

FETCO® User's Guide and Operator Instructions

CBS-1231 & CBS-1232 Extractor Plus Brewing System FETCO PLUS® Commercial Beverage Equipment



CBS-1232 & CBS-1232 3.0-4.0 Extractor Plus Brewers, shown with 2.2 liter Air Pot (sold separately)

EXTRACTOR PLUS™
COFFEE BREWING SYSTEM



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P211 November 2025

Coffee Brewer: CBS-1230 series

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Specifications and Requirements

Water Requirements:

CBS-1231 & 1232: 20-75 psig, (138-517kPa) 1½gpm/(5.7lpm)

Water inlet fitting is a 3/8 inch male flare.

Brewer supplied with inlet valve adaptor for BSP to SAE

Brew Volume: Full Batch 3.8 liters; second batch 2.9 liter)

User adjustable from 0.95 liter to 4.75 liters per brew

Electrical: See electrical configuration chart. 120 Volt; 208-240 Volt; 230 Volt and user configurable

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: First batch: 5:30 minutes=[4 minute brew time + 1.30 minute drip delay]
Second batch: 5:00 minutes=[3:30 minute brew time + 1:30 minute drip delay]

Brew-Process parameters are user controllable for:

Brew Volume, Brew Time, Prewet Percent and Prewet Delay, Drip Delay

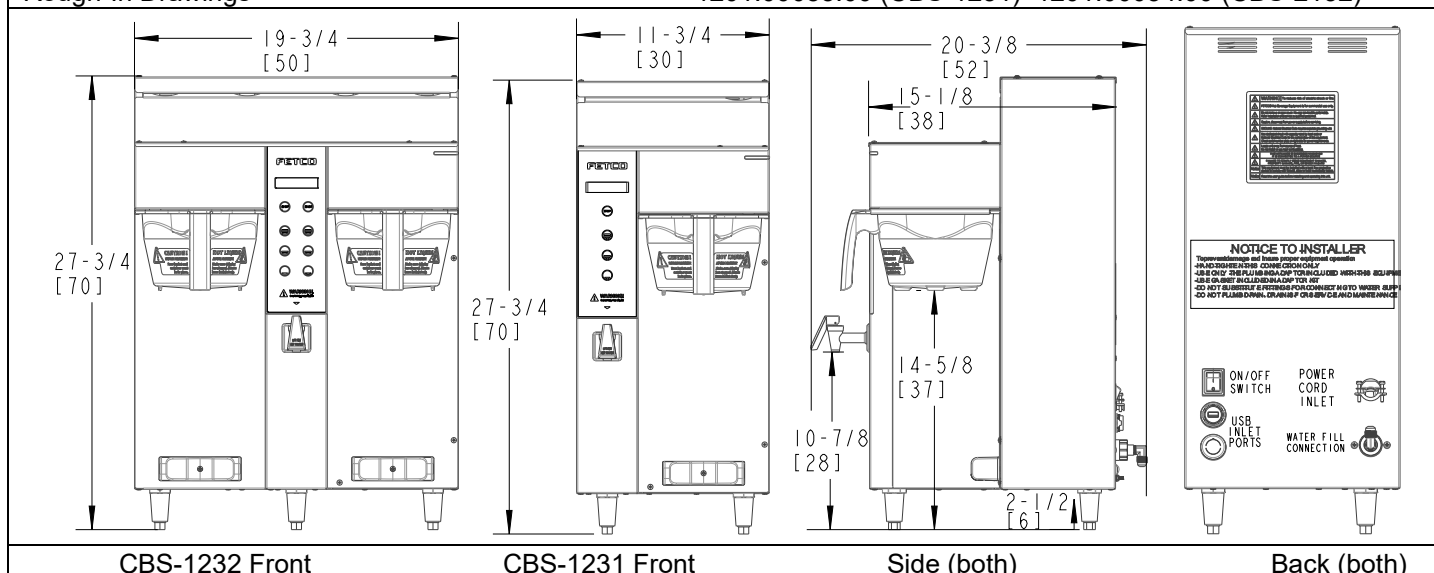
Weights and Capacities

Model	Height	Width	Depth	Water tank capacity	Empty Weight	Filled Weight	Shipping Weight	Shipping Dimensions
CBS-1231 Brewer	27 3/4 in 700 mm	11 3/4 in 300 mm	20 3/8 in 520 mm	3.3 gallon 12.4 L	29 lbs 13.2 kg	55 lbs 25.0 kg	41 lbs 18.6 kg	30" x 17" x 22" 76.2 x 43.2 x 55.9 cm
CBS-1232 Brewer	27 3/4 in 700 mm	19 3/4 in 500 mm	20 3/8 in 520 mm	6.0 gallon 22.4 L	47 lbs 21.3 kg	92 lbs 41.7 kg	55 lbs 25.0 kg	30" x 23" x 25" 76.2 x 58.4 x 63.5 cm

Calibrated for 3.8 L/1.0 gal brew Brew Basket 13" X 5" Coffee Filter 13" X 5 or FETCO# F002" 1" legs standard
2.5" legs optional

Rough-In Drawings

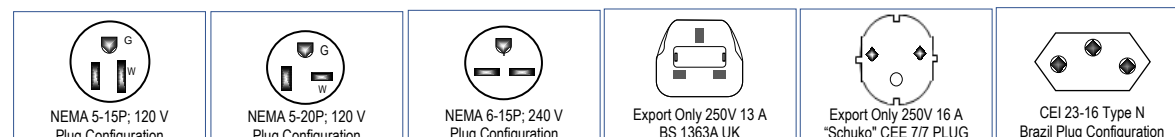
1201.00055.00 (CBS-1231) 1201.00054.00 (CBS-2132)



EXAMPLE: SKU E1231US-1X117-PM001

SKU NUMBER IDENTIFICATION KEY

Product Line	Level		Family		Region ID		Phase	Voltage Range	# Heaters	Individual Heater Wattage		Brew Basket	Hot Water Faucet	Bypass	Brew Basket Locks	Power Cord
E	1	2	3	1	U	S	1	X	1	1	7	P	M	0	0	1
E=extractor					US =United States		1	A = 100-120	1	1.5		P=plastic	M=manual	1=Yes	1=Yes	0=Terminal Block
	12=PLUS Series		31= single side		IN = International		2	B = 200-240	2	1.7		M=metal	A=automatic	0=no	0=no	1= NEMA 5-15P
			32= dual side		CE = CE		3	C = 380-415	3	2.3			N=None			2=NEMA 5-20P
					NM = NOM U = 1 or 3			D = 440-480		3.0						3=NEMA 6-15P
										4.0						4=NEMA 6-30P
										5.0						5=CEE 7/7 Schuk
																6=UK1-13P
																7= AUSTRALIA



Electrical and Output Specifications

CBS-1231PLUS Single 3.0-4.0 Liter Coffee Brewers Domestic models—field configurable with cUL/UL & NSF-4 certification Electrical and Output Specifications Brewers in this group have factory installed cord and plug 50Hz or 60Hz								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1231US-1X117-PM011	120 208-240	1 X 1.7 kW	2+G	1.7	NEMA 15-5P	1	14.7	3.9 gal/14.8 L
E1231US-1X117-PM001		2 X 1.7 kW	3+G	2.6-3.4	Terminal Block	1	12.8-14.7	5.8 gal/22 L
E1231US-1X117-MM111								
E1231US-1X117-MM011								
E1231US-1X117-MM001								

Domestic-Dual Voltage: User configurable from 120 volt cord and plug to 208-240 VAC terminal block
(Option to hardwire or install user supplied NEMA 6-16 cord and plug set for 208-240 VAC mains connection)

CBS-1231PLUS Single 3.0-4.0 Liter Coffee Brewers Domestic models—single voltage with cUL/UL & NSF-4 Certification Electrical and Output Specifications Brewers in this group have factory installed cord and plug 50Hz or 60Hz								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1231US-1A115-PM011	120	1 X 1.5 kW	2+G	1.5	NEMA 15-5P	1	13.0	4.0 gal/15.1 L
E1231US-1A115-PM001	120	1 X 1.5 kW	2+G	1.5	NEMA 15-5P	1	13.0	4.0 gal/15.1 L
E1231US-1A115-MM011	120	1 X 1.5 kW	2+G	1.5	NEMA 15-5P	1	13.0	4.0 gal/15.1 L
E1231US-1A115-MM001	120	1 X 1.5 kW	2+G	1.5	NEMA 15-5P	1	13.0	4.0 gal/15.1 L
E1231US-1A123-PM002	120	1 X 2.3 kW	2+G	2.3	NEMA 5-20P	1	19.7	5.8 gal/22 L
E1231US-1A123-MM112	120	1 X 2.3 kW	2+G	2.3	NEMA 5-20P	1	19.7	5.8 gal/22 L
E1231US-1B130-PM003	208-240	1 X 3.0 kW	2+G	2.3-3.0	NEMA 6-15P	1	11.3-13.0	7.9 gal/30.0 L

CBS-1231PLUS Single 3.0-4.0 Liter Coffee Brewers Domestic and International models single voltage With cUL/UL & NSF-4 Certification and listed in a CB test report Electrical and Output Specifications Single-Voltage. Brewers have terminal block electrical utility connection 50Hz or 60Hz								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1231IN-1B123-PM000	200-240	1 X 2.3 kW	2+G	1.6-2.3	Terminal Block	1	8.5-10.1	5.8 gal/22 L
E1231IN-1B130-PM000	200-240	1 X 3.0 kW	2+G	2.1-3.0	Terminal Block	1	10.9-13.0	7.7 gal/29.1 L

CBS-1231PLUS Single 3.0-4.0 Liter Coffee Brewers Specialty International models With cUL/UL & NSF-4 Certification and listed in a CB test report 50Hz or 60Hz Electrical and Output Specifications								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1231KS-1B130-PM006	220	1 X 3.0 kW	L/N/PE	2.6	UK Plug Type G	1	11.9	7.7 gal/29.1 L
E1231KS-1B130-PM000	220	1 X 3.0 kW	L/N/PE	2.6	Terminal Block	1	11.9	7.7 gal/29.1 L
E2231BR-1B130-PA018	220	1 X 3.0 kW	L/N/PE	2.6	TYPE N	1	11.9	7.7 gal/29.1 L
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
Field configurable version								
E1231NM-1X123-PM002	120	1 X 2.3 kW	2+G	2.3	NEMA 5-20P	1	19.7	6.1 gal/23.2 L
Twin Voltage	208-240	2 X 2.3 kW	3+G	4.6	Terminal Block	1	17.1-19.7	7.6 gal/30 L
Single voltage versions								
E1231NM-1A123-PM002	120	1 X 2.3 kW	2+G	2.3	NEMA 5-20P	1	19.7	5.8 gal/22 L
E1231NM-1B130-PM003	208-240	1 X 3.0 kW	2+G	2.3-3.0	NEMA 6-15P	1	11.3-13.0	7.9 gal/30.0 L

CE models Schuko and UK cord and plug Supported by a CB test report. NSF-4 listed, NOT UL or cUL 50Hz or 60Hz

SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1231CE-1B123-PM005	230	1 X 2.3 kW	L/N/PE	2.1	CEE 7/7Shuko	1	9.7	5.8 gal/22 L
E1231CE-1B130-MM015	230	1 X 3.0 kW	L/N/PE	2.8	CEE 7/7Shuko	1	12.5	7.7 gal/29.1 L
E1231CE-1B130-PM005	230	1 X 3.0 kW	L/N/PE	2.8	CEE 7/7Shuko	1	12.5	7.7 gal/29.1 L
E1231CE-1B130-MM005	230	1 X 3.0 kW	L/N/PE	2.8	CEE 7/7Shuko	1	12.5	7.7 gal/29.1 L
E1231CE-1B130-PM006	230	1 X 3.0 kW	L/N/PE	2.8	UK Plug TypG	1	12.5	7.7 gal/29.1 L

NOTES:

- Advanced electronics enable this equipment to operate with a 50-60 Hz frequency range without affecting the circuit or requiring user adjustments.
- NM in SKU suffix (above) denotes equipment with NOM certification, Spanish labeling for Mexico and Spanish language user guide
- The "KS" in the SKU suffix indicates GCC equipment with CB Scheme certification, labeling for KSA, and Arabic language user guide.
- The "BR" in the SKU suffix indicates Brazil equipment with CB Scheme certification, Type N plug, labeling and Portuguese for Brazil language user guide.
- The "CE" in the suffix (above) indicates equipment with a current CB scheme supporting CE marking. This equipment is not cUL/UL certified

CBS-1232PLUS models follow on the next page

CBS-1232PLUS Twin 3.0-4.0 Liter Coffee Brewers Domestic models								
Electrical and Output Specifications Brewers have terminal block electrical utility connection 50Hz or 60Hz								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1232US-1B223-PM010	208-240	2 X 2.3 kW	2+G	3.5-4.6	Terminal Block	1	17.1-19.7	11.0 gal/42.0 L
E1232US-1B223-PM000	208-240	2 X 2.3 kW	2+G	3.5-4.6	Terminal Block	1	17.1-19.7	11.0 gal/42.0 L
E1232US-1B223-MM010	208-240	2 X 2.3 kW	2+G	3.5-4.6	Terminal Block	1	17.1-19.7	11.0 gal/42.0 L
E1232US-1B223-MM000	208-240	2 X 2.3 kW	2+G	3.5-4.6	Terminal Block	1	17.1-19.7	11.0 gal/42.0 L
E1232US-1B230-MM110	208-240	2 X 3.0 kW	2+G	4.5-6.0	Terminal Block	1	22.2-25.5	14.3 gal/54 L
E1232US-1B230-MM010	208-240	2 X 3.0 kW	2+G	4.5-6.0	Terminal Block	1	22.2-25.5	14.3 gal/54 L
E1232US-1B230-MM000	208-240	2 X 3.0 kW	2+G	4.5-6.0	Terminal Block	1	22.2-25.5	14.3 gal/54 L
E1232US-1B230-PM010	208-240	2 X 3.0 kW	2+G	4.5-6.0	Terminal Block	1	22.2-25.5	14.3 gal/54 L
E1232US-1B230-PM000	208-240	2 X 3.0 kW	2+G	4.5-6.0	Terminal Block	1	22.2-25.5	14.3 gal/54 L
E1232US-1B230-PM004	208-240	2 X 3.0 kW	2+G	4.5-6.0	NEMA 6-30P	1	22.2-25.5	14.3 gal/54 L

CBS-1232PLUS Twin 3.0-4.0 Liter Coffee Brewers Domestic and International models single voltage								
With cUL/UL & NSF-4 Certification and listed in a CB test report								
Electrical and Output Specifications Single-Voltage. Brewers have terminal block electrical utility connection 50Hz or 60H								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1232IN-1B223-PM000	200-240	2 X 2.3 kW	2+G	3.2-4.6	Terminal Block	1	16.5-19.7	12.2 gal/46.3L
E1232IN-1B230-PM000	200-240	2 X 3.0 kW	2+G	4.2-6.0	Terminal Block	1	21.3-25.5	15.8 gal/60 L

CBS-1232PLUS Twin 3.0-4.0 Liter Coffee Brewers Specialty International models								
With cUL/UL & NSF-4 Certification and listed in a CB test report 50Hz or 60Hz								
Electrical and Output Specifications								
SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1232NM-1B230-PM000	208-240	2 X 3.0 kW	2+G	4.5-6.0	Terminal Block	1	22.2-25.5	15.8 gal/60 L
E1232KS-1B230-PM000	220	2 X 3.0 kW	L/N/PE	5.1	Terminal Block	1	23.3	15.8 gal/60 L
E1232BR-1B230-PM000	220	2 X 3.0 kW	L/N/PE	5.1	Terminal Block	1	23.3	15.8 gal/60 L

CE models All brewers have terminal block electrical utility connection Supported by CB test report. NSF-4 listed, NOT UL or cUL 50Hz or 60Hz

SKU	Voltage	Heater Configuration	Wires	KW	Electrical Connection	Phase	Amp Draw	Brew-Volume per hour
E1232CE-1B223-PM000	230	2 X 2.3 kW	L/N/PE	4.2	Terminal Block	1	18.9	11.0 gal/42.0 L
E1232CE-1B230-PM000	230	2 X 3.0 kW	L/N/PE	5.5	Terminal Block	1	25.5	14.9 gal/56 L
E1232CE-2C230-PM000	230/400	2 X 3.0 kW	2L/N/PE	5.5	Terminal Block	2	12.5	14.9 gal/56 L

NOTES:

- Advanced electronics enable this equipment to operate with a 50-60 Hz frequency range without affecting the circuit or requiring user adjustments.
- NM in SKU suffix (above) denotes equipment with NOM certification, Spanish labeling for Mexico and Spanish language user guide
- The "KS" in the SKU suffix indicates GCC equipment with CB Scheme certification, labeling for KSA, and Arabic language user guide.
- The "BR" in the SKU suffix indicates Brazil equipment with CB Scheme certification, Type N plug, labeling and Portuguese for Brazil language user guide.
- The "CE" in the suffix (above) indicates equipment with a current CB scheme supporting CE marking. This equipment is not cUL/UL certified

EXAMPLE: SKU E1232US-1B230-PM000														
SKU NUMBER IDENTIFICATION KEY														
Product Line	Level		Family		Region ID	Phase	Voltage Range	# Heaters	Individual Heater Wattage	Brew Basket	Hot Water Faucet	Bypass	Brew Basket Locks	Power Cord
E	1	2	3	2	U	S	1	B	2	3	0	P	M	0
E=extractor	12=PLUS Series		31= single side		US =United States	1	A = 100-120	1	1.5	P=plastic	M=manual	1=Yes	1=Yes	0=Terminal Block
			32= Twin side		IN = International	2	B = 200-240	2	1.7	M=metal	A=automatic	0=no	0=no	1= NEMA 5-15P
					CE = CE	3	C = 380-415	3	2.3		N=None			2=NEMA 5-20P
					NM = NOM	U = 1 or 3	D = 440-480		3.0					3=NEMA 6-15P
					KS= GCC				4.0					4=NEMA 6-30P
					BR=Brazil			X=120 or 240 Twin Voltage	5.0					5=CEE 7/7 Schuko
														6=UK1-13P
														7= AUSTRALIAN
														8=BRAZIL type N

The Brew Sequence

	First screen shows top left brew position being activated ... Right side is in "READY-MODE" during brew, and can be accessed for brewing		STOP brew lamp activates and top left button will pulsate. All other buttons on the left side extinguish. Count down timer activates beginning 5:30 for Batch 1 (5:00 for Batch 2)		The brewing cycle completes in four minutes. Stop button extinguishes and drip out starts at 1:30 minutes. Do not remove brew basket during this part of the cycle. Brewer returns to "ready to brew" (screen one) after drip out completes
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PROGRAMMING

Enter Programming to make adjustments to the batch size or the finished brew quality.

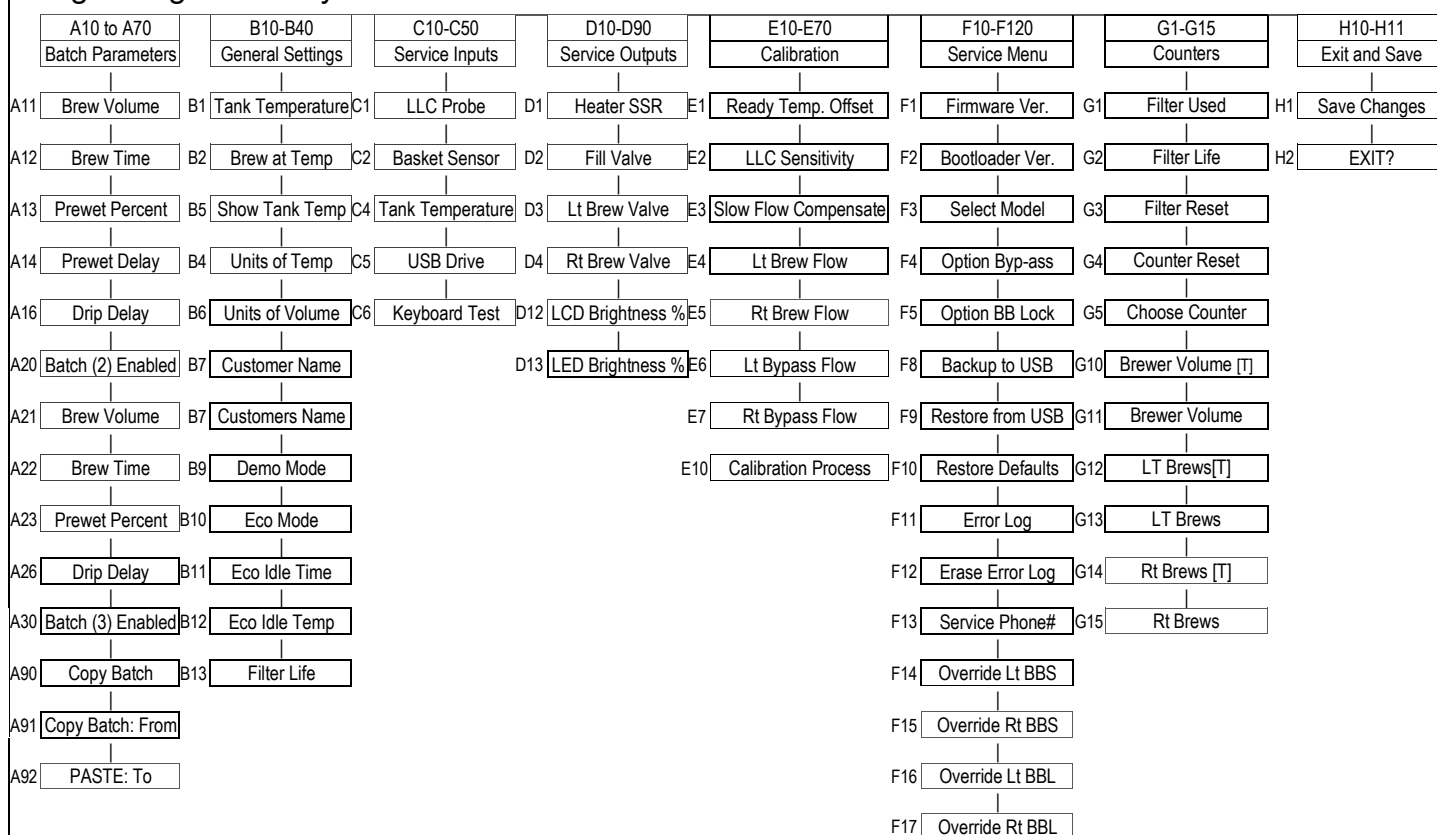
To enter PROGRAMMING:

- Turn the brewer OFF from the power switch.
- Turn the brewer ON
- Press the STOP button when it illuminates red
- First stage of the Programming Menu will be in Batch Parameters. This is the most common programming.

The following page has the entire programming field in chart form.

Enter Programming		
Screens shown are for twin brewer. Single brewer will not have menu A4-A6.		
There are seven menu groups-A-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 display digital process notifications 3-After Initialization-Red "STOP" Lamp turns on 4-Press "STOP" button – no need to hold down When brewer is In PROGRAMMING MODE -the screen will display: BATCH PRG A (or B-H) -Illuminated LED indicates active keypad positions See the following pages for batch parameter definitions and all settings for the brewer	STOP BUTTON On/OFF switch located lower right on back of brewer	Turn power OFF Turn power ON Wait for red LED Press STOP button First screen will display for PROGRAMMING-A Scroll through main menu topics by pressing "STOP" button.
Note: Only the left side buttons of a two sided brewer are used for programming		

Programing Menu Layout

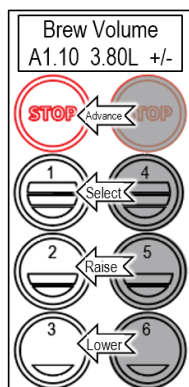


Left and Right top and middle batches are permanent SEE BOX on the following page for all "A" menus

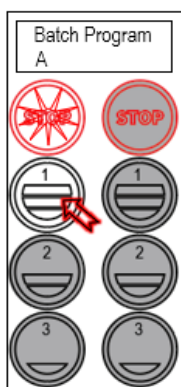
The "A" menu is the most accessed menu. It is for programming the batch volumes, brewing parameters, enabling or disabling brew buttons. The "A" menu moves through the six keypad positions(CBS-1232-) or three positions(CBS-1231+) by entering the menu and pressing the left stop button. (only the left side is active for programming the CBS-1232+)

The A menus [A1-3 or A1-6] correspond to batch buttons [3 or 6] on the touch panel

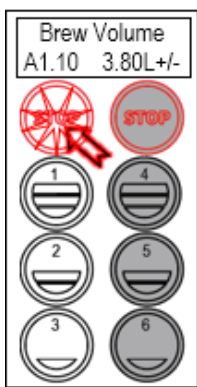
Access the A menus to PROGRAM & make changes to individual menu recipes. Menu settings can be copied Menu positions A1 and A4 [top position] are permanent. Menus A2, A3, A5, A6 can be removed by operator if desired **A1 is top left A4 is top right. A1 & A4 are the only permanent positions and are factory set at 3.8 liters. Both are adjustable.**



STOP-advances to the next menu programming position (A1 to A9 then to A,B,C,D...)
BUTTON #1-selects program items in the menu
BUTTONS 3 & 4 raise and lower the selection in the menu
 Pressing the STOP button advances the next screen A20



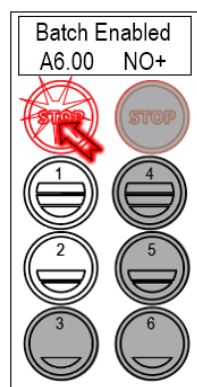
From A PRG screen
 Press button 1 to go into to the A menu access screens.
 Continue pressing button #1 to enter programming for A1



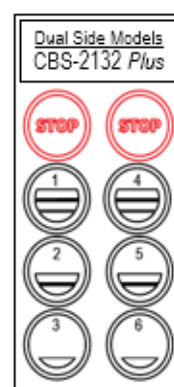
From A11 screen
 A11 sets the top left side brew button programming. Access brewing parameters by pressing button #1.
 (Brew Volume, Time, Prewet & Drip Delay)



From A20 screen
 Press STOP to scroll through the remaining (3 to 6) "A" menus. Make any changes as required



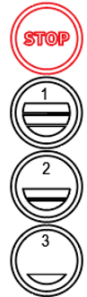
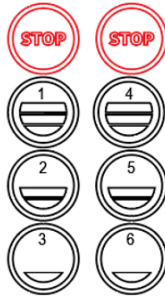
From A6.00 screen
 Scroll to remaining A10-to A60 programming keys. See SAVE & EXIT in previous table



For single and twin
 Position of batch buttons for CBS-1232+

The CBS-1231+ single position brewer has one row of buttons

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
A1.10	Batch Volume	3.8 L 1 gal	0.95 to 4.75L 0.25 to 1.25 gal	0.05L 0.01G	Unit software is in L; converts to gallon
A1.20	Brew Time	4:00 minutes	2:00 – 12:00	0.30	Default total brew time is 5:30 minutes
A1.30	Prewet Perc.	0%	0.00 – 25.0%	1%	Percentage of total brew volume
A1.40	Prewet Delay (Pause after prewet completes)	0% [1:00 Min]	[0:10 – 5:00]	1:00 min	The time between prewetting and start of brew cycle. This feature appears ONLY if Prewet >0:00
A1.60 This is a Safety Feature	Drip Delay	1:30 mm:ss	0:30 – 6:00 Min.		Time that brew basket remains locked during final drip-out →Drip delay remains “ON” for 1:30 minutes if STOP is pressed during brew†
A2.00	BATCH ENABLED	YES (Active)	Middle and Bottom batches A2,3,5,6	Batch on or off	Batches may be individually enabled, rewritten or deactivated
A2.10	Batch Volume	2.90L 0.75gal	0.95 to 4.75L 0.25 to 1.25 gal	0.05L 0.01G	Unit software is in L; converts to gallon
A2.20	Brew Time	3:30 minutes	2:00 – 12:00	0.30	Default total brew time is 5:30 minutes
A2.30	Prewet Perc.	0%	0.00 – 25.0%	1%	Percentage of total brew volume
A2.40	Prewet Delay (Brew pause after prewet completes)	0% [1:00 Min]	[0:10 – 5:00]	1:00 min	The time between prewetting and start of brew cycle. This feature appears ONLY if Prewet >0:00
A2.60 Safety Feature	Drip Delay	1:30 mm:ss	0:30 – 6:00 Min.		Time that brew basket remains locked during final drip-out
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
Batch Copy	Copy From Batch	A90	A90 1 (1-6)		
	Copy To Batch?	A91	A91.1 (1-6)		
Single Topmost Batch cannot be disabled. TWIN Topmost Batch LEFT & RIGHT cannot be disabled. Middle and bottom batches may be disabled for single and twin brewer (CBS-1231 and CBS-1232) † DRIP DELAY will not activate when STOP is pressed within 5 seconds of starting a brew time					

RECIPE Location map Viewing and changing settings for the brew recipes is from the “A” screens with the controls in PROGRAMMING. The uppermost button positions are permanent and will not display programming step A_0. The table above shows in position A20 that a button position can be made active or inactive . Position A1 does not display this step		Single Side Models CBS-2131-Plus 	←DISPLAY→ ←STOP→ ←BATCH A1→ (permanent) ←BATCH A2→ (enabled by factory) ←BATCH A3→ (disabled by factory)	Dual Side Models CBS-2132-Plus  ←DISPLAY ←STOP ←BATCH A4 (permanent) ←BATCH A5 (enabled by factory) ←BATCH A6 (disabled by factory)
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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: Equipment is Fahrenheit by default	77° to 97°C 170°F to 207°F	0.5°C 1.0°F	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 L	Gallons/L	L/Gal	NOTE: Overwrites user settings (see page 9)
B7	Customer Name	Off	NO or YES		For name on screen
B7	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	On	ON/OFF	YES/NO	If Selected: Lowers hot water tank temperature after preset time of inactivity
B11	Eco Idle Time	1Hr	1-6 hours	1 hour	Time of inactivity to go into ECO Mode
B12	Eco Idle Temp	170°F	158-176°F	1 degree	Temperature that hot water tank is lowered to when in ECO Mode
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	Hot water tank not at brew temp setpoint.
	Tank temp→
	STOP is not lit →
	BREW START buttons not lit. and are disabled.
When hot water tank temperature is at setpoint. Buttons will illuminate and "READY" will be displayed	
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 resistance in TDS	≈850- LOW ≈1600-HIGH	Nominal values
C2	Brew Basket Sensor	L-YES R-YES	YES or NO		
C3	Tank Temperature	Direct read	Hot water tank temperature		Actual values
C4	USB Drive	NO	(not in use)		
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
D3 	Lt (left) 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.
D4 	Rt (right) 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.
 These commands are for service and factory use only. User may exposed to unsafe conditions. Do not operate these commands without proper training and factory guidance					
D7*	LT (left) Brew Basket Lock Test	(Press to test)	Activates Brew Basket Lock	Toggle +/- OFF or ON	Press To Test
D8*	RT (right) Brew Basket Lock Test	(Press to test)	Activates Brew Basket Lock	Toggle +/- OFF or ON	Press To Test
*Active if bypass and brew basket lock is installed and activated on equipment. Bypass must be installed and is activated in F4-SERVICE MENU, Brew basket lock is located in F5 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
E4	LT Brew valve flow rate:	1.80L 0.47G 61oz	1.05-1.60Liter 0.39-0.55G 50-71 fl.ounces	0.05L 0.01G 1 oz	Adjusts flow rate
E5	RT Brew valve flow rate:	1.80L 0.47G 61oz	1.05-1.60Liter 0.39-0.55G 50-71 fl.ounces	0.05L 0.01G 1 oz	Adjusts flow rate
E6*	LT Bypass valve flow rate:	1.30 liters/minute (0.36 gallon/minute) (46 ounces/minute)	1.10-1.65Liter 0.28-0.42G 37-54 fl.ounces	0.05L 0.01G 1 oz.	Adjusts flow rate
E7*	RT Bypass valve flow rate:	1.30 liters/minute (0.36 gallon/minute) (46 ounces/minute)	1.10-1.65Liter 0.28-0.42G 37-54 fl.ounces	0.05L 0.01G 1 oz.	Adjusts flow rate
E10	Calibration Proc	SEE NEXT PAGE	Automatically dispenses one minute and will automatically calculate and correct flow rate		

*Active if bypass is installed and activated on equipment

Use this formula to compensate for minor discrepancies in actual volume versus programmed volume. See "PROGRAM" <u>E4</u> & <u>E5</u> 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-1230 Brewers	
		CBS-1230	L/minute
		Left Brew Valve FR	1.80
		Right Brew Valve FR	1.80
		Set FR lower to increase volume,	1.45 L to 2.10 L
		Set FR higher to decrease volume	

NOTE

Check for these causes for the difference in the programmed value to the brewed value. Correct any of these faults first.
-CSD spray head is not in place. This will always result in an increased flow volume, and uncontrollable flow rate
-Flow related error codes 100, 101 - see page 13. Reduced water flow at inlet valve can also cause erratic brew volume.

-Clogged or fouled inlet valve or improperly installed inlet valve. See page 18.

-Verify the screens that the brew time is correct, and the display is operating as the brew valve may be turning off.

-Lime scale. This can cause erratic and sometimes random under or over brew volumes. Brew valve can drip, be stuck open or closed, or fail due to lime scale accumulation. Always correct lime scale faults before changing flow rate.

Changing the flow rate corrects the brew volume if it is different from the programmed value.

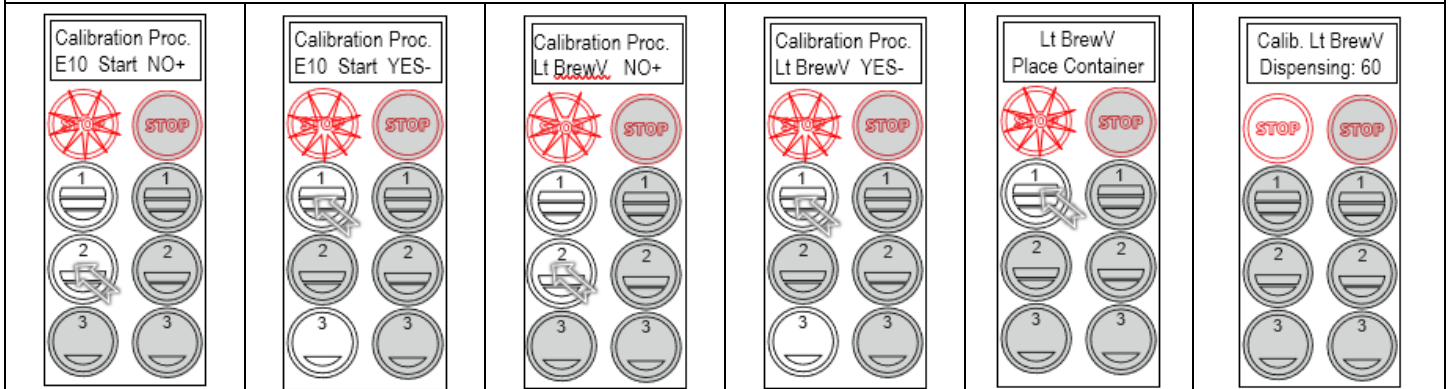
Flow rate of over and under dispensing is corrected in FLOW RATE Calibration Procedure (E10) on the previous page. The flow rate calibration procedure is an internal program to test for and enter corrections for flow rate inconsistencies. In the procedure: the equipment will dispense for 60 seconds. The quantity of brew water dispensed is carefully measured and entered into the program. The software automatically corrects the flow rate based on the difference of the actual results to the stored values.

The procedure requires a calibrated 1½ gallon/6liter container. The flow must be very accurately measured. It will be easiest to manage the readings if the brewer volume units are placed into ounces or liters for units of measure. [Go to PROGRAM B6]. Units of measure in gallons require a calculation in fractional units of measure - which can be difficult.

TESTING SHOULD BE MADE WITH AN EMPTY BREW BASKET (NO COFFEE OR TEA) NO FILTER PAPER.

E10 Calibration Procedure – Automatic (In PROGRAMMING, Position “E” CALIBRATION)

Flow rate calibration is required when the volume dispensed differs significantly and consistently from the brewer setting. This procedure automatically dispenses the selected valve brewer for 60 seconds. Testing should be performed with an empty brew basket. No filter paper. No coffee or tea. This procedure tests the brew valve and bypass valves (right side or left side). The quantity dispensed must be very accurately measured. Next: the dispensed quantity is entered into the brewer. The brewer firmware contains algorithms that automatically adjust the valve flow rate to dispense correctly.



Opening screen
Press button #2 to begin procedure

Confirm calibration
Press button #1 to proceed.
Proceed to next screen to choose which valve to test

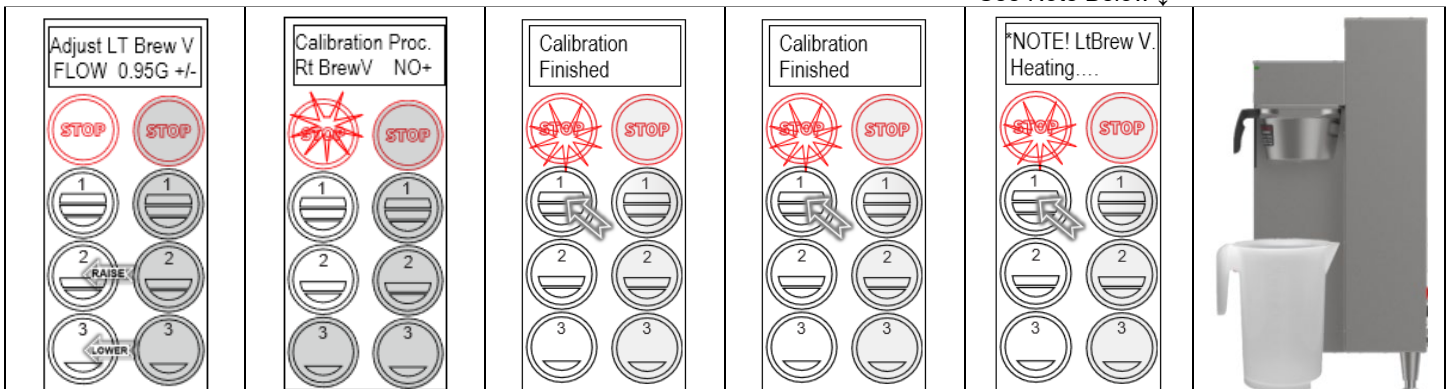
Confirm which valve (button1)
Lt BrewValve;
Rt BrewValve
Lt BypassValve;
Rt BypassValve by toggling top button.
Next: Select & press button 2 to proceed

Press button #1 to Initiate left brew valve calibration

Bottom button halts procedure

Place calibrated 1½ gallon/6liter container under left brew head. (Lt BrewV)
Insert brew basket
Press button #1 to begin testing
*See Note Below ↓

Brewer will dispense for one minute. Screen countdowns.
After drip out stops ...carefully and accurately measure the dispensed quantity of hot water ↓



Screen shows current setting.

Enter the exact quantity dispensed by toggling two lower buttons.

Press button #1 when entered

Software then automatically updates the flow rate for the left brew valve
The brewer proceeds to the next valve.

Press button #1 to scroll through valves
Rt BrewValve →
Lt BypassValve →
Rt BypassValve
Last selection is → Calibration Finished

Press STOP to proceed to screen H then: Save & Exit

If hot water tank is not at correct temperature. Calibration holds until temperature is correct.

Brewer will continue when at temperature

Measuring Pitchers:
5 liter graduated
[Bel-Art](#) catalog F28994-0000
10 liter graduated
[Bel-Art](#) catalog F28995-0000

Default, factory set, flow rates

Left Brew Valve flow rate:	0.50G	Right Brew Valve flow rate:	0.50G
Left Bypass Valve flow rate:	0.37G	Right Bypass Valve flow rate:	0.37G [Bypass only if activated -see page 5; F4]

F Service Menu		Software & Code View and Settings			
POSITION	Program Items	Factory set Default	Programming Range	Increments	Notes
F1	Display Firmware	CBS12xx (FW) (2.2.210720)			Displays current version [7/20/2020]
F2	Display Bootloader	2.0.210317			Displays current version [5/2020]
F3	Select Model	CBS-1231 or 1232 Will need reboot	Scroll to brewer model Save & Exit	CBS-1221 CBS-1231, CBS-1232 CBS-1241, CBS-1242 CBS-1251, CBS-1252 CBS-1261, CBS-1262 MBS-1231, MBS-1251	NOTE: Overwrites all user settings (See below)
F5	Option BB Lock	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
* Note that when Restore Defaults is selected and saved-the equipment will automatically default to a CBS-1221. to restore to proper equipment setting: go to Programming at F3, Select Model and then save (H on page 11)					
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			
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 to hot water tank is too low, or fill valve stuck or damaged (SEE PAGE 14)	Check water supply line. Flow should be 20-75 psig, (138-517kPa) >1gal/3.8L/min Investigate cause of low flow rate. If the flow rate is in range-replace 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	If the hot water tank heaters are turned on during a heating cycle and tank temperature is not increasing according to software logic and the tank temperature is below setpoint	1) Failure of SSR, high limit, temperature probe, or heating element. 2) Water being removed by hot water faucet during heating (control displays "heating")	1)Test and check SSRs, high limit devices temperature probe. Check heating elements with current clamp, replace if necessary. 2)Advise staff to refrain from taking large amounts of water from hot water tank, especially during "heating".
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 (<u>H</u> uman <u>I</u> nterface <u>D</u> evice)	Usually from longer than 10 seconds' contact. Or faulty reassembly after service	Restart, if still fault: reload software. If mechanical: replace module
NO BSKT <u>Insert Brew Basket</u>		Brew basket must be in place This is a SAFETY FEATURE	Insert brew basket into brewer rails to enable brewer

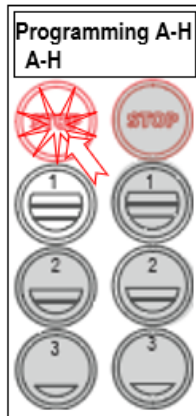
G Counters Brewer Usage, Water Filter Usage, and Statistics						
ROLE: [LT]=Permanent total for lifetime of ma[chine R]=operator resettable [User]=Input needed from operator						
Position	Counter	Program items	Role	Information	Increments	Notes
G1-G3 are for water filter maintenance. Filter Life readings (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]	0G	Gallons/Liters	Amount of water passed through external water filter. For filter life
G2	A, S, B	Filter Life	[User]	2,625Gal 10,000Liters	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	Gallons/Liters	Total of brews and hot water dispensed
G11	B	Brewer Volume	[R]			
G12	B	Lt Brews	[LT]	Left side brew total CBS-1232	Count	Total brews-Left side (CBS-1232 only)
G13	B	Lt Brews	[R]			
G14	B	Rt Brews	[LT]	Right side brew total CBS-1231&CBS-1232	Count	Total brews-Right side CBS-1231&CBS-1232
G15	B	Rt 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	Gallons/Liters	Quantity of water for brews
G23	A	Fill Volume	[R]			
G24	A	Lt Brew Cycles	[LT]	Left brew valve operation on/off	Count	Totalized cycles of valve operation (CBS-1232 only)
G25	A	Lt Brew Cycles	[R]			
G26	A	Lt Brew Volume	[LT]	Left brew valve flow through volume	Gallons/Liters	Totalized volume through left valve (CBS-1232 only)
G27	A	Lt Brew Volume	[R]			
G28	A	Rt Brew Cycles	[LT]	Right brew valve operation on/off	Count	Totalized cycles of valve operation CBS-1231&CBS-1232
G29	A	Rt Brew Cycles	[R]			
G30	A	Rt Brew Volume	[LT]	Right brew valve flow through volume	Gallons/Liters	Totalized volume through right valve CBS-1231&CBS-1232
G31	A	Rt Brew Volume	[R]			
G32	A	Lt Bypass Cycles	[LT]	Left bypass valve operation on/off	Count	Totalized cycles of valve operation (CBS-1232 only)
G33	A	Lt Bypass Cycles	[R]			
G34	A	Lt Bypass Volume	[LT]	Left bypass valve flow through volume	Gallons/Liters	Totalized volume through left valve (CBS-1232 only)
G35	A	Lt Bypass Volume	[R]			
G36	A	Rt Bypass Cycles	[LT]	Count	Count	Totalized cycles of valve operation CBS-1231&CBS-1232
G37	A	Rt Bypass Cycles	[R]			
G38	A	Rt Bypass Volume	[LT]	Right bypass valve flow through volume	Gallons/Liters	Totalized volume through right valve CBS-1231&CBS-1232
G39	A	Rt Bypass 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-G91 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-left side top button (CBS-1232 only)
G81	S	Batch 10 Cycles	[R]			
G82	S	Batch 20 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-left side middle button (CBS-1232 only)
G83	S	Batch 20 Cycles	[R]			
G84	S	Batch 30 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-left side bottom button (CBS-1232 only)
G85	S	Batch 30 Cycles	[R]			
G86	S	Batch 40 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-right side top button CBS-1231&CBS-1232
G87	S	Batch 40 Cycles	[R]			
G88	S	Batch 50 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-right side middle button CBS-1231&CBS-1232
G89	S	Batch 50 Cycles	[R]			
G90	S	Batch 60 Cycles	[LT]	Menu button selection and activation count	Count	Total brews-right side bottom button CBS-1231&CBS-1232
G91	S	Batch 60 Cycles	[R]			

The brewer will save changes only from the "H" menu.

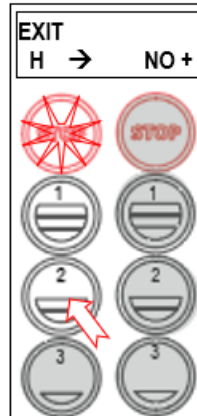
DO NOT reboot brewer or toggle ON/OFF-exit as shown below.

TO EXIT PROGRAMMING & HOW TO SAVE CONTROL SETTING CHANGES

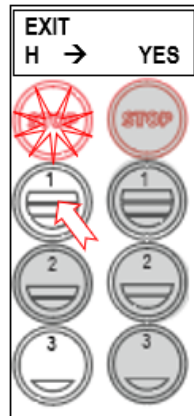
HOW TO SAVE CHANGES AND EXIT-*The brewer is in PROGRAMMING mode.*



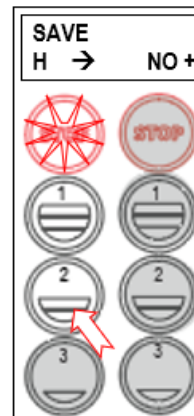
From any screen-
Press STOP button
until the EXIT ("H")
screen appears



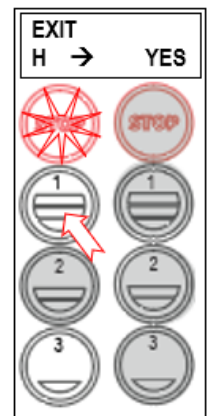
From the "H" screen
Press button **2** to
toggle to the EXIT-
YES screen



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

Note: Only the left side buttons of a two sided brewer are used for programming

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, 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.

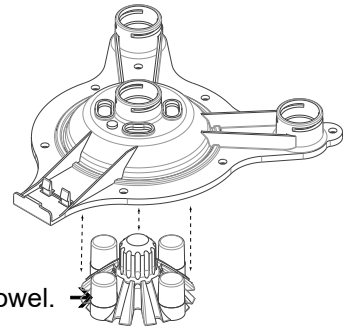
Cleaning & Maintenance

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.

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 28 to 32 for connections

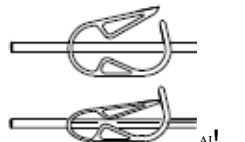
Plumbing:

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 (UPC).
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 supplied fitting is a 3/8" 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 (**SEE PAGE 16**)

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 plumb a water line to the drain.

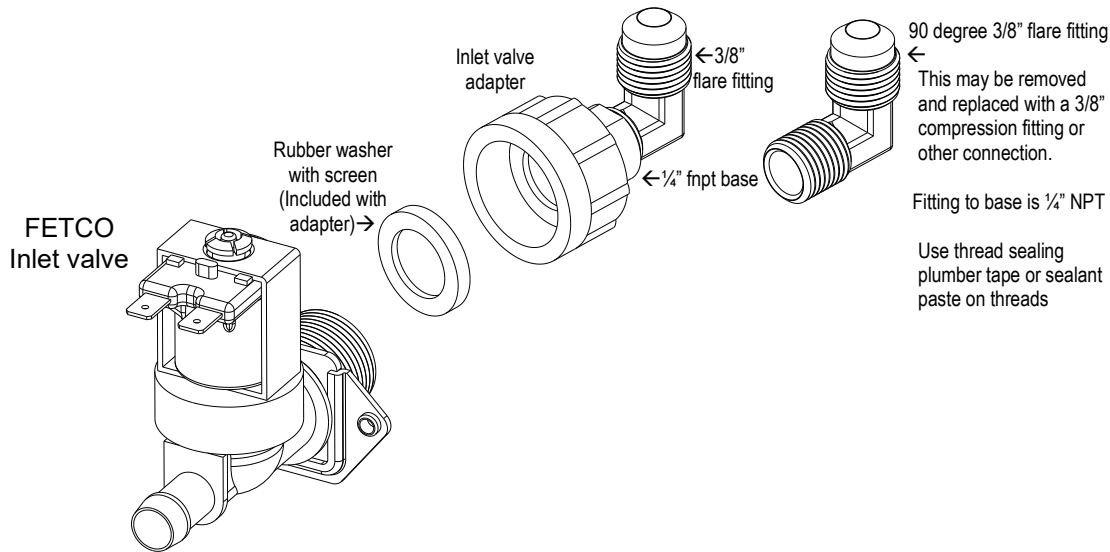
1. Disconnect power and water to unit. DANGER: Ensure that all utility connections to the brewer are broken.
2. Move the unit near a sink or obtain a container large enough to hold four gallons of water.
→Note: The hot water tank of the CBS-1231 may hold up to 3.3 gallons; the CBS-1232 up to 6.0 gallons.
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. Reverse steps 4-8 when service is complete. Ensure pinch clamp is open and hose clamps are in place.

Brewer	Hot Water Tank Capacity	OPEN Leave open for use	
CBS-1231 Single	3.3gal 12.3liter		
CBS-1232 Twin	6.0gal 22.4liter	PINCH SHUT To drain tank & service brewer	

Brewer Setup

Attach water inlet adapter

Place rubber washer with screen in adapter. Hand tighten only-and 1/4 turn with wrench



Install the adapter on inlet valve first before attaching water line. Adapter is shipped in the brew basket
The valve threads are 3/4" BSP MALE THREAD and are not 3/4 garden hose fittings.
Use of any other connector to valve will damage the valve
DO NOT use USA dishwasher water adapter or USA washing machine adapter for this connection.
The threads on these USA adapters are unusable for the valve

TO PREVENT DAMAGE AND INSURE PROPER EQUIPMENT OPERATION

The inlet valve thread is 3/4 INCH BSP (British Standard Pipe).

This valve is not a standard USA washing machine or dishwasher thread (3/4" GHT)

- Use only the plumbing adaptor kit included with this equipment. Use the gasket included in adaptor kit
- Plumber's tape is not recommended for the adapter to valve connection
- Hand tighten adapter on valve with gasket, then very lightly wrench 1/4 turn to set

-DO NOT SUBSTITUTE FITTINGS FOR CONNECTING TO WATER SUPPLY

Damage to inlet valve from improper installation will void the warranty

NOTE: DO NOT PLUMB TANK DRAIN. THIS DRAIN IS ONLY FOR SERVICE AND MAINTENANCE.

Notes on Modifying Equipment

!!TO PREVENT SERIOUS DAMAGE TO THE EQUIPMENT, PROPERTY AND INJURY OR DEATH!!

- Do not modify any part of the internal water handling system of any FETCO product.
- Do not modify any part of the electrical system of this equipment including any part of a low voltage DC bus, if present.
- Use only FETCO supplied parts and service methods advised by FETCO. Never substitute any non-FETCO part.
- Only one electrical modification is allowed at the terminal block when installing the brewer to the power utility.
- This modification is either to convert the equipment from three-phase to single-phase or, in certain models, to change from the factory-installed 120VAC cord and plug to a 240VAC input.
- These specific models are identified by the SKU number on the product label.
- FETCO offers clear and explicit instructions written and live from 1-800-338-2699 for modifying wiring from the utility connection, adjusting terminal block wiring, and installing any jumper wires for these models.

Any plumbing or electrical connection or modification must be by a licensed technician.

Disconnect equipment from power supply before service.

Always assume any electrical equipment, including this equipment, is energized even if power switch is "OFF"

Protect persons and the equipment - disconnect equipment completely from the power source before starting work.

Brewer Setup

NOTE-Assemble legs after unpacking the brewer and before connection to utilities.

This is easiest to do if the brewer is placed on its back.

1) attach legs for 3 Liter/ 1 Gallon dispensing



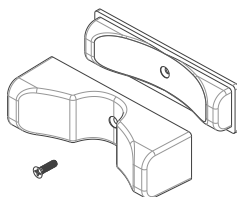
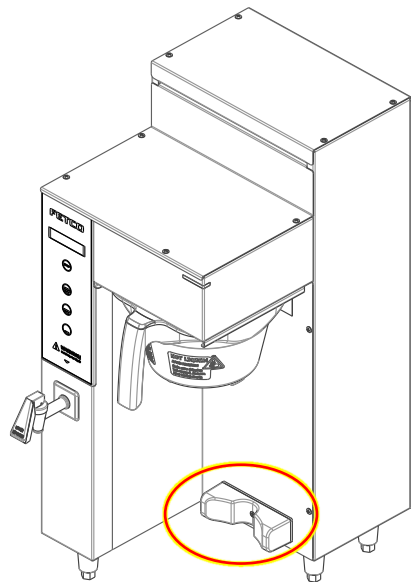
STANDARD WITH UNIT
1" legs -
Attach this length for
3 Liter air pot configuration



NOT INCLUDED. Purchase separately
2-1/2" legs -
Attach this length for
1 Gallon dispenser or 3 liter air pot.
Part number 1073.00016.00
3 required for CBS-1232
4 required for CBS-1231

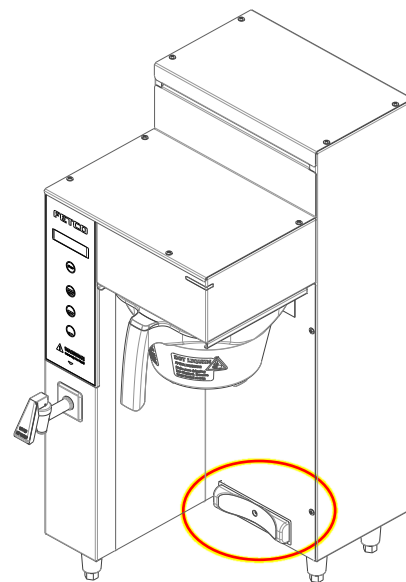
Legs are sent from factory inside brew basket. Attach legs before installing

2) Adjust dispenser locator for either 3 Liter / 1 Gallon dispensing



Set Dispenser Locator
← Shown with 3 liter air pot locator
-(Factory installed)

Shown with 1 gallon dispenser locator
→-(User option)

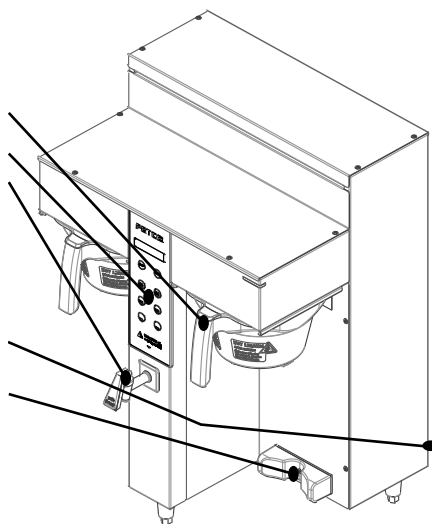


Layout of the brewer

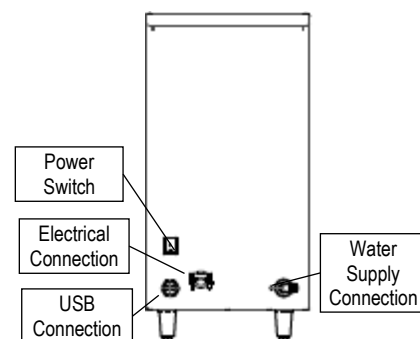
Operation and service

Brew basket
Keypad for brewer operation
Hot Water Faucet

ON/OFF Switch
Air pot or Dispenser Locator
(Two supplied for twin brewer)



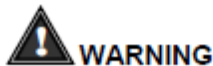
For installing brewer



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.**



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)

NOTICE TO INSTALLER

TO PREVENT DAMAGE AND INSURE PROPER EQUIPMENT OPERATION

INLET VALVE FITTING IS 3/4 INCH BSP (British Standard Pipe Thread)

- USE ONLY THIS PLUMBING ADAPTOR INCLUDED WITH THIS EQUIPMENT
- USE THE GASKET WITH STRAINER INCLUDED IN ADAPTOR KIT
- HAND TIGHTEN, THEN VERY LIGHTLY WRENCH 1/4 TURN TO SET
- PLUMBERS TAPE IS NOT RECOMMENDED FOR THIS CONNECTION
- DO NOT SUBSTITUTE FITTINGS FOR CONNECTING TO WATER SUPPLY
- To do so will damage the valve and will void the warranty
- This valve is not a standard washing machine or dishwasher 3/4" (GHT) thread

NOTE: Do not plumb drain, if provided. Drain is for service and maintenance.

1046.00064.00 Notice to Installer

Winterizing equipment

FETCO® equipment should not be exposed to below freezing conditions. Water tank and lines may crack from expansion of freezing water. Commercial kitchen equipment is for indoor use unless rated as IP44 (NEMA-3 equivalent)

Other problems

Live flexible gaskets, tubes and membranes are damaged from freeze/thaw cycles. These elastic materials are compounded for high temperatures and steam contact.

To store or move idle equipment during freezing weather

Have common tools including standard screwdriver set, adjustable wrench, long nose pliers, caps and plugs for disconnected plumbing lines. Also have a wet/dry vacuum set up for wet pickup, flashlight, lock out tags and permanent marking pen.

Perform all brewer and dispenser maintenance prior to shut down.

Sanitize dispensers, drain & dry and if possible store upside down or on sides with lids propped open.

Turn off power. Disconnect brewer from water supply then cap and plug the connectors. Unplug the brewer or disconnect the power.

Open the brewer to access the tank. Open hot water tank cover and drain hot water tank.

After tank is drained, vacuum any moisture out of the hot water tank and brew lines with a new or sanitized hose and tool. Vacuum the hot water service line through the open faucet. Attempt to remove all moisture. Purging with pressurized air is not recommended

At the factory -when preparing for shipping to the customer vacuuming and drying is performed after calibration on a warm brewer. The warm surfaces help dry out moisture.

Inoperative equipment should be tagged. This will assist while it is inactive and at restart.

Unscrew the legs from the bottom if moving equipment

NOTE: Do not use any antifreeze or food safe antifreeze, usually propylene glycol, in this equipment

Descaling equipment

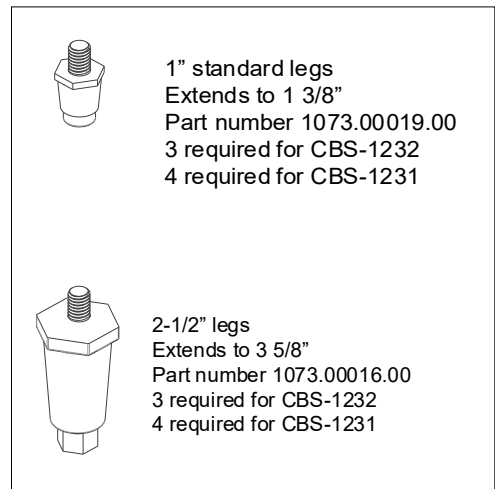
Commercial coffee brewers do not require routine descaling. The water supply mineral content range should be 100-150TDS. This will not contribute to lime scale in normal use.

For water with high mineral content: use a commercial reverse osmosis system to provide the best coffee and tea extraction and provide protection to the equipment from limescale.

A limescale ameliorating water filter, BestMax® or similar, will help control lime formation and protect the brewer if reverse osmosis is not available .

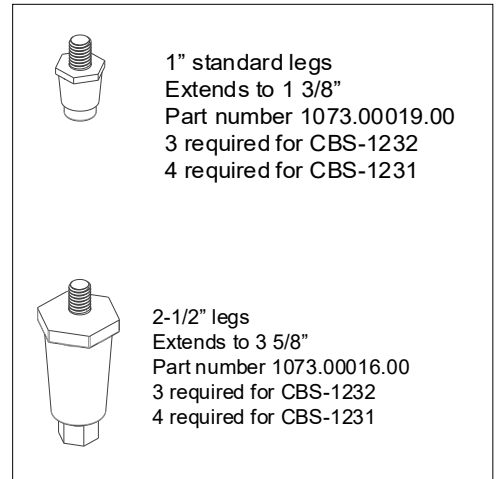
Should the unit need professional descaling: contact the factory for guidance: techsupport@fetco.com

NOTE: Never use muriatic acid, hydrochloric acid, hydrogen chloride solution or descaling compounds containing chlorine. Severe and permanent damage to the metallic components will result and will void the warranty.

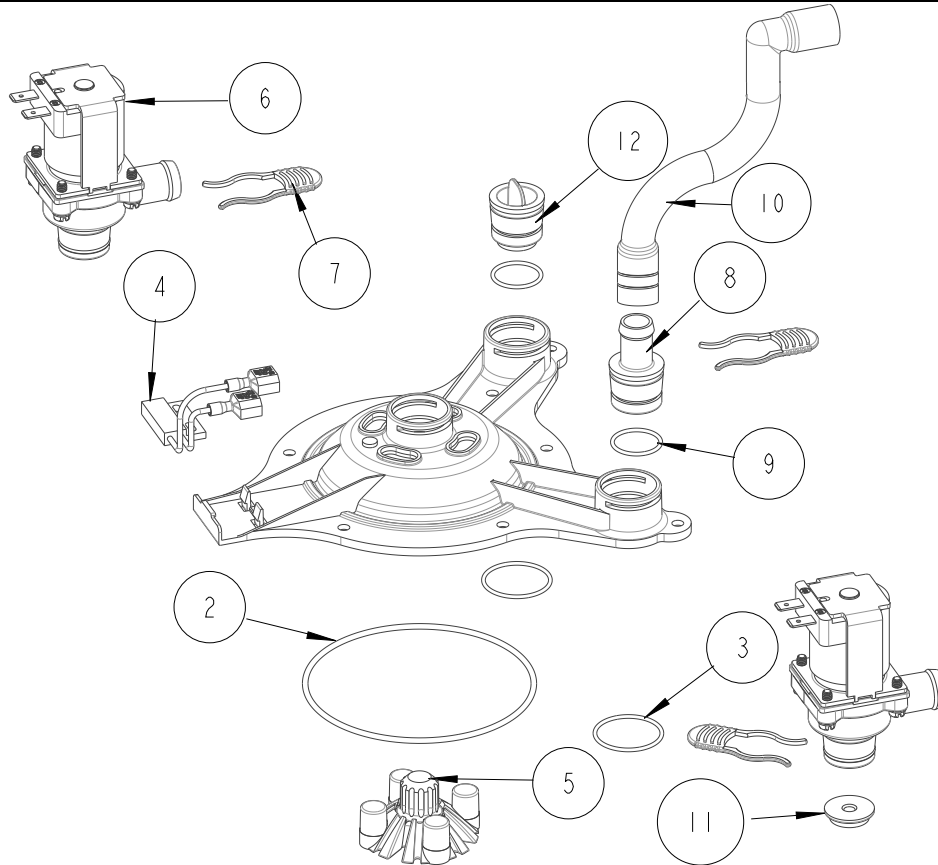
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Ref	Qty	Part Number	Description
			Drawing 1101.00570.00, CBS-1231
1	1	1111.00102.00	WELDMENT BODY, CBS-2231
2	6	1084.00051.00	NUT, HEX LOCKWASHER, #8-32, 18-8 ST. STL.
3	1	1102.00480.00	FRONT PANEL ASSY, SINGLE, PLUS SERIES
4	2	1082.00029.00	SCREW, #6 X 3/8 LG, TRUSS HD PHIL, SHEET MTL
5	3	1082.00058.00	SCREW, # 8-32 X 5/8, FLAT HD, PH, 18-8 SS
6 REF	1	Reference	ELECTRICAL COMPONENT LATTICE, NEXT GEN XV+
6-1	1	1023.00350.00	ELECTRICAL MOUNTING LATTICE, COMMON
6-2	1	1052.00023.00	EUROSTRIP HE16 TERM. BLOCK, 4 POLE, 63 AMP, 18-8 AWG
6-3	2	1082.00056.00	SCREW, # 8-16 x 1" PAN HD PHIL, THREAD FORMING, FOR PLASTICS, 18-8 SS
6-4	2	1058.00024.00	SWITCH, POWER, DOUBLE POLE, 16A, 125/250 VAC
6-5	4	1057.00043.00	SOLENOID VALVE, 5.5L/min, 180 DEG, 24VDC
6-6	2	1082.00010.00	SCREW, PAN HD. PHIL. MACH., M4x10 ZINC-PLATED
6-7	1	1052.00059.00	POWER SUPPLY, 90-264VAC/24VDC, 2.25A
6-8	2	1082.00020.00	SCREW, #6 X 5/8, TRUSS HD PHIL, SHEET MTL
6-9	2	1058.00055.00	USB CONNECTOR
7	1	1097.00171.00	ADHESIVE, RGB LED BAR
8	1	1023.00390.00	LENS, LIGHT BAR, BLACK
9	1	1102.00451.00	QUICK CONNECT SRAYHEAD ASSEMBLY,30/40'S, BASIC (see page 25 for parts breakdown)
10	1	1024.00063.00	O-RING, 3 15/16" x 3/32" CS, DASH # 154, BUNA-N, DURO-A50
11	2	1024.00107.00	O-RING, 1 3/16" OD X 1 1/16" ID X 1/16" TH, BYPASS SEAL
12	1	1023.00343.00	VENT INSERT, QUICK CONNECT
13	2	1024.00106.00	O-RING, 13/16"OD X 11/16"ID X 1/16" TH, FOR QUICK CONNECT
14	2	1023.00342.00	QUICK CONNECT CLIP
15	9	1083.00010.00	WASHER, #10 SCREW W/NEOPRENE-BONDED SEAL
16	9	1084.00006.00	NUT, 8-32 18-8 HEX MACHINE SCREW
17	1	1024.00098.00	VENT TUBE, CBS- EXTRACTOR SERIES
18	1	1086.00004.00	BUSHING, SNAP, 1" MOUNTING HOLE
19	1	1102.00243.00	ADAPTER ASSY, 3/4" BSP x 1/4" NPT x 3/8" TUBE
20	2	1065.00009.00	GROUND LUG CONNECTOR, 14-2 AWG, ALUMINUM
21	1	1044.00012.00	LABEL GROUND, CE
22	11	1084.00011.00	NUT, CLIP ON (J-NUT), #6-32, 22-20 GA., BLK-PH FINISH
23	1	1025.00058.00	TUBE, 9/16"OD X 5/16"ID X 25.00"LG
24	1	1086.00009.00	CLAMP, 3/4" MAX TUBE OD FLOW CONTROL
25	4	1086.00003.00	UNICLAMP, 15.9 HOSE OD CLAMP
26	1	1112.00530.00	WELDMENT, RIGHT COVER, CBS-2230
27	1	1023.00354.00	LOCATOR, DISPENSER, CBS-2230
28	1	1023.00355.00	LOCATOR, AIRPOT ADAPTER, CBS-2230
29	1	1001.00413.00	COVER TOP, CBS-2231/41
30	1	1001.00414.00	COVER, UPPER BASE, CBS-2231/41
31	11	1082.00017.00	SCREW, TRUSS HD. PHIL. MACHINE, # 6-32 X 1/2 LG
32	1	1046.00035.00	LABEL, WARNING "TO REDUCE RISK OF ELECTRIC SHOCK OR FIRE"
33	1	1402.00098.10	HARNESS, LOW AMP, CBS-1230, UL
34	1	1046.00003.00	LABEL, CSD WARNING, 1.5" X 5.0"
35	1	1041.00033.00	BLACK EXTRACTOR PLUS LABEL, LASER ENGRAVED
36	1	1104.00169.00	TANK ASSEMBLY, CBS-2231, 1 X 1.5KW/120VAC
36	1	1104.00170.00	TANK ASSEMBLY, CBS-2231, 1 X 1.7KW/120VAC
36	1	1104.00174.00	TANK ASSEMBLY, CBS-2231, 1 X 2.3KW/240VAC
36	1	1104.00172.00	TANK ASSEMBLY, CBS-2231, 1 X 2.3KW/120VAC
36	1	1104.00175.00	TANK ASSEMBLY, CBS-2231, 1 X 3KW/240VAC
36	1	1104.00171.00	TANK ASSEMBLY, CBS-2231, 2 X 1.7KW/120VAC
36	1	1104.00173.00	TANK ASSEMBLY, CBS-2231, 2 X 2.3KW/120VAC
37	1	B014218BN2B	K BREW BASKET ASSY, 13" X 5", 0.218" DIA HOLE, BROWN PLUG
38	1	B003218B1	BREW BASKET ASSY, 13" X 5", .218 DIA HOLE, BLACK
39	1	1402.00039.10	HARNESS HIGH AMP, CBS-2231/41/51, UL
40	1	1402.00039.11	HARNESS ADDITION, HIGH AMP, CBS-2231/41/51, UL
41	1	1402.00121.10	WIRE HARNESS ADDITION, HIGH AMP, EMI FILTER, 2-POLE, CE
42	1	1024.00111.00	GROMMET, SILICONE, W/ POSITION TABS
43	1	1023.00362.00	FITTING VENT, ELBOW, .375" X .375", SELF POSITIONING
44	1	1023.00348.00	HOT WATER INSERT, MANUAL FAUCET
45	1	1071.00055.00	FAUCET, HOT WATER, PSC-BR-8, WITH FLAT AND STEM
46	1	1084.00048.00	JAM NUT, 1/2-20 UNF, NICKEL PLATED BRASS
47	1	1003.00370.00	HOT WATER INSERT LOCK
48	1	1025.00120.00	TUBE, 9/16"OD X 5/16"ID X 13.00"LG
49	2	1024.00051.00	GROMMET, SILICONE, BLANK
50	1	1023.00349.00	HOT WATER INSERT, NO FAUCET
51	1	1023.00369.00	ORIFICE INSERT, QUICK CONNECT, 3/16" HOLE
52	1	1057.00076.00	VALVE ASSEMBLY, COMPLETE, NG, DELTROL
53	1	1029.00042.00	BYPASS L-TUBE, SILICONE, 2200 SINGLE SERIES
54	1	1023.00344.00	PLUG INSERT, QUICK CONNECT
55	1	1102.00219.00	ASSEMBLY, BB LOCKER, 24VDC
56	1	1003.00259.00	BRACKET, BREW BASKET LOCK COVER
57	4	1083.00009.00	WASHER, #6 SCREW, INTL TOOTH LOCKWASHER
58	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
59	4	1073.00016.00	LEG, THERMOPLASTIC, 2.50"(63mm)
60	4	1073.00019.00	LEG, 3/8-16 THREAD x 1" LG., GRAY
61	1	1086.00008.00	CONNECTOR, CLAMP, NON-METALLIC CABLE, 3/4"
62	1	1003.00348.00	ADAPTER PLATE, CBS-1130-XV+, STRAIN RELIEF, CE
63	1	1086.00029.00	BUSHING, STRAIN RELIEF, .360"-.430" DIA CABLE
64	1	1044.00013.00	LABEL EQUIPOTENTIALITY, CE
65	1	1052.00029.00	EMI FILTER, TWO LINE 20A, 120/250VAC
66	2	1084.00012.00	NUT, HEX, #6-32 MACHINE SCREW
67	1	1063.00016.00	POWER CORD, 120VAC W/NEMA 5-15P PLUG
68	1	1063.00015.00	CORD, 120 VAC, 12/3 AWG .20 AMP, W/5-20P NEMA PLUG
69	1	1063.00032.00	CORD, POWER, NEMA 6-15P, 15A/250V, W/O TERMINALS

Drawing 1101.00571.00
Parts CBS-1232

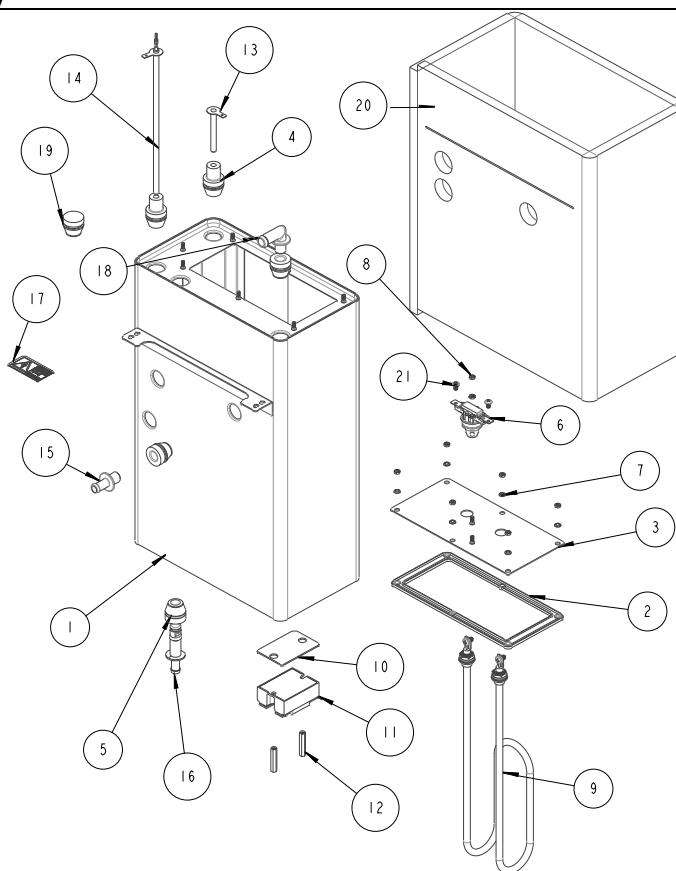


Ref	Qty	Part Number	Description Drawing 1101.00571.00, CBS-1232
1	1	1111.00101.00	WELDMENT BODY, CBS-2232
2	6	1084.00051.00.	NUT, HEX LOCKWASHER, #8-32, 18-8 ST. STL
3	1	1102.00470.00	FRONT PANEL ASSY, DOUBLE, PLUS SERIES
4	2	1082.00029.00	SCREW, #6 X 3/8 LG, TRUSS HD PHIL, SHEET MTL
5	4	1082.00058.00	SCREW, # 8-32 X 5/8, FLAT HD, PH, 18-8 SS
6 REF	1	Reference	ELECTRICAL COMPONENT LATTICE, NEXT GEN XV+
6-1	1	1023.00350.00	ELECTRICAL MOUNTING LATTICE, COMMON
6-2	1	1052.00023.00	EUROSTRIP HE16 TERM. BLOCK, 4 POLE, 63 AMP, 18-8 AWG
6-3	2	1082.00056.00	SCREW, # 8-16 x 1" PAN HD PHIL, THREAD FORMING, FOR PLASTICS, 18-8 SS
6-4	2	1058.00024.00	SWITCH, POWER, DOUBLE POLE, 16A, 125/250 VAC
6-5	4	1057.00043.00	SOLENOID VALVE, 5.5L/min, 180 DEG, 24VDC
6-6	2	1082.00010.00	SCREW, PAN HD. PHIL. MACH., M4x10 ZINC-PLATED
6-7	1	1052.00059.00	POWER SUPPLY, 90-264VAC/24VDC, 2.25A
6-8	2	1082.00020.00	SCREW, #6 X 5/8, TRUSS HD PHIL, SHEET MTL
6-9	2	1058.00055.00	USB CONNECTOR
7	1	1097.00171.00	ADHESIVE, RGB LED BAR
8	1	1023.00390.00	LENS, LIGHT BAR, BLACK
9	2	1102.00451.00	QUICK CONNECT SPRAYHEAD ASSEMBLY, 30/40'S, BASIC (see page 25 for parts breakdown)
10	2	1024.00063.00	O-RING, 3 15/16" x 3/32" CS, DASH # 154, BUNA-N, DURO-A50
11	4	1024.00107.00	O-RING, 1 3/16" OD X 1 1/16" ID X 1/16" TH, BYPASS SEAL
12	2	1023.00343.00	VENT INSERT, QUICK CONNECT
13	3	1024.00106.00	O-RING, 13/16"OD X 11/16"ID X 1/16" TH, FOR QUICK CONNECT
14	4	1023.00342.00	QUICK CONNECT CLIP
15	18	1083.00010.00	WASHER, #10 SCREW W/NEOPRENE-BONDED SEAL
16	18	1084.00006.00	NUT, 8-32 18-8 HEX MACHINE SCREW
17	2	1024.00098.00	VENT TUBE, CBS- EXTRACTOR SERIES
18	2	1086.00004.00	BUSHING, SNAP, 1" MOUNTING HOLE
19	1	1102.00243.00	ADAPTER ASSY, 3/4" BSP x 1/4" NPT x 3/8" TUBE
20	2	1065.00009.00	GROUND LUG CONNECTOR, 14-2 AWG, ALUMINUM
21	1	1044.00012.00	LABEL GROUND, CE
22	11	1084.00011.00	NUT, CLIP ON (J-NUT), #6-32, 22-20 GA., BLK-PH FINISH
23	1	1025.00058.00	TUBE, 9/16"OD X 5/16"ID X 25.00"LG
24	1	1086.00009.00	CLAMP, 3/4" MAX TUBE OD FLOW CONTROL
25	3	1086.00003.00	UNICLAMP, 15.9 HOSE OD CLAMP
26	1	1112.00530.00	WELDMENT, RIGHT COVER, CBS-2230
27	2	1023.00354.00	LOCATOR, DISPENSER, CBS-2230
28	2	1023.00355.00	LOCATOR, AIRPOT ADAPTER, CBS-2230
29	1	1001.00408.00	COVER TOP, CBS-2232/42
30	1	1001.00409.00	COVER, UPPER BASE, CBS-2232/42
31	11	1082.00017.00	SCREW, TRUSS HD. PHIL. MACHINE, # 6-32 X 1/2 LG.
32	1	1046.00035.00	LABEL, WARNING "TO REDUCE RISK OF ELECTRIC SHOCK OR FIRE"
33	1	1402.00098.10	HARNESS, LOW AMP, CBS-1230, UL
34	1	1402.00098.11	HARNESS ADDITION, LOW AMP, CBS-1232/42, UL
35	2	1046.00003.00	LABEL, CSD WARNING, 1.5" X 5.0"
36	1	1041.00033.00	BLACK EXTRACTOR PLUS LABEL, LASER ENGRAVED
37	1	1104.00176.00	TANK ASSEMBLY, CBS-2232, 2 X 2.3KW/240VAC
37	1	1104.00177.00	TANK ASSEMBLY, CBS-2232, 2 X 3KW/240VAC
37	1	1104.00191.00	TANK ASSEMBLY, CBS-2232, 2 X 4KW/240VAC
38	1	B014218BN2BK	BREW BASKET 13" X 5", .0218" DIA HOLE, BROWN PLUG
39	1	B003218B1	BREW BASKET ASSY, 13" X 5", .218 DIA HOLE, BLACK
40	1	1402.00037.10	HARNESS HIGH AMP, CBS-2232/42/51, UL
41	1	1402.00121.10	WIRE HARNESS ADDITION, HIGH AMP, EMI FILTER, 2-POLE, CE
42	1	1024.00111.00	GROMMET, SILICONE, W/ POSITION TABS
43	1	1023.00362.00	FITTING VENT, ELBOW, .375" X .375", SELF POSITIONING
44	1	1023.00348.00	HOT WATER INSERT, MANUAL FAUCET
45	1	1071.00055.00	FAUCET, HOT WATER, PSC-BR-8, WITH FLAT AND STEM
46	1	1084.00048.00	JAM NUT, 1/2-20 UNF, NICKEL PLATED BRASS
47	1	1003.00370.00	HOT WATER INSERT LOCK
48	1	1025.00120.00	TUBE, 9/16"OD X 5/16"ID X 13.00"LG
49	1	1024.00051.00	GROMMET, SILICONE, BLANK
50	1	1023.00349.00	HOT WATER INSERT, NO FAUCET
51	1	1023.00369.00	ORIFICE INSERT, QUICK CONNECT, 3/16" HOLE
52	1	1057.00076.00	VALVE ASSEMBLY, COMPLETE, NG, DELTROL
53	1	1029.00042.00	BYPASS L-TUBE, SILICONE, 2200 SINGLE SERIES
54	1	1023.00344.00	PLUG INSERT, QUICK CONNECT
55	1	1102.00219.00	ASSEMBLY, BB LOCKER, 24VDC
56	1	1003.00259.00	BRACKET, BREW BASKET LOCK COVER
57	3	1083.00009.00	WASHER, #6 SCREW, INTL TOOTH LOCKWASHER
58	1	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
59	3	1073.00016.00	LEG, THERMOPLASTIC, 2.50"(63mm)
60	3	1073.00019.00	LEG, 3/8-16 THREAD x 1" LG., GRAY
61	1	1086.00008.00	CONNECTOR, CLAMP, NON-METALLIC CABLE, 3/4"
62	1	1003.00348.00	ADAPTER PLATE, CBS-1130-XV+, STRAIN RELIEF, CE
63	1	1086.00029.00	BUSHING, STRAIN RELIEF, .360"-.430" DIA CABLE
64	1	1044.00013.00	LABEL EQUIPOTENTIALITY, CE
65	1	1052.00027.00	EMI FILTER, THREE LINE 30A, 250/440VAC
66	2	1084.00012.00	NUT, HEX, #6-32 MACHINE SCREW
67	1	1112.00246.00	WELDMENT BRACKET TERMINAL BLOCK, 3 POLE
68	1	1052.00022.00	EUROSTRIP HE10 TERM. BLOCK, 3 POLE, 50AMP, 18-8 AWG
69	2	1082.00082.00	SCREW, PHILLIP HD., 8-32 THREAD

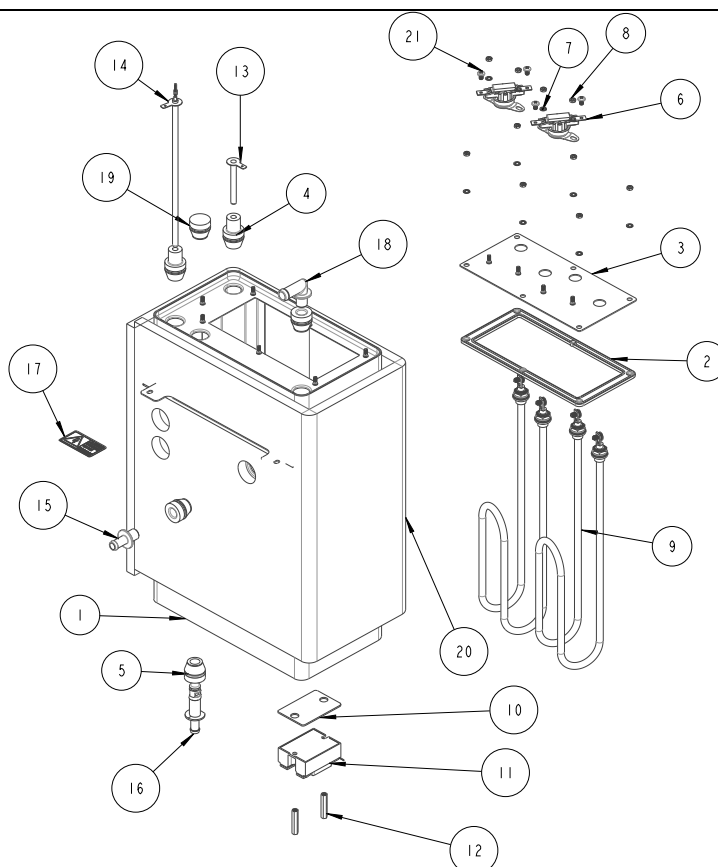


Ref#	Qty	Part number	Description
1	1	1000.00143.00	SPRAY HEAD BASE (KIT), QUICK CONNECT, 30/40'S
2	1	1024.00063.00	O-RING, 3 15/16" x 3/32" CS, DASH # 154, BUNA-N, DURO-A50
3	2	1024.00107.00	O-RING, 1 3/16" OD X 1 1/16" ID X 1/16" TH, BYPASS SEAL
4	1	1102.00113.00	SWITCH, REED, ASSEMBLY
5	1	1102.00479.00	ASSEMBLY, CASCADE SPRAY DOME, NEXT GEN, ORANGE
6	2	1057.00076.00	VALVE ASSEMBLY, COMPLETE, NG, DELTROL (interchangeable with 1057.00078.00)
6	2	1057.00078.00	VALVE ASSEMBLY, COMPLETE, NG, RPE (interchangeable with 1057.00076.00)
7	3	1023.00342.00	QUICK CONNECT CLIP
8	1	1023.00343.00	VENT INSERT, QUICK CONNECT
9	2	1024.00106.00	O-RING, 13/16"OD X 11/16"ID X 1/16" TH, FOR QUICK CONNECT
10	1	1024.00098.00	VENT TUBE, CBS- EXTRACTOR SERIES
11	1	1023.00369.00	ORIFICE INSERT, QUICK CONNECT, 3/16" HOLE
12	1	1023.00344.00	PLUG INSERT, QUICK CONNECT

CBS-1231 Tank Assembly



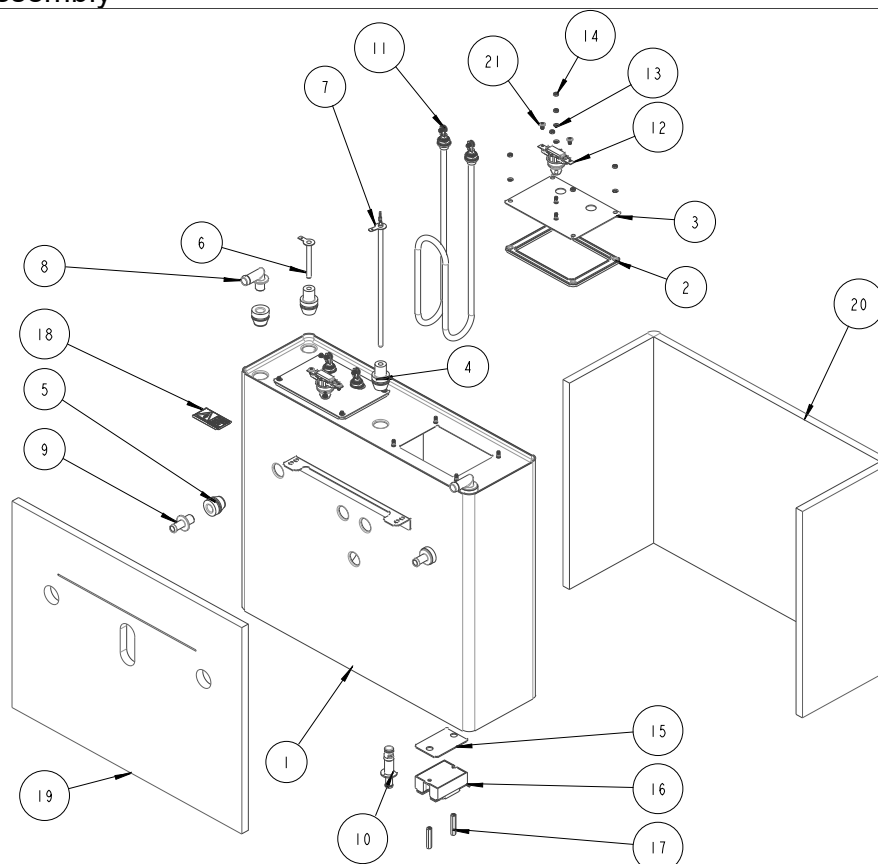
TANK ASSY, CBS-1231 Single Heater			Drawing number 1104.000169.00, 1104.000170.00, 1104.000172.00, 1104.000174.00, 1104.000175.00
REF	QTY	Part number	Description
1	1	1114.00168.001	WELDMENT, TANK, CBS-2231
2	1	1024.00114.00	TANK GASKET - NG HEATER PLATE, TWO ELEMENT
3	1	1114.00184.00	WELDMENT TANK HEATER BRACKET, NG-2231, SINGLE
4	2	1024.00053.00	LEVEL AND TEMP PROBE GROMMET
5	3	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
6	1	1053.00052.00	THERMOSTAT, SINGLE SHOT, SCREW CONNECTIONS, 240V/25A
7	8	1083.00009.00	WASHER, #6 SCREW, INTL TOOTH LOCKWASHER
8	8	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
9	1	1107.00021.00	HEATER ASSEMBLY, IMMERSION 1500W/120VAC
9	1	1107.00022.00	HEATER ASSEMBLY, IMMERSION 1700W/120VAC
9	1	1107.00020.00	HEATER ASSEMBLY, IMMERSION 2300W/240VAC
9	1	1107.00019.00	HEATER ASSEMBLY, IMMERSION 2300W/120VAC
9	1	1107.00018.00	HEATER ASSEMBLY, IMMERSION 3000W/240VAC
10	1	1003.00140.00	ALUMINUM BRACKET FOR SSR
11	1	1052.00033.00	RELAY, SOLID STATE, 50A/480VAC, W/BUILD IN VARISTOR
12	2	1081.00042.00	STANDOFF, 1/4" HEX
13	1	1112.00002.00	PROBE WELDMENT, WATER LEVEL 2.25" LG
14	1	1102.00161.00	PROBE ASSEMBLY, TEMP. AND LLC, 8" LONG
15	1	1023.00168.00	FITTING, STRAIGHT, GROMMET, .400"
16	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
17	1	1044.00004.00	LABEL, DANGER, HIGH VOLTAGE
18	1	1023.00212.00	FITTING, ELBOW, GROMMET, .500"
19	1	1024.00051.00	GROMMET, SILICONE, BLANK
20	1	1022.00114.00	TANK INSULATION, CBS-2231
21	2	1082.00136.00	BRASS SCREW, #8-32 X 1/4", PHILLIPS PAN HEAD



TANK ASSY, CBS-1231 Two Heater Drawing number 1104.000171.00, 1104.000173.00

REF	QTY	Part number	Description
1	1	1114.00168.00	WELDMENT, TANK, CBS-2231
2	1	1024.00114.00	TANK GASKET - NG HEATER PLATE, TWO ELEMENT
3	1	1114.00176.00	WELDMENT TANK HEATER BRACKET, NG-2231
4	2	1024.00053.00	LEVEL AND TEMP PROBE GROMMET
5	3	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
6	2	1053.00052.00	THERMOSTAT, SINGLE SHOT, SCREW CONNECTIONS, 240V/25A
7	10	1083.00009.00	WASHER, #6 SCREW , INTL TOOTH LOCKWASHER
8	10	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
9	2	1107.00022.00	HEATER ASSEMBLY, IMMERSION 1700W/120VAC
9	2	1107.00019.00	HEATER ASSEMBLY, IMMERSION 2300W/120VAC
10	2	1003.00140.00	ALUMINUM BRACKET FOR SSR
11	2	1052.00033.00	RELAY, SOLID STATE, 50A/480VAC, W/BUILD IN VARISTOR
12	4	1081.00042.00	STANDOFF, 1/4" HEX
13	1	1112.00002.00	PROBE WELDMENT, WATER LEVEL 2.25" LG
14	1	1102.00161.00	PROBE ASSEMBLY, TEMP. AND LLC, 8" LONG
15	1	1023.00168.00	FITTING, STRAIGHT, GROMMET, .400"
16	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
17	1	1044.00004.00	LABEL, DANGER, HIGH VOLTAGE
18	1	1023.00212.00	FITTING, ELBOW, GROMMET, .500"
19	1	1024.00051.00	GROMMET, SILICONE, BLANK
20	1	1022.00114.00	TANK INSULATION, CBS-2231
21	4	1082.00136.00	BRASS SCREW, #8-32 X 1/4", PHILLIPS PAN HEAD

CBS-1232 Tank Assembly

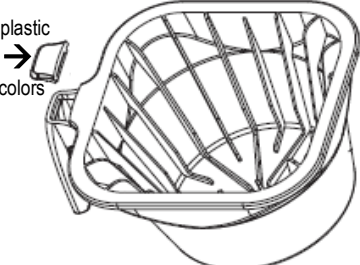


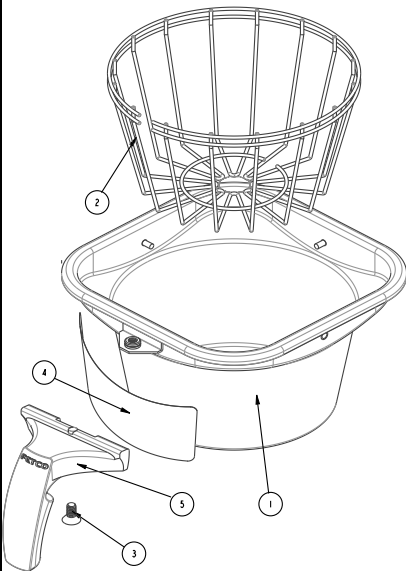
CBS-1232 Hot Water Tank

Drawing 1104.00176.00, 1104.00177.00, 1104.00191.00

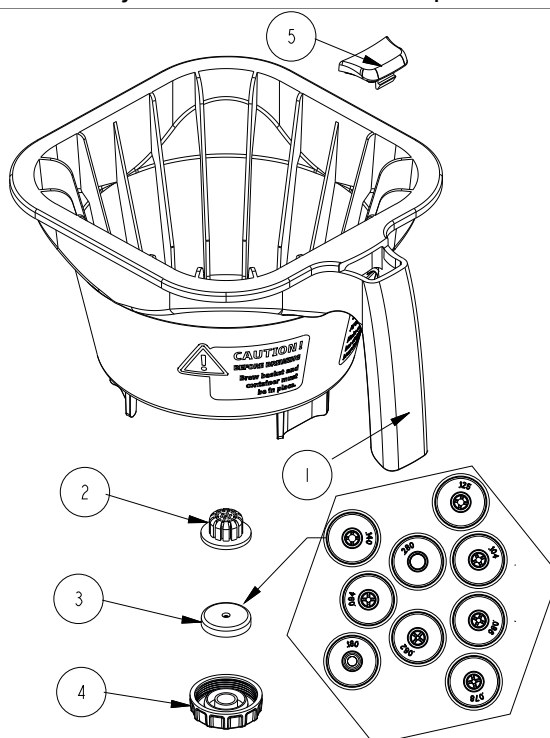
Ref#	Qty	Part number	Description
1	1	1114.00169.00	WELDMENT TANK CBS-2232, GROMMET DESIGN
2	2	1024.00115.00	TANK GASKET - NG HEATER PLATE, ONE ELEMENT
3	2	1114.00181.00	WELDMENT TANK HEATER BRACKET, NG-2232
4	2	1024.00053.00	LEVEL AND TEMP PROBE GROMMET
5	5	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
6	1	1112.00002.00	PROBE WELDMENT, WATER LEVEL 2.25" LG
7	1	1102.00161.00	PROBE ASSEMBLY, TEMP. AND LLC, 8" LONG
8	2	1023.00212.00	FITTING, ELBOW, GROMMET, .500"
9	2	1023.00168.00	FITTING, STRAIGHT, GROMMET, .400"
10	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
11	2	1107.00019.00	HEATER ASSEMBLY, IMMERSION 2300W/120VAC
11	2	1107.00018.00	HEATER ASSEMBLY, IMMERSION 3kW/240VAC
11	2	1107.00040.00	HEATER ASSEMBLY, IMMERSION 4kW/240VAC
12	2	1053.00052.00	THERMOSTAT, SINGLE SHOT, SCREW CONNECTIONS, 240V/25A,
13	12	1083.00009.00	WASHER, #6 SCREW, INTL TOOTH LOCKWASHER
14	12	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
15	2	1003.00140.00	ALUMINUM BRACKET FOR SSR
16	2	1052.00033.00	RELAY, SOLID STATE, 50A/480VAC, W/BUILD IN VARISTOR
17	4	1081.00042.00	STANDOFF, 1/4" HEX
18	1	1044.00004.00	LABEL, DANGER, HIGH VOLTAGE
19	1	1022.00113.00	TANK INSULATION, CBS-2232 FRONT
20	1	1022.00116.00	TANK INSULATION, CBS-2232 BACK
21	4	1082.00136.00	BRASS SCREW, #8-32 X 1/4", PHILLIPS PAN HEAD

Brew Baskets

Plastic Brew Basket		
Part Number B014218BN2BK – Complete Plastic Brew Basket		CBS-1231 & CBS-1232
Plugs for all FETCO plastic brew baskets are available in optional colors 	Part Number	Plug Insert color
	1023.00195.00	BROWN PLUG, BB HANDLE
	1023.00194.00	BLACK PLUG, BB HANDLE
	1023.00190.00	RED PLUG, BB HANDLE
	1023.00191.00	GREEN PLUG, BB HANDLE
	1023.00192.00	ORANGE PLUG, BB HANDLE
	1023.00180.00	BLUE PLUG, BB HANDLE

Stainless Steel Brew Basket For CBS-1231 & CBS-1232			
Part Number B003218B1			
Complete Stainless Steel Brew Basket 13" X 5", .218 DIA HOLE			
	Ref#	Part Number	Description
	1	1112.00128.00	BB WLDMNT 13" X 5", .218 DIA HOLE
	2	1009.00006.00	WIRE BASKET
	3	1082.00040.00	SCREW, 1/4-20 X .5, FL HD, PH.
	4	1046.00025.00	BREW BASKET WARNING LABEL
	5	1102.00064.00	HANDLE W/MAGNET ASY, BLACK
	5	1102.00065.00	Optional colored handle HANDLE W/MAGNET ASY, RED
	5	1102.00066.00	Optional colored handle HANDLE W/MAGNET ASY, GREEN
	5	1102.00067.00	Optional colored handle HANDLE W/MAGNET ASY, ORANGE
Specialty Brew Baskets for Iced Tea/Tea and Specialty Coffee Brewing. These brew baskets have expanded or reduced orifice sizes and may require PROGRAMMING changes to adjust brewing time and pulses to enhance extraction and prevent basket overflow or short potting during steeping. To modify the brew recipes, SEE Page 7- <u>Brew Recipes</u> Stainless Steel 13" X 5" Brew baskets use 13" X 5" filter paper, Brew Rite, Rockline, or FETCO F002			
Part Number	Orifice Size		Handle Color
B003280B1r1	0.280" (Largest)		Red
B003280B1o1	0.280" (Largest)		Orange
B003280B1g1	0.280" (Largest)		Green
B003280B1b1	0.280" (Largest)		Black
B003218B1 (from above)	0.218-Sandard		Black
B003158B1	0.158		Black
B003110G1	0.110		Green
B003110B1	0.110		Black
B003079B1	0.079		Black
Plastic brew basket			
Part Number	Orifice Size		Plug Color
B014218BN2BK (from above)	0.218-Sandard		Black
B014140G2BK	0.140		Green

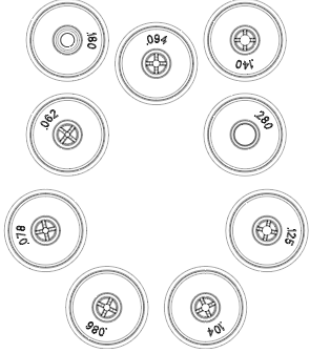
Part Number B026000G2BK
Specialty tea brewing basket for coffee, hot tea or iced tea
Features a set adjustable flow orifices to optimize extraction



13 X 5 B026000G2BK OPTIONAL COFFEE OR TEA BREW BASKET

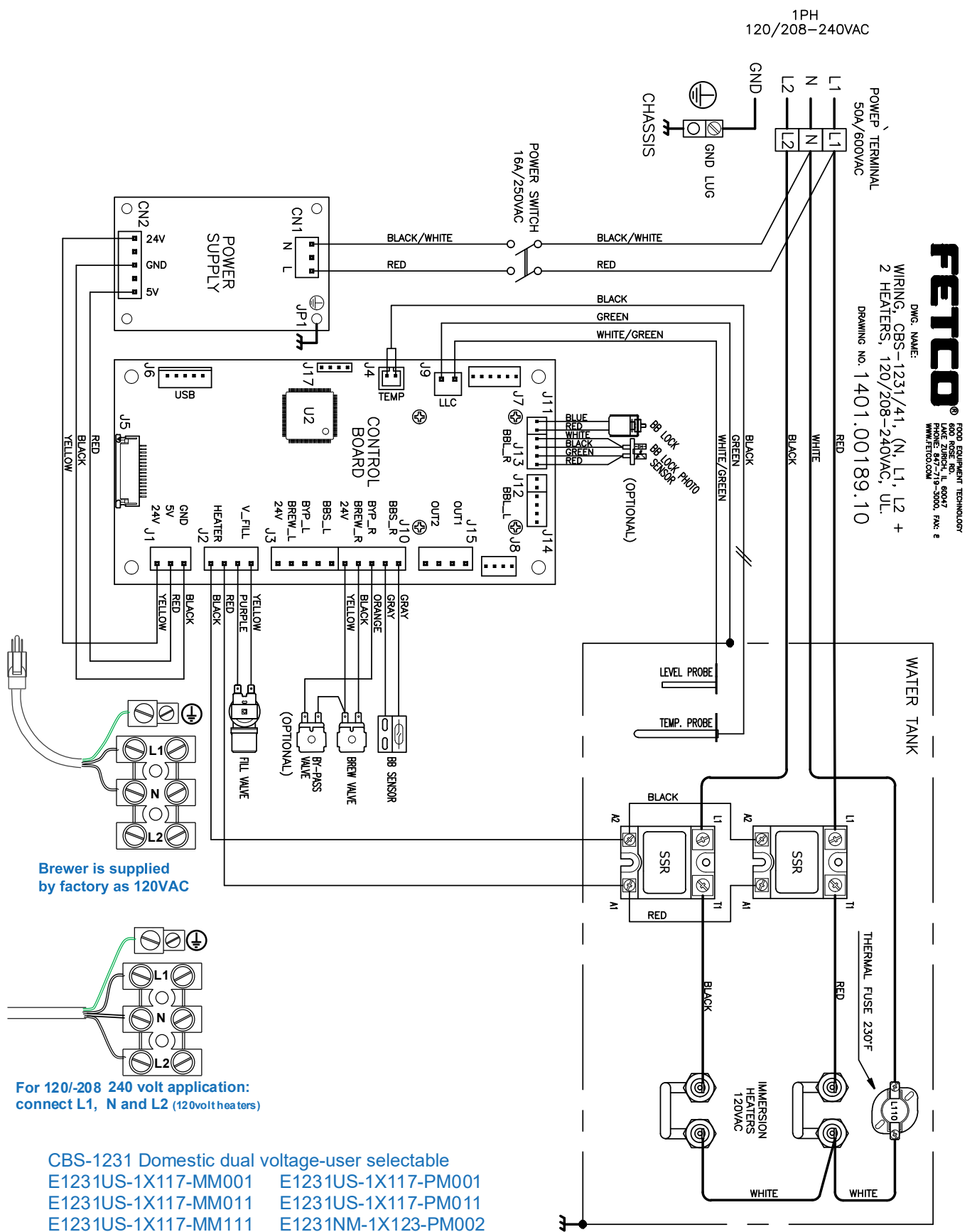
Use Filter Paper 13" X 5", Brew Rite, Rockline Brands, or FETCO F002

Ref	Qty	Part Number	Description
1	1	1023.00416.00	BREW BASKET, 13"X5", MULTI-ORIFICE, BLACK
2	1	1024.00060.00	STRAINER, SILICONE
3	1	1023.00185.00	ORIFICE, SET OF 9, BREW BASKET
4	1	1023.00330.00	NUT, BREW BASKET ORIFICE HOLDER
5	1	1023.00191.00	PLUG, BB HANDLE, GREEN
Optional		1023.00195.00	PLUG, BB HANDLE BROWN
Optional		1023.00194.00	PLUG, BB HANDLE BLACK
Optional		1023.00190.00	PLUG, BB HANDLE RED
Optional		1023.00192.00	PLUG, BB HANDLE ORANGE

Orifice diameter	Drainage rate for 1 gallon	P/N 1023.00185.00 Orifice insert
0.062	24:30 minutes: seconds	
0.078	17:30 minutes: seconds	
0.086	15:30 minutes: seconds	
0.094	11:30 minutes: seconds	
0.104	10:30 minutes: seconds	
0.125	8:10 minutes: seconds	
0.140	6:10 minutes: seconds	
0.140 is DEFAULT- & factory installed on brew basket		
0.180	3:50 minutes: seconds	Orifice inserts for brew basket 0.140 is factory installed
0.280	1:20 minutes: seconds	

Orifice inserts for brew basket
0.140 is factory installed

Wiring Diagrams



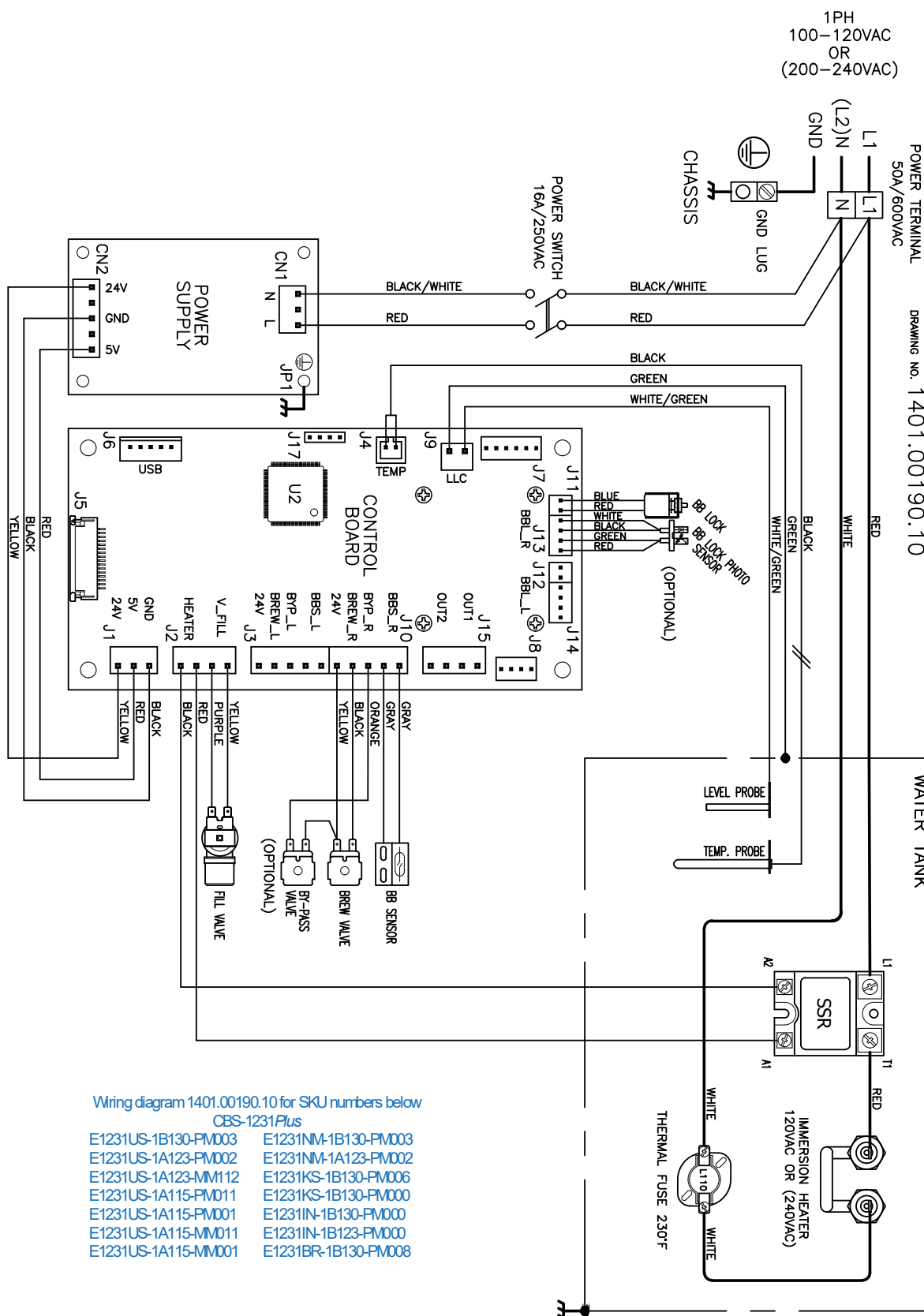
FETCO

FOOD EQUIPMENT TECHNOLOGY COMPANY
800 KOSMOS RD.
LAKE KOSCIUSKO, IL 60047
PHONE: 847-719-3000, FAX: 847-719-3001
WWW.FETCO.COM

DWG. NAME:

WIRING, CBS-1231/41, 1 HEATER, (L1, N(L2) + GND),

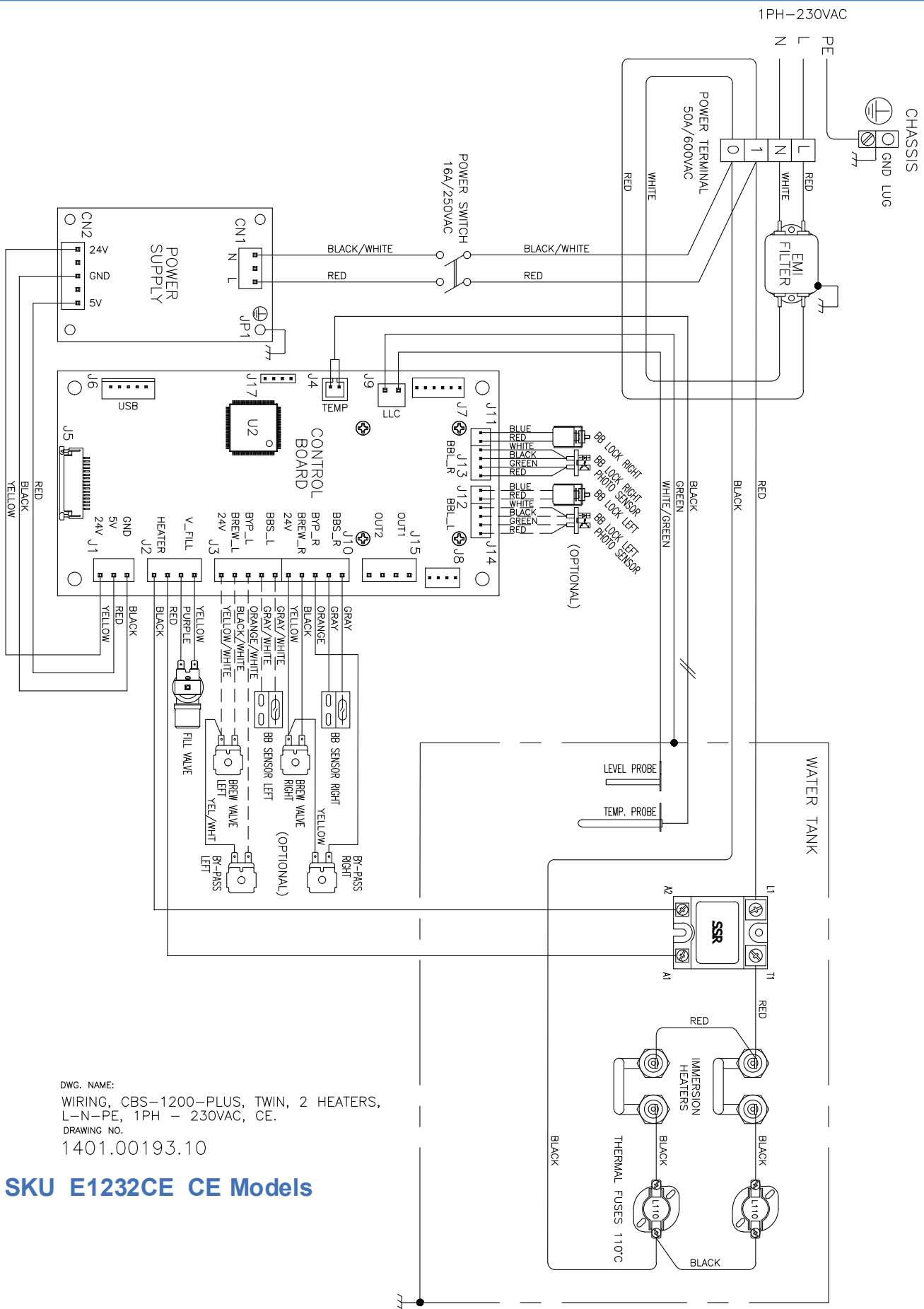
100-120VAC OR 200-240VAC, U.L.
DRAWING NO. 1401.00190.10



Wiring diagram 1401.00190.10 for SKU numbers below
CBS-1231Plus

E1231US-1B130-PM003	E1231NM-1B130-PM003
E1231US-1A123-PM002	E1231NM-1A123-PM002
E1231US-1A123-MM112	E1231KS-1B130-PM006
E1231US-1A115-PM011	E1231KS-1B130-PM000
E1231US-1A115-PM001	E1231IN-1B130-PM000
E1231US-1A115-MM011	E1231IN-1B123-PM000
E1231US-1A115-MM001	E1231BR-1B130-PM008

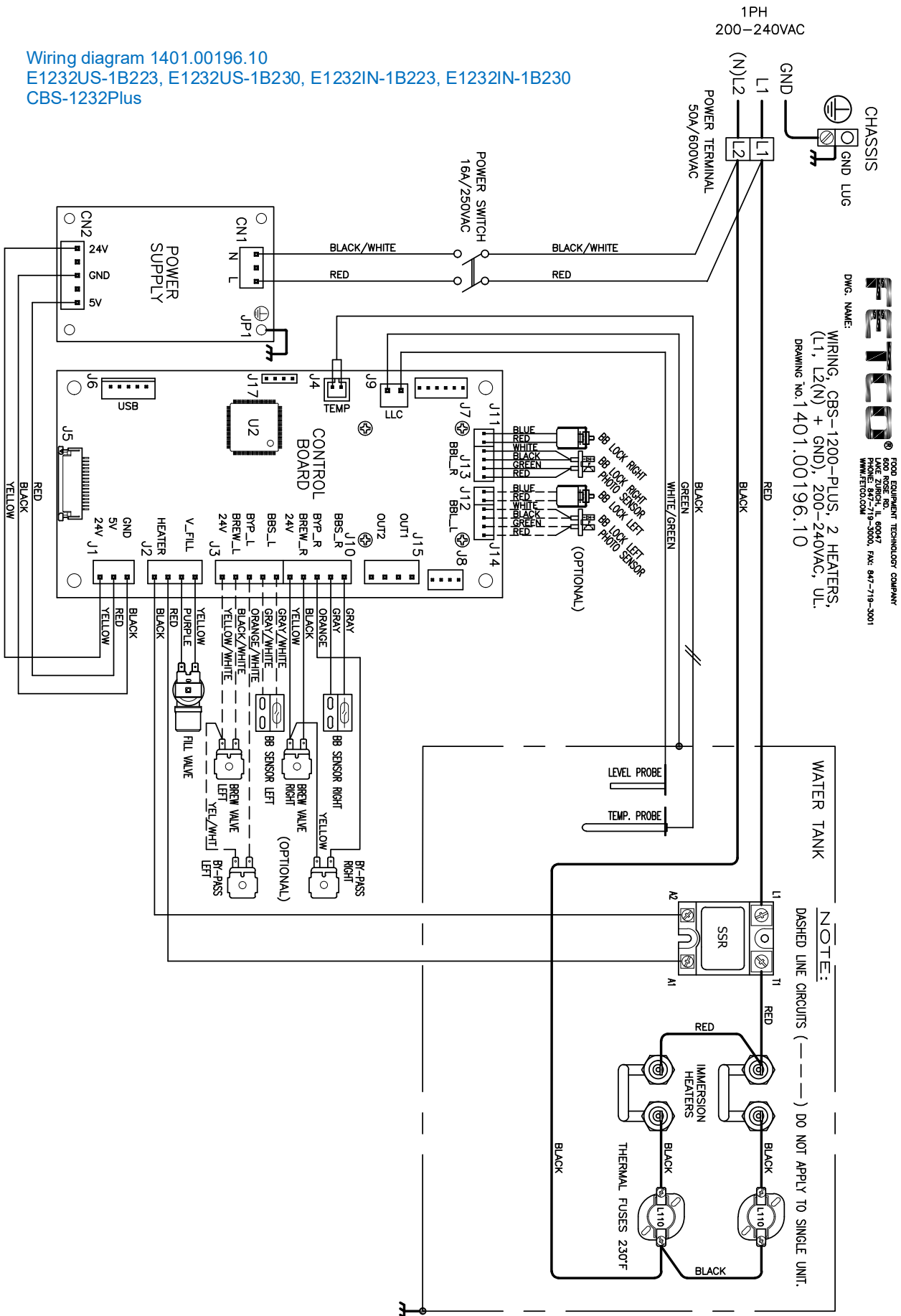




DWG. NAME:
WIRING, CBS-1200-PLUS, TWIN, 2 HEATERS,
L-N-PE, 1PH - 230VAC, CE.
DRAWING NO.
1401.00193.10

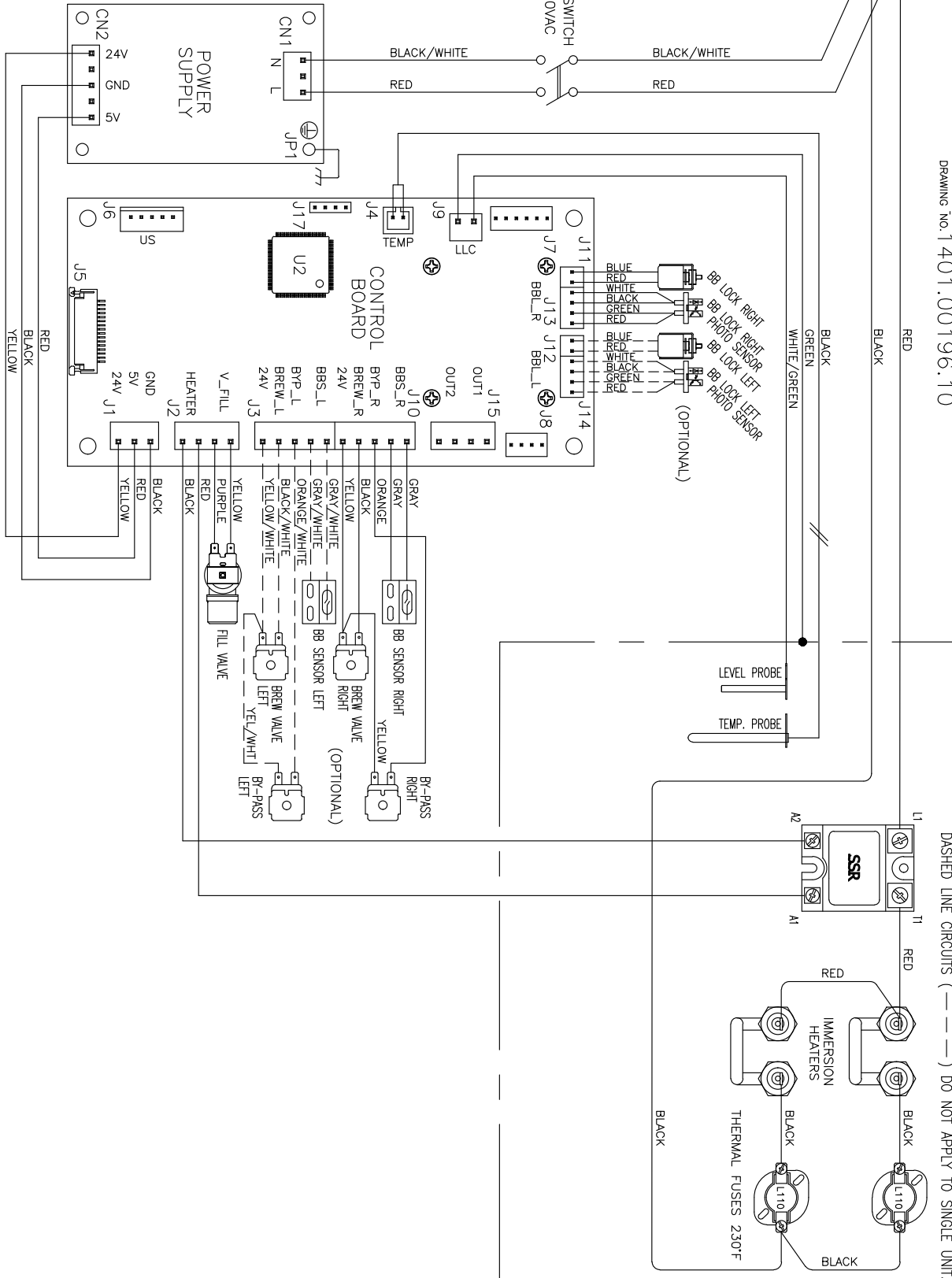
SKU E1232CE CE Models

Wiring diagram 1401.00196.10
 E1232US-1B223, E1232US-1B230, E1232IN-1B223, E1232IN-1B230
 CBS-1232Plus



CBS-1242 wiring diagram SKU numbers 1401.00196.10

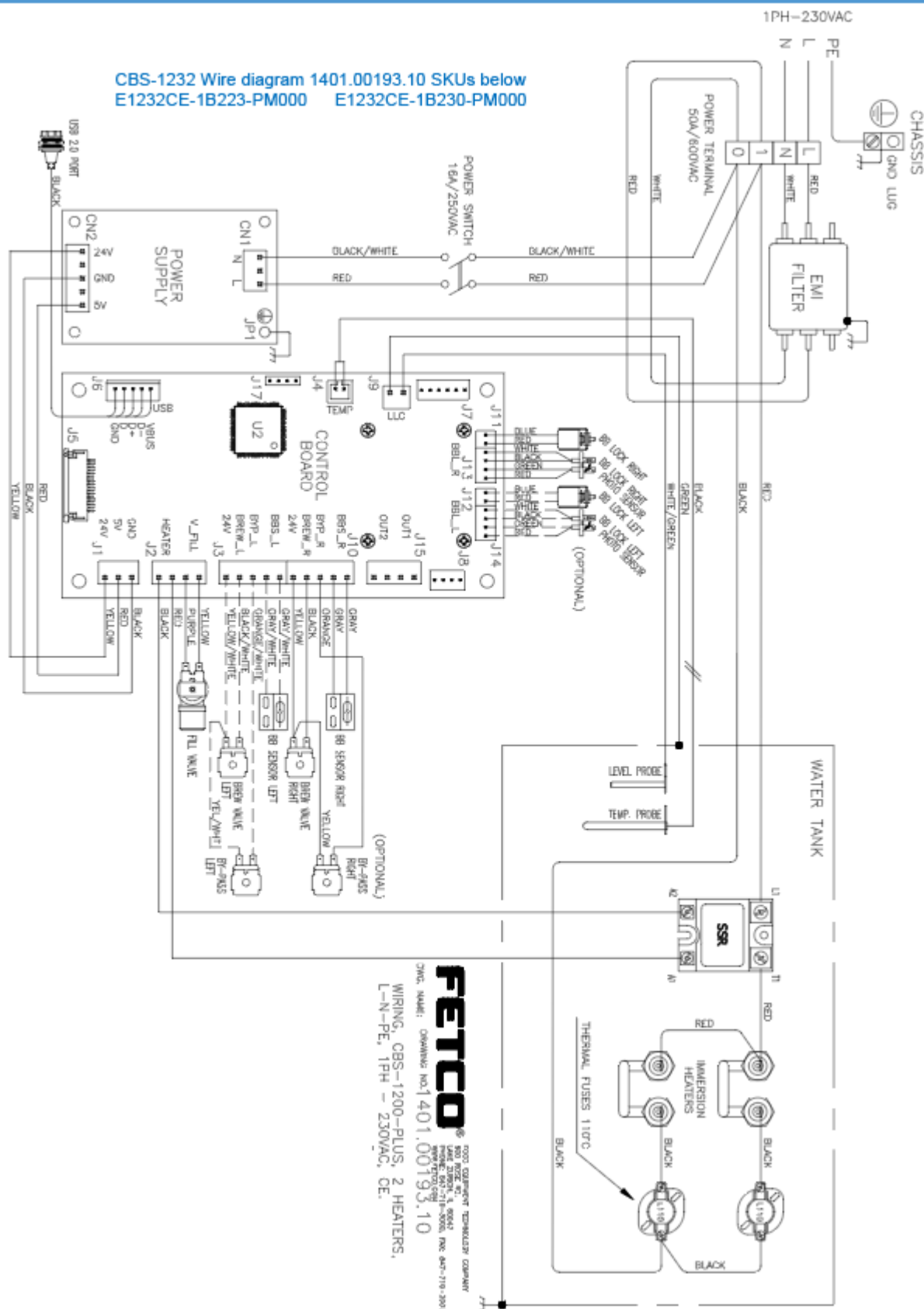
E1242IN-1B223-PM000	E1242US-1B223-PM010
E1242IN-1B230-PM000	E1242US-1B230-MM000
E1242KS-1B230-PM000	E1242US-1B230-MM010
E1242NM-1B230-MM000	E1242US-1B230-MM110
E1242NM-1B230-PM000	E1242US-1B230-PM000
E1242US-1B223-PM000	E1242US-1B230-PM010
	E1242BR-1B230 PM000



FETCO
 FOOD EQUIPMENT TECHNOLOGY COMPANY
 450 WEST 10TH AVE
 LAKE ZURICH, IL 60047
 PHONE: 847-719-3000, FAX: 847-719-3001
 WWW.FETCO.COM

DWG. NAME:
 WIRING, CBS-1200-PLUS, 2 HEATERS,
 (L1, L2(N) + GND), 200-240VAC, UL.
 DRAWING NO. 1401.00196.10

NOTE:
 DASHED LINE CIRCUITS (---) DO NOT APPLY TO SINGLE UNIT.



PETCO[®] FOOD EQUIPMENT TECHNOLOGY COMPANY
 10000 W. 15th Ave., Suite 100, Westminster, CO 80040
 TEL: 303-426-1000 FAX: 303-426-1001
 WWW.PETCO.COM

DWG. NAME: ORAING NO. 1401.00205.10

WIRING: CBS-1200-PLUS, 2 HEATERS,
 2L-N-PE, 2-PH, 230/400VAC, CE.

