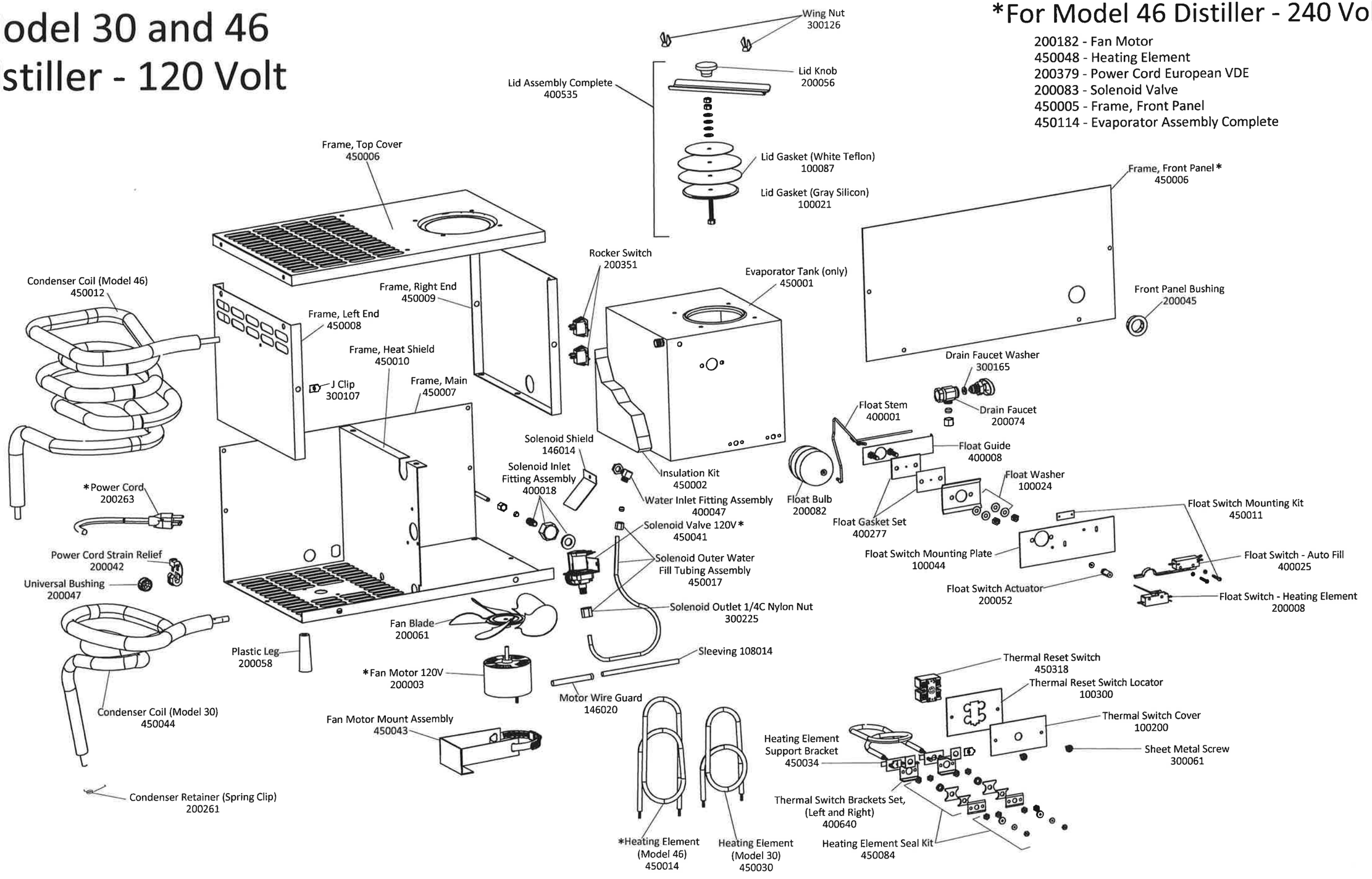
Model 30 and 46 Distiller - 120 Volt



*For Model 46 Distiller - 240 Volt

200182 - Fan Motor
450048 - Heating Element
200379 - Power Cord European VDE
200083 - Solenoid Valve
450005 - Frame, Front Panel
450114 - Evaporator Assembly Complete

Saddle Valve Installation Kit for Automatic Distiller

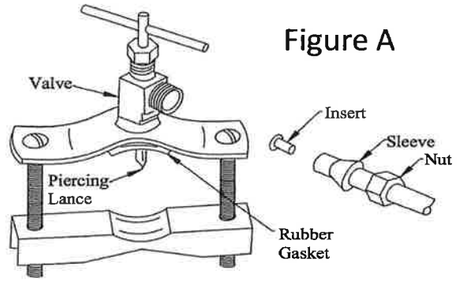
Part #400230

Connect this valve only to cold water service.

Contents

Part #	Description
100075	25' Plastic Tubing, 1/4" OD
200162	Self-Piercing Saddle Valve with Fittings
300204	Delrin Sleeve, 1/4"
300205	Compression Nut, 1/4"
300244	Tube Insert (2 Required)

Figure A

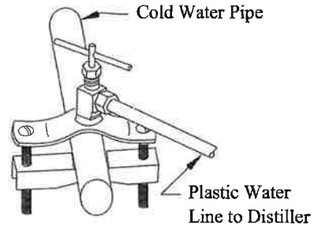


Please examine the contents of this kit and read all instructions before proceeding.
Note: Valve fits 3/8" OD through 1 5/16" OD soft or hard tubing pipe.

Installation of Saddle Valve on Copper Pipe

Note: Before you begin, make sure the piercing lance does not extend beyond the rubber gasket. Also, do not turn the handle before or while installing the self piercing saddle valve. Failure to do either of these may result in damage to the piercing needle.

1. Assemble the self piercing saddle valve on copper pipe with the enclosed nuts and bolts.
2. Tighten the bolts evenly and firmly. The brackets should be parallel.
3. Place a Compression Nut and Delrin Sleeve on one end of the plastic tubing as shown in Figure A. Place the Tube Insert into the end of the plastic tubing to stiffen the wall of the tubing. Insert the tubing into the valve and tighten the nut ½ turn past finger tight.
4. Install the Compression Nut, Delrin Sleeve, and Tube Insert on the other end of the tubing and install into inlet of distiller.
5. Turn the valve handle clockwise until you feel it is firmly seated. Once it is firmly seated, you have pierced the copper pipe.
6. Turn the handle counter-clockwise to open the valve.



Installation of Saddle Valve on Steel or Brass Pipe

Note: The saddle valve is not self piercing with steel or brass pipe.

1. Shut off the water supply and drain the line.
2. Using a hand drill to avoid shock, Drill a 5/32" diameter hole in the pipe.
3. Turn the valve handle to expose the lance beyond the rubber gasket by no more than 3/16".
4. Place the body of the valve over the drilled hole so that the lance fits into the hole.
5. Tighten the bolts evenly and firmly. The brackets should be parallel.
6. Turn the valve handle clockwise to close the valve.
7. Place a Compression Nut and Delrin Sleeve on one end of the plastic tubing as shown in Figure A. Place the Tube Insert into the end of the plastic tubing to stiffen the wall of the tubing. Insert the tubing into the valve and tighten the nut ½ turn past finger tight.
8. Install the Compression Nut, Delrin Sleeve, and Tube Insert on the other end of the tubing and install into inlet of distiller.
9. Open the water supply. The saddle valve is now ready to use.

Water Flow Switch (automatic distillers only)

See Figure C

This switch is the top switch and is responsible for turning on and off the water supply based on the water level of the evaporator tank. It is adjusted as follows:

1. **Unplug the distiller.**
2. Fill the evaporator tank to its minimum level for operation (approx. 4.5" from the bottom).
3. Loosen the two mounting screws of the switch.
4. Rotate fully counter-clockwise once. **(Right Side Up)**
5. Rotate clockwise until a "click" is heard. If difficulty is encountered with this rotation, a major adjustment may be needed. For a major adjustment, see further information at the end of this section.
6. Being careful not to alter the position of the switch, tighten the screws.
7. Check for proper setting by pushing the float downward until the first "click" is heard (this is the water "turn on" level); now slowly move the float up until another "click" is heard (this is the water "turn off" level). The second click should occur at approximately the water level set in step 2. If it does not, repeat the process until it does.

Note: You are not misreading the two different water levels for automatic distillers. The water solenoid turn on/turn off level is above the heating element/fan turn on/turn off level. This allows the evaporator to fill before the distiller shuts off. A simple method to check these levels is to pull the float to the top of the tank, then slowly move it down, and listen for the clicks. The top switch should click before the bottom switch.

Major Adjustment Instructions

It may be necessary to perform a major adjustment if the switch does not rotate far enough to allow proper setting. This adjustment is performed by bending the lever arm of the micro switch in question. To prevent breaking, hold the lever arm stationary near the hinge and use needle nose pliers to bend the arm.

- If the heating element/fan switch needs more counter-clockwise rotation or the automatic fill switch needs more clockwise rotation, bend the lever towards the switch body.
- If the heating element/fan switch needs more clockwise rotation or the automatic fill switch needs more counter-clockwise rotation, bend the lever away from the switch body.

After bending the lever arm, adjust the switch as previously described.

Power Cord Notice

The included cord is short by design to alleviate tripping and/or the cord becoming entangled. You may use an extension cord if you wish. Please ensure that the rating on any extension cord meets or exceeds the electrical rating of your distiller. Any extension cord used must be grounded (three prong/wire) and, to prevent it from becoming unplugged, we recommend that it not be draped over anything.

UL Notice

The physiological effects of the operation of this unit (including the optional carbon filters), beneficial or otherwise, have not been investigated by Underwriters Laboratories.

Problem: Water solenoid valve will not shut off automatically (automatic distillers only)

1. Check the float inside the evaporator tank and make certain it is not stuck.
2. Ensure the water line pressure at the inlet is more than 10psi.
3. Make sure the float switch mechanism is set correctly (refer to float switch instructions).
4. If 1-3 do not solve the problem, the water solenoid valve is likely damaged.

To test the solenoid valve:

- Unplug the distiller from the electrical outlet.
- Note the water level in the evaporator tank and then leave overnight.
- If the water level rises overnight, that indicates that the solenoid valve is leaking and needs to be replaced.

Float Switch Adjustment Instructions (for qualified personnel only)

All distillers have a float switch to control the heating element and fan. Automatic distillers have a second float switch to control the water flow into the evaporator tank. These switches are activated by the float stem(s). To work properly, the float(s) must rest freely on the top of the water.

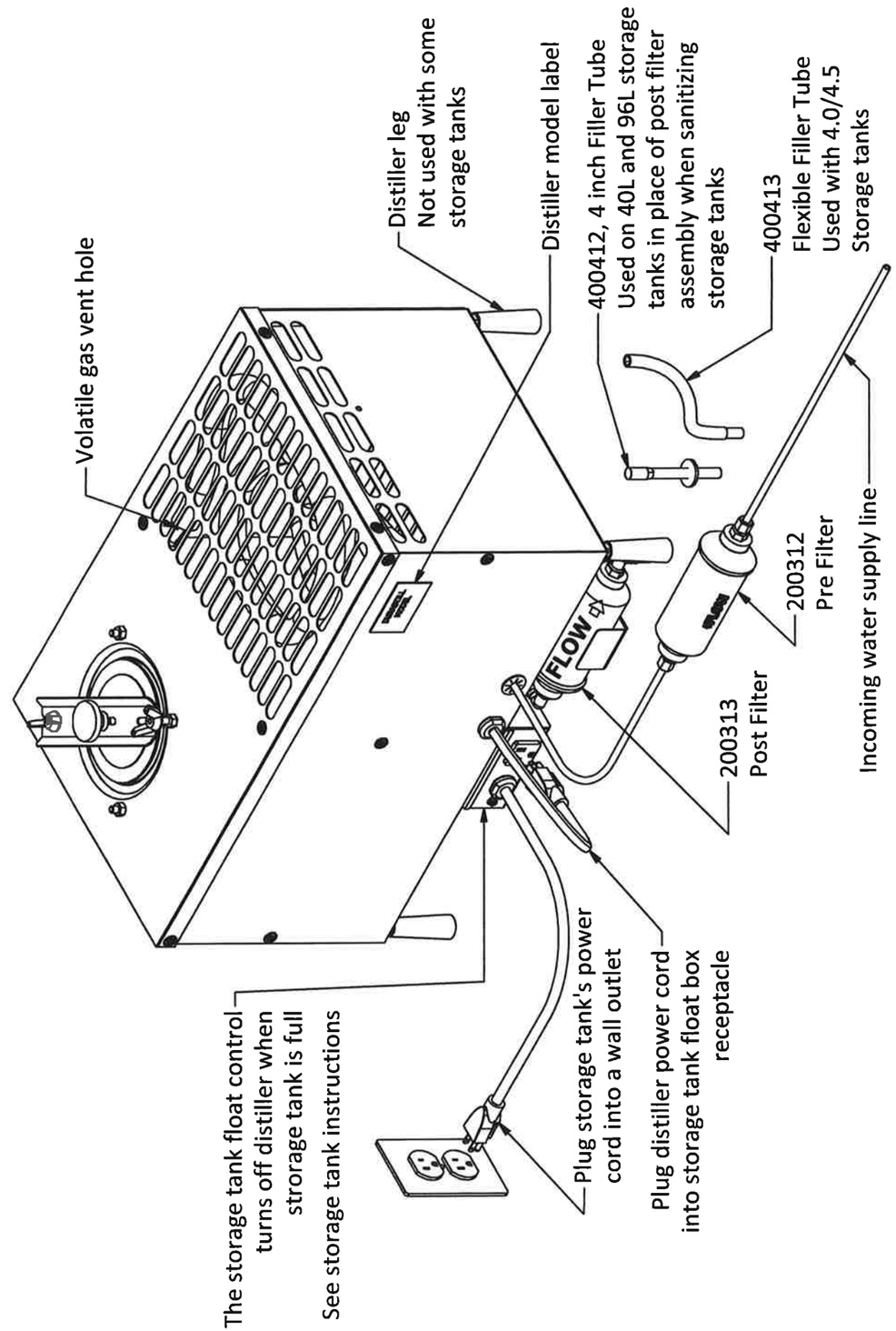
These switches are preset at the factory and should require no further adjustment. However, replacement of the float, float gasket, or switches will likely require adjustment.

Heating Element and Fan Float Switch Adjustment (all distillers)
See Figure C

This switch is the bottom switch and is responsible for shutting off the heating element and fan if the water level in the evaporator tank gets too low. It is adjusted as follows:

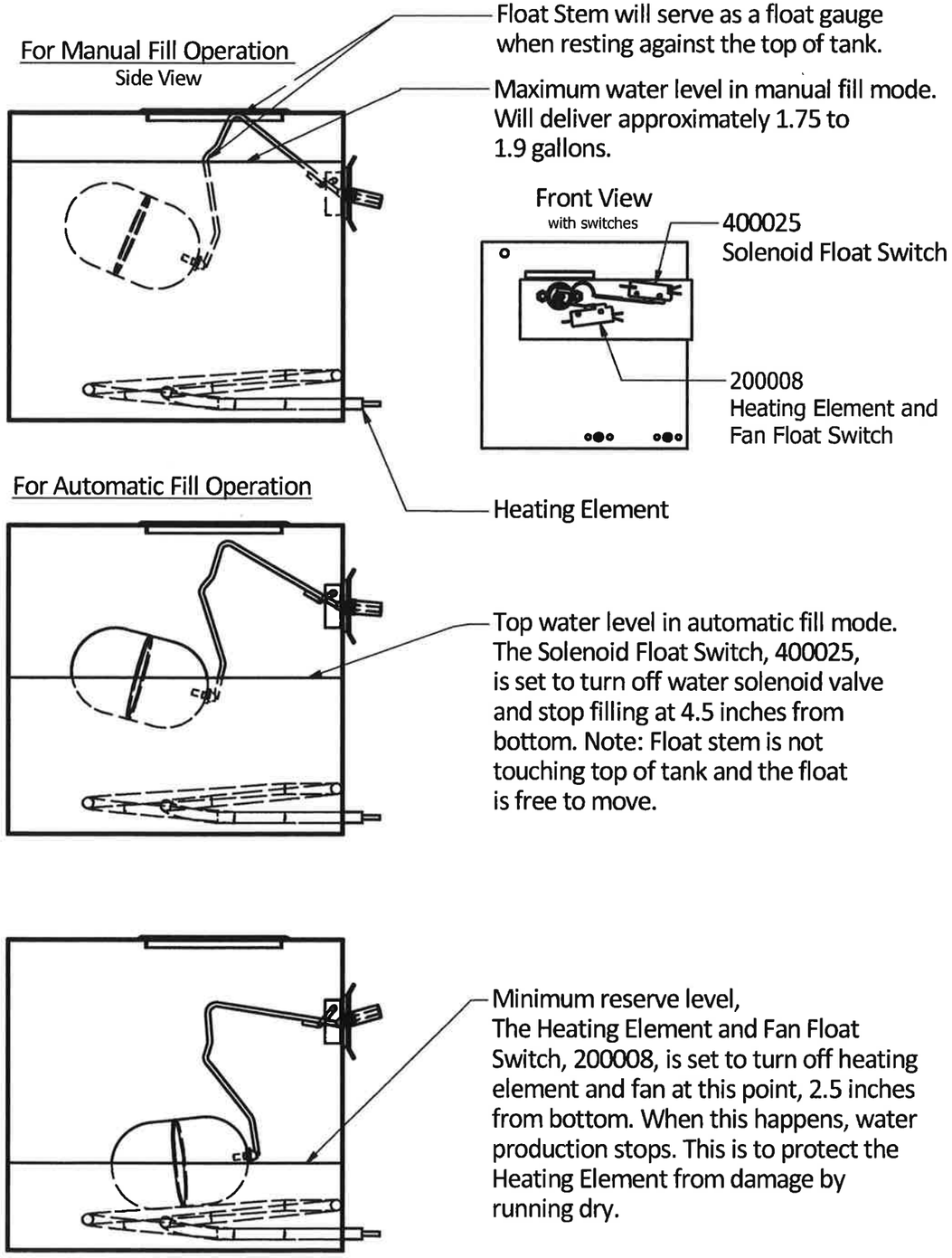
1. **Unplug the distiller from outlet.**
2. Fill the evaporator tank to its minimum level for operation (approx. 3" from the bottom).
3. Loosen the two mounting screws of the switch.
4. Rotate fully clockwise once. **(Right Side Down)**
5. Rotate counter-clockwise until a "click" is heard. If difficulty is encountered with this rotation, a major adjustment may be needed. For a major adjustment, see further information at the end of this section.
6. Being careful not to alter the position of the switch, tighten the screws.
7. Check for proper setting by pulling the float upward until the first "click" is heard (this is the "turn on" level); now slowly move the float down until another "click" is heard (this is the "turn off" level). The second click should occur at approximately the water level set in step 2. If it does not, repeat the process until it does.

Figure B



Water Levels

Figure C



Troubleshooting Guide

Note: All Durastill distillers have a safety switch that will shut down the heating element and fan when the water level is too low. For automatic distillers, a second float switch controls the operation of the water solenoid valve. These switches are set at the factory and should require no adjustment.

Problem: Distiller does not operate (neither fan nor heating element is working)

1. Make sure power is on and unit is plugged in.
2. Check the water level in the evaporator tank and make sure it is not too low.
3. Check the water level in the storage tank. It may be full and the storage tank float box has shut the unit off.
4. Thermo reset switch needs to be reset. Allow unit to cool down before resetting. **Note**: This often means the float level in the evaporator needs adjustment.
5. If 1-4 do not solve the problem, the float arm may be functioning improperly.

Problem: Fan does not operate automatically

1. Make sure fan switch is set to ON.
2. Check the water level in the evaporator tank and make sure it is not too low.
3. If those do not work, the fan motor may be faulty. This is usually indicated by steam passing through the condenser coils.

Problem: Fan operates, yet no water is produced

1. Give it time. When the unit is first filled, it requires time to make steam. The water in the evaporator may not have reached boiling temperature yet. Wait approximately 30 minutes.
2. If it still does not heat up, the heating element may be faulty.
3. If a large amount of steam is coming from the volatile vent hole on top of the distiller or from under the lid, the post filter may be blocked/clogged.

Problem: Evaporator tank will not fill (automatic distillers only)

1. Make sure the automatic fill switch is turned ON.
2. Make sure the saddle valve is turned on and the line is free of kinks.
3. Check the float inside the evaporator tank and make certain it is not stuck.
4. Make sure the float switch mechanism is set correctly (refer to float switch instructions).
5. Ensure the water line pressure at the inlet is less than 70psi.
6. Pre Filter may be damaged/clogged.
7. If 1-6 do not solve the problem, the water solenoid valve is likely damaged.

Operating Procedure

- **For automatic distillers,** keep the FAN and AUTOMATIC FILL switches ON while the unit is in operation.
- **For manual distillers**, keep the FAN switch ON while in operation.
- **For automatic distillers used manually**, you may turn the automatic fill switch to OFF if you wish to distill small batches (one or two gallons maximum).

NOTE: For automatic distillers, never turn off the water supply saddle valve while the AUTOMATIC FILL switch is on. This could damage the unit.

Initial Water Quality: These distillers are meant to distill potable water from either a municipal or well water source. They are not meant to purify heavily polluted or toxic water.

Maintenance

Durastill distillers require very little maintenance aside from the periodic cleaning of the evaporator tank and an occasional sanitation.

In the beginning, you should clean the evaporator tank after every 5 gallons (20 liters) of distilled water has been produced. You may adjust the number of gallons produced between cleanings up or down by observing the scale buildup (more scale = more frequent cleanings). **Failure to clean the tank may allow scale to build up, which can damage the element and gaskets, and will also cause a foaming action inside the tank, which will contaminate the output.**

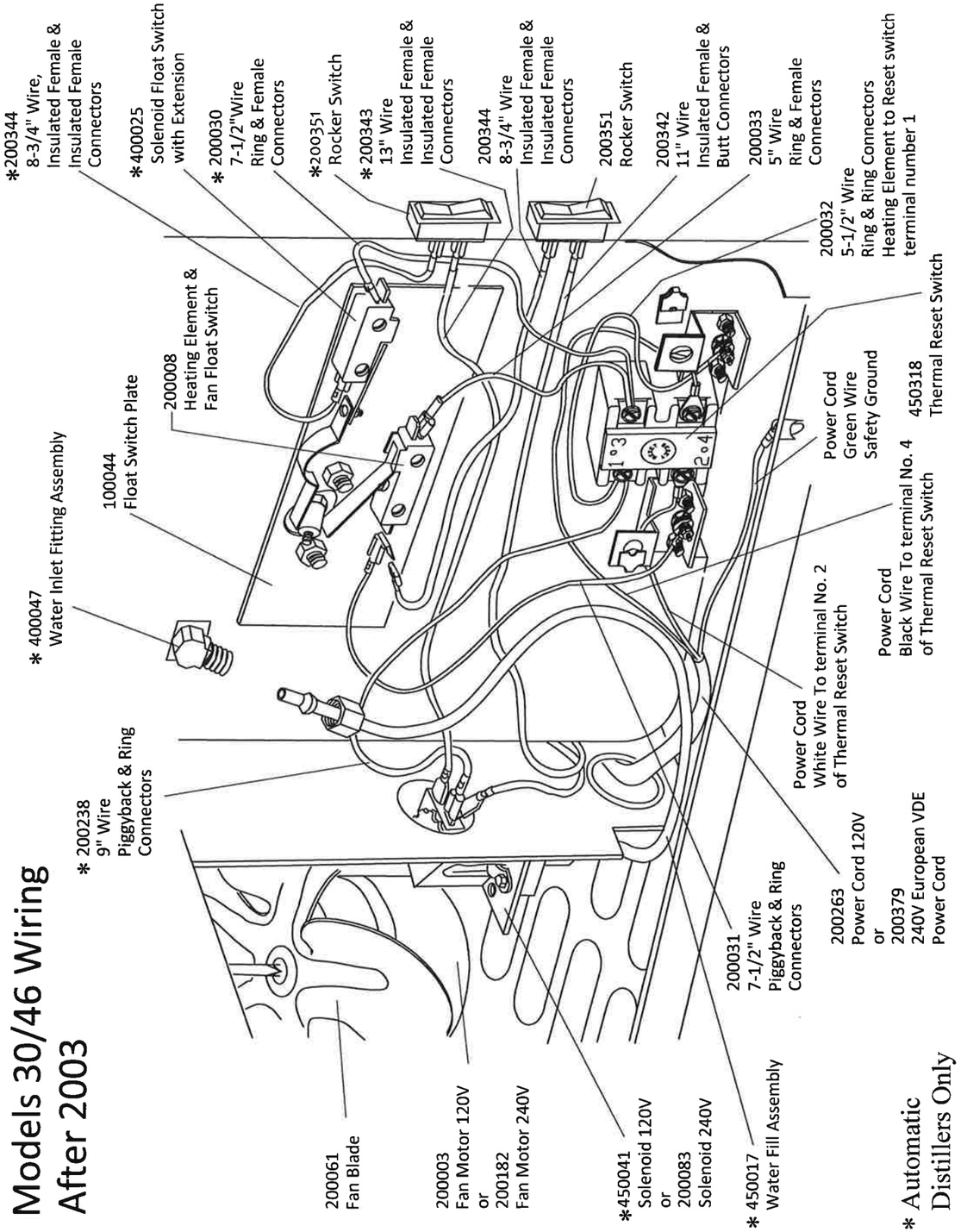
Cleaning the Evaporator Tank

1. Turn off the unit and all water supplies and unplug the unit.
2. Locate the drain faucet on the side of the tank and drain out any water.
3. Open the unit and clean away scale from the tank and heating element. Use only food-grade chemical cleaners (STILL CLEAN, etc). **Always leave the lid off of the distiller while cleaning.**
4. Rinse thoroughly and reassemble the unit. Close the drain faucet.
5. We recommend discarding the first batch of water that is produced after cleaning.

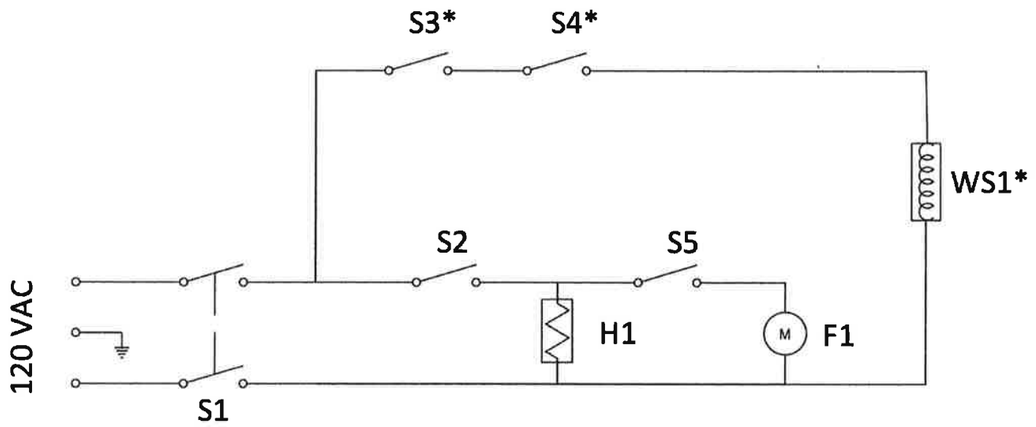
Sanitizing the Unit

We recommend sanitizing the distiller before first use and then once yearly.

1. Disconnect the post filter.
2. Disconnect from storage tank (if attached).
3. For automatic fill distillers, models 30J and 46C, turn OFF the automatic fill switch.
4. Remove the lid on top of the distiller and fill the evaporator tank with approximately 2 gallons of raw water.
5. Place the lid back onto the distiller and turn ON the distiller fan switch.
6. Place a container, bottle, or jug below the distilled water output stem located at the bottom left side of the unit. This will collect any possible distilled water produced during this procedure.
7. Turn OFF the distiller fan switch after approximately 30 minutes. BE CAUTIOUS, THE DISTILLER WILL BE HOT.
8. Turn ON fan switch and automatic fill switch and resume normal use.



Wiring Schematic



S1 – Thermal Reset Switch

S2 – Heating Element Float Switch

S3* - Water Solenoid Valve Float Switch

S4* - Automatic Fill Rocker Switch

S5 – Fan Rocker Switch

WS1* - Water Solenoid Valve

H1 – Heating Element

1500 Watt for Model 46

1000 Watt for Model 30

F1 – Fan Motor

* Automatic Distillers Only

Basic Setup

1. Unpack your distiller and be sure to remove all packing materials from inside the evaporator tank and around the float. Do not bend or adjust the float or float stem because this will effect the water level settings.
2. **For units with a storage tank and stand**: Unpack and assemble the water storage tank and stand unit (see separate instructions for stand). Make sure the float switch box is in place and that the water distiller unit power cord is plugged into the switch box. **(See Step #7)**
3. Place distiller on top of stand or screw plastic legs onto distiller if a storage tank is not used. Distillers operate best when the condenser coil has a constant downward slope. This is achieved when the unit is level. To level the unit on an uneven surface, unscrew one or two legs on opposite corners to achieve the proper stability.
4. **For automatic distillers:** Hook up your water line to the distiller using the installation kit provided. **(See Figure A)** If a PRE 6 filter is to be used, install that at this time as well (see filter instructions). **Note on water line installation:** The plastic tubing should be connected to the brass fitting at the back of the distiller. If using compression fittings, also install the brass tube inserts.
5. Connect the distiller's water output to the post filter (if used) ***or*** directly to the water storage tank using the supplied filler tube. We recommend that all automatic fill distillers use a Durastill storage unit. **(See Figure B)**
   Note for manual fill use: If you are manually filling the distiller, you may use the flexible tubing and hose clamp provided to connect a bottle or other container to the water output tube. This container must have a capacity of at least 7 liters (1.9 gallons), which is the maximum amount of distilled water produced by one batch.
6. Turn on the water or manual fill the unit to the level indicated by the float arm gauge. **(See Figure C)** Make sure there are no leaks.
7. If using a water storage tank, plug the distiller into the receptacle on the storage tank's float control box. This allows the float control to turn off the distiller when the storage tank is full. Note: if using a storage tank that is not made by Durastill, please ensure it has the same type of float switch control to prevent overflow. **(See Figure B)**
8. Plug in the distiller (or storage tank if step 7 was followed). As stated on the previous page, a 120V AC outlet is necessary. Turn all toggle switches to ON.
9. **For automatic distillers:** The evaporator tank should begin to fill. Remove the distiller lid and observe the first filling to ensure the water flow stops before the water reaches 4 ½" from the tank's top. If the unit does not stop filling when this level is reached, unplug the unit and see the troubleshooting guide to determine the problem. **For manual fill**, simply fill the tank to the proper level, as indicated in **Figure C,** with the float stem serving as a float gauge when resting against the top of the tank.
10. Fasten the evaporator lid and check for leaks.
11. Sanitize the unit before first operation. The sanitation procedure can be found under the maintenance section of these instructions.
12. **For automatic operation:** The fan switch and automatic fill switch should be ON.
    For manual operation: Keep the fan switch ON, but turn the automatic fill switch OFF.
13. The distiller is now ready for operation.

Durastill Inc.

Instructions for Fan-Cooled Electric Water Distiller Models 30H, 30J, 46A, and 46C

30H 8 Gallon Capacity/Day – Manual Fill
30J 8 Gallon Capacity /Day – Automatic Fill
46A 12 Gallon Capacity/Day – Manual Fill
46C 12 Gallon Capacity/Day – Automatic Fill

Overview

Thank you for purchasing one of the world's finest water distillers. Durastill has been producing high quality water distillers since 1970, and we are confident that with proper operation and maintenance, your unit will provide you with years of excellent service. We are certain you will be pleased with not only the quality and durability of your stainless steel distiller, but also with its effectiveness and ease of use.

The Distillation Process

The process of distilling water is simple. Water is boiled which kills bacteria, and turns to steam, which is free of dead bacteria and many other impurities. The steam is condensed and the result is pure distilled water ready to drink or use as needed.

Electrical Caution

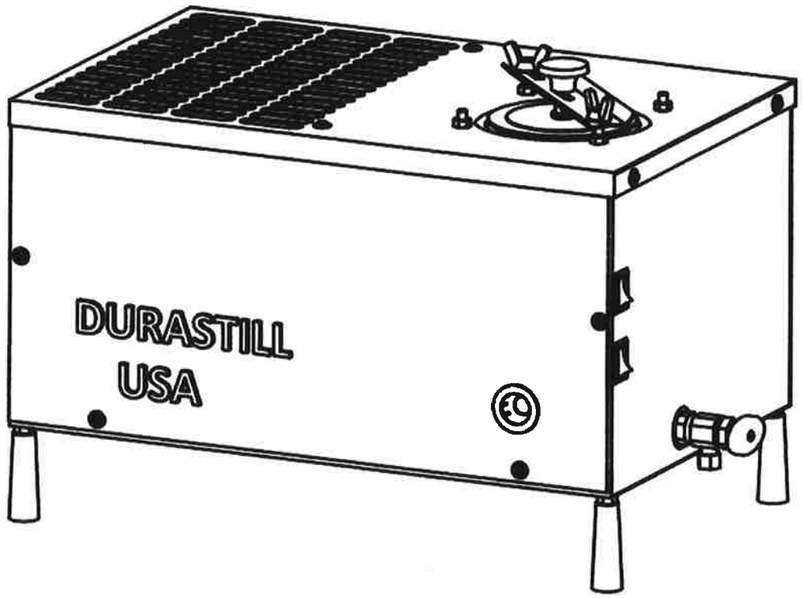
- This unit is designed to operate from a properly grounded 120 volt AC outlet. Failure to do so may result in injury, fire, or damage to the unit.
- The unit should always be unplugged before any maintenance, repair, or adjustment is made.
- **Automatic units:** Do not plug in the unit until the inlet water supply has been properly installed, turned on, and is free of leaks.

Choosing a Location for Your Distiller

The condensation of steam requires the transfer of heat. Thus, while in operation, this unit will release very warm air (approximately 5,120 BTU's per hour). Therefore, it is suggested that the unit be placed in an area where the heat will be adequately ventilated and/or used beneficially. Good ventilation will also ensure the most efficient operation. If the surrounding air is overly warm, the unit has a reduced condensing capacity. For best performance, we suggest a room temperature between 40 degrees and 85 degrees Fahrenheit (4.4 – 29.4 C).

Model 30H, 30J, 46A, & 46C Instructions

Thank you for your purchase of a Durastill Electric Water Distiller. We also offer storage tanks, remote faucet systems, and many related items. To see the rest of our product line or to find the dealer closest to you, please visit durastillparts.com. Thank you.



DURASTILL

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DURASTILL

Fan-Cooled Electric Water Distillers

Instructions for

Models 30H, 30J, 46A, & 46C