



**Models:**

- ▶ **CBS-2041e**
- ▶ **CBS-2042e**



**NOTICE TO INSTALLER:** Please leave this book with the machine.

*Driven To Pioneer Innovation™*

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## Description & Features

The CBS-2041e and CBS-2042e feature our patented intermittent spray over technology, which works like this:

The following variables are programmed for each batch size:

- ❖ Brew volume
- ❖ Brew time
- ❖ Bypass percent (Percentage of the brew volume)
- ❖ Prewet percent (Percentage of the brew volume)
- ❖ Prewet delay (The time between prewetting and the brew cycle.)
- ❖ Drip delay (The time between the end of the brew cycle and the unlocking of the brew basket.)

Using these variables, the software calculates how much water to use for prewetting, bypass, and brewing. The total brew time is divided into several 30 second cycles. Within these cycles, the software calculates how long to spray water over the coffee grounds, and how long to pause before the next cycle begins. The bypass valve opens at the beginning of the brew cycle and dispenses the correct amount of water all at once.

### Features

- ❖ Two fully programmable batch sizes per side
  - ❖ Adjustable prewetting cycle
  - ❖ Adjustable bypass
  - ❖ Electronically controlled hot water service
  - ❖ Magnetic brew basket sensor
  - ❖ Brew basket safety locks
  - ❖ Brew temperature protection
- 

## Specifications

### Requirements

- ❖ **Water Requirements:**
  - CBS-2041e: 20-75 psig, 1 gpm
  - CBS-2042e: 20-75 psig, 1 ½ gpm
- ❖ **Electrical:** See electrical configuration chart.
- ❖ **Coffee Filters:** 13" X 5" FETCO Product # F002

### Weights and Capacities

Brewer Model	Weight (empty)	Water tank Capacity & Weight.		Weight (filled)	Dispenser Weight, ea.	Dispenser Filled, ea..	Total Weight Brewer & Dispensers, Filled
CBS-2041e	46 lbs.	4.2 gal.	35 lbs.	81 lbs.	8 lbs.	16 lbs.	97 lbs.
CBS-2042e	60 lbs.	7.4 gal.	61 lbs.	121 lbs.	8 lbs.	16 lbs.	153 lbs.

# Electrical Configuration and Brewing Efficiency

## US & Canada

### CBS-2041e

1.0 gallon per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 11)	
							Cold Water	Hot Water
E41046 Can be connected to 120 VAC or 120/208-240 VAC	1 X 1.5 KW	120	single	2 + ground	1.6	13.0	3.8	9.3
	2 X 1.5 KW	120/208	single	3 + ground	2.4	11.3	5.8	11.0
		120/220			2.6	12.0	6.5	11.0
		120/240			3.1	13.0	7.7	11.0
E41036 Can be connected to 120 VAC or 120/208-240 VAC	1 X 1.7 KW	120	single	2 + ground	1.8	14.7	4.4	10.5
	2 X 1.7 KW	120/208	single	3 + ground	2.7	12.8	6.5	11.0
		120/220			3.0	13.5	7.3	11.0
		120/240			3.5	14.7	8.7	11.0
E41016 Can be connected to 120 VAC or 120/208-240 VAC	1 X 2.3 KW	120	single	2 + ground	2.4	19.7	5.9	11.0
	2 X 2.3 KW	120/208	single	3 + ground	3.6	17.1	8.9	11.0
		120/220			4.1	18.1	9.9	11.0
		120/240			4.7	19.7	11.0	11.0

### CBS-2042e

1.0 gallon per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 22)	
							Cold Water	Hot Water
E42016	2 X 3 KW	120/208	single	3 + ground	4.6	22.4	11.5	22.0
		120/220			5.1	23.7	12.9	22.0
		120/240			6.1	25.8	15.4	22.0

\* Based on standard factory settings: 4.0 minute brew time; 0% prewet; 200 F water.

## Export

### CBS-2041e

1.0 gallon per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 11)	
							Cold Water	Hot Water
E41026	1 X 3 KW	220	single	2 + ground	2.6	12.0	6.5	11.0

### CBS-2042e

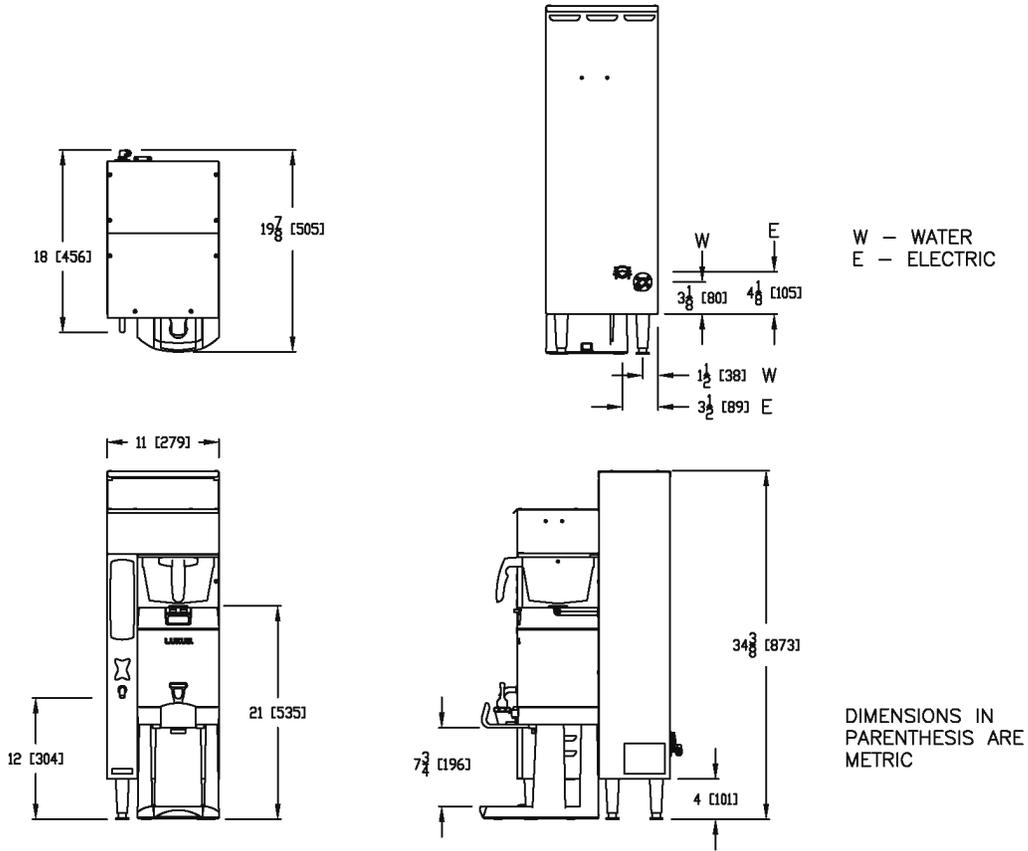
1.0 gallon per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 22)	
							Cold Water	Hot Water
E42026	2 X 3 KW	220	single	2 + ground	5.1	23.7	12.9	22.0

\* Based on standard factory settings: 4.0 minute brew time; 0% prewet; 200 F water.

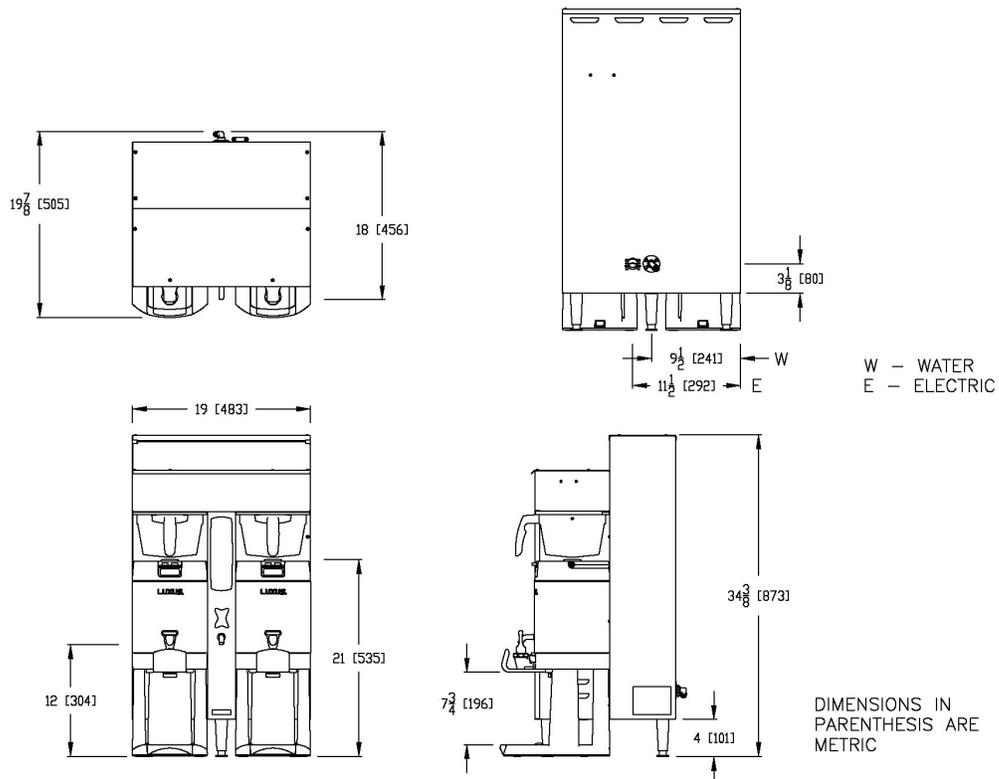
# Dimensions & Utility Connections

CBS-2041e



DWG 201098-000

CBS-2042e



DWG 201099-000

# Installation

(For Qualified Service Technicians Only)

## Keys To A Successful Installation

If not installed correctly by qualified personnel, the brewer will not operate properly and damage may result. Damages resulting from improper installation are not covered by the warranty.

Here are the key points to consider before installation:

### Electrical:

- ❖ All FETCO brewers require **NEUTRAL**. Ground is not an acceptable substitute. Installation without neutral may cause damage to the electronic components.
- ❖ The electrical diagram is located on the inside of the lower cover.
- ❖ The installation must comply with applicable federal, state, and local codes having jurisdiction at your location. Check with your local inspectors to determine what codes will apply.

### Plumbing:

- ❖ This equipment is to be installed to comply with the applicable federal, state, or local plumbing codes.
- ❖ The water line must be flushed thoroughly prior to connecting it to the brewer to prevent debris from contaminating the machine.
- ❖ Verify that the water line will provide at least 1 gallon per minute for the CBS-2041e, and 1 ½ gallons per minute for the CBS-2042e before connecting it to the brewer.

### General:

- ❖ Utilize only qualified beverage equipment service technicians for installation. A Service Company Directory may be found on our web site, <http://www.fetco.com>.

## Installation Instructions

### Brewer Setup

1. Review the Dimensions for the unit you are installing. Verify that the brewer will fit in the space intended for it, and that the counter or table will support the total weight of the brewer and dispensers when filled.
2. The brewer's legs are shipped inside the brew baskets. Remove the brew basket(s) and the coffee dispenser(s). Place the brewer on its back and screw in the legs.
3. Place the brewer on the counter or stand.
4. When the brewer is in position, level it front to back as well as side to side by adjusting the legs.
5. Remove the lower cover to access the water and electrical connections. Knock-outs are provided in the back and base of the brewer body for the connections.



**Warning: Legs are to be adjusted for leveling the brewer only. Do not use for height adjustment or extend them higher than necessary.**

### Water Connection

1. Water inlet is a 3/8 inch male flare fitting.
2. The brewer can be connected to a cold or hot water line. Cold water is preferred for best coffee flavor, but hot water will allow for faster recovery times.
3. Install a water shut off valve near the brewer to facilitate service. If an in-line water filter is used, it should be installed after the water shut off valve and in a position to facilitate filter replacement.
4. Flush the water supply line and filter **before** connecting it to the brewer.
5. Verify that the water line will provide at least 1 gallon per minute for the CBS-2041e, and 1 ½ gallon per minute for the CBS-2042e, and that the water pressure is between 20 and 75 psig.

**Electrical Connection – US & Canada**

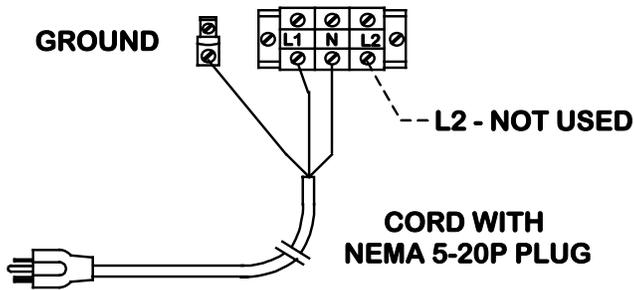
1. Verify that the actual voltage at the electrical service connection is compatible with the specifications on the brewer’s serial number label. Make sure the electrical service includes **neutral**.
2. The temperature and water tank fill level are pre-set at the factory. There is no need to turn off the heaters during the installation process. The heaters are disabled by the control board until the tank is full of water. The heating process will start automatically when the tank has filled.
3. The CBS-2041e is factory equipped with a 120 V cord and plug. The CBS-2042e has only a terminal block for connecting the incoming power wires. Consult local codes to determine if a cord and plug can be installed, or if the unit must be hard wired.
4. A fused disconnect switch or circuit breaker on the incoming power line must be conveniently located near the brewer, and its location and markings known to the operators.
5. The body of the brewer must be grounded to a suitable building ground. A ground lug is provided in the brewer next to the power terminal block. Use only 10 gauge copper wire for grounding.
6. Electrical connections must be secured in-place within the unit to meet national and local standards.
7. Finally, connect the incoming power wires to the terminal block as shown in accordance with applicable codes.



**CBS-2041e**

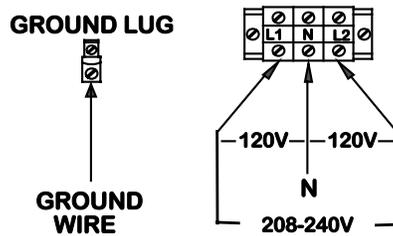
This model can be connected to 120 VAC or 120/208-240 VAC

**Factory Configuration**  
120 VAC, 3 wires



**Optional Field Conversion\***  
120/208-240 VAC, 4 wires

- Step 1:** Remove the factory provided 120 V cord & plug from the terminal block.
- Step 2:** Connect the incoming wires to the terminal block in accordance with applicable codes.



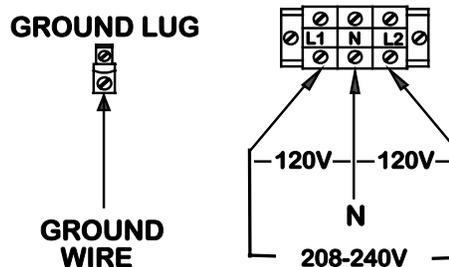
*\*This procedure must be performed only by a qualified service technician or electrician.*

**Notice:** In order for this product to comply with the requirements of the Underwriters Laboratories listing, the following conditions apply:

- 1.) This unit must be hard wired for 120/208-240 VAC.
- 2.) Once the unit is converted to 120/208-240 VAC operation, it cannot be converted back to 120 VAC operation.

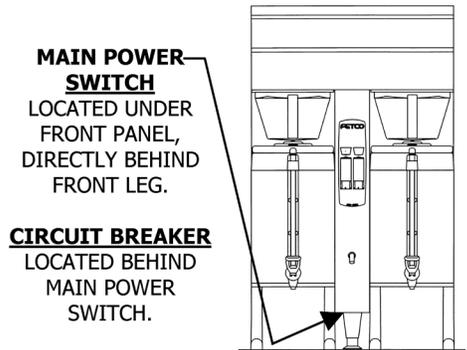
**CBS-2042e**

This model can be connected only to 120/208-240 VAC



## Final Setup

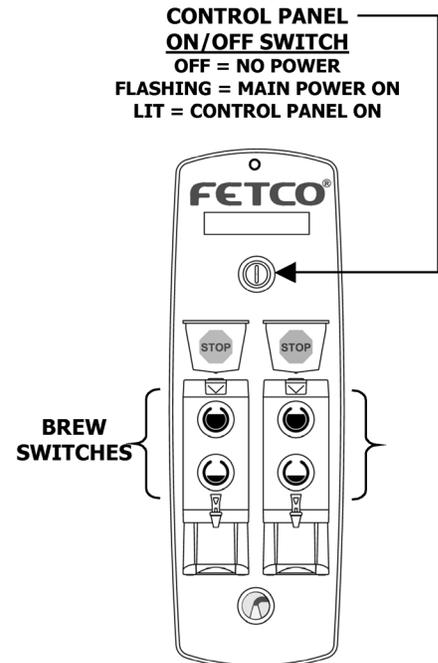
1. Turn on the incoming water supply line and inspect both inside and outside of the brewer for leaks in all fittings and tubes
2. Turn on the incoming power.
3. Press the brewer's main power switch, which is hidden behind the front leg of the brewer. The control panel on/off switch will begin flashing. Press this switch.
4. Within 6 seconds, the hot water tank will begin filling until the water is sensed by the probe at the top of the tank. The display will read "FIL". The heaters will be disabled by the control board until the tank is full.
5. While the water is heating, the display will read "LO" and the actual water temperature will be displayed. After the water has reached the set temperature, the display will be blank. There is no "ready" light.
6. Review the Operating Instructions. Brew one full batch (water only) on each side to confirm proper fill levels. The brewer is factory set with water only (no coffee) to dispense the correct amount of water. If the actual volume is slightly different from the programmed volume, fine tuning the brewer may be necessary. See #60 – 61 in the Advanced Settings & Diagnostics section.
7. Re-attach the covers after one final inspection for leaks. Look closely in the top of the brewer at the dispense fittings during this inspection.



## Operator Training

Review the operating procedures with whoever will be using the brewer. Pay particular attention to the following areas:

1. Always pre-heat the dispensers before the first use of each day by filling them half way with hot water, and letting them stand for at least 15 minutes.
2. Don't remove the brew basket until it has stopped dripping.
3. Make sure the dispenser is empty before brewing into it.
4. Show how to attach covers, close, and or secure the thermal dispensers for transporting.
5. Show the location and operation of the water shut off valve as well as the circuit breaker for the brewer.
6. Steam from the tank will form condensation in the vent tubes. This condensation will drip into and then out of the brew baskets. 1/4 cup discharging overnight is possible. Place an appropriate container under each brew basket when not in use.
7. We recommend leaving the power to the brewer on overnight. The water tank is well insulated and will use very little electricity to keep the tank hot. Leaving the brewer in the on position will also avoid delays at the beginning of shifts for the brewer to reach operating temperature.



# Operating Instructions

## Control Panel Functions

*Only switches that are active are illuminated.*

*Switches that are inactive or disabled are invisible.*

### 1 Main Power Switch

- Controls all power to brewer
- Indicator lamp at top of panel.

### 2 Control Panel On/Off Switch

- Affects only control panel. Does not disconnect main power.
- Flashing = Off
- Lit = On
- Invisible = Main Power Off

### 3 Display

- "FILL" = Water tank is filling.
- "LO XXX" = Unit is heating, not ready to brew. (XXX = actual temperature.)
- Blank = Ready to brew.
- Also displays error messages.

### 4 Stop Switches

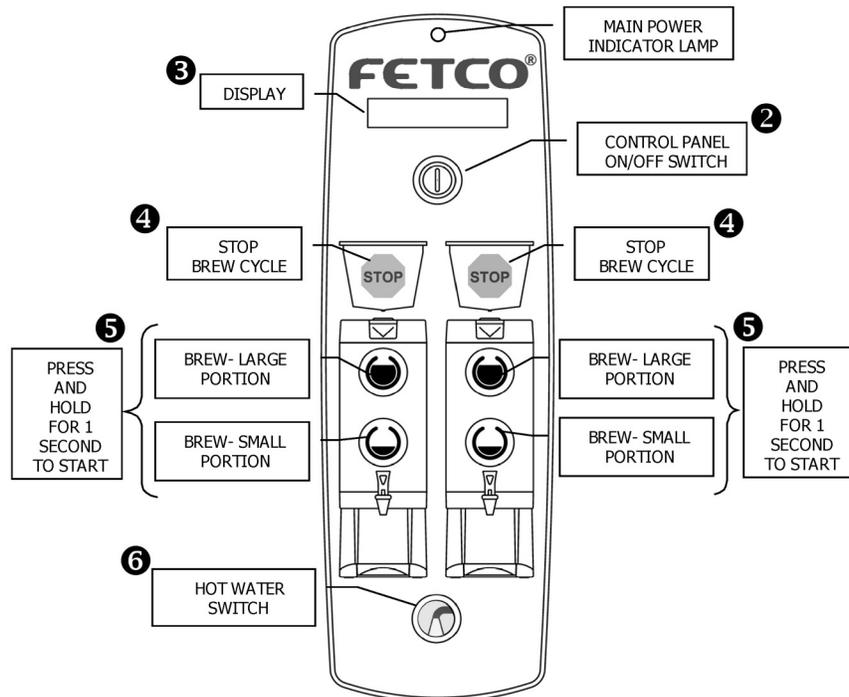
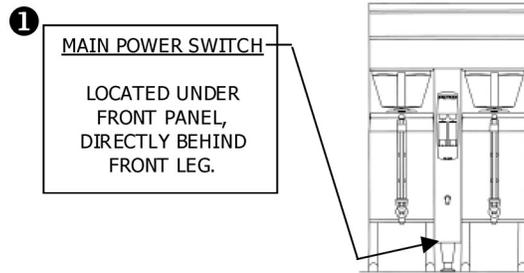
- Stops brew cycle
- Lit = Brew cycle in progress
- Invisible = Not brewing, or dripping in progress

### 5 Brew Switches

- Starts brew cycle
- Must be held in for 1 second
- Flashing = Brew cycle in progress
- Lit = Ready to brew
- Invisible – Not ready to brew, or batch disabled (See Programming Section)

### 6 Hot Water Switch

- Dispenses hot water from faucet
- Hold in to dispense



## Brewing

1. Turn the main power switch and control panel switch on.
2. Prepare a brew basket with the correct size filter and appropriate amount of coffee.
3. Slide the brew basket completely into the rails.
4. Place a clean, empty, preheated dispenser under the brew basket.
5. Select a batch from the available choices, and hold the corresponding BREW button in for 1 second to start the brew cycle.
6. The STOP button will illuminate, and the selected BREW button will flash, indicating that brewing is in progress. All other BREW buttons will extinguish.

7. When the brew cycle is finished, the STOP button will extinguish and the BREW button will continue flashing, indicating that coffee may still be dripping from the bottom of the brew basket.
8. Before removing the brew basket or dispenser, visually verify that dripping has stopped.

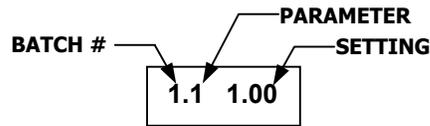
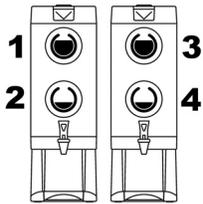
#### Notes:

- Preheat dispenser by filling at least ½ full with water at brewing temperature. Allow it to sit for at least 15 minutes before draining.
- A sensor will prevent the brewer from operating if the brew basket is not all the way in.
- A brew basket lock will prevent removal of the brew basket during brewing and dripping.

# Programming

## Batch Settings

- ❖ Turn the brewer off by pressing the main power switch.
- ❖ Press the main power switch again to turn the unit on.  
The last 2 digits of the model number will display briefly, then **S t b**.
- ❖ Quickly hold the **STOP** button for 3 seconds.
- ❖ The display will show the software version. Example:
- ❖ Press **STOP** to continue.
- ❖ Batches are numbered 1 – 2 (CBS-2041e) or 1 – 4 (CBS-2042e)



Example: Left Side – Large Batch – Volume 1.0 Gal.

- ❖ Next, the first batch parameter is displayed – batch 1, brew volume. Use the **SCROLL UP** and **SCROLL DOWN** buttons to adjust. Press the **STOP** button to go to the next parameter – brew time.
- ❖ Continue this way until all parameters are programmed for batch #1. (See the chart below for an explanation of each parameter.)
- ❖ Next, batch #2 programming begins. Batches 2 and 4 may be disabled by leaving them set to “**OFF**”. Change to “**ON**” to enable. Batches 1 and 3 cannot be disabled.
- ❖ After all batches are programmed, go to temperature settings.

## Display

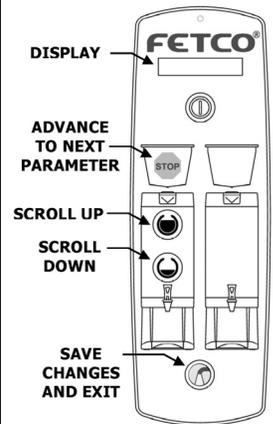
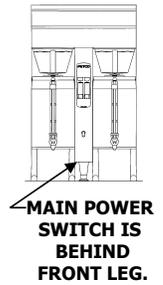
42  
S t b  
P r G  
0.0 3.2

1.1 1.00

1.2 4.00

2.0 OFF

7 200



(See next page)

**Important!** After programming, you must press the **HOT WATER** button to save the settings and exit programming mode, or changes will be lost. You may exit programming at any time.

## Batch Parameters

X=Batch Number (1 - 4)					
Parameter	Name	Range	Increment	Default Setting	Comment
X.0	Batch Enabled or Disabled	On/Off		Batch 1 & 3 = ON Batch 2 & 4 = OFF	Batch 1 & 3 cannot be disabled.
X.1	Brew Volume (Gallons)	0.25 – 1.25	0.01	1.0 gallons	To display liters, see # 59 in Advanced Settings section.
X.2	Brew Time (Min:Sec)	2:00 – 24:00	0:30	4:00 minutes	
X.3	Bypass Percent	0.00 – 40.0%	1%	0 %	Percentage of total brew volume
X.4	Prewet Percent	0.00 – 15.0%	1%	0 %	Percentage of total brew volume
X.5	Prewet Delay (Min:Sec)	0:10 – 5:00	0:10	1:00 minute	The time between prewetting and start of brew cycle.
X.6	Drip Delay (Min:Sec)	0:30 – 6:00 Minutes	0:10	1:30 minute	The time between end of brew cycle and unlocking of brew basket.

## Temperature Settings

Parameter	Name	Range	Default Setting	Comment
7	Water Temp. (°F)	180°F - 208°F	200°F	Inside tank. Will be slightly lower at spray head. To display in ° Celsius, see # 58 in Advanced Settings.
8	Hot Water Service	A (auto) / On / Off	A (auto)	A= Faucet will dispense only when not brewing. On=Faucet always enabled. Off=Faucet always disabled.
9	Brew at Set Temperature	0 - 1	1	0=Will brew at any temperature. 1=Will brew only at set temperature. Note: Changes will not take effect until the next brew cycle is completed.

Parameter	Name	Range	Default Setting	Comment
10	Enter Advanced Settings & Diagnostics	0 - 1	0	0 = Skip Advanced Settings & Diagnostics. Loop back to start of batch programming cycle. 1 = Enter Advanced Settings & Diagnostics.  Press <b>STOP</b> to continue

Important! To save your changes, press  to exit programming mode and return to operating mode.

## Advanced Settings and Diagnostics

Address	Description	Range	Default	Comment
50	Water Level in Tank	0 - 1		Tests if water is touching probe. 0 = Tank is less than full 1 = Tank is full
52	Brew Basket Sensor State (left / right)	0 - 1		To test, slide the brew basket in and out. Display should toggle between 0 and 1. 0 = Brew basket out. 1 = Brew Basket in.
55	Tank Temperature	180°F - 208°F		Displays current tank temperature.
56	Brewer Model Number	31 - 52		Must be set for the correct model number of the brewer: 41 for CBS-2041e, 42 for CBS-2042e.
57	Reload Defaults	0 - 1	0	Changes all settings to default factory settings. 0 = Do not reload defaults 1 = Reload all default settings If 1 is selected, you must advance to the next address for this change to take effect. Does not change address 56 – model number.
58	Temperature Scale	F or C	F	F = Displays temp in degrees Fahrenheit C = Displays temp in degrees Celsius
59	Water Volume Scale	GAL or LTR	GAL	GAL = Displays volume in gallons LTR = Displays volume in liters

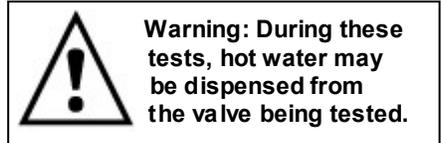
Address	Description	Range	Default	Comment
60 and 61	Left Brew Valve Flow Rate Right Brew Valve Flow Rate	0.30 – 0.50 <i>If #59 is GAL</i>  or  1.13 – 1.89 <i>If #59 is LTR</i>	0.40   1.51	Use this to compensate for minor discrepancies in actual volume versus programmed volume. Set lower to increase volume, higher to decrease volume. The following formula can be used to determine the correct setting:  $\frac{\text{ACTUAL VOLUME}}{\text{PROGRAMMED VOLUME}} \times \text{CURRENT SETTING} = \text{NEW SETTING}$
62 and 63	Left Bypass Valve Flow Rate Right Bypass Valve Flow Rate	0.28 – 0.38 <i>If #59 is GAL</i>  or  1.05 – 1.44 <i>If #59 is LTR</i>	0.33   1.24	
64	Keypad Test	0 - 1	0	Tests function of control panel switches. 0 - Skip keypad test 1 - Keypad test active Starting at the stop buttons, press each button that is lit. The display will show the name of the switch being pressed. Brew switches are named S1, S2, S3, etc. The hot water switch must be pressed last, as this will exit the test.
65	Relay Test	0 - 1	0	0 - Skip relay test. Loop back to #50 1 - Relay test active.  Press <b>STOP</b> to continue

Press  to save the settings and exit Diagnostic mode.

Press  again to exit Programming mode and return to Operating mode.

## Relay Test

Tests the individual relays which control various components. Use either batch button to actuate the relays.



To begin, you must first press the blinking Control Panel Power Switch.

Address	Description	Comment
90	Left or Single Brew Valve	
91	Right Brew Valve	
92	Left or Single Bypass Valve	
93	Right Bypass Valve	
94	Hot Water Faucet	
95	Fill Valve	
96	Heater	To protect the heaters, this test will work only if the tank is full.
97	Left or Single Brew Basket Lock	
98	Right Brew Basket Lock	

Press  to exit Relay Test.

Press  again to exit Diagnostic mode.

Press  again to exit Programming mode and return to Operating mode.

## Error Codes

Code	Description	Possible Cause	Corrective Action	How to Clear Error Codes
001	Internal Error System had to reload default settings.	Control board failure.	Clear error. Re-program the brewer to the desired specifications. If error occurs again, replace control board.	Turn main power switch off and on.
050	Shorted temperature probe.	Probe failure.	Replace probe.	Turn main power switch off and on.
051	Open temperature probe.	Bad probe connection, or probe failure.	Check all connections. Replace probe if necessary.	Turn main power switch off and on.
075	Brew basket lock or sensor failure. Basket was in place when brew cycle started, but was pulled out during the brew cycle. If this error occurs, the brew basket lock has failed.	Brew basket lock has failed.	Repair or replace brew basket lock.	Press the flashing control panel power switch to resume operation.
		Magnet in brew basket handle is missing or loose.	Remove brew basket handle. Place magnet in correct position.	
100	Initial Fill Error Initial fill time was more than 15 minutes.	Water supply flow rate is too low.	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter, etc.)	Press the control panel power switch.
101	Error on refill Tank did not refill within 3 minutes.	Water supply flow rate is too low.	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter, etc.)	Error message is cleared automatically at end of brew cycle.
102	Unwanted Fill When brewer is idle, the fill valve was activated for more than 30 seconds during a 1 hour period.	Possible leak in tank, fitting, or valve.	Check inside of machine for leaks.	Turn main power switch off and on.
		Output on control board has failed, causing a dispense valve to open.	Replace control board.	
200	Flat Line Temperature (Water is boiling) System is calling for heat, but the temperature does not rise at least 2°F within 10 minutes.	Triac is stuck closed, bad output on control board, or temperature is set too high for altitude.	Check triacs, check control board output, or adjust temperature for altitude.	Turn main power switch off and on.
201	Heater Open System is calling for heat, but the temperature does not rise at least 2°F within 10 minutes. This error is disabled during brewing and while using the hot water faucet.	Heating element failure.	Check and replace heating elements if necessary.	Turn main power switch off and on.
202	Heater Short System is not calling for heat, but temperature rises more than 5°F.	Possible triac stuck closed, or bad output on control board.	Check triac and control board.	Enter programming mode, then exit programming mode.
255	Keypad Error A switch was pressed for more than 45 seconds.	Switch was held in too long, or switch is stuck closed.	Clear error and try again. If error occurs without switch being pressed, replace input board.	Turn main power switch off and on.

# Service and Support

For service and support information, contact the Technical Support department. Our hours are 7:00 AM to 6:00 PM Central Time, Monday through Friday.

Phone: (800) 338-2699 or (847) 719-3000

Email: [techsupport@fetco.com](mailto:techsupport@fetco.com)

Utilize only qualified beverage equipment service technicians for service. A Service Company Directory may be found on our web site, <http://www.fetco.com>.

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## Cleaning & Maintenance

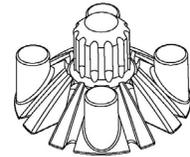
Daily: Wipe the area above the brew basket to remove coffee residue.

Daily or Weekly:

### CSD Versions:

Clean the Cascading Spray Dome (CSD) with a soft brush and detergent. It may also be cleaned in a dishwasher – top rack only.

The CSD is held in place by four magnets. To remove it, grasp the bottom and pull down.

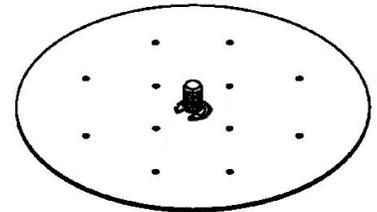


**CSD**

### Spray Plate Versions:

The spray plate should be removed and cleaned to remove hard water deposits. In areas with extremely hard water, it may be necessary to do this daily. Weekly cleaning may be sufficient in some areas.

When cleaning the spray plate, make sure that each hole is completely free of mineral deposits. Use a toothpick to clean out each hole. Never use metal objects or abrasives on the spray plate's Teflon coating.



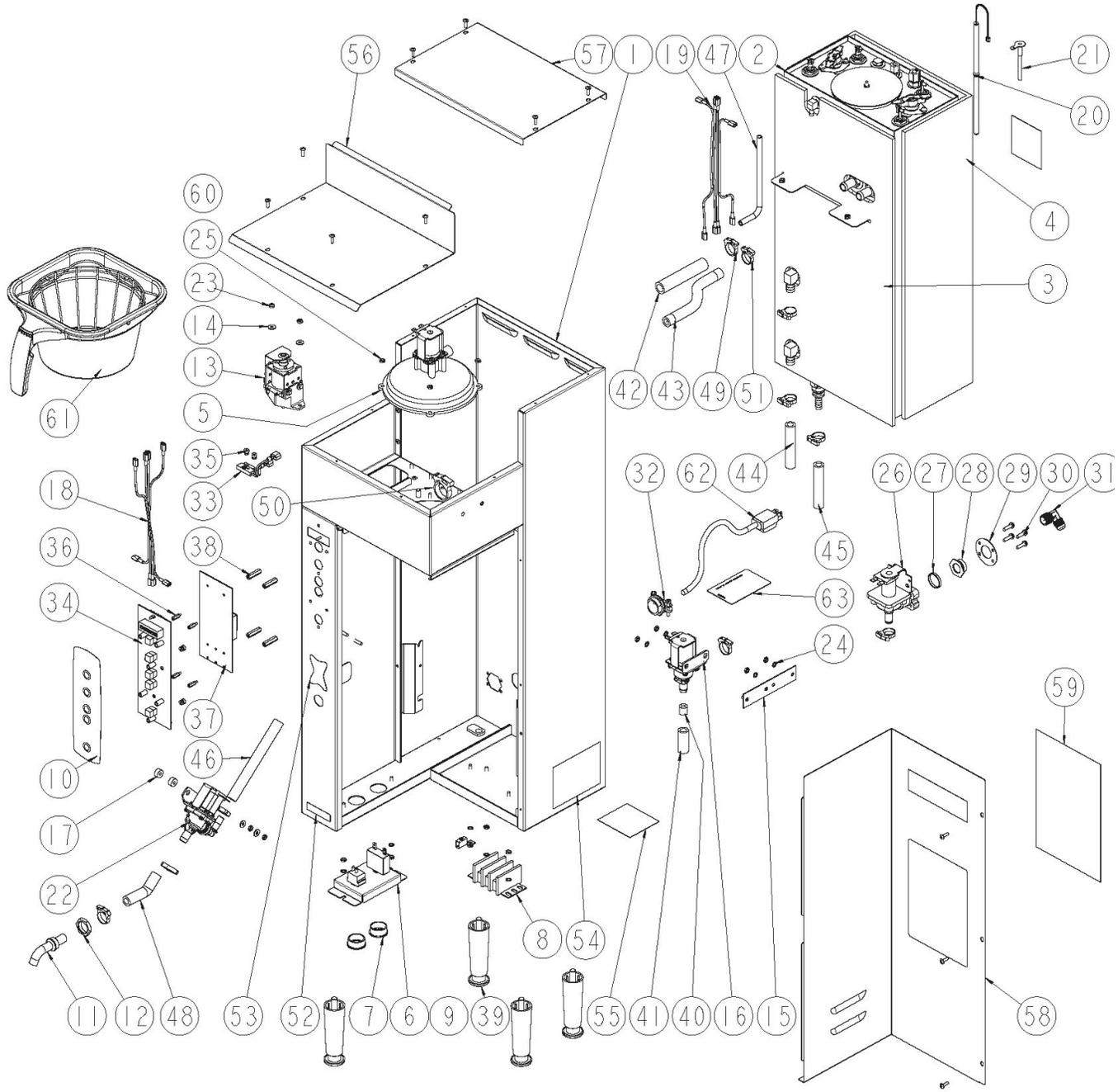
**SPRAY PLATE**

Quarterly:

- Check water temperature, adjust if necessary.
- Check brew levels, adjust if necessary.
- Inspect all fittings and hoses for leaks.
- Inspect inside of tank for lime deposits. De-lime tank and probes if necessary. This procedure should be done by a qualified service technician.

# Parts

Figure 1 – CBS-2041e Main Assembly

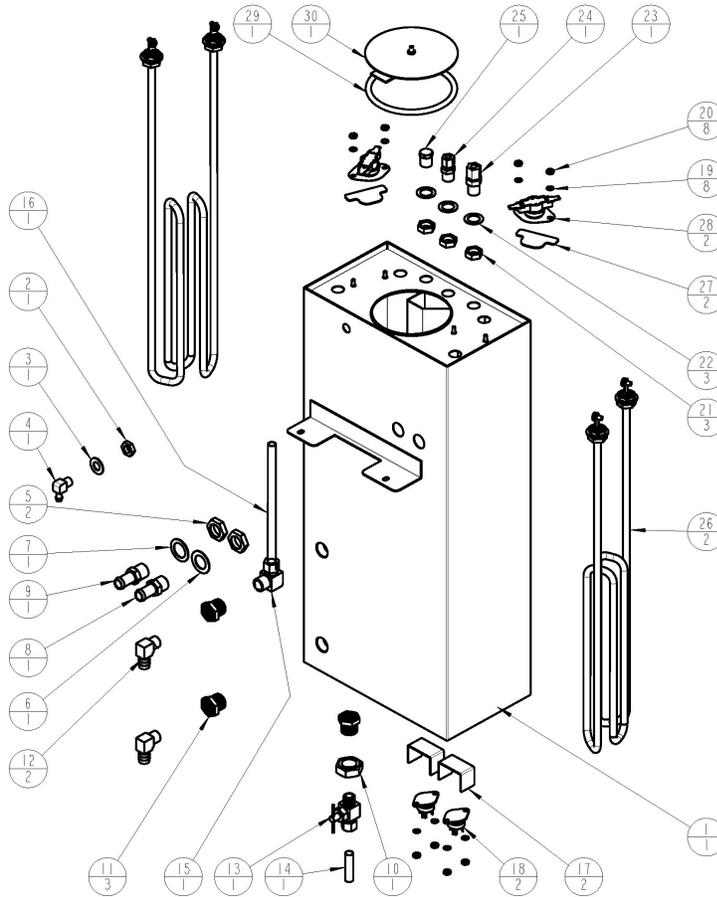


DWG 101192-B

ITEM #	QTY	PART #	DESCRIPTION
1	1	001052	WELDMENT CBS-2041e
2	1	104030	ASSEMBLY TANK, CBS-2041e (SEE FIG. 2)
3	1	22064	INSULATION TANK FRONT CBS-2041e
4	1	22065	INSULATION TANK BACK CBS-2041e
5	1	SEE FIG.5A/5B	ASSEMBLY, SMALL SPRAY HEAD
6	1	102189	ASSEMBLY, POWER BRACKET, CBS-2000e
6	1	52026	CIRCUIT BREAKER, 5A
6	1	58054	SWITCH, PUSH BUTTON
7	2	86032	BUSHING, SNAP, 1" MOUNTING HOLE DIA
8	1	52050	TERMINAL BLOCK
9	1	65002	CONNECTOR, COPPER LUG
10	1	45079	OVERLAY CBS-2041e

11	1	002065	WELDMENT, HOT WATER FAUCET	
12	1	33007	LOCKNUT, 7/16 STRAIGHT PIPE THREAD	
13	1	101160	ASSEMBLY, BREW BASKET LOCK. 120 VAC	
13	1	101174	ASSEMBLY, BREW BASKET LOCK. 220 VAC	EXPORT 220V ONLY
14	4	83051	WASHER, #8 SCREW SIZE, FLAT	
15	1	102147	WELDMENT, BRACKET BY-PASS VALVE	
16	1	57044	VALVE, BYPASS LEFT 120 VAC	
16	1	57077	VALVE, BYPASS LEFT 220 VAC	EXPORT 220V ONLY
16		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)	
17	2	29021	SPACER, #8 SCREW SIZE	
18	1	402020	HARNESS, LOW AMP, ELECTRICAL, CBS-2041e, TWO HEATERS	
19	1	402037	HARNESS, HIGH AMP, ELEC. 2 HEATER WIRE SET CBS-2041e	
20	1	102172	ASSEMBLY, PROBE DIGITAL TEMPERATURE 8.0" LG	
21	1	102202	ASSEMBLY, WATER LEVEL PROBE, CBS-2040, -50e	
22	1	102192	ASSEMBLY, HOT WATER VALVE, 120VAC	
22	1	102193	ASSEMBLY, HOT WATER VALVE, 220VAC	EXPORT 220V ONLY
22		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)	
23	2	84030	LOCKNUT, #8-32 SCREW SIZE, HEX THIN NYLON INSERT	
24	11	83026	WASHER, INTERNAL TOOTH LOCK, #8 SCREW SIZE,	
25	17	84002	NUT, HEX, #8-32 MACHINE SCREW	
26	1	57006	FILL VALVE, S-53 120VAC	
26	1	57017	FILL VALVE, S-53 220VAC	EXPORT 220V ONLY
27	1	24012	GASKET, S-53 FILL VALVE	
28	1	31078	FITTING, S-53 FILL VALVE INLET	
29	1	03074	BRACKET, S-53	
30	4	82020	SCREW, S-53 FILL VALVE	
31	1	31031	FITTING, 90° MALE ELBOW, 3/8 TUBE OD X 3/8 MPT	
32	1	86040	CONNECTOR, CABLE CLAMP, 3/4"	
33	1	102207	ASSEMBLY, REED SWITCH	
34	1	108001	SWITCHING/CONTROL BOARD, 5 KEYS, S2P	
35	4	29007	NUT, #4-40 KNURLED THUMB	
36	4	15007	STANDOFF, MALE-FEMALE, THREADED HEX 4-40-1/2"	
37	1	51042	BOARD, POWER SUPPLY-120VAC	
37	1	51055	BOARD, POWER SUPPLY-220VAC	EXPORT 220V ONLY
38	4	29019	SPACER, .25" HEX x 1" LG., FEM, #4-40 THREAD	
39	4	73002	LEG, FLANGE FOOT, 4" HIGH	
40	1	25061	TUBE 1/2"OD X 1/4"ID X 1/2"LG, BY-PASS	
41	1	25060	TUBE 5/8"OD X 3/8"ID X 1.5"LG, BY-PASS	
42	1	25078	TUBE 3/4"OD X 1/2"ID X 3 3/4"LG, SPRAY HOUSING	
43	1	25077	TUBE 5/8"OD X 3/8"ID X 6"LG, BYPASS	
44	1	25083	TUBE 5/8"OD X 3/8"ID X 14 1/2"LG, COLD WATER	
45	1	25082	TUBE 5/8"OD X 3/8"ID X 20 3/4"LG, DRAIN	
46	1	25081	TUBE 5/8"OD X 3/8"ID X 5.5"LG, HOT WATER VALVE	
47	1	25059	TUBE, 5/16"OD X 3/16"ID X 9 1/4"LG VENT	
48	1	25058	TUBE 5/8"OD X 3/8"ID X 2.5"LG, HOT WATER FAUCET	
49	4	86038	CLAMP, HOSE, .670"-.780" DIA RANGE	
50	1	86020	CLAMP, HOSE, .875"-.750" DIA RANGE	
51	6	86007	CLAMP, HOSE, .593"-.656" DIA RANGE	
52	1	46029	LABEL, POWER SWITCH	
53	1	41016	LABEL, EXTRACTOR	
55	2	44024	LABEL, WARNING-HIGH VOLTAGE	
56	1	01527	COVER BASE UPPER CBS-2041	
57	1	01506	COVER TOP CBS-2031 & 41	
58	1	102148	ASSEMBLY COVER RIGHT CBS-2040e'S	
59	1	401223	CBS-2042, UNIVERSAL WIRING, 2 WIRE + GR, 2 HEATERS	
60	11	82053	SCREW, # 6-32 X 1/2" TRUSS HD PH	
61	1	101175	BREW BASKET ASSEMBLY, 13 x 5, DIA. HOLE 0.280 (SEE FIG. 6)	
62	1	63019	CORD, 120 VAC, 12/3 AWG ,20 AMP , W/5-20P NEMA PLUG	
62	1	63018	CORD, 120 VAC, 12/3 AWG ,15 AMP , W/5-15P NEMA PLUG	

**Figure 2 – CBS-2041e Tank Assembly**

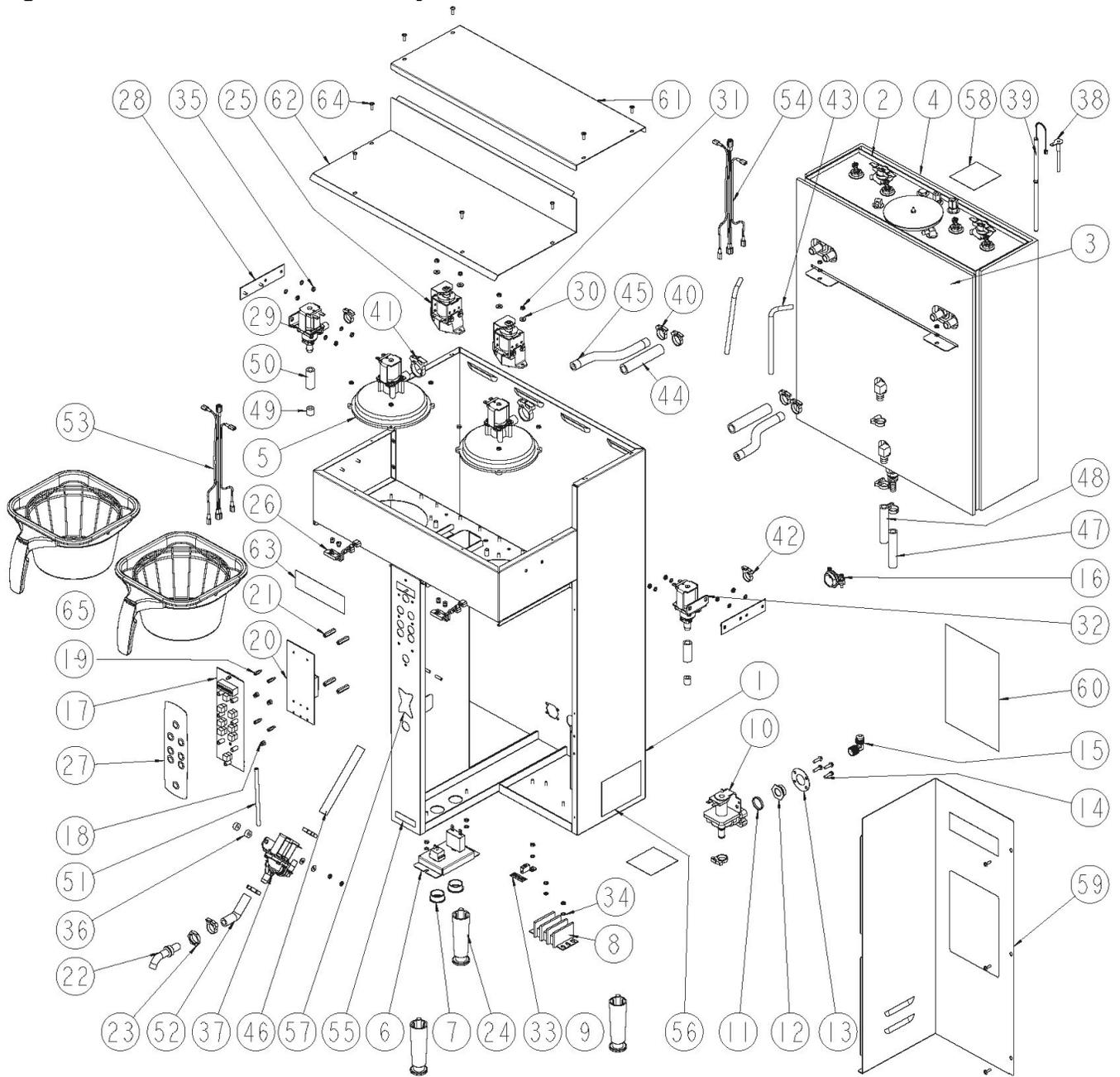


DWG 104030-A

ITEM NO	QTY	PART NO	DESCRIPTION
1	1	4040	WELDMENT TANK CBS-2041e
2	1	31116	LOCKNUT 1/8 STRAIGHT PIPE THREAD
3	1	83041	WASHER, .812"OD X .412"ID, FLAT
4	1	31005	FITTING, 90° ELBOW, 1/4 HOSE ID X 1/8 MPT
5	2	31118	LOCKNUT 3/8 STRAIGHT PIPE THREAD
6	1	83043	WASHER, 1.125"OD X 0.688"ID FLAT
7	1	83044	WASHER, 1.125"OD X 0.750"ID, FLA
8	1	31077	FITTING, 3/8 HOSE ID X 3/8 MPT
9	1	31071	FITTING, 1/2 HOSE ID X 3/8" MPT
10	1	84007	NUT, 3/4-16 HEX JAM
11	3	31021	BUSHING, 3/4-16 X 1/4 NPSM, HEX HEAD
12	2	31128	FITTING, 90° ELBOW, 3/8 HOSE ID X 1/4 MPT
13	1	25110	VALVE, DRAIN (REQUIRES # 25111 TUBE)
14	1	25111	TUBE, VALVE DRAIN
15	1	31027	FITTING, COMPR 90 MALE ELBOW, 3/8 TUBE OD X 1/4 MPT
16	1	13072	OUTLET, INSIDE TANK HOT WATER
17	2	3297	SINK, HEAT FOR 40A TRIAC
18	2	59008	TRIAC 40A, 600V
19	8	83011	WASHER, #6 SCREW SIZE, INTERNAL
20	8	84001	NUT, HEX, #6-32 MACHINE SCREW
21	3	31117	LOCKNUT 1/4 STRAIGHT PIPE THREAD
22	3	83042	WASHER, .875"OD X .562"ID, FLAT
23	1	25098	FITTING, COMPRESSION MALE CONNECTOR
24	1	31036	FITTING COMPR. MALE CONNECTOR 1/4 TUBE OD X 1/4 MPT
25	1	31081	PLUG, HEX HEAD 1/4" MPT
26	2	107027	HEATER ASSY., 1500W/120VAC
26	2	107028	HEATER ASSY., 1700W/120VAC
26	2	107024	HEATER ASSY., 2300W/120VAC
26	2	107021	HEATER ASSY., 3000W/240VAC
27	2	3332	BRACKET 2, ONE SHOT THERMOSTAT
28	2	53071	THERMOSTAT, SINGLE SHOT, 25A
29	1	24002	O-RING, TANK COVER
30	1	102013	ASSEMBLY, TANK COVER

EXPORT  
220V ONLY

**Figure 3 – CBS-2042e Main Assembly**



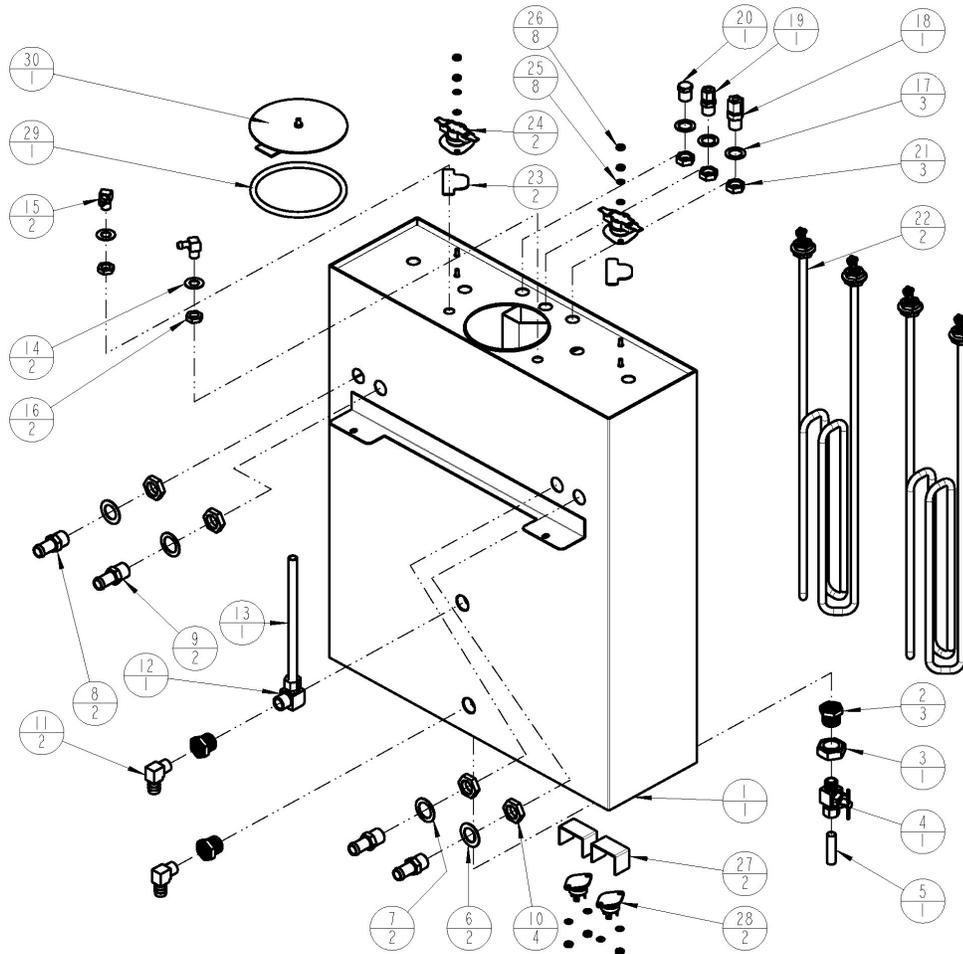
DWG 101193-B

ITEM #	QTY	PART #	DESCRIPTION
1	1	001053	WELDMENT CBS-2042e
2	1	104031	ASSEMBLY, TANK CBS-2042e (SEE FIG. 4)
3	1	22066	INSULATION, TANK FRONT, CBS-2042e
4	1	22067	INSULATION, TANK BACK CBS-2042e
5	2	SEE FIG.5A/5B	ASSEMBLY, SMALL SPRAY HEAD
6	1	102189	ASSEMBLY, POWER BRACKET, CBS-2000e
6	1	52026	CIRCUIT BREAKER, 5A
6	1	58054	SWITCH, PUSH BUTTON
7	2	86032	BUSHING, SNAP, 1" MOUNTING HOLE DIA
8	1	52050	TERMINAL BLOCK
9	1	65002	CONNECTOR, COPPER LUG
10	1	57006	FILL VALVE, S-53 120VAC
10	1	57017	FILL VALVE, S-53 220VAC
11	1	24012	GASKET, S-53 FILL VALVE
12	1	31078	FITTING, S-53 FILL VALVE INLET

EXPORT  
220V ONLY

13	1	03074	BRACKET, S-53	
14	4	82020	SCREW, S-53 FILL VALVE	
15	1	31031	FITTING, 90° MALE ELBOW, 3/8 TUBE OD X 3/8 MPT	
16	1	86040	CONNECTOR, CABLE CLAMP, 3/4"	
17	1	108002	SWITCHING/CONTROL BOARD, 8 KEYS, D2P	
18	7	29007	NUT, #4-40 KNURLED THUMB	
19	4	15007	STANDOFF, MALE-FEMALE, THREADED HEX 4-40-1/2"	
20	1	51042	BOARD, POWER SUPPLY-120VAC	
20	1	51055	BOARD, POWER SUPPLY-220VAC	EXPORT 220V ONLY
21	4	29019	SPACER, .25" HEX x 1" LG., FEM, #4-40 THREAD	
22	1	002065	WELDMENT, HOT WATER FAUCET	
23	1	33007	LOCKNUT, 7/16 STRAIGHT PIPE THREAD	
24	3	73002	LEG, FLANGE FOOT, 4" HIGH	
25	2	101160	ASSEMBLY, BREW BASKET LOCK. 120 VAC	
25	2	101174	ASSEMBLY, BREW BASKET LOCK. 220 VAC	EXPORT 220V ONLY
26	2	102207	ASSEMBLY, REED SWITCH	
27	1	45080	OVERLAY CBS-2042e	
28	2	102147	WELDMENT, BRACKET BY-PASS VALVE	
29	1	57043	VALVE, BYPASS RIGHT 120 VAC	
29	1	57076	VALVE, BYPASS RIGHT 220 VAC	EXPORT 220V ONLY
29		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)	
30	6	83051	WASHER, #8 SCREW SIZE, FLAT	
31	4	84030	LOCKNUT, #8-32 SCREW SIZE, HEX THIN NYLON INSERT	
32	1	57044	VALVE, BYPASS LEFT 120 VAC	
32	1	57077	VALVE, BYPASS LEFT 220 VAC	EXPORT 220V ONLY
32		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)	
33	1	44004	LABEL GROUND	
34	15	83026	WASHER, INTERNAL TOOTH LOCK, #8 SCREW SIZE,	
35	25	84002	NUT, HEX, #8-32 MACHINE SCREW	
36	2	29021	SPACER, #8 SCREW SIZE, 1/2" OD X 1/4" LG, ROUND UNTH.	
37	1	102192	ASSEMBLY, HOT WATER VALVE, 120VAC	
37	1	102193	ASSEMBLY, HOT WATER VALVE, 220VAC	EXPORT 220V ONLY
37		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)	
38	1	102202	ASSEMBLY, WATER LEVEL PROBE, CBS-2040, -50e	
39	1	102172	ASSEMBLY, PROBE DIGITAL TEMPERATURE 8.0" LG	
40	6	86038	CLAMP, HOSE, .670"-.780" DIA RANGE	
41	2	86020	CLAMP, HOSE, .875"-.750" DIA RANGE	
42	7	86007	CLAMP, HOSE, .593"-.656" DIA RANGE	
43	2	25059	TUBE, 5/16"OD X 3/16"ID X 9 1/4"LG VENT	
44	2	25078	TUBE 3/4"OD X 1/2"ID X 3 3/4"LG, SPRAY HOUSING	
45	2	25077	TUBE 5/8"OD X 3/8"ID X 6"LG, BYPASS	
46	1	25081	TUBE 5/8"OD X 3/8"ID X 5.5"LG, HOT WATER VALVE	
47	1	25082	TUBE 5/8"OD X 3/8"ID X 20 3/4"LG, DRAIN	
48	1	25083	TUBE 5/8"OD X 3/8"ID X 14 1/2"LG, COLD WATER	
49	2	25061	TUBE 1/2"OD X 1/4"ID X 1/2"LG, BY-PASS	
50	2	25060	TUBE 5/8"OD X 3/8"ID X 1.5"LG, BY-PASS	
51	1	25103	TUBE VENT 1/4"OD X 1/8"ID X 23"LG	
52	1	25058	TUBE 5/8"OD X 3/8"ID X 2.5"LG, HOT WATER FAUCET	
53	1	402018	HARNESS,LOW AMP, ELECTRICAL, CBS-2042e, TWO HEATERS	
54	1	402038	HARNESS, HIGH AMP, ELEC, TWO HEATER WIRE SET CBS-2042e	
55	1	46029	LABEL, POWER SWITCH	
57	1	41016	LABEL, EXTRACTOR	
58	2	44024	LABEL, WARNING-HIGH VOLTAGE	
59	1	102148	ASSEMBLY COVER RIGHT CBS-2040e'S	
60	1	401225	CBS-2042e, UNIVERSAL WIRING, 1 PH, 3 WIRE + GR, 2 HEATER	
61	1	01479	COVER, TOP CBS-2032 & 42	
62	1	01522	COVER, UPPER BASE CBS-2042	
63	1	46027	LABEL, SPRAY HOUSING	
64	11	82053	SCREW, # 6-32 X 1/2" TRUSS HD PH	
65	2	101175	BREW BASKET ASSY., 13 x 5, DIA. HOLE 0.280 (SEE FIG 6)	

Figure 4 – CBS-2042e Tank Assembly



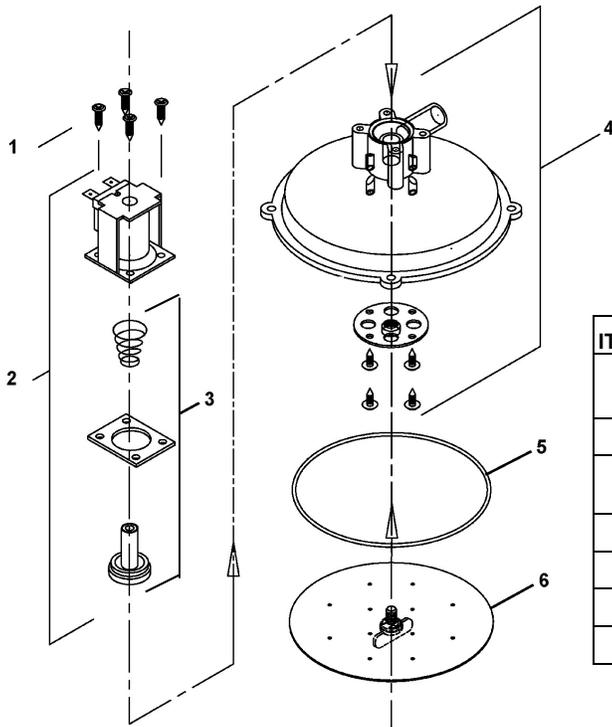
DWG 104031-A

ITEM NO	QTY	PART #	DESCRIPTION
1	1	004041	WELDMENT TANK CBS-2042e
2	3	31021	BUSHING, 3/4-16 X 1/4 NPSM, HEX HEAD
3	1	84007	NUT, 3/4-16 HEX JAM
4	1	25110	VALVE, DRAIN (REQUIRES # 25111 TUBE)
5	1	25111	TUBE, VALVE DRAIN
6	2	83043	WASHER, 1.125"OD X 0.688"ID FLAT
7	2	83044	WASHER, 1.125"OD X 0.750"ID, FLA
8	2	31077	FITTING, 3/8 HOSE ID X 3/8 MPT
9	2	31071	FITTING, 1/2 HOSE ID X 3/8" MPT
10	4	31118	LOCKNUT 3/8 STRAIGHT PIPE THREAD
11	2	31128	FITTING, 90° ELBOW, 3/8 HOSE ID X 1/4 MPT
12	1	31027	FITTING, COMPR 90° MALE ELBOW, 3/8 TUBE OD X 1/4 MPT
13	1	13072	OUTLET, INSIDE TANK HOT WATER
14	2	83041	WASHER, .812"OD X .412"ID, FLAT
15	2	31005	FITTING, 90° ELBOW, 1/4 HOSE ID X 1/8 MPT
16	2	31116	LOCKNUT 1/8 STRAIGHT PIPE THREAD
17	3	83042	WASHER, .875"OD X .562"ID, FLAT
18	1	25098	FITTING, COMPRESSION MALE CONNECTOR
19	1	31036	FITTING COMPR. MALE CONNECTOR 1/4 TUBE OD X 1/4 MPT
20	1	31081	PLUG, HEX HEAD 1/4" MPT
21	3	31117	LOCKNUT 1/4 STRAIGHT PIPE THREAD
22	2	107002	HEATER ASSY., 3000W, 240VAC
23	2	3332	BRACKET 2, ONE SHOT THERMOSTAT
24	2	53071	THERMOSTAT, SINGLE SHOT, 25A
25	8	83011	WASHER, #6 SCREW SIZE, INTERNAL
26	8	84001	NUT, HEX, #6-32 MACHINE SCREW
27	2	3297	SINK, HEAT FOR 40A TRIAC
28	2	59008	TRIAC 40A, 600V
29	1	24002	O-RING, TANK COVER
30	1	102013	ASSEMBLY, TANK COVER

**Figure 5a – SPRAY PLATE VERSIONS:**

**ASSY, SMALL SPRAY HEAD, 120VAC, PART # 102080**

**ASSY, SMALL SPRAY HEAD, 240VAC, PART # 102158 (EXPORT ONLY)**

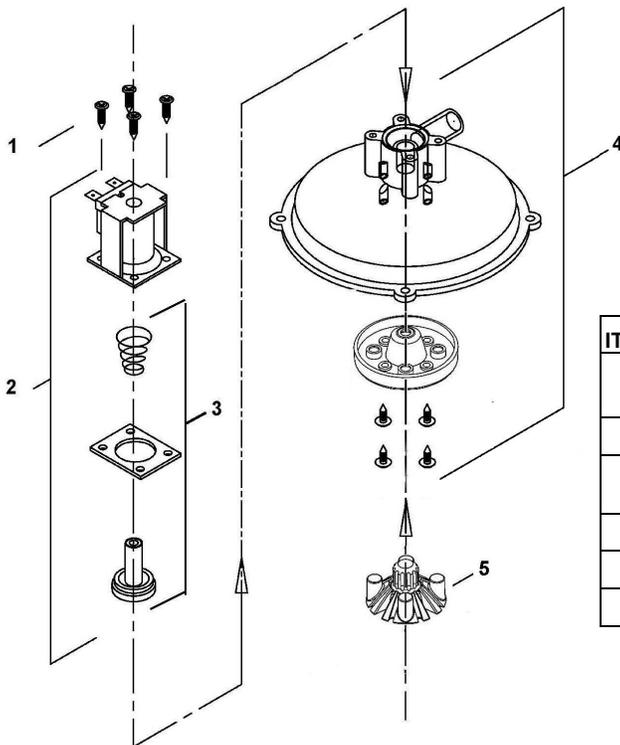


ITEM #	QTY	PART #	DESCRIPTION
1	4	82112	#8 X 3/4" PAN HD. PHIL. T.S. 18-8 S.S. SCREW
2	1	57047	VALVE ASSY., DSV-11, 120 VAC
2	1	57071	VALVE ASSY., DSV-11, 240 VAC EXPORT ONLY
3	1	57073	VALVE REBUILD KIT, DSV11
4	1	102082	SPRAY HOUSING ASSY.
5	1	24054	O-RING 4.237" I.D., #156
6	1	102081	SPRAY PLATE ASSY., 4 7/8" DIA.

**Figure 5b – CSD VERSIONS:**

**ASSY, CSD SMALL SPRAY HEAD, 120VAC, PART # 102395**

**ASSY, CSD SMALL SPRAY HEAD, 220VAC, PART # 102396 (EXPORT ONLY)**



ITEM #	QTY	PART #	DESCRIPTION
1	4	82112	#8 X 3/4" PAN HD. PHIL. T.S. 18-8 S.S. SCREW
2	1	57047	VALVE ASSY., DSV-11, 120 VAC
2	1	57071	VALVE ASSY., DSV-11, 240 VAC EXPORT ONLY
3	1	57073	VALVE REBUILD KIT, DSV11
4	1	102397	ASSY., CSD, SPRAY. HOUSING SMALL
5	1	102363	ASSEMBLY, CASCADE SPRAY DOME

**Figure 6 – Brew Basket Assembly, 13” X 5”, Part # 101175**

ITEM	QTY	PART #	DESCRIPTION
1		09022	WIRE INSERT, 13” X 5
2	1	23117	BREW BASKET HANDLE, BLACK
3	1	46011	WARNING LABEL
5	1	82096	HANDLE SCREW
8	1	57082	MAGNET
NOT SHOWN		F002	PAPER FILTERS, 13” X 5” 500 PER CASE

**COLOR BREW BASKET HANDLES**

PART #	DESCRIPTION
23106	BREW BASKET HANDLE, GREEN
23107	BREW BASKET HANDLE, ORANGE
23148	BREW BASKET HANDLE, RED

