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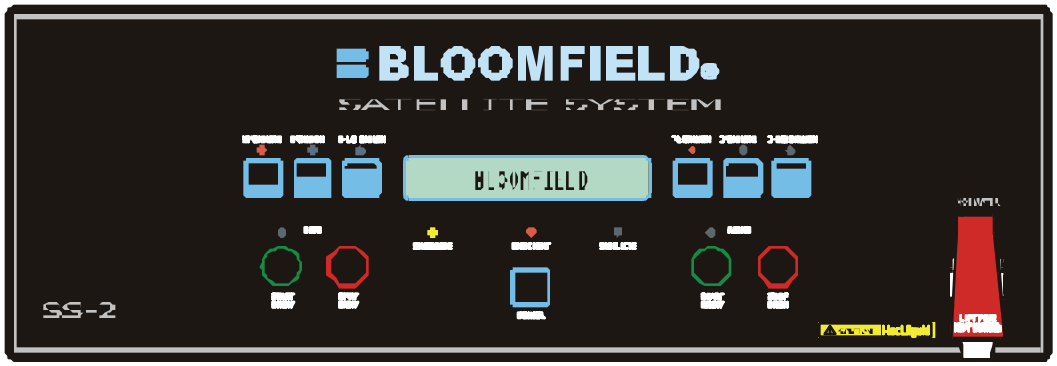
PROGRAMMING MANUAL
for
SS-2
SATELLITE BREWING SYSTEM



PROGRAMMING for SS-2 Series Dual Satellite Brewers

Models	SS-2:	9421	
		9520	9520FB
		9521	9521FB
	SS-2EX:	9521EX	9522HK

TABLE OF CONTENTS

Thank You for purchasing this Wells Bloomfield appliance.

Proper installation, professional operation and consistent maintenance of this appliance will ensure that it gives you the very best performance and a long, economical service life.

APPLICATION

Proper setup is essential to achieving the optimum performance this appliance can provide.

This manual contains the information needed to perform operator level programming, and to setup initial program parameters for this appliance.

This manual applies to the following domestic satellite brewers:
9421
9520
9520FB
9521
9521FB

This manual also applies to the following export satellite brewers:
9521EX
9522HK

WARNING: ELECTRIC SHOCK HAZARD
All servicing requiring access to non-insulated components must be performed by qualified service personnel. Do not open any access panels which require the use of tools. Failure to heed this warning can result in electrical shock.

WARNING: INJURY HAZARD
All installation procedures must be performed by qualified personnel with full knowledge of all applicable electrical and plumbing codes. Failure could result in property damage and personal injury.

WARNING: ELECTRIC SHOCK HAZARD
Brewer must be properly grounded to prevent possible shock hazard. DO NOT assume a plumbing line will provide such a ground. Electrical shock will cause death or serious Injury.

WARNING: BURN HAZARD
This appliance dispenses very hot liquid. Serious bodily injury from scalding can occur from contact with dispensed liquids.

This appliance is intended for commercial use only.

This appliance is intended for use to brew beverage products for human consumption. No other use is recommended or authorized by the manufacturer or its agents.

This appliance is intended for use in commercial establishments, where all operators are familiar with the appliance use, limitations and associated hazards. Operating instructions and warnings in the corresponding Service Manual must be read and understood by all operators and users.

Except as noted, this piece of equipment is made in the USA and has American sizes on hardware. Please note: Metric hardware is used to mount the inlet (Fill) solenoid. All metric conversions are approximate and can vary in size.

Any trouble shooting, component views and parts lists included in this manual are for general reference, and are intended for use by qualified service personnel.

This manual should be considered a permanent part of this appliance. The manual must remain with the appliance if it is sold or moved to another location.

CAUTION: EQUIPMENT DAMAGE

DO NOT plug in or energize this appliance until all *Installation Instructions* are read and followed. Damage to the Brewer will occur if these instructions are not followed.

CAUTION: BURN HAZARD

Exposed surfaces of the appliance, brew chamber and decanter may be HOT to the touch, and can cause serious burns.

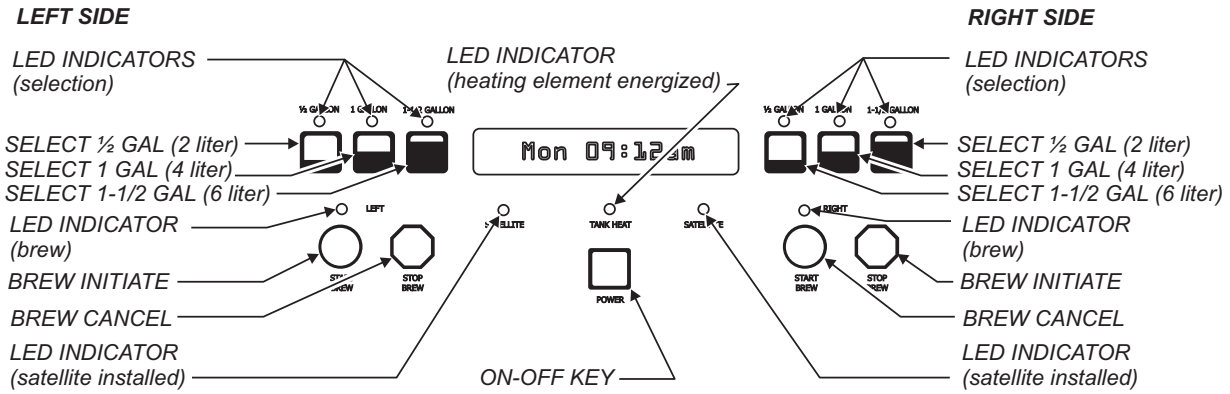
CAUTION: BURN HAZARD

To avoid splashing or overflowing hot liquids, ALWAYS use an empty decanter before starting the brew cycle.

CAUTION: BURN HAZARD

After a brew cycle, brew basket contents are HOT. Remove the brew basket and dispose of used grounds with care.

OPERATION



GETTING STARTED

1. In the OFF MODE, valves and heaters are turned OFF, and no message is displayed.
2. Press the POWER key to turn the brewer ON.
   a. When the brewer is first turned ON, the digital readout will display "BLOOMFIELD" and a beep will sound. The POWER LED will glow.
   b. The brewer will attempt to fill the tank with water. The readout will display "Filling…".
   c. When the tank is filled to the level of the water level probe the tank heaters will be energized. The TANK HEAT LED will glow and the readout displays "Heating".
3. When the water in the tank is up to the set temperature, the TANK HEAT LED turns off and the readout displays the time and day.
4. From the ON MODE, the user can press a BREW VOLUME key on left or right side to select a brew amount, the left or right START key to initiate a brew, or the POWER key to turn the system OFF (this enters the OFF MODE).

NOTE:
If water is not sensed at the water level sensor within 20 minutes:
Heater will be disabled
Error message "NO WATER SENSED" will be displayed.

NOTE:
If the keypad lockout is enabled, pressing a key will have no effect. To temporarily bypass the lockout, press and hold the LEFT BREW CANCEL key for six seconds. The keyboard is unlocked until the next brew.

To enter Brew mode from On mode, press the Left or Right Start key. A beep is heard each time a key is pressed. In Brew Mode, the Left or Right Brew LED is either on or flashing. To ensure high quality coffee, water volume and temperature considerations have to be met before initiating a brew. If such conditions are not met, the system waits until water temperature and volume conditions are met before brewing can begin.

BREWING

In regular operating mode, the SS-2 maintains the temperature of the water in the tank within ± 1ºF of the brew temperature. Normally, the brew will start as soon as the BREW START key is pressed. However, there may be a slight delay if a second brew is started immediately after a brew is completed. If the tank temperature is below the *Precise Temperature Brewing*™ point, the brew will be delayed going into the "Brew Wait" mode, with the brew light flashing and the display message "heating…". As soon as the PTB™ is reached, the brew will start. The brew light will remain on for the duration of the brew, and the time remaining will be displayed.

NOTE: The following safety features have been incorporated to prevent multiple unattended brews.

A. When the brew light is on or flashing, repeated pressing of the BREW START key will be ignored (however, an beep will sound each time the key is pressed).
B. A brew will only be initiated, or placed in "brew wait" when the brew light is off.

BREWING COFFEE

Prepare the Brew Baskets:

Make sure the wire rack is properly installed in each brew chamber.

Insert one (1) Bloomfield paper filter into each brew chamber. Make sure the filter is properly supported by the wire rack.

Add a measured amount of grounds to each brew basket. Gently shake the basket to level the grounds.

Slide one brew chamber under each brew head.

Insert Satellites:

Slide one satellite under each brew chamber until it is fully seated. When the satellite is properly installed, SATELLITE LED for left or right side will glow.

Select Brew Volume:

Press either the **1/2 GALLON**, **1 GALLON** or **1-1/2 GALLON** key. The corresponding LED will glow.

Start the Brew:

Press either the right or left **START BREW** key. The LED for the selected side will glow. At the end of the brew, the brewer will beep. When the TANK HEAT LED goes out, the brewer is ready to run another brew cycle.

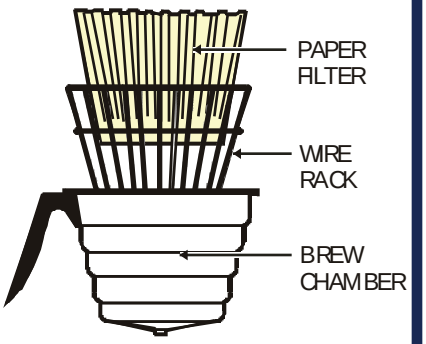
Empty the Brew Basket:

Discard the grounds and the paper filter. Rinse the brew chamber under clear water.

To bypass the BREW WAIT, press and hold the BREW START key for three seconds. The brew will start, even though the water may not be up to the *Precise Temperature Brewing*™ point. This feature is most useful when adjusting volumes and is not generally used for normal brewing.

During a brew, if the brew key is pressed, it will be ignored. Only when a brew is complete can another brew begin.

NOTE: The brew can be cancelled at any time by pressing the **BREW STOP** key.



CAUTION:
BURN HAZARD

Basket and contents are hot to the touch and may cause burns on contact.

View Water Temperature in Tank:
To view the water temperature on the screen, the SS2 brewer must be ON, and not brewing or in the filling mode. Press and hold the 3rd key, and depress the 6th key. The actual water temperature will be displayed for 3 seconds.

Temporarily Overriding the Automatic On/Off function:
While in the automatic timed OFF mode the brewer can be started by depressing the ON/OFF switch. The brewer will remain on until the automatic programmed off time, when it will turn off and resume normal automatic timed functioning. Similarly, if turned OFF during the automatic timed ON mode the brewer will remain OFF until the next programmed on time, when it will turn on and resume normal automatic timed functioning.

NOTE:
When brewing both sides at same time or one side only, countdown timer on time remaining for brew complete will be shown in minutes and seconds.

Brew Cancellation
Brewing can be canceled at any time by pressing the Stop key or another Brew Batch switch. Once canceled, there will not be any indication as to when it will be safe to begin another brew. If brewing is canceled, the valves close and the Brew LED turns off, two beeps are heard and "Cnd" is displayed on the appropriate side. In addition, the Satellite indicator light will flash.

Normal Operation (Non Brewing)
When the unit is not brewing, the SS2 maintains the water temperature at the Precise Temperature for Brewing™ (PTB ™). The heating element will cycle on and off automatically to maintain this temperature.

ON/OFF - Non Automatic Timer:
To turn the brewer OFF, press the ON/OFF switch: 2 beeps will be heard and the brewer will be turned OFF, indicated by all lights being off. To turn the brewer ON, press the ON/OFF switch: 2 beeps-will sound, all lights will flash once, then the "Power" light will remain on, (the "Heat' light may come on if water temperature is too low).

ON/OFF - Automatic Timer Feature:
The factory programmed SS2 has the automatic timer turned off. To set the automatic timer, refer to the Programming section in this manual, "Time Functions" Menu. If the Automatic Timer feature is programmed off, the brewer can be turned on and off by depressing the ON/OFF switch, as noted above.

When the Automatic Timer feature is programmed ON the SS2 will turn on and off automatically, at a programmed time, Monday to Friday; with a separate on and off programmed time schedule for Saturday and Sunday.

Automatic Start-UP in Previous Mode:
If the SS2 automatic timer is OFF (the factory setting) and power is disconnected, the brewer will start up when power is restored, in the mode it had been in prior to the power disconnection. If the SS2 has the timer setting ON and power is disconnected, the brewer will start up in the mode that it should be in at the time the power is restored.

Brew Volume - Viewing Programmed Brew Volume:
The SS2 can have up to 6 different brew volumes, see programming table to change.

Clock:
Time - Battery Backup. The SS2 has a battery backup system which will maintain the proper time during power failures, or when the brewer is unplugged (even for very prolonged periods of time). Normally there will not be a need to set the time except for Daylight Saving Time changes, or moving the brewer to different time zones.

Refer to page 2 for key designations

Changing Day and Time:
To change time, (Brewer in on mode.) Press the 3rd and 4th key at the same time to access the time change mode. In the time change mode the screen will read 'Day:" followed by the current day setting. Use the 6th key to advance the day, or the 5th key to reverse. When day has been properly set press the 3rd key. The screen will now read "Time:" with the set time on the screen, the hour and am or pm flashing. Use the 5th key to go back or the 6th key to advance the hour, making sure that the am or pm is correct. When the hour and am/pm is correctly set press the 3rd key, and the screen will read "Time:" with the set time on the screen, minutes flashing. As previously, use the 5th or 6th keys to adjust the minutes, and press the 3rd key when complete.)

Changing time can also be done in the regular programming mode.

After Hour™:
The factory programming has the *After Hours*™ mode turned ON. The *After Hours*™ can be programmed to come on from 1 to 6 hours after the last brew. When the SS2 goes into the *After Hours*™ mode, the water in the tank will be allowed to drop from the normal brewing temperature and will reheat less frequently. This feature saves energy and extends component life. When the BREW switch is pressed the SS2 automatically reverts back to normal operation, heating the water to the Precise Temperature for Brewing™ (PTB™), before starting the brew. The Brew light will flash until the correct water temperature is reached.

Consult the Programming section in this manual to set the *After Hours*™ mode.

Countdown Quality Timer™:
The SS2 factory programming has the *Countdown Quality Timer*™ turned ON for satellite brewing.

Consult the Programming section in this manual to change the *Countdown Quality Timer*™ feature:

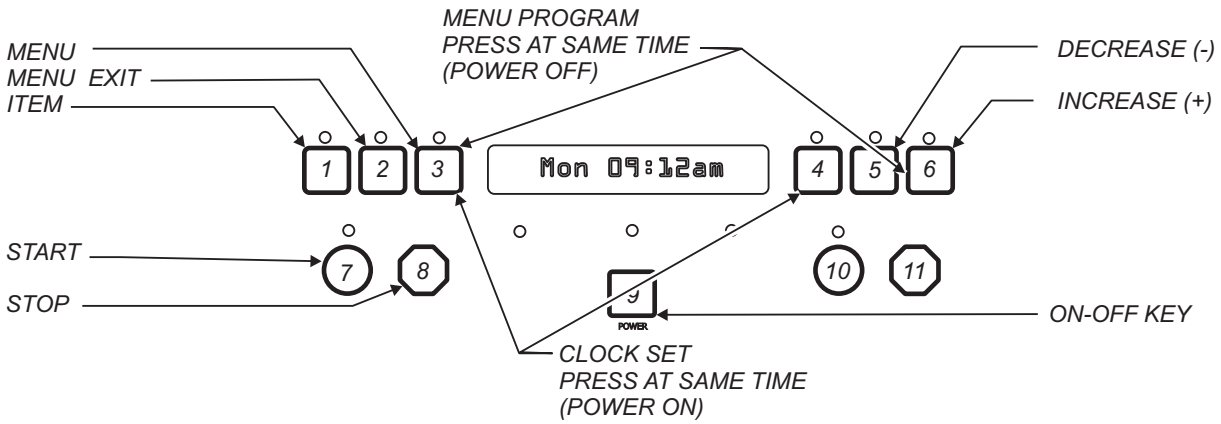
Keypadlock™:
This feature is OFF in the standard factory settings. If the *Keypadlock*™ feature is activated, there will be no response by the brewer when the keys are depressed (except for the beep after a key is depressed).
To temporarily "unlock" the keypad, press and hold the CANCEL key for 6 seconds. A beep will be heard indicating the keypad is now "unlocked", - a brew can be initiated, etc. The keypad will remain unlocked until the brew is completed, then automatically return to *Keypadlock*™ mode. If a brew is not initiated 60 seconds after "unlocking", the system will time out and return to the "locked" position.

To set the *Keypadlock*™ refer to the Programming section in this manual, Machine Settings Menu.

Pulse or Pre-infusion Volume System:
To set these features, refer to the Programming section in this manual, Brew Settings Menu. This feature maybe set for any volume key.

Bypass Valve System:
Refer to programming section under brew settings menu item. This feature may be set for any volume key.

PROGRAMMING - CONTROL PANEL CONFIGURATIONS



The brewer can be programmed with a personal computer. Please contact your local Bloomfield Representative for more information.

NOTE:
Brewer will not brew while in the FILLING mode.

QUICK NAVIGATION TIPS

1. To enter PROGRAMMING mode:
   a. Press ON-OFF (POWER) key until the brewer is OFF
   b. Press and hold 3rd and 6th keys for 3 seconds
2. Advance thru MENUS by pressing 1st key
   a. Access and advance thru ITEMS by pressing 3rd key
   b. Advance thru SUB-MENU and SUB-ITEMS by pressing 3rd key.
3. To EXIT PROGRAMMING mode:
   Press 2nd key
4. For clock settings:
   a. Press ON-OFF (POWER) key until the brewer is ON
   b. Press 3rd and 4th keys
5. To check tank temperature
   a. Press ON-OFF (POWER) key until the brewer is ON
   b. Press 3rd and 6th keys

PROGRAMMING CHART

To enter Programming Mode, turn brewer OFF, then press 3rd and 6th key. Hold until "Brew Settings" appears on readout.
Advance thru MENUS by pressing 1st key
Access and advance thru ITEMS by pressing 3rd key
See ITEM DESCRIPTION for procedure to access SUB-MENUS and SUB-ITEMS.
Advance thru SUB-MENU and SUB-ITEMS by pressing 3rd key.
Change settings by pressing 5th key (decrease) or 6th key (increase).
Press 2nd key at any time to EXIT programming mode.
See page 10 for detailed explanation of all programming topics.

MENU LEFT 1/2 GAL (key 1)	ITEM LEFT 1-1/2 GAL (key 3)	SUB-MENU	SUB-ITEM	DESCRIPTION	RANGE Key 5 dec. Key 6 inc.	DEFAULT
MENU 1				Press LEFT 1-1/2 GAL (key 3) to advance thru items Press LEFT 1 GAL (key 2) to EXIT menu		
BREW	WaterTemp			Actual water temp is displayed in ºF or ºC	none	N/A
SETTINGS	BrewTemp			Brew Temperature. Must be 5ºF below MaxTemp See Machine Settings Menu	185-205ºF 85-96ºC	197ºF
	Brew Volumes			Calculate volume of water delivered both thru brew chamber and bypass		
	Change LVols?			Change Left Volumes Y (yes) or N (no) "y" advances to Type1 ... "N" advances to Ser R=L?	Y / N	N
		Type1 Satellite		Select container for 1st (1/2 GAL) Brew	Airpot Satellite	Satellite
		TotalValve		Number of seconds brew valve is open. Press RIGHT 1/2 GAL (key 4) to access Pulse Brew Settings	0 - 655 sec.	see Factory Settings
		PULSE BREW SYSTEM	InitVlvTime	Initial Valve Time. Number of seconds Brew Valve open initially before beginning pulses	0 - 540 sec.	N/A
			PulseDelay	Number of seconds in pulse cycle to delay before opening Brew Valve	0 - 255 sec.	0
			PulseValve	Number of seconds in pulse cycle Brew Valve is open	2- 255 sec.	0
			Bypass Delay1	Number of seconds after brew starts to open Bypass Valve.	0-540 sec.	0
			Bypass Time1	Number of seconds Bypass Valve is open	0-540 sec.	0
		Brew Complete1		Number of seconds after Brew Valve closes for all product to drip out of brew chamber	0 - 255 sec.	see Factory Settings
		Left Brew Volumes 2 (Type2...) and 3 (Type3...) appear in order and are set as above				
	Set R=L?			Set RIGHT side volumes to the same settings as LEFT "Y" advances to MENU "N" advances to "ChangeRight?	Y / N	N/A
	Change Right?			Change RIGHT Volumes "Y" advances to Type4... "N" advances to MENU	Y / N	N
		Right Brew Volumes 4 (Type4...), 5 (Type5 ...) and 6 (Type6 ...) appear in order and are set as above				

When display returns to "WaterTemp", press 1st key to advance to next MENU

PROGRAMMING CHART (continued)

MENU LEFT 1/2 GAL (key 1)	ITEM LEFT 1-1/2 GAL (key 3)	SUB-MENU	SUB-ITEM	DESCRIPTION	RANGE Key 5 dec. Key 6 inc.	DEFAULT
MENU 2				Press LEFT 1-1/2 GAL (key 3) to advance thru items Press LEFT 1 GAL (key 2) to EXIT menu		
TIME FUNCTIONS	After-Hours			Puts brewer into low energy mode if unused for a time	0 (off) or 1 - 6 (hours)	3
	Quality Time			Countdown Quality Timer flashes satellite LED after a time.	0 (off) or 0-180 min.	45 min.
	TIMER			Activates various timed functions If "On" access Wkday On. If "Off" access Day	On or Off	Off
		Wkday on	Hour AM or PM	Set hour and AM/PM for brewer to turn on - Weekdays	**01 - 12** AM/PM	**07**:00**A**
			Minute	Set minute for brewer to turn on - Weekdays	00 - 59	07:**00**A
		Wkday off	Hour AM or PM	Set hour and AM/PM for brewer to turn off - Weekdays	**01 - 12** AM/PM	**07**:00**P**
			Minute	Set minute for brewer to turn off - Weekdays	00 - 59	07:**00**P
		Wkend on	Hour AM or PM	Set hour and AM/PM for brewer to turn on - Weekend	**01 - 12** AM/PM	**07**:00**A**
			Minute	Set minute for brewer to turn on - Weekend	00 - 59	07:**00**A
		Wkend off	Hour AM or PM	Set hour and AM/PM or brewer to turn off - Weekend Set same on and off times to have brewer remain off	**01 - 12** AM/PM	**07**:00**A**
			Minute	Set minute for brewer to turn off - Weekend	00 - 59	07:**00**A
	SET DAY AND TIME			Set brewer for today's time and date. Setting is battery backed. Change for daylight savings or time zone move		
		Day		Set today's day of week	Mon - Sun	none
		Time: Hour		Set hour and AM or PM	**01-12** AM/PM	none
		Time - Min		Set minute	0 - 60	none
	Press 1st key to advance to next MENU					
MENU 3				Tracks usage totals		
SERVICE & COUNTERS	TotalVol			Displays Total Volume of water in Gallons or Liters	000000 G/L	none
	BrewCycs			Total number of brew cycles performed	000000	none
	FltrLife			Filter life in 100 gallon increments. "0" disables	0-10000	0
	Filter Message			Select one of 3 messages for filter problem, or 0 for off. Programmable with personal computer.	1, 2 or 3 or 0 for off	0
	Reset Totals			Reset volume and cycles counter to 0	N/A	none
	Call for Service			A message to be displayed on readout may be programmed with a personal computer	N/A	none
	Press 1st key to advance to next MENU					

PROGRAMMING CHART (continued)

MENU LEFT 1/2 GAL (key 1)	ITEM LEFT 1-1/2 GAL (key 3)	SUB-MENU	SUB-ITEM	DESCRIPTION	RANGE Key 5 dec. Key 6 inc.	DEFAULT
MENU 4				Select measurement units and default functions		
MACHINE	Temp.Unit			Select temperature units as ºF or ºC	F or C	ºF
SETTINGS	Vol.Unit			Select volume unit as ounces or liters	Oz or L	Oz
	KeyPad Lock			Locks keypad. When ON hold LEFT BREW STOP key for 6 sec. to unlock momentarily	On or Off	Off
	MaxWt Temp			Maximum water temperature. Must be 5ºF over Brew Temperature	195 - 210	208
	Brew Wait			"Y" = Wait to initiate brew until water temperature is at Precise Temperature for Brewing™. "N" = brew regardless of temperature	Y or N	Y
	Beeper			Y = Beeper on N = Beeper off	Y or N	Y
	Load Defaults?			Y = Reload factory default settings	Y or N	N
HIDDEN MENU				To access from Machine Settings press and hold 3rd and 6th keys until "Factory Settings" is displayed		
FACTORY SETTINGS	InflRate			Inflow Rate. Number required to calculate volumes.	0.00 to 1.00 gallon/min.	Factory set @ 0.75
	Calibration			To change: press 4th key when "Calibration" is displayed Offset required to make temp sensor reading match actual temperature	-20ºF to +20ºF	none
	TotalVol.			Independent volume total - not re-settable	000000	none
	BrewCycs			Independent cycle counter - not re-settable	000000	none
	Press 2nd key to EXIT or 1st key to scroll thru MENUS. See page 10 for detailed explanation of all programming topics.					

PROGRAMMING PROCEDURES

All 6 volumes are set Independently.
Left and right side may be set the same or different. See program chart.

Maximum Water temp is factory set at 208ºF. It may be adjusted from 195ºF to 210ºF.

Maximum Brew Temp. can be set no higher than 5ºF below the Maximum Water Temperature.

Brew Settings Menu

- "Water Temp:" is actual water temperature in the tank.
- "Brew Temp:" is desired brew temperature. This temperature +/-lºF will be maintained in the tank. Adjust by pressing 5th or 6th keys. The brew temperature cannot be set any higher than 5ºF below the Maximum Water Temperature, which is factory set at 208ºF. This means maximum brew temperature will be 203ºF. If a higher temperature is required, first increase the Maximum Water Temperature in Machine settings (maximum is 210ºF), then increase brew temperature (maximum brew temperature is 205'F if Maximum Water Temperature is increased to 210ºF).
- Pulse Brew. To access the pulse or pre-infusion programs, see Pulse Brew System details.
- "Total Valve:". This is the number of seconds the dump (or brew) valve will remain open and determines total water volume.
- Brew Type for each volume can be set as airpot or satellite container.
- Note: "Airpot" brew type bypasses any satellite interlock system.
- "Brew Complete...:" (Dripout Time)- This is the number of seconds after the dump valve is closed that is required until all of the water flows through the brew basket. If different weights of coffee or tea are used, this number may need to be increased or decreased.

Time Functions Menu

- "After Hours:" When *After Hours*™ is activated, the brewer will allow the water temperature to drop by 20'F before reheating. Can be turned off by setting to "0".
- "Quality Time:" - *Countdown Quality Timer*™. Flashes SATELLITE LED after a set time to remind server that coffee is aged. Can be turned off by setting to "0", or set from 0 minutes to 180 minutes. See program table.

When using the timer be sure to allow at least 30 minutes for the brewer to reach proper temperature from the time it is turned on.

- "Timer:" Turn the timer on if automatic startup and stop is required. Time for the brewer is maintained with a battery backup system that will last up to 20 years. This system also handles power fluctuations by maintaining the power time during power outages. When setting times, make sure that the AM or PM is set properly to activate the timer at the correct time. On and Off times for weekdays and weekends are set individually. Weekend may be turned "OFF" by setting the start and stop time at the same time.
- "Day:" Set the day of the week by using the 5th and 6th keys.
- "Time:" Use the 5th and 6th keys to set Hour, AM or PM and Minutes.

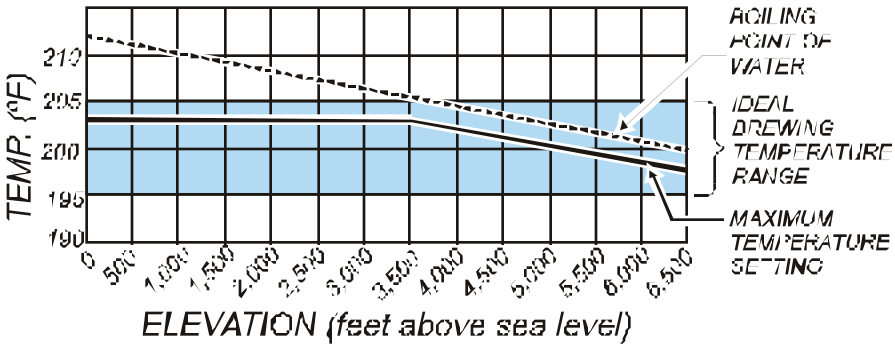
Service & Counters Menu

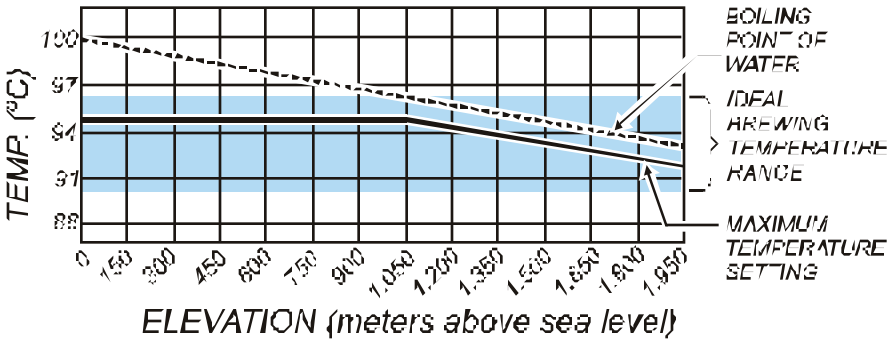
- "TotalVol:" - Total Volume. Indicates total water volume processed by the brewer.
- "Brew Cycs:" - Brew Cycles. Displays total number of brew cycles since last reset.
- "Filter Message" - Select one of three messages to be displayed if filter exceeds life expectancy, or "0" to turn filter message "OFF".
- "FltrLife:" - Filter Life. If a filter is used, input the number of gallons of expected filter life capacity, in increments 100 gallons.
- "Message" Trouble message to be displayed. Programmed with personal computer.

Machine Settings Menu

- "Temp. Unit:" - Temperature Unit. Set to "F" for ºF and "C" for ºC.
- "Vol. Unit:" - Volume Unit. Set to either "Oz" for ounces or "L" for liters.
- "KeyPadLock:" Turn to "On" or "Off". If "On" the keypad switches can only be activated by pressing and holding the LEFT BREW STOP key for 6 seconds.
- "MaxWt.Temp.:" - Maximum Water Temperature. The maximum water temperature is factory set at 208'F degrees, but can be adjusted up as high as 210ºF. The brew temperature cannot be set any higher than 5ºF below the maximum temperature. Maximum temperature should be set at least 2ºF degrees below the local boiling point. The brewer will display "overheat error' if the water temperature in the tank is sensed to be at or above the Maximum Water Temperature. Therefore in higher altitude locations, adjust the Max. Water Temp accordingly:

The keypadlock can be momentarily bypassed by pressing and holding the LEFT BREW STOP key for 6 seconds. The keys will be active until a brew has been completed. Or if a brew is not started, the keypad will revert to the locked mode after 60 seconds.





- "Brew Wait:" The Precise Temperature Brewing™ feature can be overridden by setting Brew Wait to "N" for No.
- "Load Debuits?" Reloading of default settings will reset many of the programmed settings to those outlined in the programming table. In the table those items with "none" noted in the Default column would not be reset when defaults are re@-loaded. Where a value is noted, this would be the re-loaded value if defaults are loaded. Re-loading of defaults should be used only if major programming problems have occurred and it is necessary to return to factory settings.

By setting "Brew Wait" to "N", the brewer will start a brew regardless of the water temperature. There will be no delay to heat to the proper temperature. This is not the recommended setting. "Brew Wait" is factory set at "Y" for yes. In this mode the brewer will only start a brew at the Precise Brew Temperature™.

The factory settings menu can only be accessed by going into the programming mode, and pressing the 1st key until "Machine Settings" is displayed. Then press and hold the 3rd and 6th keys for three seconds until "Factory Settings" is displayed.

IMPORTANT:
Only qualified personnel should make changes to these Factory Settings.

NOTE:
The probe has been factory calibrated. If a controller board is changed it is recommended that the previous calibration be checked and entered on the new board.
If this is not possible, or if a new probe is used, calibration should be completed as at right:

Factory Settings Menu

- "InflRate:" - Inflow Rate. The inflow rate is factory set at 0.75 gallons per minute. This value is required to calculate the water volume. Generally the .75 setting will be quite accurate unless there is unusually low or high water pressure and volume, in which case the Inflow Rate can be changed.
- "Calibration". To access the calibration program, press the 4th key when "Calibration" is displayed. The probe is factory set and should not need resetting, unless the controller board or probe is changed. See Calibration Instructions below for detailed instructions.
- "TotaiVol:" - Total Volume. Total water volume is stored in the Factory Settings menu as well as in the Service & Counters menu. This total is not re-settable.
- "BrewCvcs:" - Brew Cycles. Total brew cycles is stored in the Factory Settings menu as well as in the Service & Counters menu. This total is not re-settable.

Calibration Instructions:

1. Turn brewer on and allow to heat to proper temperature, and the heat light will go out.
2. Turn brewer off.
3. Access the programming mode, go to Factory Settings, go to Calibration and press the 4th key to access calibration.
4. Using an accurate thermometer, determine the actual tank temperature by measuring the temperature of the water coming out of the faucet. It is important to run the water over the thermostat long enough to get a proper reading. (An alternate method of establishing water temperature is to remove the top cover of the brewer, then pull out the level sensor. Insert the thermometer into the brewer. Allow time for the thermometer temperature to stabilize.)
5. Once the actual tank temperature has been established, look at the values on the screen. As an example, it may read "199F Corr. + 0" This would indicate that the water temperature in the tank is 199ºF with no correction (or calibration) of the probe. If the actual temperature according to the thermostat was:
   a. HIGHER by 3F (i.e. 202ºF in this example), press the 6th key 3 times until the screen reads as follows: "202F Corr. + 3".
   b. LOWER by 3F (i.e. 196F in this example), press the 5th key 3 times until the screen reads as follows: "196F Corr. - 3".
6. Make sure the temperature on the left of the screen agrees with the actual temperature of the water determined with the accurate thermostat. Once this has been completed the SS2 will maintain the calibrated setting.
7. Once calibrated, press the 3rd key to continue in the Factory Settings menu, press the 1st key to return to Brew Settings menu, or press the 2nd key to exit programming.

PULSE BREW PRE-INFUSION CAPABILITY
BYPASS SYSTEM

Applications:

1. Pre-infuse (or Pre-soak) the Bed of Coffee or Tea.
   The brew valve can be opened for a -short period of time to allow the bed of coffee or tea to be pre-infused. After a delay while the pre-soaking is taking place, the brew valve can be opened to start and complete the brew.

   Pre-infusion is used to pre-wet the bed of grounds or tea leaves prior to the actual brew. This may be used to improve the brew quality in certain situatons.

2. Extend Contact Time With the Coffee.
   The brew valve can be programmed to "pulse" by opening and closing for programmed periods during the brew. This capability will allow for longer contact with the coffee or tea if higher extraction rates are required.

   Pulsing the delivery of brew water extends the time the water is in contact with the coffee grounds or tea leaves. This can be adjusted to optimize extraction rates.

3. Prevent Brew Chamber Overflow.
   The pulse feature allows the delivery time of the water to be extended. Overflow problems can also be experienced if particularly fine grind coffee is used. The SS2 can be programmed to extend the delivery of the water over a longer period of time, thus preventing any overflow problems.

   Pulsing the delivery of brew water allows more time for the water to drip out of the brew chamber. This can be set to prevent brew chamber overflow when very fine grind coffee is used.

Access the Pulse System:

1. Select the Brew Volume that will be using the "pulse" brew system. (i.e. Brew Volume 1, 2, 3 etc.)

2. With the selected volume on the screen (e.g.: BrewVol1:), change volume if necessary (must not be "0") and press the 4th key (while in total valve time display) to go to the Pulse Programming options (as opposed to pressing the 3rd key which would bypass Pulse Programming).

   Bypass System delivers a portion of the total volume of water directly to the container. This is used in situations where delivery of all water through the coffee grounds or tea leaves would result in too strong a product.

3. The first three menu items below will appear in this order.
   a. InitVlv Time: Initial Valve Time (seconds) to open before pulse cycle(s) begin.
   b. Pulse Delay: Number of seconds valve is closed beginning pulse cycle(s).
   c. Pulse Valve On: Number of second's valve is open during pulse cycle(s).
   d. Total Valve: Total number of seconds valve is to be open (pulse + initial). This determines your total volume out of brew chamber, which must be set if total volume changes from factory settings.
   e. Drip Out Time: Time after valve is closed before all water drips through brew chamber as brewed product and the brew is complete.

The pulse feature will be active only if it has been programmed. See page 13.

The brewer will calculate the number of seconds for the full brew and display it on the LCD to begin the brew. It will also calculate how many pulse cycles are required to complete the brew. (If a final partial "Pulse Valve On" is required this will also be calculated automatically.)

$$Vol_{total} = (T_{brew} \times R_{sprayhead}) + (T_{bypass} \times R_{bypass})$$

or

Total delivered volume is equal to:
Brew Valve Time times
Sprayhead Flow Rate
Plus
Bypass Valve Time times
Bypass Flow Rate

Pulse Feature Operation:

When the pulse brew begins, the brew valve will be opened for the number of seconds programmed for "Initial Valve Time" (Init Vlv Time). The valve will then close for the number of seconds in "Pulse Delay", then open for the number of seconds in "Pulse Valve On". The pulse cycle (Pulse Delay plus Pulse Valve) will be repeated continuously until the brew valve has been opened for the time programmed as "Total Valve ".

Water Outflow (Delivery) Rates:

The outflow rate of water from the sprayhead is required to calculate valve time for different volumes. Sprayhead outflow rates are based on the standard 64-ounce coffee brew requiring approximately 117 seconds of the brew valve being open. This is an outflow rate of approximately .50 ounces per second.
To calculate Total Valve time, the total ounces required should be divided by .50 oz/second. Each brewer may have a slightly different flow rate based on whether the brewer is level, scale build up on lines, etc. Minor adjustments may be required to get precise volume.

Bypass Valve System:

Access the Bypass System from the "Brew Settings" menu, "Total Valve" sub-menu (same as Pulse Brew).

1. Bypass delay: Number of seconds after brew starts valve will open.
2. Bypass Valve Time: Number of seconds valve is on.
3. Bypass Flow Rate is approximately 0.27 oz/seconds.

SAMPLE PROGRAM

Position 1 & 4

Type Satellite
Total Valve 142
Press 4th Key
Intit Valve Time 30
Pulse Delay 5
Pulse Valve On 10
Bypass Dly 30
Bypass Time 50
Brew Complete 30

Position 2 & 5

Type Satellite
Total Valve 215
Press 4th Key
Intit Valve Time 30
Pulse Delay 5
Pulse Valve On 10
Bypass Dly 30
Bypass Time 150
Brew Complete 45

Position 3 & 6

Type Satellite
Total Valve 322
Press 4th Key
Intit Valve Time 30
Pulse Delay 5
Pulse Valve On 25
Bypass Dly 30
Bypass Time 200
Brew Complete 60

Approximate Flow Rates

To determine brew time for a volume divide ounces by flow rate:
EX: 1 64oz (1/2 Gallon) ¸ .50oz Sec = 128 Sec. (approx.)
EX: 2 192oz (1 ½ Gal w/bypass) ¸ .27oz Sec = 249 Sec. (approx.)

Factory Settings
With "MACHINE SETTINGS" displayed, press and hold keys 3 & 6

- Infl. Rate 0.75 G.M.
- Calibration
- Press Key #4
- Core + 0°F
- Total Val: 000000G
- Brew Cycle: 000000

Press #2

- Check Complete

Brew Settings
Water Temp:
Brew Temp: 195°F
Brew Volumes
Change L. Vol. Y

Set R=L Y
Change R. Vols N

Time Functions

- After Hours: Off
- Quality Time 180m
- Timer: ON
- Day:
- Time: Hours
- Time: Min.

3 Service Count

- Total Volume 000000G
- Brew Cycle 000000
- Filter Life 10000
- Filter Message
- Reset Total: N
- Service Number: 888-492-2782

Machine Settings

- Temp. Unit: F
- Vol. Unit: G
- Key Pad Lock: Off
- Max Temp.: 208F
- Brew Wait: Y
- Beeper: Y
- Load Defaults? N

PROGRAMMING - DIAGNOSTIC TEST

This is a built-in test of the following system components:

a) Verification of Firmware/ EEPROM data
b) Keypad switches / interlock switches
c) Volume, brew start/stop, power and satellite LEDs
d) Inlet valve, left and right dump valves, left and right bypass valves, solenoid valves (optional)
e) Heater
f) Water level probe, temperature probe

If a key or toggle switch is not detected within 5 seconds, then the "Switch Error" message will be displayed followed by 2 beeps. If an error occurred with the correct key pressed, the control board has failed the test.

DUAL SATELLITE SYSTEM BUILT-IN DIAGNOSTIC TEST

Entering Test Mode:

1. Press POWER key *OFF* .
2. Press and hold the 3rd (Left 1-1/2 GAL) key and the 4th (Right 1/2 GAL) key, then POWER key *ON*.
3. At the sound of the beep, release the keys. If successful, a message containing the revision of the firmware will be on the display. (e.g. "WW 291 Rev. 3.1) Verify that the revision of the software is correct, and then press the POWER key. Each key press should be followed by an audible beep.

Check Date Revision:

The next display contains the revision number of the data programmed into the EEPROM. (e.g. "Data Rev 3.0"). Ensure that the correct version has been loaded into the EEPROM, then press POWER key to continue.

Switch Test:

1. Press the left 1/2 GAL key. You will hear a beep, and the display will change to: "Test Switch 2".
2. Press the left 1 GAL key. You will hear a beep, and the display will change to: "Test Switch 3".
3. Continue testing keys in order:

Test Switch 1	Left 1/2 GAL key
Test Switch 2	Left 1 GAL key
Test Switch 3	Left 1-1/2 GAL key
Test Switch 4	Right 1/2 GAL key
Test Switch 5	Right GAL key
Test Switch 6	Right 1-1/2 GAL key
Test Switch 7	Left BREW START key
Test Switch 8	Left BREW STOP key
Test Switch 9	POWER key
Test Switch 10	Right BREW START key
Test Switch 11	Right BREW STOP key

4. Check the safety interlock switches (if equipped): Toggle the left interlock by removing and reinstalling the left brew chamber when the controller displays "L Interlock". Check the right interlock in the same way when the controller displays "R Interlock".

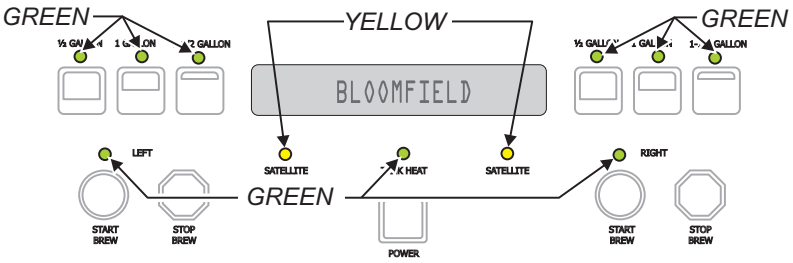
LED Test

Display will read: "Testing LEDs"

1. The top left LED should turn on first. After one second, the LED immediately right of it will turn on and the top left LED will turn off. Observe that the LEDs turn on in order - moving from left to right along the top row, then left to right along the bottom row. Ensure that only one LED is on at a time and that each of the eleven LEDs turn on.

If any one of the LEDs does not turn on, if more than one LED turns on at any given time during this test, or if the LEDs do not turn on in the correct order then the controller has failed the test.

2. Also ensure that the color of each LED is correct:



3. Press the POWER key to advance to the next test.

Valves/Heater Test

The display will read: "Valvc I Off"

If a -Valve Fault" message appears on the display during this test, the controller fails the test.

1. Verify that all the valves are off, and that the heater is off. Valve I corresponds to the inlet valve.
2. Press the POWER key and the inlet valve should turn on with the message: "Valve I On"
3. Press the POWER key to advance to Valve 2 (left dump valve). Continue testing components. Each of the following components should turn on then off in the following order:

Valve I	Inflow
Valve 2	Left Brew
Valve 3	Right Brew
Valve 4	Left Bypass
Valve 5	Right Bypass
Heater	Heater - DO NOT leave on for an extended period of time.
L Solenoid	Lock Out Solenoid (optional)
R Solenoid	Lock Out Solenoid (optional)

4. If each one of the components turn on in order, and if only one of them is on at any time, then the controller has passed this test. In this case, press the POWER key to advance to the next test.

Probe Test:

Two numbers will be displayed:

1. The ***left number*** determines whether the WATER-sensing probe is in contact with water.
   a. A number of "0" (or close to 0) means that water is in contact with the probe.
   b. A number of "255" (or close to 255) means water is not in contact with the probe.
2. The ***right number*** represents what the TEMPERATURE-sensing probe reads. The table below is an approximate correlation between the value and the temperature the probe is sensing:
   a. A number less than "10" indicates that the probe is not properly connected to the board
   b. A number higher than "155" indicate a defective probe.)

Number (Right Side)	Approximate Water Temp.
≤ 10	Probe not connected
20	74ºF
25	83ºF
30	92ºF
↓	↓
120	181ºF
125	186ºF
130	191ºF
135	196ºF
140	201ºF
150	206ºF
≥ 155	Defective Probe

The message "Test Done" should be on the display. Press the POWER key to reset the controller. The controller should restart with the message "BLOOMFIELD" and date.

Testing Complete!

Fault Detection:

Software-level fault detection is performed using the temperature probe, and the water level sensor.

In the event of a fault, solenoid valves are closed, the heater triac is turned off, all LEDs flash, an error message is displayed and the system halts by entering Error Mode.

The system can be reset by removing the power to the system or by holding down the 8th (Left Stop Brew key) for 2 seconds.

These errors are monitored at all times:

1. Probe/Heater Error
   If the temperature of the water does not increase 4ºF in 4 minutes with the heater on, then either there is a probe and/ or heating element failure, or the water is boiling. In either case, the system halts with a "probe/heater err" message.

2. Maximum Temperature Reached
   If the temperature exceeds a limit, then an overheat error message is produced. This error can occur if the heater triac fails "on". The maximum temperature should be set in the menu system as to prevent boiling.

3. Water Level Sensor Timeout
   If the inflow valve is opened and water is not detected within 30 minutes, the message no water sensed is produced. This can be caused by level sensor failure or water inflow valve failure. After the tank is filled to full capacity, the time limit varies with the state of the outflow valves:
   a. Two sides brewing: 5 minutes
   b. One side brewing: 3 minutes
   c. No brewing being performed: 1 minute

4. Internal Component Fault
   The controller is also capable of verifying the proper functioning of internal components:
   a. "Keypad locked" message indicates that a key has been held down for an extended amount of time. This is perceived as a fault in the keypad controller.
   b. "Valve fault" message indicates that the valves are not responding properly.

Fault detection is performed at all times, except in Off mode.

IMPORTANT:
The boiling temperature of water will vary with altitude. See chart, page 11.

CFESA
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SERVICE TRAINING - QUALITY SERVICE

CUSTOMER SATISFACTION

BLOOMFIELD

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