THERMAL SERVER SYSTEM

T.S.S.
Operating and Service Manual

MODELS		
145-3	180-3	350-3
145-4	180-4	350-4
145-8	180-8	350-8

VKI
TECHNOLOGIES INC.

Revision - March 1997

TABLE OF CONTENTS

INTRODUCTION 3

OPERATING DESCRIPTION 4-5
- Function Indicator Lights 4
- Brewing Function Pads 5
- Procedure for Making Coffee 5

INSTALLATION INSTRUCTIONS 6-9
- Plumber's Installation Instructions 6
- Water Temperature and Adjustments 7
- Adjusting Brew Level 8
- Adjusting Post Brew Buzzer 9
- Important Notes and Helpful Hints 9

FUNCTIONS CONTROL AND PROCEDURE 10
- Factory Settings Rear Control Board 10

SAFETY FEATURES 11
- Overflow Safety Protection 11

TEMPERATURE SETTINGS 12

CLEANING THE THERMAL SERVER 12

DELIMING THE WATER TANK 13
- Water Filtration Systems 13

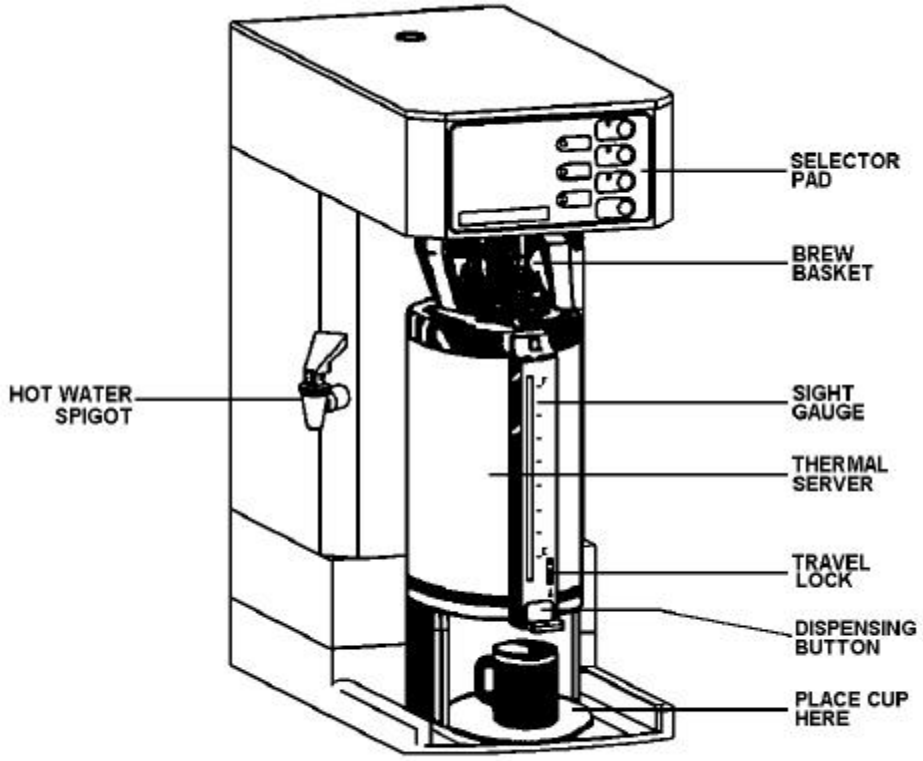
TROUBLESHOOTING GUIDE 14-19
- Power 14
- Heat 15
- Brewing 16
- Plumbing 17
- Warning / Auto 18
- Miscellaneous - Problem / Solution 19

WIRING DIAGRAM 20-21
- 120 Volt 20
- 240 Volt 21

SPECIFICATIONS 22

PARTS 23-27
- Decals and Accessories 23
- Complete System Assembly 24,25
- Water Tank Assembly 26
- Inlet Valve Assembly 27

The VKI “Thermal Server System” (T.S.S.) series of brewers incorporates the latest advancements in materials and electronics to provide optimum performance, quality and long service. Brewing begins the instant the cycle is initiated and remains consistent regardless of water pressure variations and hot water faucet operation during the brew cycle. The brewer's state of the art electronic control board controls heater tank water level, water temperature, the amount of water dispensed, monitors draining of the grounds and provides an audible indication when the brew cycle is complete.



T.S.S. FEATURES

☑ User-friendly front selection panel.

☑ Completely portable thermal server with a sight gauge and travel lock. Great feature for meetings, groups, etc.

☑ Dripless dispensing button.

☑ Overflow access panel at rear of unit.

☑ It provides consistently good tasting coffee that remains hot, flavorful and aromatic throughout the day. There is virtually no waste because of excellent extraction.

☑ Spigot that provides a constant supply of hot water for a variety of beverages, such as tea, soup or hot chocolate.

OPERATING DESCRIPTION

T.S.S. Front Selection Panel

FUNCTION INDICATOR LIGHTS

	Green LED	**ON:**	Brewer is ready to brew coffee.
		OFF:	Brewer is heating water in tank to proper brewing temperature.
	Amber LED	**ON:**	Brewer is brewing.
	Red LED	**Flashing:**	Brewer is in *AUTO BREW* mode and will automatically start the brew cycle as soon as water in the tank reaches proper brewing temperature; at the same time the green *READY* LED comes on. **NOTE: Erratically flashing red light indicates that brewer is in boiling condition and you must lower the temperature (see page 7).**
		ON:	Brewer is in *WARNING* mode and needs to be serviced. The solid red light indicates that the backup probe in the water tank has taken over because the primary probe is not working due to lime build up or disconnection.

BREWING FUNCTION PADS

Multi-brew selection mode lets you select brew volume *(REGULAR or HALF)* by simply pressing desired brew selector pad.

The green LED will light on the selector pad you have pressed. The amber *BREWING LED* will also light indicating the brew cycle has been initiated. The green LED on selected brew cycle pad will remain on during the brew cycle. At the end of the brew cycle an audible signal will sound and the green and amber LED's will turn off.

If the wrong selector pad has been pushed accidentally, the user may stop the brew cycle by pressing the *CANCEL* selector pad.

PROCEDURE FOR MAKING COFFEE

STEP 1 Remove the brew basket from the T.S.S. by pulling it out towards you. Place coffee filter into the brew basket, then add one package off coffee into the filter.

STEP 2 Insert the brew basket back into the T.S.S., then position the thermal server underneath. Check the server's sight gauge beforehand to make certain the server is empty, otherwise an overflow may occur. **Do not remove the flow-thru lid.**

STEP 3 Press the desired selection on the front selector pad. If an error was made and the wrong product was selected, simply press the *CANCEL* pad to stop the cycle.

STEP 4 When you hear the signal beep, it indicates that the cycle is complete and that the coffee is ready.

STEP 5 Remove the brew basket and discard the used grounds and coffee filter.

INSTALLATION INSTRUCTIONS

WARNING: ***Read and follow installation instructions carefully before plugging in machine to electrical outlet.***

1. Remove machine from shipping carton. It is strongly recommended to perform a visual inspection of the machine inside out checking for loose connections on either control board or for damage to outlet valve that might have been caused by mishandling during shipping. Please keep carton and packing in case the brewer needs to be re-shipped.

2. Plumb in brewer.

PLUMBING INSTALLATION INSTRUCTIONS

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

a) Flush the water lines thoroughly before installing brewer. Brewer should be connected to a **cold** water line for best operation. Check incoming water for adequate pressure. Water pressure should be at least 20 psi.

b) For less than a 25 ft. run, use 1/4" O.D. (outside diameter) copper tubing and connect to a 1/2" or larger water line. For more than a 25 ft. run, use 3/8" O.D. copper tubing from a 1/2" or larger water line, and provide an adapter fitting for the connection to the brewer.

c) If water pressure is more than 50 psi, we strongly recommend that you install a water pressure regulator and set the water pressure below 50 psi. This will prevent erratic water levels in the server.

d) Connect the incoming water line to the incoming main fitting on the back of the brewer.

e) Provide an individual water line to each machine when there are multiple units installed at the same location.

NOTE: ***A shut off valve should be installed on the incoming water line in a convenient location. This will allow the user to shut the water supply, if needed.***

3. Place an empty server under brew basket. Use the sight gauge to make certain it is empty.

4. Plug the brewer into proper voltage circuit and switch the power *ON.*

5. Water will automatically begin to fill the tank. After water tank has filled, remove the top cover of the T.S.S. by removing the one screw in front securing it in place.

6. Switch the power *OFF*.

7. Reconnect heater terminal wires with red tape.

8. Put top cover back and turn power switch to ON.

9. Measure water temperature inside tank and adjust it to the recommended brewing temperature for your area (according to elevation).

NOTE: ***Recommended water temperature in tank at sea level is 205° to 206° F. For every 500 ft. above sea level, you should set water temperature inside tank 1° less than 206° F.***

WATER TEMPERATURE INSIDE TANK

➲ MEASURING WATER TEMPERATURE

To measure temperature in the tank, please use the following procedure:

a) Remove black plastic plug at the rear top of the brewer.

b) Insert DIGITAL THERMOMETER DT 10K through the opening and inside the tank through the collapsible plug.

c) Take temperature reading about 30 seconds after green *READY* LED has come on and heater has turned off. To get the true water temperature in the, tank it is important to follow this step accurately.

➲ ADJUSTING WATER TEMPERATURE

The temperature dial on the control board (see page 10) is set at the 9 mark position and will heat the water in the tank to about 201 - 205° F.

To change temperature, please use the following procedure:

a) To **decrease** the temperature, turn the dial marked “TEMP” on the control board counterclockwise 2 markings. Draw about 1 liter of water through the spigot. This will cool down the water in the tank a few degrees. Allow water to heat to the new setting. Repeat above step until desired temperature is reached.

b) To **increase** the temperature, turn the dial marked “TEMP” on the control board clockwise slowly to increase the temperature until you hear the click sound and the green *READY* LED has turned off (this will increase temperature by about 3° F in the tank). If you desire higher temperature, please repeat the above step.

10. Press *REGULAR BREW* selector pad and monitor amount of water dispensed. The brew level will reach about 10 cups.

ADJUSTING BREW LEVEL

IMPORTANT: ***The water temperature must be at brew* READY *before brew level can be adjusted. Turning the* AUTO BREW *feature off by setting the jumper from pin 1&2 to pin 2&3 (manual operation) allows the service technician to set brew level without waiting for machine to reach brew temperature.***

When setting the brew valve, keep in mind that the yield should not exceed 14 - 5oz. cups to prevent overflowing of the server.

Factory setting will produce approximately 10 cups of water *(REGULAR BREW).* To change brew level, please use the following procedure:

a) To **increase** the brew level, rotate *BREW* dial on the control board counterclockwise and align arrow to desired mark (each mark will yield approximately 5 to 6 fl.oz. less).

b) To **decrease** the brew level, rotate *BREW* dial on rear control board clockwise and align arrow to desired mark (each mark will yield approximately 5 to 6 fl.oz. more).

NOTE: Monitor the amount of water dispensed three times to make sure that the adjusted level is constant.

NOTE: Due to the fact that decaf coffee does not hold as much water as regular coffee, the yield of brewed decaf coffee in the server will be slightly higher (approximately 3%). Make certain to take this into account when setting the brew level.

11. Empty the water from the thermal server. Place coffee filter (large-4 1/2" Dia. X 2 1/2" tall - CF12 made by ALTRA FILTERS is recommended), and add proper amount of coffee into the brew basket. Then slide the brew basket into holder.

12. Press *REGULAR BREW* selector pad to start brew cycle. At the end of the brew cycle, the post brew buzzer timer will activate.

NOTE: ***The next brew cycle can only be initiated when the buzzer has sounded, signalling the end of the current brew cycle.***

13. Adjust post brew buzzer.

ADJUSTING POST BREW BUZZER

The post brew buzzer function is factory set at 60 seconds. This means that it takes approximately 60 seconds for the buzzer to be activated after the brew function has been completed. Ideally, the buzzer should sound when the last drop of coffee has dripped out from the brew basket. Depending on the gram weight, grind size and type of coffee used (water will flow through decaf coffee at a slower rate), this pre-set time has to be decreased or increased to achieve the sounding of the buzzer when brew basket has stopped draining.

To decrease the time for the buzzer to sound, rotate the *BUZZER* dial on control board counterclockwise, and align the arrow to the desired mark (each mark will decrease time by about 3 seconds).

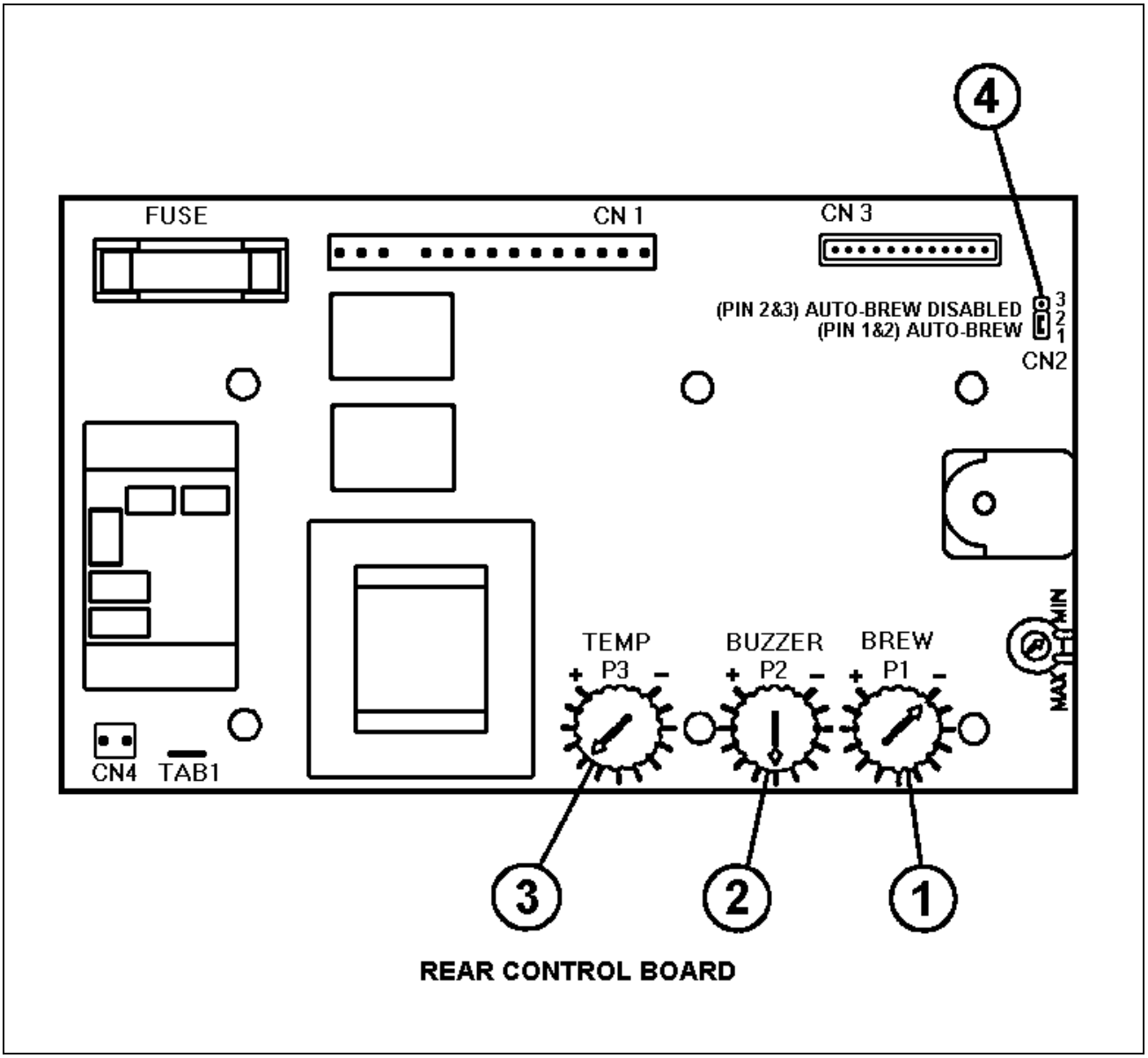
To increase the time for the buzzer to sound, rotate the *BUZZER* dial on control board clockwise, and align the arrow to the desired mark (each mark will increase the time by about 3 seconds).

14. To cancel the brew cycle, simply press *CANCEL* pad.

IMPORTANT NOTES AND HELPFUL HINTS

- If the machine indicates a red *WARNING* LED and green LED on the *HALF BREW* selector on the front panel, drain some water through hot water spigot. (This is due to the expansion of cold water during initial set-up.)
- Do not transport the coffee brewer with water inside the tank.
- The brewer can be emptied through the drain provided at the back. Simply release the clip until all the water drains out and then relock the clip.
- Should you ever remove the tank cover, please be cautious when you put it back - the temperature probe should rest in the centre of the heater coil and not at an angle. This could cause the temperature probe to read the wrong temperature, or the temperature sensor could short out and fail.
- Do not draw a cup of coffee from the thermal server while the system is still brewing coffee. This will weaken the remaining coffee in the server.
- If you need to switch the heater off, turn the power switch to the OFF position. Please note that once the system switches ON again, it may require up to 30 minutes to reach the proper brewing temperature.

FUNCTION CONTROLS AND PROCEDURES



REAR CONTROL BOARD

FACTORY SETTINGS FOR REAR CONTROL BOARD FUNCTIONS

① **BREW:** Set at (-) mark to yield 10 cups (48 fl. oz./1.42 liter) in 2 minutes, 25 seconds ± 10 seconds. Adjustment information is available on page 8.

② **BUZZER:** Set at 7 mark, which is approximately 60 seconds. Adjustment information is available on page 9.

③ **TEMPERATURE:** Set at 9 mark to get 201-205°F. Adjustment information is available on page 7.

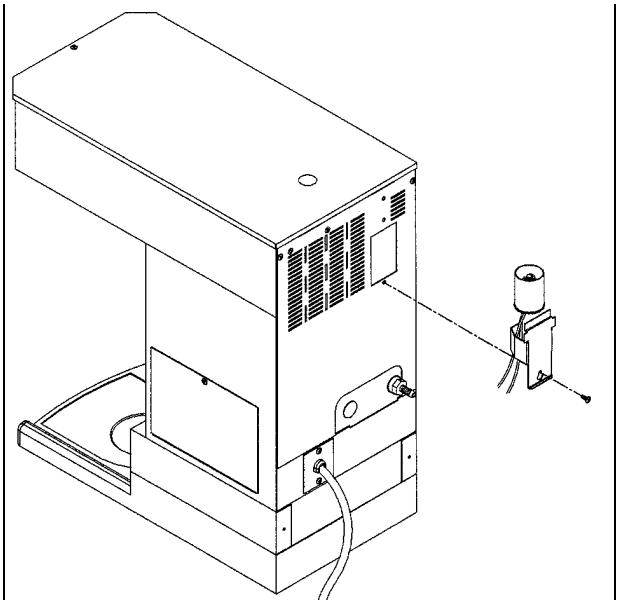
④ **AUTO BREW:** Jumper is set to pins 1 & 2 to enable the *AUTO BREW.*
To disable *AUTO BREW*, set jumper to pins 2 & 3.

All T.S.S. series brewers are equipped with several safety features to ensure that the unit does not operate should a problem arise. These safety features are described below.

- A secondary water level probe prevents that water tank from overfilling should lime and calcium build-up accumulate on the primary water level probe.
- The control board is designed so that the water heater switches off if a short circuit or open circuit is detected on the temperature probe.
- All T.S.S. models are capable of heating the water to a temperature close to the boiling point (210°F). In the event of a calibration change, low atmospheric pressure or a fault in the control board, the unit is equipped with an overflow cup for additional safety. Should this cup fill, power will be switched off to all the valves and the heater, preventing water leaking from the machine. This overflow prevention system is described in detail below.

OVERFLOW SAFETY PROTECTION

In the event of the water temperature exceeding the boiling point, or the water tank overflowing due to a control board failure, any excess water will safely drip into the overflow safety cup. This cup is located at the back of the water tank, as illustrated in the drawing (left). The magnetic float inside the overflow cup will deactivate the switch and shut off the power to the control board. This will in turn switch off the power to the inlet valve, the outlet valve and the water heater.



NOTE: Should the overflow cup be full, no lights will be illuminated on the front selection panel. The only light that will be on is the light in the main power switch.

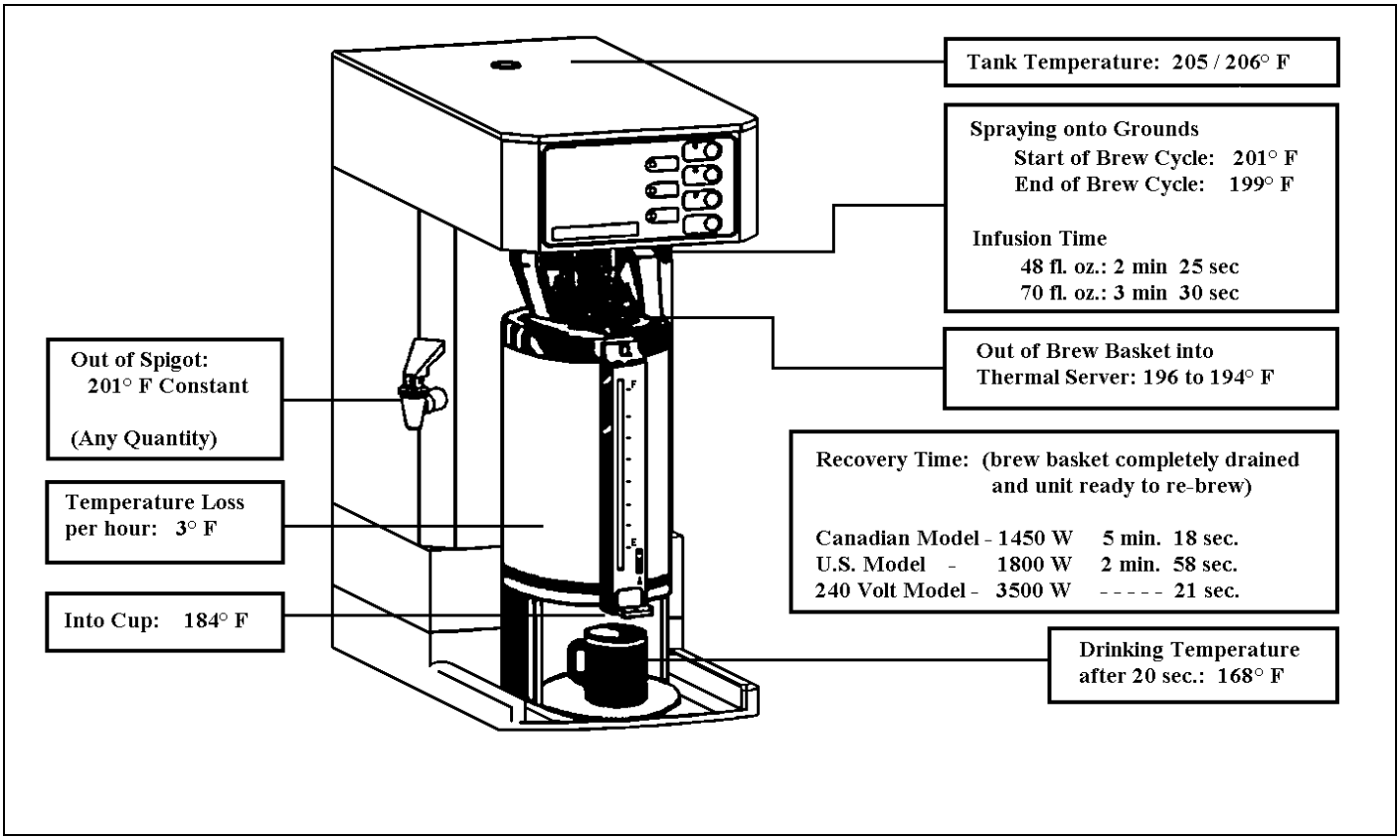
If an overflow does occur, follow these simple steps to correct it:

1. Loosen the screw that secures the overflow cup access panel at the rear of the machine.
2. Lift and remove the overflow cup access panel out of its retaining bracket, empty the water, and re-install it.
3. Rotate the temperature dial (marked TEMP) on the control board back three marks to lower the temperature.
4. Drain one or two liters of hot water through the hot water spigot. This will drop the temperature of the water currently inside the tank.
5. Allow tank to re-hear, and check the temperature with a thermometer. Adjust the dial until the desired temperature is obtained.

If the symptoms persist, check the control board and/or the water temperature probe.

TEMPERATURE SETTINGS

The Thermal Server System's advanced electronic design produces the correct, recommended brewing temperatures resulting in proper extraction and full bodied, flavorful coffee in every cup. The drawing below shows the temperatures at various brewing stages, and other useful information. Please note that this information applies for equipment with the **original factory settings**.



CLEANING THERMAL SERVER

STEP 1 Place a clean filter in the brew basket, and add 1 tablespoon of Sanitizer 510 (available from Cafe 98 Industries), then install the brew basket.

STEP 2 Place the thermal server under the brew basket and initiate the brew cycle by pressing the *REGULAR BREW* pad on the front selection panel.

STEP 3 The sanitizing solution will pour into the thermal server cleaning the server and the sight gauge.

STEP 4 After the brew cycle is complete, allow the sanitizing solution to sit for a minute. Draw some cups of cleaner through the dispenser of the server.

STEP 5 Rinse brew basket and thermal server with fresh water and draw some fresh water through the dispenser of the server.

DELIMING THE WATER TANK

To maintain the system at peak performance, it is necessary to periodically clean the lime and calcium build-up in the water tank. We recommend the following procedure:

1. Remove the brewer's top cover by removing front cover screw.
2. Remove the tank top cover by removing four screws.
3. Put 5 tablespoons of citric acid inside the water tank, or use “Scale Kleen” from EVERPURE***** according to their instructions.
4. Place tank cover back.
5. Let the brewer heat to brewing temperature and wait for five minutes. (This will remove all the lime from the tank and the lime will dissolve in the hot water.)
6. Run a brew cycle (this will help clean all the tubing) and also draw about two pots of hot water through the hot water spigot.
7. Unplug the electrical power cord and disconnect the water line.
8. Drain the tank through the drain hose.
9. Rinse the tank with clean, cold water twice and drain.
10. Reconnect brewer to cold water line. Replace the tank cover and secure it with four screws.
11. Replace the top cover and secure it with a screw.
12. Plug the brewer into electrical outlet.
13. Run one brew cycle without coffee to clean tubing and draw some water out of hot water spigot.
14. The system is now ready to brew.

NOTE: ***In a heavy lime area, double the amount of citric acid and the waiting time as per steps 3 and 5.***

WATER FILTRATION SYSTEM

Now you can enjoy the very best coffee without any chlorine taste or other impurities. Your T.S.S. brewer is equipped to readily adapt the EVERPURE* filter bracket for a QL3-3BH water filter system. Everpure's Quick Change Cartridge makes it easy for anyone to change the cartridge in 15 seconds without any tools and without breaking the water line or creating any mess.

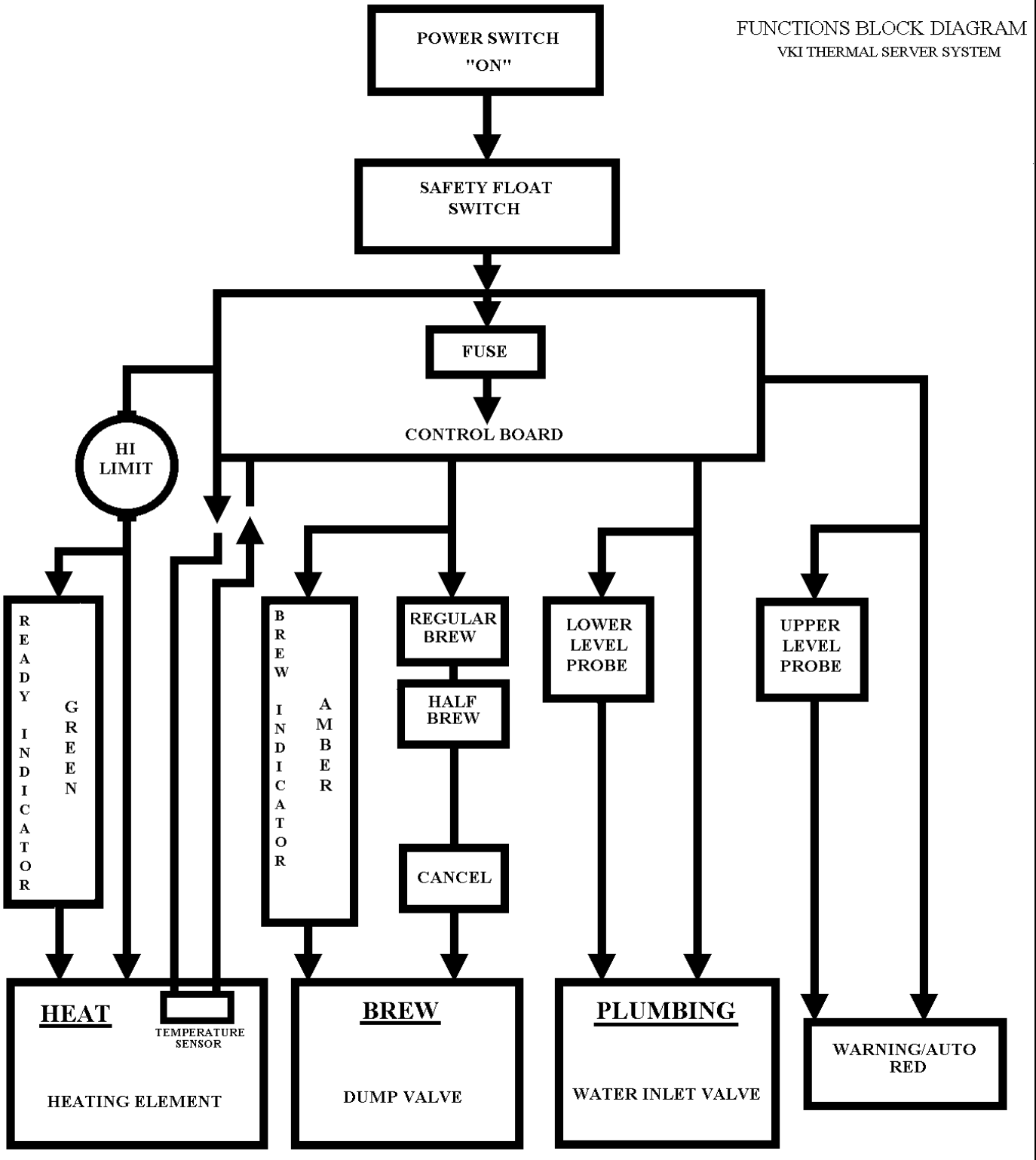
BENEFITS:

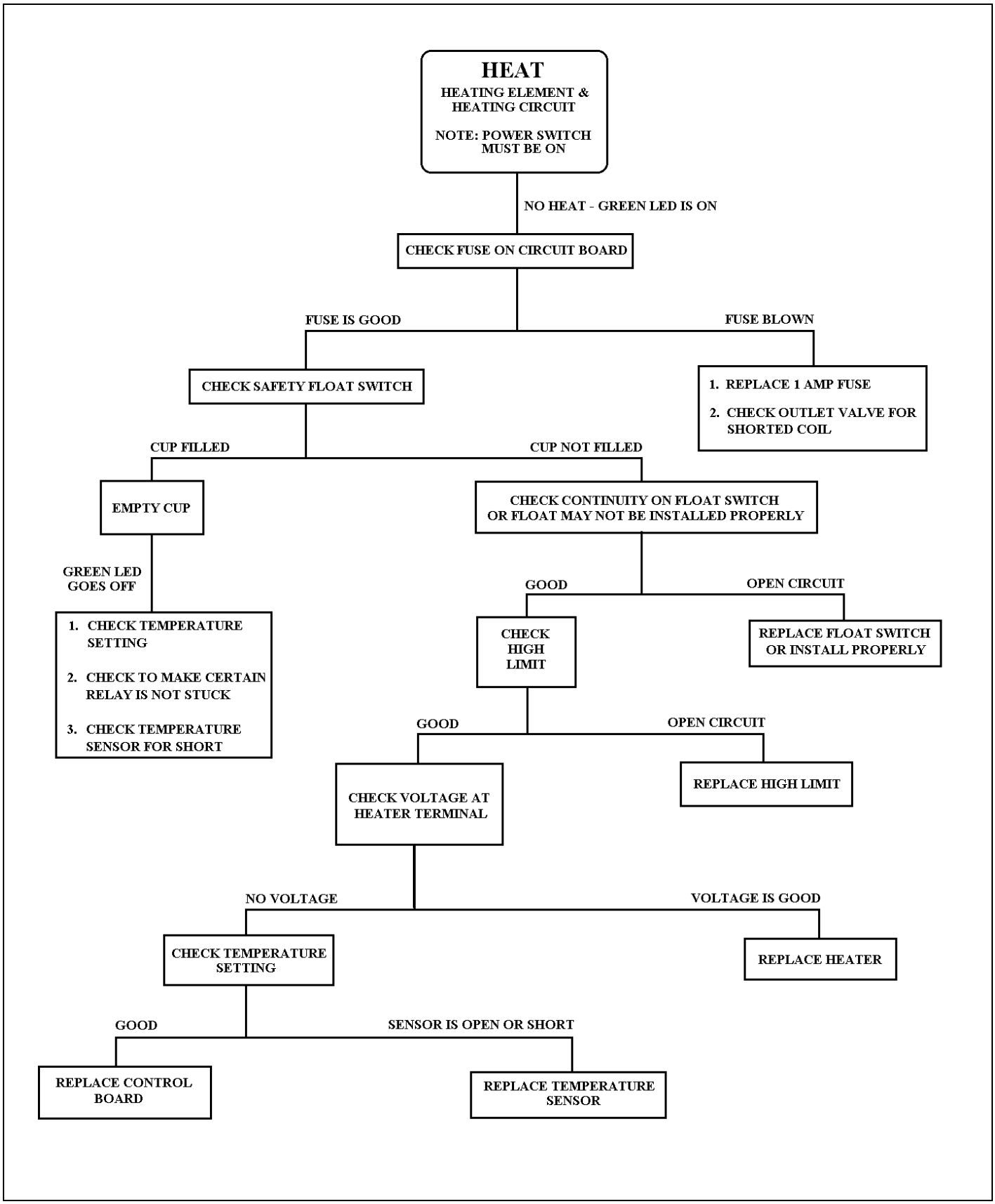
- *removes chlorine and other off-tastes and odours*
- *filters particles as small as 1/2 micron*
- *increases energy efficiency*
- *increases holding time*
- *reduces scale build-up and corrosion*
- *filter out giardia, cryptosporidium and other cysts and asbestos fibres*

CAPACITY: approximately 1500 gallons

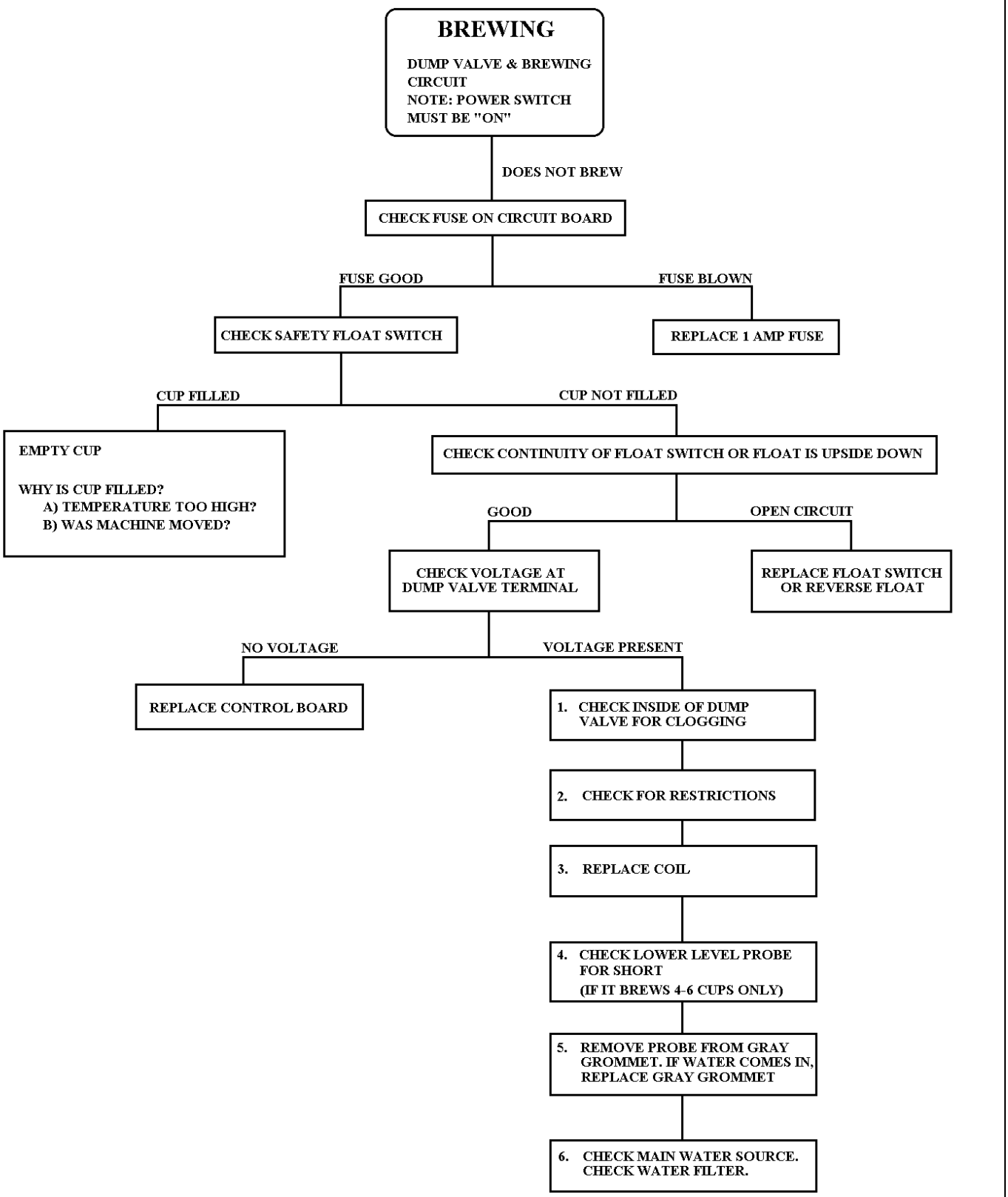
For more information call EVERPURE directly toll-free at 1-800-268-5967 (CANADA & U.S.A.)

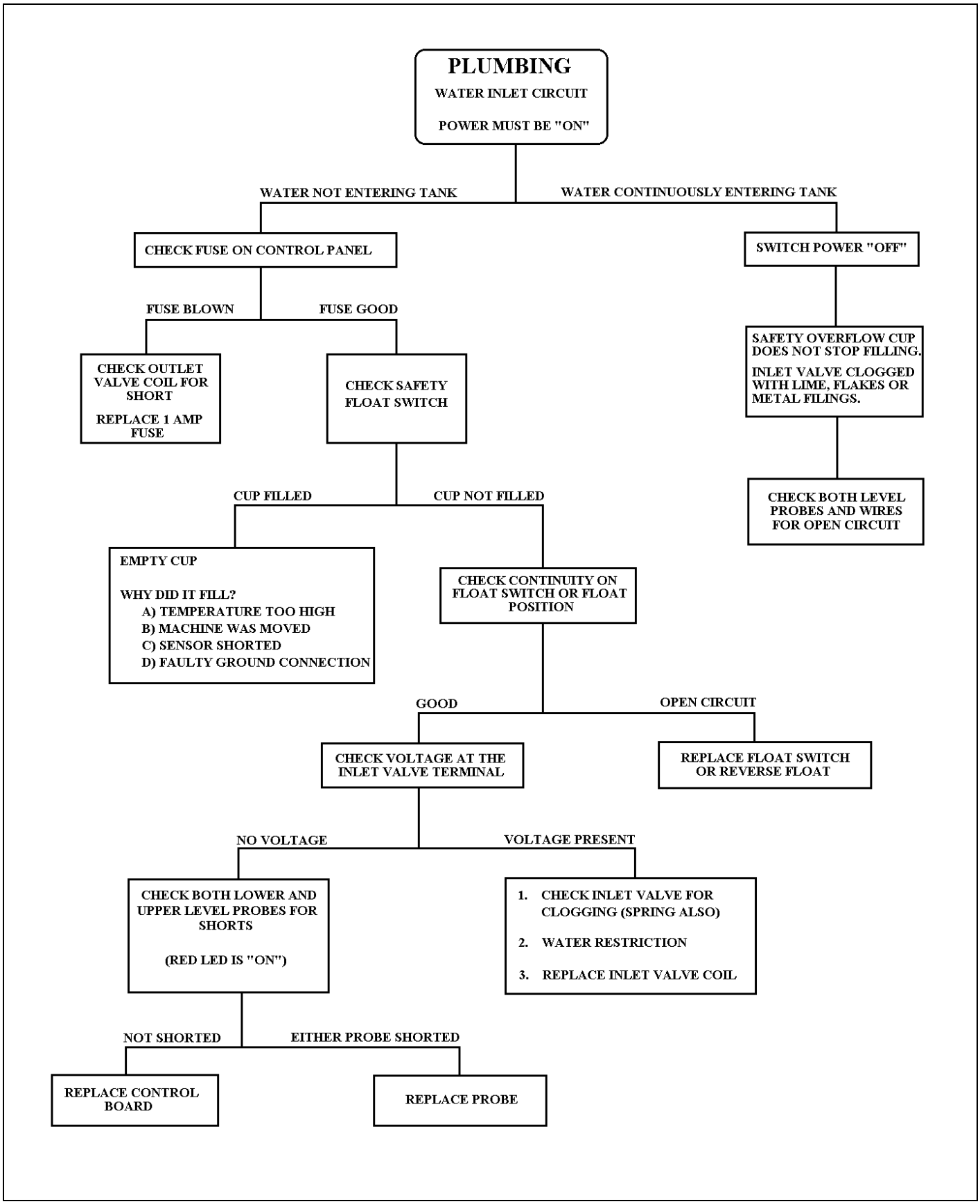
POWER 120 - AC


FUNCTIONS BLOCK DIAGRAM
VKI THERMAL SERVER SYSTEM
POWER SWITCH "ON"
SAFETY FLOAT SWITCH
FUSE
CONTROL BOARD
HI LIMIT
READY INDICATOR GREEN
BREW INDICATOR AMBER
REGULAR BREW
HALF BREW
CANCEL
LOWER LEVEL PROBE
UPPER LEVEL PROBE
HEAT
TEMPERATURE SENSOR
HEATING ELEMENT
BREW
DUMP VALVE
PLUMBING
WATER INLET VALVE
WARNING/AUTO RED

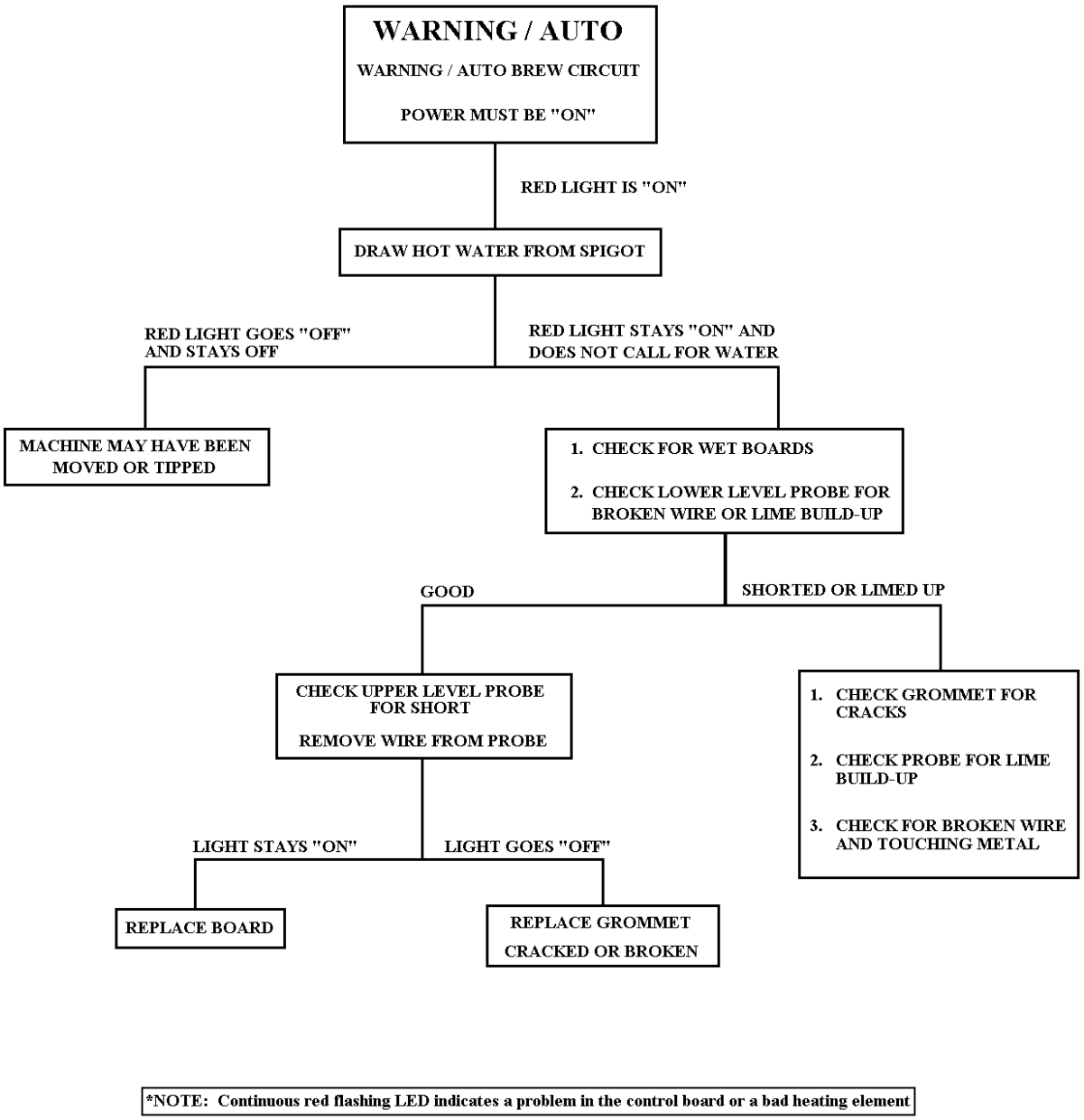

HEAT
HEATING ELEMENT & HEATING CIRCUIT
NOTE: POWER SWITCH MUST BE ON
NO HEAT - GREEN LED IS ON
CHECK FUSE ON CIRCUIT BOARD
FUSE IS GOOD
FUSE BLOWN
CHECK SAFETY FLOAT SWITCH
1. REPLACE 1 AMP FUSE
2. CHECK OUTLET VALVE FOR SHORTED COIL
CUP FILLED
CUP NOT FILLED
EMPTY CUP
CHECK CONTINUITY ON FLOAT SWITCH OR FLOAT MAY NOT BE INSTALLED PROPERLY
GREEN LED GOES OFF
GOOD
OPEN CIRCUIT
1. CHECK TEMPERATURE SETTING
2. CHECK TO MAKE CERTAIN RELAY IS NOT STUCK
3. CHECK TEMPERATURE SENSOR FOR SHORT
CHECK HIGH LIMIT
REPLACE FLOAT SWITCH OR INSTALL PROPERLY
GOOD
OPEN CIRCUIT
CHECK VOLTAGE AT HEATER TERMINAL
REPLACE HIGH LIMIT
NO VOLTAGE
VOLTAGE IS GOOD
CHECK TEMPERATURE SETTING
REPLACE HEATER
GOOD
SENSOR IS OPEN OR SHORT
REPLACE CONTROL BOARD
REPLACE TEMPERATURE SENSOR

TROUBLESHOOTING - BREWING




PLUMBING
WATER INLET CIRCUIT
POWER MUST BE "ON"
WATER NOT ENTERING TANK
WATER CONTINUOUSLY ENTERING TANK
CHECK FUSE ON CONTROL PANEL
SWITCH POWER "OFF"
FUSE BLOWN
FUSE GOOD
CHECK OUTLET VALVE COIL FOR SHORT
REPLACE 1 AMP FUSE
CHECK SAFETY FLOAT SWITCH
SAFETY OVERFLOW CUP DOES NOT STOP FILLING.
INLET VALVE CLOGGED WITH LIME, FLAKES OR METAL FILINGS.
CHECK BOTH LEVEL PROBES AND WIRES FOR OPEN CIRCUIT
CUP FILLED
CUP NOT FILLED
EMPTY CUP
WHY DID IT FILL?
A) TEMPERATURE TOO HIGH
B) MACHINE WAS MOVED
C) SENSOR SHORTED
D) FAULTY GROUND CONNECTION
CHECK CONTINUITY ON FLOAT SWITCH OR FLOAT POSITION
GOOD
OPEN CIRCUIT
CHECK VOLTAGE AT THE INLET VALVE TERMINAL
REPLACE FLOAT SWITCH OR REVERSE FLOAT
NO VOLTAGE
VOLTAGE PRESENT
CHECK BOTH LOWER AND UPPER LEVEL PROBES FOR SHORTS
(RED LED IS "ON")
1. CHECK INLET VALVE FOR CLOGGING (SPRING ALSO)
2. WATER RESTRICTION
3. REPLACE INLET VALVE COIL
NOT SHORTED
EITHER PROBE SHORTED
REPLACE CONTROL BOARD
REPLACE PROBE

TROUBLESHOOTING - WARNING/AUTO BREW

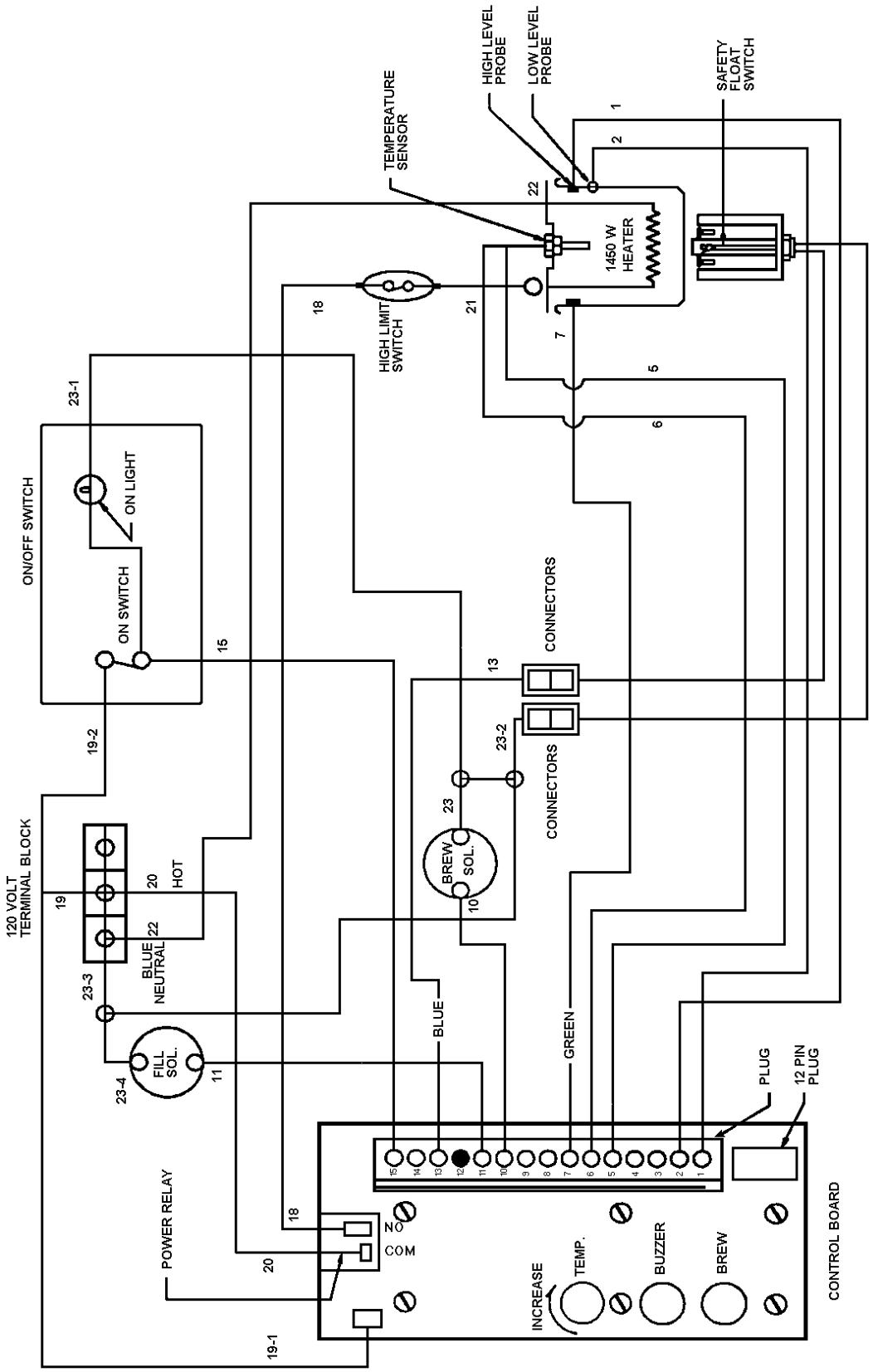


*NOTE: Continuous red flashing LED indicates a problem in the control board or a bad heating element

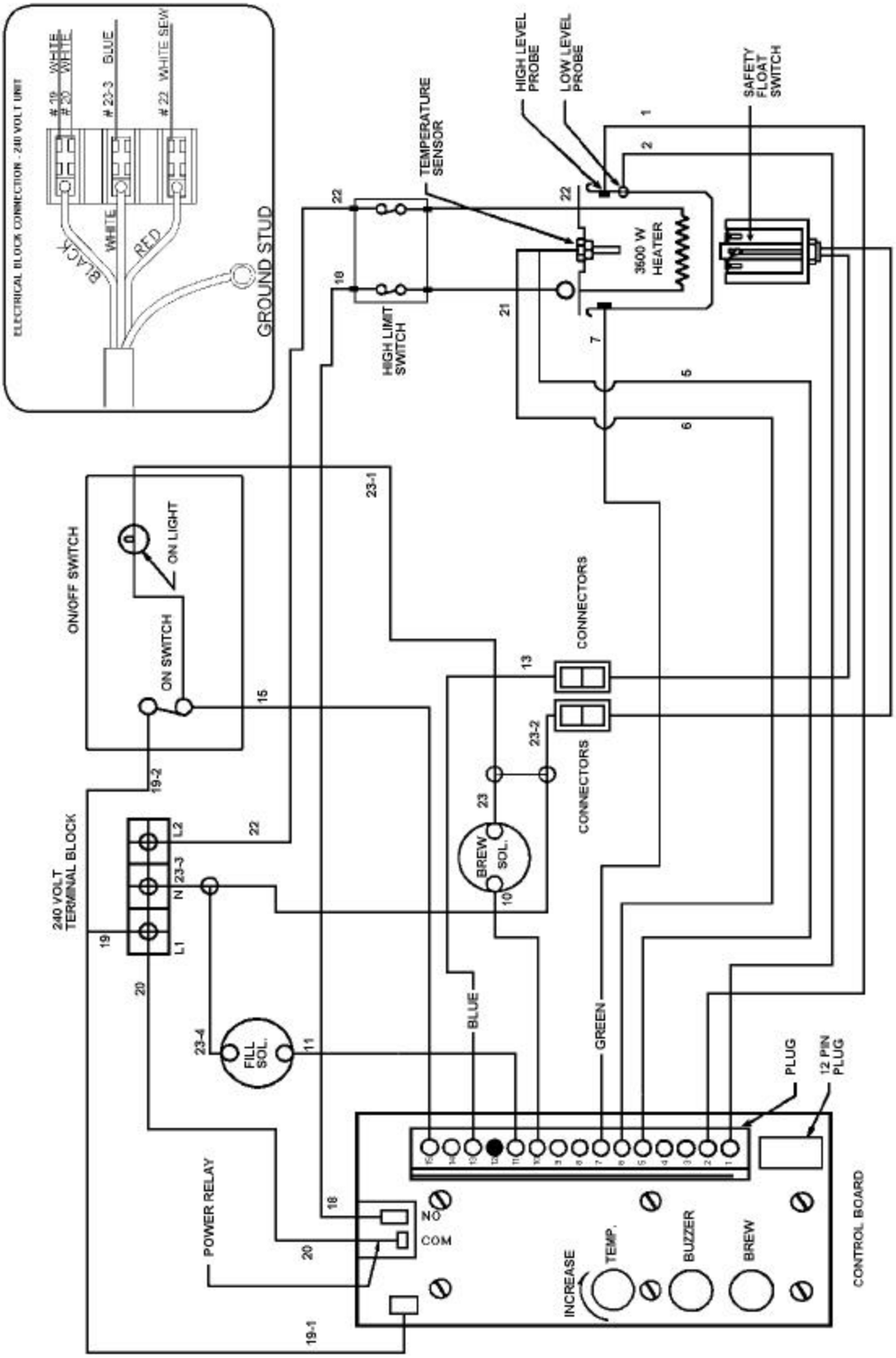
TROUBLESHOOTING - MISCELLANEOUS

PROBLEM	SOLUTION
Water fills overflow safety cup and keeps shutting the machine off.	• Tank is boiling due to too high of a temperature setting. Decrease temperature setting by turning TEMP dial on control board counterclockwise. • Machine was moved. • Ground wires loose or not connected • Wires not properly connected to the water level probes. Empty overflow cup and make sure all ground connections, and water level probe connections are tight.
Water level reaches secondary water level probes. The red WARNING AUTO BREW LED and the green HALF BREW LED will come on.	• Primary water level probe is coated with lime and needs to be cleaned. • Water level probes are not pointing straight down and need to be adjusted. • The machine was moved. Draw a few cups of hot water from the spigot to lower the level. • Cold water expanded after heating. Draw a few cups of hot water from the spigot to lower the level.
There are no LED's lit on the front selection panel, but the main power light (in the switch) is ON.	Tank has overflowed into overflow safety cup. Empty cup and replace.
Machine is cycling continuously.	Harness is not properly connected to the rear board or front board. Check the connections.
Green LED is on and machine works, but tank is not heating.	Thermistor may be open. Replace thermistor on tank assembly.
Machine letting water in continuously until tank overfills and overflows into the safety cup.	Empty overflow safety cup and replace thermistor.

WIRING DIAGRAM - 120 VOLT



WIRING DIAGRAM - 240 VOLT



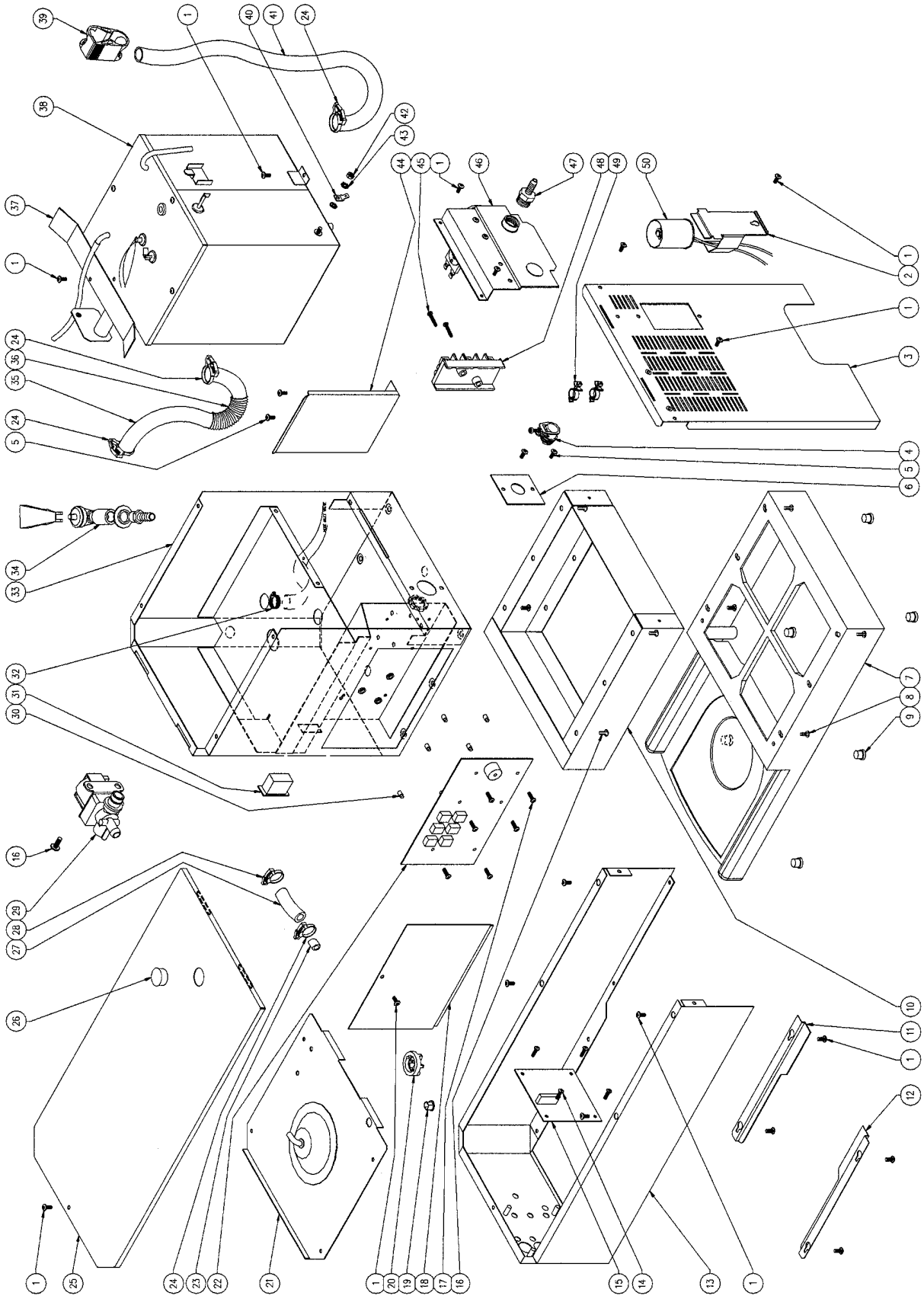
SPECIFICATIONS

	DIMENSIONS				ELECTRICAL			
MODEL	HEIGHT	WIDTH	LENGTH	WEIGHT	VOLTS	AMPS	WATTS	U.S./CDN
145-3	21”	9.5”	18”	31 lbs.	120	15	1450	Canadian
145-4	22”	9.5”	18”	34 lbs.	120	15	1450	Canadian
145-8	26¼”	9.5”	18”	34 lbs.	120	15	1450	Canadian
180-3	21”	9.5”	18”	31 lbs.	120	20	1800	U.S.
180-4	22”	9.5”	18”	34 lbs.	120	20	1800	U.S.
180-8	26¼”	9.5”	18”	34 lbs.	120	20	1800	U.S.
350-3	21”	9.5”	18”	31 lbs.	240	20	3500	U.S. / CDN
350-4	22”	9.5”	18”	34 lbs.	240	20	3500	U.S. / CDN
350-8	26¼”	9.5”	18”	34 lbs.	240	20	3500	U.S. / CDN

ALL OF THE THERMAL SERVER SYSTEMS MANUFACTURED BY VKI TECHNOLOGIES ARE C.S.A. APPROVED AND U.L. LISTED. IF YOU REQUIRE MORE INFORMATION ON THIS SUBJECT, PLEASE CONTACT VKI CUSTOMER SERVICE.

DESCRIPTION	PART NUMBER
Fascia, Selection Panel --- Filterfresh	M026117
--- Red Carpet	M026120
--- Selena, English	M026118
--- Selena, French	M026119
Decals, Thermal Server --- Filterfresh Logo	M016372
--- Red Carpet Logo	M016371
--- Selena Logo	M016374
--- Selena, Decal, “Placez Votre Tasse Ici”	M016373
Thermal Server - high profile with cup stand	M049004
Pour Through Lid, Black	M034131
Pour Through Lid, Green	M034134
Pour Through Lid, Orange	M034135
Brew Basket	M054023
Riser, 3”	L411159C2
Riser, 4”	L411160C2
Riser, 8 ¼”	L411145C2

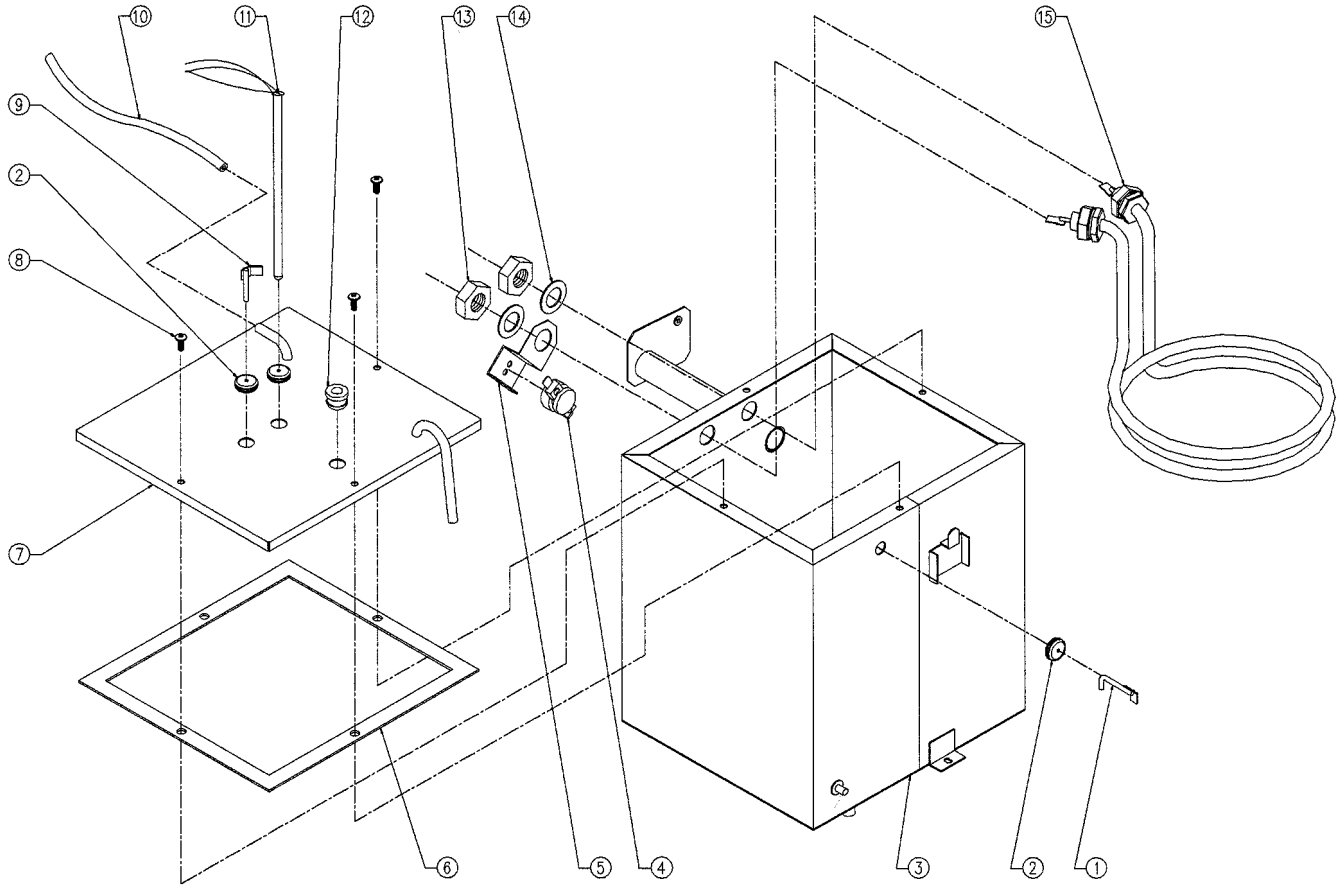
PARTS IDENTIFICATION
COMPLETE SYSTEM ASSEMBLY



PARTS IDENTIFICATION
COMPLETE SYSTEM ASSEMBLY

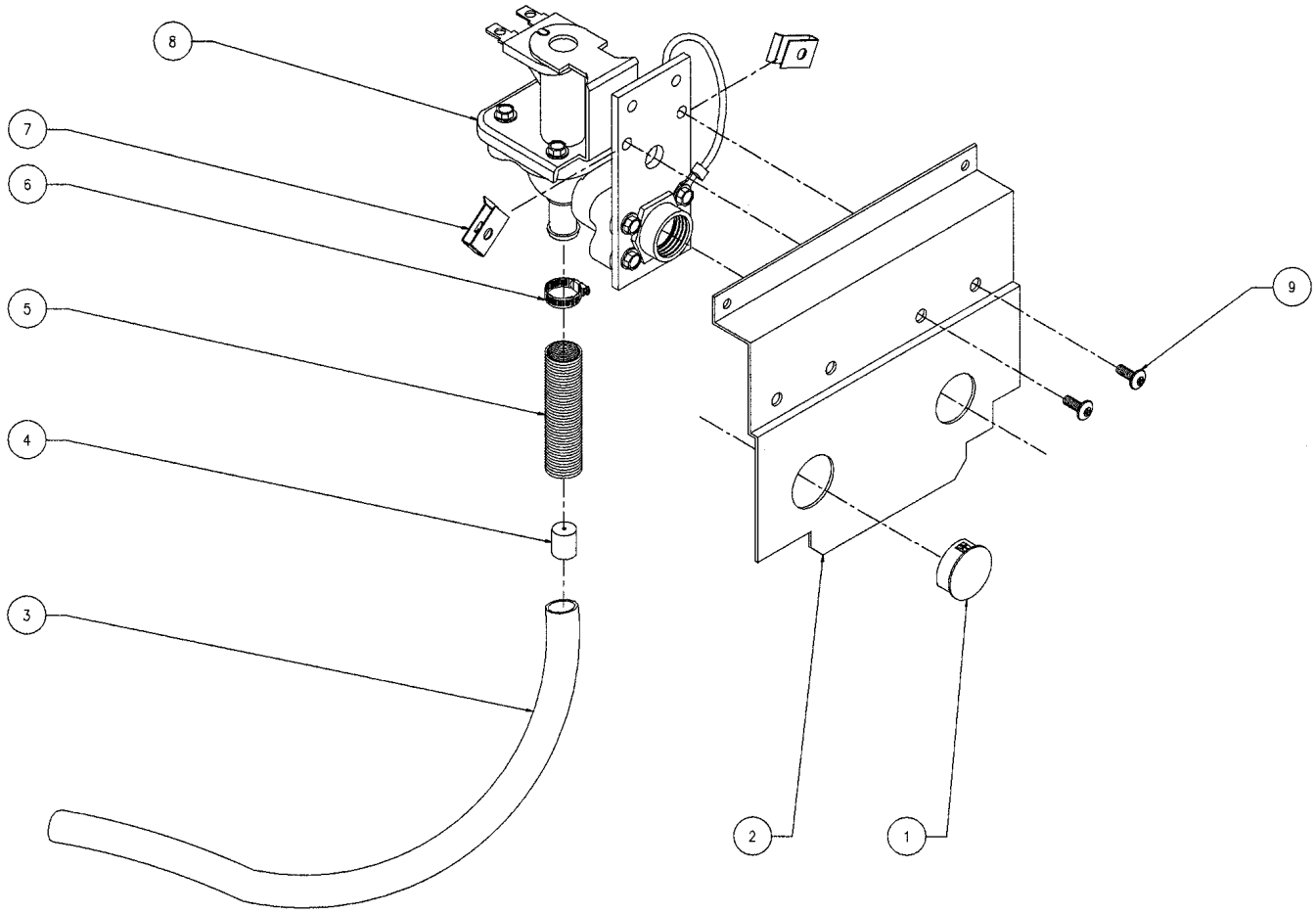
ITEM #	DESCRIPTION	PART NUMBER
1.	Screw, 6-32 x 5/16, Truss	T620541
2.	Bracket, Overflow Cup	K021625C2
3.	Back Panel, Weld Assembly	L411170C2
4.	Strain Relief - for models 145-x and 180-x	M019698
	- for model 350-x	M019695
5.	Screw, 8-32 x 3/8 RD	T820611
6.	Plate, Service Cord - for models 145-x and 180-x	K011600C2
	- for model 350-x	K011999C2
7.	Base, Plastic	M054022
8.	Screw, 10-32 x 3/8, Pan	T102069
9.	Feet, Base	M014003
10.	Riser - 3”	L411159
	- 4”	L411160
	- 8.25”	L411145
11.	Guide, Track, Left	K021318
12.	Guide, Track, Right	K021317
13.	Top Housing	K051042C2
14.	Screw, 6-32 x 1/4 Pan	T620491
15.	Front Board Assembly	G210198
16.	Screw, 10-32 x 1/4 RD	T102041
17.	Screw, 6-32 x 5/8 Pan	T621091
18.	Cover, Control Board	K021323C2
19.	Plug, Double ‘D’	M019697
20.	Spray Head	M014244
21.	Weld Assembly, Brew Plate	L311204
22.	Control Board Assembly	G310027
23.	Hose, Elbow, SH	K015148
24.	Clamp, Plastic, #8	T014195
25.	Lid, Cabinet	K041079C2
26.	Snap Plug, Lid	M019696
27.	Hose, Spray Head	K015149
28.	Clamp, Plastic, #10	T014098
29.	Valve Assembly, Outlet	E210240
30.	Spacer	M014004
31.	Switch, Main	M019686
32.	Hose Clamp, Metal, 3/4	T019051
33.	Housing, Middle	L411146C2
34.	Spigot, Hot Water	M039013
35.	Hose, Hot Water, Silicone	K015128
36.	Spring, Tube Protector	M017039
37.	Retainer, Water Tank, Front	K021615
38.	Water Tank Assembly - for model 145-x	C410205
	- for model 180-x	C410206
	- for model 350-x	C410207
39.	Clamp, Drain	M029081
40.	Terminal, Stud Mountable, .250	M019559
41.	Hose, Drain	K015132
42.	Nut, 8-32, Hex regular	T008511
43.	Lockwasher, #8, Ext. Tooth	T008421
44.	Splash Shield	K021626C2
45.	Screw, 8-32 x 3/4 Pan	T821291
46.	Valve Assembly, Inlet	E310296
47.	Fitting, Reducer, 3/8 x 1/4	M019711
48.	Terminal Block	M019685
49.	Clip, Wire	M019684
50.	Overflow Assembly	G210242

PARTS IDENTIFICATION
WATER TANK ASSEMBLY



ITEM #	DESCRIPTION	PART NUMBER
1.	Water Level Probe Weld Assembly	L111182
2.	Rubber Grommet	M014006
3.	Weld Assembly, Water Tank	L411147
4.	Thermal Cutoff Switch - for 145-x and 180-x	M019690
	- for 350-x	M019699
5.	Clip, Thermal Cutoff - for 145-x and 180-x	K011602
	- for 350-x	K011976
6.	Gasket, Water Tank	M024144
7.	Lid Assembly, Water Tank	L311203
8.	Screw, 6-32 x 5/16, Truss	T620541
9.	Water Level Alarm Probe Weld Assembly	L111184
10.	Hose, Vent	K015134
11.	Electronic Temperature Probe Assembly	G210197
12.	Grommet, Thermometer	M014005
13.	Nut, 1/2-20, Brass, Hex-U	M019372
14.	Flat Washer, .531 x .875 x .050	T019108
15.	Element, 1450 Watt - for model 145-x	M038016
	- for model 180-x	M038017
	- for model 350-x	M038018

PARTS IDENTIFICATION
INLET VALVE ASSEMBLY



ITEM #	DESCRIPTION	PART NUMBER
1.	Snap Plug, .875	M019693
2.	Inlet Valve Bracket	K021322C2
3.	Inlet Hose, Braided	K015127
4.	Restrictor, Inlet Valve	M013046
5.	Spring, Tube Protector	M017039
6.	Hose Clamp, Metal, 3/4”	T019051
7.	Nut, Tinnerman, 8-32	P019553
8.	Inlet Valve	M029052
9.	Screw, 8-32 x 1/2, Truss	T820841