



Model:

▶ **TBS-2121**



TBS-2121 Iced Tea Brewer



TBS-2121 Iced Tea Brewer with dual- 3 gallon slim dispensers

ITD-2135 3.5 gallon Dual Slim dispenser [3 gallon-in use] are available separatel

NOTICE TO INSTALLER: Please leave this User Guide with the brewer.



Table of Contents

Contact Information	2	Accessing batch and programming menu screens	8
Description & Features	2	Operating Instructions.....	10
Specifications.....	3	Programming- operator access programming.....	12
Requirements	3	Programming-category screens: Menu Tree.....	14
Weights Capacities and Measurements.....	3	Test, Calibration and Flow Rate adjustment.....	15
Electrical Configuration and Brewing Efficiency	3	List of Error codes for TBS-2121:	18
Installation.....	5	Optional tea dispenser instructions and cleaning.....	20
Final Setup.....	7	Parts diagrams, bill of materials lists	22
Three position brewbasket and touch screen display.	7	Wiring diagrams	26

FETCO®, LUXUS®, EXTRACTOR®, INTERMITTENT BREW, and Driven To Innovation™ are trademarks or trade names of Food Equipment Technologies Company.

Contact Information

FETCO®
Food Equipment Technologies Company
600 Rose Road
Lake Zurich • IL • 60047-0429 • USA

Phone: (800) 338-2699 (US & Canada)
(847) 719-3000
Fax: (847) 719-3001

Email: sales@fetco.com
techsupport@fetco.com

Internet: www.fetco.com

Description & Features

The TBS-2121 Iced Tea EXTRACTOR® series brewer features our universal spray over technology.

The following variables are programmed for each of nine menus (3 batches Left, Center, Right positions)

- ❖ Brew volume
- ❖ Brew time
- ❖ Adjustable number of pulses
- ❖ Dilution volume & time in cycle
- ❖ Prewet percent (Percentage of the brew volume)
- ❖ Prewet delay (The time between prewetting and the brew cycle.)
- ❖ Drip delay (The time between the end of the brew cycle to empty the brewbasket and end of the brewing cycle.)
- ❖ Expandable separately available base platform system

Using these variables, the software calculates how much water to use for prewetting, brewing, and dilution. The total brew time is divided into several cycles. Within these cycles, the software calculates how long to spray water over the tea, and how long to pause before the next cycle begins.

Features

- ❖ Touchscreen Operation
 - ❖ Recipe copy
 - ❖ Up to nine fully programmable menus/batch sizes
 - ❖ Color coded handle insert for brewbasket handle
 - ❖ Three position brewbasket/dispenser
 - ❖ Magnetic flux brew basket sensor
 - ❖ 7 pc Interchangeable brewbasket orifice set
 - ❖ Shipped ready to operate out of the box
 - ❖ Batch and dilution sizing for volume and ratio
 - ❖ Digitally adjustable brew mechanism
 - ❖ Customizable batch name
 - ❖ Brew at temperature protection
 - ❖ Totalizing counters for brewer functions
 - ❖ Cascading Spray Dome-no holes to clog
 - ❖ Save and load programs from SD cards
 - ❖ SD card firmware program and upgrade
-

Specifications

Requirements

- ❖ **Water Requirements:**
TBS-2121: 35-50 psig (241-345kPa) 1½gpm/(5.7lpm)
Factory calibrated for 45 psi water supply to inlet
- ❖ **Water inlet fitting** is a 1/4 inch male flare.
- ❖ **Brew Volume:** 3-5 gallon [3 gallon factory set]
- ❖ **Ratio:** TBS-2121 (user adjustable) factory setting automatically adds 2 gallons of cold water for a 1:2 ratio Iced Tea (one third hot / two thirds cold).
- ❖ **Water Supply Pressure:** Unit is factory calibrated to a stable, non-fluctuating water supply at 45 psi.
Unit may require calibration for other water pressures. See “Dill. Volume” setting in “PROGRAMMING” menu
- ❖ **Coffee Filter Size:**
15” X 5 ½” – standard FETCO # F001
- ❖ **Electrical:** See electrical configuration chart.
- ❖ **Temperature:**
200°F (93°C) inside water tank (at sea level)
195°F (91°C) ± 5° at sprayhead

Designs, materials, specifications, physical dimensions, firmware and software protocol for equipment or replacement parts are subject to change by FETCO without notice.

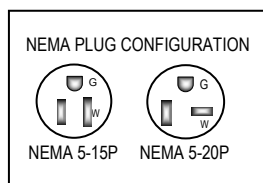
Weights Capacities and Measurements

Weights and Capacities & Measurements-TBS-2121—Without Sweetener Option								
Height	Width	Depth	Empty Weight	Filled Weight	Hot Water Tank Volume	Total Weight-Brewer & Filled Dispenser*	Shipping Weight	Shipping Dimensions
33 7/8 in 859mm	13.5 in 343mm	19 1/2 in 495mm	35 lbs 15.9 kg	43.7 lbs 24.6 kg	10.4 liter 2.75 gallon	77.8lb 40.3 kg	46 lbs 20.9 kg	24” x 15” x 38” 591 x 268 X 943mm

*Measurement made with a single ITD-2135 Iced Tea Dispenser

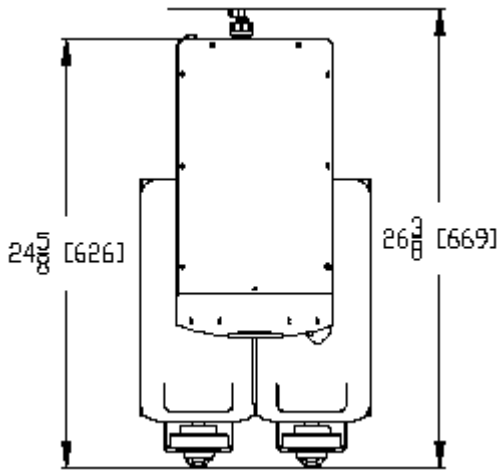
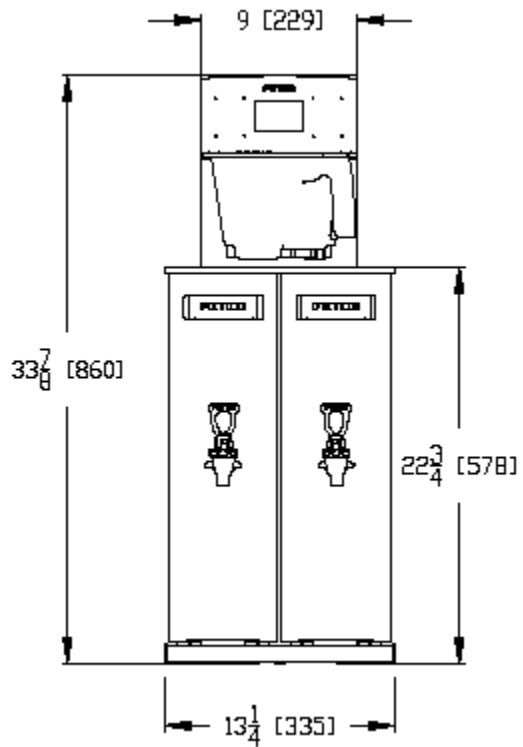
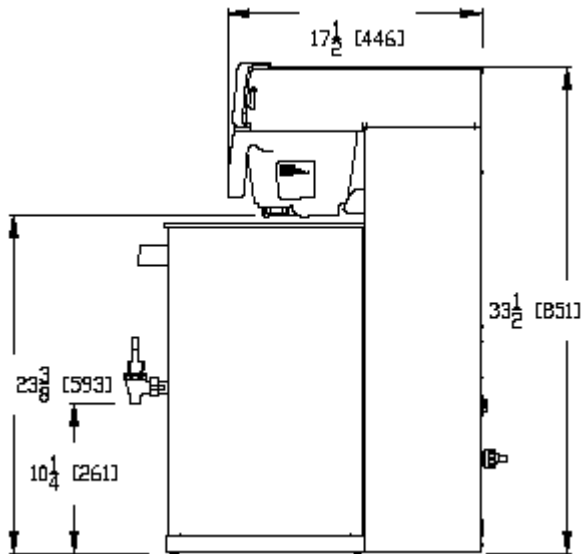
Electrical Configuration and Brewing Efficiency

Electrical Configurations TBS-2121-3 gallon brewer without Sweetener Option								
Configuration Code	Heater Configuration	Voltage	Phase	Wires	Electrical Connection US/Canada	KW	Maximum Amp Draw	Batches per Hour (3gal/11.4L per batch)
T212101	1 X 1680	120	1	2+G	NEMA 5-15P/5-20P-c	1.7	14	4



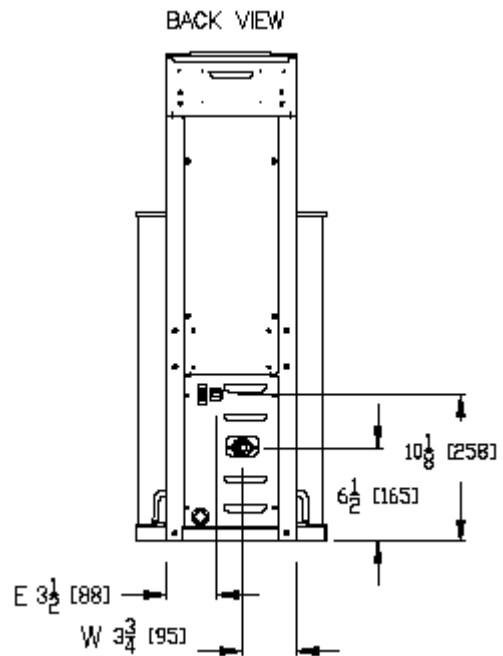
Designs, materials, specifications, physical dimensions, firmware and software protocol for equipment or replacement parts are subject to review and change by FETCO without notice

Dimensions & Utility Connections—Rough-in drawings



Rough-in TBS-2121

shown with two ITD-2135 3.5 gallon Dual Slim dispensers



Utility Connections—TBS-2121

Installation

(For Qualified Service Technicians Only)

Guide to A Successful Installation

If not installed correctly by qualified personnel, the brewer will not operate properly and damage may result. Damages resulting from improper installation are not covered by the warranty, and will void the warranty. Here are the key points to consider before installation:

Electrical:

- ❖ All FETCO brewers require an **electrical ground wire**. Installation without grounding is dangerous.
- ❖ Verify voltages, polarity, circuits, and circuit breaker access before attaching equipment.
- ❖ The electrical diagram is located in the Users Guide and online at www.fetco.com.
- ❖ 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.

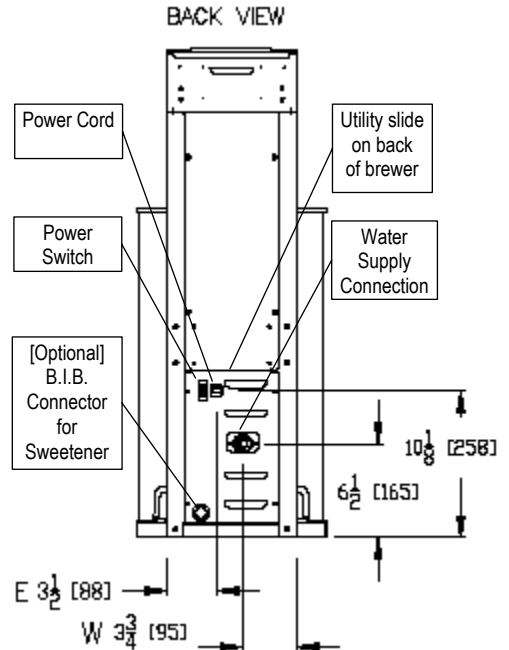
Plumbing:

- ❖ All installations must comply with applicable federal, state, or local plumbing codes.
- ❖ An inline water filter is highly recommended. It should be installed after a water shutoff valve and in a position to facilitate filter replacement.
- ❖ 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.
- ❖ Verify that the water line will provide a flow rate of $1\frac{1}{2}$ gpm/ (5.7lpm) per minute and water pressure is between 35-50 psig (241-345kPa) before making any connections. A pressure regulator may be required
- ❖ Install a backflow prevention device if required. Many municipalities require a recognized backflow preventer. Usable on all hot beverage and cold beverage equipment is a WATTS® SD-2 or SD-3. These 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.

General:

- ❖ Utilize only qualified beverage equipment service
- ❖ technicians for installation.

A Service Company Directory is available at www.fetco.com.



Installation Instructions

Brewer Setup

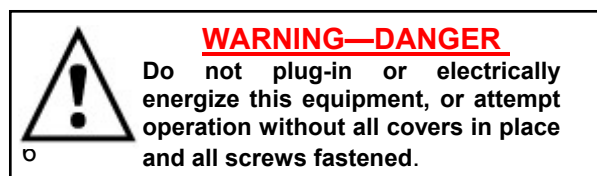
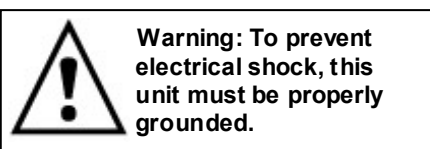
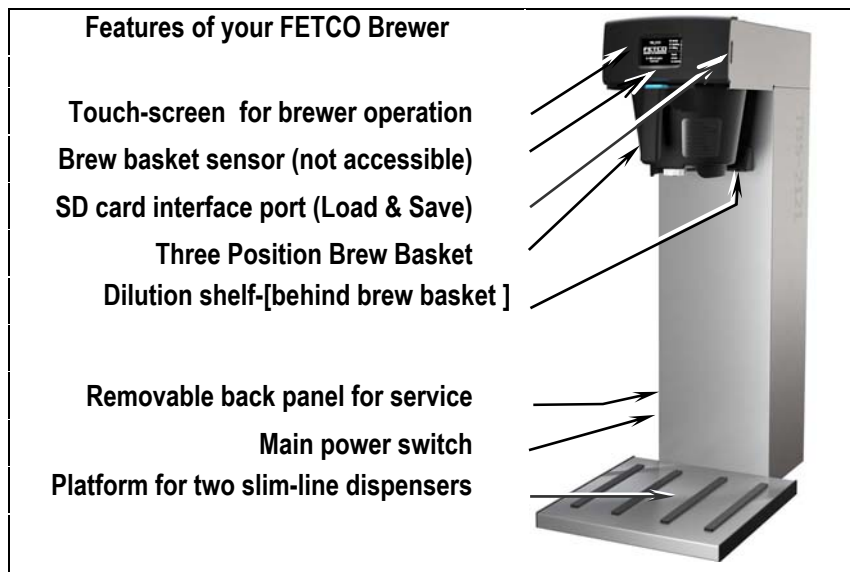
1. Review the dimensions for the unit and verify that it will fit properly in the space intended for it. Verify that the counter or table will support the total weight of the brewer and dispensers when filled (specifics-page 3). Allow a counter for a unit that is 19 ½ inches/495mm deep from front to the wall
2. Place the brewer on the counter or stand.
3. When the brewer is in position, level it front to back as well as side-to-side by adjusting the legs.
4. For Sweetener Delivery units, provide space near the TBS-2121 for the sweetener boxes

Water Connection

1. Water inlet is a ¼ inch male flare fitting.
2. Connect brewer to a cold water supply line only.
3. Install a water shut off valve near the brewer to facilitate service. An in-line water filter should be used, it should be installed after the water shut off valve and in a position to facilitate filter replacement.
4. Flush the water supply line and filter **before** connecting it to the brewer
5. Verify that the water line will provide at least 1½gpm (5.7lpm) per minute and also that the water pressure is between 35-50 psig (241-345kPa) before connecting it to the brewer.
6. Note that during use all water filters will clog and will slow the water flow. The reduced water flow affects the operation of the TBS-2121. Always schedule changing water filters per the manufactures specification.
7. Unit was calibrated to a stable, non-fluctuating water supply at 45 psi. Unit may require a pressure regulator OR calibration for other water pressures. See “Dill. Volume” setting in “PROGRAMMING” menu

Electrical Connection

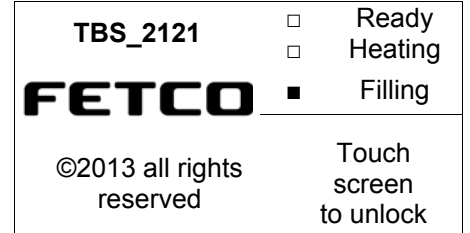
1. Verify that the actual voltage at the electrical service connection is compatible with the specifications on the brewer’s serial number label.
2. Plug in unit into an appropriate 120v circuit. Note that the plug is either a NEMA 5-15P or NEMA 5-20P. The NEMA 5-15P is for a minimum 15 amp circuit the NEMA 5-20P a minimum 20 amp circuit [USA].
3. The temperature and the fill level of the water tank are pre-set at the factory. There is no need to turn off the heaters during the installation process. The control board automatically disables the heaters until the tank is full of water. The heating process will start automatically when the tank has filled with water.



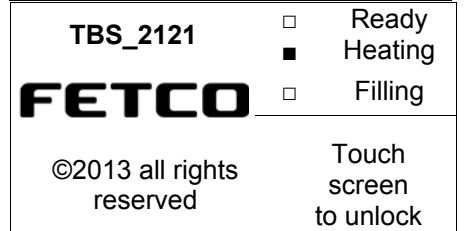
Final Setup

1. Turn on incoming water supply line and carefully inspect both inside and outside of the brewer for leaks in all fittings and tubes
2. Turn power on—by pressing the brewer’s main power switch (located on the lower right of the back of the equipment)
3. The water tank will begin filling. FETCO Home Screen #1 will read “FILLING”.
4. When the water level rises and is sensed by the probe at the top of the tank the heaters will activate
5. Heaters are automatically disabled until the tank is full.
6. While the water is heating Screen #2 “HEATING” will display and the actual water temperature will be displayed.
7. After the water has reached the set temperature Screen #3 will display “READY”
8. Review the Operating Instructions. Brew one full batch (water only) to confirm proper fill levels. The brewer is factory set with water only (no tea) to dispense the correct amount of water. If the actual volume is slightly different from the programmed volume, fine-tuning the brewer may be necessary.
9. Re-attach the covers after one final inspection for leaks. Look closely in the top of the brewer section at the dispense fittings during this inspection.
Danger: Do not operate without covers in place

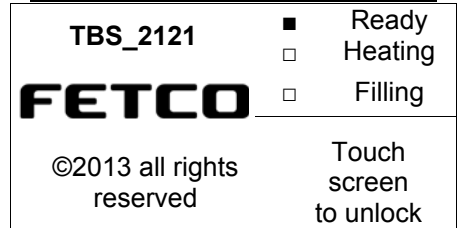
FETCO Home Screen #1 “FILLING”



FETCO Home Screen #2 “HEATING”



FETCO Home Screen #3 “READY”



Three position brewbasket and touch screen display.

Brewbasket handle—LEFT



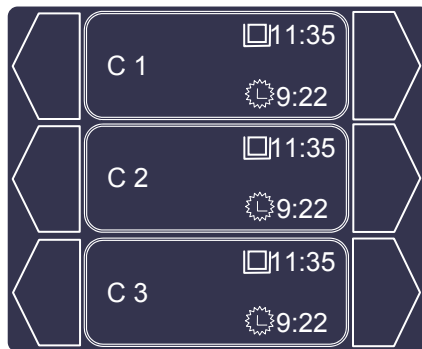
Brewbasket handle—CENTER



Brewbasket handle—RIGHT



Left screen, L1(top) is permanent



Center screen—recommended for 5 gal brews

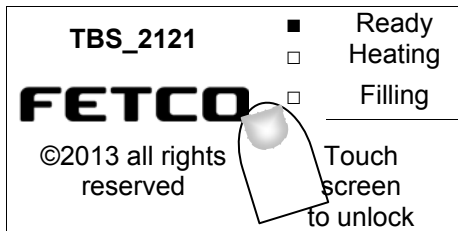


Right screen, R1(top) is permanent

- Position of the brewbasket handle activates left, right, or center menu screens for nine menu settings.
- L1 and R1 brew positions are permanent screen menu settings; all or any of the other seven can be deleted.
- We recommend the center menu screen for brewing into dispensers over 3.5 gallons.
- Only the center and right menu screen contains dialog and controls for the (optional) sweetener option..

Accessing batch and programming menu screens

Batch selection and brew operation menu screens



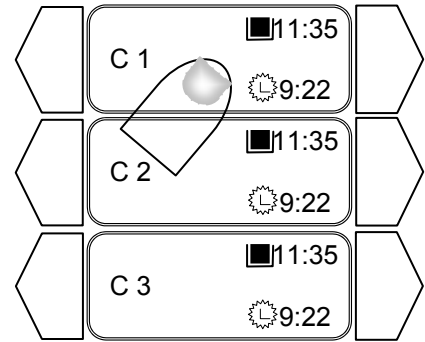
This screen displays when the TBS-2121 is in standby mode

FETCO home screen

← Tap FETCO HOME SCREEN to enter batch selection screen.

Align brewbasket handle to select, center position batches (center shown)→

Touch and hold activated top, middle or bottom (C1, C2, C3) recipe batch selector to begin brew.



Operation screens

Programming menu screens

To access programming

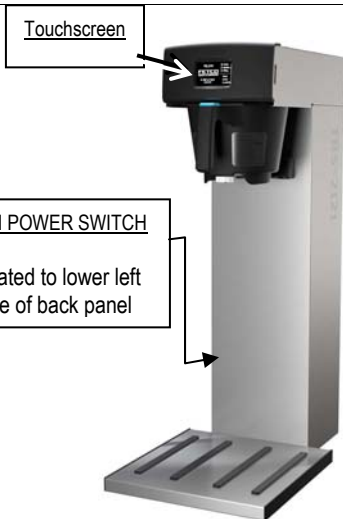
(Power off and power on the equipment-then touch and hold screen)

←Switch TBS-2121 power “OFF”

Turn main power switch to “ON”—The touch screen will illuminate.

Immediately touch and hold finger to enter programming

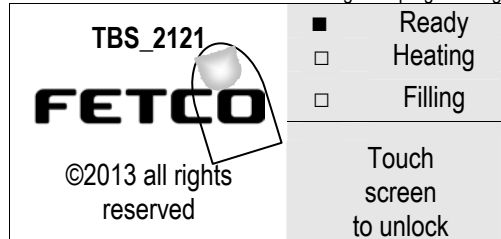
In 5-8 seconds “PROGRAMMING” screen will appear



MAIN POWER SWITCH

Located to lower left side of back panel

Illuminated touch screen-touch and hold finger for programming



Programming screen

-START→

PROGRAM

GENERAL

INPUTS

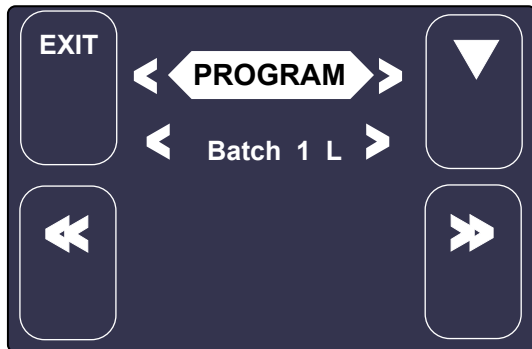
OUTPUTS

OTHER

Screen shows the “PROGRAM” Icon

In the position shown, the unit will access and display the recipe for batch Left-1 (the top touch screen pennant) By touching the right double arrows, the PROGRAM icon will scroll through the other control icons PROGRAM...GENERAL...INPUTS... OUTPUTS...OTHER.....

continued scrolling returns to “PROGRAM”.



Operator Training

Review the operating procedures for the brewer.

Pay particular attention to the following areas:

1. Always have an empty dispenser under the brewbasket
2. Don't remove the brew basket from a 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 1/2 cup/118cc discharging overnight is possible. Place an appropriate container under the 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.

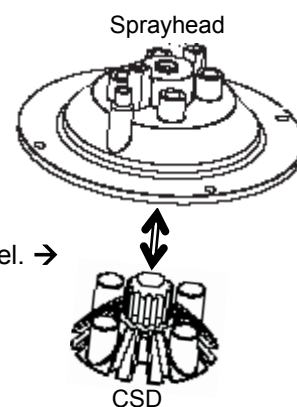
Cleaning & Maintenance

After Each Brew:

1. Dispose of used filter and rinse brew basket.
2. Never strike a brewbasket or hit it against a hard surface.
This will damage the brew cone, and may damage the brewbasket 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 surfaces to avoid scratches.
Never use abrasives, which 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

Safety notes

1. Professional installation is required. This appliance is manufactured and approved for commercial use only.
2. Operation 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. Do not attempt to move hot beverage equipment once it is filled. **IMPORTANT:** Drain equipment before moving. TBS-2121 Iced Tea brewers prepare 3-5 gallons/11.4-19 liters of tea in a single batch using very hot water. For safety, do not attempt to remove brew basket until the brew-dilution sequence is complete. .

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.

Operating Instructions

Quick brewer setup

NOTES

1) Install plumbing and electrical utilities.	-See Installation Section in this guide
2) Turn rear power switch "ON".	-Located on back, lower right side
3) <i>Brewer hot water tank will fill in 4-8 minutes.</i>	-Ready screen will display "FILLING"
4) Heater(s) activate when tank is full	-Ready screen will display "HEATING"
5) <i>Initial heating will be 15-30 minutes</i>	-Place dispenser(s) under brewbasket to collect any overflow and condensate
6) <i>Tank displays "READY" when filled & 200°F/93°C is reached</i>	
7) Brewer is ready to brew when "READY" is displayed	-Best results if brewer remains "ON"

Brewing

→To brew a single 3 gallon batch of iced tea, using default recipe

NOTES

FETCO TBS-2121 series equipment is factory calibrated and preloaded with nine recipes and is ready to brew.

1) Place paper filter in brew basket	-FETCO 15" X 5 ½ "product # F001
2) Add tea leaves (approximately 3oz per single 3 gallon brew batch)	-Weights given are only suggested
3) Insert loaded brewbasket into brewer rails and position handle	-Brewbasket(s) must be in place
4) Position brewbasket handle to the right	-Left, Center and Right hand position
5) Have empty dispenser under brewbasket	-Use the convenient locator guide
6) Tap "READY" screen to enter the batch selection menu	-A long duration "TAP" with fingertip
7) Touch a top batch key for "R1"	-Touch batch pennant with fingertip
8) Brewer will brew and display the icon for the function step it is in	-Icon may be toggled for information
9) Note there is a pause for dilution	
10) Batch will complete brewing in 5 ½ minutes	-Brew time: 4 minutes+1½ min. drip out

Touch the "Ready" screen anywhere briefly to activate

TBS_2121	■	Ready
	□	Heating
FETCO	□	Filling
©2013 all rights reserved		Touch screen to unlock

		R 1	□ 11:35
			⊙ 9:22
		R 2	□ 11:35
			⊙ 9:22
		R 3	□ 11:35
			⊙ 9:22

Touch and hold finger on selection pennant for about two seconds to start brew

- 1) TBS_2121 "READY" screen. This displays when in standby. 2) TBS_2121 "MENU" screen—right side (brewbasket is oriented right)
 Tap or touch "READY" screen to display menu screen Touch and hold batch pennant for about two seconds to start brew

Brewing-shown by touchscreen

- The FETCO TBS_2121 has three brew basket positions with three-brew batch menu screen per position.
- Each menu screen has three recipes preprogrammed with basic settings.
- There are two permanent batches Left top (L1) and Right to (R2); any or all of the remaining seven may be withdrawn
- Settings are adjustable and the names can be changed. -Batch L1 and R1 cannot be disabled.


Brewer screens displayed for brewing			
<p>Illuminated touch screen-touch and hold finger for programming</p>			
	<p>“READY SCREEN”</p> <p>Tap screen to display menus</p>		
	<p>Unit displays three preprogrammed batch buttons .</p> <p>Right side Shown</p>		
	<p>Select and hold one button for 2 seconds</p> <p>Illustration shows: Right Side, Button 1</p>		
	<p>Brew basket not in place.</p> <p>Note that there are three brewbasket positions: Left Center, and Right</p>		

Programming- operator access programming

Accessing programming category screens

To enter: Turn unit "OFF". After 10 second delay, turn unit "ON",
Home Screen will appear →
Immediately place finger on right side-(grey) of screen and "HOLD"
PROGRAM Screen (first below) will appear.
Use right/left and down arrows to travel through programming.
"EXIT" saves settings

TBS 2121



©2013 all rights reserved

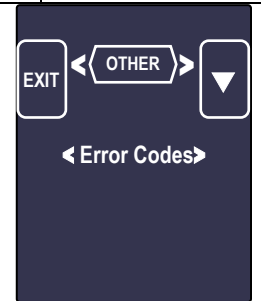
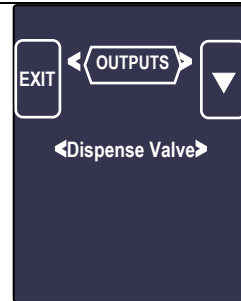
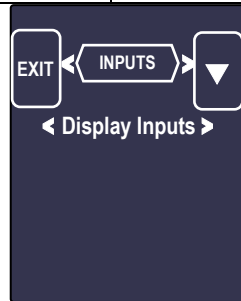
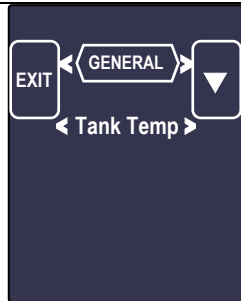
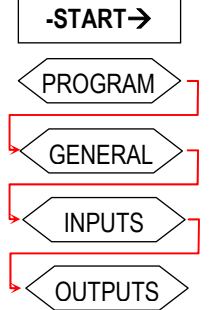
- Ready
- Heating
- Filling

Touch screen to unlock

Top line (PROGRAM) is programming category →

Second line (Batch 1L) displays items for programming →

Right and left hand arrows will scroll to the screens that display "Program, General, Inputs, Outputs and Other".
Down arrow enters the individual programming items shown below



Programming Category	Programming Category	Programming Category	Programming Category	Programming Category
PROGRAM	GENERAL	INPUTS	OUTPUTS	OTHER
Items for Programming	Items for Programming	Items for Programming	Items for Programming	Items for Programming
Batch 1 L	Tank Temp	Display Inputs	Dispense Valve	Error Codes
Batch 2 L	Brew At Temp	Cal. Touch Screen	Left Dilution	Copy Program
Batch 3 L	Time/Date		R. Dilution	Upload Logo
Batch 1 C	Unit of Meas.		Sweetener	Reset to Fact.
Batch 2 C	Logo Timeout		Fill Valve	Counters
Batch 3 C	Service Tel		Heater	Firmware
Batch 1 R			Buzzer	
Batch 2 R			Screen	
Batch 3R				
Batch Copy				

PROGRAM	Programming Items	Factory set Default	Programming Range	Notes
Batch 1 L*	• Batch Summary	Display Summary		
	• Batch Name	L: 1	Choose from list: L 1	(Regular 1-16) -OR- Write: any name
	• Extract Vol.	3.80 liter [0.40-11.35]	3.80 liter ----- 0.40 11.35	Volume of HOT tea for dilution with cold [1:2]
	• Dill. Volume	7.60 liter	7.60 liter ----- 0:00 15:15	Volume of COLD water to add to hot brew
	• Dill. Sequence	After Brew	After Brew ----- Before During After	To select when to add the cold dilution water
	• Dill. Delay	1:00 mm:ss	1:00 mm:ss ----- 0:00 12:00	Option to manually add ingredients to hot brew [cane sugar, flavoring syrup]
	• Prewet Perc.	0%	0 % ----- 0 15	
	• Brew Time	6:00 mm:ss	6:00 mm:ss ----- 1:00 12:00	
	• Nr Of Pulses	4	4 ----- 1 30	
	• Drip Delay	1:30 mm:ss	1:30 mm:ss ----- 0:30 10:00	
Notice→	*Batch 1-Left and Batch 1-Right are mandatory and are always permanently selected Batch 1-Center and Batches 2-3 [Left, Center, and Right] may each be selectively hidden			
Batch 2 L**	• Batch ON/OFF	ON	ON ----- ON OFF	
	• Batch Summary	Display Summary		
	• Batch Name	L: 1	Choose from list: L 1	(Regular 1-16) -OR- Write: any name
	• Extract Vol.	3.80 liter [0.40-11.35]	3.80 liter ----- 0.40 11.35	Volume of HOT tea for dilution with cold [1:2]
	• Dill. Volume	7.60 liter	7.60 liter ----- 0:00 15:15	Volume of COLD water to add to hot brew
	• Dill. Sequence	After Brew	After Brew ----- Before During After	To select when to add the cold dilution water
	• Dill. Delay	1:00 mm:ss	1:00 mm:ss ----- 0:00 12:00	Option to manually add ingredients to hot brew [cane sugar, flavoring syrup]
	• Prewet Perc.	0%	0 % ----- 0 15	
	• Brew Time	6:00 mm:ss	6:00 mm:ss ----- 1:00 12:00	
	• Nr Of Pulses	4	4 ----- 1 30	
	• Drip Delay	1:30 mm:ss	1:30 mm:ss ----- 0:30 10:00	
Batch Copy	Copy From Batch	L1	L1-L4;R1-R4	
	Copy To Batch	L1	L1-L4;R1-R4	
	Copy?	L1→L2? (example)	NO ----- YES NO	
Batch 3 Left **	<i>(See Batch 2-L)</i>			
Batch 1 Center **	<i>(See Batch 2-L)</i>			
Batch 2 Center **	<i>(See Batch 2-L)</i>			
Batch 3 Center **	<i>(See Batch 2-L)</i>			
Batch 1 Right *	(See Batch 1-L)			
Batch 2 Right **	<i>(See Batch 2-L)</i>			
Batch 3 Right **	<i>(See Batch 2-L)</i>			
*Batch 1L & 1R are mandatory for display and cannot be disabled. 13 *Batch can be disabled ["hidden"], and removed from display				

Programming-category screens: Menu Tree

Menu Features: Batch Parameters

GENERAL	Programming Items	Factory set Default	Programming Range (display)	Notes
Tank Temp.		200°F		Correction for high altitude below
Brew at Temp.	“OFF” allows brewing at any temperature.	AUTO		SEE NOTE BELOW!
Time/Date	Your current time and date	CST	Set time HH:MM Set date Y/mm/DD	
Units of Meas.	• Temperature	°F		
	• Volume	Liters		
Logo Timeout		1:00 mm:ss		
Service Tel.	Has FETCO # as default	Choose from list	Write: (800) 338-2699	Can enter any number

INPUTS	Programming Items	Factory set Default	Programming Range (display)	Notes
Display Inputs	• Input Summary		(L) Brew Basket Sensor <input type="checkbox"/> (C) Brew Basket Sensor <input checked="" type="checkbox"/> (R) Brew Basket Sensor <input type="checkbox"/> L.Level Sensor <input checked="" type="checkbox"/> Temperature Probe <input type="checkbox"/>	For verifying brewbasket sensor-Center position sensed Water probe in hot water tank and temperature probe
Cal. Touch Scr		Calibrate	Calibrate 	If <u>Yes</u> : Follow directions on the touch screen

Altitude (ft.)	Suggested Setting(°F)	Boiling point (° F)
0	200	212.0
500	200	211.1
1000	200	210.2
2000	200	208.4
2500	200	207.5
3000	200	206.6
3500	197	205.7
4000	195	204.8
4500	194	203.9
5000	194	203.0
5500	193	202.0
6000	192	201.1
6500	191	200.2
7000	190	199.3
7500	188	198.3
8000	187	197.4

BREW AT TEMPERATURE DEFINITONS

BREW AT TEMP: AUTO
(DEFAULT: FACTORY PROGRAMMED INTO BREWER)
 This allows the “BREW START” to active. If the hot water tank is at the selected temperature—the brew will start. If the temperature is too low, the brewer will wait until the proper temperature is reached. A screen (example to the right) will display showing a thermometer icon and the tank temperature.
IMPORTANT: ALWAYS have dispenser(s) under the brew baskets when in the BREW AT TEMP mode.

BREW AT TEMP: ON **USER SELECTABLE**
 “BREW START” Batch Section Buttons will not be accessible until tank temperature is at set point. The “BREW START” screens with the Batch Section Buttons become accessible when hot water tank is at the selected temperature. The screen at right displays when the “BREW AT TEMP” is selected.

BREW AT TEMP: OFF **USER SELECTABLE**
 Allows brewing at any temperature above 179°F/82°C. (Not recommended)

R1

11:35
 9:22
 F° 200

STOP

TBS_2121 Ready
 Heating
FETCO Filling

©2013 all rights reserved

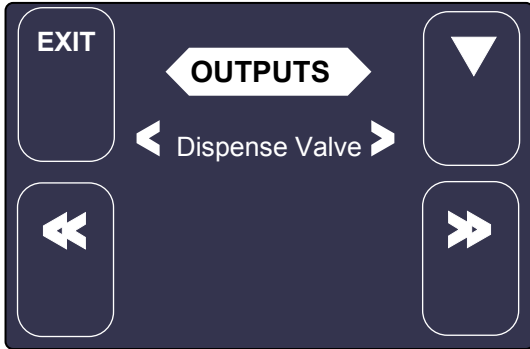
Touch screen to unlock

OUTPUTS	Programming Items	Factory set Default	Programming Range (display)	Notes
Dispense Valve	• D. Valve Test	(Press to test)	TEST Press To Test <input type="checkbox"/>	Opens valve to verify flow. Have container under brewbasket!
	• Valve Calib.* <i>See note</i>	< OUTPUTS > <Dispense Valve> < Valve Test > TEST	Scroll (left or right) from <TEST> position to <Valve Calib.>	See box below to readjust flow rate
Left Dilution	• L. Dill. Test	(Press to test)	TEST Press To Test <input type="checkbox"/>	Runs left dilution to verify flow. Have container under brewbasket!
Right Dilution	• R. Dill. Test	(Press to test)	TEST Press To Test <input type="checkbox"/>	Runs right dilution to verify flow. Have container under brewbasket!
Sweetener	• Sweet Test	(Press to test)	TEST Press To Test <input type="checkbox"/>	Runs sweetener pump to verify flow. Have container under brewbasket!
Fill Valve	• Fill Valve Test	(Press to test)	TEST Press To Test <input type="checkbox"/>	Operates fill valve. Have container under both brewbaskets!
Buzzer		(Press to test)	TEST Press To Test <input type="checkbox"/>	Sounds buzzer
Heater	• Heater Test	(Press to test)	TEST Press To Test <input type="checkbox"/>	Energizes Heater(s) Use for servicing.
Screen	• Screen Contrast	Contrast	8 ----- 1 10	
	• S. Brightness	Brightness	8 ----- 1 10	

**note* The same TEST/CALIBRATION sequence is used for test and calibration all water handling system components Dispense Valve, Left Dilution, Right Dilution, Sweetener. Always obtain an accurate one minute Test Volume to calibrate

Test, Calibration and Flow Rate adjustment

Calibration: Dispense Valve, Left Dilution, Right Dilution, Sweetener	
1) Place measuring container under brewer	Use a container that will make careful measurements of volume. Pre-weigh (TARE) a dispenser (preferred) or use an accurate graduated pitcher
2) Enter "Outputs" in "Programming"	See page 12, Programming- operator access programming
3) Press and hold the "TEST" button. Do not remove finger! (This will stop testing).	The maximum dispense time cycle is only one minute for "TEST" button. . The test must run for entire one-minute dispensing cycle without interruption. Test will stop automatically.
4) TEST icon will turn dark Shows test is completed	IMPORTANT! Complete entire calibration dispense without stopping
5) Note volume	Obtain volume dispensed Metric Units: milliliters if set for metric units Gallons: Enter <u>proportional volume</u> of one gallon if set for gallon units To obtain proportional volume Divide ounces delivered by 128 (EX: 32 oz/128=0.25)
6) Enter Calibration screen	Scroll from dilution and valve test to Calibrate in Programming OUTPUTS Menu
7) Enter Calibration calculator	Scroll down to CALIBRATE—sliding virtual volume icon will appear
8) Enter volume from test	Enter volume in milliliters or gallons obtained from one minute "ON" testing

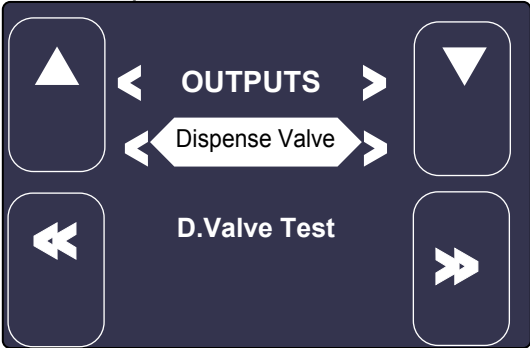


EXAMPLE: Calibrate DISPENSE VALVE

Note: TBS-2121 default units are liters/ml.
Display may be changed by user to gallons units.

- 1) Enter Programming menu.
See page 12, Programming-Operator Access Programming

Scroll to "Outputs" in "Programming"

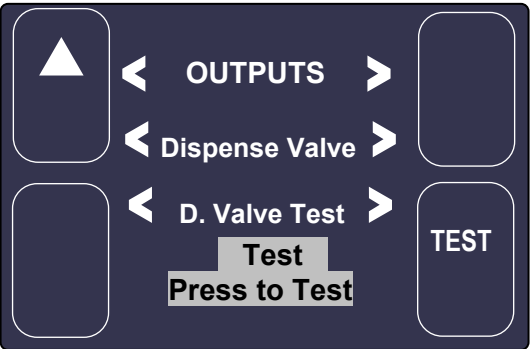


- 2) Scroll down to: "Dispense Valve"

(In this programming position, the following areas may also be programmed: *Dispense Valve, , Fill Valve, Buzzer, Heater, and Screen*)
To access these: with the 2nd level highlighted as shown—scroll through the positions with the right and left arrows.

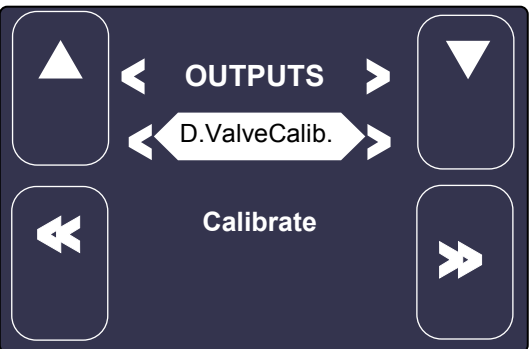
Scroll down to: "D.Valve Test"

(In this programming position, the following areas may also be programmed: Dispense Valve Calibration)

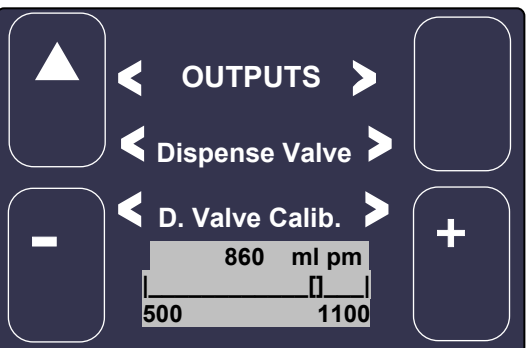


- 3) Have a measuring container under brewer
Press "TEST" icon and hold finger for one minute.
Test will automatically stop. The "TEST" icon will turn dark, and become inactive when a correct one-minute test is made.

Carefully measure the volume of water dispensed
NOTE: accurate flow rate can only be determined if test is made for the preset one minute cycle.



- 4) Scroll left or right in 2nd position to "D.Valve Calib."
Scroll down to "Calibrate"




- 5) Using the + and - icons enter the volume of water dispensed in #3.
Scroll up, Save, and Exit. [EXIT readjusts programming]

The TBS-2121 automatically readjusts the flow rate of the dispense valve (or Left Dilution, Right Dilution, Sweetener if selected)

OTHER	Programming Items	Factory set Default	Programming Range (display)	Notes
Error Codes	• Display Errors	(Codes)	1: 2: 3:	Chart is below
	• Reset Errors	(Reset)	Reset ----- YES NO	!!Errors must be corrected and cleared!!
Copy Program	• From SD to B.	SD→ Brewer	SD→ Brewer ----- YES NO	Setup upload ----- Please insert SD card with the setup data!
	• From B to SD	Brewer→ SD	Brewer→ SD ----- YES NO	Setup download ----- Please insert SD card with sufficient space (≥2GB)
Upload Logo		Upload Logo	UPLOAD LOGO Are you sure ----- YES NO	Please insert SD card with logo file!
Res to Factory		Reset to default	Reset to Default Are you sure ----- YES NO	Completely overwrites all user setup, incl. user logo.
Counters	• Display Counters -OR- • Reset Counters	Counters Display Total Counters	All Counters L. Brews 0 L. Brew Act. 0 Left Brew [L.] 0 Left Dilution Act. 0 Left Dilution [L.] 0 Right Brews 0 Right Brew Act. 0 Right Brews [L.] 0 Right Dilution Act. 0 Right Dilution [L.] 0 Center Brews 0 C. Brew Act. 0 C. Brew [L.] 0 Sweetener Act. 0 Fill valve Act. Fill Valve [L.] Heater Act. Heater "on" time Touch To Return	Resetting will restart counter from zero
	• Reset Counters	Reset All Counters	Reset All Counters Are you sure ----- YES NO	
Firmware	• Firmware Version -Software type	Firmware Version	SW ver. 1.0.2A HW ver BL ver.1.0.1 QP ver. 4.5.01	Displays firmware version
	• Update Firmware	UPDATE	UPDATE ----- YES NO	Firmware upload ----- Please insert SD card with the firmware file!

List of Error codes for TBS-2121:

Code	Description	Possible Cause	Corrective Action	How to Clear Error Codes
050	Shorted temperature probe	Probe failure.	Replace probe. Check tank	<p>TO CLEAR FAULT, make repairs as required</p> <p>Below is the only way to clear error codes</p> <p>1) Enter "PROGRAMMING"</p> <p>2) Scroll left to "OTHER"</p> <p>3) Scroll down to "ERROR CODES"</p> <p>4) Scroll down to "Display Errors"</p> <p>5) Scroll left to "Reset Errors"</p> <p>6) Scroll down to "Reset"</p> <p>7) Follow directions shown on screen.</p> <p> Toggling ON/OFF switch <u>will not</u> clear error codes.</p> <p>Error codes must be cleared!</p>
051	Open temperature probe.	Bad probe connection, or probe failure.	Check all connections. [tank] Replace probe if necessary.	
100	Initial Fill Error. Initial fill time was more than 4 minutes after power up.	Water supply flow rate is too low.	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter...)	
101	Error on refill Tank did not refill within 1 minute.	Water supply flow rate is too low.	Watch for short potting during brew cycle. Investigate cause of low flow rate. (Clogged water filter...)	
102	Unwanted fill;	Possible leak in tank, fitting, or valve.	Check inside of machine for leaks.	
103	Liquid level probe fault	Probe fouled or shorts	Clean, check all connections. Replace probe if necessary.	
201	Heater open, high limit thermostat, or Solid State Relay (SSR) fault-(if temperature does not rise at least 2 Celsius within 20 minutes - probably heater circuit is open)	SSR, High Limit, or heating element failure.	Check and replace heating elements if necessary.	
255	Touch screen error	(if touch screen is pressed more than 2 minutes continuously)		
1	Internal error	- (problems with PCB, CRC of firmware or setup data, some software errors, assert, etc)		
		Brewbasket must be in place	Insert brewbasket	

Designs, materials, specifications, physical dimensions, firmware and software protocol for equipment or replacement parts are subject to review and change by FETCO without notice

Instructions for use

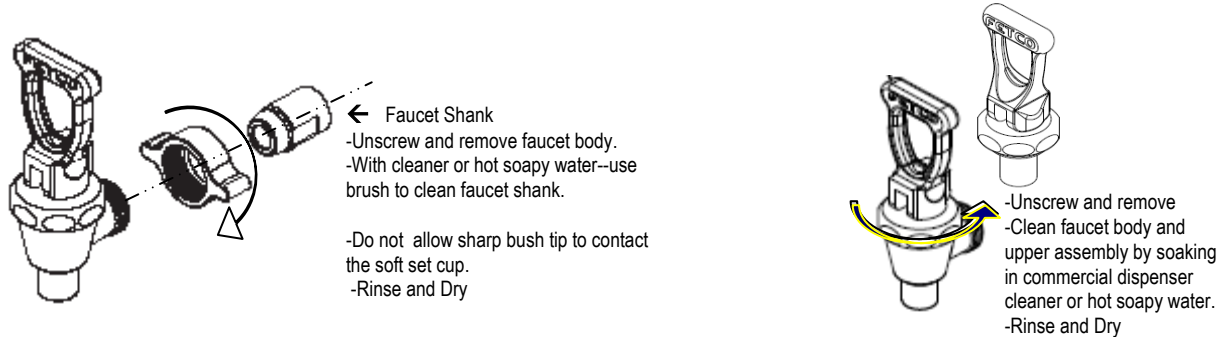
- Remove dispenser cover before brewing, replace cover after brew is complete
- To prevent overflow, make sure the dispenser is completely empty before brewing into it.
- Discard old tea often during the day and make a fresh batch
- Never keep tea overnight in this or any dispenser.
- Use only the handles to lift or carry the dispenser

Cleaning Instructions

Do not use bleach or cleaners containing chlorides.
Use any commercial beverage urn cleaner to clean the inside of the dispenser.
Follow the cleaner manufacturer’s instructions.
Thoroughly rinse the dispenser after cleaning.

Remove faucet body from shank by unscrewing plastic wing nut as shown
Disassemble upper assembly and remove the faucet upper assembly as shown
Inspect the seat cup for wear. Clean or replace if necessary.
Wash plastic parts with cleaning brush and dish detergent. Avoid abrasives

To sanitize the dispenser before filling, brew a batch of water only (no tea) into the dispenser allow it to rest for 10 minutes-and drain. Repeat daily, or as needed.

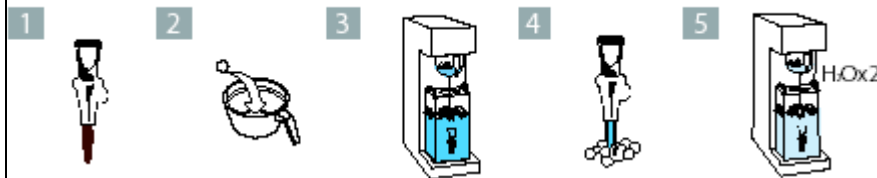


We recommend Urnex Tabz™ Tea Clean for use on FETCO® tea brewing equipment

- Specifically formulated for the removal of tea stains from tea brewing equipment.
- Daily cleaning of Iced Tea Dispensers ensures fresh tasting iced tea and properly maintained equipment.
- Cleans brew basket and serving vessel in one simple step
- Sanitizes all types of tea ware for bright and sparkling flavor of brewed tea

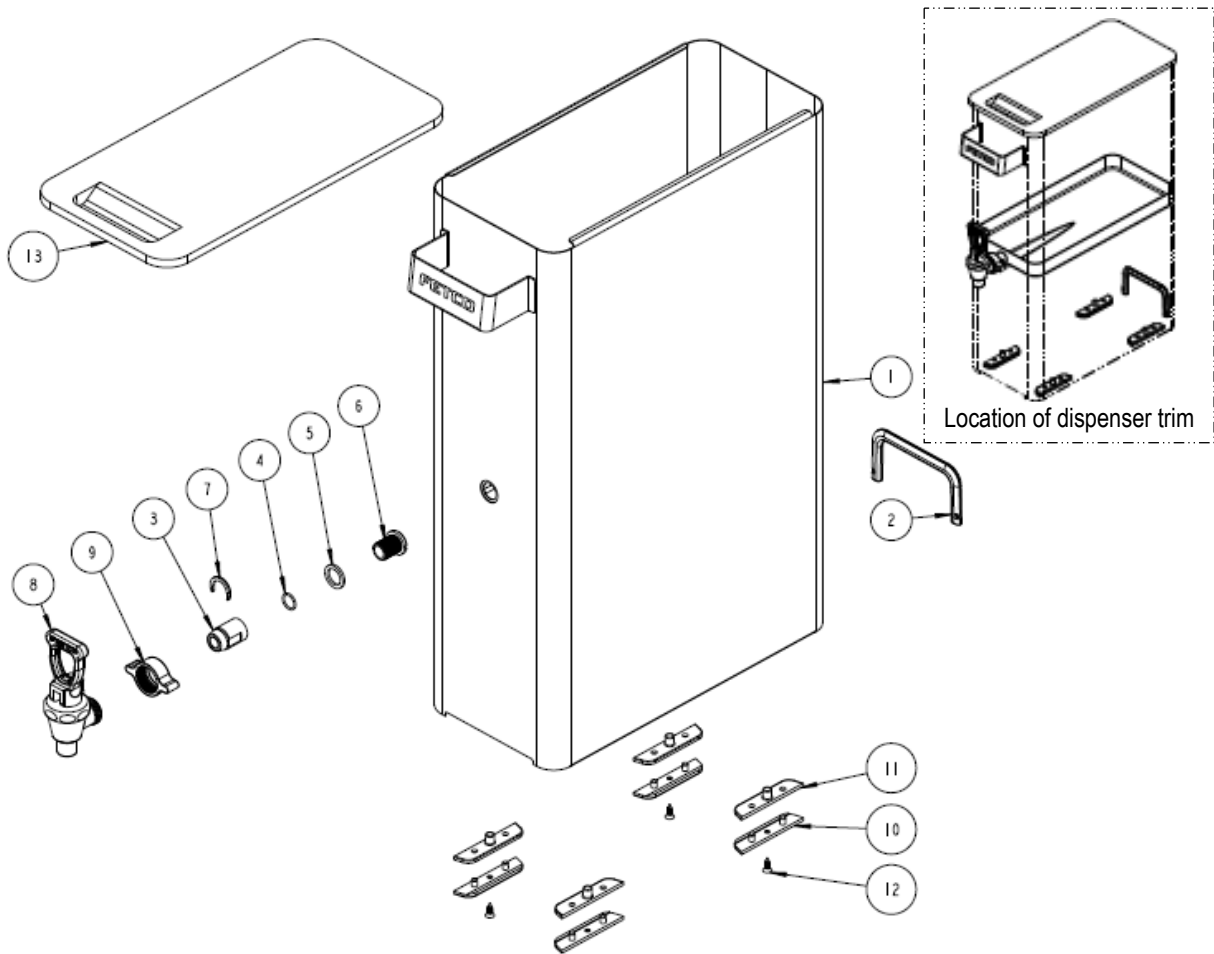
INSTRUCTIONS FOR DAILY USE:

Simple directions to use Urnex Tabz™



- 1 Drain all product from dispenser
- 2 Place four tablets in center of brew basket
- 3 Run brew cycle into server and hold.
- 4 Discard solution and remove any residue.
- 5 Rinse all parts with clean water. REPEAT

Optional tea dispenser instructions and cleaning



Drawing number 1102.00193.00

FETCO ITD-2135 3 gallon Ice Tea Dispenser			Product D-064
Ref.	QTY	PART NO	DESCRIPTION
1	1	1111.00034.00	WELDMNT, DISPENSER 3.5GAL, TBS-2121
2	1	1023.00187.00	PROTECTOR, BACK POCKET, TBS DISP.
3	1	1012.00005.00	SHANK, TEA DISPENSER FAUCET
4	1	1024.00061.00	O_RING SHANK 1/2 ID X 5/8 OD, TBS DISP.
5	1	1023.00186.00	GASKET, TEA CONTAINER FAUCET SHANK
6	1	1013.00078.00	SCREW, SHANK TEA DISPENSER
7	1	1071.00045.00	C - RING FOR TEA FAUCET
8	1	1071.00047.00	FAUCET, TEA DISPENSER
9	1	1071.00046.00	PLASTIC WING NUT
10	4	1023.00175.00	BUMPER DISPENSER 2A
11	4	1023.00174.00	BUMPER DISPENSER 2B
12	4	1082.00075.00	SCREW, #8 X 1/2", FLAT HD, PH, SHEET METAL
13	1	1023.00178.00	DISPENSER COVER, TBS-2121
NOT SHOWN	1	1074.00005.00	CLEANING BRUSH--Ice Tea Dispenser

Designs, materials, specifications, physical dimensions, firmware and software protocol for equipment or replacement parts are subject to change by FETCO without notice

FETCO® TBS-2121

Iced Tea Brewing System

With Sweetener Delivery

Complete Commercial Parts Listing

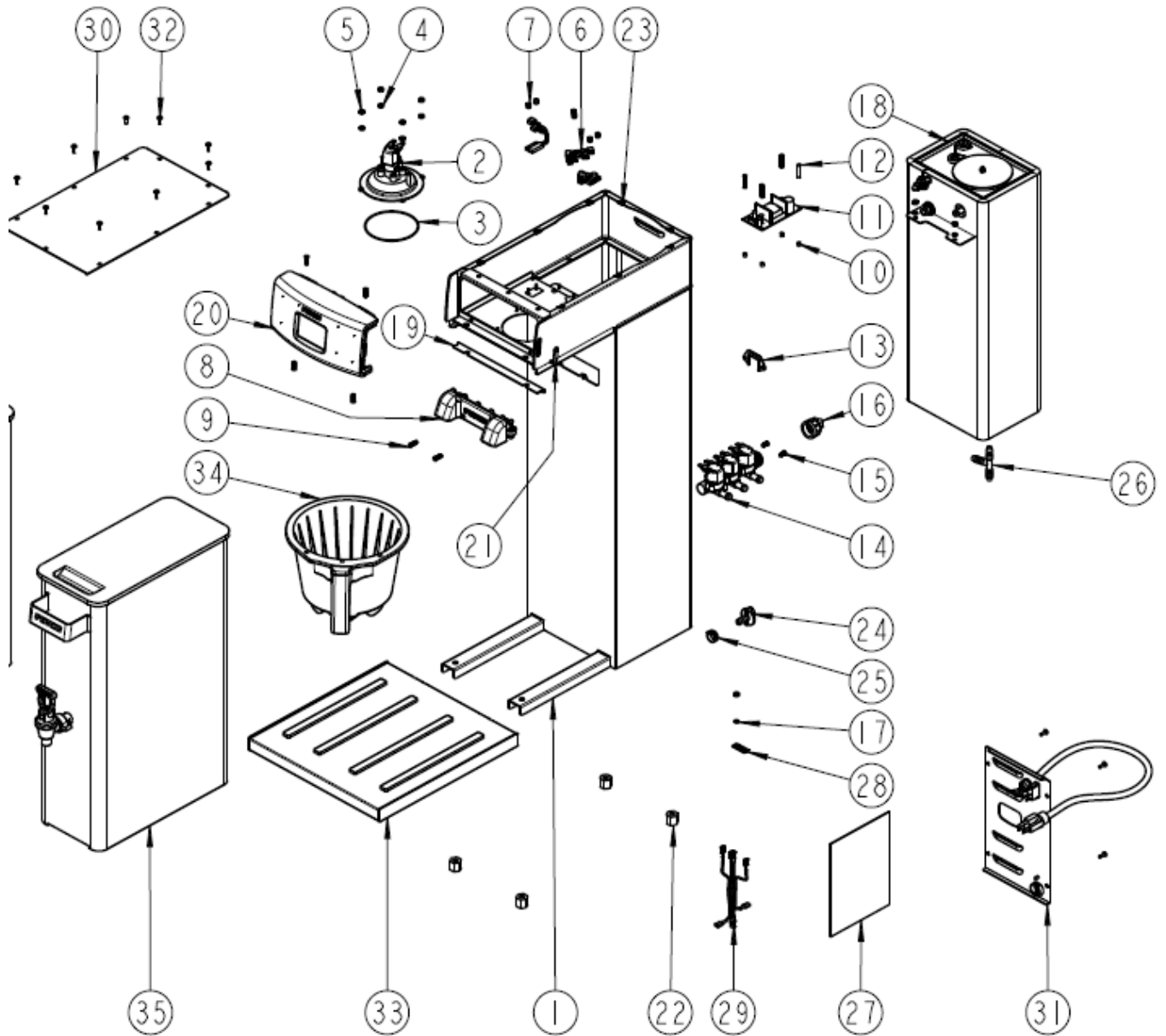
For FETCO® TBS-2121 and FETCO® TBS-2121-s Model Range

NEW June 2013

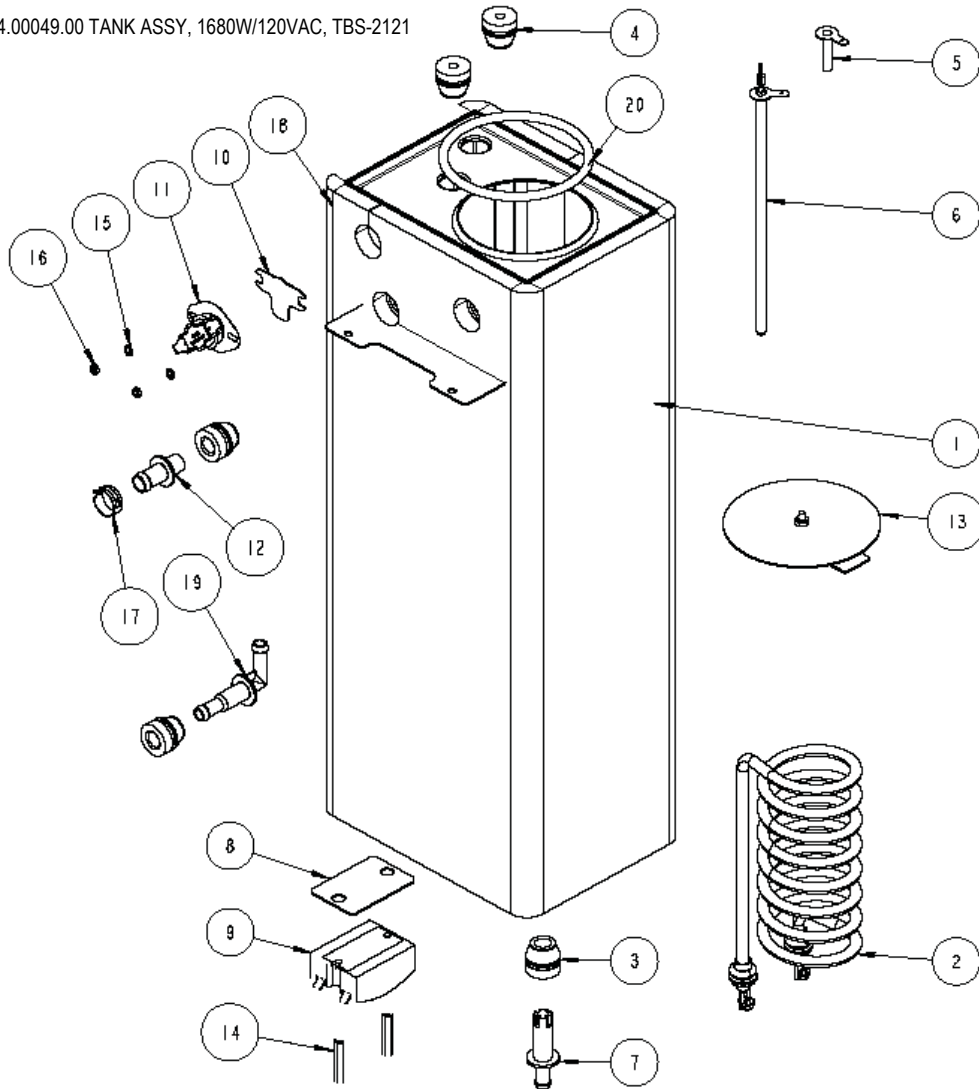
Please see our website-www.fetco.com for the most up to date listings and additional parts and service information

Parts diagrams, bill of materials lists

Drawing 1101.00142.00 TBS-2121 Assembly-No Sweetener



Drawing 1101.00142.00 TBS-2121 ASSEMBLY, NO SWEETENER, 1680 kW/120VAC			
Ref#	Qty	Part number	Description
1	1	1111.00033.00	WELDMENT, BODY TBS-2121
2	1	1102.00203.00	ASSEMBLY, SPRAY HOUSING, TBS-2121
3	1	1024.00017.00	O'RING, 3.739" ID X 0.070" CS, 70 DURO, BUNA
4	4	1083.00010.00	WASHER, #10 SCREW W/NEOPRENE-BONDED SEAL
5	7	1084.00006.00	NUT, 8-32 18-8 HEX MACHINE SCREW
6	3	1102.00113.00	SWITCH, REED, ASSEMBLY
7	6	1029.00006.00	#4-40 NYLON FINGER NUT
8	1	1102.00196.00	Faucet Dilution Assembly, TBS-2121
9	6	1082.00058.00	SCREW, # 8-32 X 5/8, FLAT HD, PH, 18-8 SS
10	4	1081.00006.00	SPACER, 6MM OD x 3.2MM ID x 5MM LG, Z/P
11	1	1052.00001.00	POWER SUPPLY, 90-264VAC/24VDC, 1.8A
12	4	1029.00012.00	SPACER, .25" HEX X 1" LG, FEM #4-40 THREAD
13	1	1074.00004.00	BRACKET FOR RPE VAVLE #1057.00048.00
14	1	1057.00048.00	VALVE, TRIPLE, RPE
15	2	1082.00010.00	SCREW, M4x10 ZINC PLATED PAN PHILLIPS MACHINE
16	1	1102.00164.00	ADAPTER ASSY, 3/4" BSP X 1/4 SAE FLARE
17	3	1083.00011.00	WASHER, #8 SCREW SIZE, INTERNAL TOOTH LOCK
18	1	1104.00049.00	TANK ASSEMBLY, 1680W/120VAC, TBS-2121
19	1	1024.00059.00	GASKET FRONT 4A
20	1	1102.00201.00	ASSEMBLY, FRONT PANEL, TBS-2121
21	1	1024.00040.00	CARD PLUG, HWD-2100
22	4	1021.00018.00	LEG, TBS 2121
23	2	1084.00024.00	NUT, CLIP ON (J-NUT), #6-32, 18 -16 GA., BLACK-
24	1	1023.00147.00	PLUG, TANK SERVICE DRAIN FOR 18GA AND UP BODY
25	1	1086.00003.00	UNICLAMP, 15.9 HOSE OD CLAMP
26	1	1029.00002.00	FITTING, HOSE BARB TEE, SIZE 3/8" , NYLON
27	1	1401.00047.00	WIRING, TBS-2121, L1, N+GND, 1 HEATER
28	1	1044.00003.00	LABEL, GROUND
29	1	1402.00036.00	ELECTRICAL HARNESS, TBS-2121
30	1	1001.00103.00	TOP COVER, TBS-2121
31	1	1102.00199.00	ASSEMBLY, BACK COVER TBS-2121
32	13	1082.00017.00	SCREW, # 6-32 X 1/2" TRUSS HD PHIL., MACHINE
33	1	1102.00197.00	ASSEMBLY, BASE DISPENSER, TBS-2121
34	1	B013000B2	BREW BASKET ASSEMBLY, TBS-2121, BLUE HANDLE
35	2	1102.00193.00	ASSEMBLY, TEA DISPENSER 3.5 GAL
	1	1025.00071.00	TUBE, 9/16"OD X 5/16"ID X 16.75"LG
	1	1025.00070.00	TUBE, 9/16"OD X 5/16"ID X 8.25"LG
	2	1025.00068.00	TUBE, 9/16"OD X 5/16"ID X 21.75"LG
	2	1025.00067.00	TUBE, 9/16"OD X 5/16"ID X 1.25"LG
	1	1025.00061.00	TUBE, 9/16"OD X 5/16"ID X 2.75"LG
	1	1025.00051.00	TUBE, 5/8"OD X 3/8"ID X 6.44"LG
	1	1025.00006.00	TUBE, VENT SUPPORT, 5/16"OD X 3/16"X 0.5"LG
		1000.00090.00	KIT, LIQUID SWEETENER INFUSION PUMP, TBS-2121

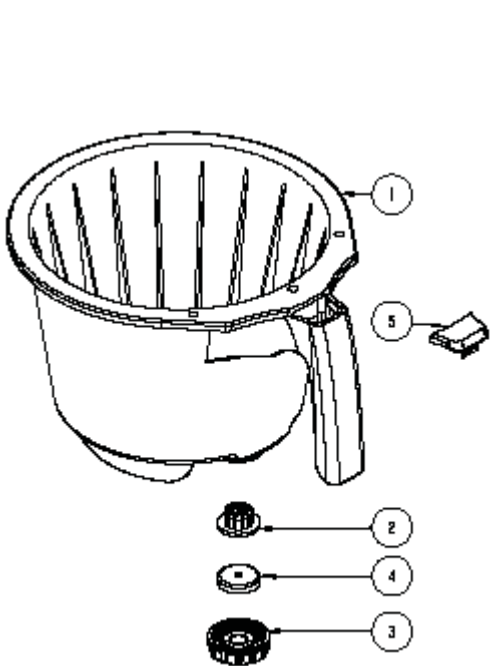


Drawing 1104.00049.00 TANK ASSY, 1680W/120VAC, TBS-2121			
Ref#	QTY	PART NO	DESCRIPTION
1	1	1114.00079.00	WELDMENT, TANK, TBS-2121
2	1	1107.00023.00	HEATER ASSY, IMMERSION, 1680W/120VAC
2	1	1107.00017.00	HEATER ASSY, IMMERSION, 2300W/240VAC
3	3	1024.00050.00	GROMMET, SILICONE, 11.4mm ID
4	2	1024.00062.00	GROMMET, SHORT, SILICONE, LEVEL AND TEMP PROBE
5	1	1112.00202.00	PROBE WELDMENT, WATER LEVEL 1.188" LONG
6	1	1102.00161.00	PROBE ASSEMBLY, TEMP. AND LLC, HWD-2100
7	1	1023.00166.00	FITTING, COLD WATER INLET, GROMMET DESIGN
8	1	1003.00140.00	ALUMINUM BRACKET FOR SSR
9	1	1052.00014.00	ASSEMBLY RELAY, SOLID STATE, 25A/230V
10	1	1003.00005.00	BRACKET, ONE SHOT THERMOSTAT
11	1	1053.00004.00	THERMOSTAT, SINGLE SHOT, 25A
12	1	1023.00167.00	FITTING, BREW, GROMMET DESIGN
13	1	1102.00007.00	TANK COVER ASSEMBLY
14	2	1081.00042.00	STANDOFF, 6-32 x1.25 LG., 1/4 HEX WIDTH
15	2	1083.00009.00	WASHER, #6 SCREW , INTL TOOTH LOCKWASHER
16	2	1084.00010.00	NUT, HEX, #6-32, UNDERSIZED, ZINC PLATED
17	1	1086.00003.00	UNICLAMP, 15.9 HOSE OD CLAMP
18	1	1022.00060.00	TANK INSULATION, TBS-2121
19	1	1023.00188.00	FITTING, VENT, TBS-2121
20	1	1 1024.00007.00	RING, DASH #344, TANK COVER

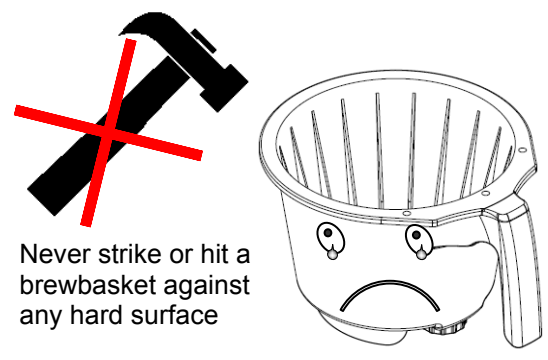
1102.00203.00 Spray Housing Assembly, TBS-2121

Ref.	QTY	PART NO	DESCRIPTION
1	1	1102.00020.00	SPRAY HOUSING ASSY CSD DESIGN
2	1	1024.00002.00	ORING, AS568A-019, BUNA-N
3	1	1102.00019.00	ASSEMBLY, CASCADE SPRAY DOME
4	1	1023.00189.00	ADAPTER, SPRAY HSG, DSV11 VALVE
5	2	1082.00068.00	SCREW, M3.9x13, CHEESE PH., T/FORM, Z/P
6	1	1057.00038.00	DIAPHRAGM, VALVE DSV-11
7	1	1057.00050.00	SPACER PLATE DSV11, -1 OPTION
8	1	1057.00040.00	PLUNGER, DISPENSE VALVE 24VDC
9	1	1057.00051.00	SPRING, DISPENSE VALVE 24VDC
10	1	1057.00022.00	DSV11 COIL AND FRAME ASSEMBLY, 24VDC
11	4	1082.00076.00	SCREW, #6-20 X 1/2", THRD FORM, P/H PHIL

B013000BE2 TBS-2121 Iced Tea Brew Basket Assembly, 16"X6"(Three position)



Ref	Qty	Part #	DESCRIPTION
1	1	1023.00182.00	BREW BASKET, TBS-2121
2	1	1024.00060.00	SILICONE STRAINER
3	1	1023.00179.00	NUT, BREW BASKET ORIFICE HOLDER
4*	1	1023.00185.00	ORIFICE, SET OF 7, BREW BASKET TBS-2121*
5	1	1023.00180.00	BLUE, BREW BASKET HANDLE PLUG TBS-2121
5	1	1023.00190.00	RED, BREW BASKET HANDLE PLUG TBS-2121
5	1	1023.00191.00	GREEN, BREW BASKET HANDLE PLUG TBS-2121
5	1	1023.00192.00	ORANGE BREWBASKET HANDLE PLUG TBS-2121
		B013000BE2	COMPLETE TBS-2121 BREW BASKET—Blue Insert



* #4 orifice set Size	Drain time for 1 gallon hot water	
0.094	12:30	DEFAULT: Factory installed to brewbasket
0.062	24:30	On optional orifice selector (included)
0.078	17:30	On optional orifice selector (included)
0.086	15:30	On optional orifice selector (included)
0.104	10:30	On optional orifice selector (included)
0.125	8:10	On optional orifice selector (included)
0.28	1:20	On optional orifice selector (included)

TBS-2121, PLUMBING LAYOUT, NO SWEETENER PUMP OPTION

PN: 1203.00002.00

