

CBS-1000 Series Coffee Brewers

Models:

- ▶ CBS-11H
- ▶ CBS-12H



Driven To Pioneer Innovation™

Table of Contents

Contact Information	2	Operating Procedures	7
Product Description/Features	2	Service	8
Technical Data	2	Warranty	8
Brewing Specifications	2	Principles of Operation	8
Weights and Capacities	2	Adjustments	11
Electrical Configuration and Brewing Efficiency	3	Parts	14
Dimensions & Utility Connections.....	4	Troubleshooting.....	18
Installation.....	5		

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Product Description/Features

CBS-11H - Single Coffee Brewing System CBS-12H - Twin Coffee Brewing System

- 1.5 gallon, insulated-heated, portable, all stainless steel beverage dispensers
- Stainless steel, gourmet size brew baskets
- Brew basket double safety locks
- Open type, leak free dispense system
- Fully automatic, with electronic temperature control
- Mercury type power contactor
- Total serviceability from the front
- Guard protected gauges and faucets
- Hot water service
- Self-locking container bottoms

Optional Features:

- Half batch brewing capability*
- Iced tea brewing capability*
- Color stainless steel finish
- Custom and export voltage
- Insulated satellite servers and warming stands

* Can be added at any time.

Technical Data

Brewing Specifications

Brew Volume:

Full Batch 1 ½ gal. (5.7 lit.)
 Half Batch ¾ gal. (2.8 lit.)

Brew Time:

Full Batch 4 - 4 ½ min.
 Half Batch 2 - 2 ¼ min.
(Allow an extra 2-4 minutes for coffee to finish dripping)

Coffee Filter Size:

15" X 5 ½" – standard (FETCO Product # F001)
 13" X 5" - optional half batch (FETCO Product # F002)

Temperature:

205°F inside water tank (at sea level)
 195°F ± 5° at sprayhead

Bypass Range:

0 to 33%
(factory set at 0% unless specified)

Water Requirements:

20-75 psig
 ½ gpm (CBS-11H), 1 ¼ gpm (CBS-12H)

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-11H	56 lbs.	3.5 gal.	29 lbs.	85 lbs.	9 lbs.	21.5 lbs.	107 lbs.
CBS-12H	77 lbs.	6.0 gal.	50 lbs.	127 lbs.	9 lbs.	21.5 lbs.	170 lbs.

Electrical Configuration and Brewing Efficiency

CBS-11H

1.5 gallons per batch

Electrical Config. Code	Heater Configuration	Voltage Connection	Phase	Wires	KW	Maximum Amp draw	Batches per Hour (max11)	
							Cold Water	Hot Water
C11021	1 X 1800 watt	120	1 ph.	2 + ground	2.0	16.3	3.0	6.8
C11031	1 X 3000 watt	120/208	1 ph.	3 + ground	2.5	12.1	3.7	8.6
		120/220	1 ph.	3 + ground	2.8	13.2	4.3	10.0
		120/240	1 ph.	3 + ground	3.2	13.8	5.0	11.0
C11041	1 X 4000 watt	120/208	1 ph.	3 + ground	3.2	15.7	5.0	11.0
		120/220	1 ph.	3 + ground	3.7	17.1	5.8	11.0
		120/240	1 ph.	3 + ground	4.2	18.0	6.6	11.0

CBS-12H

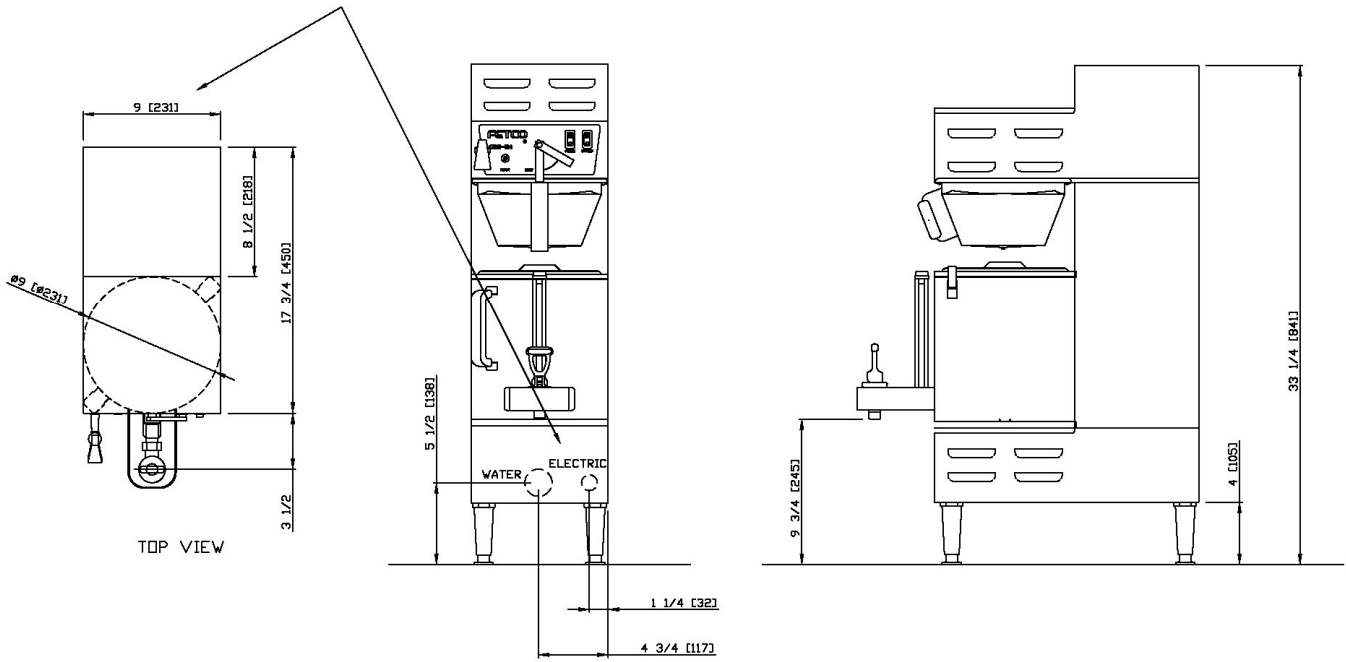
1.5 gallons per batch

Electrical Config. Code	Heater Configuration	Voltage Connection	Phase	Wires	KW	Maximum Amp draw	Batches per Hour(max 22)	
							Cold Water	Hot Water
C12031	2 X 3000 watt	120/208	1 ph.	3 + ground	4.8	24.1	7.4	17.2
		120/220	1 ph.	3 + ground	5.5	26.2	8.6	19.9
		120/240	1 ph.	3 + ground	6.3	27.5	9.9	22.0
C12041	2 X 4000 watt	120/208	1 ph.	3 + ground	6.3	31.3	9.9	22.0
		120/220	1 ph.	3 + ground	7.3	34.1	11.5	22.0
		120/240	1 ph.	3 + ground	8.3	35.8	13.2	22.0

Dimensions & Utility Connections

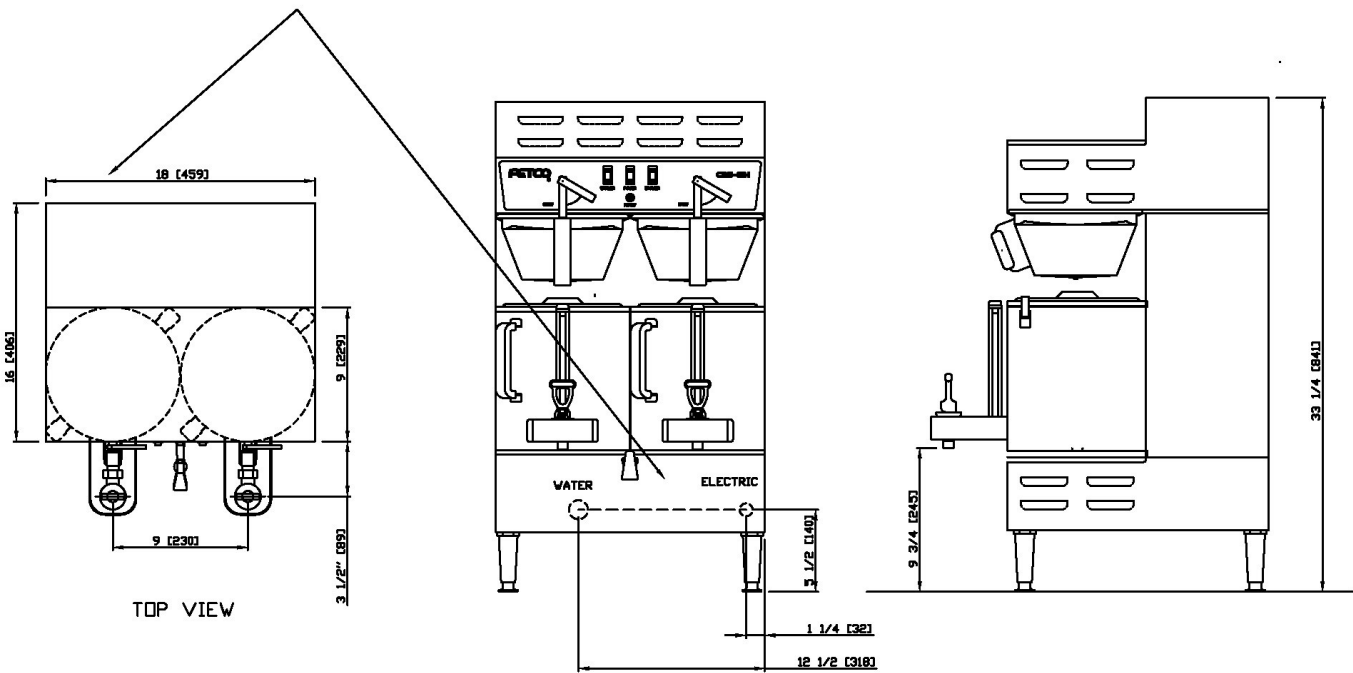
CBS-11H

ELECTRIC INPUT AND WATER CONNECTION FROM REAR



CBS-12H

ELECTRIC INPUT AND WATER CONNECTION FROM REAR



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.
- ❖ The power connection to L2 on the terminal block must be at least 105 volts. Less than 105 volts will cause erratic behavior from the brewer.
- ❖ The circuit breaker is located on the bottom of the brewer. To reset it, push the button in and release.
- ❖ The electrical drawing for the brewer is located on the inside of the upper cover.

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 ½ gallons per minute for the CBS-11H, and 1 ¼ gallons per minute for the CBS-12H 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 and 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.



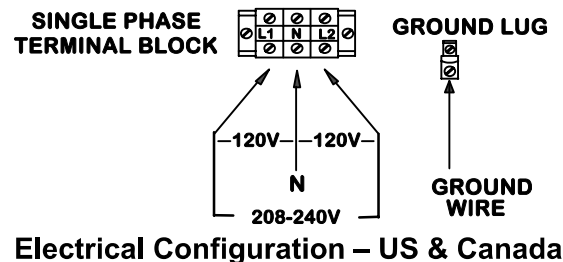
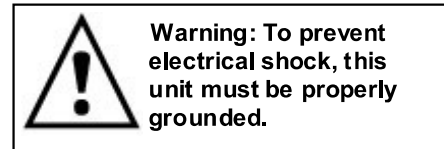
Warning: Legs are to be adjusted for leveling the brewer only. Do not use for height adjustment or extend them higher than necessary.

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 ½ gallons per minute for the CBS-11H, and 1 ¼ gallons per minute for the CBS-12H, 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. Only 120vac powered units are shipped from the factory with power cords and plugs attached. For other voltages, 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. Finally, connect the incoming power wires to the terminal block in accordance with applicable codes.

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. Turn on the brewer's main power 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.
5. The heaters will be disabled by the control board until the tank is full.
6. The brewer will be ready for operation as soon as the ready light comes on to signify that the water tank is up to temperature. The time required to reach brewing temperature will vary according to the electrical configuration ordered.
7. 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. With water only, the correct level can be observed as being approximately ¼ inch below the top edge of the container.
8. 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. Don't remove the brew basket until it has stopped dripping.
2. Make sure the dispenser is empty before brewing into it.
3. Show how to attach covers, close, and or secure the dispensers for transporting.
4. Show the location and operation of the water shut off valve as well as the circuit breaker for the brewer.
5. 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.
6. 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 Procedures

1. Turn brewer on/off switch (E) to the on position

- The power switch will illuminate to indicate that the brewer has power and is operating.
- When the **ready light (F)** illuminates, the brewer is fully up to temperature. The amount of time required to gain full operating temperature will vary depending on the electrical configuration that was ordered, and the temperature of the incoming water.

2. Remove the brew baskets from the brewer.

- H model brewers will have a safety bar (C) in front of the brew basket to make removing the brew basket a 2-handed operation. This was done to help draw attention to the basket so any residual hot water or coffee will be noticed by the operator.
- Place a paper filter in each basket to be used. Pour into the paper filter the appropriate amount of pre-measured, ground coffee. The amount of coffee used will depend on your personal tastes and the recommendation of your roaster.
- Slide the brew basket back into the rails on the brewer. Insure the latch is outside of the basket.

3. Carefully drain any coffee or preheating water from the dispensers through the faucets before starting a coffee brewing cycle.

- Overflowing of the dispensers may result if the dispensers are not completely empty when the brew cycle begins. Verify by opening the faucet over an appropriate container or drain. The last several cups cannot be seen in the sight gauge tube.
- **CAUTION:** both the coffee or water may still be hot enough to cause burns, so be careful when draining the dispensers

4. Place the dispenser(s) in position under the brew baskets.

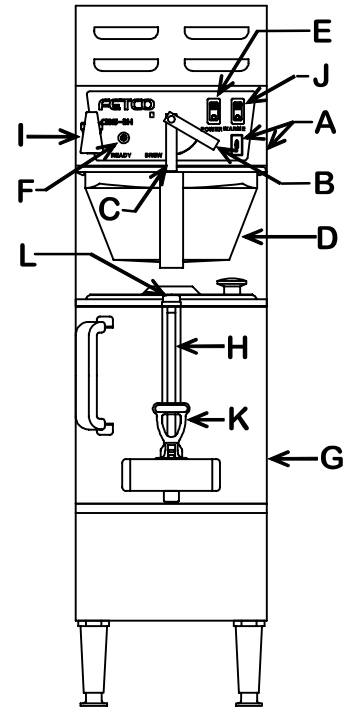
- Ensure that the cover is in place, the dispenser is empty, and the faucet is closed.
- Turn the switch(s) (J) for the warming elements to the on position.

6. Start the brew cycle.

- When the ready light illuminates, start a brew cycle by rotating the brew lever (B) to the brew position.
- It will not be necessary to interrupt the cycle while brewing coffee. The brewer will return to the stopped and ready status automatically.
- It is normal for the ready light to go out after the start of the brew cycle. On twin brewers, there is enough hot water in the brewer to support a second brew, even if the ready light is off. After brewing on both sides, you must wait for the ready light to come back on.
- The electrical configuration and the electrical power connected to the brewer will determine how long before the ready light comes back on for the next brew.

CAUTION

- **Do not remove the brew basket immediately after the brew cycle has finished. Wait until dripping from the bottom of the brew basket has stopped. Carefully remove the brew basket while inspecting the inside of the basket for hot coffee that may have been trapped or has not finished draining.**



Legend:

- A**-Full/half batch switch
- B**-Brew lever
- C**-Safety bar
- D**-Brew basket
- E**-On/off switch
- F**-Ready light
- G**-Dispenser
- H**-Sight gauge
- I**-Hot water faucet
- J**-Warmer switch
- K**-Dispenser faucet
- L**-Vent cap

Service

Warranty

All FETCO brewers come with a limited warranty. All warranty service must be pre-authorized by calling the FETCO Service Department at (800) 338-2699.

Principles of Operation

Fill System

The fill system consists of a liquid level control board, a water level probe at the top of the tank, a fill valve, and a fill tube. As the water rises and touches the probe, continuity is established between the probe tip and the tank body, and the fill valve closes.

When water is dispensed, the water level drops below the probe. After a 5 second delay, the fill valve opens until the water touches the probe again.

The 5 second delay, and the speed that water refills the tank during brewing, results in many short bursts of water. The sound made by these repetitive bursts will let you know the fill system is functioning normally.

The fill system is designed to protect the heaters during both the installation and a loss of the water supply. During initial installation, or whenever the power switch is turned on, voltage will not be supplied to the thermostat until the tank fills and water touches the water level probe.

During operation, when water is dispensed and the water level drops below the probe, a fill signal is sent to the fill valve. If no water is sensed by the probe after 40 seconds, the voltage to the thermostat and the heaters is removed.

Water enters the tank through the fill tube. A hole is drilled in the upper portion of the fill tube to prevent water from being siphoned from the tank. The fill tube extends to the bottom area of the tank. This introduces cold incoming water directly to the heaters and away from the dispense assembly.

The water tank can be drained through a valve located inside the lower compartment of the brewer.

Temperature System:

The temperature system consists of an electronic thermostat, a temperature probe, and heating elements, and is enabled by the liquid level control board. (See the previous section - Fill Circuit.)

When the water level probe is in contact with water, power is delivered to the thermostat through the liquid level control board. If the temperature probe senses that the water is not hot enough, the thermostat energizes the heating elements through the mercury relay, the water is heated, and the ready light goes off.

Once the water temperature reaches the set point, the thermostat disengages power to the heaters and the ready light illuminates.

The thermostat is adjusted to 205° F ± 2° at the factory. (Slightly lower for high altitude installations.)

Timing System:

The timing system consist of the timer and the dispense latch assembly.

When the brew handle is rotated from the stop to the brew position, it pushes the plunger in the latch coil and closes the micro switch, and the timer starts the timed cycle. It also starts the hot water flowing.

The timer energizes the dispense latch coil, which acts as a magnet, to hold the brew handle in the brew position. It also lights the brew light. The coil remains energized throughout the brew cycle timed sequence.

When the timer finishes its cycle, it removes voltage from the latch coil. The latch coil then releases the brew handle, a spring returns it to the stop position, and the flow of water stops. This return opens the micro switch, stopping voltage from going to the timer. The brew light and the timer are disabled, and wait for the brew handle to engage the next brew cycle.

Dispense System:

The dispense system is completely mechanical. It is one of the areas that makes FETCO's brewer truly unique. (See the illustration in this section.)

When you rotate the brew lever down to brew, the end of the dispense tube is submerged in the hot water tank. It is held in the brew position by the magnetic action of the dispense latch coil.

The brew water travels down the dispense tube to the sprayhead assembly. The rate of flow over the coffee is controlled by the flow disc above the spray cutter. The standard hole in the flow disc is .240". Other flow discs are available for special situations like high levels of by-pass.

The sprayhead can be assembled incorrectly during cleaning. Refer to the cleaning label on the brewer for proper assembly. The flow disc has the flange down, flat side up. The six triangle spray cutter has the flange up. The eight hole spray cutter used in place of the triangle cutter goes bumps down.

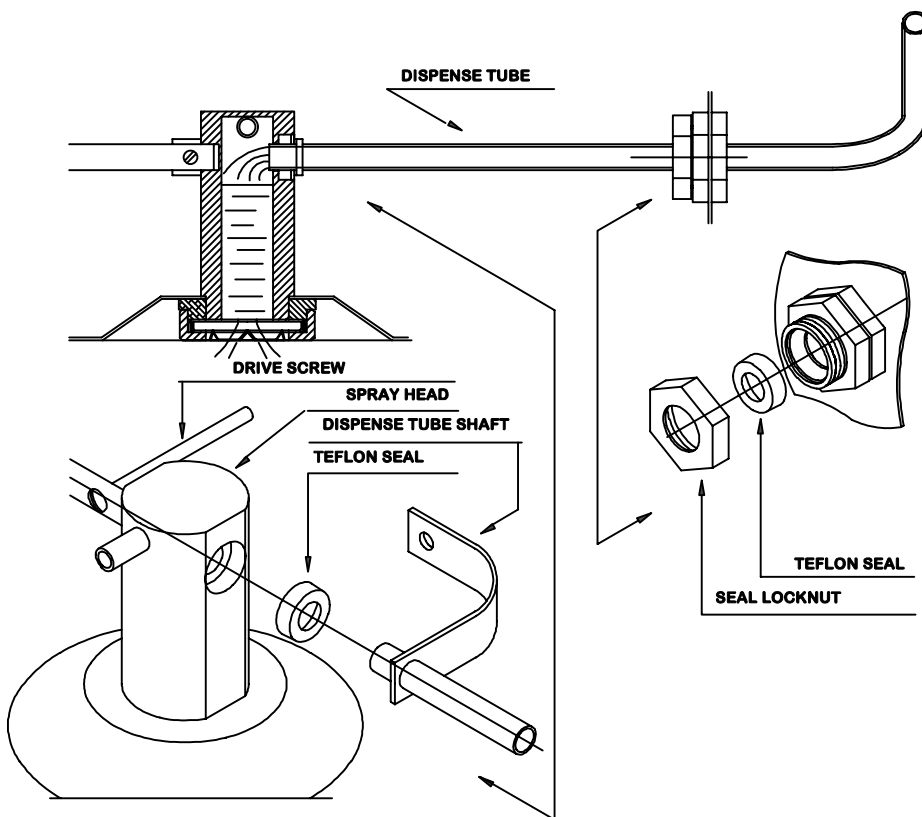
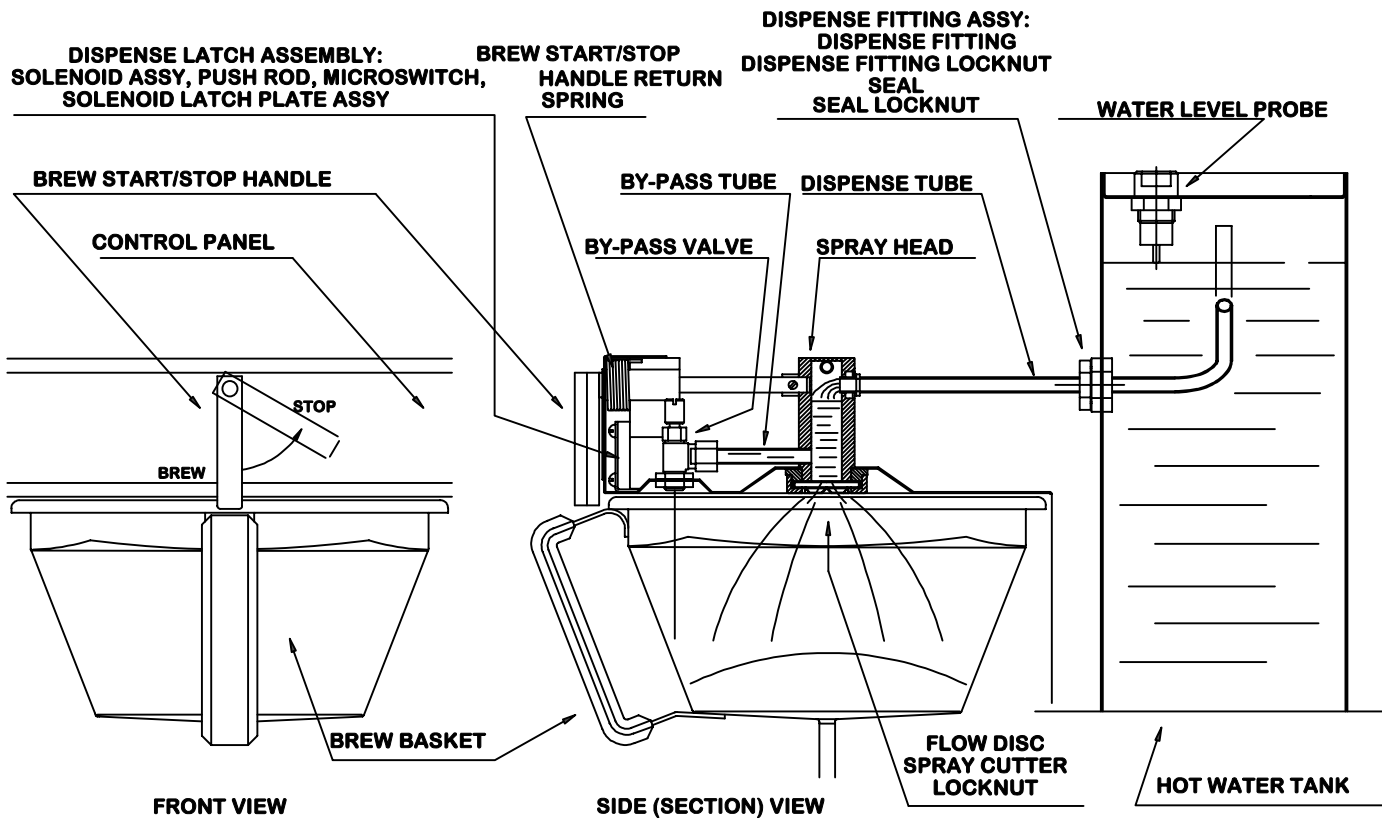
A bypass valve and tube are connected to the sprayhead. This valve directs brew water around the outside edge of the filter paper. The by-pass valve is shipped in the closed position from the factory. Each time the valve is adjusted, the brew volume is affected. Adjustment of the by-pass valve is for flavor only.

When the timer circuit releases the brew latch, the dispense tube pops back above the hot water level. The remaining brew water drains from the dispense system leaving it free of standing water. Steam escaping from the brew tank through this tube inhibits the formation of lime in the brew system.

The dispense system is clean & semi dry for all but the brief time required for the brew cycle. This eliminates any chance of lime build-up affecting the brew cycle.

It is very easy to dislodge the dispense tube seals while servicing the dispense system. If you see it leaking profusely, remove the nut and dispense tube. Reset the seal fully into the recess and carefully insert the dispense tube. Then secure the locknut before you back the tube into position. (See detailed instructions on the next page.)

Mechanical Illustration - Dispense System



To remove the dispense tube:

1. Unscrew seal locknut and release the drive screw from dispense tube shaft.
2. Turn the dispense tube slightly back and forth, while pushing the tube into the hot water tank until it is free from the sprayhead.

Pull the dispense tube out of the tank. Remember the tube is bent inside the tank. The seal will come out with the tube.

To install the dispense tube:

1. Clean any lime build up off the tube and then slide the seal off. Push the seal carefully into its chamber in the fitting. (spring towards the hot water tank.)
2. Place the seal locknut onto the tube and slide the tube into the seal. Tighten the seal locknut.
3. Work the tube back into the sprayhead seal.
4. Join the dispense tube shaft and the brew handle shaft with the drive screw.

Adjustments

Thermostat Adjustment:

For equipment manufactured before April 1, 2004

The brewer's water tank temperature is factory set at 205°F (slightly lower for high altitudes, to prevent boiling). This setting will deliver water at 195°F ± 5° to the coffee grounds.

Measure the temperature by holding a thermometer in the stream of water flowing out of the hot water faucet. The temperature should be 195°F ± 5°.

If an adjustment is necessary:

- Remove the upper cover of the unit.
- The thermostat is located in the upper section of the brewer. Locate the adjustment stem, which may be taped to the thermostat.
- Insert the stem into the adjustment hole.
- Turn the adjustment stem slightly clockwise (as viewed from the stem insertion point) to increase the temperature, and counter-clockwise to decrease the temperature.
- If you decreased the temperature setting, run 2 or 3 brew cycles to allow enough cold water into the brewer to lower the tank temperature.
- Wait for the "ready" light to come on, and measure the temperature again.
- Repeat until the desired temperature is obtained.

Effective April 1, 2004:

A new digital thermostat and temperature probe were introduced as a direct replacement for the old style thermostat and probe.

During normal operation, the digital readout displays the last two digits of the actual water temperature. When the adjustment tool is turned, the readout begins flashing to indicate the set point, not the actual temperature. After the tool is released, the readout stops flashing and displays the actual temperature again.

A red LED lights when the power to the thermostat is on. A yellow LED lights when the thermostat is calling for heat.

To adjust, turn the adjustment tool. If no adjustment tool is present, a small flat-head screwdriver may be used. The display will flash, indicating that the display is showing the set point, not the actual temperature.


The dots below the numbers indicate the temp range.

- 0 dots – less than 100° F
- 1 dot – between 100° and 200° F
- 2 dots – over 200° F

Examples:

 = 75°F

 = 187°F

 = 203°F

Timer Adjustment:

For equipment manufactured before April 1, 2004

The timers control the amount of water that is used for brewing. The dual sided brewer, model # CBS-12H, has separate timers to control each side independently.

All timers are factory set to deliver the correct amount of water.

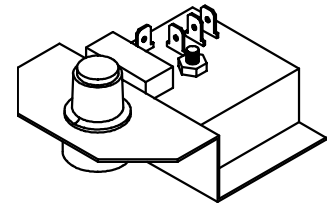
There are three possible types of timers used:

- Part # 51006 – full batch only (standard)
- Part # 51005 – full / half batch (optional) The half batch setting provides exactly half the amount of water as the full batch setting.
- Part # 51017 – dual portion (optional) The timer has 2 independent settings.

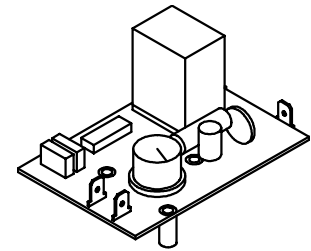
Adjustment of the factory settings may be desired to compensate for the amount of water absorbed by the coffee grounds. Approximately 2 ounces of water will be absorbed for every ounce of coffee.

To adjust the timer:

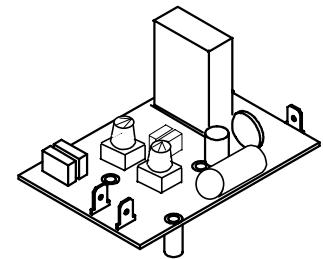
- Remove the brewer's upper cover.
- If your brewer has the half-batch or dual portion option, make sure the selector switch is in the full batch position.
- Note the current setting of the dial before making any adjustments.
- Turn the knob clockwise to increase and counter-clockwise to decrease the timer setting. On the dual portion timer, the knob labeled "T1" controls the full batch setting.
- Run a full brew cycle to check the brew level.
- If necessary, repeat the adjustment until the desired volume is obtained.
- For the dual portion timer, set the selector switch on "half" and adjust the knob labeled "T2" until the desired volume of water is obtained.
- Replace the cover.



51006 timer, 120V



#51005 timer, full/half, 120V



#51017 timer, dual portion, 120V

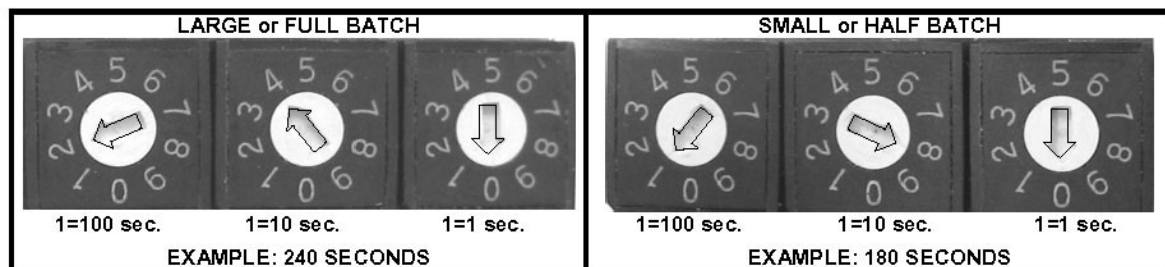
Effective April 1, 2004:

A new digital timer was introduced as a direct replacement for the three old style timers. When a batch selector switch is not connected, the timer functions as a single portion timer.

The timer has two independent settings, with three dials for each setting. The first dial in each group sets 100 second increments, the second dial sets 10 second increments, and the third dial sets 1 second increments.

A red LED lights when the power to the timer is on. A yellow LED lights when the timer is running.

A small flat head screwdriver is required to adjust the dials.



part # K034, digital timer, 100-120 VAC

part # K036, digital timer, 200-240 VAC (export versions only)

Water Level Control Board

Effective April 1, 2004:

A new digital water level control board was introduced as a direct replacement for the old style liquid level control board. The new board features a jumper to adjust its' sensitivity for reverse osmosis or other types of ultra-pure water.

The default jumper setting is LO (50K ohms) for normal water. If the brewer tank overfills because of ultra-pure water, the jumper should be set to HI (100K ohms).

A red LED lights when the power to the board is on.

A green LED lights when the water level probe detects that the tank is full.

A yellow LED lights when the FILL circuit is energized.

A second yellow LED lights when the HEAT circuit is energized.

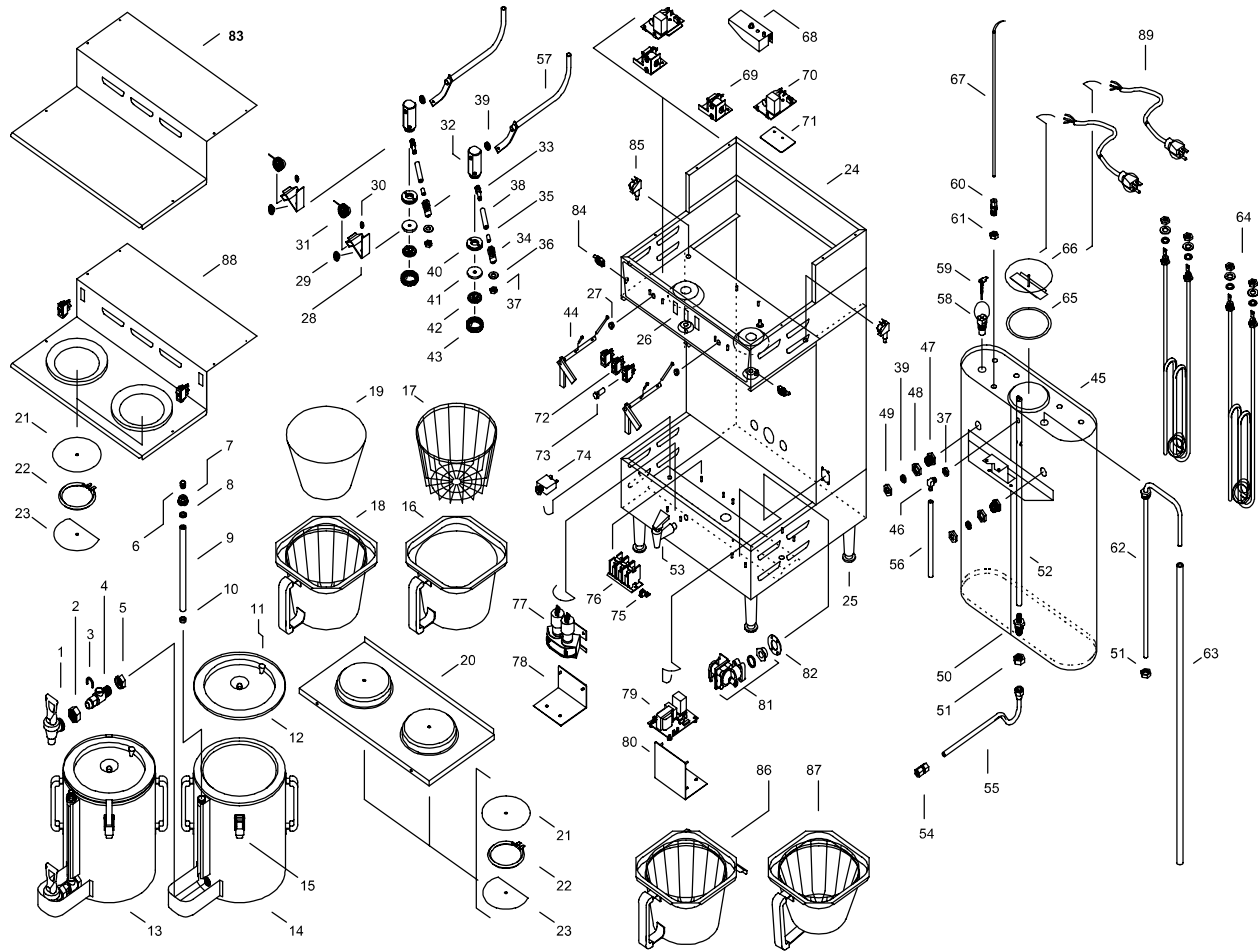
Bypass Adjustment:

The purpose of the bypass valve is to allow a portion of the brewing water to flow between the brew basket and the wire insert, directly into the server, without coming in contact with the coffee grounds. The bypass can be adjusted from 0% to 33% of the total brewing water. Dual brewers (CBS-12H), have separate bypass valves on each side. Unless requested at the time of order, all brewers are shipped with the bypass valves closed (0%). Adjusting the bypass always changes the total brew volume, so the timer setting must always be checked and adjusted.

To adjust the bypass:

- Remove the brewer's upper cover.
- The bypass valve is located above the brew basket, to the right and to the front, as you are facing it.
- Remove the brew basket.
- Place a container under the spray head, and a separate container under the bypass hole.
- Turn the bypass valve clockwise to decrease, and counter-clockwise to increase the bypass amount. A good starting point would be one full turn for each 5% change.
- Brew a full cycle and measure the amount of water in both containers.
- The ratio of the bypass water to the total in both containers is the bypass percentage. example: ½ gal. bypass + 1 gal. from spray head = 1 ½ gal. total. Bypass = 33.3%.
- Several adjustments may be necessary until the desired results are achieved.

Parts



Part #	Description	Drawing Item #		used on
97006	Tube, silicone 1/4 x 7/16"	0	11	12
31054	Fitting (hot water outlet) 1/2 barb x 3/8 MPT	0	11	
31059	Drain cock 1/8 NPT valve	0	11	
31061	Fitting (hot water faucet)	0	11	
97008	Tube, silicone 1/8 x 3/16"	0	11	
97007	Tube, silicone 1/2 x 11/16"	0	11	12
71026	Faucet, complete w/blk handle (ES model)	1	11	12
71027	Faucet Handle, Decaf faucet (orange)	1	11	12
71035	Faucet Seat cup	1	11	12
71037	Faucet upper assy. w/black handle	1	11	12
31045	Faucet Union Nut (1.5 & 3 gal. Luxus & 1.5 gal. cont.)	2	11	12
71036	Faucet C ring, for retaining faucet union nut	3	11	12
102019	Faucet Shank assy. (1.5 gal. container)	4	11	12
13015	Faucet Shank Locknut (1.5 gal. container)	5	11	12
71025	Sight glass vented top plug (1.5 gal. cont.)	6	11	12
71024	Sight glass cap (1.5 & 3 gal. luxus & 1.5 cont.)	7	11	12
71018	Sight glass washer UPPER (1.5 & 3 gal. luxus & 1.5 cont.)	8	11	12
71016	Sight Glass tube, 8" GLASS (1.5 gal. container)	9	11	12
21032	Sight Glass tube, 8" PLASTIC (1.5 Gal. Container)	9	11	12
71017	Sight glass washer LOWER (1.5 & 3 gal. luxus & 1.5 cont)	10	11	12
72006	Knob, water inlet cover on 31p & cover on 1.5 gal. cont.	11	11	12
101079	Cover assy. (1.5 gal. container)	12	11	12
101035	Beverage disp. assy. (complete 1.5 gal. container)	13	11	12
101013	Beverage disp. assy 1.5 gal. square heated	13	11	12
102037	Beverage disp. subassy. (only 1.5 gal. cont. weldment)	14	11	12
72005	Beverage disp. cover latch (1.5 gal. cont.)	15	11	12
002022	Brew Cone Weldment (gourmet) 16x6	16	11	12
09006	Brew basket Wire insert 16x6 (gourmet & tea basket)	17	11	12

101165	Brew basket assy. Gourmet 16 x 6	18	11	12
2030	Brewer Lower Shelf Weldment	20		12
101085	Brewer Lower Cover assy. 220vac (export)	20	11	
101084	Brewer Lower Cover assy. 120vac	20	11	
002031	Brewer Lower Shelf Weldment	20	11	
03101	Warmer Space Plate	21	11	12
53017	Warmer element 100w 220v (export)	22	11	12
53036	Warmer element 100w 120v	22	11	12
03102	Warmer Cover Plate	23	11	12
101074	Warmer, lower cover assy. 220vac (export)	23		12
101073	Warmer, lower cover assy. 120vac	23		12
1073.00002.00	Legs, 4" adjustable	25	11	12
45019	Nameplate	26	11	
45020	Nameplate	26		12
86001	Brew handle Bushing	27	11	12
102022	Dispense Latch assy.	28	11	12
002005	Brew handle Latch Weldment	28	11	12
14002	Brew handle Latch Plate	29	11	12
85005	Brew handle latch plate Retaining clip	30	11	12
85004	Brew handle Return Spring	31	11	12
31068	Spray Head (Large brass part & is NOT the spray cutter)	32	11	12
02019	Spray Head Weldment	32	11	12
31070	Fitting (by pass & tank drain outlet)	33	11	12
34001	Valve (by pass)	34	11	12
102028	By-pass Valve assy.	34	11	12
32023	By-pass Tube (by-pass valve inlet)	35	11	12
83005	By-pass & misc. Washer	36	11	12
31006	By-pass & misc. Locknut 1/8" NPT	37	11	12
25001	By-pass Silicone Tubing 1/4 x 7/16 x 2 7/8"	38	11	12
24008	Dispense Tube Seal 7/16"	39	11	12
33002	Spray Head Lock Nut	40	11	12
05002	Spray cutter FLOW DISK (.240 dia. opening)	41	11	12
05014	Spray Cutter (8 + 1)	42	11	12
102054	Spray Cutter assy.	42	11	12
31015	Spray Cutter Locknut	43	11	12
82004	Brew handle Screw, 6-32 x 5/8" ss r.h.	44	11	12
82018	Brew handle Screw, 8-32 x 2" ss r.h.	44	11	12
13005	Brew handle Safety Handle	44	11	12
102010	Brew handle start/stop assy.	44	11	12
002036	Brew handle Weldment	44	11	12
104009	Tank assy.	45	11	
004001	Tank Weldment	45		12
004002	Tank Weldment	45	11	
31005	Tank Fitting (tank vent)	46	11	12
33008	Fitting (dispense)	47	11	12
33006	Tank Fitting (dispense tube 7/16")	47	11	12
33007	Tank Locknut (for tank dispense tube fitting 7/16")	48	11	12
31052	Dispense Tube seal LOCKNUT 7/16"	49	11	12
31010	Tank drain Fitting	50		12
31021	Tank drain Fitting 3/4 x 16 x 1/4" FPST HEX	50	11	
31060	Fitting (hot water drain)	50	11	
33011	Tank drain Fitting Locknut 3/4 x 16	51	11	12
31011	Locknut 3/4 x 16 (tank drain, inlet tube)	51		12
32001	Tank drain Tube (drain & hot water faucet stand tube)	52		12
71021	Faucet assy., complete hot water faucet	53		12
71003	Faucet Seat cup, HOT water faucet	53		12
71023	Faucet upper assy., HOT water faucet (Safety Handle)	53		12
31075	Faucet Fitting (hot water faucet mount) flare	54	11	
31023	Faucet Fitting 1/4" FPT x 3/8" Comp. (hot water faucet)	54		12
25013	Silicone Tubing (hot water) 5/8 x 3/8 x 9 1/2"	55	11	
31080	Tank drain Needle Valve 3/8" comp. x 1/4" MPT	55	11	
32028	Tank drain Tube brass (tank drain outlet)	55	11	
25014	Tank drain Silicone Tubing 7/16 x 1/4 x 12"	55	11	
31073	Tank Fitting 3/8" MPT x 3/8" barb (hot water tank out)	55	11	
102055	Tube, hot water tank to faucet connecting assy.	55		12
102025	Tube assy. hot water tank to hot water faucet	55		12
25002	Tank vent tube, Silicone Tubing 1/4 x 7/16 x 7 3/4"	56	11	12
002033	Dispense Tube Weldment 7/16" dia.	57	11	12
102004	Water Level probe assy.	58	11	12

21026	Water Level Probe Housing	58	11	12
02010	Water Level Probe Weldment	59	11	12
31036	Thermostat Temp probe tank Fitting 1/4" MPT x 1/4" comp.	60	11	12
31037	Thermostat Temp probe Locknut 1/4" NSPL (tank fitting)	61	11	12
002039	Water Inlet Tube Weldment	62	11	
002029	Water Inlet Tube Weldment	62	11	
002009	Water Inlet Tube Weldment w/sleeve & comp nut	62	11	
002035	Water Inlet Tube Weldment	62		12
25003	Water Inlet Tube, Silicone tubing 7/16 x 1/4 x ?	63		12
25015	Water Inlet Tube, Silicone tubing 7/16 x 1/4 x 13"	63	11	
107002	Heater element 3000w 240v assy.	64	11	12
83004	Heater Gasket 3/4" o.d. (also used behind faucet on 30's)	64	11	12
107003	Heater element 4000w 240v	64	11	12
82019	Heater Screw, 10-32 x 1/4" ss (heater connection)	64	11	12
107005	Heater element 1800w 120v assy.	64	11	12
83071	Heater Washer, 1"o.d. x 1/2" I.d.	64	11	12
84004	Heater Locknut, 1/2-20	64	11	12
24002	Tank Cover Gasket	65	11	12
102013	Tank Cover assy.	66	11	12
53015	thermostat temp probe 14" (use with K033 digital thermostat or 53012 thermostat)	67	11	12
102198	Digital temp probe assy., 14" (use with K033 digital thermostat only)	67		
K033	Digital thermostat, 100-120VAC	68	11	12
K035	Digital thermostat, 200-240VAC (EXPORT)	68	11	12
102008	Dispence Latch, Solenoid assy. 120vac	69	11	12
102039	Dispence Latch, Solenoid assy. 220vac (export)	69	11	12
K034	Digital Timer Kit, 100-120VAC	70	11	12
K036	Digital Timer Kit, 200-240VAC (EXPORT)	70	11	12
58014	Warmer power, Switch, 120vac	72	11	12
58013	Warmer power, Switch, 220vac (export)	72	11	12
58013	Switch, power (new style)	72	11	12
58025	Lamp, "ready" round-green 220vac (export)	73	11	12
58012	Lamp, "ready", round-green 120vac	73	11	12
52007	Circuit breaker, 15 amp.	74	11	12
52003	Ground lug terminal MEDIUM size	75	11	12
52001	Terminal block mounting track	76	11	12
102040	Terminal block assy. 2 pole (export & 120v 11 & 51's)	76	11	12
102041	Terminal block assy. 3 pole	76	11	12
52002	Terminal block only, requires mouting track #52001	76	11	12
52015	Relay mercury 20amp SP 120vac	77	11	
52016	Relay mercury 20amp DP 120vac	77	11	12
52017	Relay mercury 30amp DP 120vac	77		12
52029	Relay mercury 30amp DP(export 208-240v coil)	77		12
03089	Relay Mounting bracket (30a DP relay)	78	11	12
03103	Relay Mounting bracket (20a DP relay)	78	11	12
108034	Liquid Level Control Brd. 100-120VAC, 50-100K ohm	79	11	12
108035	Liquid Level Control Brd. 200-240VAC, 50-100K ohm (EXPORT)	79	11	12
03108	Liquid Level brd, Mounting bracket	80	11	12
57023	Fill Valve Flow Washer,1.5 GPM (S-45)	81	11	12
57021	Fill Valve Coil, 230vac (S-45 export)	81	11	12
31031	Fill Valve Fitting 3/8" MPT x 3/8" Flare elbow (inlet std.)	81		12
31039	Fill Valve Fitting 5/16" hose barb x3/8" MPTelbow (v outlet)	81	11	
57017	Fill Valve assy., 240vac plastic (S-53 export)	81	11	12
31055	Fill Valve Fitting 3/8" MPT x 3/8" comp. elbow (inlet opt)	81	11	12
31074	Fill Valve Fitting 3/8" MPT x 3/8" hose barb elbow (v outlet)	81		12
31078	Fill Valve Fitting 3/8" FPT (inner) (S-53)	81	11	12
57022	Fill Valve assy.,brass body, 220vac (S-45 export)	81	11	12
24012	Fill Valve Gasket	81	11	12
31055	Fill Valve Fitting 3/8" MPT x 3/8" comp. elbow (inlet opt)	81	11	12
31038	Fill Valve Fitting 1/4" comp. x 3/8" MPT elbow (inlet)	81	11	
57001	Fill Valve Valve assy.,120v, brass body w/bracket (S-45)	81	11	12
57003	Fill Valve, repair kit (S-45)	81	11	12
57004	Fill Valve Coil, 120vac (S-45)	81	11	12
57006	Fill Valve assy.,120v plastic (S-53)	81	11	12
03074	Fill Valve Mounting plate S-53	82	11	12
001186	Brewer 1-pc Upper Cover	83	11	
58024	Switch, full/half batch selector, w/harness (optional)	84	11	12
58016	Switch, tea/coffee brew cycle (ice tea option)	85	11	12
101081	Brew basket assy. Tea 16 x 6	86	11	12
002024	Brew Cone Weldment (ice tea) 13 x 5	86	11	12

002037	Brew Cone Weldment Tea	86	11	12
101010	Brew basket assy. (13 x 5) (current 1/2 batch option)	87	11	12
002003	Brew Cone Weldment 13 x 5 (also 1/2 batch option)	87	11	12
09001	Brew Basket Wire insert 13x5 (ice tea, 1/2 batch)	87	11	12
101063	Warmer assy. upper cover (optional) 2 x 100w / 120v	88	11	12
101080	Warmer assy. Up 2x100w / 220vac (export)	88	11	12
53032	Warming plate assy. 100w 220v (export)	88	11	12
53033	Warming Plate only	88	11	12
001094	Brewer Upper Front Cover	88	11	
001093	Brewer Upper Rear Cover	88	11	

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

Troubleshooting

Brewing Problem	Possible Cause	Solution
Brew handle will not stay down	Power switch off.	-Turn switch on.
	No power to the brewer (Brewer lights are not illuminated)	-Make sure the brewer is plugged in. -Check the wall circuit breaker / reset -Turn the brewer power switch off then back on (it has an internal breaker)
	Bad timer or dispense latch assembly. (Brew light does not come on and handle won't stay down)	-Check for voltage reaching the timer from the dispense latch assembly if yes replace timer. If no, replace latch assy.
	Bad dispense latch assy. (Brew light does come on and handle won't stay down)	-Replace the dispense latch assembly
	Bad dispense latch assembly (brewer buzzes when in brew cycle)	-Replace the dispense latch assembly
Brew handle stays down but no water is dispensed	No water reaching the brewer	-Make sure the shut off valve is open. -Check water line for kinks; replace line if necessary -Check to see if filter is clogged by changing it.
Short brew levels EVERY BREW (One or Both sides are affected and levels are consistent)	Flow discs in spray heads in upside down	-Reassemble spray heads - bumps on spray cutter face ↓ with flange on flow disc facing ↓
	Water filter clogged	(See details in next section)
	Spray head clogged	-Clean and or replace the sprayhead
	Timer/s are set too low	-Advance timers to proper level.
	Incoming Voltage is too low for timers to function at proper time sequences	-Reset wall circuit breaker as one side may drop out & not flag the breaker. -Call an electrician to find loose connections in the building
Short brew levels SOME BREWS (One or Both sides are affected and levels are erratic)	Water filter clogged. (problem is worse during simultaneous brews)	-Replace water filter
	Weak dispense latch assembly (usually buzzes during cycle)	-Replace dispense latch assembly.
	Water pressure or flow rate is too low or fluctuates too much to support a full brew. (problem is worse in simultaneous brews)	-Make sure brewer has a dedicated water line -Ensure that the shut off valve is open all the way (Never use needle saddle valves) -Increase the diameter of the water line to the brewer and or find stable source.
Brew Time required to fill LUXUS are not the same for both sides	Brewer is not level	-With an accurate level, level the brewer front to back and left to right by adjusting the feet.
High brew levels EVERY BREW (overfills but does stop) SOME BREWS	Timer/s are set too high	-Adjust timers down to appropriate level
	Thermal server not empty	-Empty the server and try again
Brew basket or filter overflows		-Call FETCO Service Dept. to discuss. (800) 338-2699
Weak Coffee	Spray head missing	-Attach spray head assembly.
	Improper dose	-Measure and confirm correct dose
	Filter papers	-Make sure only one paper is used
	Cracked dispense tube	-See "spray head drips MAJOR", below
	Low brew temperature (Temperature inside the hot water tank is set to 205° F, the metal delivery system drops the temp.)	-Adjust thermostat so the water stream measured at the bottom of the brew basket, 1/3 of the way through the brew cycle, equals 190 degrees + or - 5 degrees
Grounds not saturated	Spray head missing	-Replace spray head
	Half batch used incorrectly	-Use smaller "half batch" brew basket -Discourage half batch use -Investigate the need for a smaller brewer
	Water Softener in use	-Move brewer water feed to a non-softened source.
	Degassing - extremely fresh coffee	-Call FETCO Service Dept. to discuss. (800) 338-2699
No bypass EVERY BREW → SOME BREWS →	Bypass valve closed	-Open bypass valve
	Flow disc wrong size or missing	-Correct or replace flow disc
Spray head / brew basket drips either side or both MINOR	Condensation around the sprayhead area	-Wipe sprayhead area after brewing; place an empty container under brew cone when not in use.
	Condensation from water tank dripping through dispense tube	-Insert an empty brew basket and server under brew heads when not in use

Brewing Problem	Possible Cause	Solution
Spray head / brew basket drips either side or both MAJOR	Cracked dispense tube/s (This problem starts out minor but gets steadily worse)	-Replace both dispense tubes even if other side is not dripping
	Fill valve not sealing (Will drip even with power off.)	-See next section - "Brewer won't stop brewing", "Bad or stuck fill valve".
Brewer won't stop brewing (not same as high brew levels)	Dispense tube cracked	-See "sprayhead drips MAJOR" above
	Mechanical binding (brew handle stays down / brew light turns off at normal time)	-Re-align the brew handle / brass sprayhead tower / and dispense tube into a straight line by moving brass tower
	Water pressure over 75psi	-Place a water pressure regulator on the line and reduce to 20-75 psi
	Dispense tube drive screw off. A 2.5" screw that connects the handle to the dispense tube at the brass sprayhead tower. (handle returns up and brew lamp turns off but brewing continues)	-Ensure that the drive screw is straight (can be straightened by hand while still in the brew handle) and reconnect to the dispense tube. The flange that the drive screw engages MUST be held flat against the brass sprayhead tower, without being able to back out.
	Water level probe bad or encrusted with lime. (causes brewer to continue filling hot water tank which will overflow into the brew baskets)	-Clean lime build up on the probe tip and/or tank wall. (Holding the probe wire (green) from the probe end to the body of the brewer should stop the fill if the probe is bad but the liquid level board is good)
	Bad liquid level control board	-Replace the LLC board if grounding the probe end of the (green) probe wire to the body of brewer does not remove the voltage at the fill terminal on the LLC board.
	Bad or stuck fill valve	-Rebuild or replace the fill valve if no voltage is on the coil (it is not magnetic) and it still passes water to the tank. (Disconnect the outlet side to see if it leaks water to the tank)
Coffee tastes too strong	Incorrect dosage	-Measure and confirm the correct amount of coffee required
	Short brew levels	-See "Short brew levels", above.

Temperature Problem (brewer only)	Possible Cause	Solution
Brew water is cold / not hot enough, ready light is OFF. (Before proceeding, make sure water tank refills when water is dispensed. The brewer will not heat unless the tank is full.)	No power to brewer.	-Make sure power switch is on. -Reset machine circuit breaker. -Check power connection. (plug or hard wire connection). -Check building circuit breaker. (Always reset breaker by switching off, then on.)
	Defective liquid level control board. (No power to thermostat).	-With power on, and water tank full, check LLC board for 120 volts on brown wire and neutral. Replace LLC board if there is no voltage.
	Bad connections on mercury relay. (No power to heaters).	-Check relay for burned or loose connections. Replace with high temperature connectors if necessary.
	Defective mercury relay. (No power to heaters).	-Check input and output voltages on relay. 120 volts on blue wire (input) but no voltage out to heaters indicates a bad relay.
	Bad heating element/s.	-Check amperage draw on heater wires. 0 amps = bad heater.
Brew water is cold / not hot enough, ready light is ON.	Bad Thermostat (the thermostat believes that it is at set temperature)	-Replace the thermostat and or thermal probe. It's not possible to trouble shoot the probe.
	Low brew temperature setting on thermostat	-See "Low brew temperature" under " Weak Coffee " section.
Slow to recover temperature (Ready light takes along time to come back on after brewing.)	Brewers with more than one heater can have just one fail	-Check amperage draw on heater wires. 0 amps = bad heater.
	Hot water tank limed up	-Remove access cover to the hot water tank and inspect for lime. Remove the brewer for shop de-liming if build up is thick.
Boiling	Thermostat set too high for altitude (Denver etc.)	-Reduce temperature setting to 3 degrees below boiling at your altitude
	Defective thermostat	-Replace the thermostat and or thermal probe. It's not possible to trouble shoot the probe.

