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User's Guide and Operator Instructions

Single Air Pot Brewer: CBS-1221
FETCO Commercial Beverage Equipment

CBS-1221 Air Pot Brewer, shown with 2.2 liter Air Pot (sold separately)

SKU	Product Description	Features
E1221US-1X117-LM001	FETCO CBS-1221 brewer Gourmet metal brew basket	▸ Ready to brew out of the box-factory calibrated for 2.2 liters ▸ Simple, intuitive digital controls and programming ▸ User configurable batch size and brew parameters ▸ Supplied with 120V cord and plug. User configurable to 240V/3.3kW/13.8A for direct connect ▸ Front accessible with modular components & service friendly ▸ Accepts 2.2, 2.5 liter, 3 liter and 3.8 liter air pots & 1.9L server ▸ Value priced ▸ Self-cleaning spray head patented for mineralization resistance
E1221US-1X117-KM001	FETCO CBS-1221 brewer Gourmet plastic brew basket	
E1221US-1X117-MM001	FETCO CBS-1221 brewer Standard metal brew basket	
E1221US-1X117-PM001	FETCO CBS-1221 brewer Standard plastic brew basket	

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Coffee Brewer: CBS-1221

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Specifications and Requirements-North America

Water Requirements:
CBS-1221: 20-75 psig, (138-517kPa) 1½gpm/(5.7lpm)
Water supplied to hot beverage equipment should be filtered
Water inlet fitting is a 1/4 inch male flare.
Brew Volume: Full Batch 2.20 liters (all 3 batches 2.2 liter)
User adjustable to up to 0.85 gallon/3.25 liters per brew

Electrical: Supplied with 120V cord & plug
User adjustable to 220-240 volt terminal block
Tank Temperature, as set by factory:
200°F (93°C) inside water tank (at sea level)
Water supply: (Optimal) 100-150TDS
All beverage equipment must use filtered water.

Total Brew Cycle—Factory default setting: 6 minutes=[4 minute brew time + 2.0 minute drip delay] (all recipes)
Brew-Process parameters are user controllable for:
Brew Volume, Brew Time, Prewet Percent and Prewet Delay, Drip Delay

Electrical Specifications
Universal wiring, sold 120 volt cord and plug. Brewers may be field converted to 200-240 volts

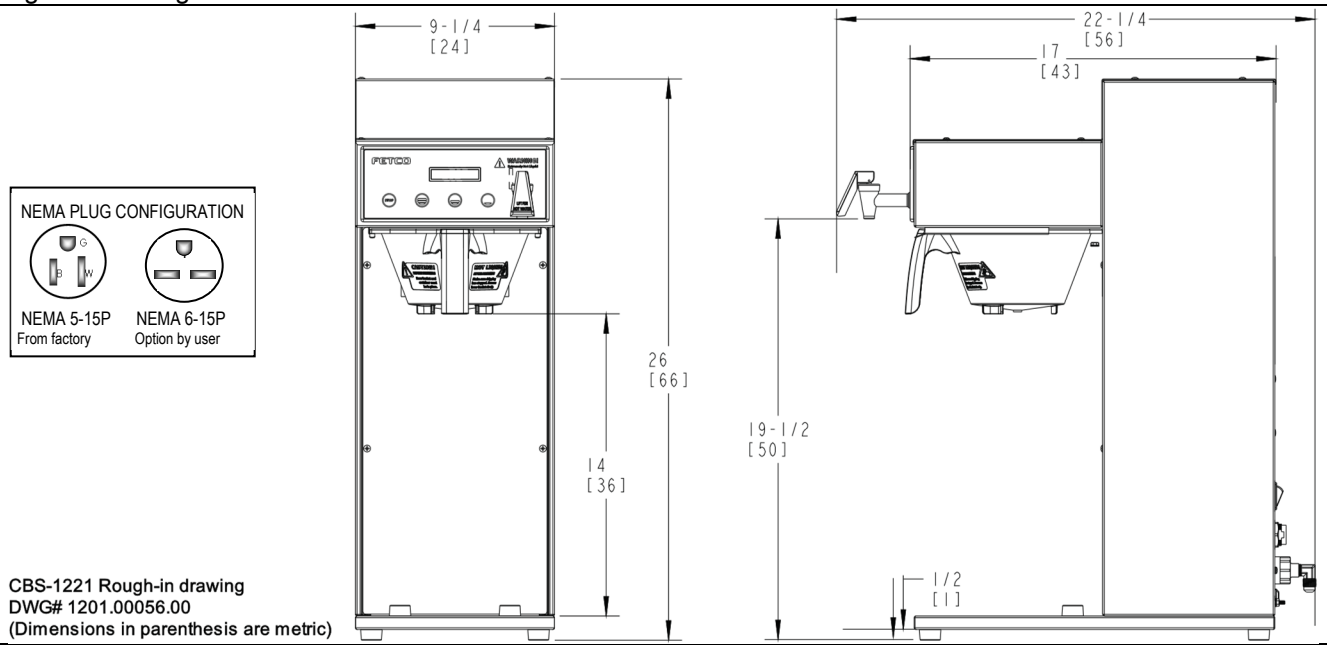
	Heater Configuration	Voltage	Wires	Electrical Connection	KW	Maximum Amp Draw	Brew-Volume/Hour
Factory default	1 X 1.7 kW	120	L1,N, G	Cord and plug	1.7	14.7	4.4 gal/16.5 liters
User selectable-	1 X 3.2 kW	200-240	L1,L2,G	Terminal block	2.2-3.3	11.2-13.4	6-8 gal/22-32 liters

Weights and Capacities

Dispenser Model	Height	Width	Depth	Water tank capacity	Empty Weight	Filled Weight	Shipping Weight	Shipping Dimensions
CBS-1221 Brewer	26 in 660 mm	9 1/4 in 240 mm	22 1/4 in 560 mm	2.7 gallon 10.1 L	29bs. 13.1 kg	52 lbs. 23.6 kg	35 lbs. 15.9 kg	31½" x 24¾" x 13" 800mmX629X330mm

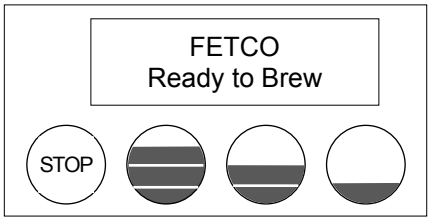
Calibrated for 2.2 L/74 oz/0.58gal air pot	Calibrated for 120g/4.2oz coffee dose Range: 100-140 gram 3.5-4 ounce dose	Coffee Filter FETCO# F008 or 10⅝" X 4½" (Standard) FETCO# F002 or 13" X 5" (Gourmet)

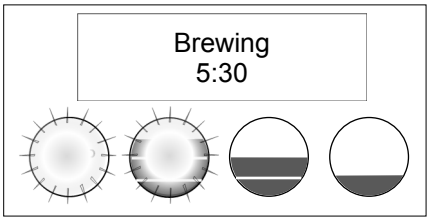
Rough-In Drawings



CBS-1221 Front CBS-1221 Side

Starting The Brew



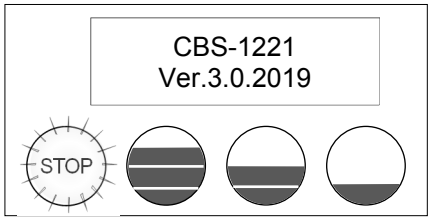


1. Turn the power switch “ON”.
2. Prepare a brew basket with the correct size filter and appropriate amount of coffee.
3. Slide the brew basket completely into the rails.
4. Place a clean, empty, preheated dispenser under the brew basket.
5. Select a batch & hold the corresponding BREW button in for 1 second to start
6. -STOP button will illuminate, Brew Selector button will illuminate
   -Countdown time will display. Default time setting is 6:00 (six minutes)
   -Selected BREW button will slowly pulsate to indicate brew is in progress.
   -All other BREW buttons for that brew head will be unlit.

7. When the brew cycle is finished,
STOP button will extinguish and the BREW button will continue to pulsate to indicate DRIP will display to show the 2:00 (two minutes) drip delay setting.
This indicates that coffee may still be dripping from the brew basket
For safety- do not remove brew basket until drip-out is complete.

Enter Programming

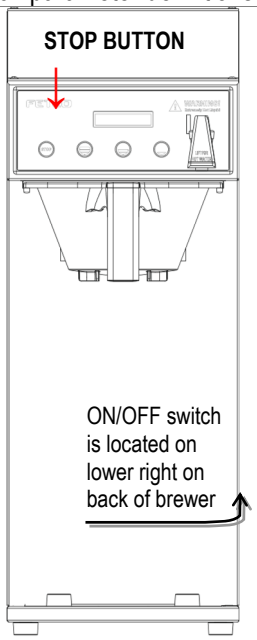
There are 7 menu groups-A-F plus EXIT (G).
See the following pages for the batch parameter definitions and all settings for the brewer

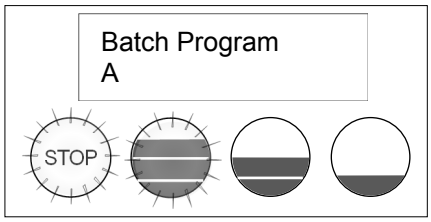


TO ENTER PROGAMMING
1-Turn brewer “OFF” from power switch
2-Turn power switch to “ON”

…Screen will initialize and then display digital process notifications

3-After Initialization- “STOP” Lamp turns on
4-Quickly press “STOP” button (no need to hold)





When brewer is In PROGRAMMING MODE
-the screen will display:

|BATCH PRG|
|A (or B-F) |

-Illuminated LED indicates active keypad positions

See the following pages for batch parameter definitions and all settings for the brewer

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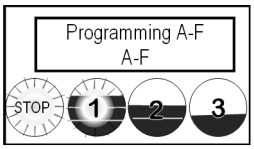
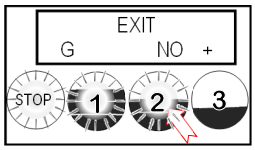
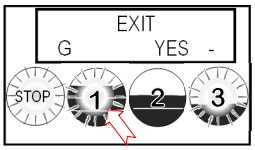
Exit Programming & Save Control Setting Changes



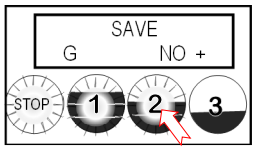
<u>From any screen-</u>
Press STOP button until the EXIT (“G”) screen appears



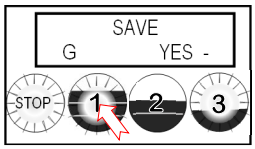
<u>From the “G” screen</u>
Press button **<u>2</u>** to toggle to the EXIT-**YES** screen



<u>From EXIT screen</u>
Press button **<u>1</u>** to toggle to the SAVE screen



<u>From SAVE screen</u>
Press button **<u>2</u>** to toggle to the SAVE-**YES** screen



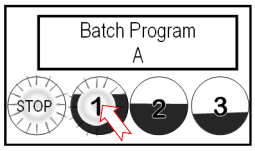
<u>To SAVE and EXIT</u>
Press button **<u>1</u>** to SAVE your changes and EXIT to OPERATING MODE

Programing Menu Layout

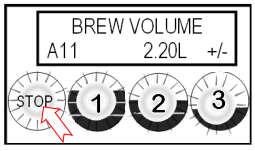
A10 to A70 Batch Parameters	B10-B40 General Settings	C10-C50 Service Inputs	D10-D90 Service Outputs	E10-E70 Calibration	F10-F120 Service Menu	G10-G11 Exit and Save
A11 Brew Volume	B1 Tank Temperature	C1 LLC Probe	D1 Heater SSR	E1 Ready Temp. Offset	F1 Firmware	G1 Save Changes
A12 Brew Time	B2 Brew at Temp	C2 Basket Sensor	D2 Fill Valve	E2 LLC Sensitivity	F2 Bootloader	G2 EXIT?
A13 Prewet Percent	B3 Temperature Units	C3 Tank Temperature	D4 Brew Valve	E3 Slow Flow Compensate	F3 Select Model	
A14 Prewet Delay	B4 Volume Units	C4 USB Drive	D9 LCD Brightness %		F4 Customer Name	
A16 Drip Delay		C5 Keyboard Test	D10 LED Brightness %		F5 Add Customer Name	
A20 Batch (2) Enabled					F6 Backup to USB	
A30 Batch (3) Enabled					F7 Restore from USB	
A70 Copy Batch					F8 Restore Defaults	
A71 Copy Batch: From					F9 Demo Mode	
A72 PASTE: To					F10 Error Log	
					F11 Erase Error Log	
					F12 Service Phone#	

The A menus [A1-3] correspond to batch buttons [1-3] on the touch panel

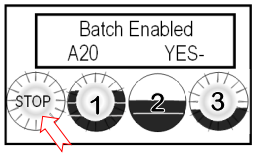
Access the A menus to PROGRAM & make changes to individual menu recipes. Menu settings can be copied
Menu position A1 is permanent. Menus A2, A3 can be removed by operator if desired



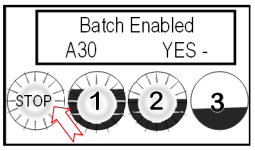
From A PRG screen
Press button 1 to go to the A menu access screen



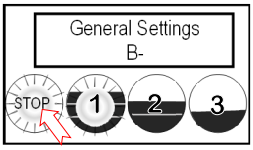
From A11 screen
Press **STOP** to scroll to A20.
(A1 is permanent)



From A20 screen
Press STOP to scroll to the third batch in the "A" menus. Make any changes as required



From A30 screen
Press STOP to scroll through COPY and further to remaining programming keys.



To continue
Press STOP to scroll through sections
See SAVE & EXIT in previous table

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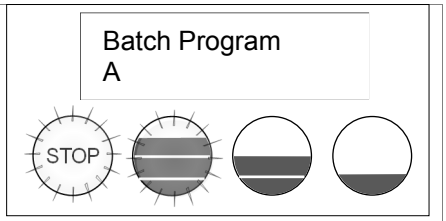
RECIPE Location map

View and change settings for the brew recipes from the "A" screens with the controls in PROGRAMMING.

The batch A1 button position is permanent and will not display programming steps A20 or A30 to ENABLE/DISABLE.

DISPLAY →



STOP BATCH A1 (permanent) BATCH A2 BATCH A3

A PROGRAM	Menu Features: Batch Parameters				
The settings below are shown for the top batch on a single brewer top left button on a twin brewer. See how to access all A menus on the previous page. Below are the brew settings for default A1 & A2 batches					
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
A11	Batch Volume	2.20liters 0.58gal	0.95 to 3.25L 0.25 to 0.85 gal	0.05L 0.01G	Unit software is in liters; Can convert to gallon
A12	Brew Time (MIN:SEC)	4:00 minutes	2:00 – 12:00	15 sec	Default total brew time is 6:00 minutes
A13	Prewet Perc.	0%	0.00 – 25.0%	1%	Percentage of total brew volume
A14	Prewet Delay (Pause after prewet completes)	0% [1:00 Min]	[0:10 – 5:00]	10 sec	The time between prewetting and start of brew cycle. **This feature appears ONLY if Prewet >0:00**
A16	Drip Delay	2:00 mm:ss	0:30 – 6:00 min.	10 sec	Time brew basket should remain in place during final drip-out →Drip delay remains "ON" for 2:00 minutes if STOP is pressed during brew †
A20	Batch Enabled A20 YES **-** NO **+**	YES (Active)	Middle and Bottom batches A2,A3	Batch on or off	Batches may be individually enabled, rewritten or deactivated
A21	Batch Volume	2.20liters 0.58gal	0.95 to 3.25L 0.25 to 0.85 gal	0.05L 0.01G	Unit software is in liters; converts to gallon
A22	Brew Time (MIN:SEC)	4:00 minutes	2:00 – 12:00	15 sec	Default total brew time is 6:00 minutes
A23	Prewet Perc.	0%	0.00 – 25.0%	1%	Percentage of total brew volume
A24	Prewet Delay (Brew pause after prewet completes)	0% [1:00 Min]	[0:10 – 5:00]	10 sec	**See Note A14**
A26	Drip Delay	2:00 mm:ss	0:30 – 6:00 min.	10 sec	→See Note A16
A30	Batch Enabled A30 YES **-** NO **+**	YES (Active)	Middle and Bottom batches A2,A3	Batch on or off	Batches may be individually enabled, rewritten or deactivated
A31	Batch Volume	2.20liters 0.58gal	0.95 to 3.25L 0.25 to 0.85 gal	0.05L 0.01G	Unit software is in liters; converts to gallon
A32	Brew Time (MIN:SEC)	4:00 minutes	2:00 – 12:00	15 sec	Default total brew time is 6:00 minutes
A33	Prewet Perc.	0%	0.00 – 25.0%	1%	Percentage of total brew volume
A34	Prewet Delay (Brew pause after prewet completes)	0% [1:00 Min]	[0:10 – 5:00]	10 sec	**See Note A14**
A36	Drip Delay	2:00 mm:ss	0:30 – 6:00 min.	10 sec	→See Note A16
A70 **Batch Copy**	Copy From Batch	A71	A71 1 (1-6)		
A72 **(PASTE TO)**	Copy To Batch?	A72	A72.1 (1-6)		
A11 Single Topmost Batch cannot be disabled. A21 & A31 middle and bottom batches may be disabled. **† DRIP DELAY** will not activate when STOP is pressed within 5 seconds of starting a brew time					

B GENERAL		Brewer Operation Control Settings, Adjust Brew Flow Rate			
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
B1	Tank Temp.	200°F -or- 93°C NOTE: Units are in English by default	170° to 207°F 77° to 97°C	1.0°F 0.5°C	Chart to correct for high altitude below
B2	Brew at Temp.	"YES"	ON/OFF	YES/NO	**SEE NOTE BELOW**
B3	Units of Measure TEMPERATURE	°F Fahrenheit	Fahrenheit/Celsius	C/F	**NOTE**: Overwrites user settings (see page 9)
B4	Units of Measure VOLUME	L LITERS	Gallons/Liters	L/Gal	**NOTE**: Overwrites user settings (see page 9)
B5	Show Tank Temperature	YES	YES/NO		To display HW tank temperature on screen

BREW AT TEMPERATURE DEFINITIONS

DEFAULT: BREW AT TEMP: "ON"

(FACTORY DEFAULT FOR BREWER)

"BREW at TEMP:
-Batch will not start if tank temperature is below set point.
-Display will show "HEATING" and hot water tank temperature
The "BREW START" entry buttons will not illuminate until the hot water tank reaches the selected temperature.

Controls allow both sides of dual brewer to operate if one side has an ongoing brew started and the second side brew is selected.

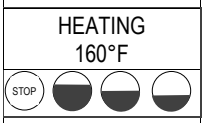
Notifications shown on screen:
TEXT: **HEATING**→Tank above 87°C/189°F- will allow brew at low temperature.
Coffee flavor may be affected
TEXT: **L. HEAT**→Tank above 76°C/169°F- will allow brew at low temperature.
Coffee flavor will be noticeably affected

Tank temp→

STOP is not lit → BREW START buttons not lit. and **are disabled**.

Buttons will illuminate "READY" when hot water tank temperature is at setpoint

Hot water tank not at brew temp setpoint.



USER SELECTABLE OPTION: BREW AT TEMP: OFF
(Not recommended) Unit will operate at cold temperature
Allows brewing at any temperature above 77°C/170°F
Below 70°C/170°F The red colored ready lights switch turn off

Chart to correct for altitude for boiling point in tank water temperature.

[ft]	[m]	Suggested Setting[°F]	Boiling point[°F]	Suggested Setting[°C]	Boiling point [°C]
0	0	205	212.0	96	100.0
500	152	205	211.0	96	99.5
1000	305	200	210.1	93	98.9
2000	610	200	208.1	93	97.8
2500	762	200	207.2	93	97.3
3000	914	200	206.2	93	96.8
3500	1067	197	205.3	92	96.3
4000	1219	195	204.3	91	95.7
4500	1372	194	203.4	90	95.2
5000	1524	194	202.4	90	94.7
5500	1676	193	201.5	89	94.2
6000	1829	192	200.6	89	93.6
6500	1981	191	199.6	88	93.1
7000	2134	190	198.7	87	92.6
7500	2286	188	197.8	86	92.1
8000	2438	187	196.9	86	91.6
8500	2591	185	196.0	85	91.1

C SERVICE INPUTS	Brewer Sensors and Keypad				
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
C1	LLC Probe continuity	Direct read	Reading of tank water resistivity in TDS	≈850- LOW ≈1600-HIGH	Nominal values
C2	Brew Basket Sensor	Direct read	YES or NO		
C3	Tank Temperature	Direct read	Hot water tank temperature		Actual values
C4	USB Drive	NO			
C5	Keyboard Test	Calibrate	Checks buttons under membrane cover	YES/NO	Follow directions on the touch screen

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D SERVICE OUTPUTS	Test Valves and Heaters; Set screen brightness				
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
D1	Heater SSR Test	Press button 2 to test (button 1 stops test)	Activates heater Default is 10 sec..	Toggle +/- OFF or ON	Energizes Heater(s) WARNING! Service use only.
D2	Fill Valve Test	Press button 2 to test (button 1 stops test)	Activates valve Default is 10 sec.	Toggle +/- OFF or ON	Press To Test
D4	Brew Valve Test	(Press to test)	Activates valve Default is 10 sec.	Toggle +/- OFF or ON	Runs valve to verify flow. NOTE: Have container under brew basket.
Single series displays right side only Left Valve display is only for twin side brewer.					
D9	LCD Brightness	Brightness=90%	20-100%	5%	Adjust LCD screen brightness only-Not for LEDs under buttons
D10	LED Brightness	Brightness=60%	20-100%	5%	Adjust LED button brightness only-Not for the screen display LCD

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E CALIBRATION	Brewer Sensors and Keypad				
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
E1	Ready Temp. Offset	-4°F -2°C	-2° to -10°F -1° to -5° C	1°F 1°C	Compensates output to measured temperature
E2	LLC Sensitivity	NORMAL (“NORMAL” for most water)	HIGH (Biased for reverse osmosis water or very pure water)	NORMAL HIGH	Liquid level control sensitivity. High,1300Ω is for reverse osmosis water or very pure water.
E3	Slow flow rate from mains	OFF	OFF/ON	Toggle +/- YES or NO	Trims fill system for low supply
E5	RIGHT brew valve flow rate:	1.60L/0.42G	1.30-1.90Liter 0.34-0.52G	0.05L 0.013G	Adjusts flow rate

Use this formula to compensate for minor discrepancies in actual volume versus programmed volume.

$$\frac{\text{ACTUAL VOLUME}}{\text{PROGRAMMED VOLUME}} \times \text{CURRENT SETTING} = \text{NEW SETTING}$$

Default Brew Valve Flow Rate—All CBS-1200 Brewers

CBS-1220	L/min	Range
Right Brew Valve FR	1.60	+1.3 L to 1.9 L

Use the formula above to determine the correct setting
Set lower to increase volume, higher to decrease volume.

See “PROGRAM” E5 For valve settings and calibration. Factory set brew valve flow rates are in liter/min

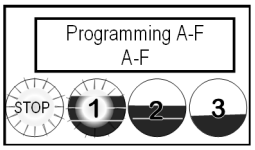
F SERVICE MENU	Software & Code View and Settings				
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
F1	Display Firmware	1.0.201001			Displays current version [10/2020]
F2	Display Bootloader	1.0.200930			Displays current version [9/2020]
F3	Select Model	CBS-1221 & CBS-1222 Will need reboot	Scroll to brewer model Save & Exit	**CBS—1221 (Single side)** CBS—1222 (Dual side)	**NOTE**: Overwrites all user settings **(See below)**
F4	Customer Name	Off	NO or YES		For name on screen
F5	Customer Name	(only if above is "ON)	Scroll with batch keys	A-Z;a-z;0-9	16 characters total
F6	Backup to USB		Follow prompts	Saves settings	Insert blank USB
F7	Restore From USB		Applies settings from USB		Insert USB Will need reboot
F8	Restore Defaults	NO	NO/YES		Reset to factory
F9	Demo Mode	DEMO ON/OFF			Demonstrates the controls for training. Disables all components in demo mode
F10	Error Log	Lists up to six codes, in order	**1:** ; **2:** ;**3:**;**4:** ;**5:** ;**6:** 1=Newest/6=Oldest LAST six errors only	Newest=first Oldest=last	See Error Code Chart for references
F11	Erase Error Log	NO +		Toggle +/- YES or NO	FACTORY USE ONLY. DO NOT RESET
F12	Service Phone #				Service

G SAVE & EXIT — Saving changes and exiting PROGRAMMING

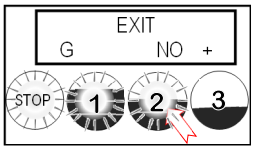
The brewer will save changes only from the "G" menu. **DO NOT** reboot brewer or toggle ON/OFF-exit as below.

TO EXIT PROGRAMMING & HOW TO SAVE CONTROL SETTING CHANGES

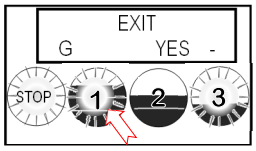
HOW TO SAVE CHANGES AND EXIT-*The brewer is in PROGRAMMING mode.*
A convenient way to access the steps is to remember to scroll to EXIT→YES and to SAVE →YES



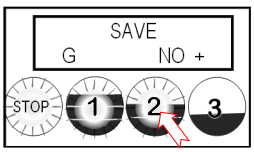
From any screen- Press STOP button until the EXIT ("G") screen appears



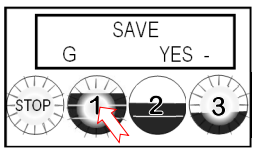
From the "G" screen Press button **2** to toggle to the EXIT-**YES** screen



From EXIT screen Press button **1** to toggle to the SAVE screen



From SAVE screen Press button **2** to toggle to the SAVE-**YES** screen



To SAVE and EXIT Press button **1** to SAVE your changes and EXIT to OPERATING MODE

NOTE: **User Settings will be erased and overwritten to factory default settings by the following five programming changes**

1) When setting or changing units of display for the tank temperature (F Fahrenheit or C Celsius). **(SETTING B3)**
2) When setting or changing units of display for the volume (L liters, G gallons). **(SETTING B4)**
3) When setting brewer model →The software sets equipment to brewer defaults **(SETTING F3)**
4) When loading from USB (Reprograms settings) **(SETTING E7)**
5) When restoring defaults (Reloads to defaults) **(SETTING E8)**

ERROR CODES			
DO NOT CLEAR ERROR CODES UNTIL ERROR IS IDENTIFIED AND/OR CORRECTED →Contact specialized personnel for error codes			
Code	**Description**	**Possible Cause**	**Corrective Action**
001	Software error-error on start up or corrupted software	Improper start-up or shutdown	Restart , if still fault: reload software
050	Short-circuit in temperature probe	Probe failure.	Replace probe.
051	Open temperature probe.	Bad probe connection, or probe failure.	Check all connections. Replace probe if necessary.
100	Initial Fill Error. Initial fill time took longer than expected after power up.	Water supply flow rate is too low.	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter...)
101	Error on refill-. Tank did not refill within expected time.	Water supply flow rate is too low.	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter…)
201	Heater open, high limit thermostat, or Solid State Relay (SSR) fault	Failure of heating element, SSR, high limit or low voltage	Check and replace heating elements, SSRs, high limit devices if necessary.
255	Touch pad error	Usually from longer than 2 min contact. Or faulty reassembly after service	Restart , if still fault: reload software. If mechanical: replace module
NO BSKT **Insert Brew Basket**		Brew basket must be in place **This is a SAFETY FEATURE**	Insert brew basket into brewer rails to enable brewer

Operator Training

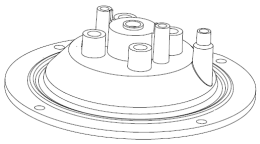
Review the operating procedures with whoever will be using the brewer.

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 5 minutes.
2. Do not remove the brew basket from a coffee brewer 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 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. Up to 1/4 cup/118cc 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 very little electricity is used 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.

Cleaning & Maintenance

After Each Brew:



1. Dispose of grounds and rinse brew basket.
2. Never strike a brew basket or hit it against a hard surface.
   This will damage the brew cone, and may damage the brew basket support rails
3. Rinse dispensers before reuse.

Every Day:

1. Wash brew basket with hot sudsy water.
2. Pull CSD from the spray head, it is magnetically attached. Use gloves or a heavy towel. → Wash off any film and reattach. Use vinegar if limescale filming is present.
3. Clean dispensers with hot suds water and a brush, rinse and air dry.
4. Use only a soft cloth and hot suds on the outside to avoid scratches. Never use abrasives that will scratch surface.

Weekly

1. Use a commercial coffee dispenser cleaner such as URNEX™, TABZ™, DIP-IT™ or Squeak 'n Clean™.
2. Carefully Follow the instructions supplied with the cleaning product
3. Never use spray cleaners, solvent, solvent based cleaner or petroleum based polish anywhere on dispensers

Warning

1. Turn off power before any cleaning procedure, including wiping the exterior for appearance reasons.
2. Dry the exterior, especially the face panel, before turning on power.
3. Do not apply any type of spray cleaner on the face panel of this equipment.
4. Never use solvent or solvent-based cleaner or petroleum based polish anywhere on this equipment.
5. Dry the face of the touch pad before turning on power
6. Do not electrically energize this equipment or attempt operation without all covers in place and all screws fastened.
7. Unplug machine before disassembly or servicing.

Safety Notes

1. Professional installation is required. This appliance is manufactured only for commercial use
2. Operational requirements and maintenance for commercial cooking appliances differ from household appliances.
3. Operators must be trained for this equipment and must understand the use, maintenance and hazards.
4. Access to the service area is restricted to persons having safety/hygiene knowledge and practical experience of the coffee brewer. This appliance must be installed in locations where it can be overseen by adult trained personnel.
5. Do not attempt to move hot beverage equipment once it is filled. Drain equipment before moving.
6. FETCO commercial coffee brewers prepare large amounts of coffee or tea in a single batch using very hot water
7. Commercial coffee brewers provide very hot water from the spray head, brew basket and faucet when it is pulled.
8. Coffee brewers may continue to dispense very hot water from the mechanically operated faucet after the electronic touchpad is completely disabled by turning off the power switch on the lower back of the unit, or unplugging the unit.
9. For safety, the brewer control locks the brew basket for 6.0 minutes after starting the brew.
10. Never attempt to defeat the factory set (default) time that the brew basket is locked for safety from start of brew.

Keep these instructions for training and future reference.

Installation Guide

(For Qualified Service Technicians Only)

General:

1. If not installed correctly by qualified personnel, the brewer will not operate properly, and damage may result.
2. Utilize only qualified beverage equipment service technicians for service and installation.
3. Always have an empty dispenser under spray head of all coffee brewing equipment-including when at idle
4. Damages resulting from improper installation are not covered by the warranty, and will void the warranty. Below are the key points to consider before installation:

Electrical:

1. All CBS_Series brewers require **an electrical ground wire**. Installation without grounding is dangerous.
2. Note Equipotentiality Terminal, if present, (To identify the terminals which, when connected together, bring the various parts of equipment or of a system to the same potential, not necessarily being the earth (ground) potential, e.g. for local bonding.)
3. Verify voltages, polarity, circuits, and circuit breaker access before attaching equipment.
4. Brewers in this series wire differently in regard to a neutral wire. Review the wire diagrams.
5. The electrical diagram is located in the User's Guide and online at www.fetco.com.
6. Make sure of the tight grounding of the equipment and use the external ground bolt.
7. 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.

→See wiring diagrams for connections

Plumbing:

1. North America: All installations must comply with applicable federal, state, or local plumbing codes.
2. All Others: The water and waste piping and connections shall comply with the International Plumbing Code 2003, International Code Council (ICC), or to the Uniform Plumbing Code 2003 (IAPMO).
3. Use an inline water filter for all beverage equipment. A finishing carbon filter is preferred
4. Install the filter unit after a water shutoff valve and in a position to facilitate filter replacement.
5. The water line and newly installed filter cartage must be flushed thoroughly prior to connecting it to the brewer to prevent debris from contaminating the machine.
6. Verify that the water line will provide a flow rate of at least 1½gpm/(5.7lpm) per minute and the water pressure is between 20-75 psig (138-517kPa) before making any connections.
7. Hand tighten 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
8. Install a backflow prevention device. Most municipalities require a recognized backflow preventer.
9. Usable on all hot beverage and cold beverage equipment is a WATTS® SD-2 or SD-3.
10. WATTS spring loaded double check valve models are accepted by most zoning authorities.
    →The check valve should be as close to the water supply inlet of the beverage equipment as possible.

Tank Drain

The water tank must be drained before maintenance procedures, and when the unit is to be relocated or shipped

1. Disconnect power and water to unit. DANGER: Insure that all utility connections to the brewer are broken.
2. Move the unit near a sink or obtain a container large enough to hold four gallons of water.
→Note: the hot water tank may hold more than four gallons.
3. Remove the front panel and tank cover and allow the tank to cool to a safe temperature
4. The tank drain line and clamp are located inside-under the hot water tank. Pinch the drain line clamp to close
5. Locate the fill valve against the back wall, using pliers, loosen the hose clamp and move it back over the tube.
→Note Do not loosen the hose clamp to the bottom of the hot water tank
6. Crimp the tube an inch or two away from the drain plug to prevent water from flowing and pull it off the valve.
7. Pull the tube end out of the brewer and position over sink or bucket.
8. Release the crimped tube and hose clamp and allow the water to flow into the sink or container.
9. Multiple buckets may be needed during the draining, see tank volumes below.
10. NOTE: Never plumb a water line into a drain.

Installation safety and hygiene directions-For International and CE equipment

1. Access to the service area is restricted to persons having safety/hygiene knowledge and practical experience of the coffee brewer. This appliance must be installed in locations where it can be overseen by trained personnel.
2. For proper operation, this appliance must be installed indoors where the temperature is between 10°C/50°F to 35°C/95°F. Drain and remove all liquid from equipment and lines if exposed to freezing temperatures.
3. All commercial cooking equipment, including this unit, is not intended for use by children or persons with reduced physical, sensory, or mental capabilities. Ensure proper supervision of children and keep them away from the unit.
4. Children should be supervised to ensure that they do not play hot beverage equipment.
5. This unit must be installed and serviced by qualified personnel only.
6. Installation must conform to all local electrical and plumbing codes. Installation by unqualified personnel will void the unit warranty and may lead to electric shock or burn, as well as damage to unit and/or its surroundings.
7. If the power cord requires repair or replacement-it must be performed by the manufacturer or authorized service personnel with the specified cord only from the manufacturer in order to avoid a hazard.
8. Review the dimensions for the unit and verify that it will fit properly in the space intended for it. Verify that the counter or table will support the total weight of the brewer and dispensers when filled (See: Technical Data).
9. Place the brewer on the counter or stand. When the brewer is in position, level it front to back as well as side-to-side by adjusting the legs.
10. Brewers will need a sturdy supported surface for operation. Do not move brewers when filled.
11. Do not tilt appliance more than 10° to insure safe operation.
12. Unit is for protected indoor use only. Do not steam clean or use excessive water on unit.
13. This unit is not “jet-proof” construction. Do not pressure wash or use jet spray to clean this unit.
14. The unit is not waterproof-do not submerge or saturate with water.

Equipment exposed to flood and contaminated must not be used due to electrical and food safety.
Do not operate if unit has been submerged or saturated with water.

WARNING

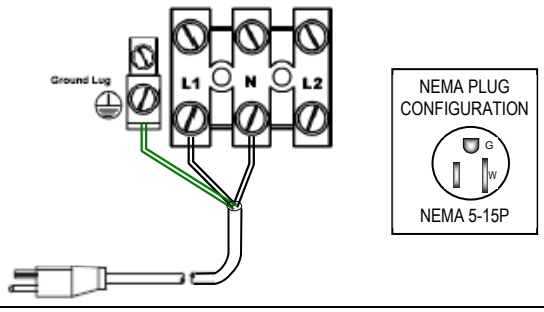
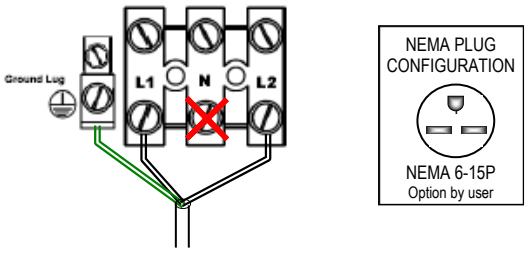
All electrical connections must be in accordance with local electrical codes and any other applicable codes. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.

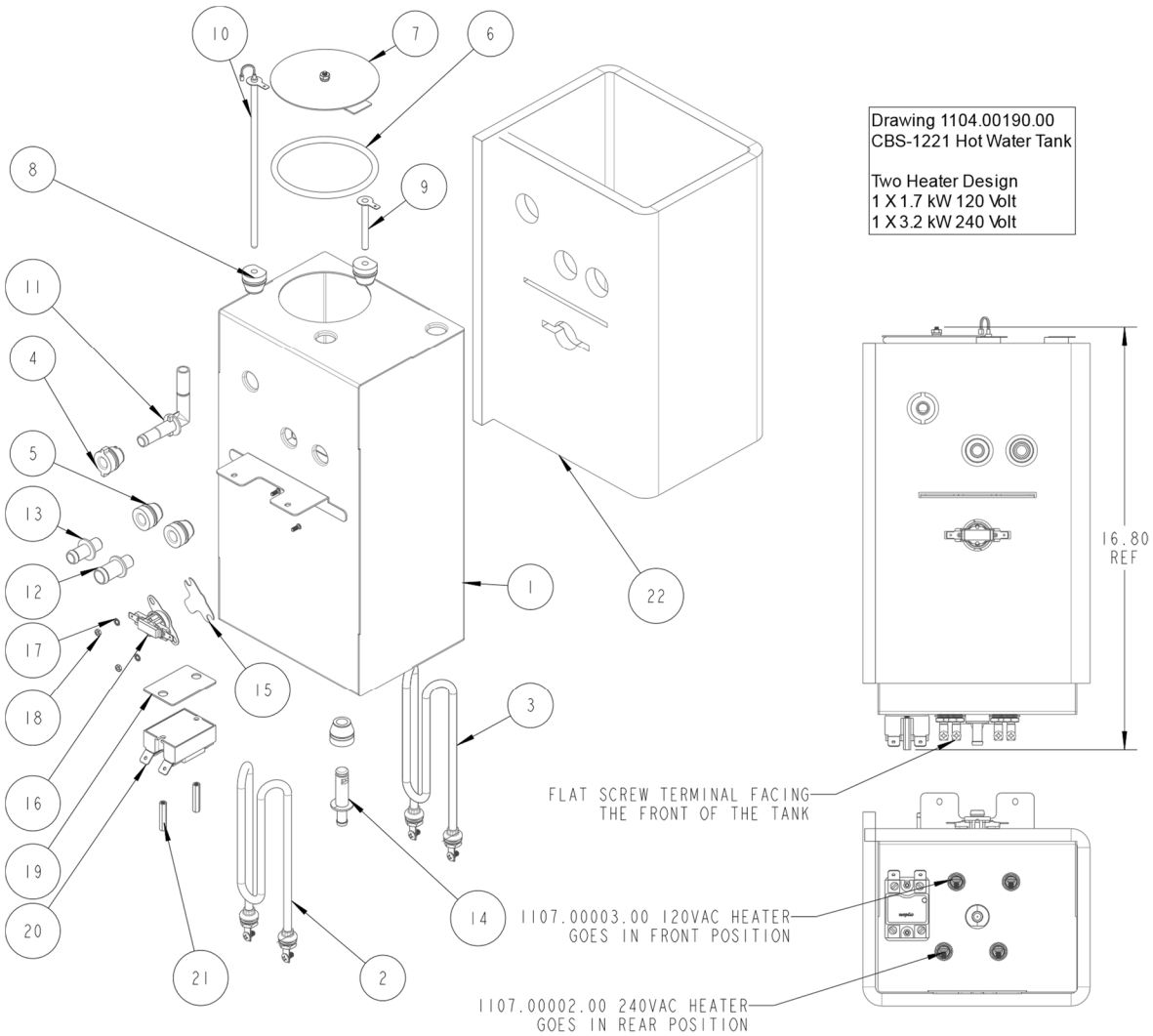
To prevent an electric shock hazard this device must be bonded to equipment in close proximity with an equipotential bonding conductor. This device is equipped with a bonding lug for this purpose and is marked with the following symbol

WARNING	To reduce risk of electric shock or fire.
	FETCO® Hot Beverage Equipment is for commercial use only.
	Do not remove or open cover. No user serviceable parts inside. Refer installation and service to qualified personnel.
	Caution, disconnect from power supply before servicing.
	GROUND: National Electrical Code requires separate grounding wire.
	Use dedicated circuit with capacity rated by local code or National Electrical Code for the current draw of this equipment. Check serial number plate on right side for power requirements.
	Locate unit away from source of heat. Do not install or use near combustibles.
	THIS APPLIANCE IS ENERGIZED WHENEVER IT IS CONNECTED TO A POWER SOURCE
	FAILURE TO COMPLY RISKS EQUIPMENT DAMAGE, PROPERTY DAMAGE, FIRE, OR SHOCK HAZARD
Notice	This equipment must be installed with a backflow protection device to comply with federal, state or local municipality codes.
Notice	Read the user guide before installing and operating this unit.

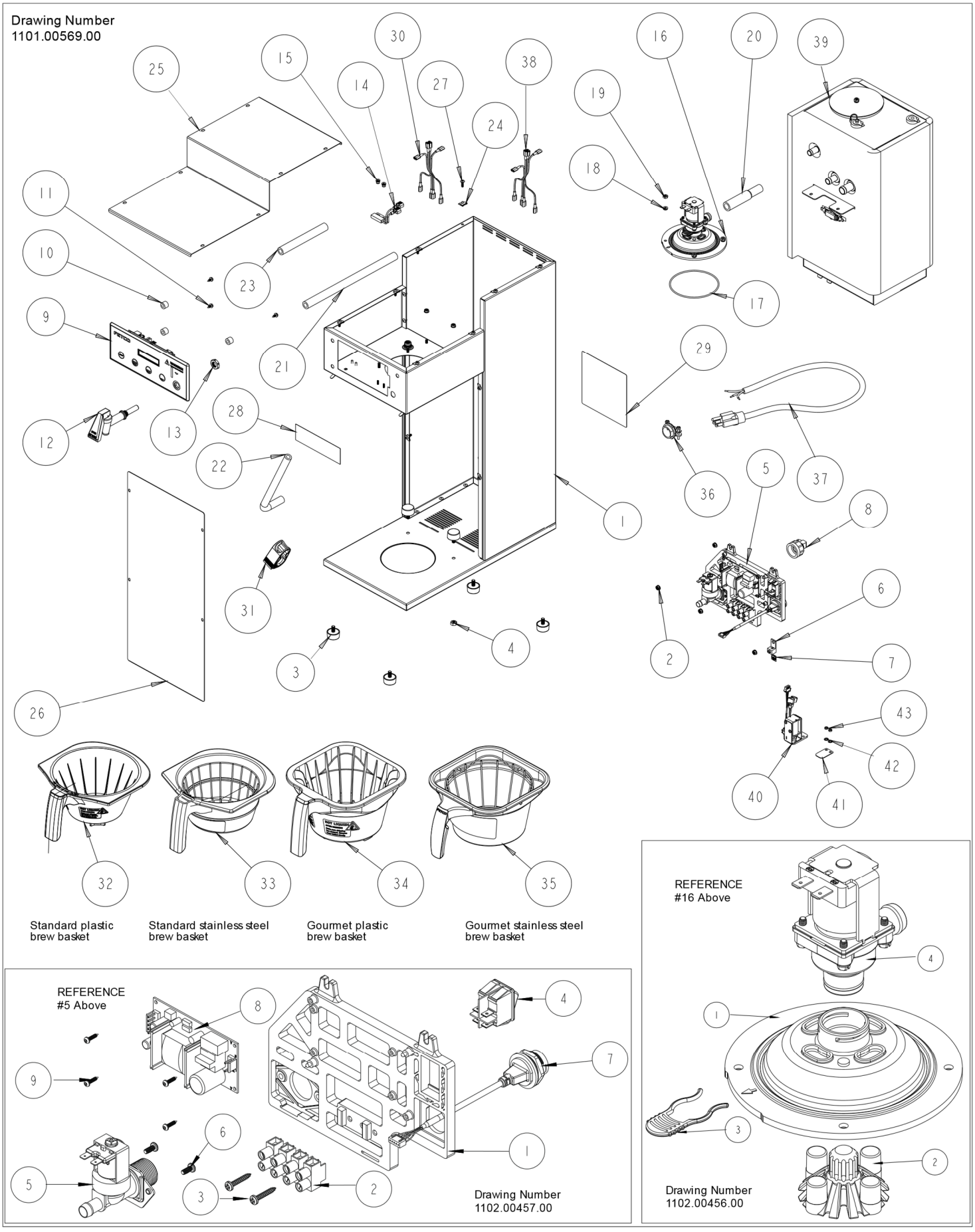
Labels and warnings for hot beverage equipment

For BACK PANEL of equipment (1046.00035.00)

WIRING METHODS: REFERENCE ONLY: SEE THE WIRING DIAGRAM AT BACK OF THIS GUIDE	
CBS-1221 120-volt models with cord and plug	CBS-1221 models 200-240 volt L1, L2,G
	
Electrical installation, service and field conversion is to be made only by licensed electrician. Disconnect equipment from power supply before service. Equipment may be powered even if power switch is “OFF”	

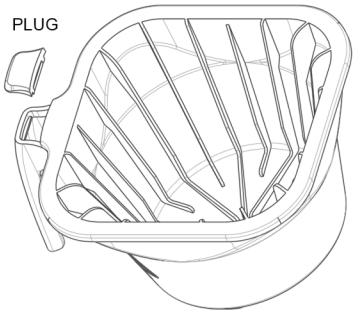


ITEM	Qty	PART NO	DESCRIPTION Hot Water Tank CBS-1221 Drawing number 1104.00190.00
1	1	1114.00167.00	WELDMENT, TANK, CBS-1221
2	1	1107.00003.00	HEATER ASSY, IMMERSION 1700W/120VAC
3	1	1107.00002.00	HEATER ASSY, IMMERSION 3200W/240VAC
4	1	1024.00111.00	GROMMET, SILICONE, W/ POSITION TABS
5	3	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
6	1	1024.00007.02	O-RING, DASH #344, TANK COVER
7	1	1102.00007.00	TANK COVER ASSEMBLY
8	2	1024.00007.00	GROMMET, SHORT, SILICONE, LEVEL AND TEMP PROBE
9	1	1112.00002.00	PROBE WELDMENT, WATER LEVEL 2.25" LONG
10	1	1102.00161.00	PROBE ASSEMBLY, TEMP. AND LLC, 8" LONG
11	1	1023.00362.00	FITTING VENT, ELBOW, .375" X .375", SELF POSITIONING
12	1	1023.00203.00	FITTING, STRAIGHT, GROMMET, .625"
13	1	1023.00167.00	FITTING, STRAIGHT, GROMMET, .500"
14	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
15	1	1003.00005.00	BRACKET, ONE SHOT THERMOSTAT
16	1	1053.00051.00	THERMOSTAT, SINGLE SHOT, 240V/45A
17	2	1083.00009.00	WASHER, #6 SCREW , INTL TOOTH LOCKWASHER
18	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
19	1	1003.00140.00	ALUMINUM BRACKET FOR SSR
20	1	1052.00033.00	RELAY, SOLID STATE, 50A/480VAC, W/BUILD IN VARISTOR
21	2	1081.00042.00	STANDOFF, 1/4" HEX
22	1	1022.00112.00	TANK INSULATION, CBS-1221

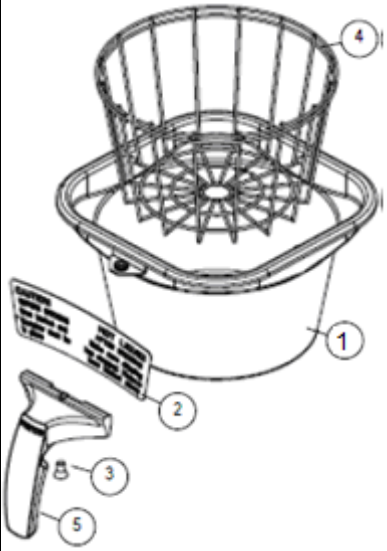

Drawing Number
1101.00569.00
Standard plastic brew basket
Standard stainless steel brew basket
Gourmet plastic brew basket
Gourmet stainless steel brew basket
REFERENCE
#5 Above
Drawing Number
1102.00457.00
REFERENCE
#16 Above
Drawing Number
1102.00456.00

ITEM	Qty	PART NO	DESCRIPTION Drawing number 1101.00569.00
1	1	1111.00105.00	WELDMENT BODY, CBS-1221
2	7	1084.00051.00	NUT, HEX LOCK WASHER, #8-32, 18-8 ST. STL.
3	6	1073.00021.00	FOOT, RUBBER, 1/4-20
4	2	1084.00017.00	NUT, HEX, 1/4"-20
5 REF	1	Reference	ELECTRICAL COMPONENT LATTICE, CBS-1200
5-1	1	1023.00360.00	ELECTRICAL MOUNTING LATTICE, AIR POT
5-2	1	1052.00023.00	EUROSTRIP HE16 TERM. BLOCK, 4 POLE, 63 AMP, 18-8 AWG
5-3	2	1082.00056.00	SCREW, #8-11 X 1" PAN HD PHIL, THREAD FORMING
5-4	1	1058.00024.00	SWITCH, POWER, DOUBLE POLE, 16A, 125/250 VAC
5-5	1	1057.00043.00	SOLENOID VALVE, 5.5L/min, 180 DEG, 24VDC
5-6	2	1082.00010.00	SCREW, PAN HD. PHIL. MACH., M4x10 ZINC-PLATED
5-7	1	1058.00055.00	USB CONNECTOR
5-8	1	1052.00001.00	POWER SUPPLY, 90-264VAC/24VDC, 1.8A
5-9	4	1082.00132.00	SCREW, PAN HD. PHIL. THREAD-FORMING, #4-20x5/16"LG.
6	1	1065.00009.00	GROUND LUG CONNECTOR, 14-2 AWG, ALUMINUM
7	1	1044.00012.00	LABEL GROUND, CE
8	1	1102.00164.00	ADAPTER ASSY, 3/4" BSP X 1/4 SAE FLARE
9	1	1102.00453.00	ASSEMBLY, FRONT PANEL, CBS-1220
10	3	1023.00361.00	SPACER, UNTHREADED, 1/2"OD X 3/8" LONG
11	3	1082.00115.00	SCREW, #6 x 3/8" LG., SLOTED HEX HD. WASHER
12	1	1071.00055.00	FAUCET, HOT WATER, PSC-BR-8, WITH FLAT AND STEM
13	1	1084.00048.00	JAM NUT, 1/2-20 UNF, NICKEL PLATED BRASS
14	1	1102.00113.00	SWITCH, REED, ASSEMBLY
15	2	1029.00006.00	NUT, FINGER KNURLED, #4-40
16 REF	1	1102.00456.00	QUICK CONNECT SPRAY HEAD ASSEMBLY, SMALL, RETROFIT
16-1	1	1023.00353.00	BASE, QUICK CONNECT SPRAY HEAD, RETROFIT
16-2	1	1102.00479.00	ASSEMBLY, CASCADE SPRAY DOME, NEXT GEN (BLUE)
16-3	1	1023.00342.00	QUICK CONNECT CLIP
16-4	1	1057.00076.00	VALVE ASSEMBLY, COMPLETE, NG, DELTROL
17	1	1024.00063.00	O-RING, 3 15/16" x 3/32" CS, DASH # 154, BUNA-N, DURO-A50
18	4	1083.00010.00	WASHER, #10 SCREW W/NEOPRENE-BONDED SEAL
19	4	1084.00006.00	NUT, 8-32 18-8 HEX MACHINE SCREW
20	1	1024.00065.00	CONNECTOR, SILICONE, TANK TO BREW VALVE
21	1	1025.00039.00	TUBE, 5/8" OD X 3/8 ID X 10" LG, DRAIN
22	1	1025.00058.00	TUBE, 9/16"OD X 5/16"ID X 25.00"LG
23	1	1025.00046.00	TUBE, 5/8" OD X 3/8" ID X 5.0" LG, DOUBLE VALVE
24	12	1084.00011.00	NUT, CLIP ON (J-NUT), #6-32, 22-20 GA., BLK-PH FINISH
25	1	1001.00425.00	BREW BASKET RAIL, RIGHT, CBS-1220
26	1	1001.00426.00	FRONT COVER, CBS-1221
27	12	1082.00017.00	SCREW, TRUSS HD. PHIL. MACHINE, # 6-32 X 1/2 LG.
28	1	1046.00003.00	LABEL, CSD WARNING, 1.5" X 5.0"
29	1	1046.00035.00	LABEL, WARNING "TO REDUCE RISK OF ELECTRIC SHOCK OR FIRE"
30	1	1402.00098.01	HARNESS, LOW AMP, CBS-1131 XV+, UL
31	1	1086.00009.00	CLAMP, 3/4" MAX TUBE OD FLOW CONTROL
32	1	B024230BN2	BREW BASKET ASSY, 9-3/4" X 4-1/2", BROWN PLUG Standard Plastic
33	1	B025230B1	BREW BASKET ASSY, METAL, 9-3/4" X 4-1/2", BLACK Standard Metal
34	1	B014218BN2	BB ASSY, 13" X 5", ın˘.218" HOLE, BRN PLUG Gourmet Plastic
35	1	B003218B1	BREW BASKET ASSY, 13" X 5", .218 DIA HOLE, BLACK Gourmet Metal
36	1	1086.00008.00	CONNECTOR, CLAMP, NON-METALLIC CABLE, 3/4"
37	1	1063.00016.00	POWER CORD, 120VAC W/NEMA 5-15P PLUG
38	1	1402.00110.00	WIRE HARNESS, CBS-1221, HIGH AMP
39	1	1104.00190.00	TANK ASSEMBLY, CBS-1221, 1.7kW/120VAC OR 3.2kW/240VAC
40	1	1102.00445.00	ASSY, BREW BASKET LOCKER W/FEEDBACK
41	1	1003.00259.00	BRACKET, BREW BASKET LOCK COVER
42	2	1083.00011.00	WASHER, #8 SCREW SIZE, INTERNAL TOOTH LOCK
43	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED

Brew Basket Parts

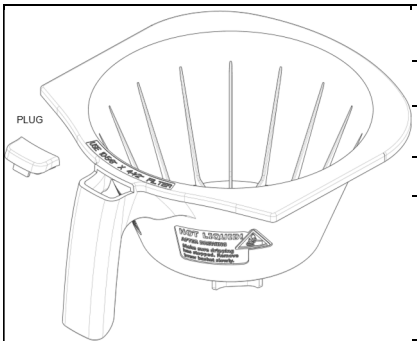


Part Number	
B014218BN2	Gourmet Plastic Brew Basket
1023.00195.00	**BROWN PLUG, BB HANDLE (STANDARD)**
1023.00194.00	BLACK PLUG, BB HANDLE (OPTIONAL)
1023.00190.00	RED PLUG, BB HANDLE (OPTIONAL)
1023.00191.00	GREEN PLUG, BB HANDLE (OPTIONAL)
1023.00192.00	ORANGE PLUG, BB HANDLE (OPTIONAL)
1023.00180.00	BLUE PLUG, BB HANDLE (OPTIONAL)



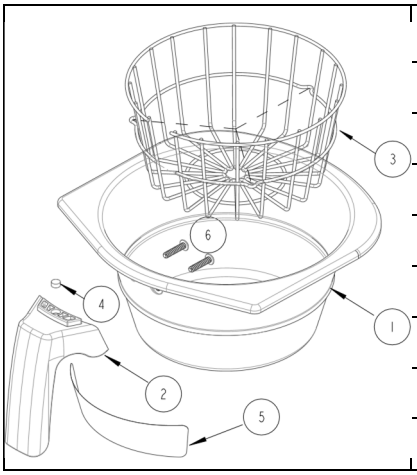
Part Number B003218B1 Gourmet Stainless Steel Brew Basket

Ref#	Qty	Part Number	Description
		B003218B1	Complete Stainless Steel Brew Basket
1	1	1112.00128.00	BB WELDMENT 13" X 5", .218 DIA HOLE
2	1	1046.00025.00	BREW BASKET WARNING LABEL
3	1	1082.00040.00	SCREW, 1/4-20 X .5, FL HD, PH., W/NYLN
4	1	1009.00006.00	WIRE BASKET
5	1	1102.00064.00	HANDLE W/MAGNET ASY, BLACK
Optional colored handle		1102.00065.00	HANDLE W/MAGNET ASY, RED
Optional colored handle		1102.00066.00	HANDLE W/MAGNET ASY, GREEN
Optional colored handle		1102.00067.00	HANDLE W/MAGNET ASY, ORANGE



Part Number B024230BN2 Standard Plastic Brew Basket

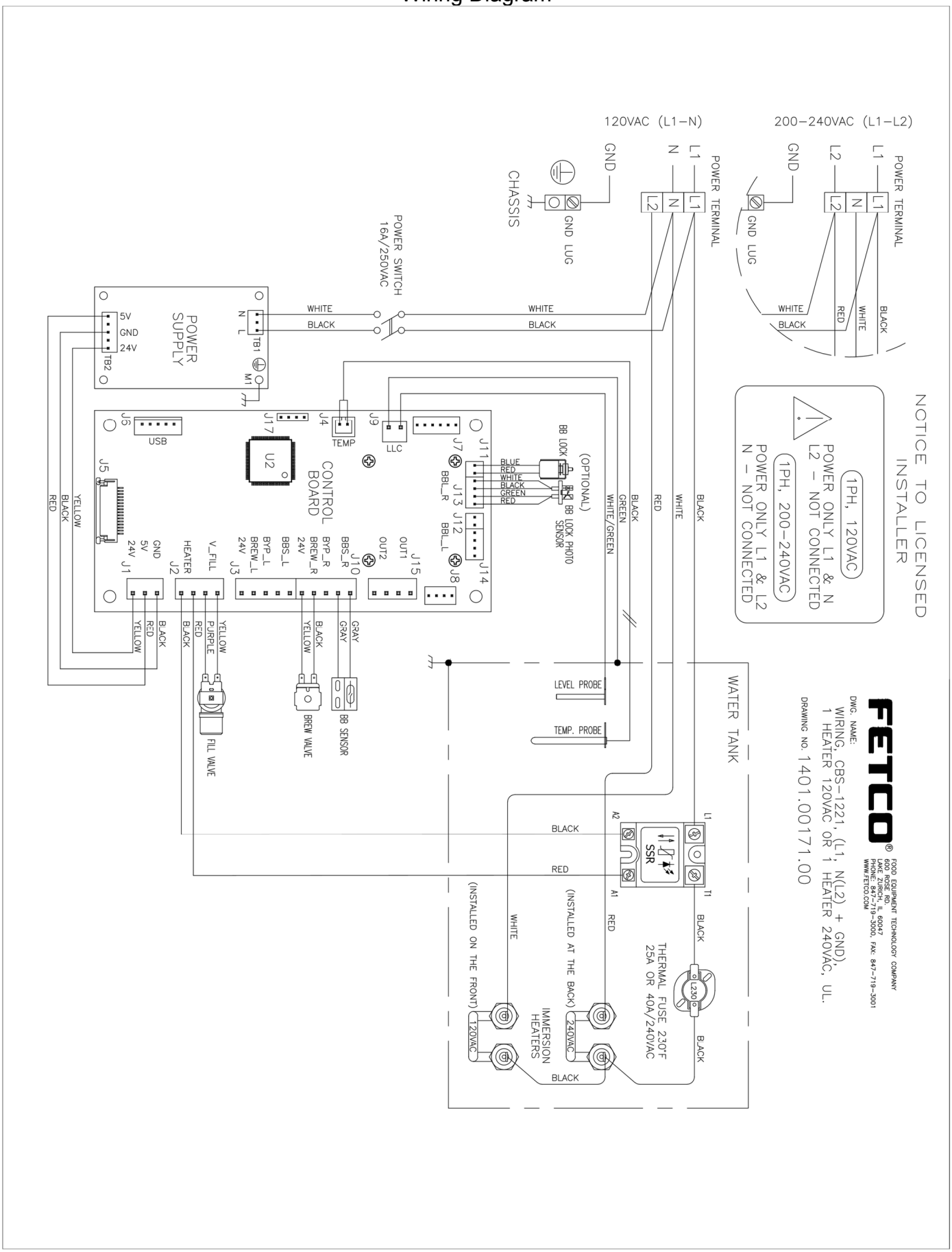
Part Number	Description
B024230BN2	Complete Standard Plastic Brew Basket
1023.00359.00	PLUG, FOR AIR POT BREW BASKET ONLY, BROWN



Part Number B025230B1 Standard Stainless Steel Brew Basket

Ref	Qty	Part Number	Description
		B025230B1	Complete Stainless Steel Brew Basket
1	1	1004.00053.00	BREW CONE, CBS-1221, 8" W/ .230" HOLE
2	1	1023.00358.00	HANDLE, BREW BASKET,
3	1	1009.00014.00	WIRE BASKET, CBS-1221, 8" BREW BASKET
4	1	1057.00016.00	MAGNET, NEODYMIUM, 25"OD x .125"THK.
5	1	1046.00061.00	LABEL, BREW BASKET WARNING, AIR POT
6	2	1082.00123.00	SCREW, ROUND HD. PHIL.

Wiring Diagram



End of section notes