

**OPERATIONS  
&  
SERVICE  
PS-1000 SERIES**

# PS-1000 Series Operating Description

Congratulations on purchasing AquaBrew's PS-1000 Series. This state-of-the-art thermal brewing system is designed for high volume commercial use.

The PS-1000 Series is a solid-state electronic based coffee brewing system. Remove the hold down screw and top cover of the brewer and you will find the Brew Tank, Outlet (Brew) Valve, and Control Board. Inside the brew tank, the system conducts low-voltage electricity (<1 volt DC) through the water between a series of four probes inserted into the top of the tank. Each probe is a different length, creating circuits that close or open as the water level rises or falls. These low-voltage circuits send signals to the control board to open or close the inlet and outlet water solenoid valves, to start or stop each brew pulse and to ensure that the heater is only energized when there is a safe level of water in the brew tank.

Before operating this system make sure that the brewer is installed properly (see installation instructions). The unit should always remain plugged into a 120 volt, 15-amp independent circuit.

## ADJUSTABLE FEATURES

There are seven adjustable features on PS-1000 Series brewers. One through five are located on the Control Board, six is located on the top of the Brew Tank and seven is the adjustable outlet (brew) valve. These features may be configured in any combination to meet specific brewing requirements.

1. Tank Fill Level: "HIGH" or "LOW" (small, black removable jumper).

TANK FILL "HIGH" MODE: This mode is designed to hold more water in the tank, for faster overall brew times and virtually no recovery time. In this mode, the BLUE wire probe is the tank holding level "FILL" probe. Water enters the brewer through the inlet solenoid valve until it touches the tip of the BLUE wire probe. At this point, the water has connected the BLUE and GREEN wire probe circuit, signaling the control board to close the inlet solenoid valve. When brewing, this mode produces an almost instant flow of brew water over the coffee grounds, because the chamber of the brew tank above the outlet (brew) valve is already filled and ready to dispense.

TANK FILL "LOW" MODE: This mode is designed to hold less water in the brew tank which leaves the outlet (brew) valve dry after the system is finished brewing. This virtually eliminates the need to service the outlet solenoid valve in locations where lime or mineral build up on the plunger and seat of the valve may be a concern. (Also, contact AquaBrew for information about the "Scale Grenade" now available to prevent build-up in boilers, hot tanks, vending machines, valves, etc.). In this mode, the YELLOW wire probe is the brew tank holding level "FILL" probe. This mode leaves the upper chamber of the brew tank empty. The BLUE wire probe is still the brew level "FILL" probe. Water enters the brewer through the inlet solenoid valve until it touches the tip of YELLOW wire probe. At this point, the water has connected the YELLOW and GREEN wire probe circuit, signaling the control board to close the inlet solenoid valve. Brewing in this mode produces a slight delay before beginning the flow of water over the coffee grounds while the upper chamber is being filled. Because there is a smaller total volume of hot water in the brew tank, there may be a slight recovery time when several 'back-to-back' brews are required.

2. HEAT BEFORE BREW "ON or OFF" (small, black removable jumper)

HEAT BEFORE BREW "ON" MODE: This mode requires the brew water to reach the selected brew temperature before allowing the brewer to begin a brew cycle. This ensures the proper brew temperature every time.

HEAT BEFORE BREW "OFF" MODE: This mode allows a brew cycle to be started at any time, regardless of what temperature the water in the brew tank is at. This setting should always be used when the brewer is being installed, allowing the technician to test the brew volume without the need to wait for the unit to finish heating. This can reduce install times by as much as 30 minutes. This may also be a desirable setting for locations where several brews are required 'back-to-back', but even the slightest recovery time is unacceptable.

3. BREW PULSES "2, 3, 4, 5, or 6" (small, black removable jumper).

The 6 Pulse position is generally desired to create the greatest amount of turbulence in the coffee grounds, providing optimal extraction. This position will also provide virtually no fluctuation in brew temperature, because smaller amounts of water are required to flow out-of and into the brew tank during each pulse. This allows a more efficient heating cycle, keeping the brew tank water at the proper brew temperature. Also, decreasing the number of brew pulses will decrease the brew volume, in equal increments.

For example: If the 6 pulse setting brews 10 oz. per pulse for a total brew of 60 oz., changing the jumper to the 5 pulse setting will still brew 10 oz. per pulse, but reduce the total brew to 50 oz.

4. BREW TEMPERATURE "+" or "-" (round dial)

The brew temperature can be increased by rotating the dial clockwise (205F max), or decreased by rotating the dial counter-clockwise.

5. BREWING SAFETY LIGHT TIME "+" or "-" (round dial)

This patented feature adjusts the amount of time during which the Brewing Light will stay on after the brew cycle has ended. The purpose of this is to act as a visual indicator that coffee is still draining out of the brewcone. When properly adjusted, this can reduce the risk of injury and possibility of spillage, because as long as it flashing, it is unsafe to remove the brewcone. PLEASE ADVISE YOUR CUSTOMERS OF THIS FEATURE. To increase brewcone drain time, rotate the dial clockwise and to decrease rotate the dial counterclockwise.

6. BREW VOLUME “+” or “-” (Red Wire Probe)

After selecting the desired number of brew pulses, set the individual brew pulse volume by sliding the Red wire probe further into the tank to increase the volume or slide it slightly out of the tank to decrease the volume.

7. BREW TIME & EXTRACTION RATE (Outlet Valve flow adjustment)

This final adjustment allows complete control of the brew time and resulting extraction. Brew times that are too rapid can result in under extracted (weak) coffee. Brew times that are excessively long may result in over extracted (bitter) coffee. To adjust, insert a ‘stubby’ screwdriver into the adjustment port of the Outlet (brew) Valve, and rotate the flow control clockwise to slow the brew time down and increase the extraction, or rotate counter-clockwise for a quicker overall brew time and decreased extraction.

# Installation Instructions

**Warning:** Please read and follow initial Operating instructions before plugging in the brewer to electrical circuit. Warranty will be void if the brewer is connected to any voltage other than specified on serial plate.

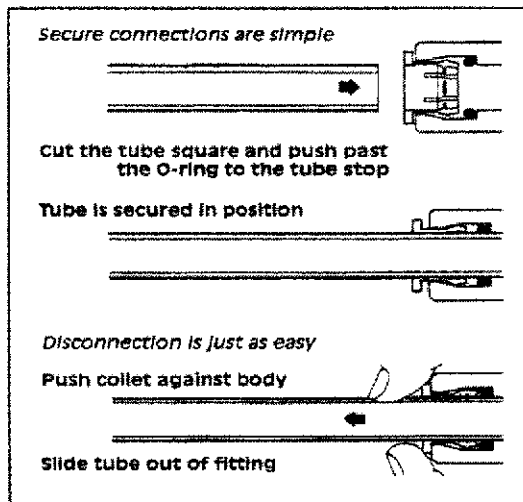
1. Connect brewer to water source by referring to the plumber's installation instructions.
2. Plug brewer's power cord into the proper voltage outlet and turn the "ON/OFF" switch ON. The green "ON/OFF" light will turn on and the green "READY" light will start to blink.
3. The water will begin to flow into the brew tank.
4. When the "READY" light stops flashing, the heater is energized and will begin to heat the brew water.
5. The brewer will brew without heating the brew water; however for optimum performance, wait until the "READY" light come on (approximately 20 minutes).
6. To adjust brew volume, refer to Brew Volume Adjustment section.

# Plumbing Instructions

**CAUTION:** Power to the brewer must be off before proceeding with installation.

1. Flush water line before installing brewer. Brewer should be connected to COLD WATER LINE for best operation.
2. Install water shut-off valve in a convenient location on water line before installing water to brewer.
3. Install strainer or water filter to incoming water line between shut-off and brewer.

## John Guest® Super Speedfit®



# Brewing Instructions

A step-by-step instruction guide to your new AquaBrew coffee System

You now own the AquaBrew PS-1000 Series commercial coffee brewing system – a revolution in coffee brewing. AquaBrew welcomes you to its exclusive club of coffee connoisseurs.

- Step 1. Put the paper filter into the brew cone.
- Step 2. Place the desired amount of coffee into the paper filter.
- Step 3. Gently glide the brew cone into the brewer's brew rails.
- Step 4. Place an EMPTY thermal server on the brewer, centered under the brew cone.
- Step 5. Make sure the green ready light is on.
- Step 6. Press the brew button.
- Step 7. When the brewer is finished brewing, the red "safety brewing lights" will stop flashing.
- Step 8. Treat your self to a FRESH, HOT cup of coffee.



## ADDITIONAL FEATURES

**HOT WATER SPIGOT:** The hot water spigot draws water from the brew tank. It is possible to short pot your brew if you dispense hot water from the spigot while you are brewing.

**“LEAK DETECTION” FEATURE:** The Leak Detection (LD) feature is designed to greatly reduce the liabilities of water damage, should an unforeseen internal leak occur. The unibody constructed, custom molded housing, creates a reservoir in the base of the brewer, where two GRAY LD sensing wires are connected internally to the base of the brewer. If enough water accumulates in the base of the unit to connect the two GRAY LD wires, the LD feature will be activated. This will prevent the inlet solenoid valve from allowing additional water to continuously enter the system. This ability to reduce unforeseeable accidents to nothing more than a small clean-up is an extremely valuable benefit found on all AquaBrew equipment.

# Cleaning Procedures

## For Brew Cone, Sprayhead and Thermal Server

1. At the end of every business day, empty the thermal server of any left over coffee.
2. Place the thermal server back in normal brewing position.
3. Empty the brew cone and insert the brew cone back into brewing position, (without a paper filter or coffee).
4. Press the brew button – hot water will spray into the brew basket and will enter the thermal server.
5. Let the thermal server sit over night with the water in it.
6. In the morning empty the thermal server before making the first batch of coffee.
7. Wipe clean brew plate and sprayhead area.

The benefits of do the aforementioned cleaning procedures daily are:

- Keep the thermal server cleaner longer.
- Keep brew cone cleaner longer.
- Keep brew thru lid cleaner longer.
- This will preheat the thermal server prior to making the morning's first batch coffee, thus providing longer heat retention of the coffee.

## For Heater

1. Drain brewer through drain tube. (Remove lower back panel and carefully (WATER MAY BE HOT!) remove red drain plug to drain the unit, **DO NOT TURN BREWER UPSIDE DOWN**).
2. Remove brewer's subassembly by the following steps:
  - a. Remove top cover of brewer.
  - b. Disconnect sprayhead.
  - c. Disconnect light and switch cables from main control.

- d. Remove four screws that secure the upper back panel to main brewer housing.
    - e. Remove, by lifting, the entire subassembly up and back out of the main brewer housing.
  3. Remove hose clamps that secure the heater to the brew tank (use a 5/16" nut driver).
  4. Use citric acid or another food grade acid to remove any mineral deposits in the heater.
  5. Flush heater, tubing, tanks and sprayheads clean with water.
  6. Reassemble brewer.

# Service Tips

## Problem

## Fix

Cannot Turn Brewer On. Check for voltage at outlet.

Check connection of switch cable to on/off button and main control.

Check connection of power cord to control board.

READY Light Will Not Stop Flashing.

Check incoming water supply.

Check connection of yellow and white wires to inlet solenoid valve and control board. Use voltmeter to verify 120 volts across the yellow and white wires at inlet solenoid valve.

Brewer Will Not Brew

Check connection at RED wire probe.

If 'Heat before Brew' is selected, check temperature of brew tank.

Brewer Leaking

Check inlet solenoid water valves foreign material on valve seat.

Check connection at BLUE wire probe both at the probe and at the main control board connector.

Check all internal water connections.

Clean all probes in water tanks.

## Service Tips

### Problem

### Fix

Excessive Steaming  
While Brewing

Check boiler for mineral build-up.  
Check Sprayhead for restriction.  
Check tubing from boiler to sprayhead.  
Check 'Check Valve' for blockage.

Safety Brewing Light  
Not blinking Long Enough

Adjust safety brewing light timer dial  
(located on main control) clockwise.

Hot Water Spigot Not Hot

Allow 20 minutes with the brewer "ON"  
for water to heat.  
Check thermistor wire and connection  
at main control.

Hot Water Spigot Dripping

Check 'Seat Cup' in hot water spigot for  
foreign material or mineral deposits.

Hot Water Spigot Water  
Not Hot Enough

Adjust temperature dial  
(located on main control) clockwise.

Hot Water Spigot or Brew  
Water Boiling

Re-set thermistor in back of tank.  
Thermistor bead MUST make  
contact with plastic wall of tank (inside  
cone shaped orifice). Insert bead until it  
touches the end of the cone, approx. 2"  
and re-insert plug.).

# Brew Volume Adjustments

The PS-1000 Series measures water by volume with a series of probes. These probes control the water level in the tank and the amount of water desired for brewing.

FOR BREW VOLUME ADJUSTMENT, USE ONLY THE  
RED WIRE PROBE

The RED probe adjusts the brew volume as follows:

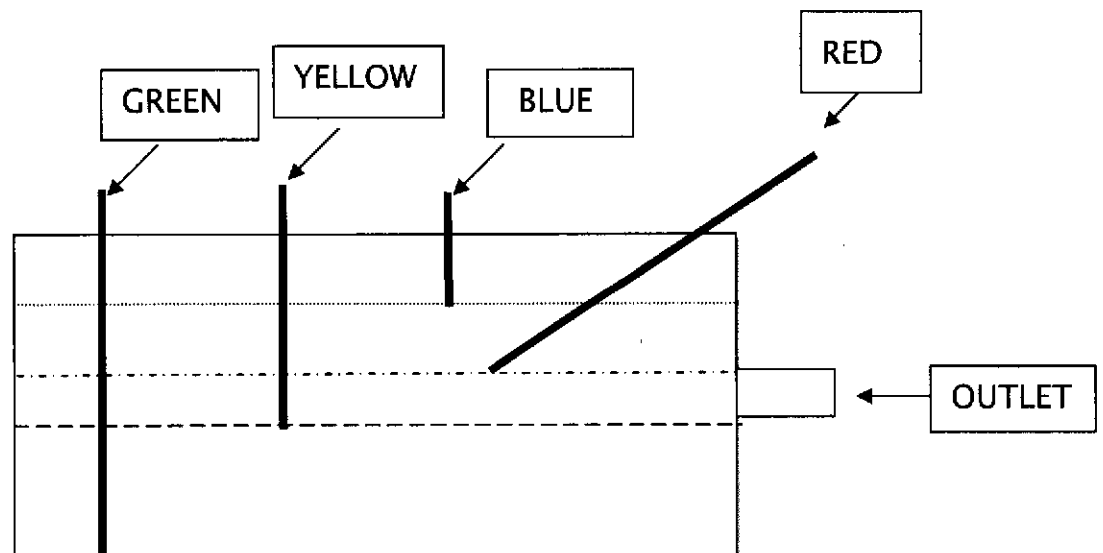
- For LESS volume pull the RED wire probe out.
- For MORE volume push the RED wire probe in.

DO NOT adjust the YELLOW, GREEN or BLUE wire probes.

The RED wire probe is the brew shut-off probe. This probe tells the control board when to shut-off the outlet solenoid valve / brew water.

The YELLOW wire probe is the “Heater Safety” and “Low Tank Fill Mode Sensor”. This probe tells the control board that the tank has sufficient water to safely energize the heater. Also, when the brewer is set in the “Low” Tank Fill mode, it is used as the stand-by fill level probe.

The GREEN wire probe is the “COMMON” probe, acting as a common connection to the RED, YELLOW and BLUE wire probes.



PS-1000 Parts List

ITEM NUMBER	DESCRIPTION
TANKPS1000SRS	PS1000 Series Tank
SPIGOTHOTWTR	Hot Water Spigot
PROBEKITPS1000	Complete Probe Kit PS1000
PS1000CNTRBD	PS-1000 SRS Control Board
VALVEDUMP120	120 Volt Dump Valve
LEDXLRGGRN	LED Lg. Green 8mm
LEDXLRGRD	LED Lg. Red 8mm
SWITCH-ON/OFF	Push Button On/Off
POWERCORD120	14ga.Power Cord 120V Blk
STRAINRELIEF	Heyco 1237
TUBINGTHKW	3/8X5/8Silic50A DURO
SPRAYHEAD	4 Piece Sprayhead Assembly
FOOT8-32SCREW	Grey Bumper Screw Foot MR-0255
DRAINPLUGSML	5/16 RED Drainplug
TUBINGDRAIN	.312ID X .437OD Silicone Tube
LABELPS1000SRS	Label PS1000 SRS Molded Brewer
PREHEATER-120V	PreHeater 120V SA
HILIMITSPRNGCLP	Hi Limit Spring Clip #ABSP4001
HIGHLIMITSWITCH	TripFree Man. Reset Thermostat
COUPLINGHUB	2X2 No Hub Coupling Corrigated
COUPLINGINSERT	No Hub Coupling Silicone Insert
VALVECHECK	Check Valve
VALVEKIP	Inlet Valve Kip2X1180-120-50/60
THERM2ASSY	2 Pin Thermistor Assembly SA
LEDXLRGHLDR	LED Holder Snap-in Panel 8mm
PF1/4X1/8NPTF	A4ME2MGSpdfit Elbow-Inlet

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