FETCO® User's Guide and Operator Instructions

EXTRACTOR PLUS COFFEE BREWING SYSTEM

CBS-1221 Plus Air Pot Brewer

FETCO Commercial Beverage Equipment

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

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Coffee Brewer: CBS-1221

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Specifications and Requirements

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: First Batch 2.20 liters
Brew Volume: Second Batch 1.90 liters
Third batch is vacant by factory, ready to program by user
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.
Brew basket filters: Large 13" x 5" or F002
Small basket 10-5/8" x 4-1/2" or F008

Total Brew Cycle—First batch factory default setting: 5 minutes=[3.5 minute brew time + 1.5 minute drip delay]
Second batch factory default setting: 4.5 minutes=[3.0 minute brew time + 1.5 minute drip delay]

Brew-Process parameters are user controllable for:
Brew Volume, Brew Time, Prewet Percent and Prewet Delay, Drip Delay

Electrical Specifications for Domestic-dual voltage

SKU Model description	Electrical Connection	Brew Basket	Heater Configuration	Voltage	KW	Amp Draw	Brew-Volume/Hour
E1221US-1X117-LM001 Domestic-Dual Voltage	NEMA 15-5P Terminal Block	LM	1 X 1.7 kW 1 X 3.0 kW	100-120 200-240	1.3-1.8 2.2-3.1	12.3-14.7 10.9-13.0	4.4 gal/16.5 liters 6-7 gal/22-21 liters
E1221US-1X117-KM001 Domestic-Dual Voltage	NEMA 15-5P Terminal Block	LP	1 X 1.7 kW 1 X 3.0 kW	100-120 200-240	1.3-1.8 2.2-3.1	12.3-14.7 10.9-13.0	4.4 gal/16.5 liters 6-7 gal/22-21 liters
E1221US-1X117-MM001 Domestic-Dual Voltage	NEMA 15-5P Terminal Block	SM	1 X 1.7 kW 1 X 3.0 kW	100-120 200-240	1.3-1.8 2.2-3.1	12.3-14.7 10.9-13.0	4.4 gal/16.5 liters 6-7 gal/22-21 liters
E1221US-1X117-PM001 Domestic-Dual Voltage	NEMA 15-5P Terminal Block	SP	1 X 1.7 kW 1 X 3.0 kW	100-120 200-240	1.3-1.8 2.2-3.1	12.3-14.7 10.9-13.0	4.4 gal/16.5 liters 6-7 gal/22-21 liters

Universal wiring, sold with 120 volt cord and plug. Brewers may be field converted to 200-240 volts-see page 12

Electrical Specifications, Domestic-single voltage 120 volt cord and plug

SKU	Electrical Connection	Brew Basket	Heater Configuration	Voltage	KW	Amp Draw	Brew-Volume/Hour
E1221US-1A117--LM001	NEMA 15-5P	LM	1 X 1.7 kW	100-120	1.3-1.8	12.3-14.7	4.4 gal/16.5 liters
E1221US-1A117-KM001	NEMA 15-5P	LP	1 X 1.7 kW	100-120	1.3-1.8	12.3-14.7	4.4 gal/16.5 liters
E1221US-1A117-MM001	NEMA 15-5P	SM	1 X 1.7 kW	100-120	1.3-1.8	12.3-14.7	4.4 gal/16.5 liters
E1221US-1A117-PM001	NEMA 15-5P	SP	1 X 1.7 kW	100-120	1.3-1.8	12.3-14.7	4.4 gal/16.5 liters

Electrical Specifications for International equipment Schuko cord and plug Note: All equipment operates either 50Hz or 60Hz

SKU	Electrical Connection	Brew Basket	Heater Configuration	Voltage	KW	Amp Draw	Brew-Volume/Hour
E1221IN-1B130--LM005	Schuko plug	LM	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-Schuko	CEE 7-7			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters
E1221IN-1B130-KM005	Schuko plug	LP	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-Schuko	CEE 7-7			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters
E1221IN-1B130-MM005	Schuko plug	SM	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-Schuko	CEE 7-7			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters
E1221IN-1B130-PM005	Schuko plug	SP	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-Schuko	CEE 7-7			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters

Electrical Specifications for International equipment UK cord and plug Note:All equipment operates either 50Hz or 60Hz

SKU	Electrical Connection	Brew Basket	Heater Configuration	Voltage	KW	Amp Draw	Brew-Volume/Hour
E1221IN-1B130-LM006	UK Plug TypG	LM	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-UK Plug	BS 1363 A			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters
E1221IN-1B130-KM006	UK Plug TypG	LP	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-UK Plug	BS 1363 A			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters
E1221IN-1B130-MM006	UK Plug TypG	SM	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-UK Plug	BS 1363 A			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters
E1221IN-1B130-PM006	UK Plug TypG	SP	1 X 3.0 kW	230	2.8	12.4	7 gal/21 liters
International-UK Plug	BS 1363 A			200-240	2.2-3.1	10.9-13.0	6-7 gal/22-21 liters

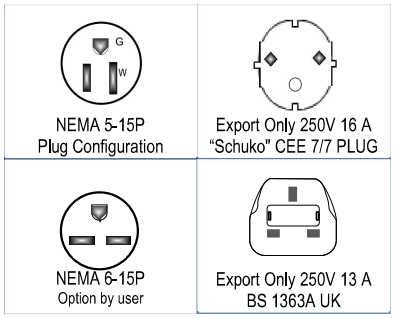
Weights and Capacities								
Dispenser Model	Height	Width	Depth	Water tank capacity	Empty Weight	Filled Weight	Shipping Weight	Shipping Dimensions
CBS-1221 Brewer	26 in 660 mm	9 1/4 in 240 mm	22 1/4 in 560 mm	2.7 gallon 10.1 L	29bs. 13.1 kg	52 lbs. 23.6 kg	35 lbs. 15.9 kg	31½" x 24¾" x 13" 800mmX629X330mm

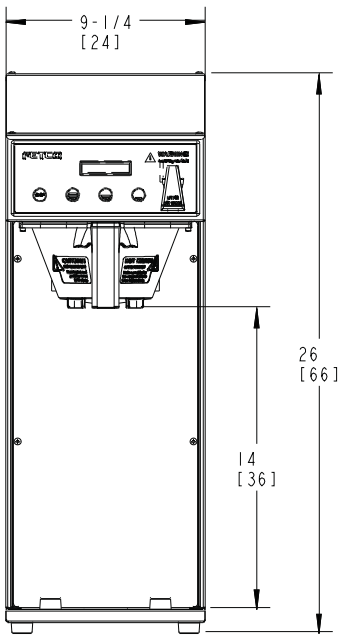
Calibrated for 2.2 L/74 oz/0.58gal air pot	Calibrated for 120g/4.2oz coffee dose Range: 100-140 gram 3.5-4 ounce dose (Dose size varies for brew basket size)	Coffee Filter FETCO# F008 or 10⅝" X 4½" (Standard) FETCO# F002 or 13" X 5" (Gourmet)

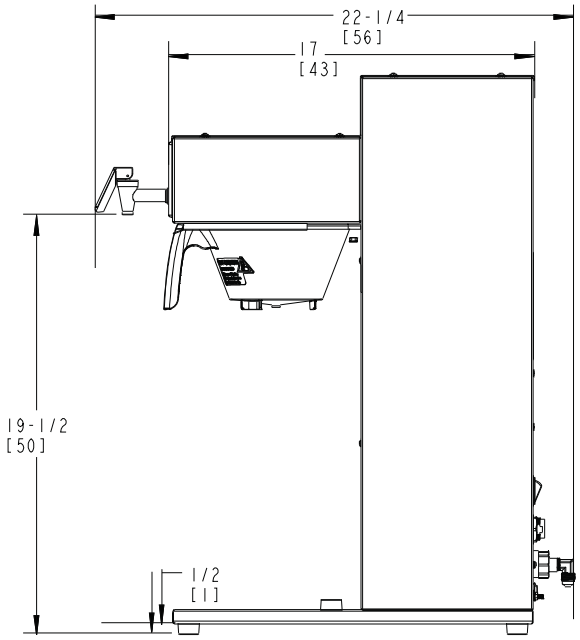
CBS-1221 brewbaskets

			
Brew basket LM Large metal 13"x5" F002 or 13"x5 filter paper	Brew basket LP Large metal 13"x5" F002 or 13"x5 filter paper	Brew basket SM Small metal 10⅝"x4½" F008 or 10⅝"x4½" filter paper	Brew basket SP Small plastic 10⅝"x4½" F008 or 10⅝"x4½" filter paper

Rough-In Drawings





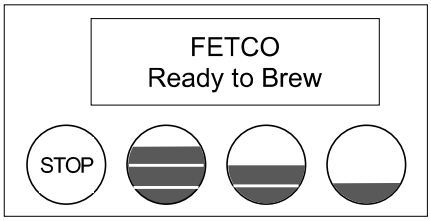


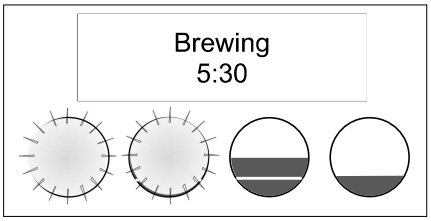
CBS-1221 Rough-in drawing
DWG# 1201.00056.00
(Dimensions in parenthesis are metric)

CBS-1221 Front

CBS-1221 Side

Starting The Brew



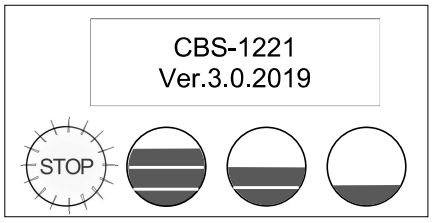


1. Turn the power switch “ON”.
2. Prepare a brew basket with the correct size filter and appropriate amount of coffee.
3. Slide the brew basket completely into the rails.
4. Place a clean, empty, preheated dispenser under the brew basket.
5. Select a batch & hold the corresponding BREW button in for 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

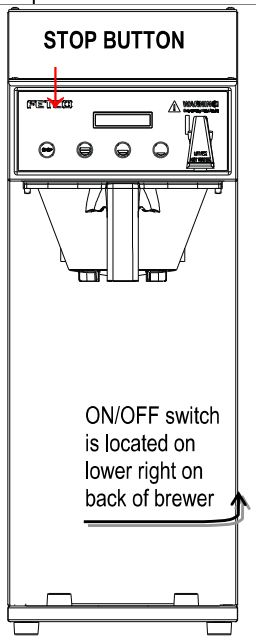
There are 7 menu groups-A-F plus EXIT (G).
See the following pages for the batch parameter definitions and all settings for the brewer

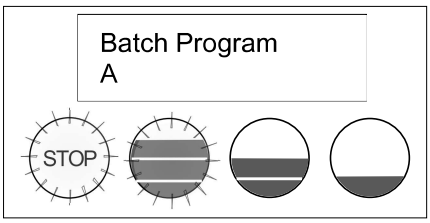


TO ENTER PROGRAMMING
1-Turn brewer “OFF” from power switch
2-Turn power switch to “ON”

…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)



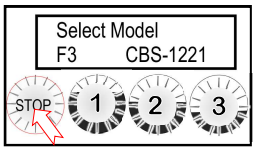


When brewer is In PROGRAMMING MODE
-the screen will display:

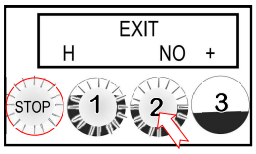
|BATCH PRGI
|A (or B-F) |
-Illuminated LED indicates active keypad positions

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

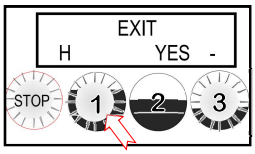
Exit Programming & Save Control Setting Changes



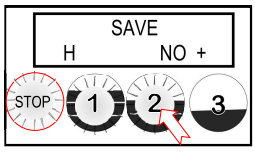
Model Selected In “F” Screen (CBS-1221 shown) Press “STOP” 3X to proceed to “SAVE”



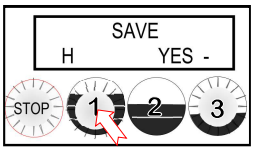
From the “H” screen Press button **2** to toggle to the EXIT-**YES** screen.



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



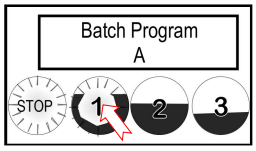
To SAVE and EXIT Press button **1** to SAVE your changes and EXIT to OPERATING MODE

Programing Menu Layout

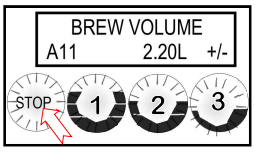
A10 to A70 Batch Parameters	B10-B40 General Settings	C10-C50 Service Inputs	D10-D90 Service Outputs	E10-E70 Calibration	F10-F120 Service Menu	G1-G15 Counters	H10-H11 Exit and Save
A11 Brew Volume	B1 Tank Temperature	C1 LLC Probe	D1 Heater SSR	E1 Ready Temp. Offset	F1 Firmware Ver.	G1 Filter Used	H1 Save Changes
A12 Brew Time	B2 Brew at Temp	C2 Basket Sensor	D2 Fill Valve	E2 LLC Sensitivity	F2 Bootloader Ver.	G2 Filter Life	H2 EXIT?
A13 Prewet Percent	B4 Show Tank Temp	C4 Tank Temperature	D4 Brew Valve	E3 Slow Flow Compensate	F3 Select Model	G3 Filter Reset	
A14 Prewet Delay	B5 Units of Temp	C5 USB Drive	D8 Basket Lock	E5 Brew Flow	F5 Option BB Lock	G4 Counter Reset	
A16 Drip Delay	B6 Units of Volume	C6 Keyboard Test	D12 LCD Brightness %		F8 Backup to USB	G5 Choose Counter	
A20 Batch (2) Enabled	B7 Customer Name		D13 LED Brightness %		F9 Restore from USB	G10 Brewer Volume [LT]	
A21 Brew Volume	B8 Customers Name				F10 Restore Defaults	G11 Brewer Volume [R]	
A22 Brew Time	B9 Demo Mode				F11 Error Log	G14 Rt Brews [LT]	
A23 Prewet Percent	B10 Eco Mode				F12 Erase Error Log	G15 Rt Brews [R]	
A26 Drip Delay	B11 Eco Idle Time				F13 Service Phone#	See page 10	
A30 Batch (3) Enabled	B12 Eco Idle Temp				F15 Override Rt BBS		
A90 Copy Batch	B13 Filter Life				F17 Override Rt BBL		
A91 Copy Batch: From							
A92 PASTE: To							

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

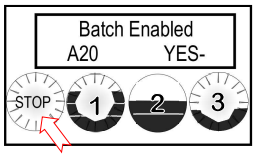
Access the A menus to PROGRAM & make changes to individual menu recipes. Menu settings can be copied
Menu position A1 is permanent. Menus A2, A3 can be removed by operator if desired



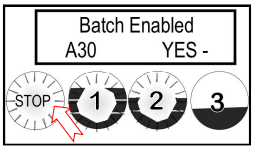
From A PRG screen
Press button 1 to go to the A menu access screen



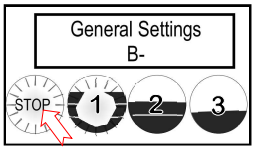
From A11 screen
Press **STOP** to scroll to A20.
(A1 is permanent)



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

.

RECIPE Location map

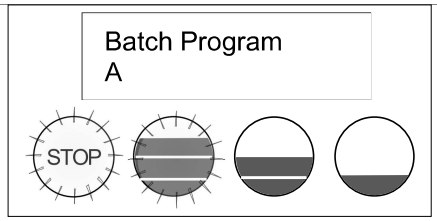
View and change settings for the brew recipes from the "A" screens with the controls in PROGRAMMING.

The batch A1 position is permanent and cannot be disabled

To access programming steps A20 and A30

Batch programming steps A20 or A30 will not display from step A10
Programming for steps A20 and A30 are accessed from any step in A10 by pressing the STOP button (one time for A20;two times for A30).

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)	3:30 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	1:30 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 †
To access programming steps A20 and A30 Batch programming steps A20 or A30 will not display from step A10 Programming for steps A20 and A30 are accessed from any step in A10 by pressing the STOP button (1x for A20;2x for A30).					
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	1.90liters 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)	3:00 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	1:30 mm:ss	0:30 – 6:00 min.	10 sec	→See Note A16
A30	Batch Enabled A30 YES **-** NO **+**	NO-inactive (defaults to recipe A20 if activated)	Middle and Bottom batches A2,A3	Batch on or off	Batches may be individually enabled, rewritten or deactivated
A90 **Batch Copy**					
A91 **Batch Copy**	Copy From Batch	1 +	A91 1 (1-6)		Select recipe to copy
A92 **(PASTE TO)**	Paste To Batch?	1 +	A92.1 (1-6)		Select where to paste
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 Fahrenheit by default	171° 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**
B4	Show Tank Temperature	YES	YES/NO		To display HW tank temperature on screen
B5	Units of Measure TEMPERATURE	° Fahrenheit	Fahrenheit/Celsius	C/F	**NOTE**: Overwrites user settings (see page 9)
B6	Units of Measure VOLUME	L LITERS	Gallons/Liters	L/Gal	**NOTE**: Overwrites user settings (see page 9)
B7	Customer Name	Off	NO or YES		For name on screen
B8	Customer Name	(only if above is "ON)	Scroll with batch keys	A-Z;a-z;0-9	16 characters total
B9	Demo Mode	DEMO ON/OFF			Demonstrates the controls for training. Disables all components in demo mode
B10	Eco Mode	Off	ON/OFF	YES/NO	If Selected: Lowers hot water tank temperature after preset time of inactivity
B11	Eco Idle Time **(turns on if B10 active)**	1Hr	1-6 hours	1 hour	Time of inactivity to go into ECO Mode
B12	Eco Idle Temp **(turns on if B10 active)**	169°F	158-176°F	1 degree	Temperature that hot water tank is lowered to
B13	Filter Life	OFF	ON/OFF	YES/NO	Water filter life is accessed in G-Counters. This is user set and will display indicator to change water filter

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.

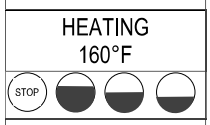
Notifications shown on screen:
TEXT: **HEATING**→Tank above 87°C/189°F-will allow brew at low temperature.
Coffee flavor may be affected
TEXT: **L. HEAT**→Tank above 76°C/169°F-will allow brew at low temperature.
Coffee flavor will be noticeably affected

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 reduced temperature
Allows brewing at any temperature above 90°C/202°F

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 resistance 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			
C6	Keyboard Test	Calibrate	Checks buttons under membrane cover	YES/NO	Follow directions on the touch screen

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.
D8	Basket Lock (if activated)	(Press to test)		Toggle +/- OFF or ON	Press To Test
Single series displays right side only Left Valve display is only for twin side brewer.					
D12	LCD Brightness	Brightness=90%	20-100%	5%	Adjust LCD screen brightness only-Not for LEDs under buttons
D13	LED Brightness	Brightness=60%	20-100%	5%	Adjust LED button brightness only-Not for the screen display LCD

.

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 -9°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 supply	ON	OFF/ON	Toggle +/- YES or NO	Trims fill system for low supply or Flojet use
E5	Brew valve flow rate:	1.60L/0.42G/54oz	1.30-1.90 Liter 0.35-0.48Gallon 0.54-0.63 ounce	0.05L 0.013G 1.0 ozs1	Adjusts flow rate

`

Use this formula to compensate for minor discrepancies in actual volume versus programmed volume.
See “PROGRAM” E5 For valve settings and calibration. Factory set brew valve flow rates are in liter/min

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

Default Brew Valve Flow Rate—CBS-1221 Brewers

CBS-1220	Liters/minute	Range
Brew Valve FR	1.60	1.30 L to 1.90 L

Set FR lower to increase volume, set higher to decrease volume.

Use the formula above to determine the correct setting

F SERVICE MENU	Software & Code View and Settings				
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
F1	Display Firmware	2.2.210720			Displays current version [6/2021]
F2	Display Bootloader	2.0.210317			Displays current version [6/2021]
F3	Select Model	CBS-1221 Will need reboot	Scroll to brewer model Save & Exit	CBS-1221, CBS-1222 CBS-1231, CBS-1232 CBS-1241, CBS-1242 CBS-1251, CBS-1252 CBS-1253; CBS-1261, CBS-1262; MBS-1221 MBS-1222, MBS-1251 TBS-1221, TBS-1222	**NOTE**: Overwrites all user settings **(See below)**
F4	Option Bypass	Yes	NO or YES		Turns on bypass
F5	Option BB Lock	NO	NO or YES		Apply to future upgrade kit
F6	Option BBL Sensor	NO	NO or YES		Apply to future upgrade kit
F8	Backup to USB	NO	Follow prompts	Saves settings	Insert blank USB
F9	Restore From USB		Applies settings from USB		Insert USB Will need reboot
F10	Restore Defaults	NO	NO/YES		Reset to factory
When selecting F10-RESTORE DEFAULTS, save and exit programming (page 13) then reenter programming and select your model (F3). Save and exit again after this selection.					
F11	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
F12	Erase Error Log	NO +		Toggle +/- YES or NO	FACTORY USE ONLY. DO NOT RESET
F13	Service Phone #				Set phone for brewer operator
F15	Override Rt BBS	NO	NO/YES	Toggle +/- YES or NO	Disables brew basket sensor
F17	Override Rt BBL	NO	NO/YES	Toggle +/- YES or NO	Disables brew basket lock

F Error Codes obstructed			
DO NOT CLEAR ERROR CODES UNTIL ERROR IS IDENTIFIED AND CORRECTED →Contact factory or 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
002	Internal flash corrupted internal data memory malfunction	Error found in cyclic redundancy check **CRC**	Restart , if still fault: reload software If not corrected :replace board
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 powering up.	Water supply flow rate is too low, fill valve is stuck, water line kinked or closed.	Reboot machine. If persists-investigate cause of low flow rate. (Clogged water filter, kinked line, stuck fill valve)
101	Error on refill-. Tank did not refill within expected time.	Water supply flow rate is too low, fill valve stuck	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter or stuck fill valve)
200	Heating flatline-Tank is boiling	Heater is on, temperature is not rising/dropping	High elevation correction. Bad heaters or temperature probe or position
201	Solid State Relay (SSR) failure, heater open, high limit thermostat, or temperature probe failure	Failure of SSR, heating element, high limit, or temperature probe	Test and check SSRs, heating elements, high limit devices temperarure probe and replace if necessary.
202	Heater Shorted or Stuck SSR	Heater is off and heating SSR is stuck “ON”	Check ohms on heater (15-60Ω). SSR may be stuck in ON mode-replace SSR.
255	Keyboard [HID] error (Human Interface Device)	Usually from longer than 10 se 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

G COUNTERS Brewer Usage, Water Filter Usage, and Statistics

ROLE: [LT]=Permanent total for lifetime of machine [R]=operator resettable [User]=Input needed from operator

Position	Counter	Program items	Role	Information	Increments	Notes
G1-G3 are for water filter maintenance. Filter Life readings (G1, G2, G3) must be activated in B13 GENERAL if they are not visible and the equipment has a water filter. All beverage equipment must use filtered water and filter cartridges must be monitored for quality						
G1	A, S, B	Filter Used	[User]	0L	Gallons/Liters	Amount of water passed through external water filter. For filter life
G2	A, S, B	Filter Life	[User]	10,000Liters 2,625Gal	25 gal 100 L	Upload published life of filter
G3	A, S, B	Filter Reset	[User]	NO	Toggle +/- ,Y or N	Reset when replacing external water filter
G4	A, S, B	Counter Reset	[User]	NO	Toggle +/- ,Y or N	Resets all resettable counters to zero
G5	**A, S, B**	Choose Counter		Factory set to BASIC	Basic=**B** Advanced=**A** Statistical=**S**	Stored brewer component activity.. See **column 2, Counters**, to identify where counters are located.
G10-G15 Number of brews and volumes handled. Available in BASIC counter only (G5)						
G10	B	Brewer Volume	[LT]	Dispensed volume	Liters/ Gallons	Total of brews and hot water dispensed
G11	B	Brewer Volume	[R]			
G14	B	Brews	[LT]	Total number of brews	Count	Total brews
G15	B	Brews	[R]			
G20-G55 component use cycles and volumes handled. Available in ADVANCED counter only (G5)						
G20	A	Fill Cycles	[LT]	Hot water tank refill cycles	Count	Cycles of hot water tank refill
G21	A	Fill Cycles	[R]			
G22	A	Fill Volume	[LT]	Total volume of water for all brews	Liters/ Gallons	Quantity of water for brews
G23	A	Fill Volume	[R]			
G28	A	Rt Brew Cycles	[LT]	Right brew valve operation on/off	Count	Totalized cycles of valve operation
G29	A	Rt Brew Cycles	[R]			
G30	A	Rt Brew Volume	[LT]	Right brew valve flow through volume	Liters/ Gallons	Totalized volume through right valve
G31	A	Rt Brew Volume	[R]			
G52	A	Heater Cycles	[LT]	ON/OFF switching for heating elements	Count	Totalized cycles of heater switching
G53	A	Heater Cycles	[R]			
G54	A	Heater On Time	[LT]	Total ON time for heating element	Hour	Totalized heater ON time in hours
G55	A	Heater On Time	[R]			
G80-G85 See illustration below for batch button positions Available in STATISTICAL counter only (G5)						
G80	S	Batch 10 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-top button
G81	S	Batch 10 Cycles	[R]			
G82	S	Batch 20 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-middle button
G83	S	Batch 20 Cycles	[R]			
G84	S	Batch 30 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-bottom button
G85	S	Batch 30 Cycles	[R]			

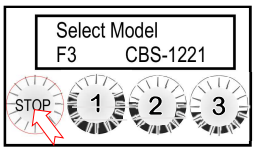
H SAVE & EXIT — Saving changes and exiting PROGRAMMING

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

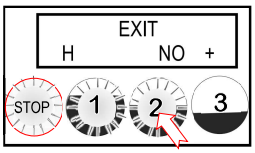
TO EXIT PROGRAMMING & HOW TO SAVE CONTROL SETTING CHANGES

HOW TO SAVE CHANGES AND EXIT-*The brewer is in PROGRAMMING mode.*

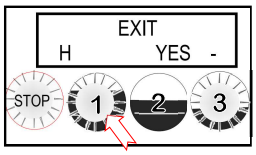
A convenient way to access the steps is to remember to scroll to EXIT→YES and to SAVE →YES



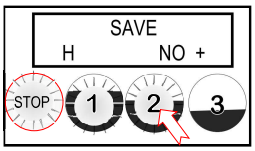
Model Selected In "F" Screen (CBS-1221 shown) Press "STOP" 3X to proceed to "SAVE"



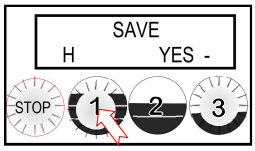
From the "H" screen Press button **2** to toggle to the EXIT-**YES** screen



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 B4)**
2) When setting or changing units of display for the volume (L liters, G gallons). **(SETTING B5)**
3) When setting brewer model →The software sets equipment to brewer defaults **(SETTING F3)**
4) When loading from USB (Reprograms settings) **(SETTING F9)**
5) When restoring defaults (Reloads to defaults) **(SETTING E10)**

Operator Training

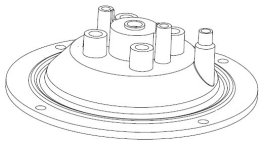
Review the operating procedures with whoever will be using the brewer.

Pay particular attention to the following areas:

1. Always pre-heat the dispensers before the first use of each day by filling them halfway 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.

(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 on pages 14, 21&22 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, International Code Council (ICC), or to the Uniform Plumbing Code (IAPMO).
3. Install a backflow prevention device. Most municipalities require a recognized backflow preventer
   Usable on all hot beverage and cold beverage equipment is a WATTS® SD-2 or SD-3.
   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
4. All beverage equipment must use a water filter. A finishing carbon filter is preferred
5. Install the filter unit after a water shutoff valve and in a position to facilitate filter replacement.
6. The water line and newly installed filter cartridge must be flushed thoroughly prior to connecting it to the brewer to prevent debris from contaminating the machine
7. 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
8. Only use the supplied factory fitting to attach water supply line to brewer (shipped in brew basket)
9. The suppled fitting is a 1/4" flare/compression fitting for 1/4" supply line. Other adaptors may be substituted.
10. Hand tighten the factory fitting when connecting the stub on the brewer. This will reduce stress on the internal connections and reduce the possibility of leaks developing after the install has been completed

Tank Drain

The water tank must be drained before maintenance procedures, and when the unit is to be relocated or shipped. Drain is for service use only and must not be permanently connected. NOTE: Never permanently plumb a drain line.

1. Disconnect power and water to unit. DANGER: Ensure 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 holds approximently 2¾ gallons/10.1 liters.

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. Reverse steps 4-8 when service is complete. Ensure pinch clamp is open and hose clamps are in place.

Installation safety and hygiene directions-For International and CE equipment

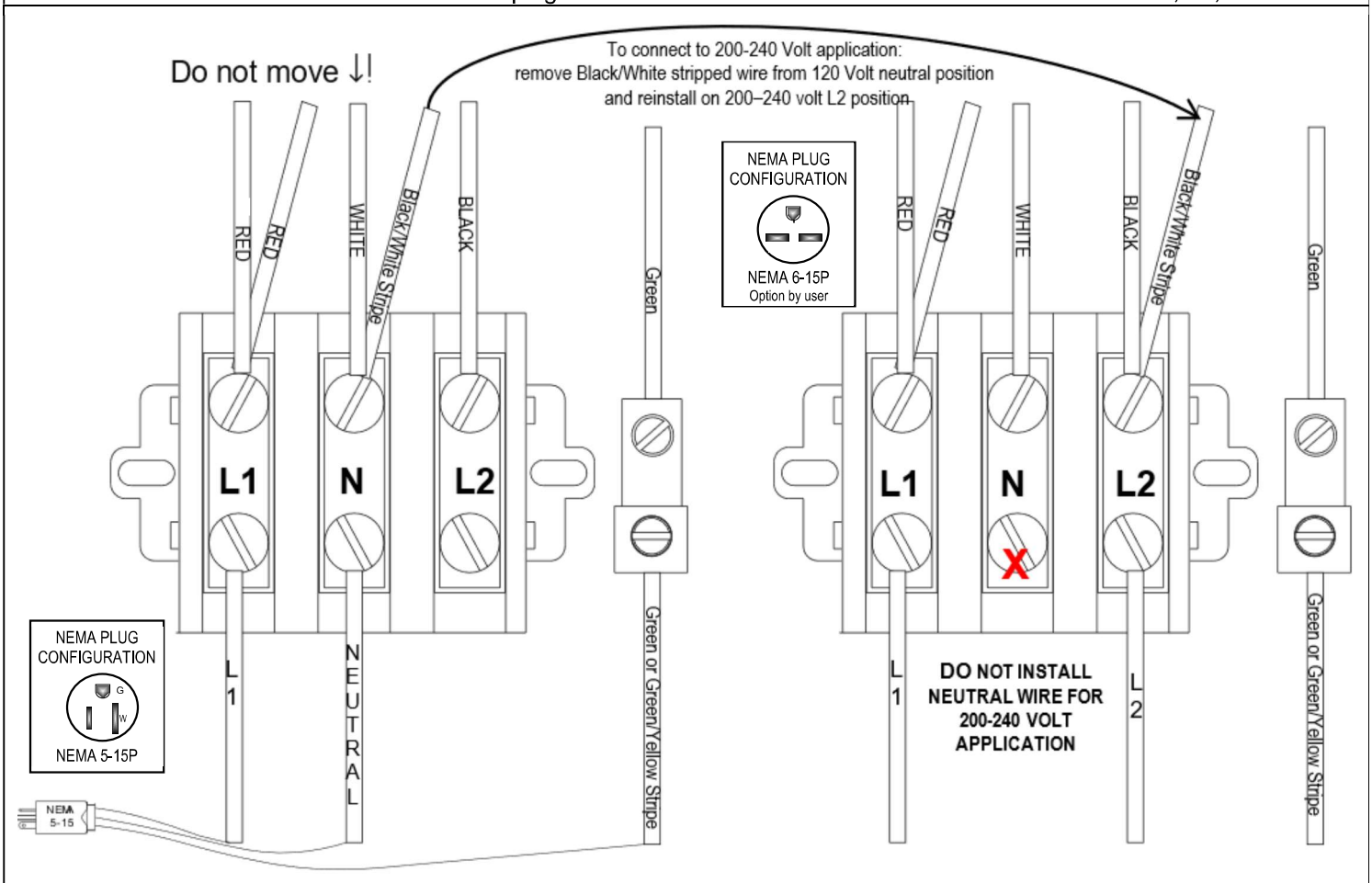
1. Access to the service area is restricted to persons having safety/hygiene knowledge and practical experience of the coffee brewer. This appliance must be installed in locations where it can be overseen by trained personnel.
2. For proper operation, this appliance must be installed indoors where the 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 with 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.

WIRING METHODS: REFERENCE ONLY: SEE THE WIRING DIAGRAM ON PAGE 22 OF THIS GUIDE

CBS-1221 120-volt models with cord and plug

CBS-1221 models 200-240 volt L1, L2,G

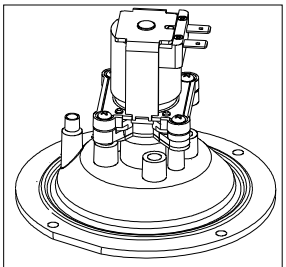


Electrical installation, service and field conversion is to be made only by licensed electrician.
Disconnect equipment from power supply before service. Equipment may be powered even if power switch is “OFF”

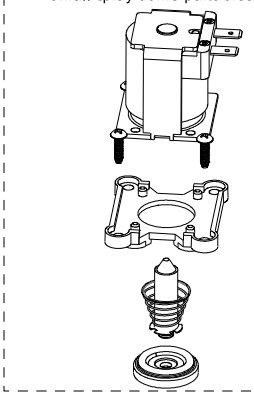
Small Spray Head Assembly CBS-1221 Part #16 pages 15-16 (Check your equipment to determain your type)

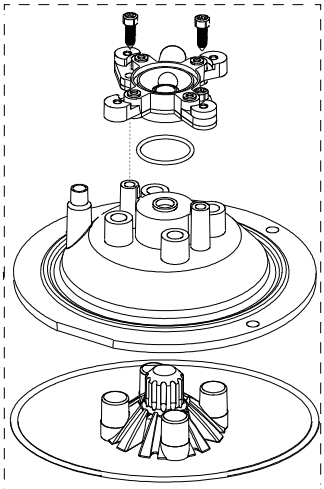
FETCO 24 volt small spray dome is found on some models of CBS-1200, MBS-1200, TBS-1200 all models CBS-1131V+, CBS-1132V+ CBS-1141V+, CBS-1142V+

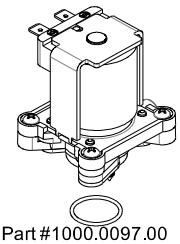
Small spray dome parts breakdown



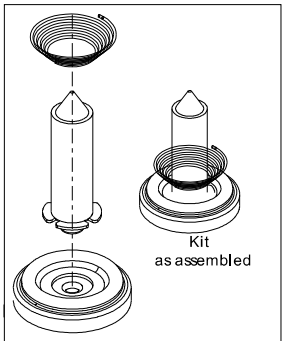
Part # 1102-00203.01
Complete 24volt spray housing factory assembled



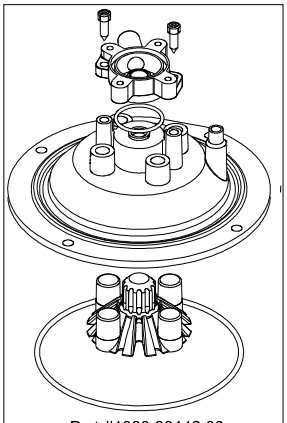




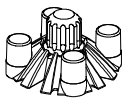
Part #1000.0097.00
Complete, assembled 24 volt valve kit with o-ring



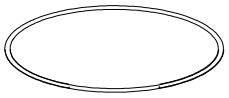
Part #1000.0098.00
Valve rebuild kit contains spring, plunger and diaphragm.



Part #1000.00142.00
Small spray housing kit w ith o-ring and cascading spray dome

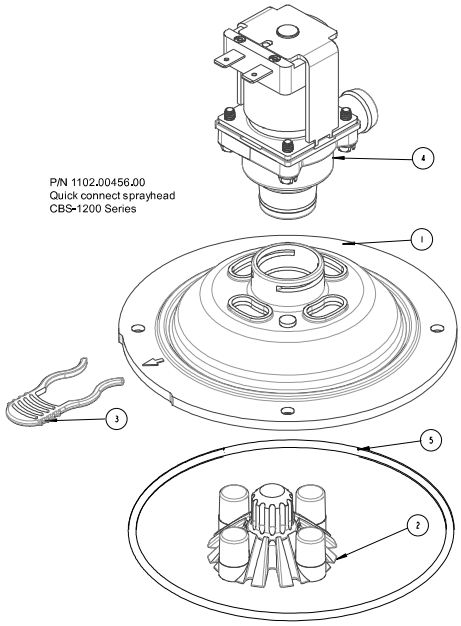


1102.00019.00 Small cascading spray dome, red

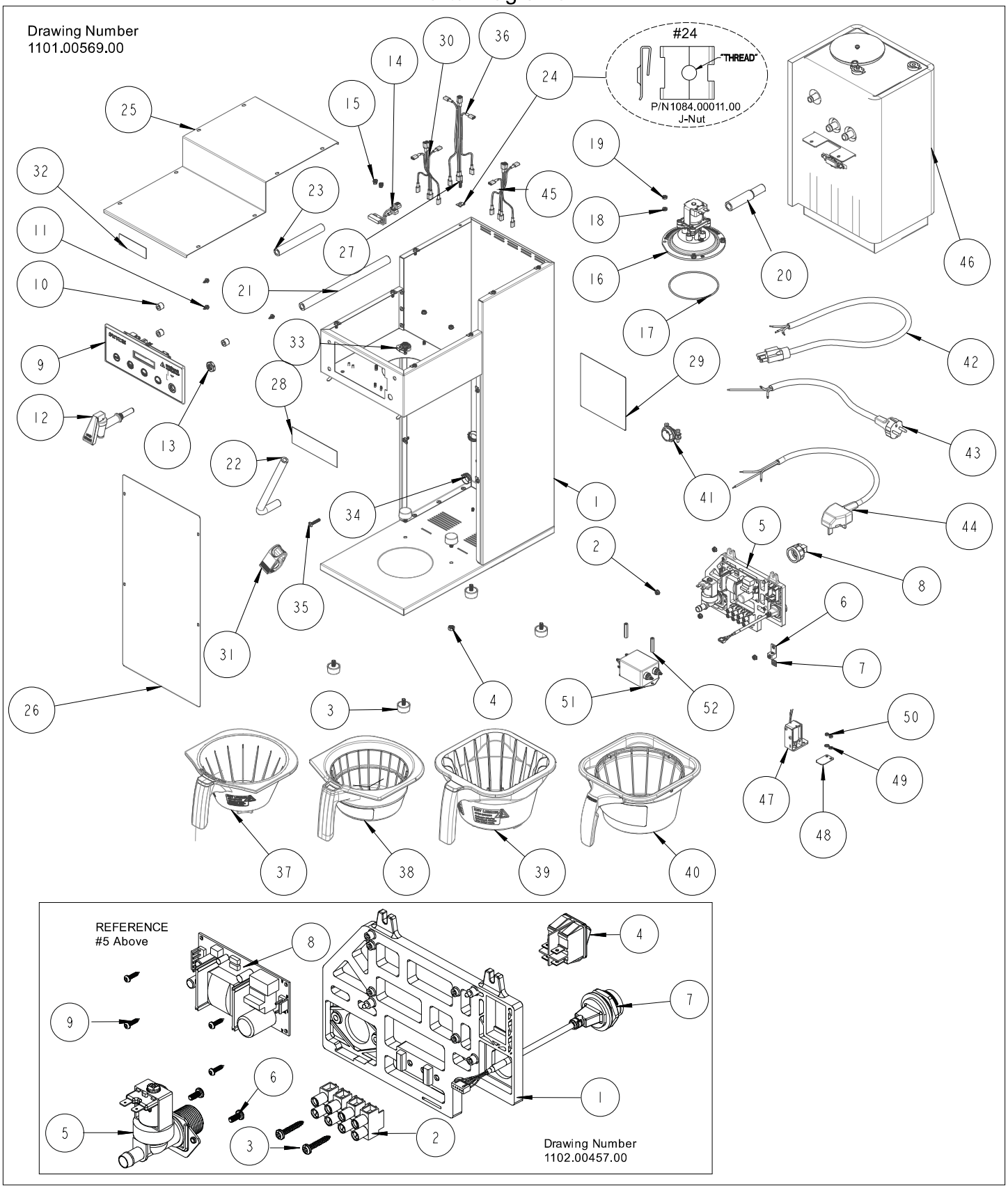


1024.00063.00 Spray housing O-RING, 3 15/16" x 3/32" CS, DASH # 154, DURO-A50

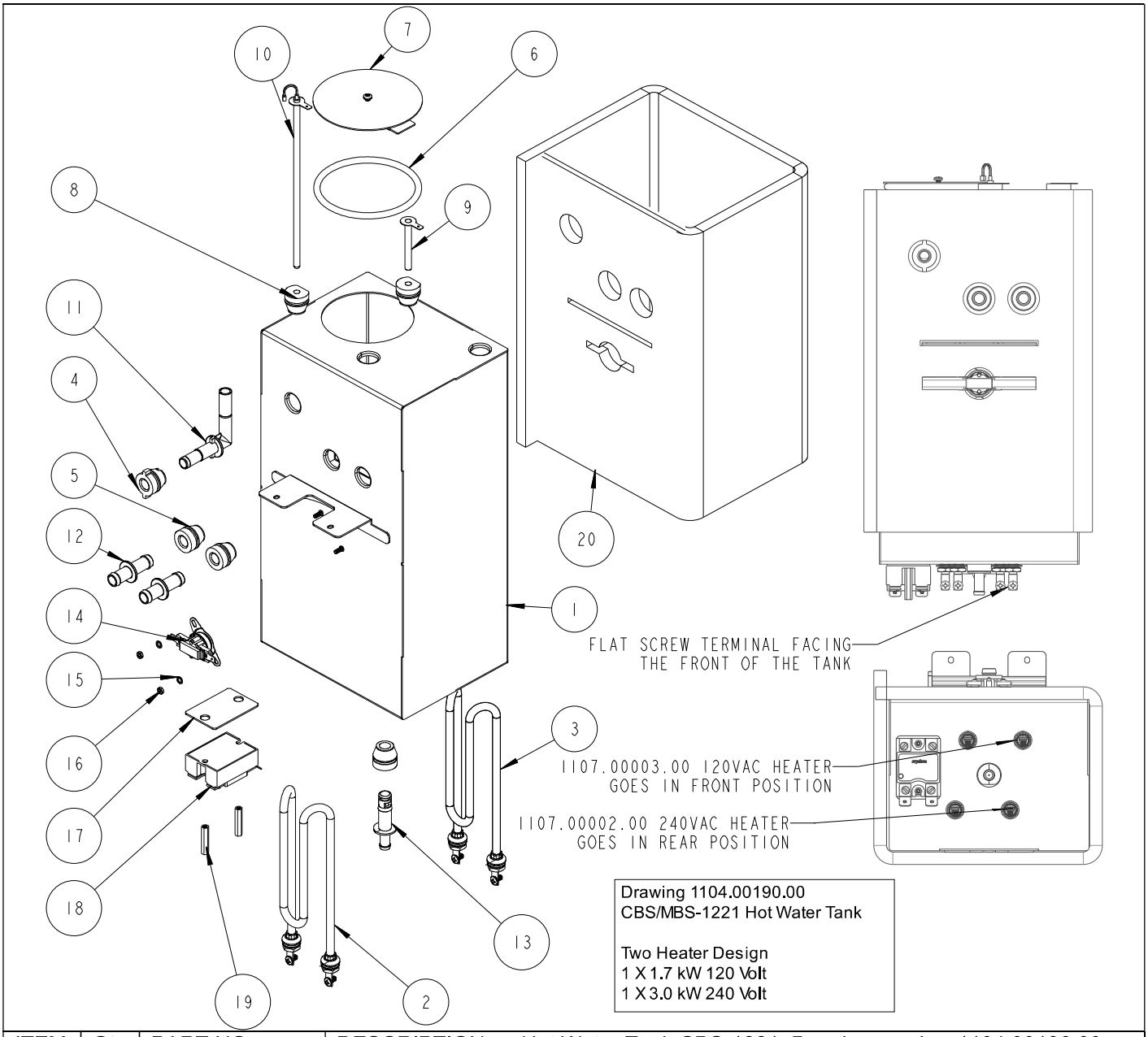
Small Spray Assembly Parts List-alternate version (Check your equipment to determain your type)



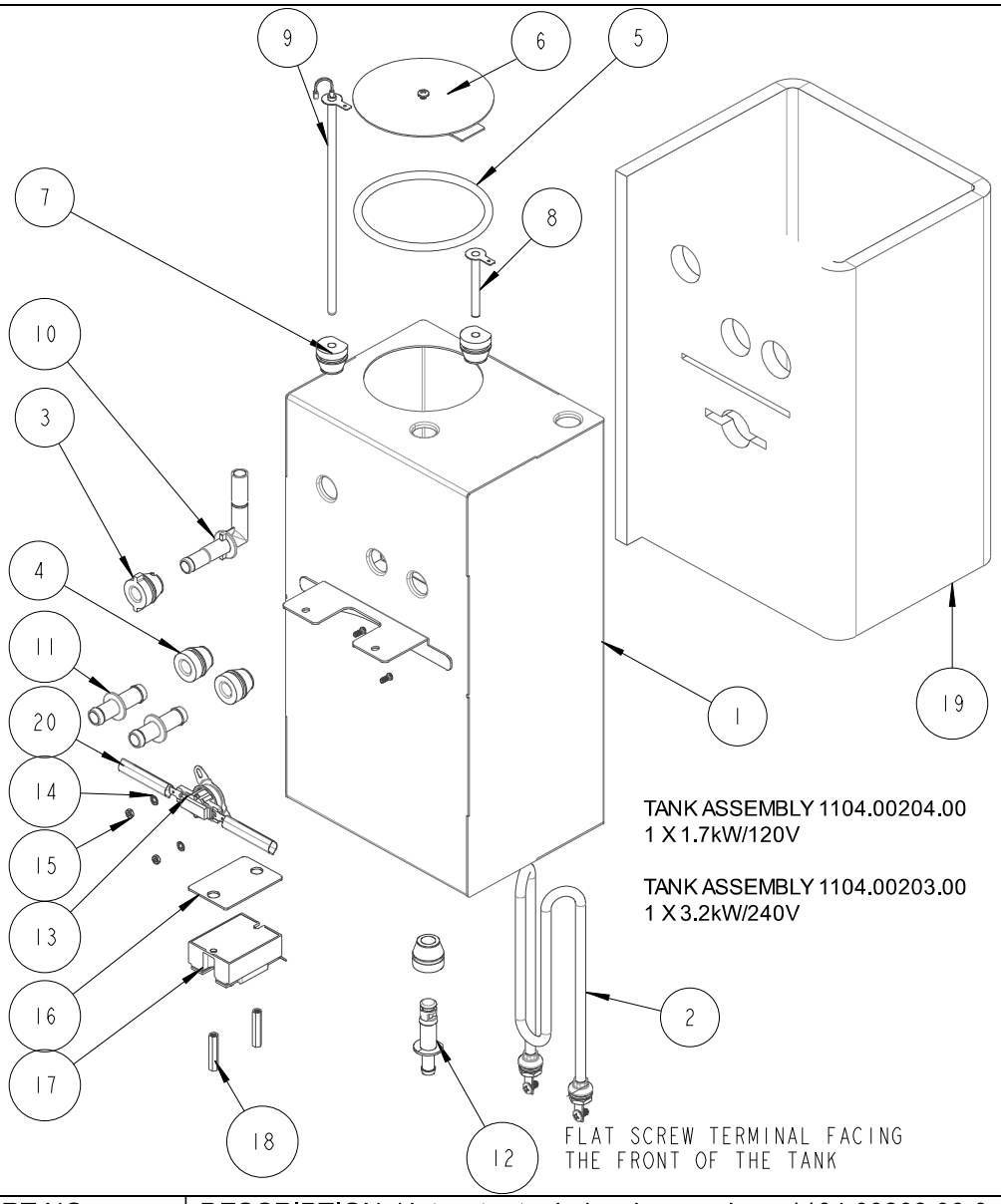
ITEM	Qty	PART NO	DESCRIPTION Drawing number 1101.00569.00
1	1	1000.00142.00	BASE, QUICK CONNECT SPRAY HEAD, RETROFIT
2	1	1102.00479.00	ASSEMBLY, CASCADE SPRAY DOME, NEXT GEN, ORANGE
3	1	1023.00342.00	QUICK CONNECT CLIP
4	1	1057.00076.00	VALVE ASSEMBLY, COMPLETE, NG, DELTROL(interchangeable with 1057.00078.00)
4	1	1057.00078.00	VALVE ASSEMBLY, COMPLETE, NG, RPE (interchangeable with 1057.00076.00)
5	1	1024.00063.00	O-RING, 3 15/16" x 3/32" CS, DASH # 154, BUNA-N, DURO-A50
NS	4	1083.00010.00	WASHER, #10 SCREW W/NEOPRENE-BONDED SEAL
NS	4	1084.00006.00	NUT, 8-32 18-8 HEX MACHINE SCREW


Drawing Number
1101.00569.00
#24
"THREAD"
P/N1084.00011.00
J-Nut
REFERENCE
#5 Above
Drawing Number
1102.00457.00

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 LOCKWASHER, #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	1	1102.00457.00	ELECTRICAL COMPONENT LATTICE, CBS-1200
5REF	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
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	1	1102.00203.01	ASSEMBLY, SPRAY HOUSING, DSVP11 DESIGN, NO VENT (Expanded drawing Page 19)
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	TOP COVER, CBS-1221
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	1402.00097.01	HARNESS, LOW AMP, CBS-1151-XV+, UL
31	1	1086.00009.00	CLAMP, 3/4" MAX TUBE OD FLOW CONTROL
32	1	1041.00033.00	BLACK EXTRACTOR PLUS LABEL, LASER ENGRAVED
33	1	1086.00002.00	CLAMP, HOSE, SIZE "G" NYLON
34	3	1086.00003.00	UNICLAMP, 15.9 HOSE OD CLAMP
35	1	1082.00082.00	SCREW, PHILLIP HD., 8-32 THREAD
36	1	1402.00113.00	WIRE HARNESS ADDITION, POWER SUPPLY GROUND
37	1	B024230BN2	BREW BASKET ASSY, BLACK, 9-3/4" X 4-1/2", .230" DIA. HOLE,BROWN PLUG
38	1	B025230B1	BREW BASKET ASSY, METAL, 9-3/4" X 4-1/2",.230" DIA HOLE, BLACK HANDLE
39	1	B014218BN2	BB ASSY, 13" X 5", ın˘.218" HOLE, BRN PLUG
40	1	B003218B1	BREW BASKET ASSY, 13" X 5", .218 DIA HOLE, BLACK
41	1	1086.00008.00	CONNECTOR, CLAMP, NON-METALLIC CABLE, 3/4"
42	1	1063.00016.00	POWER CORD, 120VAC W/NEMA 5-15P PLUG
43	1	1063.00030.00	CORD PWR, 16A/250VAC, EU1-16P PLUG, W/O CONNECTORS, CE
44	1	1063.00034.00	CORD, POWER, 13A 250VAC, 2.5M LG., UK
45	1	1402.00110.00	WIRE HARNESS, CBS-1221, HIGH AMP
46	**1**	**1104.00190.00**	TANK ASSEMBLY, CBS/MBS-1221, 1.7kW/120VAC OR 3.2kW/240VAC
46	**1**	**1104.00203.00**	TANK ASSEMBLY, CBS-1221, 3.2kW/240VAC
46	**1**	**1104.00204.00**	TANK ASSEMBLY, CBS-1221, 1.7kW/120VAC
47	1	1102.00219.00	ASSEMBLY, BB LOCKER, 24VDC
48	1	1003.00259.00	BRACKET, BREW BASKET LOCK COVER
49	2	1083.00011.00	WASHER, #8 SCREW SIZE, INTERNAL TOOTH LOCK
50	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
51	1	1052.00029.00	EMI FILTER, TWO LINE 20A, 120/250VAC
52	2	1081.00061.00	STANDOFF, 1/4 HEX x 1 1/4 LG., #6-32 THREAD

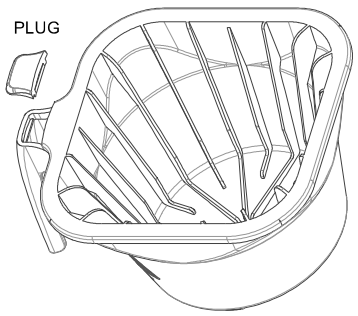


ITEM	Qty	PART NO	DESCRIPTION Hot Water Tank CBS-1221 Drawing number 1104.00190.00
1	1	1114.00167.00	WELDMENT, TANK, CBS-1221, 2 HEATERS
2	1	1107.00003.00	HEATER ASSY, IMMERSION 1700W/120VAC
3	1	1107.00002.00	HEATER ASSY, IMMERSION 3000W/240VAC
4	1	1024.00111.00	GROMMET, SILICONE, W/ POSITION TABS
5	3	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
6	1	1024.00007.00	O-RING, DASH #344, TANK COVER
7	1	1102.00207.00	TANK COVER ASSEMBLY, TBS-2121
8	3	1024.00062.00	GROMMET, SHORT, SILICONE, LEVEL AND TEMP PROBE
9	1	1112.00002.00	PROBE WELDMENT, WATER LEVEL 2.25" LG
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	2	1023.00167.00	FITTING, STRAIGHT, GROMMET, .500"
13	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
14	1	1053.00051.00	THERMOSTAT, SINGLE SHOT, 240V/25A
15	2	1083.00009.00	WASHER, #6 SCREW , INTL TOOTH LOCKWASHER
16	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
17	1	1003.00140.00	ALUMINUM BRACKET FOR SSR
18	1	1052.00033.00	RELAY, SOLID STATE, 50A/480VAC, W/BUILD IN VARISTOR
19	2	1081.00042.00	STANDOFF, 1/4" HEX
20	1	1022.00112.00	TANK INSULATION, CBS-1221

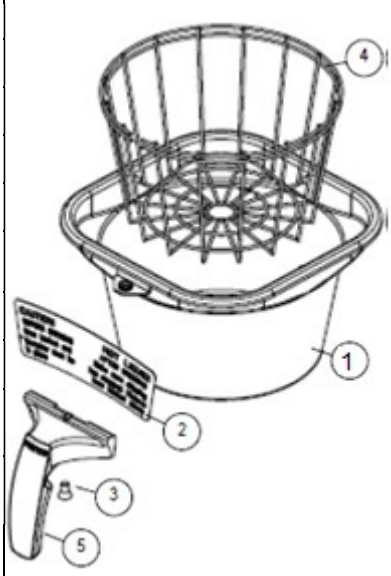


ITEM	Qty	PART NO	DESCRIPTION Hot water tank drawing numbers 1104.00203.00 & 1104.00204.00
1	1	1114.00173.00	WELDMENT, TANK, CBS/MBS-1221, ONE HEATER
2	**1**	**1107.00002.00**	**HEATER ASSY, IMMERSION 3000W/240VAC (1104.00203.00)**
2	**1**	**1107.00003.00**	**HEATER ASSY, IMMERSION 1700W/120VAC (1103.00304.00)**
3	1	1024.00111.00	GROMMET, SILICONE, W/ POSITION TABS
4	3	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
5	1	1024.00007.00	O-RING, DASH #344, TANK COVER
6	1	1102.00207.00	TANK COVER ASSEMBLY, TBS-2121
7	2	1024.00062.00	GROMMET, SHORT, SILICONE, LEVEL AND TEMP PROBE
8	1	1112.00002.00	PROBE WELDMENT, WATER LEVEL 2.25" LG
9	1	1102.00161.00	PROBE ASSEMBLY, TEMP. AND LLC, 8" LONG
10	1	1023.00362.00	FITTING VENT, ELBOW, .375" X .375", SELF POSITIONING
11	2	1023.00167.00	FITTING, STRAIGHT, GROMMET, .500"
12	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
13	1	1053.00051.00	THERMOSTAT, SINGLE SHOT, 240V/25A
14	2	1083.00009.00	WASHER, #6 SCREW , INTL TOOTH LOCKWASHER
15	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
16	1	1003.00140.00	ALUMINUM BRACKET FOR SSR
17	1	1052.00033.00	RELAY, SOLID STATE, 50A/480VAC, W/BUILD IN VARISTOR
18	2	1081.00042.00	STANDOFF, 1/4" HEX
19	1	1022.00112.00	TANK INSULATION, CBS-1221
20	2	1022.00032.00	SLEEVE, Ø.50 x 2.0" LG. x 1.50" SLOT

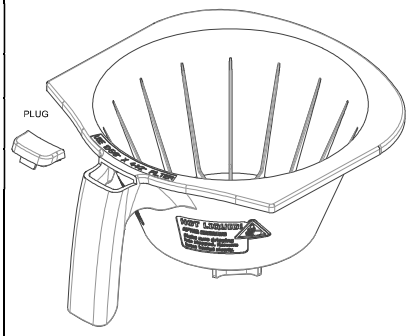
Brew Basket Parts



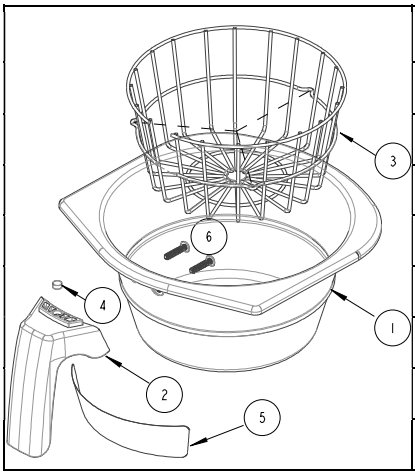
Part Number B014218BN2 Large Plastic Brew Basket	
1023.00195.00	**BROWN PLUG, BB HANDLE (STANDARD)**
1023.00194.00	BLACK PLUG, BB HANDLE (OPTIONAL)
1023.00190.00	RED PLUG, BB HANDLE (OPTIONAL)
1023.00191.00	GREEN PLUG, BB HANDLE (OPTIONAL)
1023.00192.00	ORANGE PLUG, BB HANDLE (OPTIONAL)
1023.00180.00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



Part Number B003218B1 Large 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



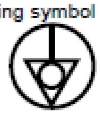
Part Number B025230B1 Standard Stainless Steel Brew Basket			
Ref	Qty	Part Number	Description
		B025230B1	Complete Stainless Steel Brew Basket
1	1	1004.00053.00	BREW CONE, CBS-1221, 8" W/ .230" HOLE
2	1	1023.00358.00	HANDLE, BREW BASKET,
3	1	1009.00014.00	WIRE BASKET, CBS-1221, 8" BREW BASKET
4	1	1057.00016.00	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.

Labels and warnings for hot beverage equipment

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.

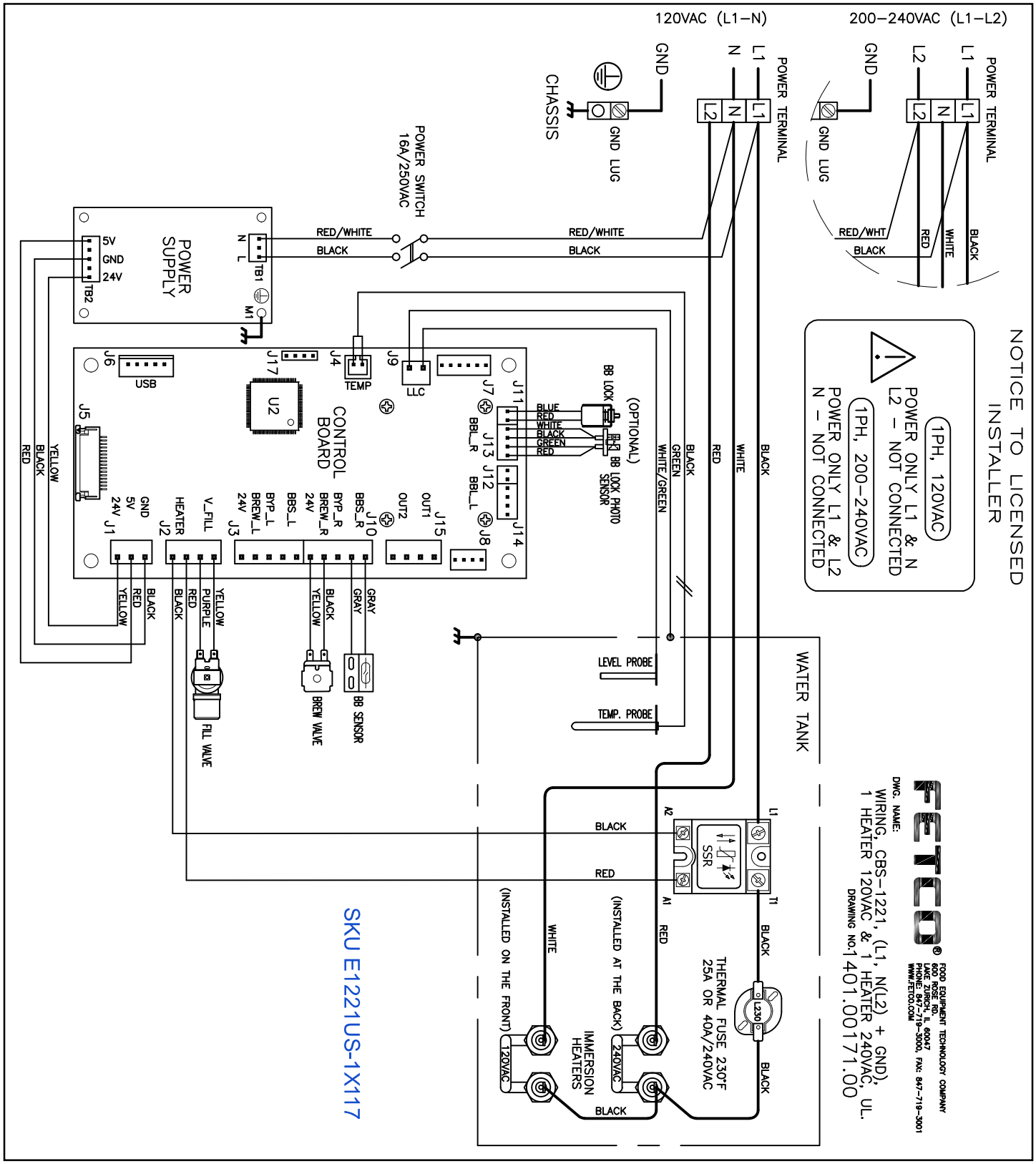
To prevent an electric shock hazard this device must be bonded to equipment in close proximity with an equipotential bonding conductor. This device is equipped with a bonding lug for this purpose and is marked with the following symbol

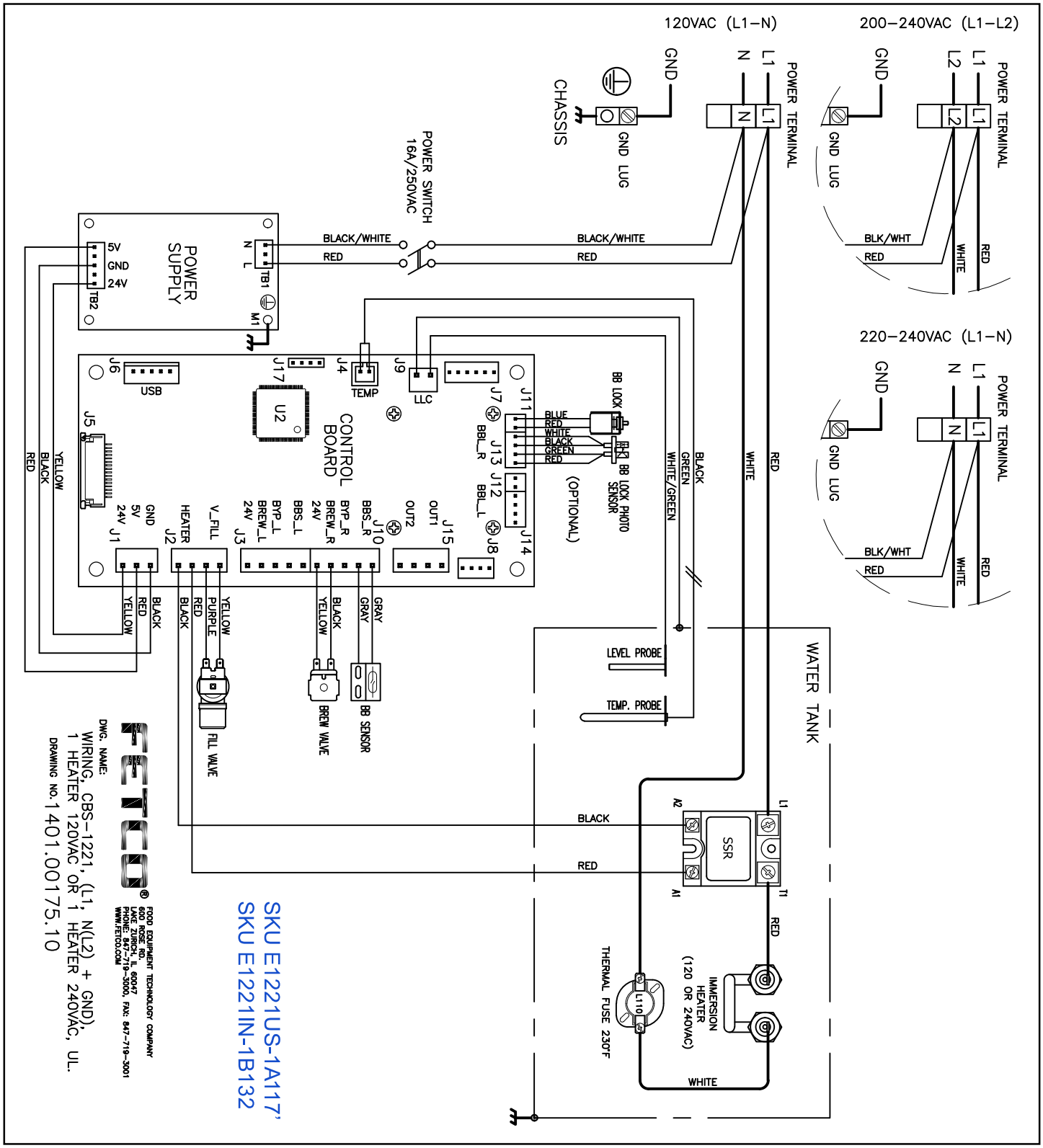


WARNING	**To reduce risk of electric shock or fire.**
FETCO® Hot Beverage Equipment is for commercial use only.	
Do not remove or open cover. No user serviceable parts inside. Refer installation and service to qualified personnel.	
Caution, disconnect from power supply before servicing.	
GROUND: National 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.**

For BACK PANEL of equipment (1046.00035.00)

Wiring Diagram




120VAC (L1–N)
200–240VAC (L1–L2)
220–240VAC (L1–N)
POWER TERMINAL
GND
GND LUG
CHASSIS
POWER SWITCH
16A/250VAC
BLACK/WHITE
RED
BLK/WHT
WHITE
POWER SUPPLY
5V
GND
24V
TB1
TB2
M1
CONTROL BOARD
U2
USB
TEMP
LLC
BB LOCK PHOTO SENSOR
(OPTIONAL)
BLUE
WHITE
BLACK
GREEN
WHITE/GREEN
YELLOW
BLACK
RED
HEATER
V_FILL
BYP_L
BREW_L
BBS_L
BYP_R
BREW_R
BBS_R
OUT1
OUT2
FILL VALVE
BREW VALVE
BB SENSOR
LEVEL PROBE
TEMP. PROBE
WATER TANK
SSR
A2
A1
L1
T1
THERMAL FUSE 230°F
IMMERSION HEATER (120 OR 240VAC)
SKU E1221US-1A117'
SKU E1221IN-1B132
FOOD EQUIPMENT TECHNOLOGY COMPANY
600, ROSE RD.
LAKE ZURICH, IL 60047
PHONE: 847-719-3000, FAX: 847-719-3001
WWW.FETCO.COM
DWG. NAME:
WIRING, CBS-1221, (L1, N(L2) + GND),
1 HEATER 120VAC OR 1 HEATER 240VAC, UL.
DRAWING NO.1401.00175.10

End of section notes