation of this appliance, beneficial or otherwise have not been investigated by Underwriters Laboratories Inc.

** Note: The National Sanitation Foundation International has only tested for reduction of certain chemicals in accordance with Standard 62, Drinking Water Distillation Systems.

The Model 200-L & Accessories



For more information on available accessories, see the section on **Accessories** in this guide.

Distiller Features

- Energy saving system - The 200-L is the most efficient model in the Polar Bear distiller line. An effective water preheating system recycles up to 15% of the energy in the distillation process.
- Automatic start/stop of the distiller maintains water reserves in the storage tank.
- Evaporation tower and baffle system require higher steam rise, therefore providing purer water.
- 'V' shaped boiling chamber is sloped in two directions for more effective cleaning and draining of impurities.
- Large lid openings with polished edges for easier cleaning.
- All pure water contact parts are stainless steel or food grade gasket materials.
- All parts required for automatic water feed are included.
- Almost all electrical servicing may be done from the front of the distiller.
- Control lights and status indicators show you what your distiller is doing.
- Optional pump can be running while machine is off-line for cleaning or maintenance.
- Safety switch prevents overheating.
- Safety switch turns off pump if there is insufficient water in the holding tank.
- Quick connect fitting on water feed inlet allows for ease in removing feed line when moving machine and fast hookups when setting up.
- Preheater and tower can be easily removed and disassembled for regular cleaning.
- Multiple 200-L distillers may be connected in parallel to one water service line output.
- Air filter on Holding Tank prevents airborne contamination.
- The Distiller and Holding Tank are manufactured from attractive, long-lasting high grade 304 stainless steel.
- Coconut Charcoal Filter.
- One year parts and labour warranty - see **Polar Bear Distiller Warranty**.

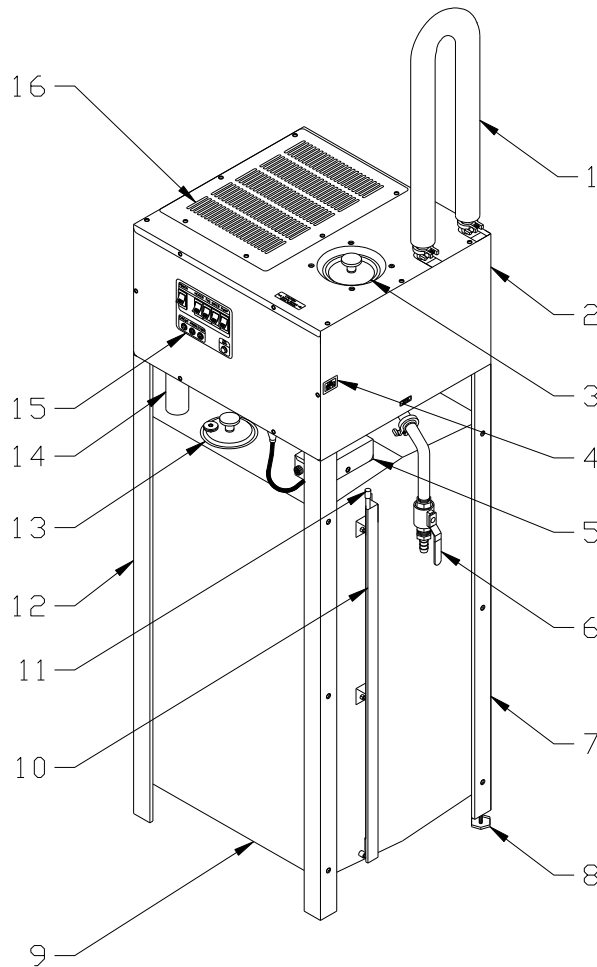
As You Begin...

1. It is important to fill out and return the warranty card. The information is necessary should parts or repairs be needed during the warranty period.
2. Each distiller is operated at the factory and tested for leaks and proper operation. Therefore, the distiller may have a water ring inside the boiling tank.
3. Proper cleaning is important! Keep the distiller and especially the inside of the boiling tank clean at all times. This is necessary to produce the purest water possible. See section on Maintenance for more information.
4. The boiling tank is TIG (Tungsten Inert Gas) welded. As water is distilled, minerals may cling to the weld, appearing as rust. This does NOT affect the quality of the water! Discoloration in corners of the boiling tank is caused by the heat during welding.
5. Distilled water may have a different taste. This is not a "taste", but a lack of taste. You will become accustomed to this the same way you did to the water in your area.

Know Your Distiller

Use this picture as a reference throughout this manual.

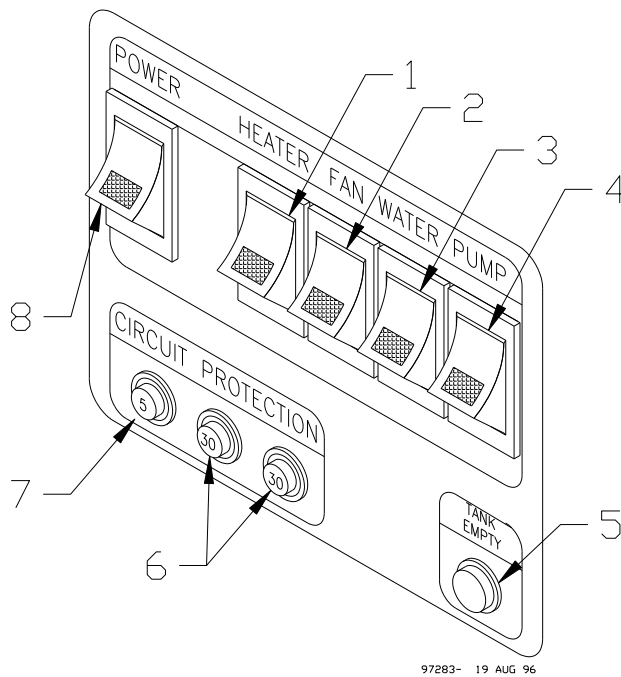
1. Tower
2. Distiller Head
3. Boiling Tank Lid
4. Hour Meter
5. Holding Tank Switch Box
6. Drain System
7. Rear Legs
8. Appliance Feet
9. Holding Tank
10. Sight Tube Guard
11. Sight Tube
12. Front Legs
13. Holding Tank Lid
14. Charcoal Filter
15. Control Panel (see next page)
16. Top Grate



97204A, 19 AUG 96

Control Panel

1. Heater Switch
2. Fan Switch
3. Water Switch
4. Pump Switch
5. Low Level Indicator Light
6. 30 Amp Breakers
7. 5 Amp Breaker
8. Main Power Switch



Distilled Water – Benefits, Uses, & Questions

You have made an excellent choice in using distilled water. To help answer some questions of your own, or those of others, here are some of the benefits, uses, and answers to common questions about distilled water.

There is also a section on how distilled water is made.

Benefits

- Provides the *purest drinking water* - reduction of chemicals, impurities, pollutants, and bad taste.
- Distillation does not rely on physical barriers which can break down or fail. The prolonged boiling process in water distillers is critical for killing and eliminating bacteria and viruses. No other process is as effective or as reliable.
- Eliminates scale build-up on pots, tea kettles, coffee pots, humidifiers, vaporizers, steam irons, etc.
- Produces less waste water than reverse osmosis.
- Distillers are not affected by low or varying water pressures, temperatures, or pH. Consistent, high quality water will be produced for the life of the Distiller.
- **Polar Bear** water distillers are extremely durable, trouble-free appliances that require a minimum of service and maintenance for efficient and complete operation.

Uses

- Drinking – Distilled water is an excellent drink all on its own.
- Ice cubes - not only are they more shiny due to the absence of impurities in the water, but they are also harder.
- Tea and coffee. When you use distilled water to make coffee or tea, try approximately 1/3 less grounds or tea leaves. There will be a somewhat light color, but just as rich flavor, as well as a less-bitter taste.
- Juices and drinks. Try adding about 25% more water. Because the distilled water is free from chlorine, there will be no interaction between the chlorine and the Vitamin C.
- Cooking and baking - for standard results from favorite recipes. Flavors come through naturally, baked goods have a better texture. *Pasta products* will absorb more distilled water than tap water, producing better texture and flavor, as well as less tendency to cling together. Canning fruits and vegetables - not only do they retain a more natural color, but the flavor is better.
- Infant care and formulas. (Be sure to follow your Doctor's advice on sterilizing water for infants)
- Wine and beer making or mixing drinks.
- Drinking water for pets and for topping off aquariums.
- Automobile care - for batteries, as well as windshield washers - leaves no spotting.
- Photographic equipment and laboratories.
- Watering plants.
- Water based paints.
- All types of cleaning – less streaking on mirrors, windows, etc.

Answers to Some 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. There are tests of water supplies throughout the world that now show varying degrees of contamination by modern chemical pollutants. In many cases, the chlorine used to rid water 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 untested wells can be very unreliable, particularly when located on ½ - 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 minerals from the water. Independent 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 which are abundant in the foods we eat.

* Results from: *An Evaluation of Polar Bear Water Distillers For Removing Toxic Industrial and Agricultural Contaminants*. 'Enviro-Test Laboratories', September 28, 1987, Ref. No. 762.REP.

Question: Are water softeners considered water purifiers?

Answer: No. Water softeners do not kill bacteria or take out any contaminants. Rather, they add salts to the water. No one on a sodium (salt) restricted or sodium-free diet should drink softened water.

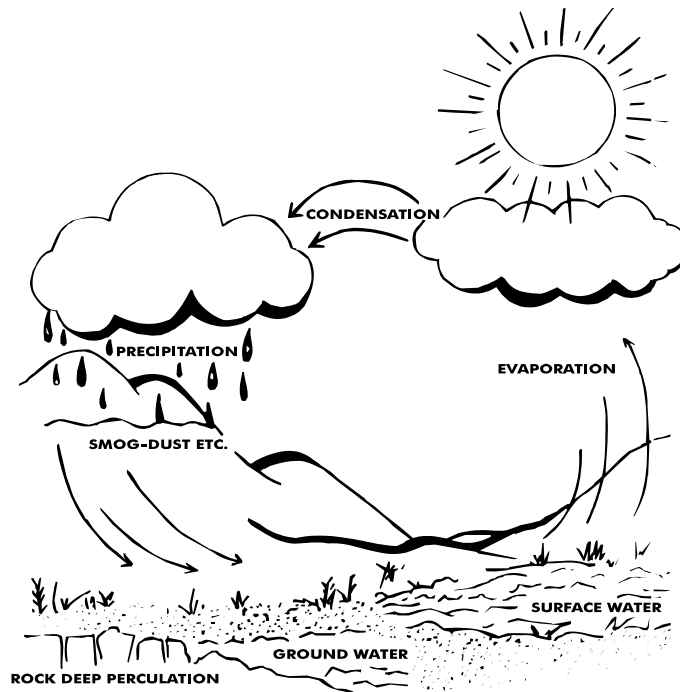
Question: Are there any other benefits of distilled water?

Answer: Food has more flavor. 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.

The Process of Distilling Water

The process of distillation duplicates Nature's hydrologic cycle:

1. In nature, the heat of the sun vaporizes the surface water and draws it into the atmosphere, leaving the impurities behind.
2. As the vapor cools, it condenses and falls back to Earth as rain or snow.
3. As it falls back towards Earth through smog and dust, the water can pick up many forms of contamination.
4. Even more contamination is absorbed through ground 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 almost all of the impurities behind in the Boiling Tank. The steam is collected and condensed as clean, distilled water and stored in a stainless steel Holding Tank. The impurities that remain in the Boiling Tank are then expelled to a drain or sewer.

Polar Bear Water Distillers

Distillation is the only water treatment process that does not rely on physical barriers to separate good, clean water from contaminants.

With proper maintenance, Polar Bear 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 than the boiling point of water.

Assembly

The Distiller & parts have been shipped in one package. Save all packing material until the Distiller is in full operation. Save the sleeve and box ends should the Distiller require transportation.

Parts Included

- 1- Distiller Head and Holding Tank
- 1- Drain Tube, 1" ID X 36"
- 1- Tower Assembly
- 1- Parts Box:
 - 1- Feedline Connection Fitting
 - 1- Instruction Manual and Warranty Card
 - 1- Saddle Valve kit
 - 1- Direct water feed line – ¼" x 16 ft.
 - 1- Boiling Tank Welded Drain Tube
 - 1- Lid for boiling tank
 - 1- Charcoal Filter
 - 1- Sample jar of P.B.W.D. Cleaner & Descaler
 - 1- Sample jar of Activated Coconut Charcoal
 - 1- Length of Sterilization Drip Tube
 - 3- Centering Rings
 - 3- Retaining Clamps
 - 3- 1-1/8" O-Rings
 - 1- 3/4" x 1" Plastic Barb Coupler
 - 1- 3/4" FPT Ball Valve
 - 1- Greeting Card

**** Note: Distiller installation must comply with all local and state regulations.***

Location of Distiller Installation

Before installing your Distiller, decide where it will go, keeping in mind the following important factors:

1. The Distiller requires cool air to operate properly. Air flow must not be restricted by placing objects on top of Distiller, and it must be installed in an area that receives plenty of cool air.
2. Location of power. Distiller requires a 220 Volt wall outlet which should be on a dedicated circuit. (see Distiller Information for power requirements)
3. Close proximity of water supply.
4. Access to drain impurities using a pail or other suitable container, OR close proximity to a water drain (sewer) if an auto-drain is to be installed.
5. Size & location of the Distiller including options such as Pump Kit, Auto-Drain, Sediment Filter, Water Softener and external Charcoal Filter.

Unpacking

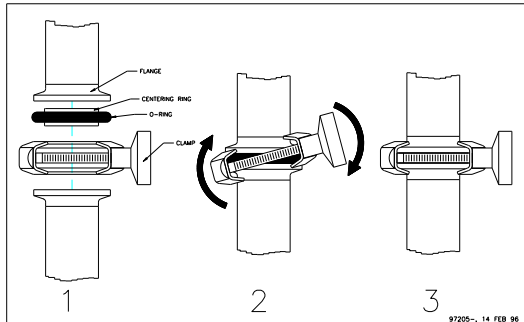
1. Remove all packing material from outside distiller.
2. Strip off any protective plastic from Distiller, Holding Tank, Legs and Lids.

Holding Tank Assembly

1. Remove Distiller Head from Holding Tank.
2. Remove the plastic from the Holding Tank.
3. Remove tape from the float arm inside the tank. Be careful not to bend the float arm.
4. Wash the inside of the holding tank with hot soapy water, and rinse thoroughly.

Distiller Head Assembly

1. Remove plugs from tower exits on top of distiller head. Also remove plug from drain exit.
2. Place tower on one side of the tower exit and connect it as shown below. Do not over tighten the clamp. Connect other side of tower in the same manner. When both sides are in place with the clamp properly positioned, tighten clamps to firmly hold tower in place.

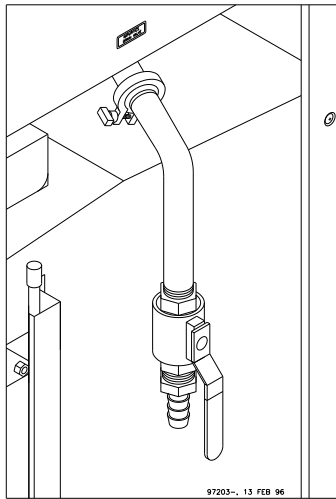


Clamp Connection:

- Place two flanges together with centering ring and o-ring between them. Also have the loosened clamp located to one side of a flange.
 - While holding the flanges together, lift the clamp up and twist it on as shown in #2 above.
 - When the clamp is in place, tighten it to firmly hold the two flanges in place.
3. Remove paper from inside of boiling tank. ***Be careful not to bend float arm!*** Check that float is free to move up and down.
 4. Distiller Head may now be placed back on top of holding tank. (This is best done with two people since weight and height can be awkward.)
 5. Connect holding tank switch box cable to the matching 7 pin connector on the distiller head.

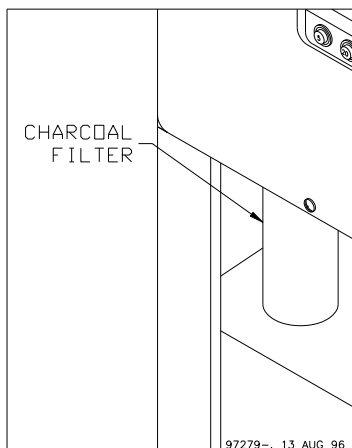
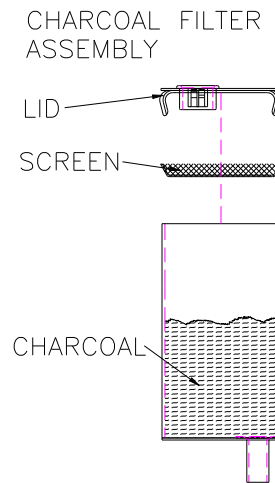
Drain Line Connection

1. Wrap Teflon tape on the threads of the boiling tank drain extension and hose barb fitting.
2. Tighten the 3/4" ball valve onto the drain extension making sure that the handle is opposite of the flange as shown below. Tighten barb fitting into valve's other side.
3. Place complete drain assembly onto boiling tank drain using the clamping technique shown previously. Be sure to place drain pointing downwards and parallel with holding tank as shown below.
4. Place the clear 1" drain tubing on the barb fitting to direct flow towards a waste water drain.



Charcoal Filter Cannister

1. Separate Filter Lid from Filter Body, as shown.
2. Remove top screen.
3. Fill Filter 2/3 full of new coconut charcoal.
4. Place Screen above charcoal by using your fingers to evenly slide the screen down until it is placed against the charcoal.
5. Rinse with water (distilled, if available) until the water runs clear (about 1 liter).
6. Press Filter Lid onto Filter Body.

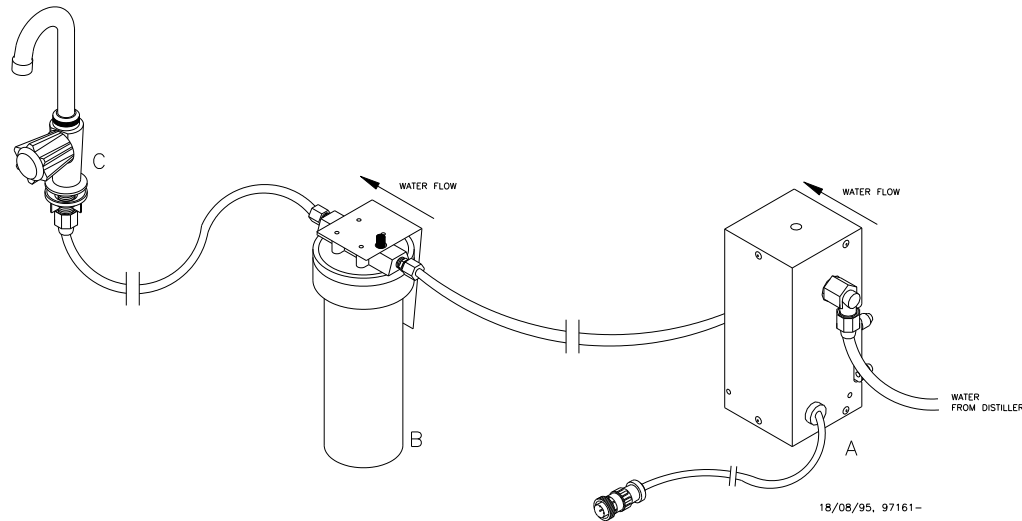


7. Install Charcoal Filter by lifting front left corner of Distiller Head enough to place coil exit in bushing on Filter Lid. Place Filter body into bushing on Holding Tank.

Note: *Do not install Charcoal Filter on Distiller until a sterilization process has been performed. (See **Initial Sterilization**)*

External Charcoal Filter (Option) Installation

Installed in-line after an optional Pump, an External Charcoal Filter will provide longer periods between changes than the standard Charcoal Filter provided with the Distiller. Contact your dealer for more information.

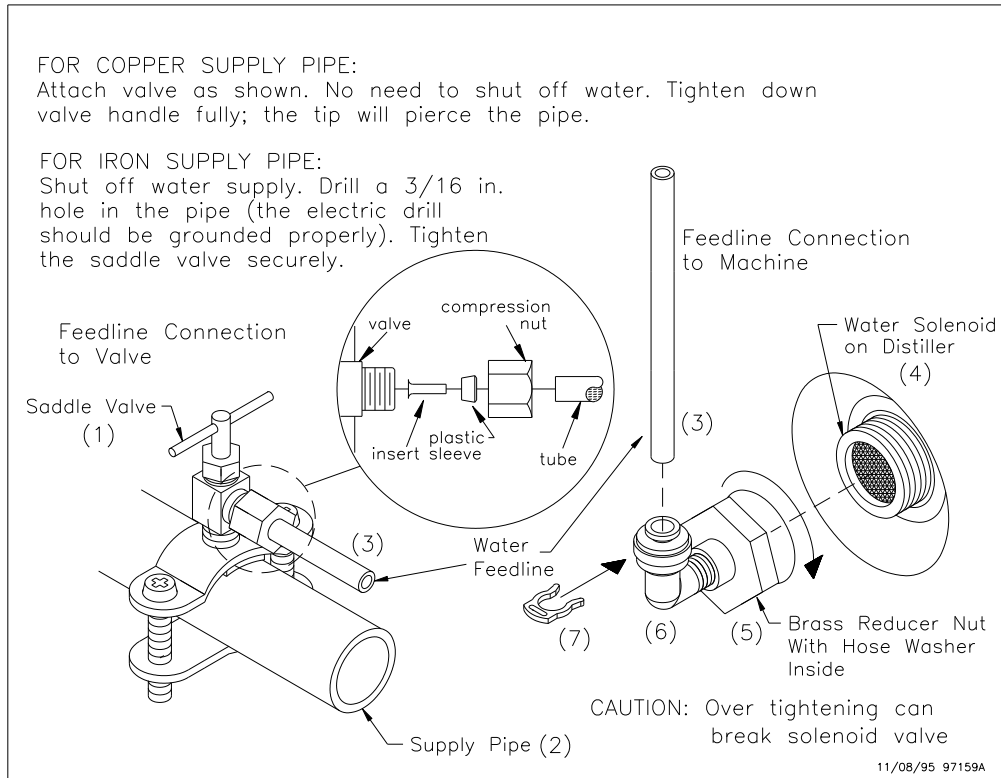


Follow instructions provided with the Charcoal Filter to complete installation.

Automatic Water Feed Line

The water feed connection for the 200-L is located on the back rear panel.

1. Tighten Brass Reducer Nut(5) with hose washer snugly onto Solenoid Valve(4) at the back of Distiller Head. Wetting gasket inside Brass Reducer Nut with water will make assembly easier.



2. Cut the water feed line square.
3. Remove red Retaining Clip(7) from Water Feed Connection(6).
4. Push water Feed Line end into the distiller's Water Feed Connection(6) as far as it will go. Reinsert retaining clip(7).
5. Install Sediment Filter (if purchased) and Water Softener (if purchased).

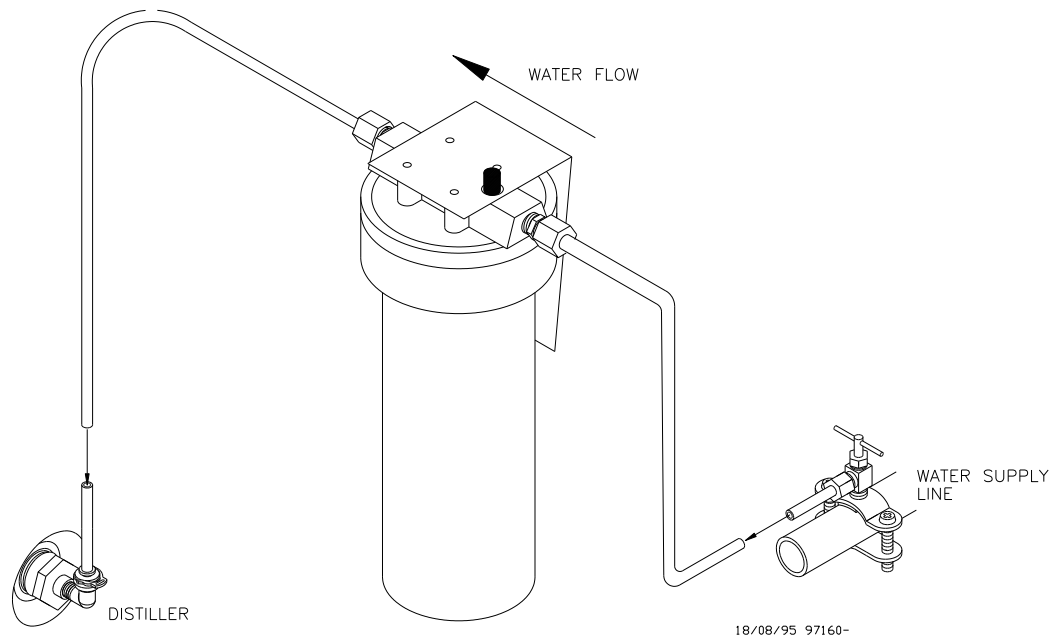
6. Connect other end of Water Feed Line(3) onto saddle valve(1). Mount saddle valve to the cold water supply pipe(2). Be sure rubber gasket is centered underneath valve bracket.
7. When mounting on iron pipe, turn in valve handle first so that self piercing tip protrudes through rubber gasket. Turn off water supply. Align tip into pre-drilled hole on pipe.
8. Make sure the boiling tank drain valve is closed and Distiller is unplugged.
9. Tighten saddle valve handle completely to pierce pipe (Copper pipe only).
10. Open saddle valve 1 to 1-1/2 turns by turning handle counter-clockwise to allow water into distiller.
11. Turn on water supply.
12. Check for leaks. Areas where leaks may occur are where the saddle valve connects to the direct feed line; where saddle valve is attached to existing water line; where direct feed line attaches to water feed connector on the distiller; or the nut around the valve stem on the saddle valve.

Make sure all switches on front of distiller are 'OFF' (down), and plug Distiller into a suitable approved receptacle. If you are not sure if the receptacle is acceptable, check with a local certified electrician.

Sediment Filter (Option) Installation

A sediment filter is used when problems with coarse particles are present in the raw water supply. Coarse particles such as sand can make cleaning difficult, and are prone to plugging or jamming the automatic water feed system inside the Distiller. This may cause over filling of the Boiling Tank.

Contact your Dealer for more information on Sediment filters.

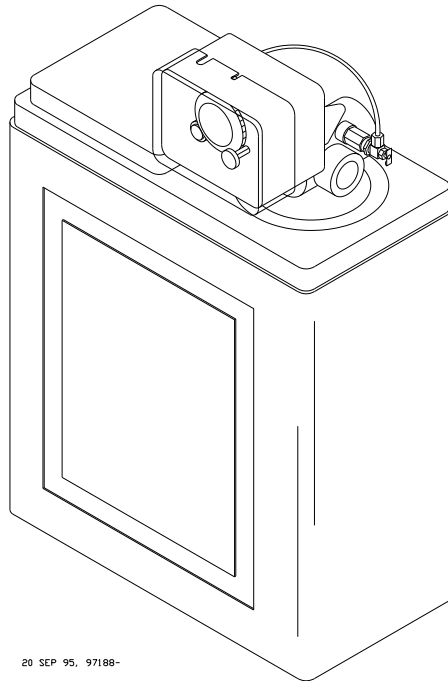


Follow instructions provided with the Sediment Filter to complete installation.

Water Softener (Option) Installation

A Water Softener removes some of the minerals present in a hard water supply. This allows for easier maintenance of your Distiller.

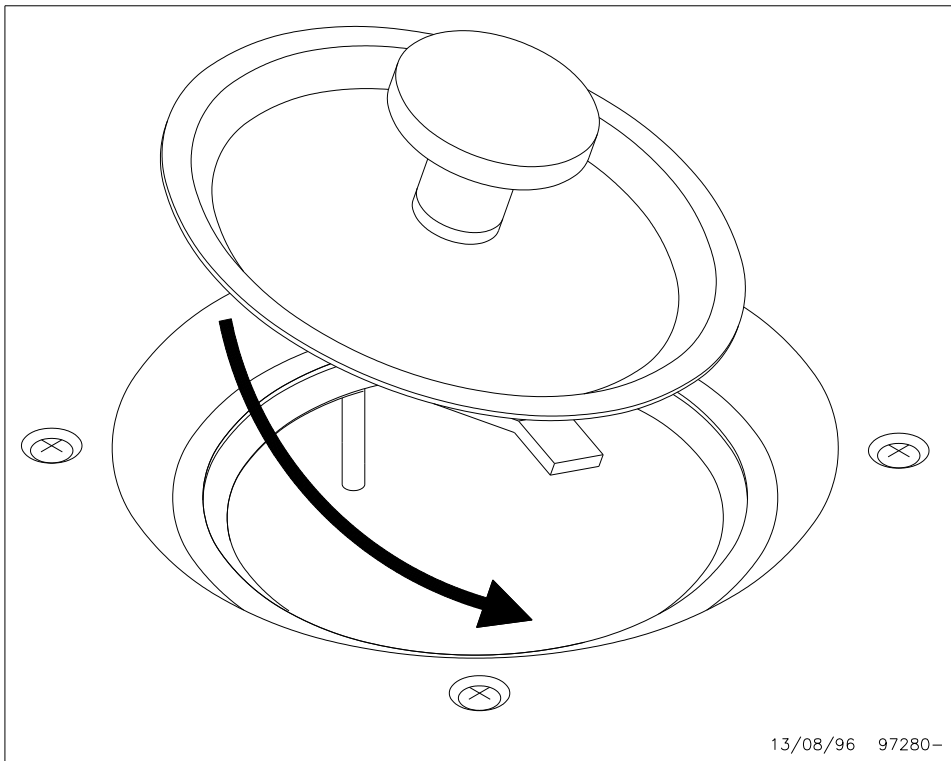
Contact your Dealer for more information on water softeners.



Follow instructions provided with the Water Softener to complete installation.

Boiling Tank Lid

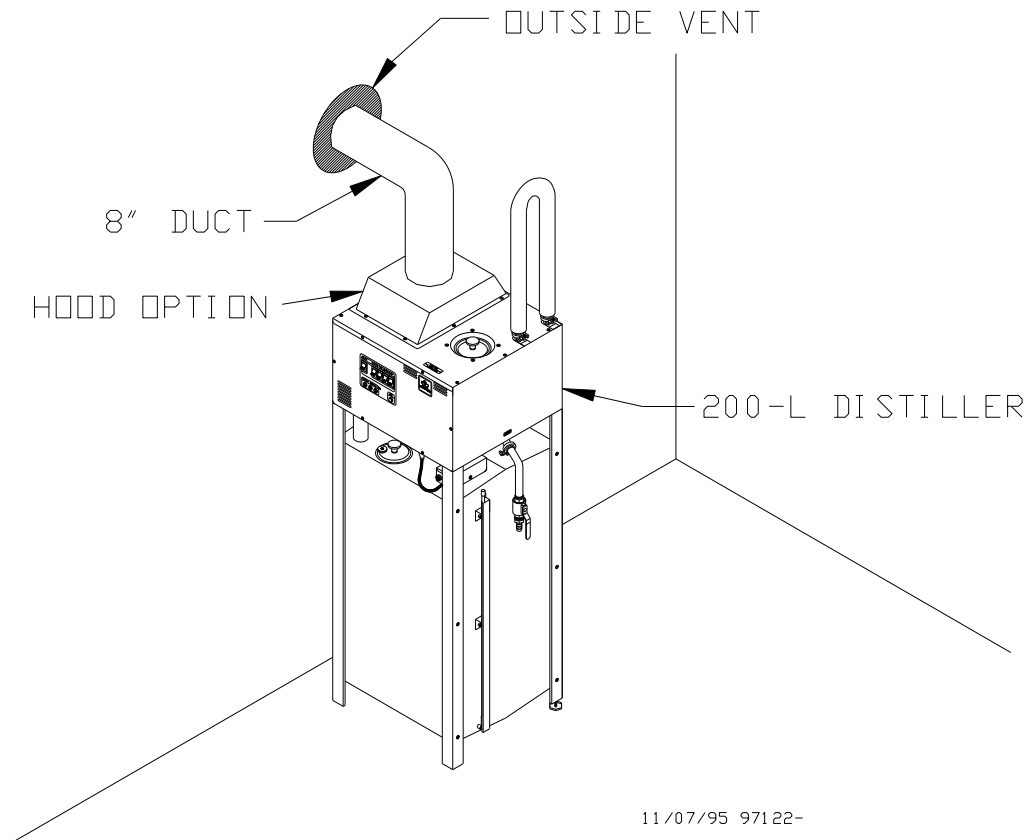
1. Remove any protective plastic coating (white or clear blue) from lid.
2. Loosen the Lid Knob (turn counter-clockwise). Tip the bar at the bottom.
3. Slip bar under the rim of Boiling Tank opening.
4. Center Lid Knob over the opening and tighten. This will need to be removed each time the distiller is cleaned.



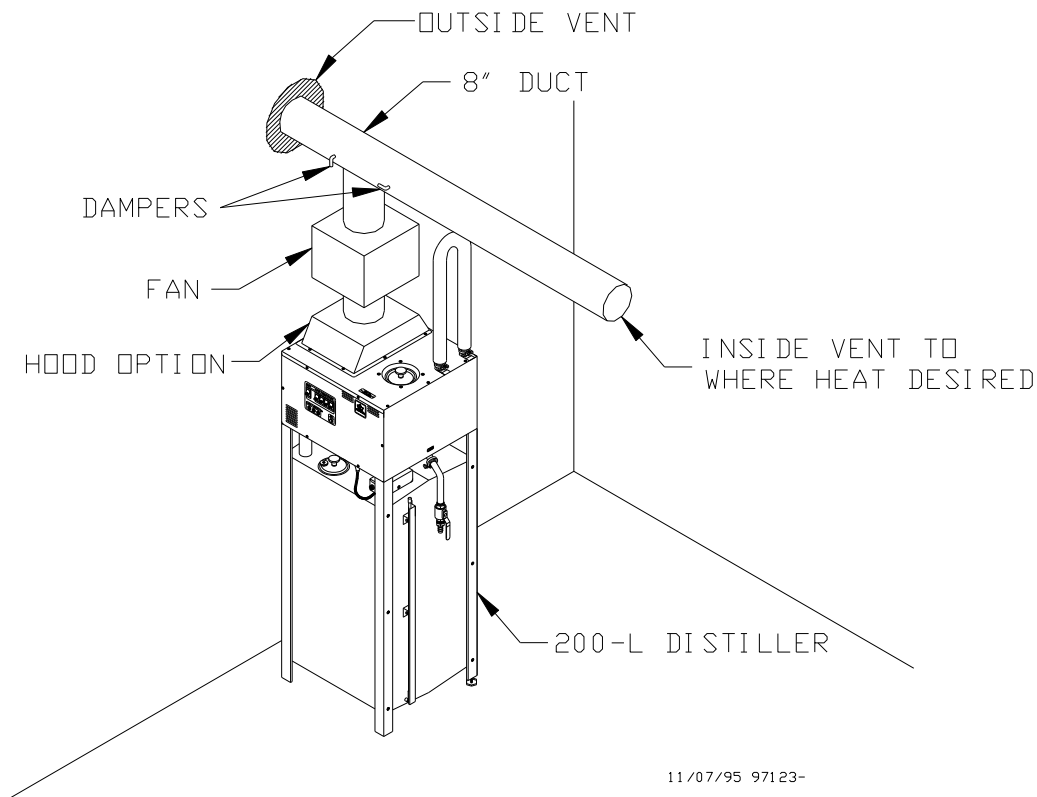
Distiller Hood Venting (Option) Installation

To reduce heat in the area in which the Distiller operates, an optional hood can be purchased to attach duct-work that routes hot air to a more desired location.

Venting can simply run to another room or outdoors as depicted below:



Or, a duct with 2 or more dampers can be installed to adjust where the hot air travels, depending on outside air temperature, as shown on the following page.



When installing a Hood Venting option, consult a qualified heating and cooling technician to ensure local standards are met.

Typically, an installation where the hot exhaust air must travel more than 12 feet or be deflected more than 180 degrees total will require a booster fan of approximately 800 CFM. High indoor ambient temperatures may also necessitate a booster fan.

Final Assembly

1. Make sure all switches (Water, Fan, Heater, Pump, Main Power, and Auto-Drain power) are turned OFF.
2. Ensure Drain Line Valve is CLOSED (if an Auto-Drain is not installed).
3. Your Distiller is now ready to operate. Please read section on Operation thoroughly before operating Distiller.

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Operation

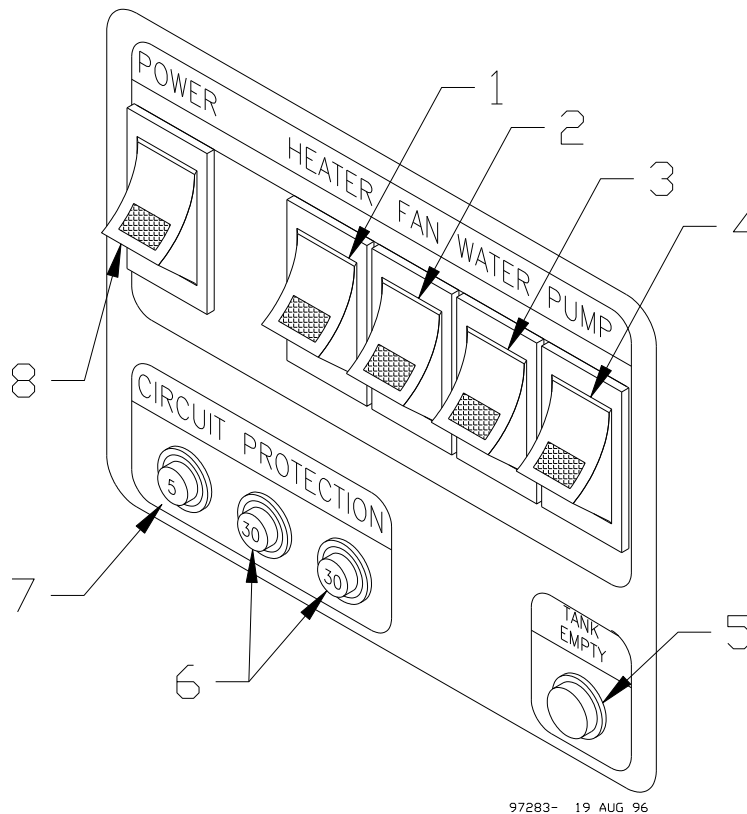
Before operating Distiller for the first time, please read the safety precautions and Distiller Controls, and perform the following Before-Operation checks and Initial Sterilization procedure.

Safety Precautions

1. Always unplug Distiller from power source before servicing.
2. If the electrical cord becomes damaged or cut, have it changed immediately!
3. Operate indoors. Do not expose the Distiller to any natural elements (rain, sun, snow).
4. This Distiller is air-cooled. *Do not restrict air-flow or place inside a closet or poorly ventilated area to operate!.*
5. Distiller must be plugged directly into a suitable, approved wall receptacle. (see section Distiller Information for power requirements) If you are not sure if the receptacle is suitable, check with a local certified electrician.

Controls, Indicators And Circuit Protection

There are five (5) switches located on the front of the distiller that allow you to control all functions of the distiller.



Power (#8)-"ON/OFF"

- Normally turned ON. Controls power to entire Distiller, INCLUDING THE PUMP.
- Turn OFF to stop operation of Distiller.
- Illuminates whenever this switch is in "ON" position.

Heater (#1)-"ON/OFF"

- Normally turned ON. Controls power to heaters.
- Turn OFF to remove power to heaters.
- Will illuminate when heaters are operating.

Fan (#2)-"ON/OFF"

- Normally turned ON. Turn OFF only when performing a sterilization process.
- Supplies power to cooling fan if turned ON and if heater light is on.
- Illuminates when fans are operating.

Water Switch (#3) - "AUTO/MANUAL"

- Normally turned to "ON". Set to "MANUAL" for manual operation of distiller.
- Allows water from water supply pipe to enter Boiling Tank to be distilled.
- Light will illuminate when water is being fed into the boiling tank.

Pump (#4)-"ON/OFF"

- This switch controls the operation of the pump.
- Pumps will run when water is requested if this switch is ON and if there is sufficient water in the Holding tank.
- Turn OFF to remove power to pump.
- Illuminates when turned ON.

Tank Empty Indicator (#5)

- Illuminates whenever there is insufficient water in the holding tank to activate the pump.
- Remains illuminated until the holding tank has enough water to trip the pump cutoff switch.

Circuit Protection (#6 & #7)

- There are two 30 Amp (#6) and one 5 Amp (#7) circuit breakers on the front of the distiller.
- All of these should be pressed in.
- Should any one of these breakers pop out, Distiller operation will cease. In this event, the cause of the breaker trip out should be determined before resuming operation.

Before Operating

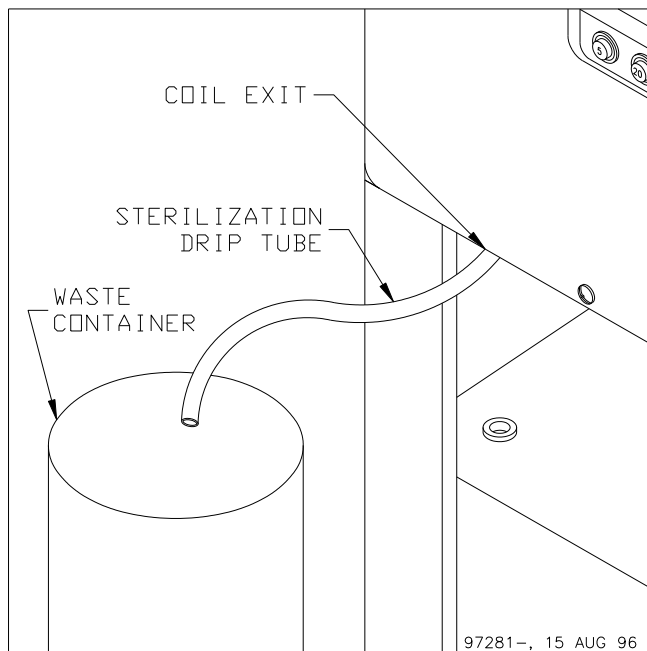
After installing a new Distiller, it is a good idea to check its operation and look for any leaks or other problems.

1. Ensure Saddle Valve on Water Supply Pipe is turned ON (counter-clockwise).
2. Make sure control switches are turned OFF.
3. Plug in Distiller, turn Main Power Switch to ON. Main Power Switch should illuminate.
4. Check for leaks around Saddle Valve on Supply pipe, and around the Water Solenoid on Distiller.
5. Turn Water switch to AUTOMATIC, Heater switch to ON and Fan switch to ON. Water should enter boiling tank (open Boiler Lid to check), and soon after the fan and heaters should turn on (illuminating both switches).
6. Turn off (down) Water, Fan, Heater and Power switches.
7. Perform the Sterilization Process detailed on the following page before beginning operation.

Initial Sterilization

The first operation with a new distiller is sterilization. This will remove any dust, cleaning solutions, etc. from the Distiller. After this is done, the Distiller may be put into service.

1. Turn Main Power Switch to “ON”.
2. Turn Water Switch to “AUTOMATIC”. Distiller should immediately begin filling with water, and should stop filling when 1/3 to 1/2 full.
3. Ensure the Boiling Tank Lid is back on and snug.
4. Attach Sterilization Drip Tube to Cooling Coil outlet, as shown. Place other end of tube into a waste container to collect condensate.



5. Turn ON the Heater switch, and leave the Fan switch in the STERILIZE position. The Water switch can remain AUTOMATIC if you have installed the Water Feed line.
6. Allow the distiller to run for about 1 hour. Check all connections for leaks and retighten if necessary. **WARNING: The Distiller and sterilization drip tube will get VERY hot (this is normal).**
7. Turn Power Switch OFF and Water Supply to MANUAL (off). Allow to cool 1 hour.
8. Replace Sterilization Drip Tube with Charcoal Filter (see section *Assembly-Charcoal Filter*). Your Distiller is now ready to produce distilled water.

Normal Operation

1. Ensure Boiling Tank and Holding Tank lids are on and snug.
2. Set Power, Heater, and Fan switches to ON, and set Water switch to AUTO. Set pump switch to PRESSURE if pump option is used, or to DISPENSER if a commercial dispenser is to be used.
3. Distiller will continually fill Boiling tank and run until the Holding Tank is full. It will take about 48 hours to fill the Holding Tank.
4. To help prevent a concentration of chemicals, pollutants and other material from building up in the Boiling Tank, drain the Boiler Tank every 24 hours of operation using the Impurities Drain Valve and a Pail. Alternatively, this can be done automatically with an optional electronic Auto-drain (see section *Accessories*).

Maintenance

With proper care, your Polar Bear Water Distiller should give you years of trouble free distilled water. Regular maintenance will help ensure that your Distiller will provide top quality distilled water.

Cleaning the Boiling Tank

The most important aspect of Distiller maintenance is keeping the Boiling Tank free from the build-up of contaminants and scale. These impurities removed from the water during distillation collect inside the Boiling Tank.

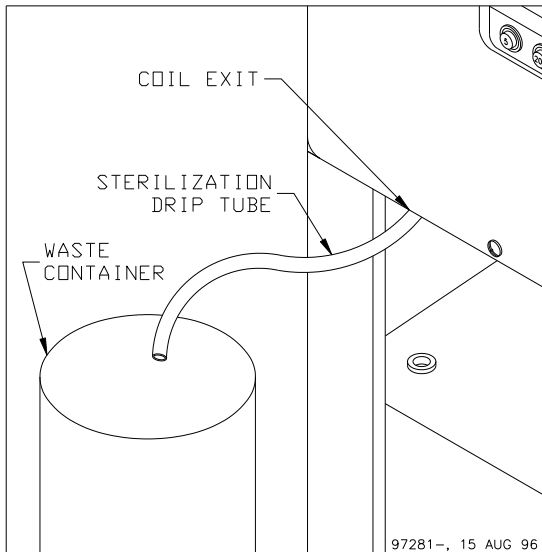
To remove these impurities:

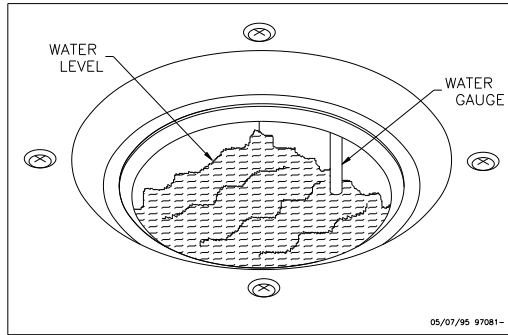
1. After every 50 gallons distilled or every 24 hours, drain the boiling tank with the Impurities Drain Valve into the drain or a pail. This step is not necessary when an Auto-Drain is installed, however, you must still check the condition of the boiler as in the next step:
2. Every two weeks or 700 gallons distilled, and when Distiller is cool, observe the inside of boiler (remove Boiling Tank Lid). Walls of boiler and especially the heating element should be relatively clear of scale (less than 1/8" build up). If build up is excessive, use the following procedure: **'Cleaning - Using P.B.W.D. Cleaner and Descaler'**.
 - When cleaning we recommend that you use our industrial cleaner, **P.B.W.D. Cleaner & Descaler**. A sample is included with every new Distiller.
 - *Do not use an abrasive cleaner or steel wool cleaning pads.* Plastic pads may be used.
 - The sample of the Descaler enclosed with the distiller should last for approximately three cleanings.

Cleaning the Boiling Tank - Using P.B.W.D. Cleaner and Descaler

This procedure requires the use of our Cleaner and Descaler – a corrosive and poisonous substance. Read safety precautions on package before proceeding.

1. Turn the Power Switch to the OFF position. Allow Distiller to cool. When cool, unplug Distiller from power source.
2. Remove the Boiling Tank Lid.
3. Drain the Boiling Tank by opening Impurities Drain Valve (or pressing Manual Drain Switch on Auto-Drain). Rinse and drain.
4. Remove all loose scale build-up, if any, inside the Boiling Tank.
5. Close the Drain Valve (or release Manual Drain switch on Auto-Drain).
6. Remove Charcoal Filter and install Sterilization Drip Tube as shown.
7. Fill the Boiling Tank with tap water (preferably hot) to just above the water line pin (see next page). **DO NOT OVERFILL!**
8. **SLOWLY** add 5-6 level tablespoons of P.B.W.D. Cleaner and Descaler. Mix well to dissolve the cleaner.





9. Let solution stand overnight, or until mineral content softens. *Leave boiling tank lid open during cleaning so that Descaler fumes do not enter the cooling (Condensing) coil.*
10. The next morning, or when mineral content is soft, drain the Boiling Tank. Repeat cleaning if necessary.
11. Rinse Boiler **THOROUGHLY** using warm tap water: Fill the Boiler with water to bottom of Water Level Pin, stir gently, drain. Repeat several times.
12. Replace Boiling tank lid.
13. Perform a steam sterilization process (detailed on the following page).
14. The Distiller is now cleaned, and ready to produce distilled water.

Steam Sterilization

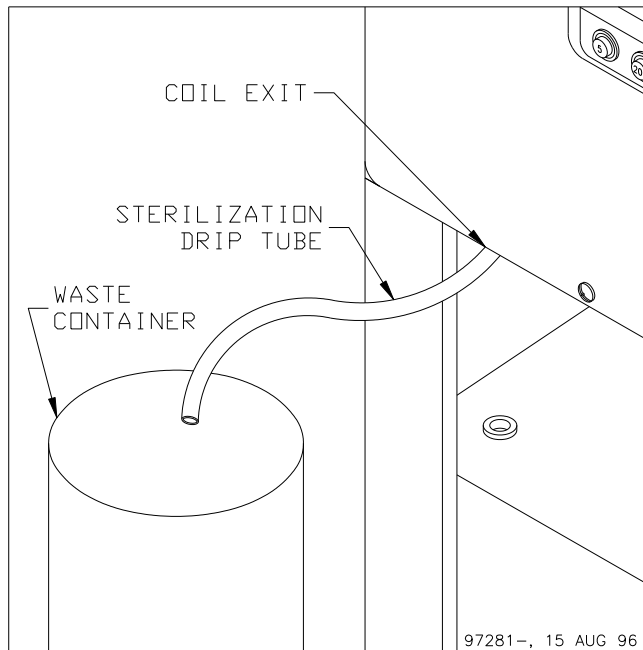
This procedure should be performed after any maintenance, or if there are any problems with the quality of your distilled water.

Before Sterilization:

IF DISTILLER BOILING TANK HAS JUST BEEN CLEANED WITH P.B.W.D. CLEANER AND DESCALER, ENSURE BOILER TANK HAS BEEN RINSED AND THAT DISTILLER HAS BEEN CLEANED WITH THE STERILIZATION DRIP TUBE AS DESCRIBED IN THE PROCEDURE: 'CLEANING - USING P.B.W.D. CLEANER AND DESCALER'

Performing Steam Sterilization

1. Turn Main Power Switch to “ON”.
2. Turn Water Switch to “AUTOMATIC”. Distiller should immediately begin filling with water, and should stop filling when 1/3 to 1/2 full.
3. Ensure the Boiling Tank Lid is back on and snug.
4. Remove Charcoal Filter from Distiller and attach Sterilization Drip Tube to Cooling Coil outlet, as shown on the following page. Place other end of tube into a waste container to collect condensate.
5. Turn ON the Heater switch, and set the Fan switch to the STERILIZE position. The Water switch can remain AUTOMATIC if you have installed the Water Feed line.

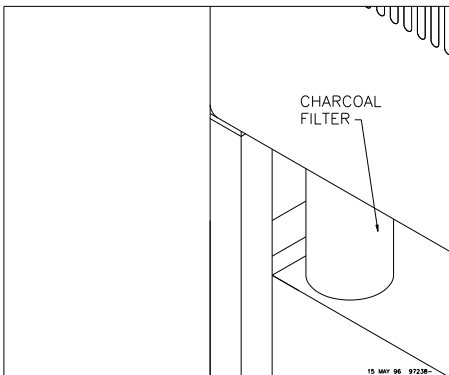
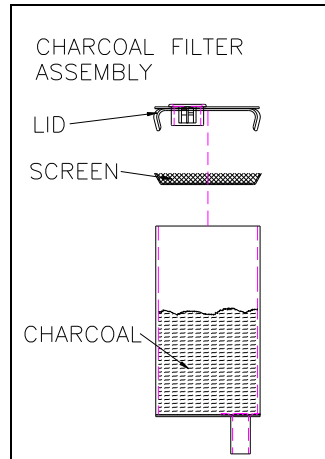


6. Allow the distiller to run for about 1 hour. Check all connections for leaks and retighten if necessary. **WARNING: The Distiller and sterilization drip tube will get VERY hot (this is normal).**
7. Turn Power Switch OFF and Water Supply to MANUAL (off). Allow to cool 1 hour.
8. Replace Sterilization Drip Tube with Charcoal Filter (see section Assembly-Charcoal Filter). Your Distiller is now ready to produce distilled water.

Charcoal Replacement

Replace charcoal in filter every month or every 1500 gallons of distilled water.

1. Remove Charcoal Filter.
2. Over a sink, remove Lid and top stainless steel screen. Empty charcoal from filter and rinse.
3. Fill filter 2/3 full of new coconut charcoal.
4. Place Screen above charcoal by using your fingers to evenly slide the screen down until it is placed against charcoal.
5. Rinse with water (distilled, if available) until the water runs clear (about 1 liter).
6. Press Filter Lid onto Filter Body.
7. Replace charcoal in filter every month or every 1000 gallons of distilled water.



8. Place Charcoal Filter into Distiller by lifting the front left corner of Distiller Head just enough to insert Condenser Coil exit into Filter Lid. Insert Filter Exit into plastic bushing on top of Holding Tank.

Cleaning the Preheater and Tower

The Preheater and Tower should be checked for scale buildup at least once per year.

1. Turn off machine and disconnect from power source. Disconnect water feed from back of machine. Allow machine to cool down before continuing.
2. Remove tower, top cover, and rear cover. Disconnect preheater from condenser coils by undoing the quick connect clamp on that end.
3. Disconnect braided hoses to preheater from solenoid and boiling tank. The preheater can now be removed from the machine.
4. Undo six bolts holding the preheater flanges together and pull preheater apart.
5. Inspect inside the tower (especially boiler exit side), inside the outer preheater tube, and outside of the inner preheater tube for scale buildup. If buildup is excessive, they should be cleaned. If not, the machine can be reassembled.
6. To clean, first fill a corrosive resistant container with water. Be sure that all the parts can be submerged in the water and add approximately 1 tablespoon of **Polar Bear** cleaner/descaler for ever gallon (4 Liters) of water used. Mix solution well.
7. Remove insulation and gaskets from all parts to be cleaned. Scrape off loose and large flakes and place parts in container and let them sit over night or until deposits have softened.
8. Drain container and rinse parts thoroughly with fresh water. Replace insulation on tower and reassemble preheater. Replace worn gaskets or preheater may not seal properly. Put preheater into machine and connect it to the two braided hoses and condenser coils.

9. Put tower back on with two clamps. Reconnect water supply and power source. Run machine through steam sterilization cycle to clean out system and check for leaks.
10. If no leaks occur, disconnect from power supply and replace top and rear covers. The machine is now ready to start distilling again.

External Charcoal Filter Replacement

External Charcoal Filters are replaced depending on the volume of water used. Refer to the instructions provided with the Charcoal Filter.

Sediment Filter Replacement

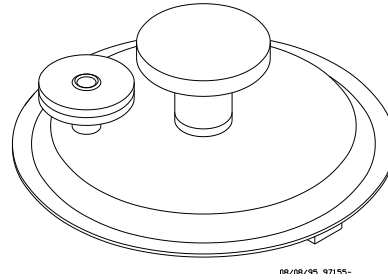
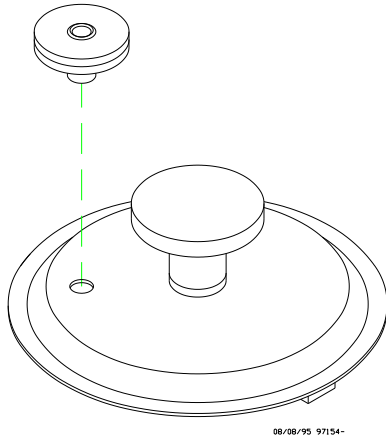
Sediment Filters are replaced depending on the volume of water used, and the quality of raw water supply. Refer to the instructions provided with the Sediment Filter.

Water Softener Maintenance

Water Softeners require regular maintenance in order to function properly. Refer to the instructions provided with the Water Softener for maintenance schedules and procedures.

Air Filter Replacement

Replace the Air Filter on the Holding Tank Lid every six months.



1. Remove Holding Tank Lid.
2. Pull out Air Filter while turning gently.
3. Press new Air Filter gently into hole in Holding Tank Lid.
4. Replace Holding Tank Lid onto Holding Tank.

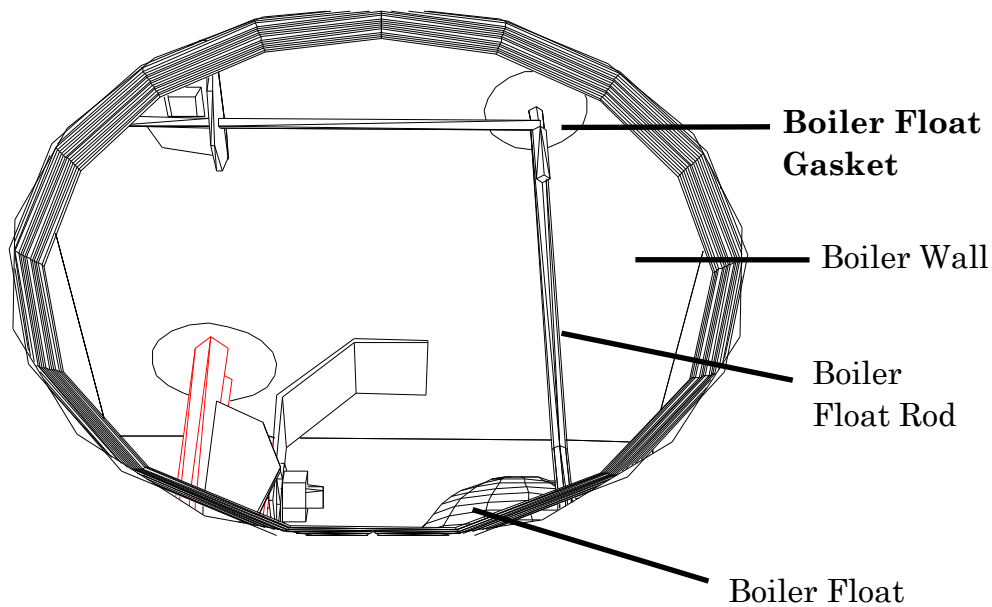
Boiler Float Gasket

The Boiler Float inside the Distiller has a gasket on the wall of the Boiler to seal in water. Since the Boiler is subject to high temperatures for long periods of time, this gasket will require replacing every three to five years.

Inspection of this gasket should be done every month or two – inspecting during cleaning is an excellent time!

Inspect the Boiler Float Gasket:

1. Turn OFF Distiller and unplug.
2. When Distiller is cool, remove Boiler Tank Lid. Looking inside the Boiler Lid hole from the rear of the Distiller towards the front, you will see the following:



3. Look for float and rod connecting it to boiler wall (towards front of Distiller inside boiler).
4. You will see where Boiler Float rod passes through Boiler wall. On boiler wall you will be able to see or feel the Boiler Float Gasket.
5. Gasket should feel pliable and should not appear to be cracked or have any visible holes.

Should Gasket require replacing, contact your dealer. Polar Bear recommends that gasket replacement be done by qualified personnel only.

Troubleshooting

Problem: Water tastes ‘funny’.

- Causes:**
1. Boiling Tank is badly scaled with impurities – see section on Maintenance, Cleaning.
 2. Auto-Drain has malfunctioned. Check Boiling tank for scale build up – see section on Maintenance, Cleaning.
 3. Boiling Tank has overfilled: Open Boiler Tank and observe that Boiler water level is below water gauge. If water level is at top of Boiler, Boiler Float mechanism has failed and undistilled water has flowed into Holding Tank.
 4. If water is spilling out onto the floor, and Boiler Tank is also overfilled, the Water Solenoid is defective and needs replacement.
 5. Boiling tank may have been overfilled during cleaning, or cleaning procedure was not completed. This can allow dissolved solids to pass through the Condenser and into the Holding Tank. Drain the Holding Tank, rinse, and follow the Sterilization procedure in the section on Maintenance.

Problem: Boiling tank will not fill with water automatically.

- Causes:**
1. Water Fill switch is turned to MANUAL or Main Power switch is OFF.
 2. The Saddle Valve is turned off.
 3. Check for kinks in the Direct Feed Line.
 4. Float inside the Boiling Tank may be stuck.
 5. If the Distiller is buzzing (calling for water) then the water supply is plugged. Turn off the water (saddle valve) and disconnect Direct Feed Line from Distiller. Momentarily turn on water – if water flows out of Direct Feed Line problem is in Distiller. If no water flows, attempt to clear saddle valve by closing completely and reopening.
 6. Ensure water feed opening inside boiler is not scaled over.
 7. Solenoid valve may be damaged.

Problem: **Boiling Tank is getting water but not filling or holding water & Distiller has Auto-Drain installed.**

Causes: 1. Solenoid Drain Valve is stuck open or is defective: Attempt to clear valve by depressing Manual drain switch several times. Valve should be heard every time it is cycled.

Problem: **Fan Operates, little or no water is distilled.**

Causes: 1. Boiler Tank Lid is loose or Boiler Tank Lid Gasket requires replacement.
2. Tower or Preheater flanges may be leaking from improper installation.
3. Heating element(s) may be defective

Problem: **No boiling or very little heat.**

Causes: 1. Heater switch may be OFF.
2. Heating element(s) may be defective.
3. Defective Relay, Reset switch, or Breaker.

Problem: **Distiller does not operate.**

Causes: 1. Main Power switch on Distiller is in OFF position.
2. Distiller is not plugged in securely or circuit breaker is OFF.
3. Reset button needs to be reset. To do this UNPLUG DISTILLER and wait to cool. This button is for safety and may indicate that the float levels may need to be reset. Remove front cover and locate reset switch between heater elements at bottom of boiler tank. Depress red button; if it 'clicks' in, it was tripped and needed resetting.
4. Holding tank is full – Distiller has shut itself off.
5. Holding tank float is jammed or float is taped in it's shipping position.

Problem: Fan does not operate automatically or Charcoal Filter is extremely hot.

- Causes:**
1. Fan switch is in the STERILIZE position.
 2. Condensing Coil may have moved down onto Fan Blade.
 3. Fan motor may be defective.

Problem: Water is overflowing from the Charcoal Filter.

- Causes:**
1. Charcoal filter is more than 2/3 full of charcoal. Ensure there is a small air gap between charcoal and top Filter Screen.
 2. Charcoal is old and 'caked up'. replace with new charcoal.
 3. Charcoal Filter grains are too fine. Use Polar Bear charcoal to ensure correct grain size.
 4. Water solenoid is stuck open.

Problem: Loud noises occur in my water pipes whenever the Distiller fills with water, or
Water solenoid valve turns on & off rapidly due to a bouncing float in Boiler Tank.

- Causes:**
1. Water flow through Direct Feed Line is too great: Turn down Saddle Valve so that water flows slower into boiler. Water should enter Boiling Tank for 15-30 seconds at a time.

**Should problems arise that are not covered in this guide,
please contact your local qualified Polar Bear service person.**

Water Quality

The model 200-L is designed to provide many years of high quality water. However, like all machinery, there exists the possibility of problems. Some of the problems can lead to degraded water quality.

It is recommended that for a distiller operating in a commercial environment, or in other areas where high quality water is especially important, the operator own a T.D.S. meter (Total Dissolved Solids) to detect any such problems early.

T.D.S. meters are relatively inexpensive, and can assure owners and customers that the product is superior. They also serve well to compare the 'before' water (or customer samples) to distilled water to show the sometimes extreme mineral content of modern water supplies.

Water Testing Program

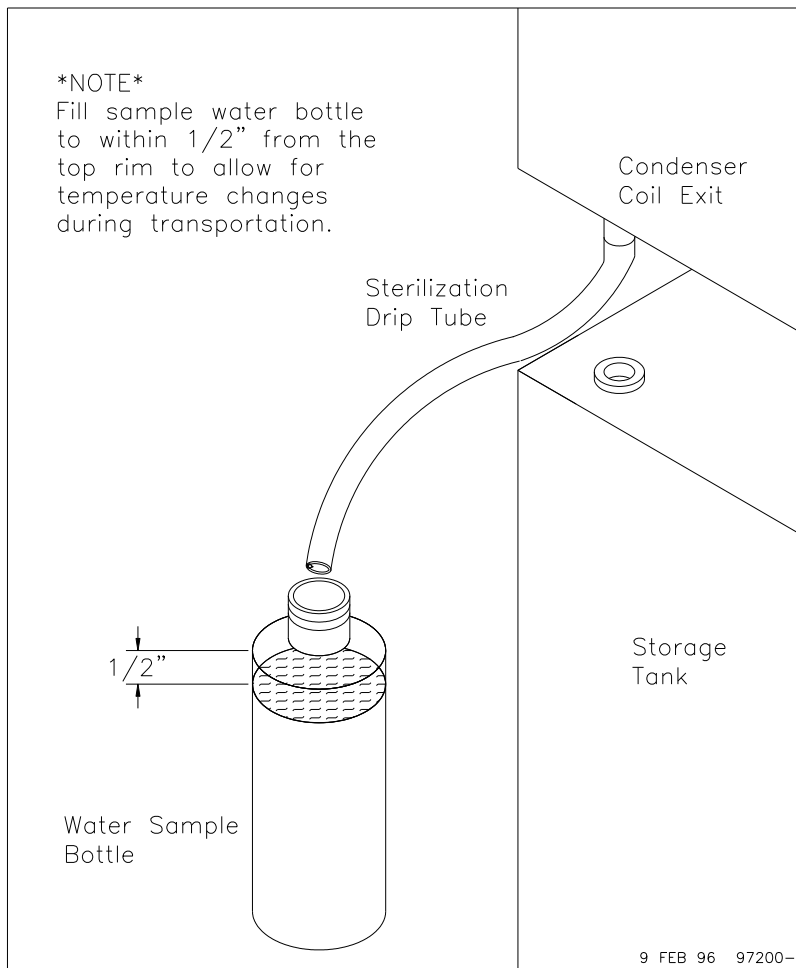
In a continuing effort to provide the purest drinking water possible, Polar Bear is proud to offer you a water testing program. Choosing to be part of this program will ensure your investment runs trouble free and you receive the quality of water promised. The Polar Bear testing program is available through all of our distributors across Canada and the USA and where all products are sold Internationally. By sending a distilled water sample in at least every six months for analysis, Polar Bear can determine whether your machine is operating properly or if it may require cleaning or repair.

A water sample bottle is enclosed with your Polar Bear Water Distiller as well as a bubble-pack envelope.

Please follow the following procedure:

1. Ensure sample bottle is clean and free of debris as well as structurally intact (no holes or leaks).
2. The charcoal filter must first be removed. (see owners manual; use **caution** as canister may be hot) Attach sterilization drip tube to nipple. Run the tube into the small water bottle until 3/4 full. Do not completely fill the bottle. Leave some room in bottle for water expansion in case of freezing temperatures during shipping.(see illustration on next page) Place charcoal filter back on unit following procedure.
3. Firmly screw top on sample bottle and place bottle in bubble pack envelope.
4. Send package to your local authorized Polar Bear Dealer, Polar Bear head office or Polar Bear USA. Please ensure that a return name and address is clearly marked so that the test results and a new Water sample kit can be sent to you. Enclose appropriate payment and send package prepaid by mail or courier.

5. Results of the water test will be sent to you within approximately three weeks. Along with the results, a new water sample kit will arrive in the mail. If you would like your water sample analysis to be sent via fax then please indicate on form with kit.



Note: This service is in accordance with NSF (National Sanitation Foundation) Standard 62, Drinking Water Distillation Systems, and must be completed at least once every six months.



Supplies & Accessories

P.B.W.D. CLEANER & DESCALER

Not only for the Distiller Boiling Tank, use wherever scale is a problem: In water distillers, coffee pots, dishwashers, humidifiers and most metal products. Two to three tablespoons per gallon of water does the job! More Descaler may be used if scale build-up is excessive. Available in 600 gram or 1.2 kg jars.

REPLACEMENT COCONUT CHARCOAL

Activated coconut charcoal has the ability to absorb over 50% its own weight in gases and odors. Non-toxic. 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!* Available in 250 gram and 500 gram jars.

POLAR BRITE STAINLESS STEEL POLISH

An odorless liquid polish for stainless steel. Use on outside surfaces of your Distiller.

AUTO-DRAIN KIT (AD-3)

An electronic Auto-drain provides automatic draining of your Boiling Tank. Can be set to drain in 3, 6, 12, or 24 hour intervals depending on the total dissolved solids content in your particular source water. An Auto-Drain does **not** clean the Boiling tank, but it does make cleanings easier and less frequent.

PUMP AND FAUCET KIT (PK 4)

This electronic pump kit can be mounted on the wall beside your distiller using the factory supplied screws and when connected to the application desired, provides for a convenient source of fresh distilled water directly from the holding tank of your distiller. This can be especially useful when connecting the unit to a water dispenser or ice machine.

PRESSURE TANK KIT (PT 1)

The pressure tank should be used on all optional pump hookups to extend the life of the pump. It is a bladder type precharged hydro-pneumatic tank for residential and commercial water distillation systems, and is designed to deliver water under pressure between pump cycles while providing sufficient flow to meet demands.

DISTILLER HOOD

A hood is used to route hot exhaust air from the Distiller installation to a more desired location in order to reduce ambient air temperatures.

SEDIMENT FILTERS

Sediment filters help prevent the plugging and/or jamming of Water Solenoid Valves.

EXTERNAL CHARCOAL FILTERS

External Charcoal Filters have a greater capacity than the standard Charcoal Filter supplied with your Distiller. They require changing less often, and are well suited for high volume installations.

WATER SOFTENER

Water Softeners help to decrease scale buildup in the Boiling Tank, making cleanings easier and less frequent.

Technical Information

The following information can be used for repairing the Distiller, and when contacting your Polar Bear dealer to order replacement parts.

WARNING:

There are exposed high voltage and high temperature areas inside the water Distiller. Do not operate while covers are removed. Repairs must be made by qualified personnel only.

Wiring List

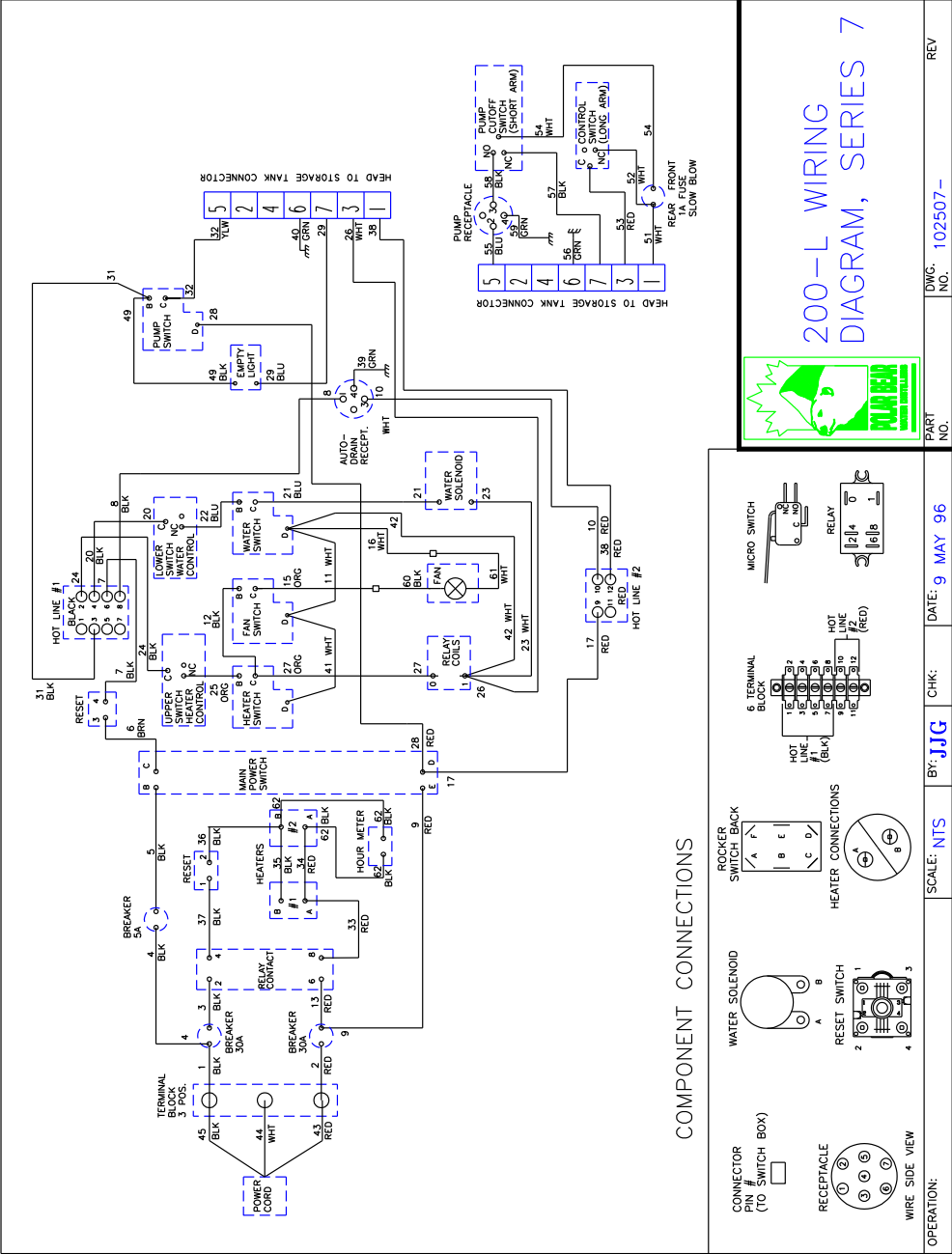
Main Wiring

#	Part #	Color	Ga.	Length in. mm	From Conn. Part #	To Conn. Part #	From Location	To Location
1	102234	BLK	10	34 864	RING 60030	RING 60030	term block-3	30A breaker
2	102235	RED	10	35 889	RING 60030	RING 60030	term block-3	30A breaker
3	102236	BLK	10	11.5 292	RING 60030	F250 60057	30A breaker	main relay 2
4	102237	BLK	16	3.5 89	RING 60034	RING 60034	30A breaker	5A breaker
5	102238	BLK	16	8 203	RING 60034	FLAG 60023	5A breaker	power sw B
6	102239	BRN	16	22 559	F250 60001	SPADE 60012	power sw c	reset 3
7	102251	BLK	16	12 305	SPADE 60012	F250 60001	reset 4	hot line #1
8	102241	BLK	16	18 457	F250 60001	FPIN 60014	hot line #1	autodrain plug #1
9	102242	RED	16	7 178	RING 60034	F250 60001	30A breaker	power sw E
10	102243	RED	16	17.5 445	F250 60001	FPIN 60014	hot line #2	autodrain plug #3
11	102474	WHT	16	3.5 89	PIGG 60016	PIGG 60016	fan sw D	water sw D
12	102244	BLK	16	4 102	FLAG 60023	PIGG 60016	fan sw B	heater sw C
13	102246	RED	10	13 330	RING 60030	F250 60057	30 A breaker	main relay 6
14								
15	102497	ORG	16	20 508	F250 60001	M250 60032	fan sw C	wire # 60
16	102498	WHT	16	20 508	M250 60032	F250 60001	wire # 61	water sw D
17	100249	RED	16	12.5 318	F250 60001	F250 60001	power sw D	hot line #2
18								
19								
20	102253	BLK	16	16 406	F250 60001	F187 60011	hot line #1	water cntrl C
21	102254	BLU	16	52 1321	F250 60001	F250 60001	water sw C	water solenoid
22	102255	BLU	16	34.5 876	FLAG 60023	F187 60011	water sw B	water cntrl NC
23	102256	WHT	16	35 889	F250 60001	F250 60001	water solenoid	main relay 1
24	102257	BLK	16	18 457	F250 60001	F187 60011	hot line #1	heat cntrl C
25	102258	ORG	16	29.5 749	F187 60011	FLAG 60023	heat cntrl NC	heater sw B
26	102259	WHT	16	10.5 267	PIGG 60016	FPIN 60014	main relay 1	HT socket 3
27	102260	ORG	16	18 457	F250 60001	F250 60001	heater sw C	main relay 0
28	102250	RED	16	8 203	PIGG 60016	F250 60001	power sw D	pump sw D
29	102262	BLU	16	28 711	M250 60032	FPIN 60014	empty light	HT socket 7
30								
31	102264	BLK	16	20.5 521	F250 60001	FLAG 60023	hot line #1	pump sw B
32	102265	YLW	16	29 737	F250 60001	FPIN 60014	pump sw C	HT socket 5
33	102266	RED	10	12.5 318	F250 60057	RING 60030	main relay 8	heater #1 A
34	102267	RED	10	6.5 165	RING 60030	RING 60030	heater #1 A	heater #2 A
35	102270	BLK	10	8 203	RING 60030	RING 60030	heater #1 B	heater #2 B
36	102269	BLK	10	4.5 114	RING 60030	RING 60030	heater #2 B	reset 2
37	102240	BLK	10	15.5 394	F250 60057	RING 60030	main relay 4	reset 1
38	102279	RED	16	14.5 368	F250 60001	FPIN 60014	hot line #2	HT socket 1
39	102271	GRN	16	3.5 89	RING 60033	FPIN 60014	chassis	autodrain plug #4
40	102271	GRN	16	3.5 89	RING 60033	FPIN 60014	chassis	HT socket 6
41	102291	WHT	16	3.5 89	F250 60001	PIGG 60016	fan sw D	heater sw D
42	102274	WHT	16	20 508	F250 60001	F250 60001	main relay 1	water sw D
43	102289	RED	10	4.5 114	RING 60030		term block - 3	cord
44	102289	WHT	10	4.5 114	RING 60030		term block - 3	cord
45	102289	BLK	10	4.5 114	RING 60030		term block - 3f	cord
46								
47	102288	RED	18	5 127		F250 60010	empty light	wire #29
48								
49	102288	BLK	18	5 127	PIGG 60013		pump sw B	empty light
50								
51	102285	WHT	18	4.5 114	F250 60010	MPIN 60015	fuse, rear con.	head plug 1
52	102263	WHT	16	4.5 114	FLAG 60023	PIGG 60016	long sw NC	fuse, rear con.
53	102285	RED	18	4 102	F250 60010	MPIN 60015	long sw C	head plug 3
54	102283	WHT	16	9 229	F187 60011	F250 60001	cut off sw C	fuse, front con.
55	102285	BLU	18	4 102	FPIN 60014	MPIN 60015	pump recep. #2	head plug 5
56	102285	GRN	18	3.5 89	RING 60020	MPIN 60015	chassis	head plug 6
57	102285	BLK	18	8 203	F187 60061	MPIN 60015	pump sw NC	head plug 7
58	102287	BLK	16	7 178	F187 60011	FPIN 60014	pump sw NO	pump recep. #3
59	102271	GRN	18	3.5 89	RING 60020	FPIN 60014	chassis	pump recep. #4
60	102499	BLK	16	16 406	F250 60001		wire # 15	fan motor # L
61	102500	WHT	16	16 406	F250 60001		wire # 16	fan motor # N

Polar Bear Water Distillers

62	107068	BLK	16	7	178	SPADE	60012	F250	60001	heater #2 A & B	hour meter
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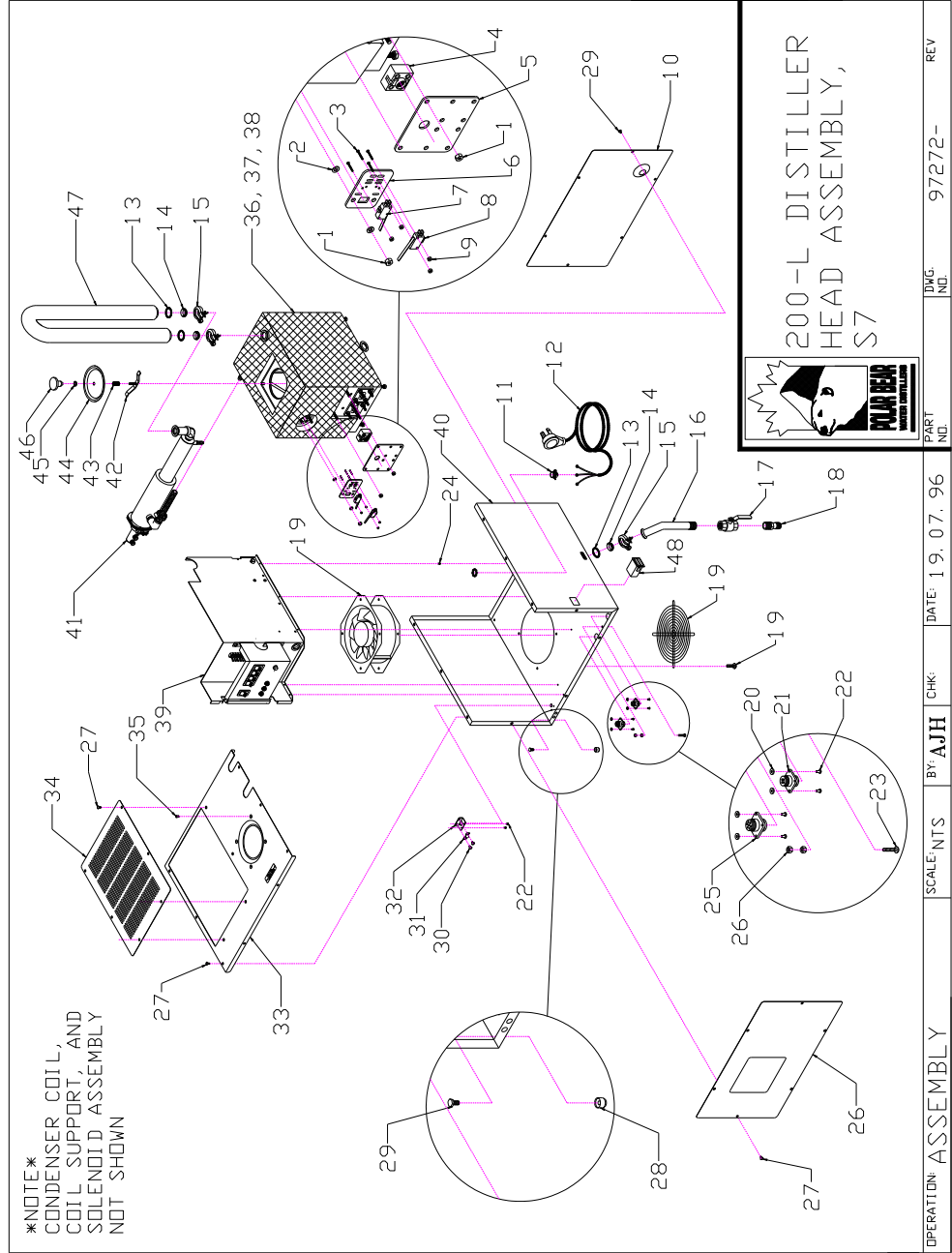
Wiring Diagram



Parts List: Head Assembly

Line	Qty	Item	Description
1	8 EA	15502	NUT,HEX,1/4",PLATED
2	4	15003	WASHER, FLAT,S.S.,5/16"X11/16"
3	4 EA	10105	SCREW, MACH,RND,SLOT,#4-40X3/4
4	1 EA	100122	SWITCH,BOILER TANK RESET
5	1	102155	200-L RESET PLATE, LEXAN
6	1	100428	UNIVERSAL LEXAN SWITCH PLATE
7	1 EA	60005	MICROSWITCH,H.T. FLOAT
8	1 EA	60005	MICROSWITCH,H.T. FLOAT
9	4 EA	15504	NUT,KEP,#4-40
10	1	102391	200-L REAR COVER, SERIES 3
11	1 EA	102085	STRAIN RELIEF, METAL CLAMP
12	1	102289	200-L POWER CORD ASSEM.
13	1 EA	80162	O-RING, 3/16"X1-1/8"ID, VITON
14	1 EA	102299	FLANGE CENTERING RING
15	1	102305	FLANGE RETAINING CLAMP
16	1	102326	DRAIN LINE WELDED ASSEM. SER 3
17	1 EA	30081	VALVE,BALL,BRASS,3/4"FPT,FULLF
18	1 EA	30085	COUPLER,3/4"BARB-3/4"MPT
19	1 EA	102451	MOTOR,FAN-TUBEAXIAL,600CFM230V
20	4	15101	WASHER,FLAT,ALUM,0.140x3/8"
21	1 EA	100123	CONNECTOR, 4 PIN RECEPT SHELL
22	11 EA	80004	RIVET, ALUMINUM, 1/8"X1/4"
23	2 EA	10103	SCREW,MACH,SS,TRS/SKT#10-24X1"
24	4 EA	15503	NUT,KEP,#10-24
25	1 EA	100124	CONNECTOR, 7 PIN RECEPTACLE
26	1	102106	200-L FRONT COVER
27	30 EA	10109	SCREW,SHTMTL,SS,#10-12x1/2"
28	4 EA	100199	LEG,ALUMINUM, 1/4"
29	4 EA	10133	BOLT,HEX HEAD,PLATD,1/4-20X1/2
30	2 EA	10109	SCREW,SHTMTL,SS,#10-12x1/2"
31	1	100081	CLIP, CONDENSER, ALUM, SECT.
32	1	100080	CLIP, CONDENSER, S.S., SECT.
33	1	102310	200-L TOP COVER, SERIES 3
34	1	102298	200-L TOP GRATE
35	4 EA	10123	SCREW,SS,#10-24X3/8"
36	1	102448	208V BOILINGTANK,COMPLETE,S3ON
37	1	102371	200-L - 220V BOILING TANK,S3ON
38	1	102449	240V BOILINGTANK,COMPLETE,S3ON
39	1	102388	200-L MIDDLE DIVIDER ASSEM.
40	1	102456	200-L MAIN BODY, S6
41	1	102439	COMPLETE PREHEATER ASSEMBLY,
42	1	100302	B.T. T-BAR ASSEM
43	1 EA	100069	SPRING, B.T. LID
44	1	100070	LID DISC, B.T. S.S.
45	1 EA	100205	ORING,RUBBER,1/2"IDx11/16"OD
46	1 EA	100071	KNOB,LID,PLASTIC STAMPED
47	1	102372	200-L REGULAR TOWER W. INSUL.
48	1	60096	220 VOLT HOUR METER

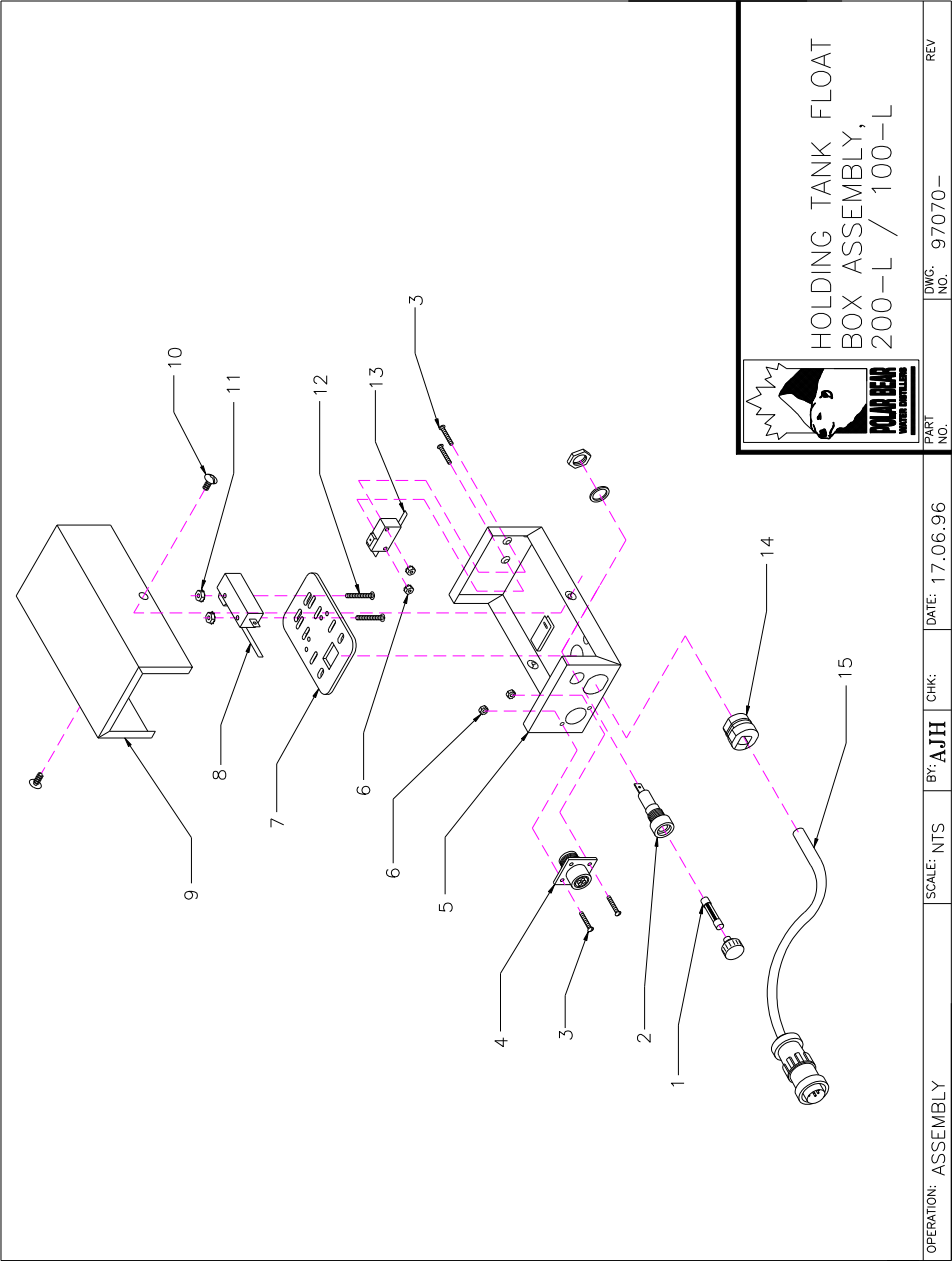
Parts Diagram: Head Assembly



Parts List: Float Box Assembly

Line	Qty	Item	Description
1	1 EA	100161	FUSE, 1 AMP SLOW BLOW
2	1 EA	100160	FUSE,HOLDER,CHASSIS,15 AMP
3	4 EA	10105	SCREW, MACH,RND,SLOT,#4-40X3/4
4	1 EA	100123	CONNECTOR, 4 PIN RECEPT SHELL
5	1	102167	200-L HOLDING TANK FLOAT BOX
6	4 EA	15504	NUT,KEP,#4-40
7	1	100428	UNIVERSAL LEXAN SWITCH PLATE
8	1 EA	60024	MICROSWITCH,LARGE
9	1	102168	200-L HOLDTANK FLOAT BOX COVER
10	2 EA	10107	SCREW,SHTMTL,SS,10-12X1/4BPT
11	2 EA	15507	NUT,KEP,#6-32
12	2 EA	10112	SCREW, MACH,RND,SLOT,#6-32X 1"
13	1 EA	60017	MICROSWITCH,SHORT ARM
14	1 EA	80061	STRAIN RELIEF 7K2
15	1	102285	200-L FLOAT BOX HARNESS

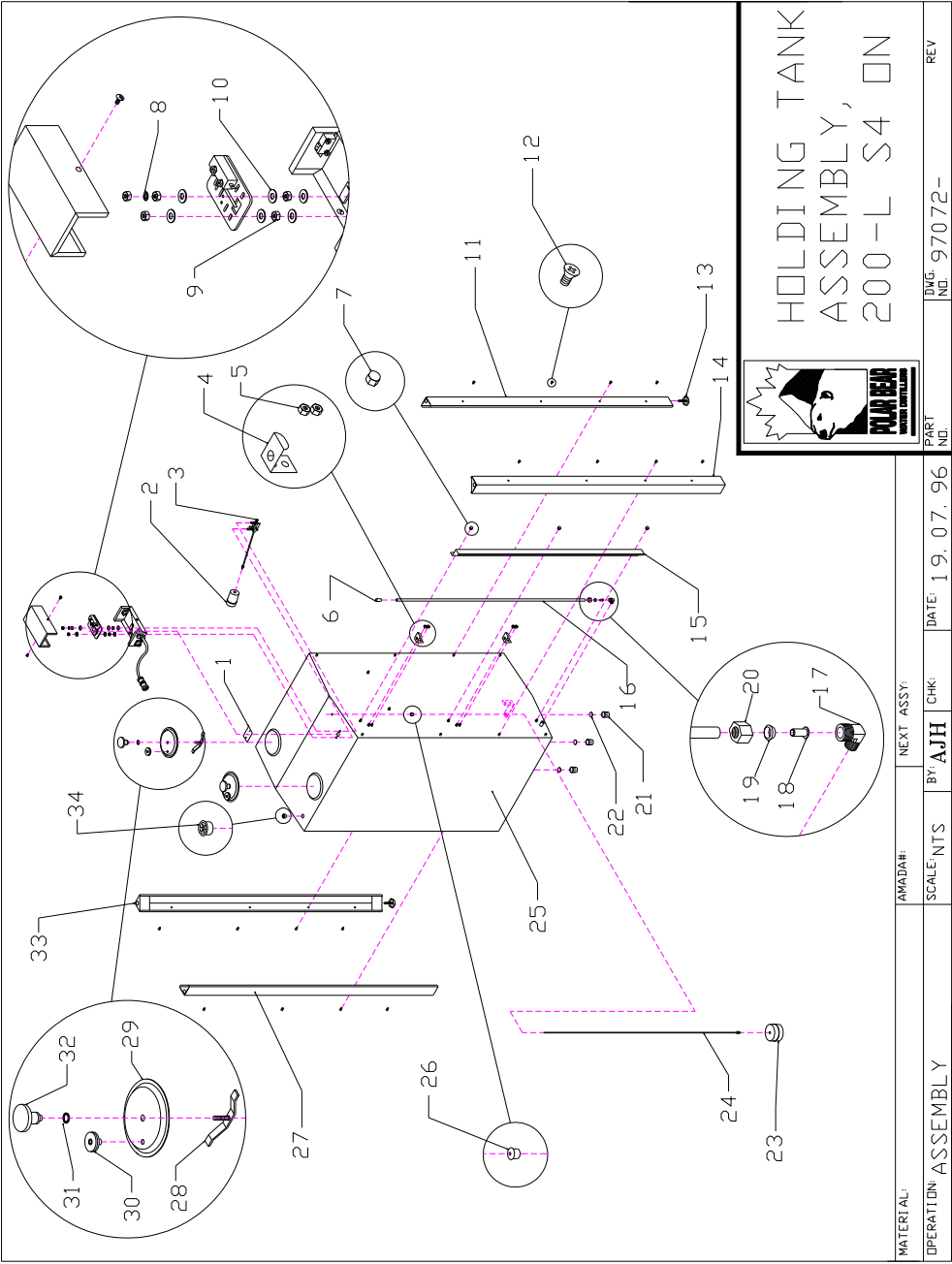
Parts Diagram: Float Box Assembly



Parts List: Holding Tank Assembly

Line	Qty	Item	Description
1	1	100066	BOILER TANK FLOAT GASKET SILIC
2	1 EA	100162	FLOAT, H.T., PF-29 1-1/2X2-5/8"
3	1	102201	200-L HLD TKN LEVEL FLOAT ASSEM
4	2	102104	200-L SIGHT TUBE BRACKET
5	4 EA	15501	HEX NUT, SS, 1/4" - 20
6	1 EA	102103	CAP, PLASTIC 3/8", 200-L
7	3 EA	15506	NUT, ACORN, 1/4", S.S.
8	1 EA	15203	WASHER, SS, LOCKTOOTH, EXT., 1/4"
9	5 EA	15501	HEX NUT, SS, 1/4" - 20
10	6	15003	WASHER, FLAT, S.S., 5/16"X11/16"
11	1	102431	LEG, ASSY, REAR LEFT, SERIES 4
12	12 EA	10123	SCREW, SS, #10-24X3/8"
13	2 EA	80164	FOOT, APPLIANCE, 3/8"UNC X1 1/2"
14	1	102428	LEG, ASSEMBLY, FRONT LEFT,
15	1	102095	200-L SIGHT TUBE GUARD
16	1	102102	200-L SIGHT TUBE, ACRYLIC
17	1	30064	ELBOW, 90, 3/8" TUBE-1/8" MPT, PLTD
18	1 EA	30021	INSERT, BRASS, 0.25" ID
19	1 EA	30003	SLEEVE, COMPRESSION, 3/8"
20	1	30002	NUT, COMPRESSION, PLTD. BRASS
21	3 EA	30076	CAP, 1/2 NPT PLASTIC
22	3	100535	GASKET, DRAIN NIPPLE, 1 1/2"
23	1 EA	102169	FLOAT, H.T., PF-24
24	1	102197	PUMP FLOAT ROD ASSEM
25	1	102367	HOLDING TANK WA, S4 USE 102367
26	1	100165	NYLON PLUG, 7/16" DRILLED
27	1	102429	LEG, ASSEMBLY, FRONT RIGHT,
28	1	100302	B.T. T-BAR ASSEM
29	1	100054	H.T. LID DISC
30	1 EA	100117	FILTER CANNISTER, 2U, PTFE, 2uM
31	1 EA	100205	ORING, RUBBER, 1/2" ID x 11/16" OD
32	1 EA	100071	KNOB, LID, PLASTIC STAMPED
33	1	102430	LEG, ASSEMBLY, REAR RIGHT,
34	1 EA	100115	BUSHING, WIRE, 5/8"

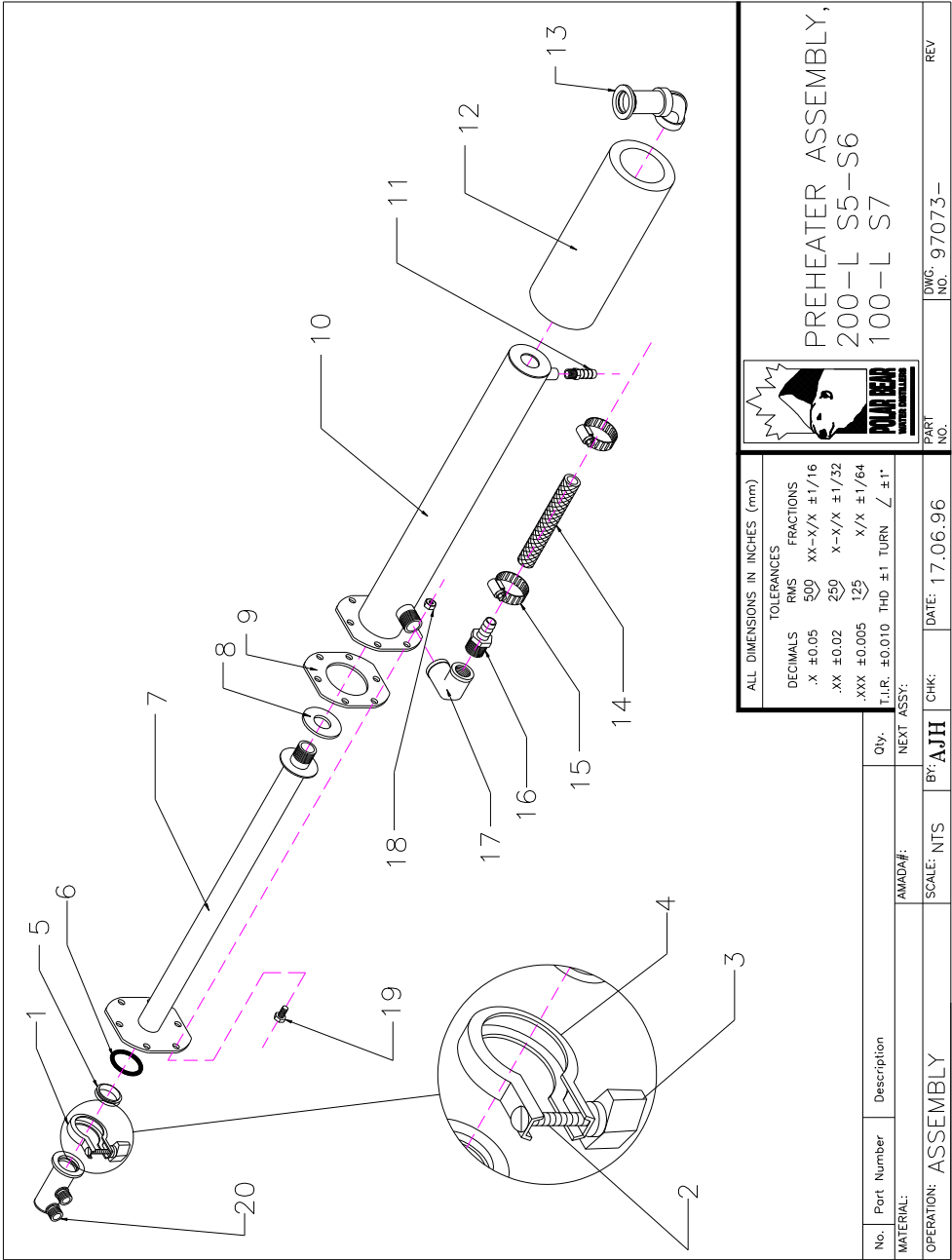
Parts Diagram: Holding Tank Assembly



Parts List: Preheater Assembly

Line	Qty	Item	Description
1	1	102305	FLANGE RETAINING CLAMP
2	1	10141	BOLT,CARRIAGE,SS,#10-24x2"
3	1 EA	80187	KNOB,#10-24,BLACK
4	1	102450	V-RETAINING CLAMP FLANGE BLANK
5	1 EA	102299	FLANGE CENTERING RING
6	1 EA	80162	O-RING, 3/16"X1-1/8"ID, VITON
7	1	102435	TUBE, PREHEATER INNER, W.A.
8	1	102374	200-L PREHTR INNER SEAL GASKET
9	1	102364	200-L PREHTR OUTER FLANGE GASK
10	1	102343	200-L OUTER PREHEATER TUBE
11	1 EA	30079	COUPLER, 3/8" BARB - 1/8"MPT
12	1	102418	200-L PREHTR INSULATION, 8.5"
13	1	102334	200-L INNER TOWER, WELD ASSEM.
14	1	102375	200-L BOILER TANK FILL LINE
15	2 EA	80014	GEAR CLAMP, 5/8", S.S.
16	1 EA	30035	COUPLER, 1/2"BARB - 1/2"MPT
17	1 EA	30015	ELBOW, 90DEG, 1/2"FPT, BRASS
18	6 EA	15501	HEX NUT, SS, 1/4" - 20
19	6 EA	10121	BOLT, HEX, SS, 1/4"-20 X 1/2"
20	1	102437	PREHEATER QUICK CONNECT STEAM

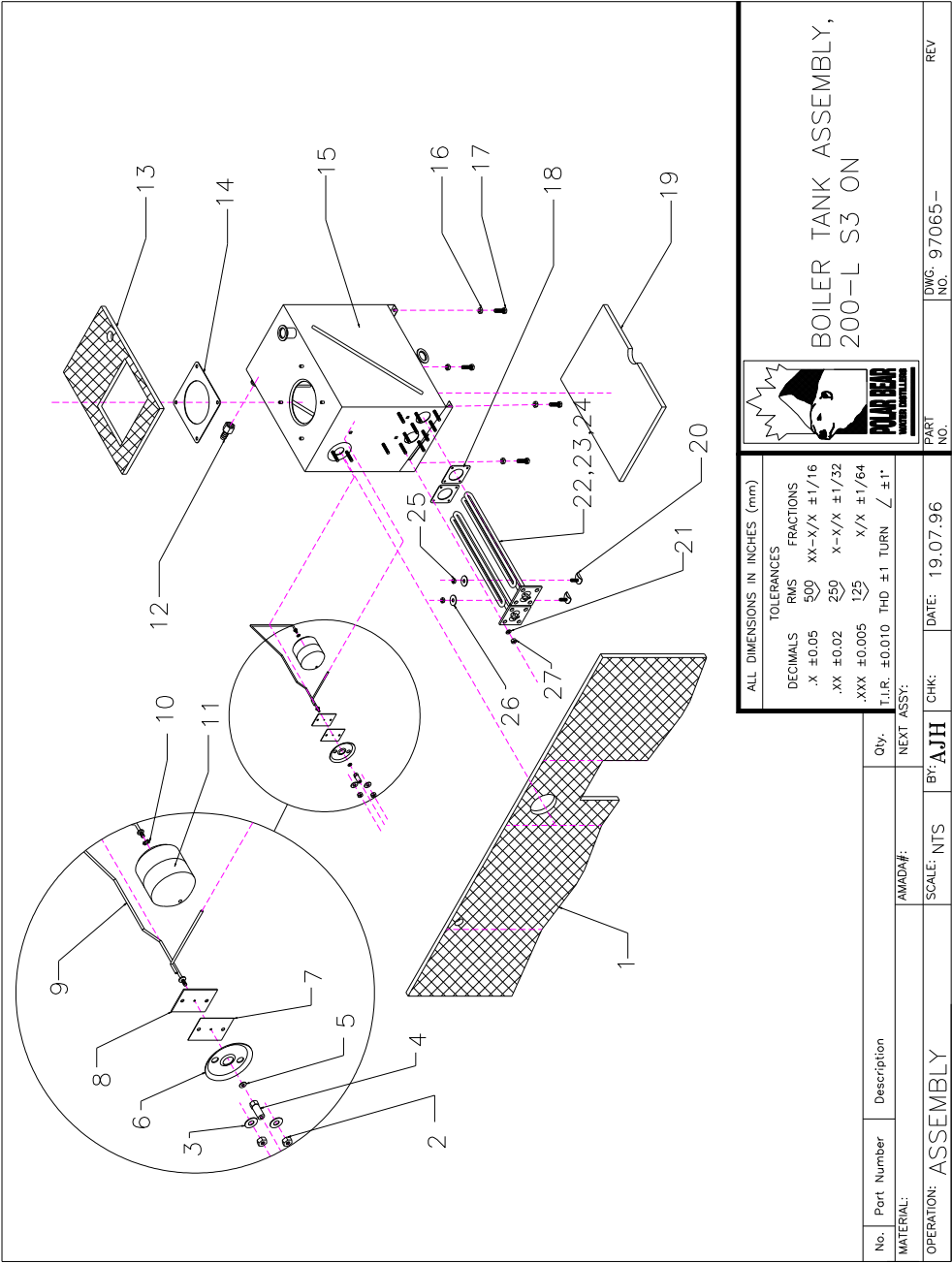
Parts Diagram: Preheater Assembly



Parts List: Boiler Tank Assembly

Line	Qty	Item	Description
1	1	102362	200-L INSULATION, BOILER SIDES
2	2 EA	15501	HEX NUT, SS, 1/4" - 20
3	2	15004	WASHER, FLAT, SS, 1/4"X1/2"
4	1 EA	100060	FLOAT,BRASS CONTACT
5	1	15001	WASHER, FLAT, SS, 5/32 X 3/8"
6	1	100062	BOILER TANK FLOAT WASHER
7	1	100067	BOILER TANK FLOAT GASKET,NTEAR
8	1	100066	BOILER TANK FLOAT GASKET SILIC
9	1	102410	ASSEMBLY, 200L B.T. FLOAT ROD
10	1 EA	15203	WASHER,SS,LOCKTOOTH,EXT.,1/4"
11	1 EA	100058	FLOAT BALL, 2.5" S.S.
12	1 EA	30078	COUPLER, 1/2"BARB - 1/2"FPT
13	1	102363	200-L INSULATION, BOILER TOP
14	1	100068	BOILING TANK LID GASKET SILICO
15	1	102337	200-L BOILING TANK, SERIES 3
16	4 EA	15513	NUT, HEX, SS, 5/16"
17	4 EA	10128	BOLT, HEX HEAD, SS, 5/16"X 1"
18	2	100065	HEATING ELEMENT GASKET, SILICO
19	1	102301	200-L INSULATION,BOILER BOTTOM
20	2	100063	HEATING ELEMENT CLIP WELD ASSE
21	8	15004	WASHER, FLAT, SS, 1/4"X1/2"
22	2 EA	102075	HEATING ELEMENT,2500W,208V
23	2 EA	102076	HEATING ELEMENT, 2500W,220V
24	2 EA	102077	HEATING ELEMENT,2500W,240V
25	2 EA	15501	HEX NUT, SS, 1/4" - 20
26	2	15002	WASHER, FLAT, SS, 5/16"X 1"
27	8 EA	15501	HEX NUT, SS, 1/4" - 20

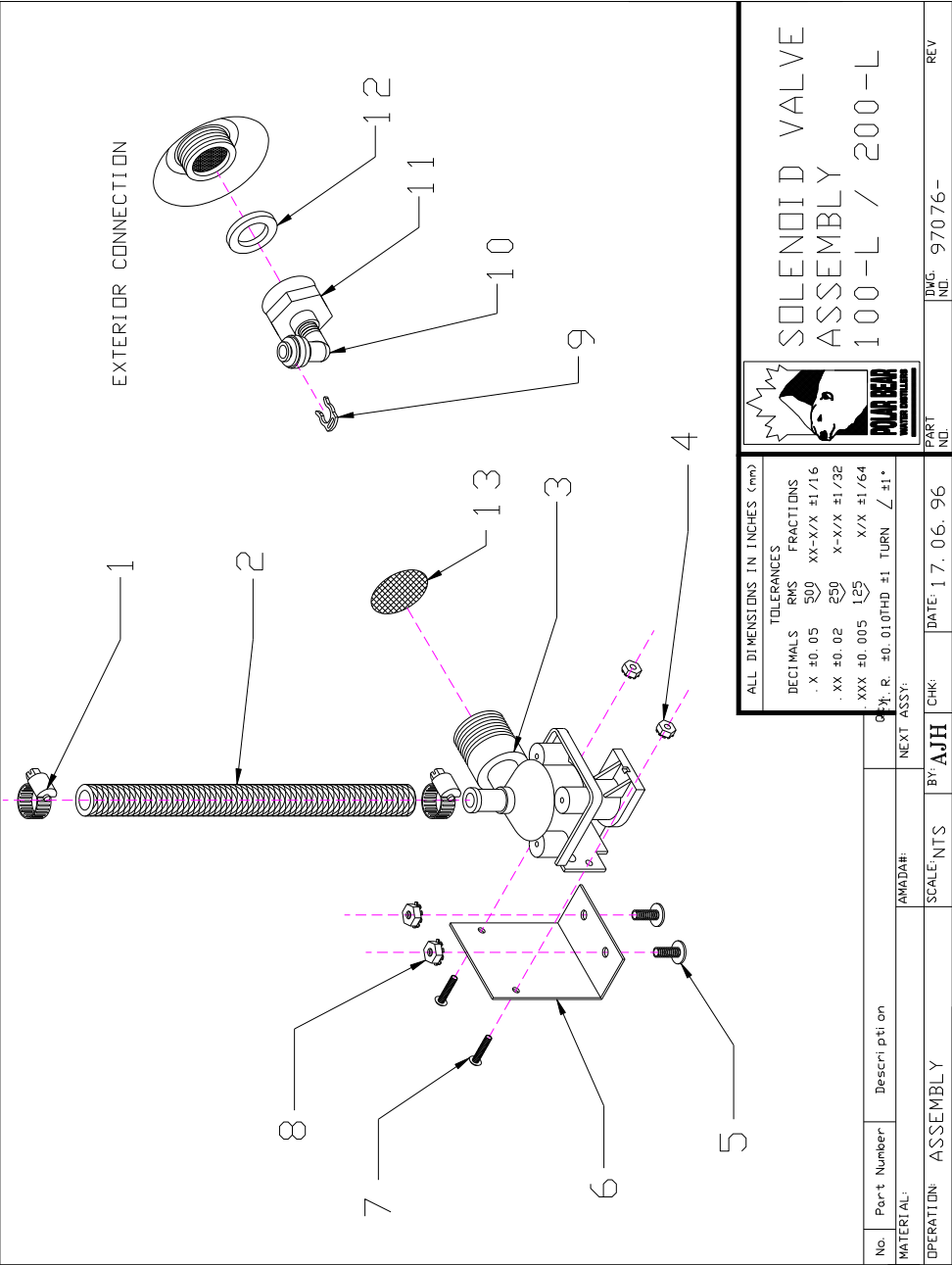
Parts Diagram: Boiler Tank Assembly



Parts List: Solenoid Valve Assembly

Line	Qty	Item	Description
1	2 EA	80014	GEAR CLAMP, 5/8", S.S.
2	1	102377	TUBE, 3/8" PREHEATER FILL LINE
3	1 EA	100092	VALVE, SOLENOID, SUPPLY, 240V, S-54
4	2 EA	15507	NUT, KEP, #6-32
5	2 EA	10104	SCREW, MACH, PLTD, #10-24 X 1/2
6	2	102325	200-L SER 3 SOLENOID VLV BKT
7	2 EA	10120	SCREW, MACH, PLTD, PAN, 6-32x5/8
8	2 EA	15503	NUT, KEP, #10-24
9	1 EA	30083	CLIP, JOHN GUEST, 1/4" LOCKING
10	1 EA	30082	ELBOW, 90, JG, 1/4" TUBEX 1/8" MPT
11	1 EA	30004	COUPLER, BRASS, 3/4" FGHT-1/8" FPT
12	1 EA	80006	WASHER, BLK NEOPREAN, 1"x5/8x1/8
13	1 EA	100097	SCREEN - FILTER-FILL VALVE

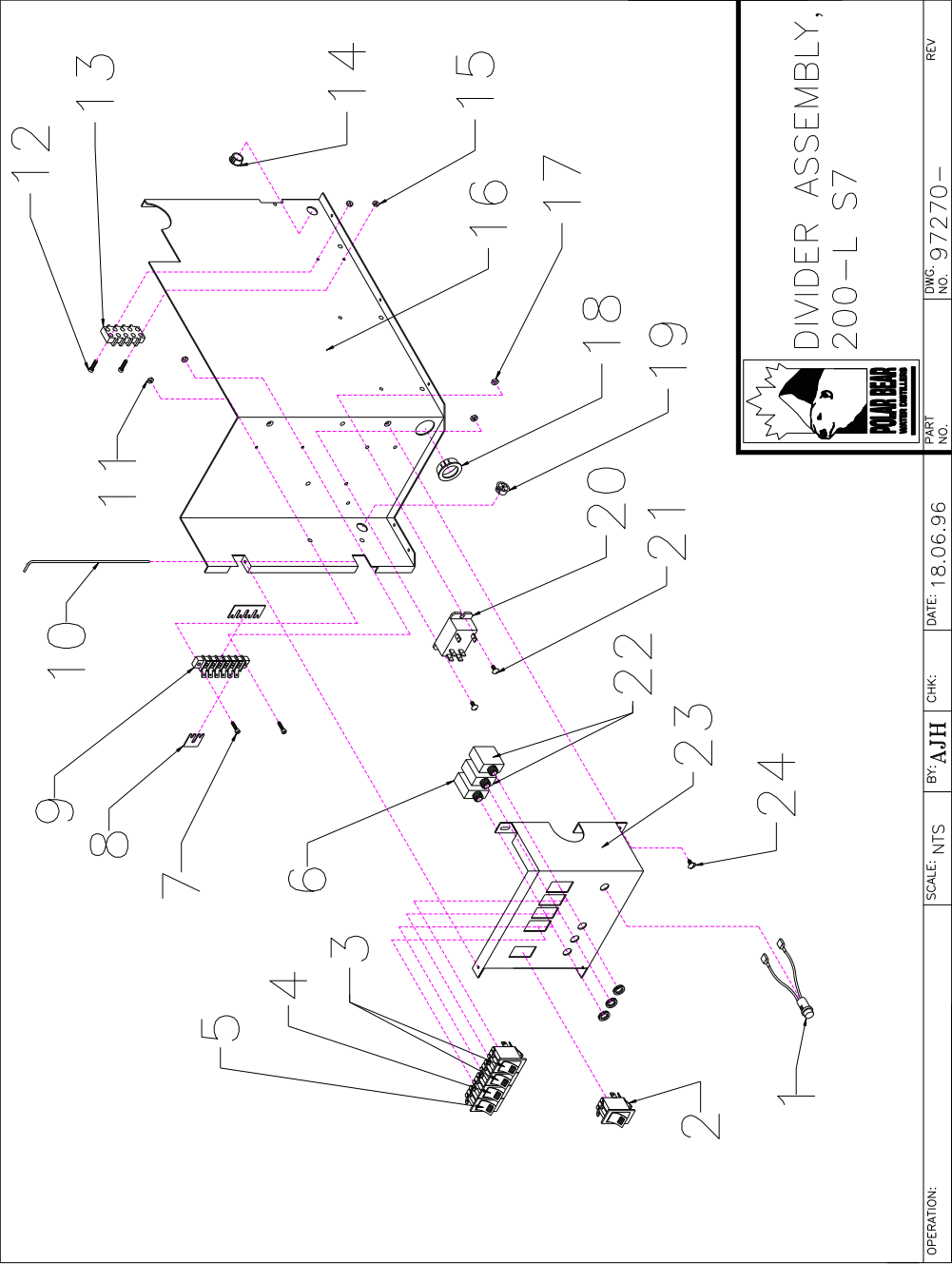
Parts Diagram: Solenoid Valve Assembly



Parts List: Divider Assembly

Line	Qty	Item	Description
1	1 EA	102288	INDICATOR,RED220V,ALARM ASSM
2	1 EA	102091	SWITCH,ROCKER,RED,DPST,220V
3	2 EA	102094	SWITCH,ROCK,BLU,SPST120 220V
4	1 EA	102093	SWITCH,ROCK,CLR,SPST120 220V
5	1 EA	102092	SWITCH,ROCKER,RED,SPST120 220V
6	1 EA	102159	BREAKER, 5 AMP
7	2 EA	10120	SCREW,MACH,PLTD,PAN,6-32x5/8
8	1	102182	JUMPER STRIP,ALUMINUM
9	1 EA	102160	TERM BLOCK,1x6POS,DBL-TAB@45
10	1	102152	200-L DOOR HINGE PIN
11	2 EA	15507	NUT,KEP,#6-32
12	2 EA	10120	SCREW,MACH,PLTD,PAN,6-32x5/8
13	1 EA	102161	TERMINAL BLOCK,2 x 3 POS
14	1 EA	100115	BUSHING,WIRE,5/8"
15	2 EA	15507	NUT,KEP,#6-32
16	1	102355	200-L SERIES 3 MIDDLE DIVIDER
17	2 EA	15505	NUT,KEP #8-32
18	1 EA	100146	BUSHING,SNAP,NYLON,1.25"HOLE
19	1 EA	100115	BUSHING,WIRE,5/8"
20	1 EA	102445	RELAY,DPST,P&B T92, 240V, 30A
21	2 EA	10102	SCREW,MACH,SS,TRUSPHLP8-32X3/8
22	2 EA	102158	BREAKER, 30 AMP
23	1	102153	200-L SWITCH DOOR
24	2 EA	10109	SCREW,SHTMTL,SS,#10-12x1/2"

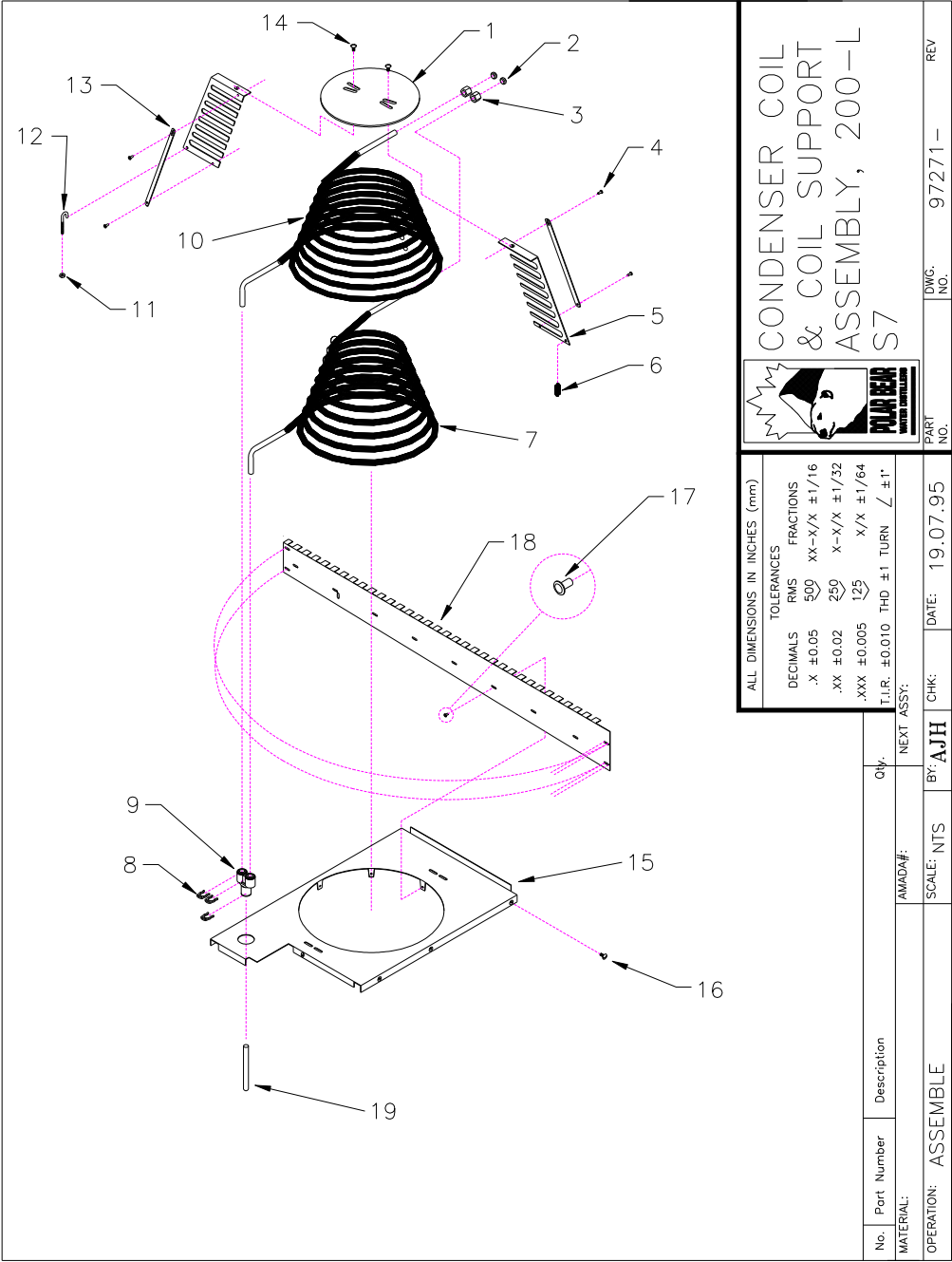
Parts Diagram: Divider Assembly



Parts List: Condenser Coil and Support Assembly

Line	Qty	Item	Description
1	1	102381	200-L CONDENSER COIL TOP COVER
2	2 EA	30083	CLIP,JOHN GUEST,1/4" LOCKING
3	2	30002	NUT, COMPRESION,PLTD. BRASS
4	4 EA	80004	RIVET, ALUMINUM, 1/8"X1/4"
5	2	102380	200-L CONDENSER COIL SPACERS
6	1 EA	100069	SPRING, B.T. LID
7	1	102125	200-L INNR COND COIL,S3
8	3 EA	30093	CLIP,LOCK,POLY,JOHN GUEST,3/8"
9	1 EA	30092	DIVIDER,3/8TUBE-3/8TUBE,JG
10	1	102126	200-L OUTR COND COIL,S3
11	1 EA	15503	NUT,KEP,#10-24
12	1 EA	80163	J-BOLT, PLATED, #10-24X 1-7/8"
13	2	102415	CONDENSER COIL SPACER BRACE
14	2 EA	10109	SCREW,SHTMTL,SS,#10-12x1/2"
15	1	102444	CONDENSER SUPPORT S5 ON
16	8 EA	10109	SCREW,SHTMTL,SS,#10-12x1/2"
17	12 EA	80004	RIVET, ALUMINUM, 1/8"X1/4"
18	1	102174	200-L CONDENSER COWLING
19	1 FT	41000	TUBING,SS#304,3/8"OD .028X25'

Parts Diagram: Condenser Coil Assembly



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Dealer Information

For Dealer information, please contact:

Polar Bear Water Distillers Mfg. Co. Ltd.
P.O. Box 113 Main Street
Pickardville, Alberta
CANADA T0G 1W0

Telephone: (403) 349-4872
Facsimile: (403) 349-5904

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