

EXTRACTOR™
COFFEE BREWING SYSTEM

Models:

- ▶ CBS-2051
- ▶ CBS-2052



NOTICE TO INSTALLER: This book contains important programming instructions that will be needed by the customer. Please leave it with the manager or responsible person at the machine location.



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Description & Features

The CBS-2051 and CBS-2052 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

- ❖ Three fully programmable batch sizes per side
 - ❖ Adjustable prewetting cycle
 - ❖ Adjustable bypass
 - ❖ Electronically controlled hot water service
 - ❖ Brew basket safety locks
 - ❖ Brew temperature protection
 - ❖ Universal wiring – single or three phase
-

Specifications

Requirements

- ❖ **Water Requirements:**
 - CBS-2051: 20-75 psig, 1 gpm
 - CBS-2052: 20-75 psig, 1 ½ gpm
- ❖ **Electrical:** See electrical configuration chart.
- ❖ **Coffee Filters:** 15" X 5 ½" FETCO Product # F001

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-2051	*	5.5 gal.	46 lbs.	*	8.5 lbs.	21 lbs.	*
CBS-2052	92 lbs.	10.3 gal.	86 lbs.	178 lbs.	8.5 lbs.	21 lbs.	220 lbs.

* Not available at time of publication.

Electrical Configuration and Brewing Efficiency

US & Canada

CBS-2051

1.5 gallons per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 11)	
							Cold Water	Hot Water
E51016	2 X 3 KW	120/208	single	3 + ground	4.6	22.1	7.7	11.0
		120/220			5.1	23.4	8.9	11.0
		120/240			6.1	25.5	10.3	11.0

CBS-2052

1.5 gallons per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 22)	
							Cold Water	Hot Water
E52016 Universal Wiring	Option 1 2 X 3 KW (Factory Setting)	120/208	single	3 + ground	4.6	22.4	7.7	18.6
		120/220			5.1	23.7	8.9	21.6
		120/240			6.1	25.8	10.3	22.0
Total 3 X 3 KW Heaters	Option 2 3 X 3 KW	120/208	three	4 + ground	6.9	19.5	11.5	22.0
		120/220			7.7	20.6	13.4	22.0
		120/240			9.1	22.5	15.4	22.0
E52026 Universal Wiring	Option 1 2 X 5 KW	120/208	single	3 + ground	7.6	36.9	12.8	22.0
		120/220			8.5	39.0	14.9	22.0
		120/240			10.1	42.5	17.1	22.0
Total 3 X 5 KW Heaters	Option 2 3 X 5 KW (Factory Setting)	120/208	three	4 + ground	11.4	32.0	19.2	22.0
		120/220			12.7	33.9	22.0	22.0
		120/240			15.1	36.9	22.0	22.0

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

Export

CBS-2051

1.5 gallons per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 11)	
							Cold Water	Hot Water
E51026	2 X 3 KW	220	single	2 + ground	5.1	23.4	8.9	11.0

◆ Not available at time of publication.

CBS-2052

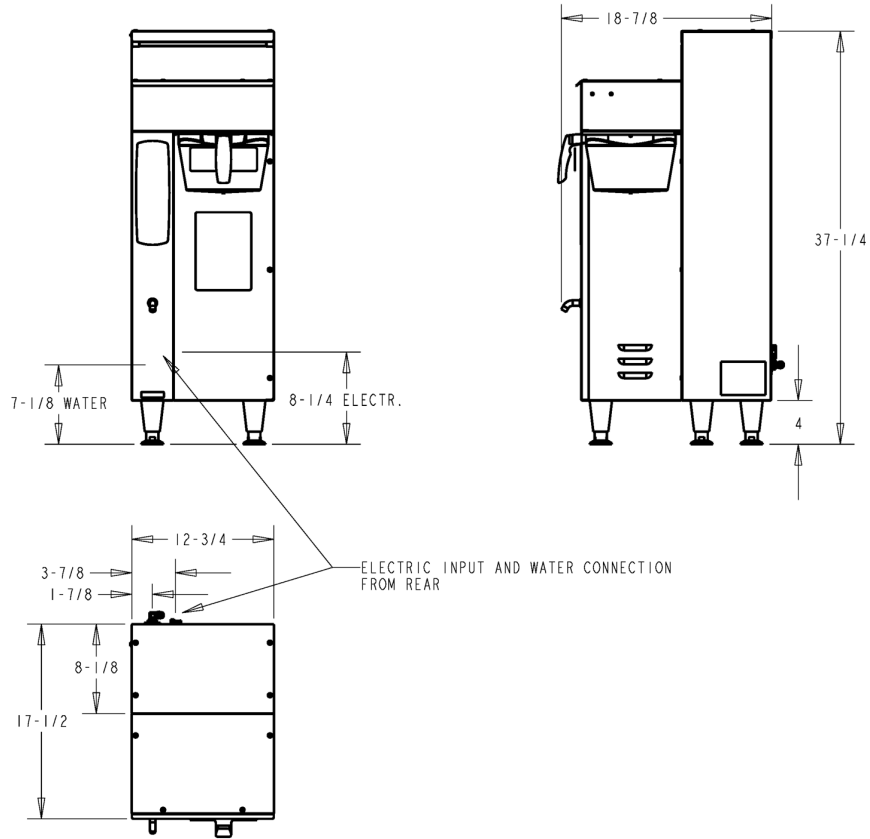
1.5 gallons per batch

Electrical Config. Code	Heater Configuration	Voltage (AC)	Phase	Wires	KW	Maximum Amp draw	Batches per Hour* (max 22)	
							Cold Water	Hot Water
E52036	2 X 3 KW	120/220	single	3 + ground	5.1	23.7	8.9	21.6

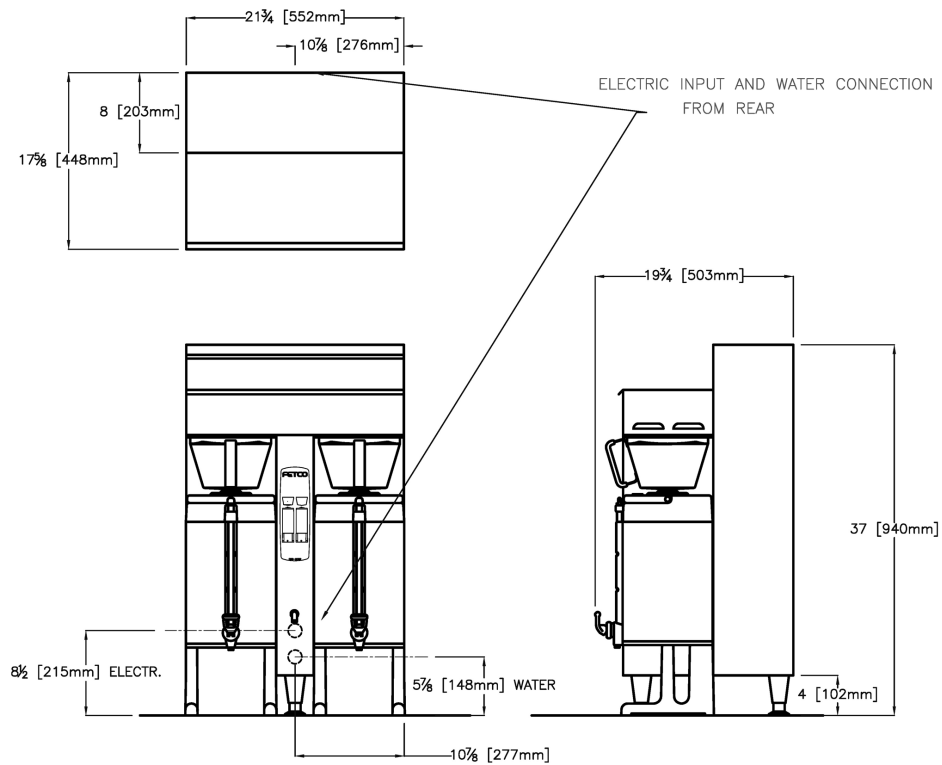
* Based on standard factory settings: 4.0 minute brew time; 0% prewet, 0% bypass; 200 F water.

Dimensions & Utility Connections

CBS-2051



CBS-2052



Installation

(For Qualified Service Technicians Only)

Keys To A Successful Installation

If not installed correctly by qualified personnel, the brewer may 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.
- ❖ Universal wiring: This brewer can be configured for single or three phase operation. Conversion instructions are described later in this section.
- ❖ The electrical diagram and universal wiring instructions are 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-2051, and 1.5 gallons per minute for the CBS-2052 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.



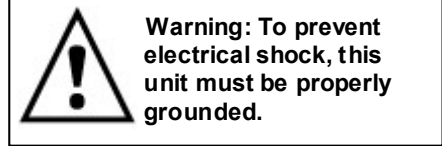
Warning: Legs are to be adjusted for leveling the brewer only. Do not use for height adjustment or extend them higher than necessary.

Water Connection

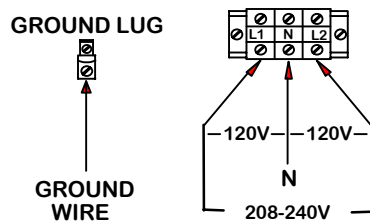
1. Water inlet is a 3/8 inch male flare fitting.
2. The brewer can be connected to a cold or hot water line. Cold water is preferred for best coffee flavor, but hot water will allow for faster recovery times.
3. Install a water shut off valve near the brewer to facilitate service. If an in-line water 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-2051, and 1.5 gallons per minute for the CBS-2052, and that the water pressure is between 20 and 75 psig.
6. Use a wrench on the factory fitting when connecting the incoming water line. This will reduce stress on the internal connections and reduce the possibility of leaks developing after the install has been completed.

Electrical Connection

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. A terminal block is provided 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. Connect the incoming power wires to the terminal block in accordance with applicable codes.



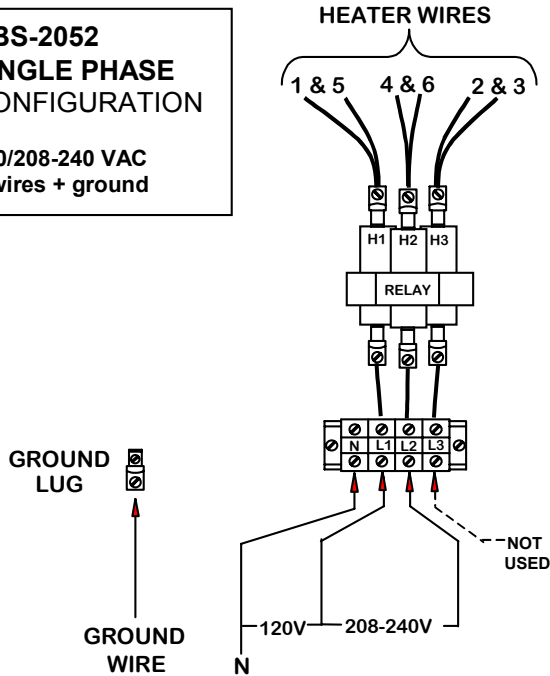
CBS-2051



8. The **CBS-2052** is shipped from the factory configured for either single phase or three phase operation, depending on the version that was ordered. A tag attached to the terminal block will indicate which way the unit was configured. To change the configuration, change the relay and heater wires as shown below. Make sure that all connections are tight. These instructions are also located on the inside of the lower cover.

**CBS-2052
SINGLE PHASE
CONFIGURATION**

120/208-240 VAC
3 wires + ground

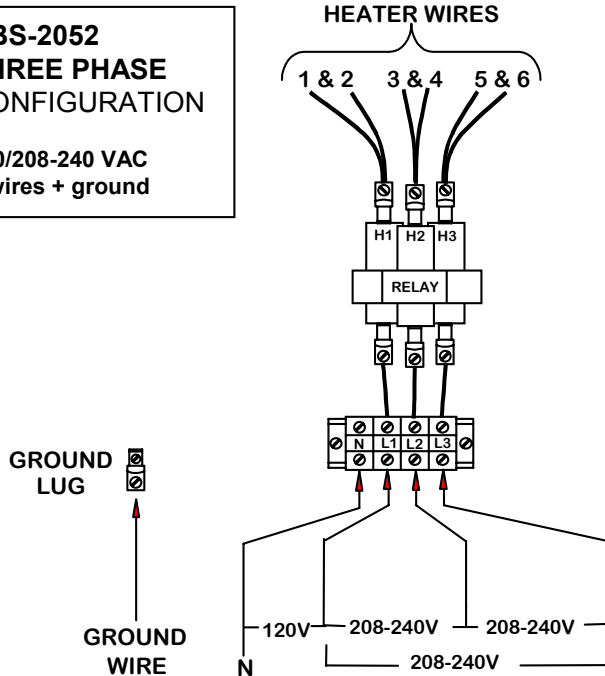


Terminal block: Connect incoming wires to L1, L2, N, Ground

Relay terminal: H1 - Connect heater wires 1 & 5
H2 - Connect heater wires 4 & 6
H3 - Connect heater wires 2 & 3

**CBS-2052
THREE PHASE
CONFIGURATION**

120/208-240 VAC
4 wires + ground

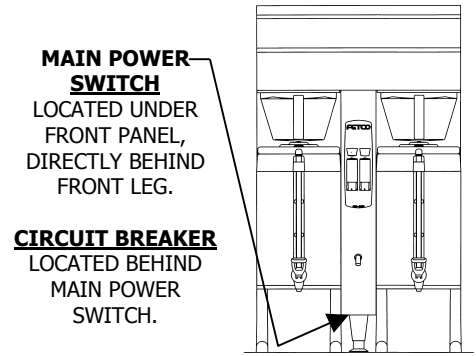


Terminal Block: Connect incoming wires to L1, L2, L3, N, Grnd.

Relay terminal: H1 - Connect heater wires 1 & 2
H2 - Connect heater wires 3 & 4
H3 - Connect heater wires 5 & 6

Final Setup

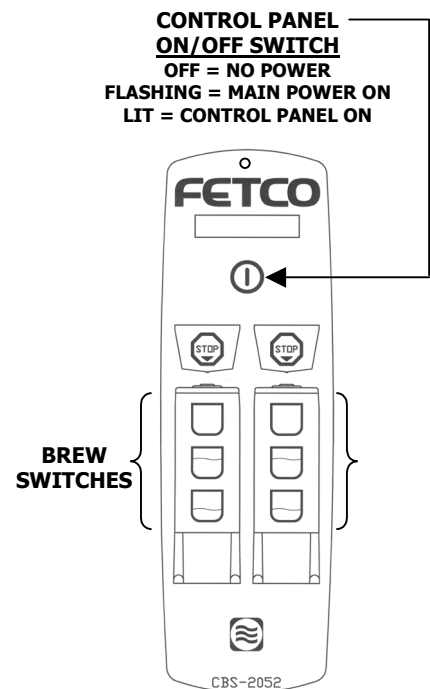
1. Turn on the incoming water supply line and inspect both inside and outside of the brewer for leaks in all fittings and tubes
2. Turn on the incoming power.
3. Press the brewer's main power switch, which is hidden behind the front leg of the brewer. The control panel on/off switch will begin flashing. 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 "FILL". 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". Once the temperature has reached 175°F, the actual water temperature will also 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 – 63 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

- Secondary power switch. 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, if over 175°F)
- "NO BAS" = Brew basket not in position.
- Blank = Ready to brew.
- Also displays error messages.

4 Stop Switches

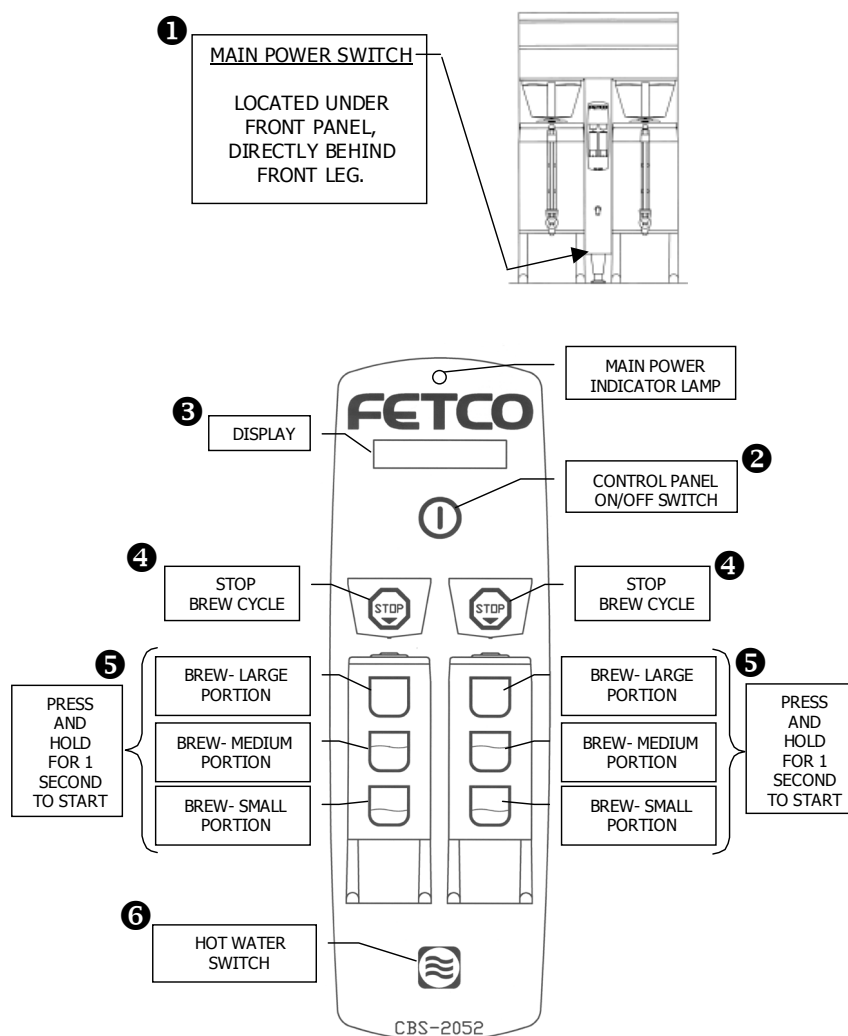
- Stops brew cycle
- Lit = Brew cycle in progress
- Invisible = Not brewing, or dripping in progress

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.

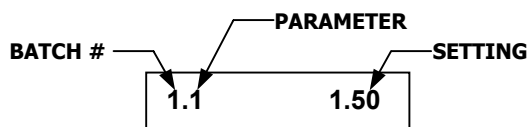
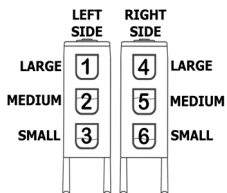
Notes:

- 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.
- ❖ Quickly hold the **STOP** button for 3 seconds.
- ❖ The display will show the software version for 3 seconds. Example: **0.0 1.35**
- ❖ Batches are numbered 1 – 3 (CBS-2051) or 1 – 6 (CBS-2052)



Example:
Left Side – Large Batch – Brew Volume 1.5 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, 3, 5, and 6 may be disabled by leaving them set to “OFF”. Change to “ON” to enable. Batches 1 and 4 cannot be disabled.
- ❖ After all batches are programmed, go to temperature settings.

Display

S t b y

P r G

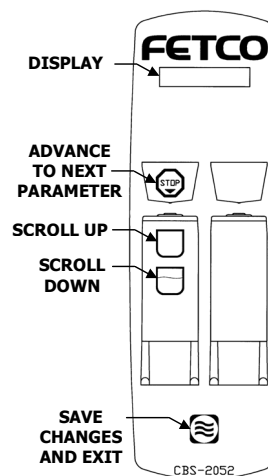
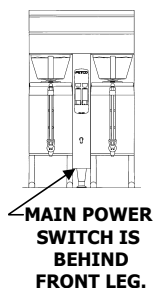
0.0 1.35

1.1 1.50

1.2 4.00

2.0 OFF

7 200



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 - 6)					
Parameter	Name	Range	Increment	Default Setting	Comment
X.0	Batch Enabled or Disabled	On/Off		Batch 1 & 4 = ON Batch 2, 3, 5, 6 = OFF	Batch 1 & 4 cannot be disabled.
X.1	Brew Volume (Gallons)	0.25 – 3.00	0.01	1.5 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.


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
51	Water Resistance			Water resistance (ohms) as read by probe.
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 in. 1 = Brew Basket out.
53	Power Relay State	0 - 1		Checks power relay on control board. To test, press Control Panel Power Switch. Display should toggle between 0 and 1. 0 = Power relay OFF, switch should blink. 1 = Power relay ON, switch should be lit..
54	N/A			Not used on this model.
55	Tank Temperature	180°F - 208°F		Displays current tank temperature. If temperature is below 175°F, displays "LO".
56	Circuit Board Configuration			Should read 110 for CBS-2051 111 for CBS-2052
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.
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	0.49 – 1.49 <i>If #59 is GAL</i> or 1.85 – 5.64 <i>If #59 is LTR</i>	0.92 3.48	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 top, press each button. Display will read 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. Go to #90

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.





Warning: During these tests, hot water may be dispensed from the valve being tested.

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	
				Software Ver. 1.51 and lower	Software Ver. 2.0 and higher
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.	Enter programming mode, then exit programming mode.	Turn main power switch off and on.
002	Power Failure Power state does not match feedback loop state.	Relay on control board has failed.	Replace control board.	Enter programming mode, then exit programming mode.	Turn main power switch off and on.
050	Shorted temperature probe.	Probe failure.	Replace probe.	Enter programming mode, then exit programming mode.	Turn main power switch off and on.
051	Open temperature probe.	Bad probe connection, or probe failure.	Check all connections. Replace probe if necessary.	Enter programming mode, then exit programming mode.	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, or the sensor is out of adjustment.	Brew basket lock has failed or sensor needs adjustment.	Repair or replace brew basket lock, or adjust sensor.	Press the flashing control panel power switch to resume operation.	Press the flashing control panel power switch to resume operation.
100	Initial Fill Error Initial fill time was more than 8.6 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.	Press the control panel power switch.
101	Error on refill Tank did not refill within 2 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.	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.	Enter programming mode, then exit programming mode.	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 5 minutes.	Mercury relay is stuck closed, bad output on control board, or temperature is set too high for altitude.	Check mercury relay, check control board output, or adjust temperature for altitude.	Enter programming mode, then exit programming mode.	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.	Enter programming mode, then exit programming mode.	Turn main power switch off and on.
202	Heater Short System is not calling for heat, but temperature rises more than 5°F.	Possible mercury relay stuck closed, or bad output on control board.	Check mercury relay and control board.	Enter programming mode, then exit programming mode.	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.	Enter programming mode, then exit programming mode.	Turn main power switch off and on.

Service

Utilize only qualified beverage equipment service technicians for service. A Service Company Directory may be found on our web site, <http://www.fetco.com>. Companies listed as “Extractor Authorized” stock parts for these models.

When changing the control board, check the software version on the chip. Example- V1.40. If the chip on the replacement board has an older software version than the board being replaced, carefully remove the chip from the old board and place it in the new board. Use a chip puller if one is available.

Cleaning & Maintenance

Brewer: The spray plates should be removed and cleaned periodically to remove hard water deposits. In areas with extremely hard water, it may be necessary to do this weekly. Monthly cleaning may be sufficient in areas with average water conditions.

LUXUS Dispensers :

Use the same techniques and products as you would use to clean any coffee urn. I.E.,

- a) the sight gauge brush to scrub the gauge
- b) urn brush for inside the dispenser
- c) urn cleaner to clean the dispenser
- d) stainless steel polish for the outside
- e) hot water and towels for the faucet parts

Care of Stainless Steel

(These procedures were developed by NAFEM and Packer Engineering.)

1. Use the proper tools. Don't use; steel pads, wire brush, or scrapers

When cleaning your stainless steel products, take care to use non-abrasive tools. Soft cloths and plastic scouring pads will not harm the steels passive layer. Stainless steel pads can also be used but the scrubbing motion must be in the direction of the manufacturers polishing marks. Step 2 tells you how to find the polishing marks.

2. Clean with the polish lines.

Some stainless steels come with visible polishing lines or "grain." When visible lines are present, you should always scrub in a motion that is parallel to them.

When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. Use alkaline, alkaline chlorinated or non-chloride containing cleaners.

While many traditional cleaners are loaded with chlorides, the industry is providing and ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask if they have an alternative. They probably will. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel and cause pitting and rusting.

4. Keep your equipment clean.

Use alkaline, alkaline chlorinated or non-chloride cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains.

5. Rinse, Rinse, Rinse.

If chlorinated cleaners are used you must rinse, rinse, rinse and wipe dry immediately. The sooner you wipe off standing water, especially when it contains cleaning agents, the better. After wiping the equipment down, allow it to air dry for the oxygen helps maintain the stainless steel's passivity film.

6. Never use hydrochloric acid (muriatic acid) on stainless steel.

7. Regularly restore / passivate stainless steel.

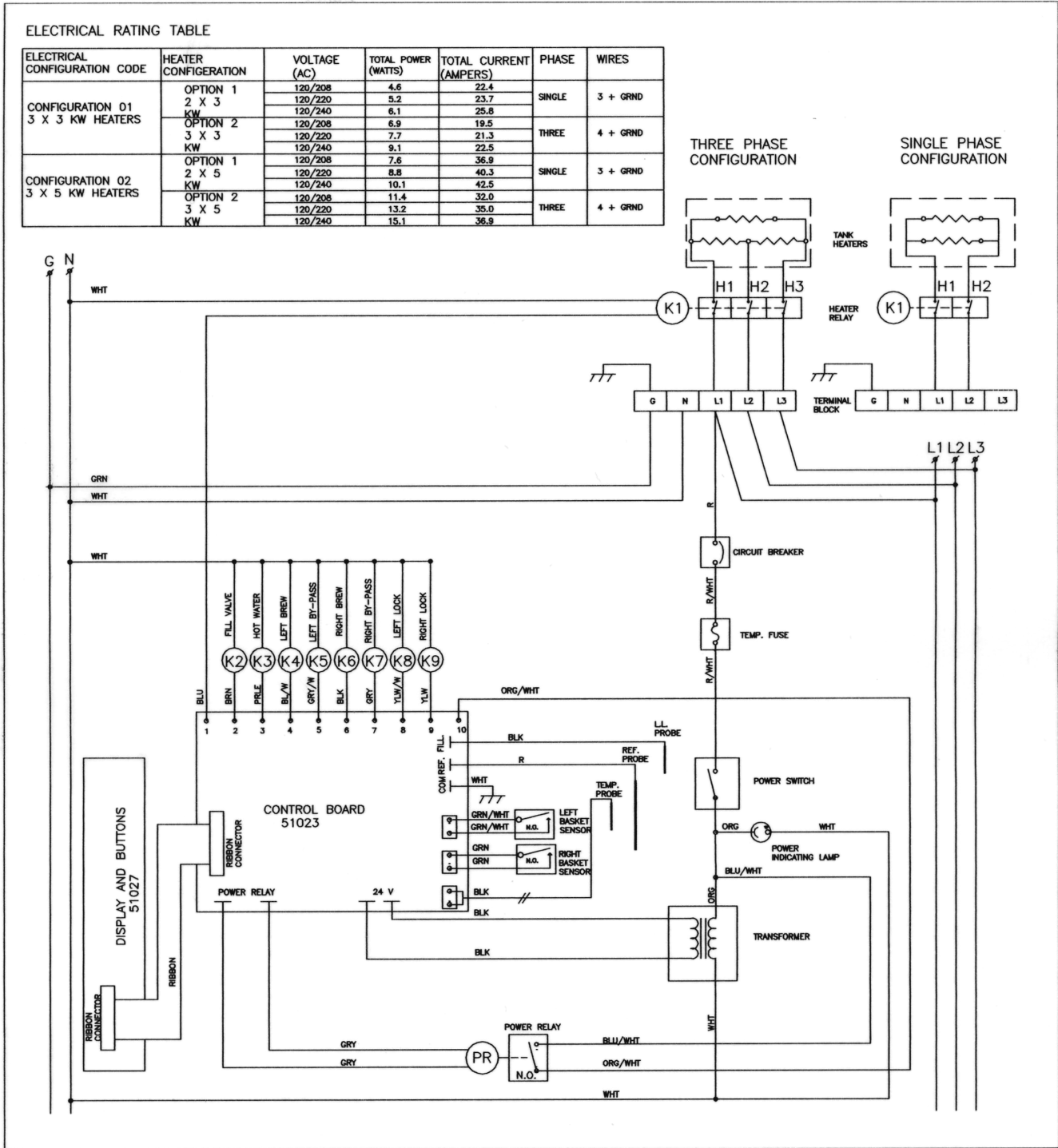
Recommended cleaners for specific situations.

Job	Cleaning Agent	Comments
Routine cleaning	Soap, ammonia, detergent Medallion	Apply with cloth or sponge
Fingerprints & Smears	Arcal 20, Lac-O-Nu, Ecoshine	Provides better film
Stubborn stains and discoloration	Cameo, Talc, Zud, First Impression	Rub in the direction of the polish lines
Grease and fatty acids, blood etc.	Easy-off, De-Grease It, Oven Aid	Excellent removal on all finishes
Grease and Oil	Any good commercial detergent	Apply with sponge
Restoration / Passivation	Benefit, Super Sheen	

Reference: Nickel Development Institute, Diversey Lever, Savin, Ecolab

Wiring Diagram

CBS-2052



FETCO FOOD EQUIPMENT TECHNOLOGIES COMPANY, INC.
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 PHONE: (800) 338-2699, (847) 821-1177
 e-MAIL: techsupport@fetco.com, http://www.fetco.com

FETCO PRODUCT NO. CBS-2052	DESCRIPTION WIRING DIAGRAM	WIRING DIAGRAM NO. 401158-000
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(CBS-2051 wiring diagram not available at time of publication)

Parts – Brewer

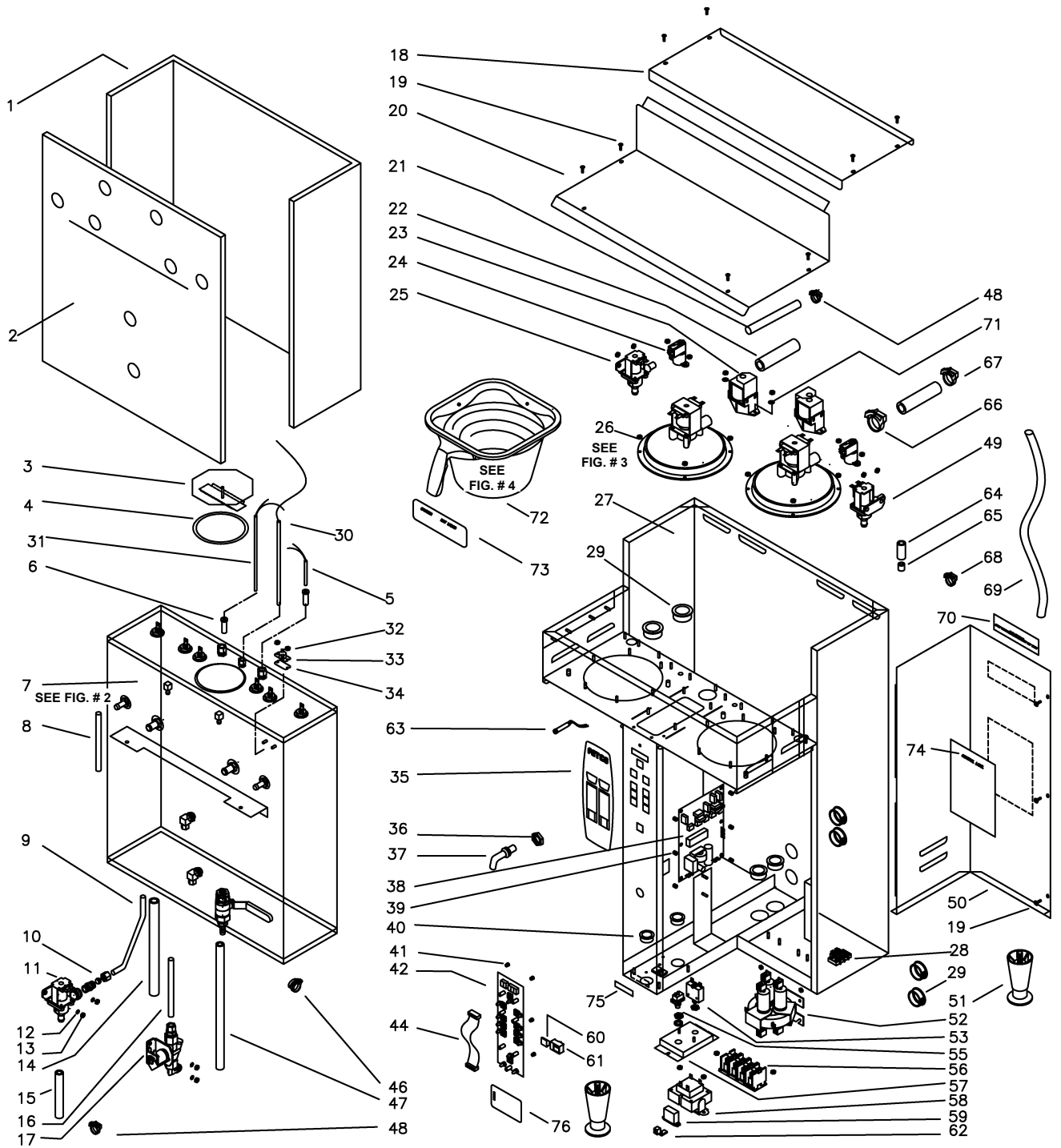
CBS-2051

- ▶ Main assembly and tank assembly drawings were not available at time of publication.
- ▶ Spray housing assembly – see figure 3.
- ▶ Brew basket assembly – see figure 4.

CBS-2051 Major Components:

PART NO	DESCRIPTION
51023	CONTROL BOARD, 2000 SERIES
51026	INPUT BOARD, 2051
54022	TEMPERATURE PROBE ASSY, 8"
102134	WATER LEVEL PROBE ASSY., 2.6"
102135	REFERENCE PROBE ASSY.
57047	COIL ASSY REPAIR KIT, DSV-11, 120 VAC
57073	VALVE REBUILD KIT, DSV11
57042	COIL ASSY REPAIR KIT, DSV-10, 120 VAC
57072	VALVE REBUILD KIT, DSV10
57006	FILL VALVE ASSY., S-53, 120V
101160	BREW BASKET LOCK ASSY., 120V
101158	BREW BASKET SENSOR ASSY.
52060	RELAY
52061	TRANSFORMER, 120VAC/24VAC
52017	MERCURY RELAY, 120V, 30ADP
53061	THERMOSTAT, TEMP. LIMIT
53009	HEATING ELEMENT, 3 KW, 240V

Figure 1 – CBS-2052



Drawing for CBS-2051 was not available at time of publication.

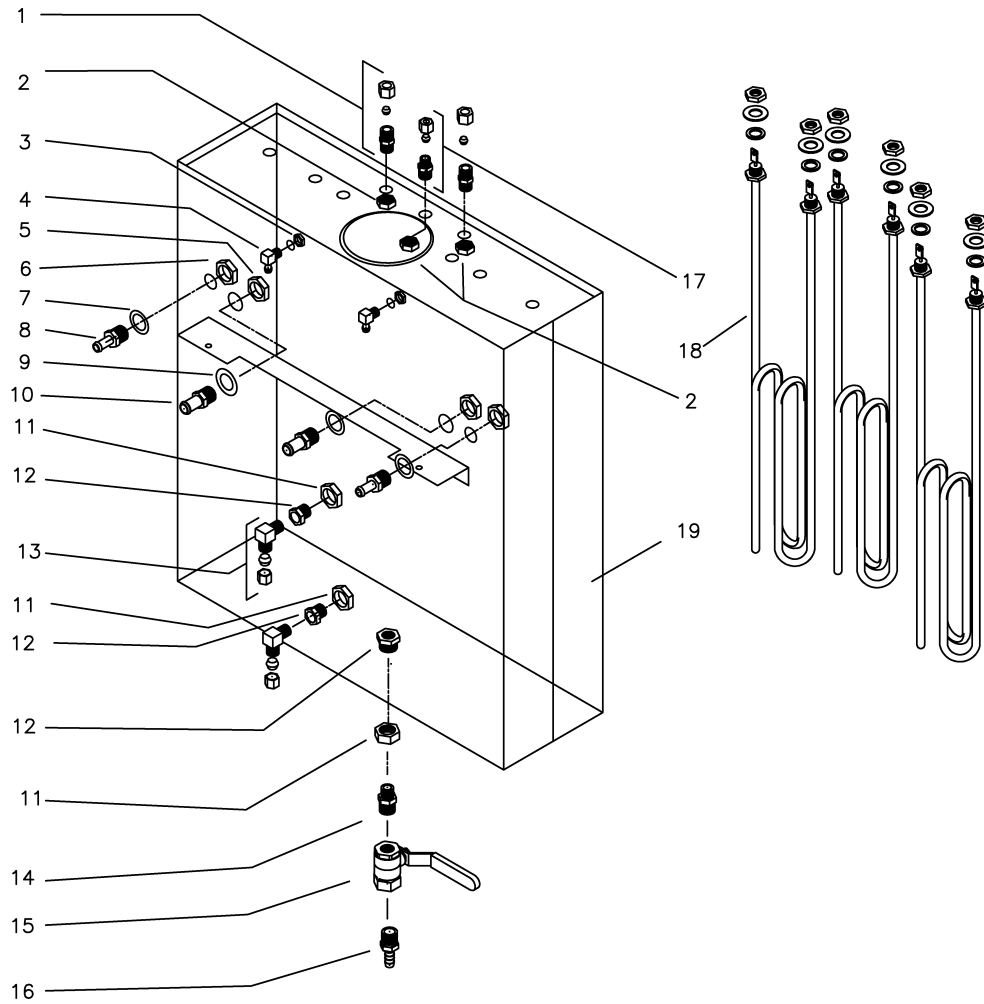
Parts List – Figure 1 – CBS-2052

ITEM	QTY	PART NO.	DESCRIPTION
1	1	22037	CBS-2052 TANK INSULATION- BACK
2	1	22036	CBS-2052 TANK INSULATION-FRONT
3	1	102013	TANK COVER ASSY
4	1	24002	TANK COVER GASKET
5	1	102134	WATER LEVEL PROBE ASSY., 2.6"
6			(INCLUDED WITH #5)
7	1	104016	CBS-2052 TANK ASSEMBLY (SEE FIGURE 2)
8	2	25042	VENT SILICONE TUBE
9	1	32049	S.S. TUBE - HOT WATER OUTLET
10	1	31129	1/4 MPT X 3/8 COMPRESSION FITTING
11	1	102140	HOT WATER VALVE 120 VAC, VENTED
11	1	102153	HOT WATER VALVE 208/240 VAC, VENTED (EXPORT VERSIONS ONLY)
11		57047	COIL ASSY. REPAIR KIT, DSV-11, 120 VAC (COIL, DIAPHRAGM, SPRING, & PLUNGER)
11		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)
12	8	83026	#8 INTERNAL TOOTH WASHER
13	34	84002	#8-32 S.S. NUT
14	1	22043	HOT WATER TUBE INSULATION
15	1	25043	3/8 I.D. X 5/8 O.D. X 4.25 SILICONE TUBE
16	1	32050	COLD WATER TUBE
17	1	57001	FILL VALVE ASSY.,S-45N, 120V, 1.5 GPM
17	1	57022	FILL VALVE ASSY.,S-45N, 220V, 1.5 GPM (EXPORT VERSIONS ONLY)
17		57004	FILL VALVE COIL, 120V (S-45N)
17		57021	FILL VALVE COIL, 220V (S-45N) (EXPORT VERSIONS ONLY)
17		57003	FILL VALVE REPAIR KIT (S-45N) (DIAPHRAGM, SPRING, & PLUNGER)
18	1	1445	TOP REAR COVER
19	11	82059	#8 X 32 3/8 T.H. S.S. SCREW
20	1	1446	TOP FRONT COVER
21	2	25044	3/8 I.D. X 5/8 O.D. X 7 1/2 BY-PASS SIL.TUBE
22	2	25045	.625 I.D X .965 O.D. 4.0" BREW SILICONE TUBE
23	2	101160	BREW BASKET LOCK-ASSY, 120 V
23	2	101174	BREW BASKET LOCK-ASSY, 230 V (EXPORT VERSIONS ONLY)
24	2	101158	BREW BASKET SENSOR ASSY
25	1	57044	BY-PASS VALVE -LEFT 120 V
25	1	57077	BY-PASS VALVE- LEFT 208/240 V (EXPORT VERSIONS ONLY)
25		57047	COIL ASSY. REPAIR KIT, DSV-11, 120 VAC (COIL, DIAPHRAGM, SPRING, & PLUNGER)
25		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)
26	2	-----	(SEE FIGURE 3) SPRAY HOUSING ASSY FOR 120V AND 220V
27	1	1030	CBS-2052 BODY WELDMENT
28	1	102116	CURTIS TERMINAL BLOCK NEUTRAL ASSY
29	4	86021	HEYCO SNAP BUSHING 1.375" HOLE
30	1	54022	TEMPERATURE PROBE, 8", W/SLEEVE & COMP NUT
31	1	102135	REFERENCE PROBE ASSY.
32	2	84001	#6-32 NUT
33	1	53061	THERMOSTAT, TEMPERATURE LIMIT, 230 DEG. F
34	1	03233	LIMIT THERMOSTAT SPACER
35	1	45063	CBS-2052 OVERLAY
36	1	33007	S.S. DISP. FITTING LOCKNUT
37	1	02065	HOT WATER FAUCET TUBE WELDMENT
38	1	51023	CONTROL BOARD, 2000 SERIES TFC-T1685-010

39	10	29007	#4 NYLON FINGERNUT
40	2	86032	HEYCO SNAP BUSHING 1.00" HOLE
42	1	51027	INPUT BOARD, CBS-2052
44	1	51028	RIBBON CABLE
46	1	86038	HEYCO HOSE CLAMP DIA. 0.671-0.812
47	1	25046	3/8 I.D. X 5/8 O.D. X 15" DRAIN SILICONE TUBE
48	4	86038	HEYCO HOSE CLAMP DIA. 0.671-0.812
49	1	57043	BY-PASS VALVE RIGHT 120 V
49	1	57076	BY-PASS VALVE RIGHT 208/240 V (EXPORT VERSIONS ONLY)
49		57047	COIL ASSY. REPAIR KIT, DSV-11, 120 VAC (COIL, DIAPHRAGM, SPRING, & PLUNGER)
49		57073	VALVE REBUILD KIT, DSV11. (PLUNGER, SPRING, AND DIAPHRAGM)
50	1	1447	CBS-2052 RIGHT PANEL
51	3	73011	LEG, 4" ADJUSTABLE
52	1	52025	RELAY, MERCURY, 60AMP TP, 120V COIL
52	1	52038	RELAY, MERCURY, 60AMP TP, 240V COIL, (EXPORT VERSIONS ONLY)
53	1	52027	CIRCUIT BREAKER 10 AMP
55	1	58054	PUSH BUTTON SWITCH
56	1	102104	TERMINAL BLOCK ASSY
57	1	3240	PUSH BUTTON AND CIRCUIT BREAKER BRACKET
58	1	52068	TRANSFORMER, PRIMARY 208/240 V, SEC 24 V (EXPORT ONLY)
58	1	52059	TRANSFORMER, PRIMARY 120 V, SEC. 24 VAC,
59	1	52060	RELAY G2R-1A-T-DC12
60	10	23101	.600 SQUARE LIGHT PIPE
61	10	23121	LIGHT PIPE HOLDER
62	1	65001	SLU-70 ILSCO COPPER LUG CONNECTOR
63	1	58068	POWER SWITCH INDIC. LAMP, 120 V, SEC. 24V
63	1	58071	POWER SWITCH INDIC. LAMP, 208/240V, SEC. 24V (EXPORT ONLY)
64	2	25060	BY-PASS SILICON TUBE .625 X .375 X 1.5"
65	2	25061	BY-PASS SILICON TUBE INSERT .500 X .250 X .500"
66	2	86039	HEYCO HOSE CLAMP DIA. 1.031-1.188
67	2	86036	HEYCO HOSE CLAMP DIA. .875-1.00
68	2	86038	HEYCO HOSE CLAMP DIA. .671-.812
69	1	29011	POLYETHYLENE FLEXIBLE SPLIT CONDUIT 0.625" I.D.
70	1	46027	HOT WATER WARNING LABEL
71	2	83051	FLAT WASHER
72	2	101165	BREW BASKET ASSY. (SEE FIGURE 4)
73	2	46011	BREW BASKET WARNING LABEL
74	2	46028	INSTRUCTION LABEL
75	1	46029	MAIN POWER SWITCH LABEL
76	1	44019	SINGLE PHASE CONFIGURATION LABEL
76	1	44020	THREE PHASE CONFIGURATION LABEL

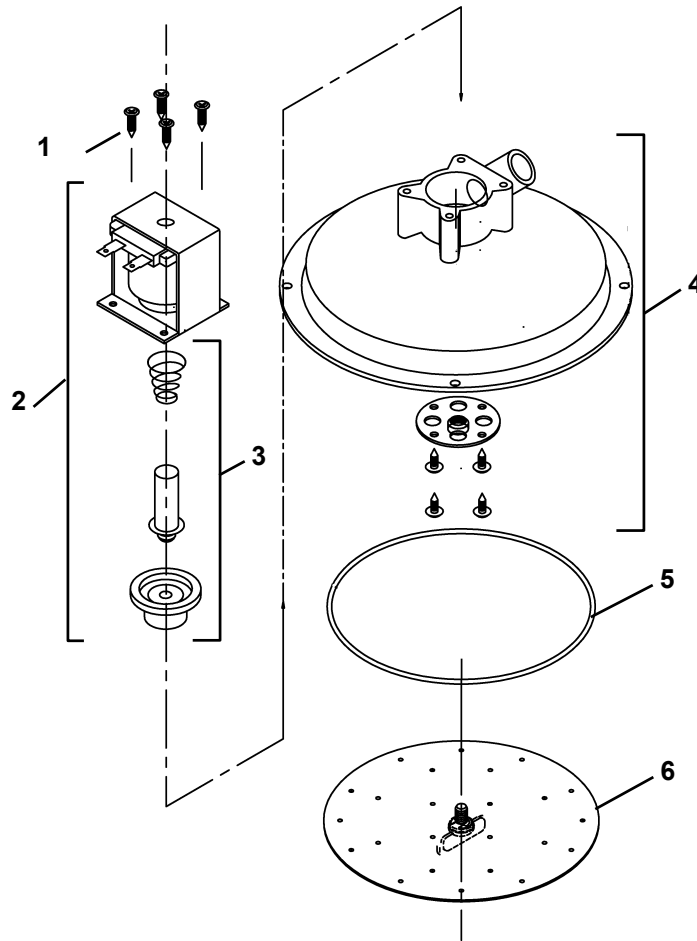
For current parts pricing, visit www.fetco.com.

Figure 2 – Tank Assembly – CBS-2052



ITEM	QTY	PART NO.	DESCRIPTION
1	2	31129	3/8" X 1/4" MPT CONNECTOR
2	3	31117	1/4" LOCKNUT
3	2	31116	1/8" LOCKNUT
4	2	31005	1/4" HOSE X 1/8"MPT 90 DEG HOSE BARB ELBOW
5	2	31151	1/2" LOCKNUT
6	2	31118	3/8" LOCKNUT
7	2	83043	FLAT WASHER I.D. .688 X O.D. 1.125
8	2	31077	3/8" BARB X 3/8" MPT
9	2	83048	.835 I.D. X 1.25 O.D. FLAT WASHER
10	2	31150	HOSE BARB X MALE PIPE THREAD RIGID 5/8 X 1/2
11	3	84007	3/4-16 X 1/4" S.S NUT
12	3	31021	3/4-16 X 1/4 FSPT HEX HEAD BUSHING
13	2	31027	3/8 COMPR. X 1/4 MPT MALE ELBOW
14	1	31082	3/8" MPT X 1/4 MPT HEX NIPPLE
15	1	34004	BALL VALVE 3/8 X 3/8 MPT
16	1	31054	1/2" HOSE BARB X 3/8 MPT
17	1	31036	1/4" COMPR. X 1/4" MPT CONNECT.
18	3	53056	HEATER ELEMENT ASSY, 5000 W 240VAC
18	3	53009	HEATER ELEMENT ASSY, 3000 W 240VAC
19	1	40023	TANK WELDMENT, CBS-2052

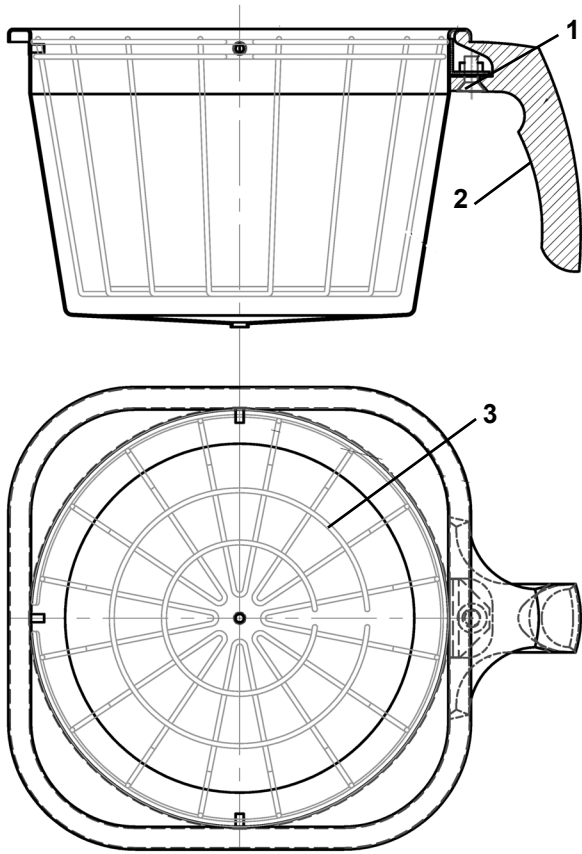
Figure 3 – Spray Housing Assembly – CBS-2051 & CBS-2052



ITEM #	QTY	PART NO	DESCRIPTION
1	4	82112	#8 X 3/4" PAN HD. PHIL. T.S. 18-8 S.S. SCREW
2	1	57042	COIL ASSY. REPAIR KIT, DSV-10, 120 VAC
2	1	57075	COIL ASSY. REPAIR KIT, DSV-10, 240 VAC (EXPORT VERSION ONLY)
3	1	57072	VALVE REBUILD KIT, DSV10
4	1	102113	SPRAY HOUSING ASSY.
5	1	24035	O-RING, 5.5 I.D. X 5 11/16 O.D. X 3/32
6	1	102108	SPRAY PLATE ASSY., 5 7/8" DIA.

For current parts pricing, visit www.fetco.com.

Figure 4 – Brew Basket Assembly, 16" X 6", Part # 101165



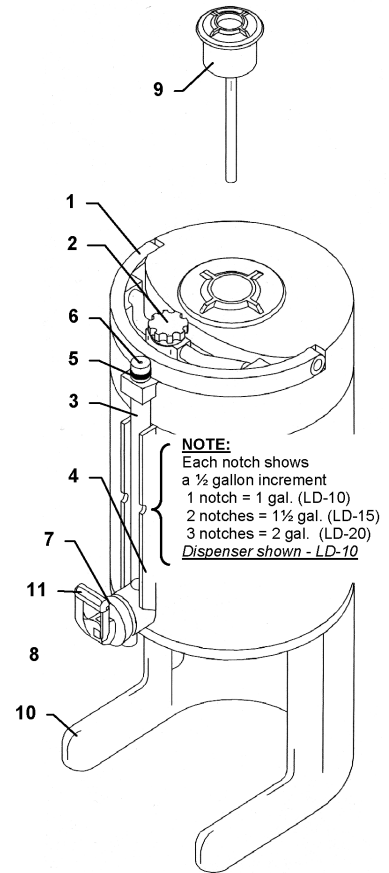
ITEM	QTY	PART #	DESCRIPTION
1	1	82096	HANDLE SCREW
2	1	23117	BREW BASKET HANDLE
3	1	9006	WIRE INSERT, 16 X 6
NOT SHOWN		F001	PAPER FILTERS, 15" X 5.5" 500 PER CASE

For current parts pricing, visit www.fetco.com.

Parts - LUXUS Dispensers

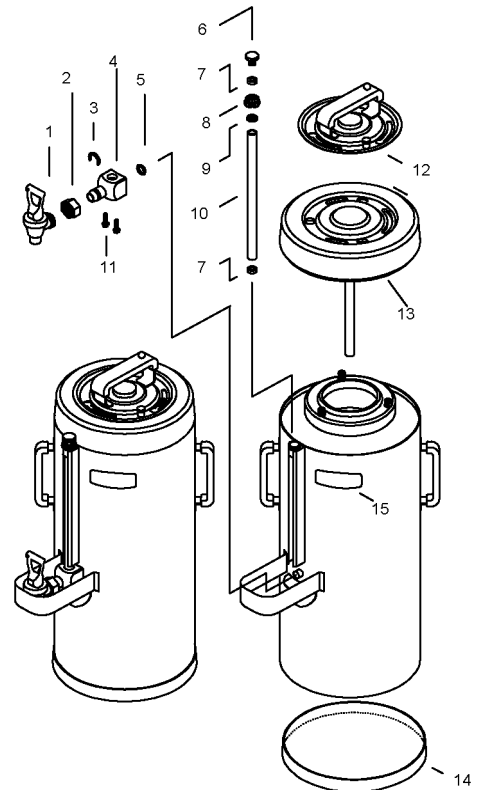
LUXUS LS & LD Series

Item	Part No.	Description
1-all sizes	102068	handle assembly (includes 3 piece handle, plug-knob assy., screw bushings and screws)
2-all sizes	102067	plug-knob assy. only
3- for LD 10	21044	sight gauge tube, 1 gal.
3- for LD 15	21045	sight gauge tube, 1.5 gal.
3- for LD 20	21046	sight gauge tube, 2 gal.
4- all sizes	83012	sight gauge washer, lower
5- all sizes	83013	sight gauge washer, upper
6- all sizes	71047	sight gauge cap
7- all sizes	71054	faucet upper assembly (includes handle, cap, spring and seat cup)
8-all sizes	71035	faucet seat cup
9- for LD 10	102069	funnel assembly-1 gal ld
4- all sizes	83012	sight gauge washer, lower
5- all sizes	83013	sight gauge washer, upper
6- all sizes	71047	sight gauge cap
7- all sizes	71054	faucet upper assembly (includes handle, cap, spring and seat cup)
8-all sizes	71035	faucet seat cup
9- for LD 10	102069	funnel assembly-1 gal ld
9- for LD 15	102070	funnel assembly-1.5 gal ld
9- for LD 20	102071	funnel assembly-2 gal ld
10- all sizes	102066	base assembly, (includes base, foot, & 3 screws)
11- all sizes	71056	faucet handle-black
11- all sizes	71055	faucet handle-orange
not shown	74003	sight tube brush 16"



LUXUS TPD-1.5

Item	Part No.	Description
1	71026	faucet, complete, black handle (ES)
1	71037	faucet upper assy. w/black handle (handle, spring, seat cup and nut)
1	71035	faucet seat cup
1	71028	faucet handle- black
1	71027	faucet handle, decaf faucet (orange)
2	31045	faucet union nut
3	71036	faucet "c" ring
4	102052	faucet shank assembly
5	24009	faucet shank "o" ring 1/2" x 3/4"
6	12018	vent top plug
7	71017	sight gauge washer lower
8	71024	sight gauge cap
9	71018	sight gauge washer upper
6-9	102020	sight gauge cap and vent assy.
10	21033	sight gauge tube 10-5/16" (plastic)
10	71038	sight gauge tube 10-5/16" (glass)
11	82015	faucet shank screw-2 required
12	101038	twist lock cover assembly
13	101052	brew funnel assembly
14	23024	plastic bottom
15	41011	LUXUS label



For current parts pricing, visit www.fetco.com.

