

OPERATIONS & SERVICE MANUAL



TE-200 SERIES

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Series TE-200 Operating Description

Congratulation on purchasing AquaBrew's series TE-200. This state-of-the-art thermal brewing system is designed for medium to high volume commercial use.

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.

The series TE-200 is a solid-state electronic based coffee brewing system. The system utilizes the conductivity of water to connect a series of four probes; to open and close the inlet water solenoid valves and to start or stop the boiler for brewing coffee.

BREW SYSTEM: There are four probes in the brew tank. The water in the brew tank conducts electricity between these probes, which causes the electronic control board to either fill the system with water (the "ON/OFF" light will flash when the brew tank is filling), allow the brew switches to activate or turn the boiler off when brewing is finished.

The **GREEN** wire probe is the "**COMMON**" probe, acting as a common connection to the red, yellow, and blue wire probes. The **BLUE** wire probe is the "**FILL**" probe. Water enters the brewer through the inlet solenoid valve until it touches the tip of blue wire probe. At this point, the blue and green wire probe have been connected by the water, so the control board will close the inlet solenoid valve and the system well then be primed and ready to brew.

TO BREW: press either the "**FULL**" or "**HALF**" pot brew button. This will energize the boiler to boil out the water through the sprayhead, over the coffee grounds to brew the coffee. It will also begin flashing the red safety brewing light. The boiler will continue to boil out the water, thus lowering the water level in the brew tank, until the water level drops below the tip of the yellow wire probe. If you pressed the "**FULL**" pot brew button, the will continue to brew; if you pressed the "**HALF**" pot brew button, when the water level drops below the tip of the yellow wire probe, the red safety brewing light will flash for an adjustable period of time (this adjustment is a dial located on the left side of the main control board). The control board will cut the power off to the boiler to stop the brewing. If the "**FULL**" pot button was pressed the boiler will stay energized to boil out the water until the water level drops below the red wire probe, then the control board will cut the power off going to the boiler to stop the

brewing. The control board will then open the inlet solenoid valve to refill the brew tank with water (the "ON/OFF" light will indicate this by flashing). The brew tank has now premeasured the brew water by volume and is ready to brew the next cycle. As always, the brewer is ready to brew, with absolutely NO recovery time required.

LDI FEATURE: The "LEAK DETECTION INDICATOR" is designed to greatly reduce or eliminate water damage, by sensing an accumulation of water inside the base of the brewer in case of an internal leak, to reduce the chance of severe water damage. There are two probes located on the subassembly extending down internally towards the base of the unit. These two probes do not touch the base of the unit, but are approximately 1 inch from the base of the unit. If water pools in the base of the unit to a point where the water connects the two LDI probes, the LDI light will flash and lock out the inlet solenoid valves to prevent additional water from continuing to enter the system.

WATER QUALITY MONITOR: The "WATER QUALITY MONITOR" feature is designed to let you know when it is time to change out the water filter. The water quality monitor is based only on time. The system will light a green light for five months. After the fifth month, it will light the green and the yellow light for one more month. After six months, both the green and yellow lights will turn off and the red light will turn on and start to flash, indicating that the six month time frame has elapsed and the water filter needs replacement. The system has a 9-volt battery back up feature that is designed to continue tracking the time that has elapsed if the unit is unplugged or the power is interrupted or turned off at the outlet. The battery back up will not light the lights; it will only continue tracking the time. If the battery is not connected or lower than 1/3 of charge, you will not be able to reset the water quality monitor. In normal applications, when the brewer is plugged in, the system does not utilize the battery and the electronic control sends a positive trickle charge, to the battery, extending its shelf life. To reset the water quality monitor feature, remove the lid of the brewer and press the water quality reset button located near the 9-volt battery leads (red and black wires).

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. Remove top cover of brewer by removing one screw located towards the back of the top cover.
2. Connect the 9-volt battery to the red and black wire battery leads. Place battery into battery well, which is molded into the brew tank.
3. Press the "Water Quality Reset" button.
4. Connect brewer to water source by referring to the plumber's installation instructions.
5. 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 start to blink.
6. The water will begin to flow into the brew tank.
7. When the "ON/OFF" light stops flashing and remains on, the
8. To adjust brew volume, refer to Brew Volume Adjustment section.

Plumber's Installation Instructions

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

1. Flush water lines 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.
4. Connect the incoming water line to the incoming main fitting on the back of the brewer.

Brew Volume Adjustments

The RED wire probe adjusts the "FULL" pot brew setting.

- For MORE volume push the RED wire probe down.
- For LESS volume lift the RED wire probe up.

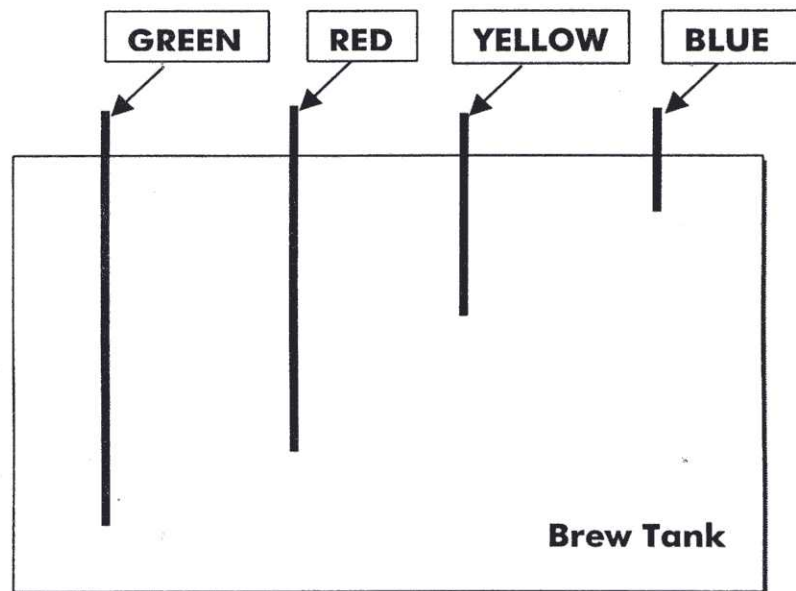
The YELLOW wire probe adjusts the "HALF" pot brew setting.

- For MORE volume push the YELLOW wire probe down.
- For LESS volume lift the YELLOW wire probe up.

DO NOT adjust the BLUE (Brew Fill)

DO NOT adjust GREEN (Common) Probe.

(The blue & green probes should be approximately 1/8" up from the surface of the tanks).



Service Tips

Problem

Fix

Cannot Turn Brewer On.

**Check for voltage at outlet.
Check connection of membrane switch
ribbon cable at main control.
Check connection of power cord to relay
board.**

**ON/OFF Light Will Not
Stop Flashing.**

**Check incoming water supply.
Check connection of yellow and white
wires to inlet solenoid valve and
relay board.
Use voltmeter to verify 120 volts across
the yellow and white wires at brew
tank inlet solenoid valve.**

Service Light is On

**Check all three high limit cut off reset
buttons located on the side of the
boiler and both preheaters.**

Brewer Will Not Brew

**Check connection at red and yellow
probes, both at the probes and at
the main control board.
Check connection of membrane switch
ribbon cable at main control.**

Brewer Leaking

**Check inlet solenoid water valves for
foreign material on valve seat.
Check connection at blue and violet
probes, both at the probes and at
the main control board.
Check all internal water connections.
Clean all probes in water tanks.
Check boiler for mineral build-up.
Check Sprayhead for restriction.
Check tubing from boiler to sprayhead.
Check check valve.**

**Excessive Steaming
While Brewing**

**Safety Brewing Light
Not blinking Long Enough**

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

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 "FULL" pot 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.

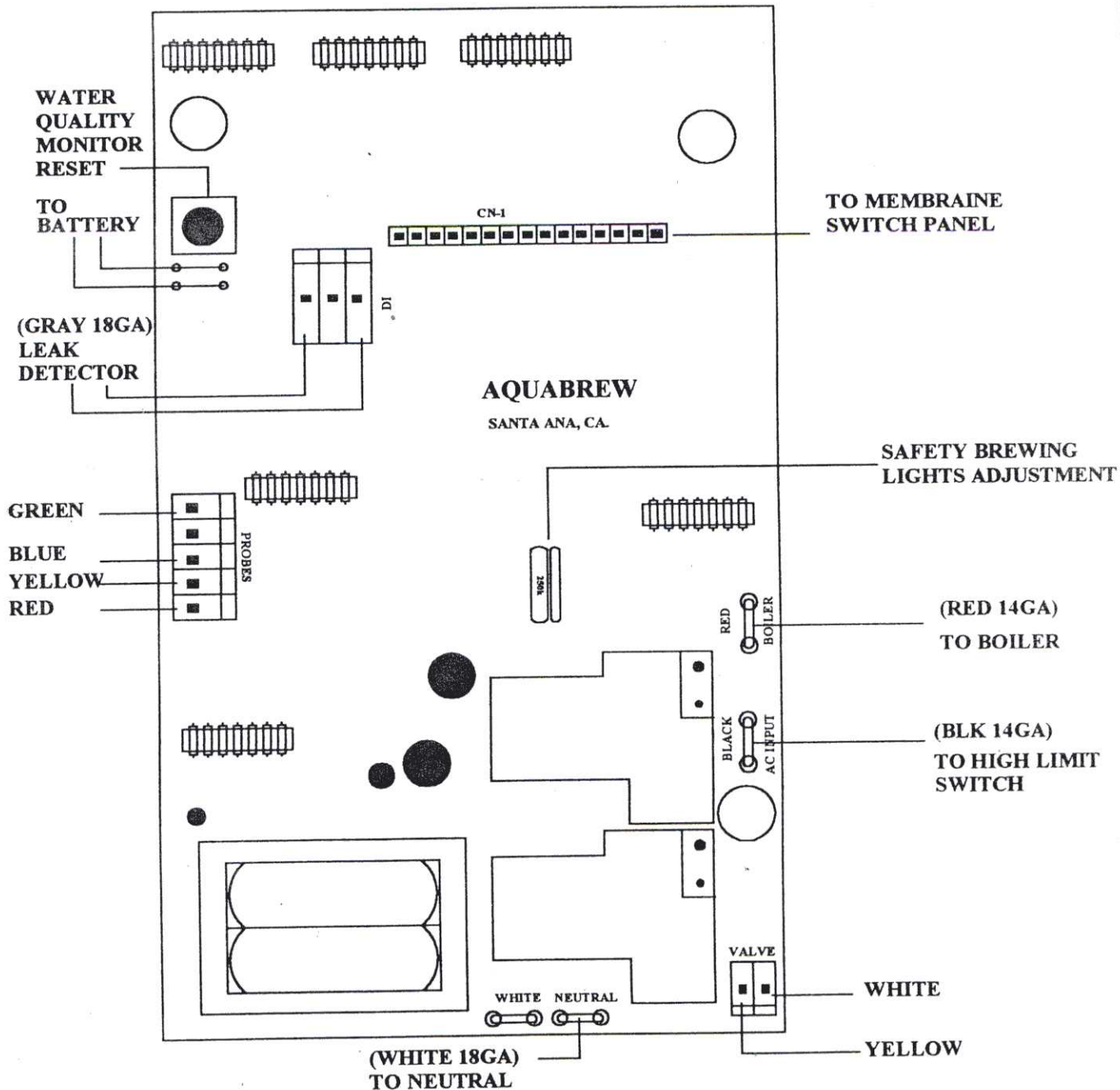
The benefits of do the aforementioned cleaning procedures daily are:

- 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.

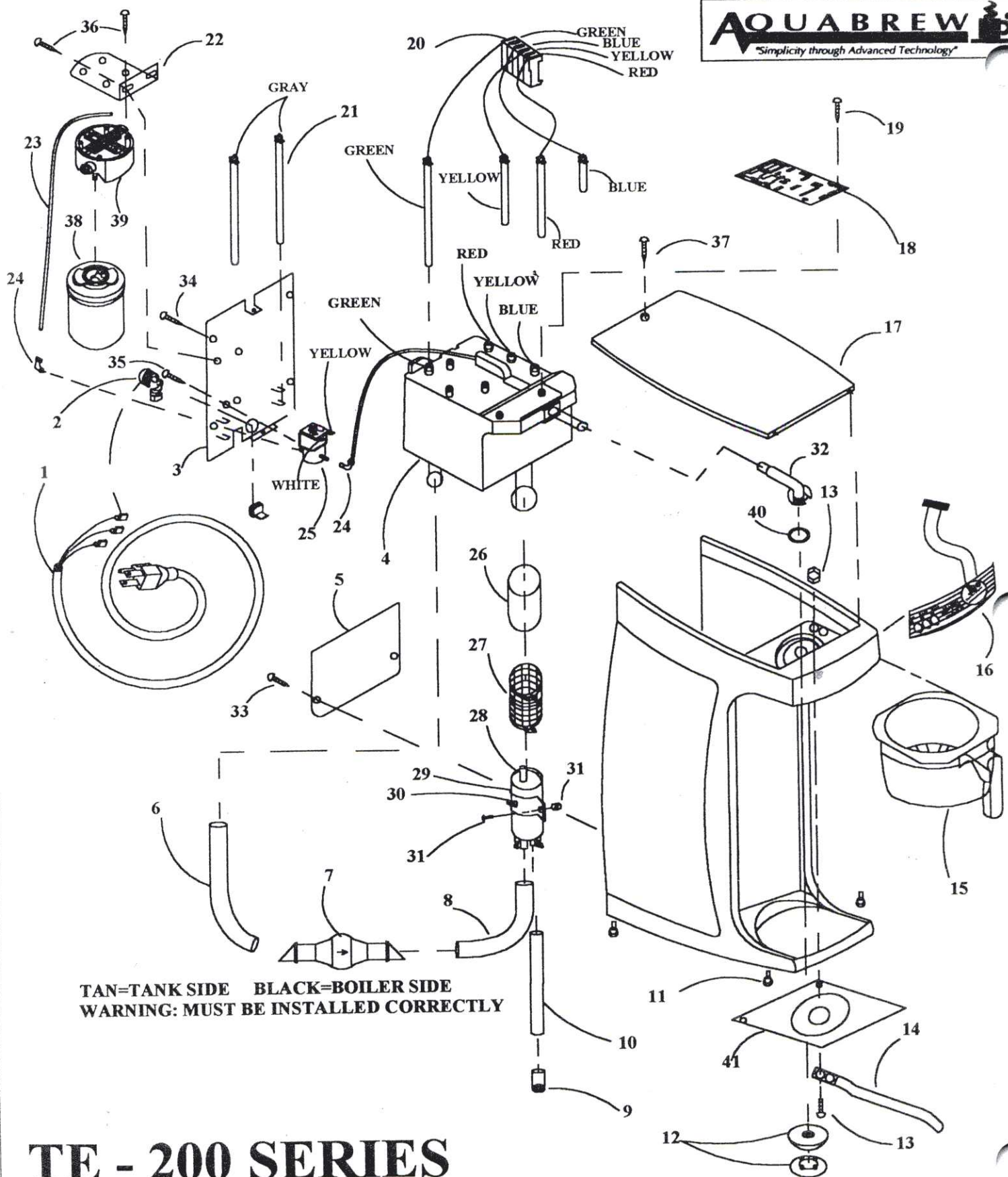
For Boiler

1. Remove brewer's subassembly by the following steps:
 - a. Remove top cover of brewer.
 - b. Disconnect sprayhead.
 - c. Disconnect ribbon cable 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.
2. Remove hose clamps that secure the boiler to the brew tanks (use a 5/16" nut driver).
3. Use citric acid or another food grade acid to remove any mineral deposits in the boiler and preheaters.
4. Flush boiler, tubing, tanks and sprayheads clean with water.
5. Reassembly brewer.

TE-200 SERIES WIRE DIAGRAM



NOT TO SCALE



TE - 200 SERIES

ILLUSTRATED
PARTS BREAK DOWN

NOT TO SCALE

Series TE-200 Parts List

<u>Illustration #</u>	<u>Part #</u>	<u>Description</u>
1	Power Cord 120	Power Cord 120 Volts
2	Strain Relief	Strain Relief
3	TE218/20UBC	TE218/220Upper Back Panel
4	Tank-TE218B	Brew Tank TE-1218
5	TE218LBC	TE218 Lower Back Panel
6	Tubing-Thk-Wall	Silicone Tube-Thick Wall
7	Valve-Check	One Way Check Valve
8	Tubing-Thk-Wall	Silicone Tube-Thick Wall
9	Drain Plug	(1) Drain Plug
10	Tubing Drain	Silicone Drain Tube
11	Foot 8-32Screw	(4) Foot 8-32 w/ Thread
12	Sprayhead	(4) Piece Sprayhead Assbly.
13	FSTNR6-32x5/8SS	(2)6-32 x 5/8 Phillips/PH SS
14	Brew Rail	Tension Mount Brew Rail
15	Brewcone12blk	12-Cup Black Brew Cone
16	Membrane TE-200	Membrane Switch TE-200
17	Top Cover TE218-G (or M)	Top Cover TE218-G (or M)
18	TE218CNTRLBDM	TE218 Main Control Board
19	FSTNR6-32x3/8>B	(4) Type B for Plastic Tank
20	Probe218-SA	218 Probe Assbly.
21	TE218LDI Probes	TE218 LDI Probes
22	Filter-Bracket	Water Filter Bracket
23	TubingP1/4inch	1/4" Plastic Tubing
24	PF 1/8NPTF x 1/4	PF 1/8NPTF x 1/4
25	Valveinletkip	Inlet Solenoid Valve
26	Couplinginsert	Silicone Coupling Insert
27	Couplinghub	2 x 2 No Hub Coupling
28	Boiler-TE-120v	Boiler-TE-120 Volt
29	HilimitSpringClip	High Limit Spring Clip
30	Highlimitcutoff	High Limit Cut Off Switch
31	FSNTNR6-32x1/2	6-32 x 1/2" Phil Pan SS
32	Sprayhead	(4) Piece Sprayhead Assbly.
33	FSTNR10x1/2PPAS	#10 x 1/2 Phil Pan Type A
34	FSTNR10x1/2PPAS	#10 x 1/2 Phil Pan Type A
35	FSTNR10x1/2PPAS	#10 x 1/2 Phil Pan Type A
36	FSTNR10x1/2PPAS	#10 x 1/2 Phil Pan Type A
37	FSTNR10x1/2PPAS	#10 x 1/2 Phil Pan Type A
38	Filter-Head	Filter Head w/on/off Valve
39	Filter-TOSP	Filter Taste Odor S/P
40	GasketSprayhd	Sprayhead Gasket
41	BrewPlateTE-1200	Brew Plate TE-1200
42	Housing218-G (or -M)	Housing TE218 Granite or Mocha