



Under Counter Water Boiler



READ AND SAVE THESE INSTRUCTIONS

NOTICE TO INSTALLER: Please leave this booklet with the machine.

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Product Warranty.....PW1

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Due to continued product improvement, the products illustrated/photographed in this guide may vary slightly from the actual product.

Key Features

- G3 Digital Control Module – Provides precise control of temperature.
- Easy-To-Operate – Simple touch controls.
- Automatic Refill System – For hot water anytime.

Specifications (Selected Models)

Electrical Supply Requirements

MODEL #	DESCRIPTION	PHASE	VOLTS	AMPS	HEATING CONFIG	WIRE	WATTS	HERTZ	CAPACITY
COR1B/COR1W	5.0 Gallon - 1 phase, domestic	1 PH	120/220 V	12.5/22.7 A	2 X 2500 W	2W/3W + G	1500/5000 W	50/60 Hz	4.3/10.0 gal/hr [16.3/37.9 l/hr]
COR1B30/COR1W30	5.0 Gallon - 1 phase, export	1 PH	230 V	23.9 A	2 X 2500 W	2W + G	5500 W	50/60 Hz	10.0 gal/hr [37.9 l/hr]

Dimensions

Water Supply Requirements

MODEL #	HEIGHT	WIDTH	DEPTH	SHIP WEIGHT	SHIP CUBE	WATER CONNECTOR	WATER PRESSURE	MIN. FLOW RATE
COR1B/COR1W	24.52" [62.3 cm]	11.07" [28.1 cm]	20.52" [52.1 cm]	50.0 lbs [22.7 kg]	6.53 cu. ft. [0.18 m ³]	3/8" flare	20 - 90 psi [138 - 620 kPa]	2.0 gpm [7.6 lpm]
COR1B30/COR1W30	24.52" [62.3 cm]	11.07" [28.1 cm]	20.52" [52.1 cm]	50.0 lbs [22.7 kg]	6.53 cu. ft. [0.18 m ³]	3/8" flare	20 - 90 psi [138 - 620 kPa]	2.0 gpm [7.6 lpm]

Following are the factory default settings for the water boiler:

- Temperature = 208°F (98°C)
- Temperature scale = °F
- Dispense Button 1 = Manual
- Dispense Button 2 = 12 oz. (355 ml)
- Dispense Button 3 = 16 oz. (473 ml)

Symbols



This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



DANGER - Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING - Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION - Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE - Indicates a situation which, if not avoided, could result in property damage.



IMPORTANT - Provides information and tips for proper operation.



SANITATION REQUIREMENTS



WARNING - This product can expose you to chemicals including Acrylamide and Bisphenol A (BPA), which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information visit www.P65Warnings.ca.gov.

Important Safeguards/Conventions



WARNING:

- Make sure that this appliance is installed and grounded according to the INSTALLATION INSTRUCTIONS by qualified personnel before attempting to use it. Failure to follow the INSTALLATION INSTRUCTIONS could result in personal injury or void the warranty.
- This appliance is designed for commercial use. Any service other than cleaning and preventive maintenance should be performed by an authorized Wilbur Curtis service technician.
- To reduce the risk of fire or electric shock, DO NOT open the service panels. There are no user serviceable parts inside.
- Keep hands, arms and other items away from hot surfaces of the unit during operation.
- Clean the appliance and any dispensers completely before using them for the first time according to the CLEANING INSTRUCTIONS. Clean them regularly as instructed in the CLEANING INSTRUCTIONS.
- Use this appliance only for its intended use, brewing/dispensing hot and/or cold beverages/water.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- Avoid spillage onto the power (mains) connector.

CE Requirements

- This appliance must be installed in locations where it can be overseen by trained personnel.
- For proper operation, this appliance must be installed where the temperature is between 5°C to 35°C.
- This appliance is not suitable for outdoor use.
- This appliance shall not be tilted more than 10° for safe operation.
- An electrician must provide electrical service as specified in conformance with all local and national codes. For safe use, an all-pole disconnection must be incorporated into the fixed wiring in accordance with the wiring rules outlined in clause 7.12.2 of IEC 60335 for meeting the minimum electrical safety of this standard.
- This appliance must not be cleaned by water jet.
- This appliance can be used by persons aged from 18 years and above if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved.
- Keep the appliance and its cord out of reach of children aged less than 18 years.
- Appliances can be used by persons 18 years and above with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children under the age of 18 years should be supervised to ensure they do not play with the appliance.
- If the power cord is ever damaged, it must be replaced by the manufacturer or authorized service personnel with a special cord available from the manufacturer or its authorized service personnel in order to avoid a hazard.
- Machine must not be immersed for cleaning.
- Cleaning and user maintenance shall not be made by children unless they are older than 18 years and supervised.
- This appliance is intended to be used in household and similar applications such as:
 - staff kitchen areas in shops, offices and other working environments;
 - by clients in hotels, motels and other residential type environments;
 - bed and breakfast type environments.
- This appliance not intended to be used in applications such as:
 - farm houses
- Access to the service areas permitted by Authorized Service personnel only.
- The A-Weighted sound pressure level is below 70 dBA.



WARNING: Installation is to be performed only by a qualified installer.



WARNING: Improper electrical connection may result in an electric shock hazard. This appliance must be properly grounded.



NOTICE: DO NOT connect this appliance to a hot water supply. The water inlet valve is not rated for hot water. Do not exceed the maximum water pressure stated in the **SPECIFICATIONS** section.



IMPORTANT: Observe all governing codes and ordinances.

Installation Instructions

Installation Requirements

- A secure surface capable of supporting the weight of the appliance.
- For units without an attached cord set: Appropriately sized, UL listed, grounding type power cable to meet the electrical specifications for the appliance. If you have questions about the correct cable size and length, consult a qualified installer. If the unit will be hard wired to a junction box, the power cable must be long enough so that it can be moved for cleaning underneath.
- A grounded electrical connection to an electrical circuit that meets the electrical specifications of the appliance (see **SPECIFICATIONS**). The circuit must be protected by the appropriate sized circuit breaker. If you are not certain that the existing circuit meets the requirements for your unit, consult a licensed electrician.
- A water filtration system is required to maintain trouble-free operation. Wilbur Curtis Co., Inc. recommends a Wilbur Curtis approved water filter. See the Curtis Equipment Catalog for a full line of Wilbur Curtis approved water filters.
- Potable water supply line connection from the water filter capable of supplying the minimum flow rate required by the specifications. The water supply line must be able to connect to the flare fitting on the back of the unit. See the **SPECIFICATIONS** section for the correct size. The water line should also be capable of being controlled by a shut off valve. Do not connect the water line to a saddle or needle valve.

IEC requires the following water connection:

- 1 A quick disconnect or additional coiled tubing (at least two times the depth of the appliance) is required so that it can be moved for cleaning underneath.
- 2 This equipment is to be installed with adequate back-flow protection to comply with applicable federal, state and local codes.
- 3 Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained in accordance with federal, state and local codes.

The International Plumbing Code of the International Code Council and the Food and Drug Administration (FDA) Food Code manual, direct that this equipment must be installed with adequate back-flow prevention in compliance with federal, state and local codes. For units installed outside of the U.S.A., make sure that the installation is in compliance with the applicable plumbing/sanitation code for your area.

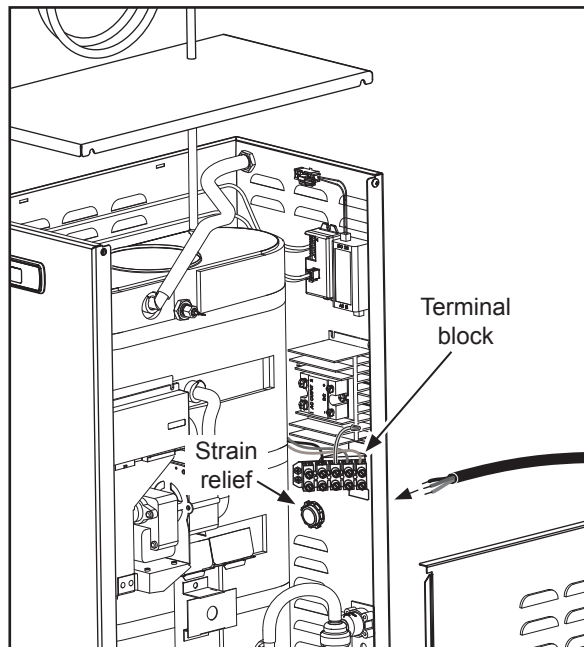
Installation

Connect the Power Cord to the Water Tower



WARNING: Make sure power to the circuit supplying power to the water tower is turned off at the circuit breaker panel until installation is complete. Lock out and tag the circuit breaker if connecting directly to a junction box.

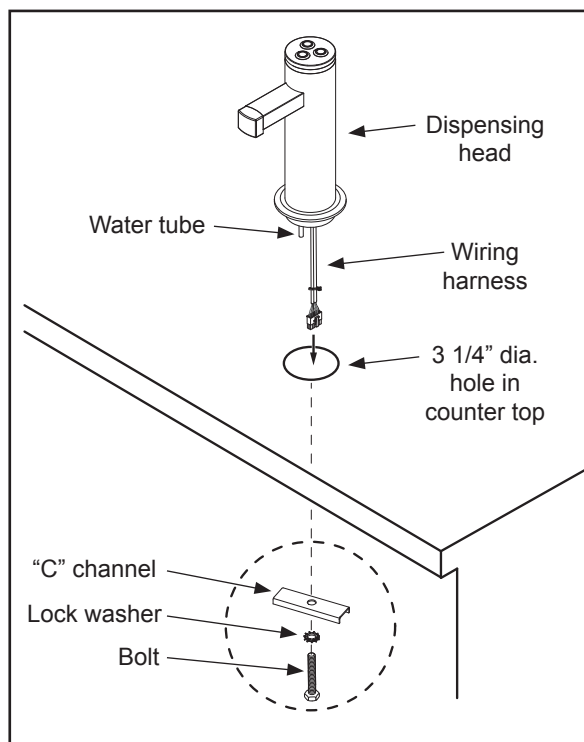
- 1 Place the water tower on a sturdy surface. Remove the top and side covers.
- 2 If the unit will be operating using 120 Vac, locate the jumper on the terminal block inside the water tower and remove the cap, then connect the end of the jumper wire to the L2 terminal on the terminal block.
- 3 Loosen the strain relief on the back of the water tower.
- 4 Feed the end of the power cord into the strain relief.
- 5 Connect the wires on the power cable to the terminal block inside the water tower.
- 6 Replace the side and top covers.



Water Tower Power Cord Connection

Installing the Dispensing Head (Installations Without Optional Drip Tray Assembly)

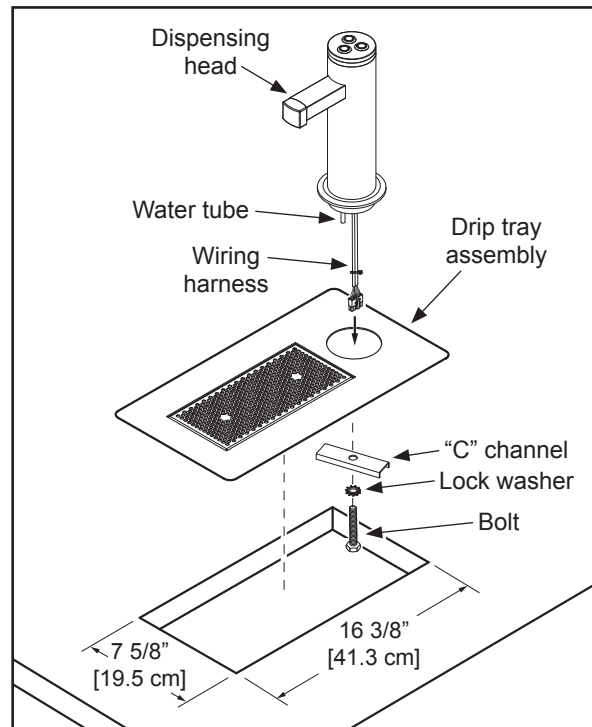
- 7 Cut a 3 1/4" (8.3 cm) diameter hole in the counter top to install the dispensing head. The hole should be located directly above the selected location for the water tower to allow connection of the water tube and wiring harness.
- 8 Remove the "C" channel assembly from the bottom of the dispensing head and insert the water tube and wiring harness into the hole.
- 9 Fit the base of the dispensing head into the hole and secure it in place from the bottom using the "C" channel assembly removed in step 8.



Dispensing Head Installation (Without Drip Tray)

Installing the Dispensing Head (Installations With Optional Drip Tray Assembly)

- 10 Create a rectangular cutout in the countertop, according to the dimensions shown.. Center it over the selected location for the water tower to allow connection of the water tube and wiring harness. Consideration must be made for the drip tray drain system. The drip tray comes with a 1/2" NPT barbed elbow.
- 11 Remove the "C" channel assembly from the bottom of the dispensing head and insert the water tube and wiring harness into the hole on the mounting plate.
- 12 Fit the base of the dispensing head into the hole on the mounting plate and secure it in place from the bottom using the "C" channel assembly removed in step 11.
- 13 Lower the mounting plate into the cutout created in step 10.



Dispensing Head Installation (Without Drip Tray)

Place the Water Tower

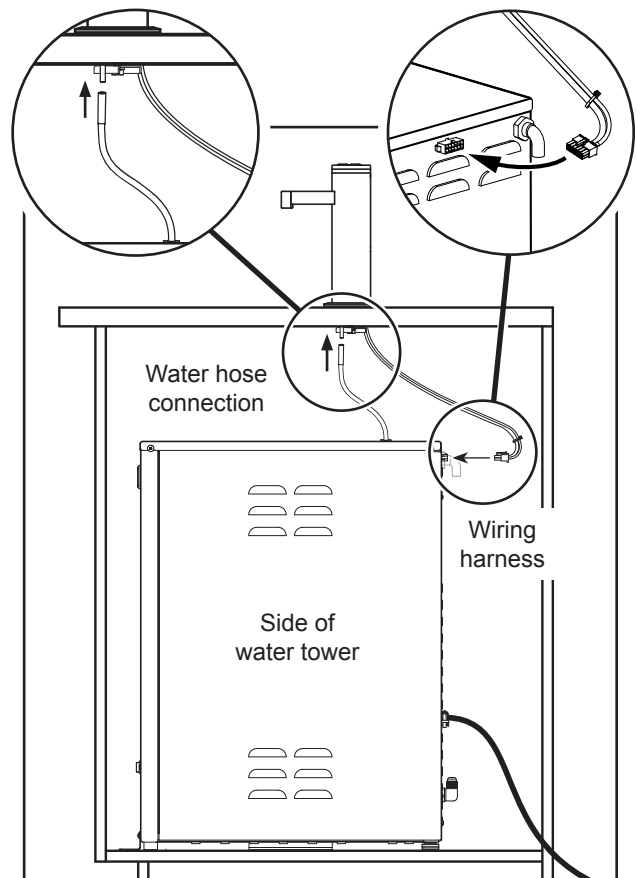
- 14 Place the water tower on the floor of the cabinet below the counter top. Wait to install the hold down brackets until later in this procedure.

Connect the Dispensing Head



NOTICE: Do not open the dispensing head! The length of the wires and hose are fixed and set at the factory. Do not splice or add additional hoses to the dispensing head. Ample hose length is provided for proper unit installation. Cut away any excess hose. Keep hose lengths to a minimum. The hose should be loose. It is important to avoid and kinks loops or restrictions along the entire length of the hose. Do not pull the hose in an attempt to accommodate a shortage, even if it is just a few inches. Always bring the unit to the hose, not the hose to the unit.

- 15 Locate the end of the dispensing head wiring harness and plug it into the connector on the back of the water tower.
- 16 Locate the water supply line coming from the top of the water tower. Shorten it to minimize length when it is connected to the matching tubing stub coming from the bottom of the dispensing head. Splice the two ends together.



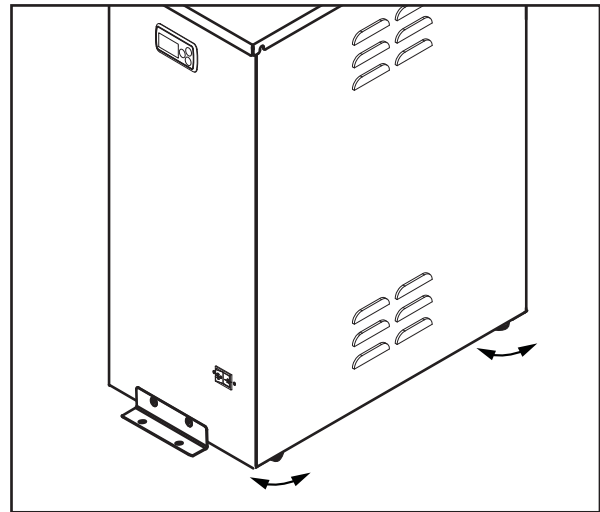
Dispensing Head Connection

Level the Water Tower



WARNING: Use the leveling legs to level the water tower only. Do not use them to adjust the height. Do not extend them higher than necessary.

- 17 With the water tower centered under the dispensing head, level it left to right and front to back by turning the bottom of the legs.



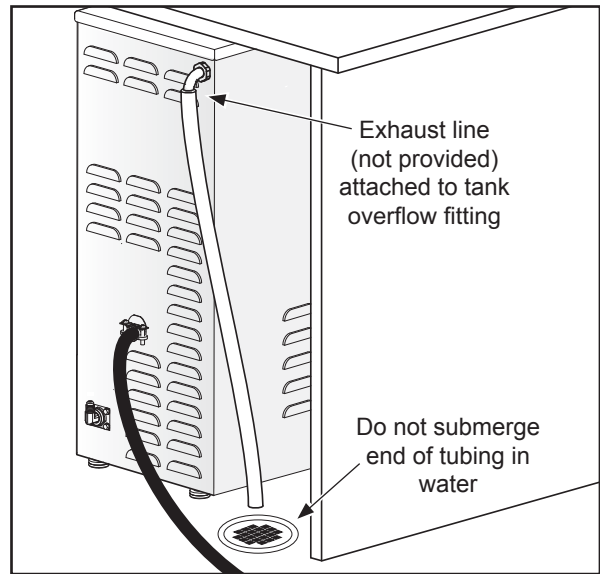
Leveling the Water Tower

Install the Exhaust Line



NOTICE: The exhaust line tubing must be installed so that the end does not become submerged in water to avoid backup.

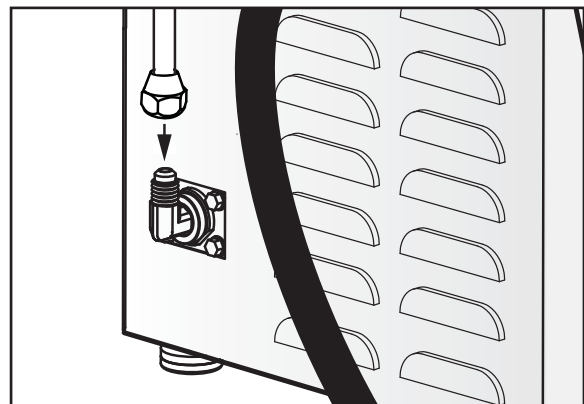
- 18 The water tower is equipped with an outlet fitting that vents steam and condensation from the water tank inside the chassis. Run a 3/8" exhaust line (not provided) from the fitting to a drain to drain off condensation. If using the optional drip tray assembly, install a drain hose (not provided).



Exhaust Line Installation

Connect the Water Supply

- 19 Flush the water supply line prior to installation to purge air and debris from the water filter and tubing.
- 20 Connect the water supply line to the flare fitting on the back of the water tower. Leave the water supply valve closed until the power is connected.



Water Supply Connection

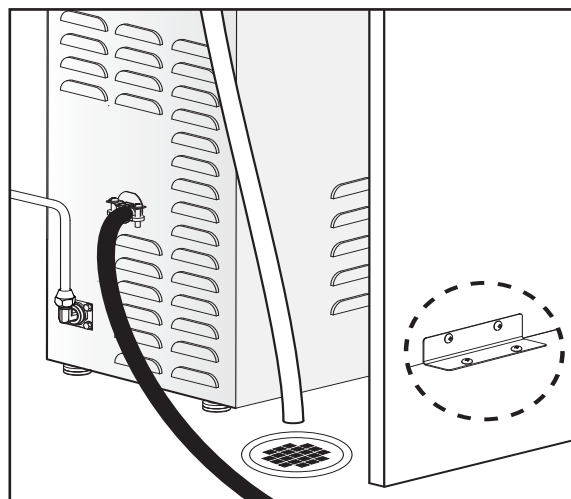
Install the Hold Down Brackets

The water tower must be secured to the bottom of the cabinet using the hold down brackets affixed to the bottom edges of the chassis.



WARNING: Failure to install the hold down brackets may allow the unit to tip over, especially when installed in a mobile coffee counter. Injury may result from spilled hot liquids or damage to the water tower itself may occur.

- 21 Fasten the water tower brackets onto the floor. There is one on the front and one on the side. If the unit is installed in a different location later, these brackets must also be moved and installed with the water tower.



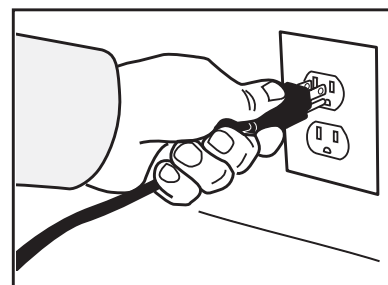
Hold Down Bracket Installation

Connect the Power Cord



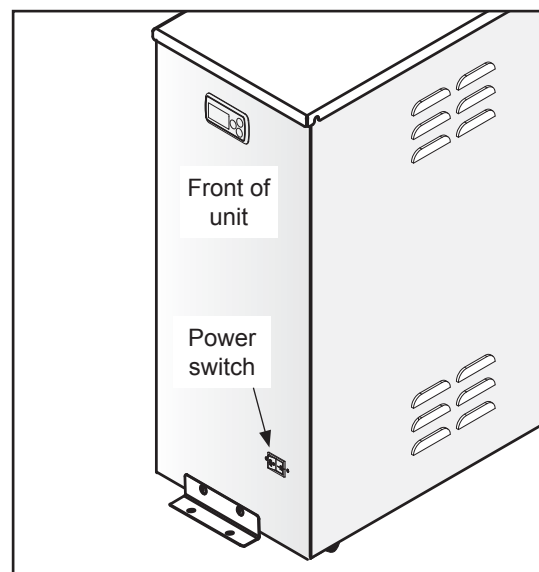
WARNING: If using a 120 Volt power cord, connect the power cord to the appropriate type and size electrical outlet. If the electrical outlet is not compatible with the power cord, have it upgraded by a licensed electrician. Do not modify the power plug. Do not use an extension cord. Do not use a power cord/plug that is damaged.

- 22 Make sure that the power switch on the front of the unit is in the OFF position. Also make sure that power to the circuit that will supply power to the unit is shut off.
- 23 For 220 Volt units, connect the power cable wires to the terminals in the junction box. On units set up for 120 Volts, connect the power cord to the appropriate electrical outlet. See the *ELECTRICAL SCHEMATIC* for the power supply requirements.



Power Up the Unit

- 24 Turn on the water supply valve.
- 25 Make sure that the circuit breaker supplying power to the circuit is on.
- 26 Turn the rocker switch on the front of the water tower to the ON position. The water tank will start to fill. While the tank is filling, inspect the water supply line for leaks.



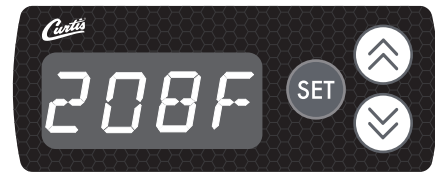
27 When the water in the tank rises to the correct level, the heating elements will turn on automatically. The lights on top of the dispensing head will flash and three flashing lines will appear on the display while the unit is heating. Depending on the incoming water temperature and the electrical specifications, the water tank typically requires 45 minutes to reach the factory set operating temperature. The display and dispensing head lights stop flashing when the unit has reached operating temperature and the temperature setting appears on the display.



IMPORTANT: Reduce the factory set operating temperature (208°F/98°) by 2°F (1°C) for each 1000 feet (300 m) of elevation. See the *PROGRAMMING GUIDE* section.



Typical Display During Heating



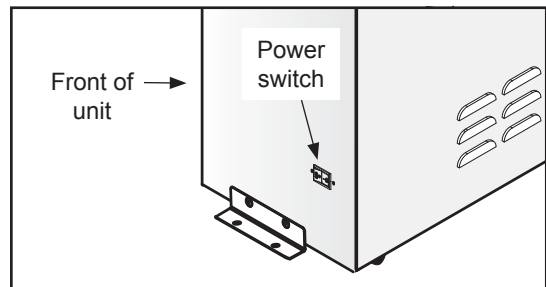
Typical Display During Normal Operation

28 Dispense a least 12 oz. (30ml) of water to purge any remaining air from the system (see *OPERATING INSTRUCTIONS*). If water does not flow, prime the pump according the instructions below. During the initial dispense and whenever the filter is replaced, you may hear the sounds of air being purged from the filter, tubing and water tank.

29 Calibrate the flow rate of the unit according to the instructions in the *PROGRAMMING GUIDE* section.

Priming the Pump

1 Turn OFF the main power switch, located on the front of the water tower, and disconnect power to the unit.

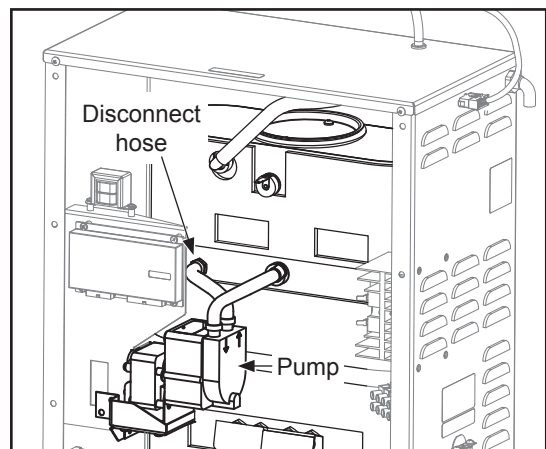


2 Open the side panel on the unit.



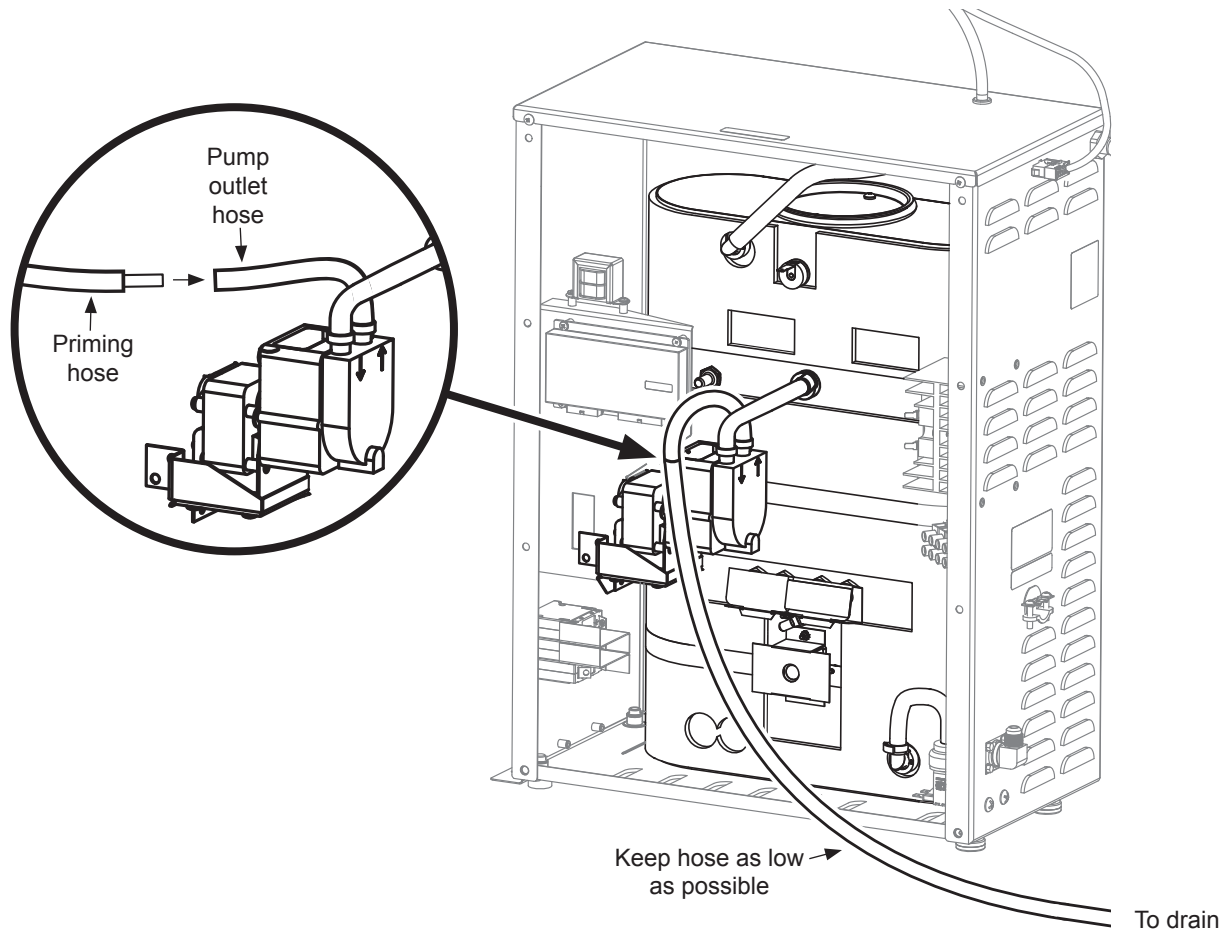
WARNING: Take care when removing the hose from the water tank. There may be hot water in the hose and portions of the water tank may be hot.

3 Locate the pump and disconnect the pump outlet hose from the water tank (note the arrows on the end of the pump).



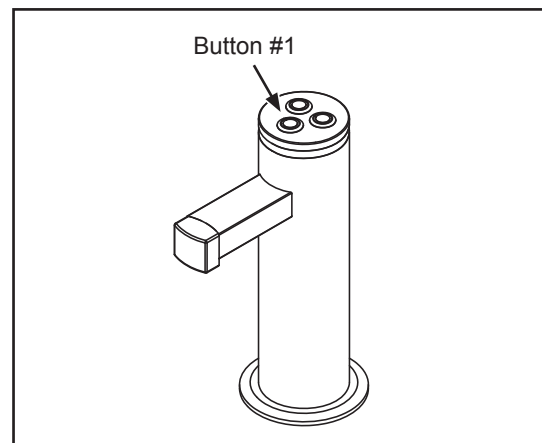
Priming the Pump (cont.)

- 4 Connect the priming hose (included with the unit) by inserting the fitting on the end into the end of the hose removed in step 3. Run the other end of the hose to a drain. To prime, the hose (with the exception of the end connected to the pump) must lay lower than the pump itself (see diagram below).



Step 4 - Connecting the Priming Hose

- 5 Reconnect power to the unit and turn ON the main power switch. Allow the water tank to heat to the operating temperature (the lights on the dispensing head stop flashing).
- 6 Push the manual dispense button (#1) until water flows freely from the end of the priming hose.
- 7 Disconnect power to the unit.
- 8 Reconnect the pump outlet hose to the water tank and replace the cover.
- 9 Reconnect power and make sure that the main power switch is ON.

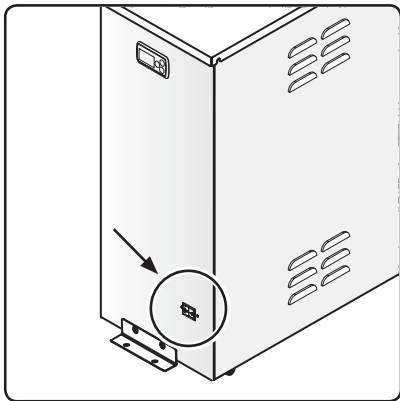


Step 6 - Push Manual Dispense

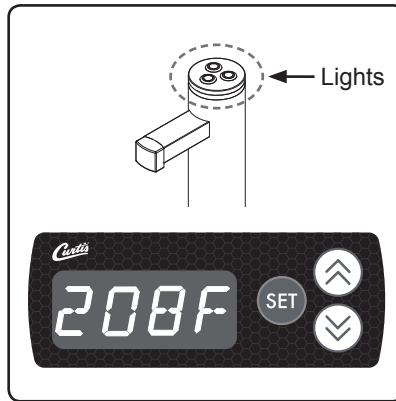
Dispensing Instructions

WARNING - TO AVOID SCALDING, AVOID SPLASHING. Keep body parts clear of the dispensing head during dispensing. Do not remove the container until water stops flowing.

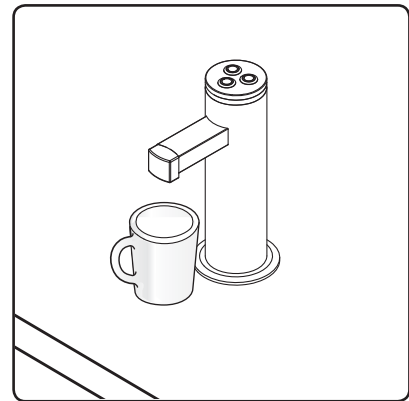
The hot water dispenser is factory preset for optimal performance.



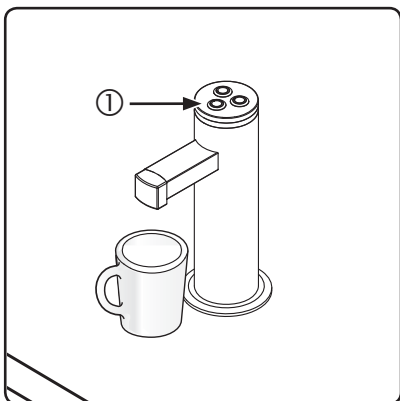
1 The unit should be ON. Confirm this at the rocker switch on the front of the water tower, below the counter top.



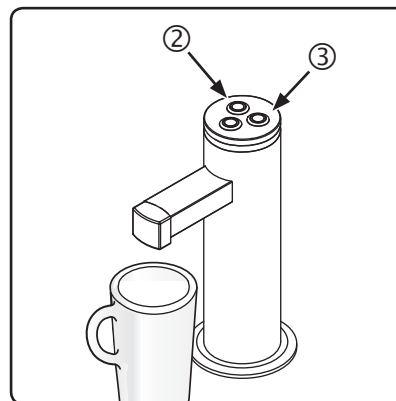
2 Make sure that the unit is at operating temperature. The dispensing head lights are on solid and the temperature (or "Hot") appears on the display when the water is at the set operating temperature.*



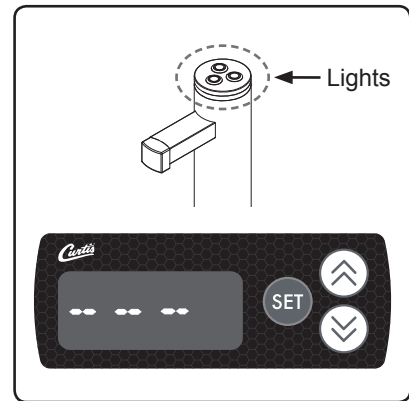
3 Place a suitable sized container underneath the dispensing head spout.



4A Press the front button (1) on top of the dispensing head to start dispensing. Release the button to stop.



4B Buttons 2 and 3 are factory preset to dispense 12 ounces and 16 ounces of water automatically.* Press and release button 2 (12 oz.) or button 3 (16 oz.) to start. Water will stop dispensing when the preset volume is reached. Pressing any button during the dispensing cycle will stop the water flow.



5 The dispensing head lights flash and three bars flash on the display when the water is heating/reheating.

*To change the factory default settings, see *Programming Guide*.



WARNING: HOT SURFACES - To avoid injury, allow the unit to cool 30 minutes before cleaning.



NOTICE - Do not use cleaning liquids, compounds or powders containing chlorine (bleach) or corrosives. These products promote corrosion and will damage the finishes. **USE OF THESE PRODUCTS WILL VOID THE WARRANTY.**

Cleaning The Water Boiler and Dispensing Head - Daily or As Needed



WARNING: DO NOT immerse the water boiler in water or any other liquid.

The water boiler should be OFF. Turn the unit off by turning the rear toggle switch to the OFF position. Allow it to cool.

- 1 Wipe exterior surfaces with a soft, damp cloth soaked with a mild detergent solution to remove spills and debris.
- 2 Rinse with a soft cloth soaked with clean water to remove any residual detergent. Then dry.
- 3 If applicable, remove the drip tray screen and rinse it off. Wipe out the interior of the drip tray with a soft, damp cloth. Replace the screen.

Flushing the Pre-heat Coil (Corinth Models) - Twice a Year

It is recommended that the pre-heat coil be flushed twice a year by a qualified technician according to the instructions in the *Troubleshooting* section.



Control Panel

How to Program the Unit

- 1 Press and hold the SET button for about 5 seconds to enter programming mode.
- 2 b1 (for button 1) will appear on the display.
- 3 Press the up and down arrows until the function that you want to change appears on the display (see table below).
- 4 With the desired function to change on the display, press the SET button. The current setting will appear on the display.
- 5 Press the up and down arrows to scroll through the available settings. Press SET to choose the setting that appears on the display.
- 6 Press the up or down arrows if you want to change another function, or do not touch any of the buttons for several seconds and the unit will exit programming mode and save new settings.

Function	Description	Setting Range	Default
b1	Dispense button 1	Manual to 32 oz. (946 mL) ^a	Manual
b2	Dispense button 2	Manual to 32 oz. (946 mL) ^a	12 oz. (355 mL) ^b
b3	Dispense button 3	Manual to 32 oz. (946 mL) ^a	16 oz. (473 mL) ^b
T	Temperature setting	170°F to 208°F (77°C to 98°C)	208°F (98°C)
CAL	Calibrate flow rate ^c	14 oz. to 18 oz. (414 mL to 532 mL)	16 oz. (473 mL)
U	Units ^d	F, C	F
Hot	Display readout when water is hot	Temperature setting (T), "Hot"	Temperature setting

^a When set to manual, water flows when button is pushed and stops when button is released. When button is set to a certain volume, water starts when a button is pushed and continues to flow until set volume is reached.

^b Based on flow rate setting

^c See the following page for calibration procedure.

^d When temperature is set to "F", volume is set to oz. When temperature is set to "C", volume is set to mL.

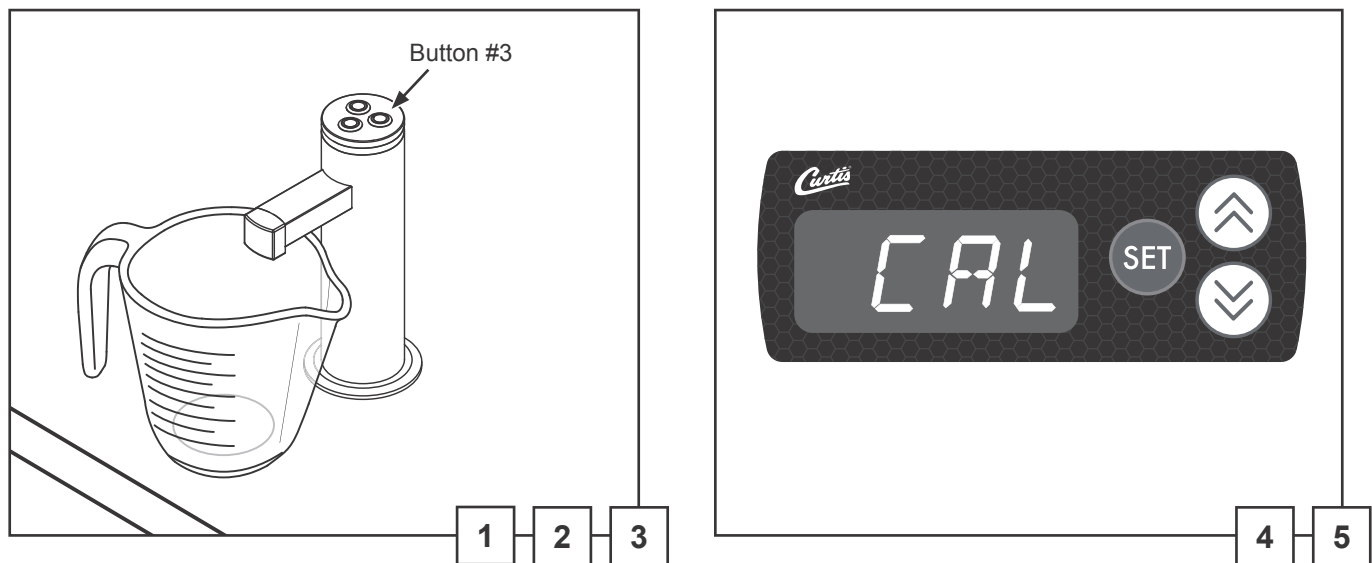
Calibrating the Water Flow Rate

This procedure calibrates the control panel to match the actual flow rate of the unit. The actual flow rate varies from installation to installation based on system layout and altitude.

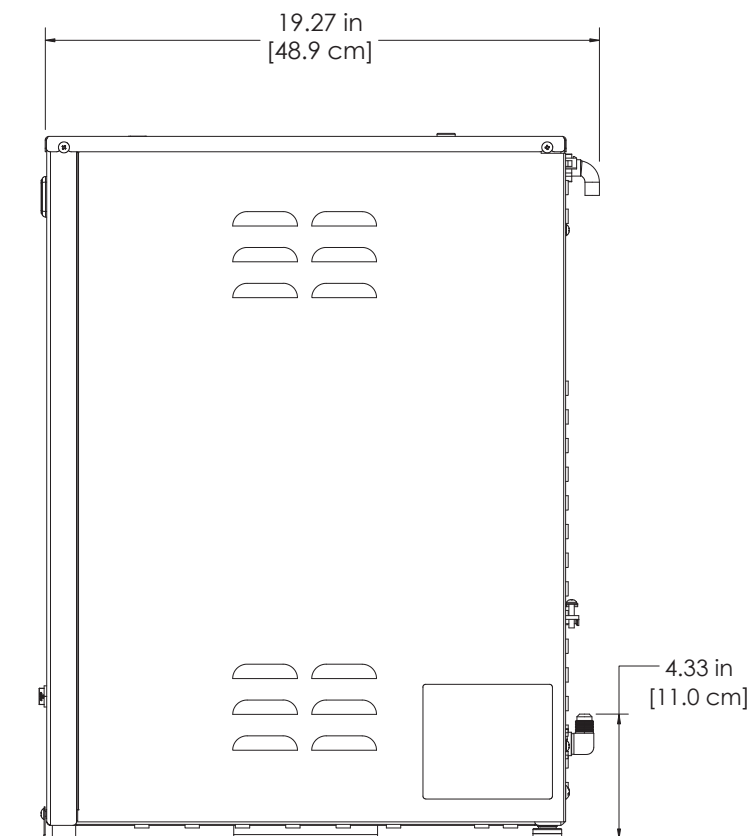
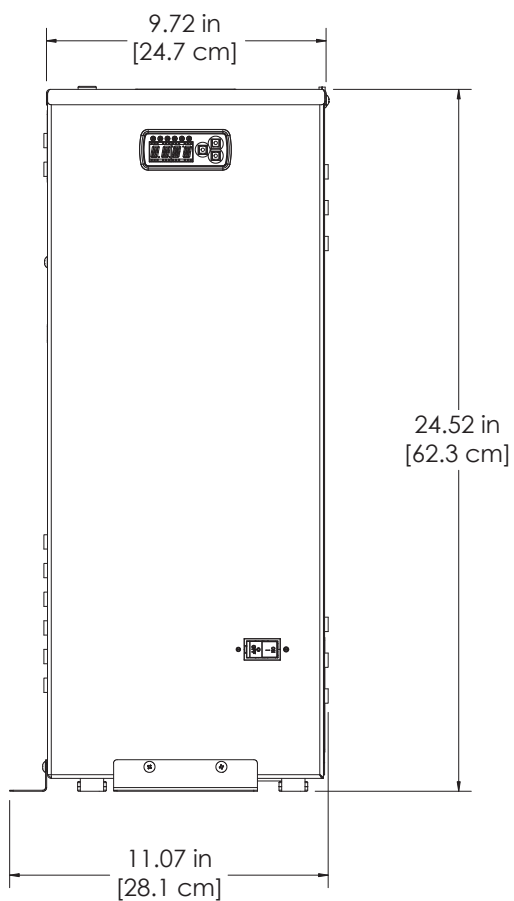
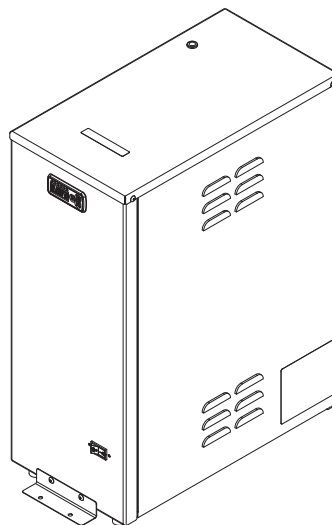
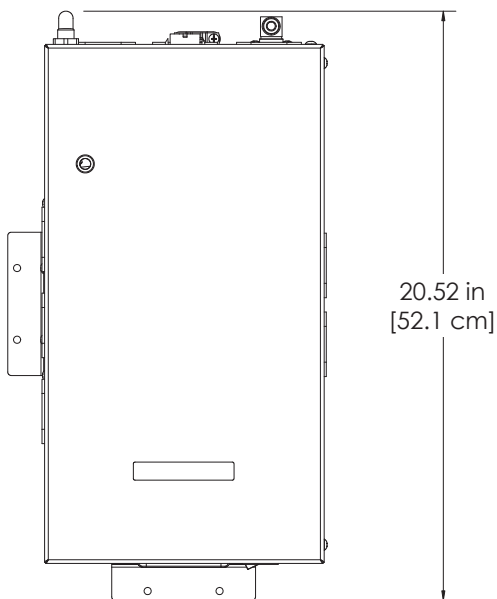
i **IMPORTANT:** The following procedure requires that one of the buttons on the dispensing head be programmed for 16 oz. (473 ml) automatic dispense. Since the factory default setting for button 3 is 16 ounces, the following procedure shows button 3 being used for calibration.

- 1 Place a 20 ounce (600 ml) or larger measuring cup under the dispensing spout.
- 2 Press button 3 (or whichever button is set to 16 oz/473 ml).
- 3 When dispensing is complete, determine the volume in the measuring cup.
- 4 Enter programming mode according to the instructions on the previous page and navigate to the CAL function.
- 5 Enter the amount of water measured in step 2, then save and exit programming mode.

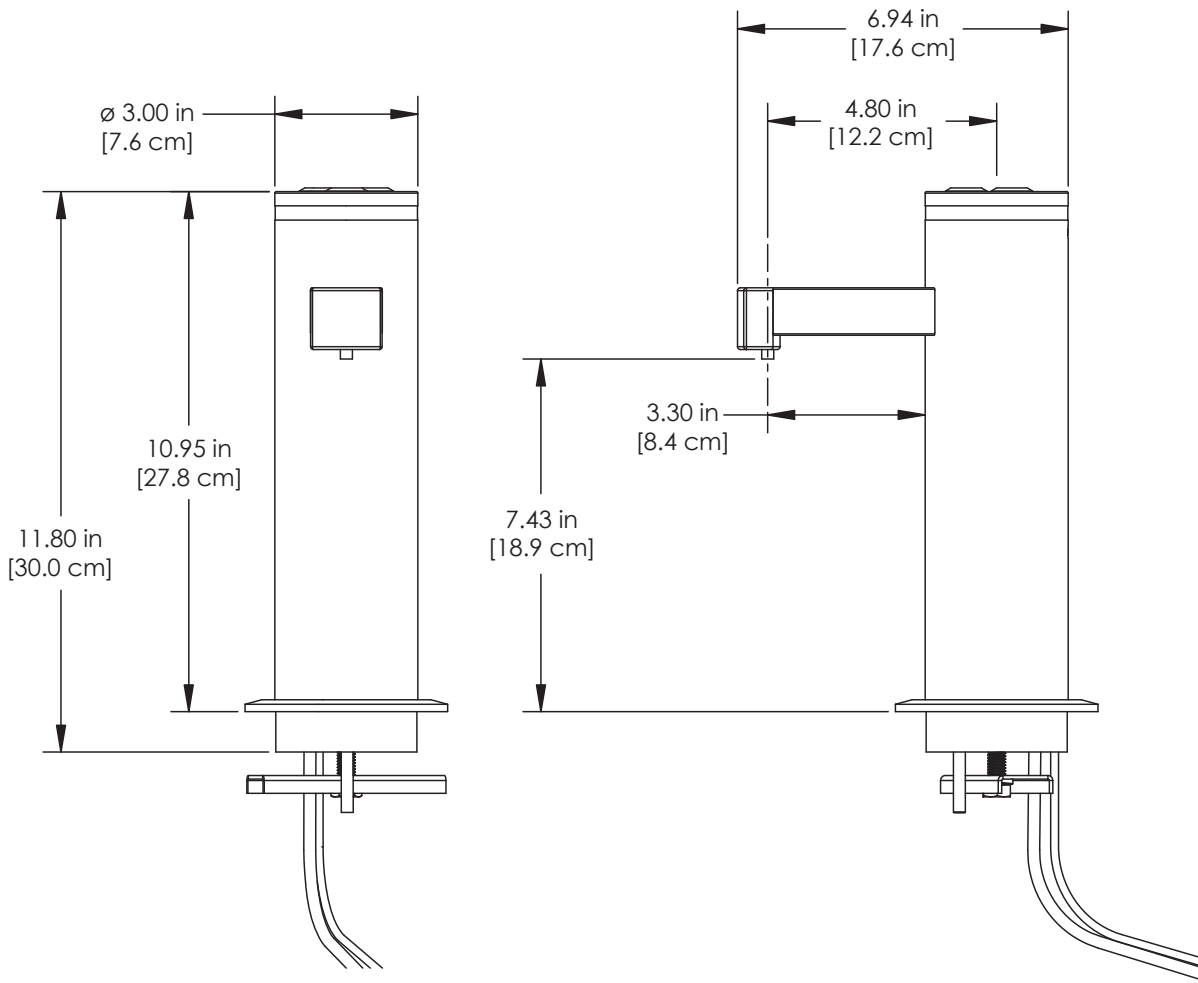
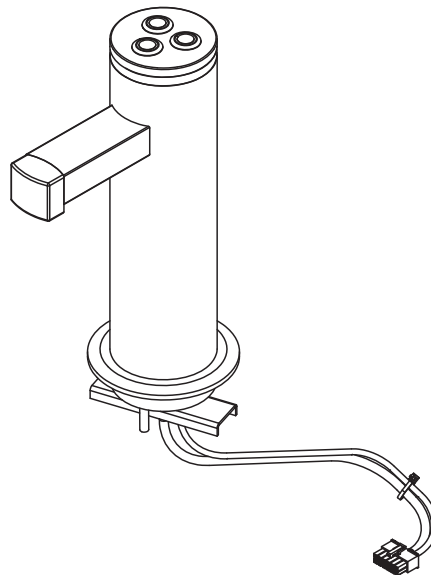
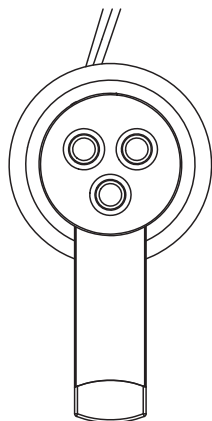
The control panel will now automatically compensate for the flow variance when dispensing.



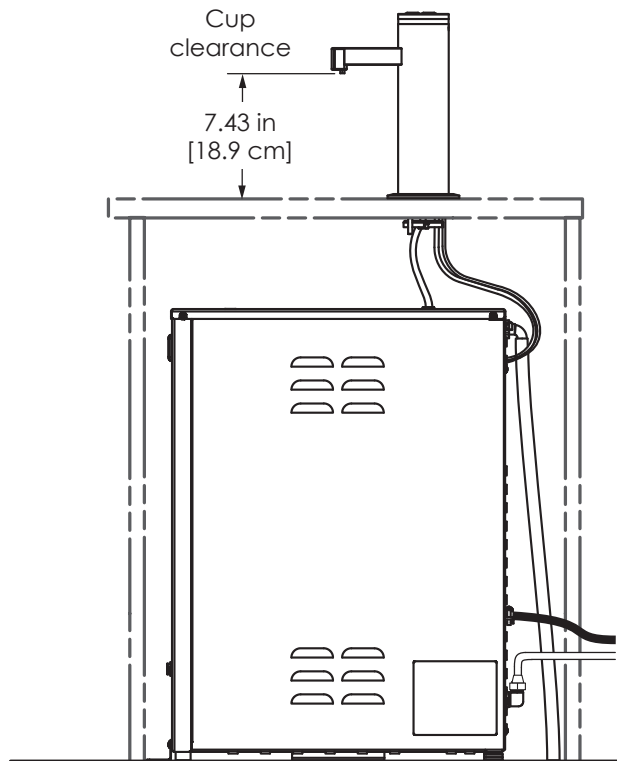
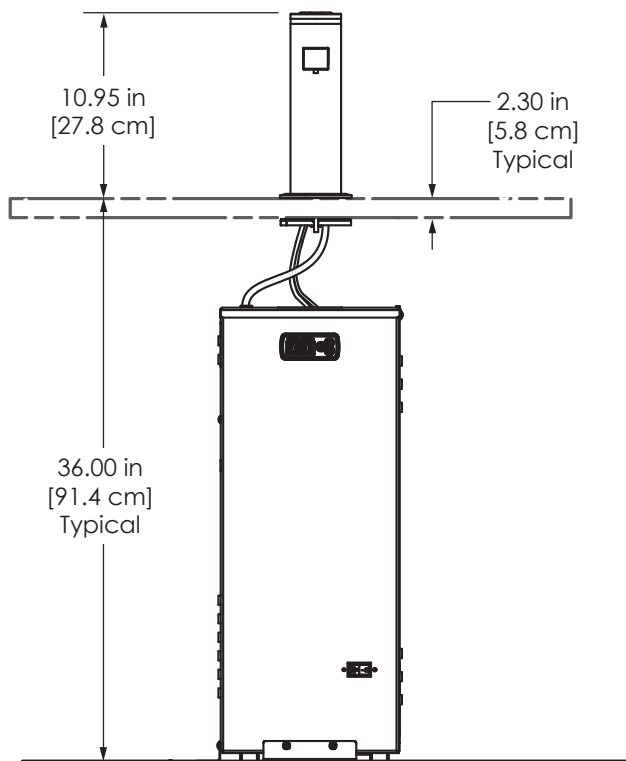
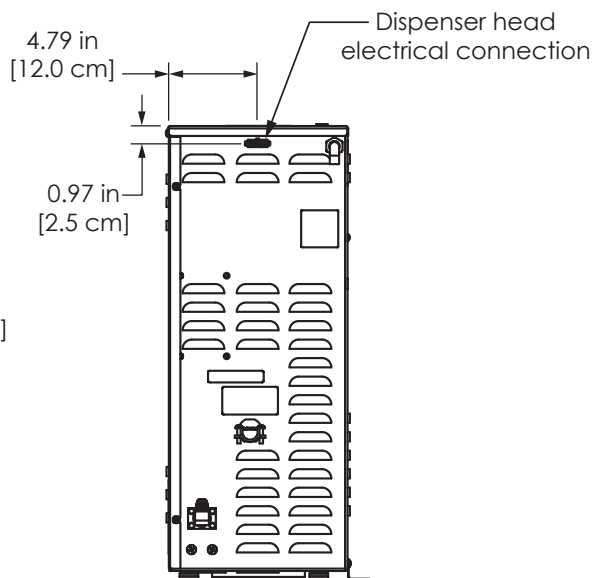
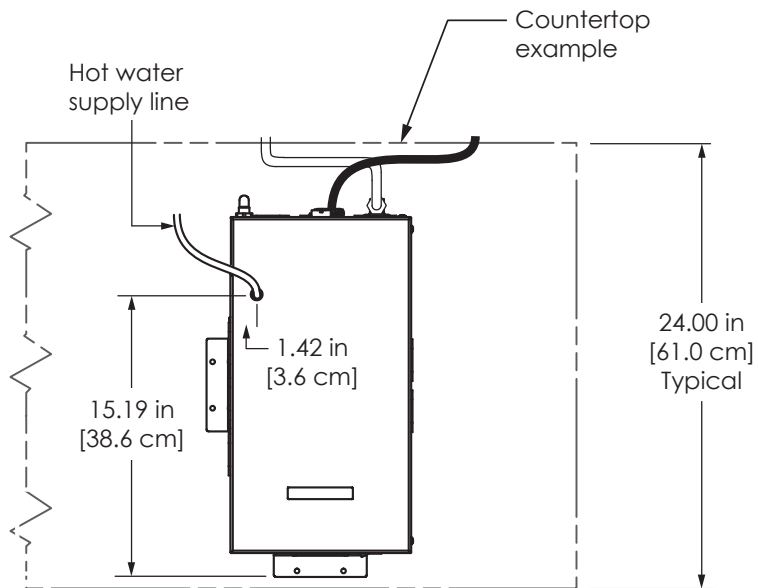
Water Tower Dimensions



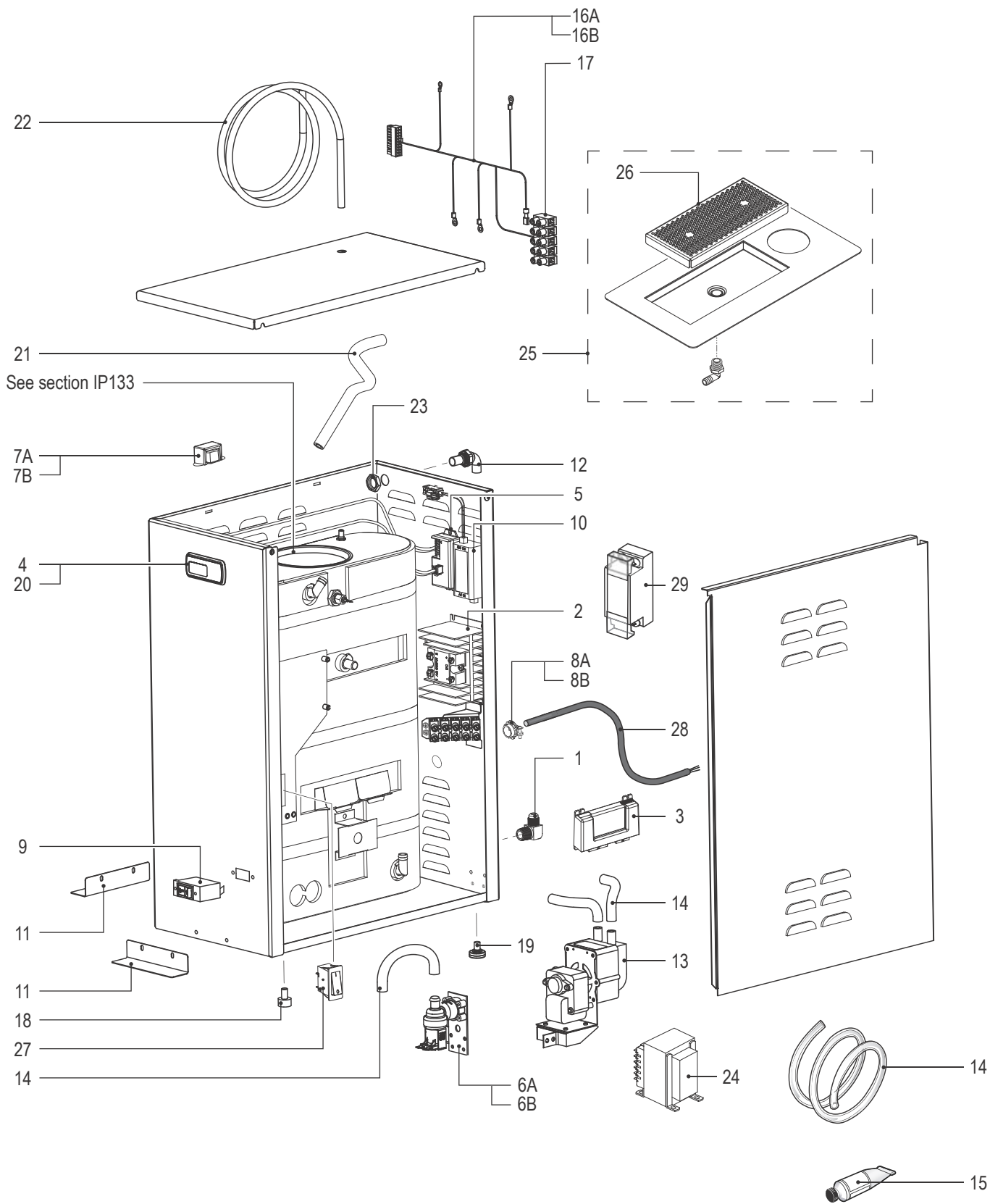
Dispensing Head Dimensions



Sample Cabinet Layout



COR1 - Main Chassis, Front - Exploded View



COR1 - Main Chassis - Parts List

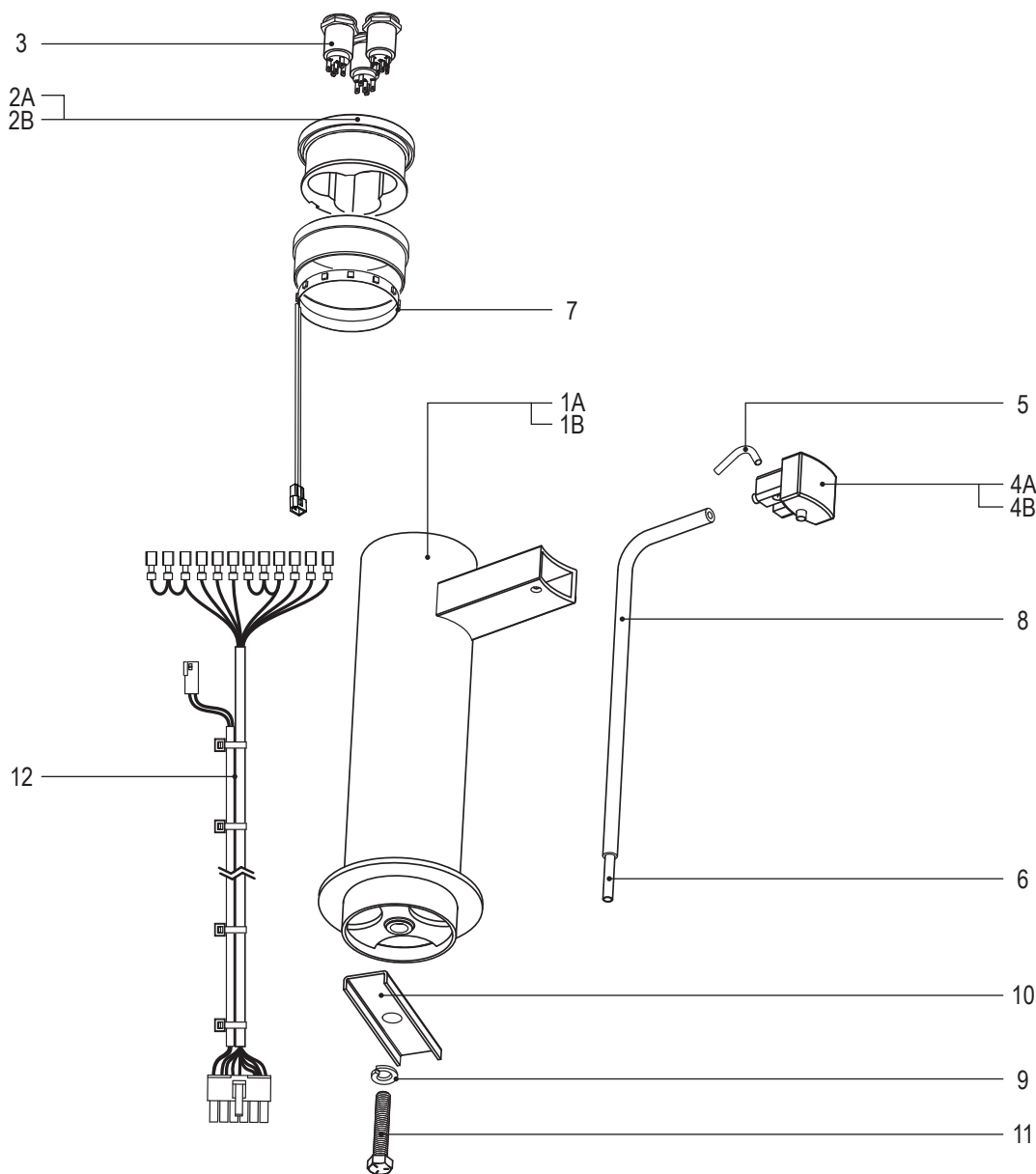
ITEM #	PART #	DESCRIPTION
1	WC-2402P-P	ELBOW, 3/8"FL x 3/8" NPT PLATED
2	WC-8559*	RELAY, SOLID STATE 280V/40A w/HEATSINK
3	WC-10031*	CONTROL MODULE, UPM 120V/220V COR
4	WC-10034*	CONTROL MODULE, SWITCH PANEL 5Vdc COR
5	WC-10012*	SMART MEMBRANE ENCODER
6A ¹	WC-847*	VALVE, INLET 2 GPM 120V-10W
6B ²	WC-883	VALVE, INLET 2 GPM 240V 6W
7A ¹	WC-589-101	TRANSFORMER, 120Vac - 24VAC 4.8VA w/ TERMINALS
7B ²	WC-589-102	TRANSFORMER, 240VAC- 24V 4.8VA W/LEADS & MOLEX CONNECTOR
8A ¹	WC-1412	CORD, GRIP Ø3/4" for 220Vac POWER CORDS
8B ²	WC-1523	CORD GRIP, 25MM THREAD PLASTIC
9	WC-172*	SWITCH, ROCKER STYLE, 50A
10	WC-1064	POWER SUPPLY, 100-240Vac X12Vdc W/ CONNECTORS SERAPHIM
11	WC-61536*	BRACKET, SIDE
12	WC-2948	FITTING, TANK OVERFLOW
13	WC-1040-101*	PUMP, WATER DIRECT DRIVE 120V/60HZ TLP

¹COR, ²COR30

*Recommended parts to stock.

ITEM #	PART #	DESCRIPTION
14	WC-5310*	TUBE, 5/16 ID x 1/8W SILICONE
15	WC-5231*	COMPOUND, HEAT SINK 5OZ
16A ¹	WC-13535	HARNESS, ASSY, COR
16B ²	WC-13535-101	HARNESS, ASSY COMPLETE COR30, COR31
17	WC-314	POWER BLOCK, 5 STATION
18	WC-3503	LEG, 3/8"-16 STUD SCREW BUMPER
19	WC-3518	LEG, GLIDE 3/8"-16 STUD SCREW
20	WC-390396*	LABEL, UCM OVERLAY CORINTH CURTIS LOGO
21	WC-53164*	TUBE, 3/8 ID X 1/8 W SILICONE
22	WC-5307*	TUBE, 3/16 ID x 3/32W SILICONE
23	WC-4212-P	NUT, 5/8-18 JAM UNF SS
24 ²	WC-592	TRANSFORMER, 230-115V 130VA GEN USE
25	WC-65066K	KIT, ASSY ADAPTER PLATE AND DRIP SCREEN
26	WC-65065	SCREEN, DRIP TRAY UBER ADAPTER
27 ²	WC-1512	BREAKER, CIRCUIT 2-POLE 5A/ 250VAC
28 ²	WC-1250	CORD, 4mm ² 90°C 49A 450/750V 6 FT LG W/ FERRULES ONE END
29 ²	WC-596K	FILTER, NOISE EMI 250VAC/30A 1PH

COR-DH-BLK/WHT - Dispenser Head - Exploded View



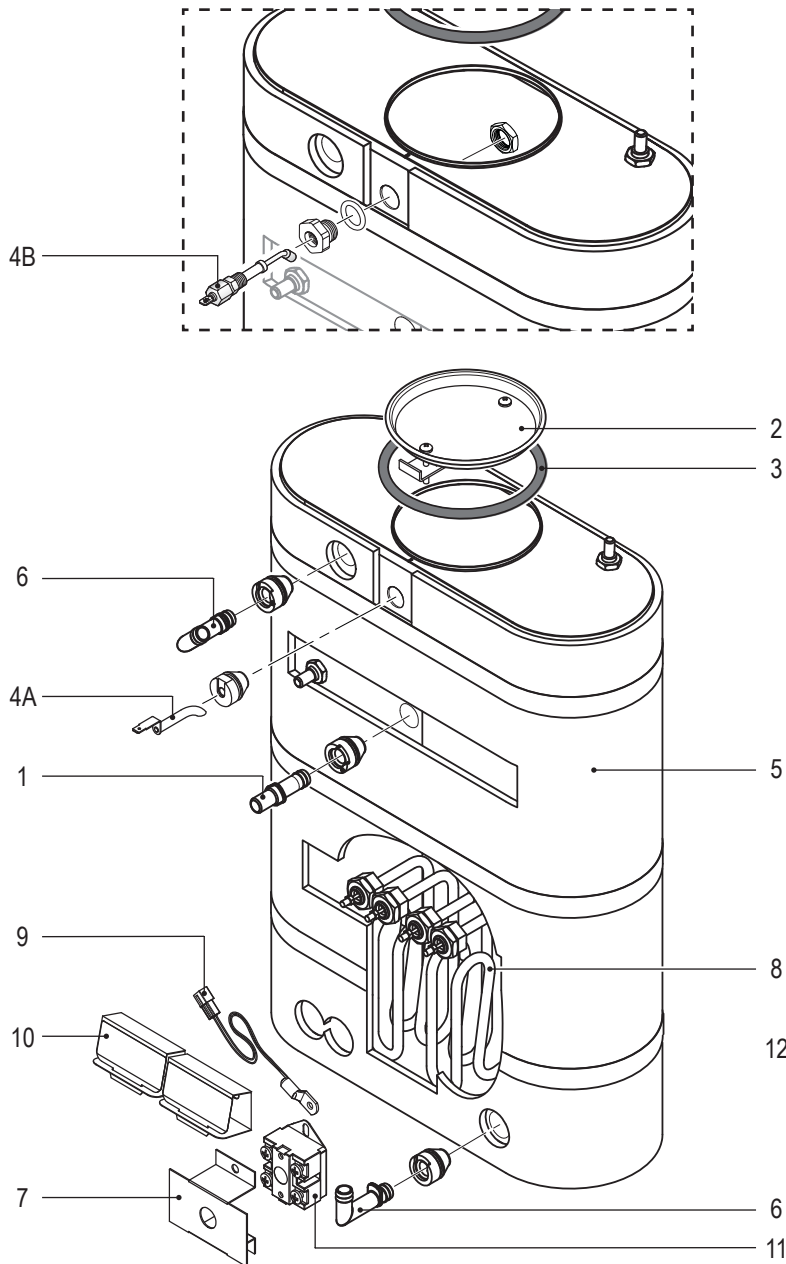
COR-DH-BLK/WHT - Dispenser Head - Parts List

ITEM #	PART #	DESCRIPTION
1A	WC-66137-BLK	DISPENSING HEAD, W/A COR (BLACK)
1B	WC-66137-WHT	DISPENSING HEAD, W/A COR (WHITE)
2A	WC-66139-BLK	CAP, DISPENSING HEAD, COR (BLACK)
2B	WC-66139-WHT	CAP, DISPENSING HEAD, COR (WHITE)
3	WC-178*	SWITCH, PUSH BUTTON, WHITE
4A	WC-66138-BLK*	TIP, DISPENSING HEAD, COR1 (BLACK)
4B	WC-66138-WHT*	TIP, DISPENSING HEAD, COR1 (WHITE)
5	WC-29074	TUBE, WATER DISPENSING, .25 DIA. OD, SS

ITEM #	PART #	DESCRIPTION
6	WC-65078*	TUBE, WATER LINE CONNECTING, .250 OD X 1.75, SS
7	WC-1075	ASSY, LED STRIP, 6000K, 145 LUMENS/FT
8	WC-5307*	TUBE, DISPENSING HEAD, .188 ID, SILICONE
9	WC-73145	C-CHANNEL, DISPENSING HEAD
10	WC-43184	WASHER, LOCK, .385 ID X .68 OD, SS
11	WC-4887	SCREW, .375-16 X 2.0 L, 9/16" HEX, ZINC
12	WC-13535-DH*	HARNES, SWITCH/LED

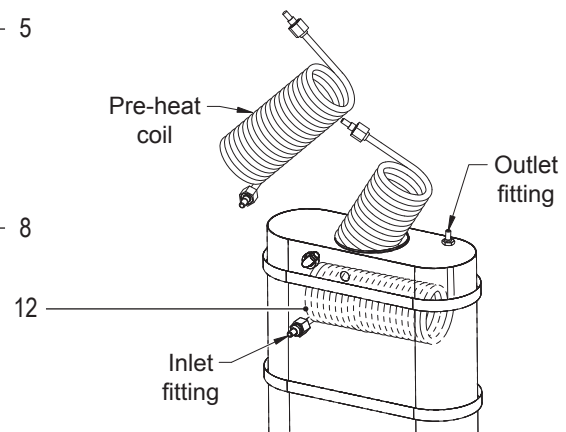
*Recommended parts to stock.

WC-62114 - Tank Assembly



Pre-heat Coil Removal and Installation

- a. Remove the nuts from the inlet and outlet fittings. See the diagram below.
- b. Push the outlet fitting down, out of the hole on the top of the tank.
- c. Push the inlet fitting in, out of the hole on the side of the tank.
- d. Tilt the end of the coil with the outlet fitting up and bring the coil up and out of the access hole on the top of the tank.
- e. Install the new coil in the reverse order. Be sure that the o-rings on both fittings remain intact while lowering the coil into the tank and when inserting the fittings into the mounting holes.



WC-62114 - Tank Assembly - Parts List

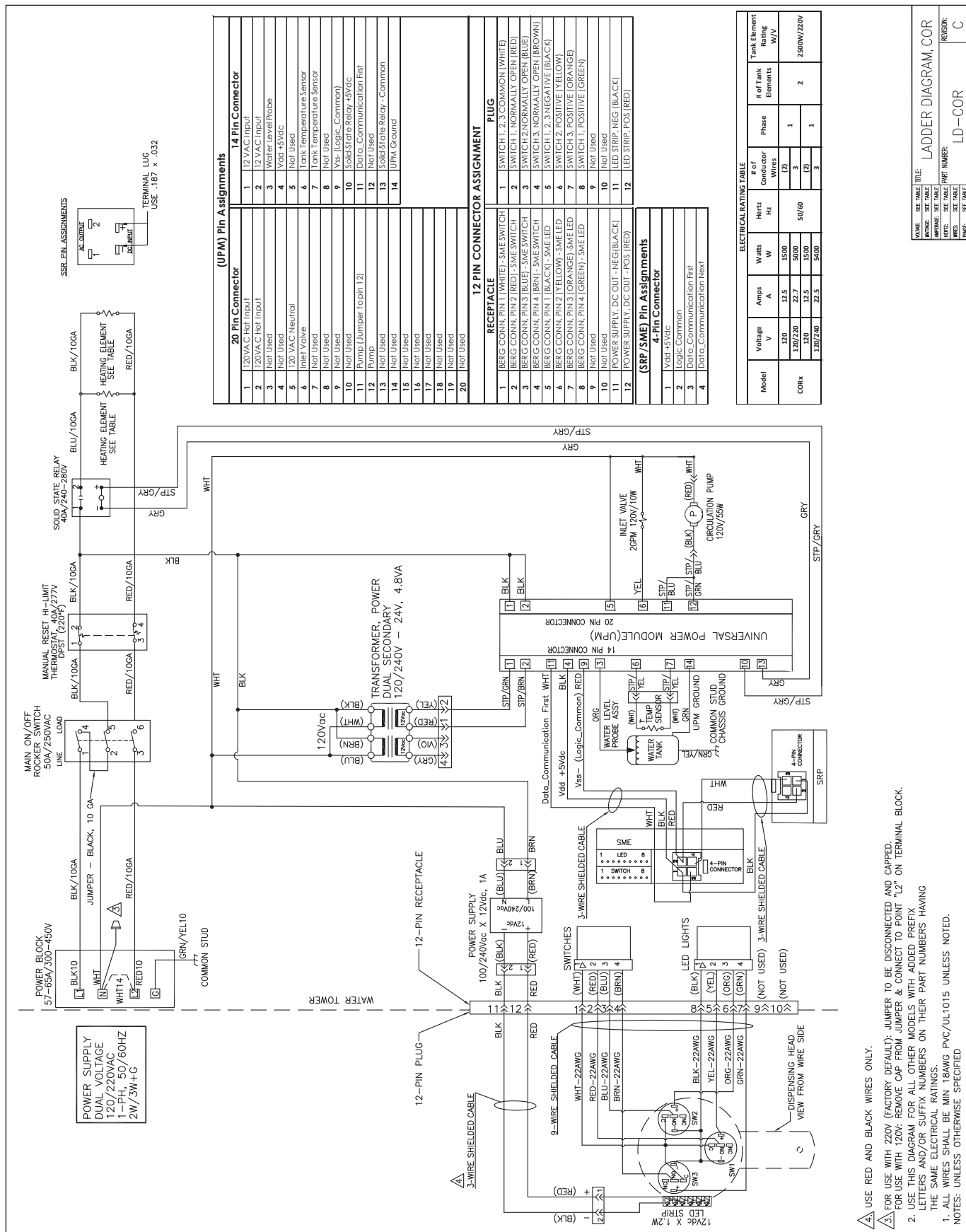
ITEM #	PART #	DESCRIPTION
1	WC-37317	KIT, STRAIGHT FITTING & BUSHNG 8mm GEN USE
2	WC-37008	KIT, TANK LID ROUND
3	WC-43067*	O-RING, 4-1/2" I.D. X Ø.285 SILICONE TANK LID
4A ¹	WC-5528K*	KIT, WATER LEVEL PROBE, SILICONE
4B ²	WC-5502-01*	KIT, PROBE, ASSY WATER LEVEL W/HEX FITTING, O-RING & NUT

ITEM #	PART #	DESCRIPTION
5	WC-62114	TANK, COMPLETE 5000W COR1
6	WC-37365*	KIT, FITTING TANK INLET
7	WC-43055*	GUARD, SHOCK RESET THERMOSTAT
8	WC-934-04*	KIT, ELEMENT HEATING 2.5KW 220V W/ JAM NUT & SILICONE WASHERS
9	WC-1438-101*	SENSOR, TEMPERATURE TANK
10	WC-4394*	GUARD, SHOCK/HEATING ELEMENT FOR SINGLE HEATING ELEMENT
11	WC-522*	THERMOSTAT, HI LIMIT HEATER CONTROL DPST 277V 40A
12	WC-54351K	KIT, PRE-HEAT COIL COR

¹ Units built 01/04/2019 and later.

² Units built before 01/04/2019. Replaces WC-5527.

* Recommended parts to stock.



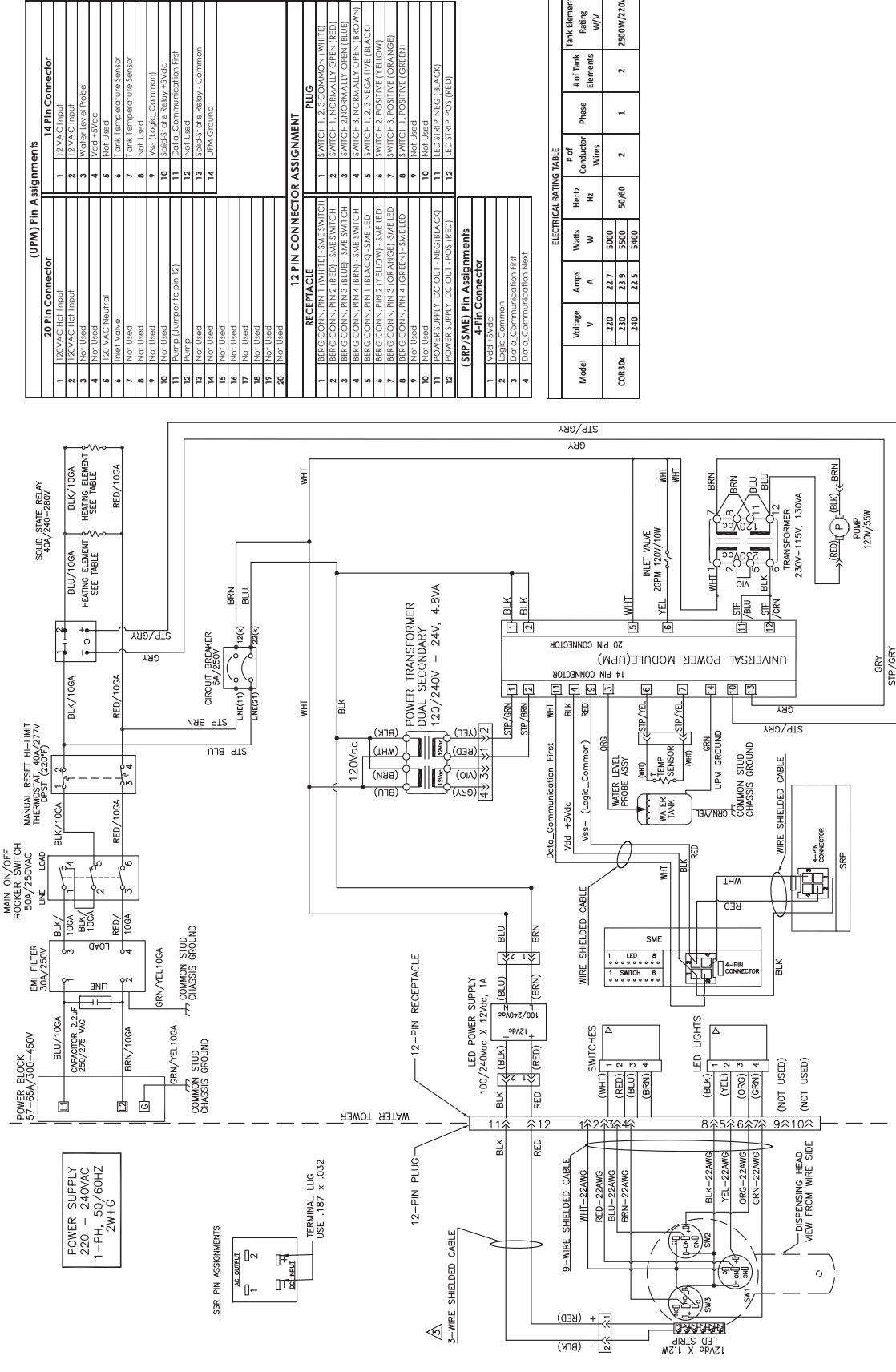
▲ USE RED AND BLACK WIRES ONLY.

▲ FOR USE WITH 220V (FACTORY DEFAULT): JUMPER TO BE DISCONNECTED AND CAPPED. FOR USE WITH 120V: REMOVE CAP FROM JUMPER & CONNECT TO POINT 1,2 ON TERMINAL BLOCK.

▲ USE THIS DIAGRAM FOR ALL OTHER MODELS WITH ADDED PREFIX LETTERS AND/OR SUFFIX NUMBERS ON THEIR PART NUMBERS HAVING THE SAME ELECTRICAL RATINGS.

▲ ALL WIRES SHALL BE MIN 18AWG PVC/UL1015 UNLESS NOTED. NOTES: UNLESS OTHERWISE SPECIFIED

NAME: SEE TABLE	TITLE: LADDER DIAGRAM, COR	REVISION: C
DATE: SEE TABLE		
DRAWN: SEE TABLE		
CHECKED: SEE TABLE		
APPROVED: SEE TABLE		
PART NUMBER: LD-COR		



(UPM) Pin Assignments

20 Pin Connector		14 Pin Connector	
1	120VAC Hot Input	1	12 VAC Input
2	120VAC Hot Input	2	12 VAC Input
3	Not Used	3	Water Level Probe
4	Not Used	4	VDD +5VDC
5	Neutral	5	Not Used
6	Line Voltage	6	Tank Temperature Sensor
7	Not Used	7	Tank Temperature Sensor
8	Not Used	8	Not Used
9	Not Used	9	Vss (Logic, Common)
10	Not Used	10	Not Used
11	Pump (Lumpert to pin 12)	11	Solid State Relay +5Vdc
12	Pump	12	Data, Communication Fst
13	Not Used	13	Solid State Relay - Common
14	Not Used	14	UPM Ground
15	Not Used		
16	Not Used		
17	Not Used		
18	Not Used		
19	Not Used		
20	Not Used		

12 PIN CONNECTOR ASSIGNMENT

RECEPTACLE	PLUG		
1	BERG CONN. FN1 (WHITE) - SWE SWITCH	1	SWITCH 1, 2, 3 (COMMON) (WHITE)
2	BERG CONN. FN2 (RED) - SWE SWITCH	2	SWITCH 1, 2, 3 (COMMON) (RED)
3	BERG CONN. FN3 (BLUE) - SWE SWITCH	3	SWITCH 1, 2, 3 (COMMON) (BLUE)
4	BERG CONN. FN4 (BRN) - SWE SWITCH	4	SWITCH 1, 2, 3 (COMMON) (BROWN)
5	BERG CONN. FN1 (BLACK) - SWE LED	5	SWITCH 1, 2, 3 (NEGATIVE) (BLACK)
6	BERG CONN. FN2 (YELLOW) - SWE LED	6	SWITCH 2, 3 (POSITIVE) (YELLOW)
7	BERG CONN. FN3 (ORANGE) - SWE LED	7	SWITCH 3 (POSITIVE) (ORANGE)
8	BERG CONN. FN4 (GREEN) - SWE LED	8	SWITCH 1, 2 (POSITIVE) (GREEN)
9	Not Used	9	Not Used
10	Not Used	10	Not Used
11	POWER SUPPLY, DC OUT - NEG (BLACK)	11	LED STRIP, POS (RED)
12	POWER SUPPLY, DC OUT - POS (RED)	12	LED STRIP, POS (RED)

(SRP/SMB) Pin Assignments

4-Pin Connector	
1	Vdd +5Vdc
2	Logic Common
3	Data, Communication Fst
4	Data, Communication Next

ELECTRICAL RATING TABLE

Model	Voltage V	Amps A	Watts W	Hertz Hz	# of Conductor Wires	Phase	# of Tank Elements	Tank Element Rating W/V
COR30k	220	22.7	5000	50/60	2	1	2	2500W/220V
	230	23.9	5500					
	240	22.5	5400					

LADDER DIAGRAM COR30, COR31

NOTE: SEE TABLE TITLE
 WIRE: SEE TABLE
 WIRE GAUGE: SEE TABLE
 WIRE: SEE TABLE
 PART NUMBER: LD-COR-30
 REVISION: A

**WARNING:**

Electric Shock Hazard - the following procedures are to be performed only by a qualified service technician. Disconnect power when replacing components. Neither Wilbur Curtis Co., Inc. nor the seller can be held responsible for the interpretation of this information, or any liability in connection with its use.

Scald and Burn Hazard, Extremely Hot Surfaces, Water and Steam - Allow the water tower to cool for 30 minutes before beginning servicing procedures. Drain the tank before replacing any internal components. Keep body parts clear of hot surfaces during troubleshooting.



IMPORTANT: If it is necessary to replace the universal power module (UPM), always check the inlet valve coil for a short and replace as necessary, before replacing the module. See the **Valve Test Procedure**, below to test for defective valves.

Troubleshooting Guidelines

- A unit that is not level may not function properly. Make sure the unit is properly leveled before proceeding.
- If the display or dispensing head buttons are flashing, see the **ERROR CODES** section before troubleshooting.
- Turn off power when disconnecting components from the wiring harness.
- Use this troubleshooting guide along with the appropriate **ELECTRICAL SCHEMATIC**.

Valve Test Procedure

Use a digital multi-meter (DMM) to measure the resistance of valve coils.

Measure the resistance across the valve coil terminals with the wiring harness disconnected. Reverse the meter leads on the terminals and measure the resistance in the opposite direction. A resistance of less than 100 ohms, in either direction, indicates a shorted coil. The valve must be replaced.

If a shorted coil is not detected, test for an open coil:

- 1 Reconnect the valve terminals to the wiring harness.
- 2 Check to see if the valve opens when power is applied.

Water Not Hot Enough

- 1 If the water heats, but is not hot enough, first check for the correct temperature setting on the control panel.
- 2 If the temperature setting is OK, and the actual water temperature does not match setting on the control panel, replace the temperature sensor.

Water Heats More Slowly Than Usual

- 1 Check for power across the terminals of the heating elements. If power is being supplied, disconnect the elements and check for continuity. Replace a heating element if the resistance is too high (nominal resistance is 13 Ohms).
- 2 Check the wiring to any element that does not have the proper voltage across it. Also check for corroded connections anywhere between the power cord and the heating elements.

Container Not Filled To Normal Level During Dispensing (overflow or too little)

- 1 Each of the three buttons can be set to either manual (push to dispense, release to stop) or automatic, preset volumes. The factory defaults are 1 set to manual, 2 and 3 set to automatic. See the **PROGRAMMING GUIDE** section to change the button settings.
- 2 The flow rate of the unit may not be calibrated. See **Calibrating the Water Flow Rate** in the **PROGRAMMING GUIDE** section.
- 3 Too little hot water dispensed can be caused by a blocked pre-heat tube (inside the water tank). It is recommended that the pre-heat tube be flushed at least twice a year to avoid build-up. See **Pre-heat Coil Flushing Procedure**, later in this section. If flushing the tube does not remove the build-up, replace the pre-heat tube.

Dispenser Overflows All Of The Time

If the circulation pump is “stuck on” when ever the rocker switch is in the ON position:

- 1 Check for a button stuck in the on position or a shorted button wiring harness.
- 2 Disconnect the SME/UPM wiring harness from the smart membrane encoder (SME). If the circulation pump continues to run, replace the UPM. If the circulation pump stops running when the SME is disconnected the SME is probably bad.

No Power - Display and Dispenser Head Not Lit

- 1 Make sure the circuit breaker to the circuit supplying power to the water tower is not tripped and is turned on.
- 2 On units with a power plug, make sure it is connected to the power receptacle.
- 3 Make sure that the main power rocker switch on the front of the water tower is turned ON.
- 4 Verify that all wires from the power cord are properly connected inside the water tower. Check to make sure that the wires are not burned/overheated. Loose connections can create heat. Check chassis ground. NOTE: Overheated wires are often caused by loose connections.
- 5 Check for power to the internal power supply module, the power transformer and the 120 Volt input of the universal power module (UPM). Trace the circuit back (using the wiring diagram) to the power cord to find out where power is lost. If there is power into the thermostat reset switch, but not out, see step 6.
- 6 If there is power into the thermostat reset switch, but not out, check to make sure that the water tank is not empty. If the tank is empty, the reset switch has probably opened up due to a low water level, go to **Water Tank Does Not Fill**. If there is water in the tank, but no power out, push in on the reset switch button to see if it restores power. If power is restored, check to make sure that the switch is not opening up at the wrong temperature (the switch should not open up at normal water temperatures). If there is still no power through the switch after pushing the button, replace the thermostat reset switch.

Nothing Works, No Temperature is Displayed, but Top of Dispenser Head is Lit

- 1 Make sure that both 24 Volt and 120 Volt power are being supplied to the universal power module (UPM). If not, trace the circuit back (using the wiring diagram) to the power cord to find out where power is lost.
- 2 Check to make sure power is being supplied to the switch panel control module (SPCM) through the Vdd and Vss wires. If there is power into the UPM, but not out suspect the UPM.
- 3 Check the orange wire between the UPM and SPCM for continuity. If the wire is good, either the SPCM or the UPM is bad.

Water Does Not dispense, Temperature Display is Working

- 1 Place a container under the dispensing head. Push all three buttons, one at a time (empty the container after each button push). If a button is not working, skip to step 6.
- 2 Make sure that both 24 Volt and 120 Volt power are being supplied to the UPM. If not, trace the circuit back (using the wiring diagram) to the power cord to find out where power is lost.
- 3 Check to make sure that the pump is primed according to the pump priming instructions in the **INSTALLATION INSTRUCTIONS** section.
- 4 Check to see if power is being supplied to the circulation pump while button 1 is pressed. If power is being supplied, but you do not hear the pump run, replace the pump.
- 5 Check the dispensing head wiring harness at the switch terminals. Check for good connections at the SME/UPM connector.
- 6 If all connections are good, suspect either the SME or the UPM.
- 7 If one or two of the buttons is not working, disconnect the “switches” connector from the SME. Push each button, one at a time and check for continuity with a DMM. Replace any buttons that do not work. If all buttons have continuity, replace the SME.

Water Tank Overfills

- 1 Turn the rocker switch on the front of the water tower ON and OFF. If water continues to flow when the switch is in both positions, replace the inlet valve.
- 2 Check to make sure that the water tank is properly grounded.
- 3 If water stop flowing to the water tank when the rocker switch is turned OFF, and continues when the switch is turned back ON, remove the orange wire from the water probe on the tank. While power is ON, short the end of the orange wire to the tank. If water does not stop flowing when the orange wire is shorted to the tank, check to make sure that the tank is properly grounded. Also check the continuity of the orange wire connecting to the universal power module (UPM). If both are OK, replace the UPM.

Water Too Hot (Boiling or Excessive Steaming)



IMPORTANT: Before proceeding, make sure that the control panel temperature is adjusted to compensate for higher elevations. The factory default temperature is 208°F (98°C). Reduce the factory set operating temperature 2°F/1°C for every 1000 feet of elevation.

- 1 Check the control panel temperature setting. If the temperature display reading is lowing than the control panel temperature setting, and the water is steaming/boiling, go to step 4.
- 2 If the temperature display matches the control panel setting, but the water overheats, first check to see if power is being supplied to the input of the solid state relay (SSR). If it is, then the universal power module (UPM) is probably bad.
- 3 If power is not being supplied to the input of the SSR, but the heating element is constantly on, the SSR is probably bad.
- 4 If temperature display reading is lower than the control panel temperature setting, check the resistance across the leads of the temperature sensor. If the resistance is 10 k or more when the water is hot, check the sensor wire for corroded/poor connections at the universal power module (UPM). Also check the sensor for proper mounting to the tank (with heat sink compound). If the display still continues to constantly read lower than the control panel temperature setting, replace the temperature sensor.

Water Tank Does Not Fill

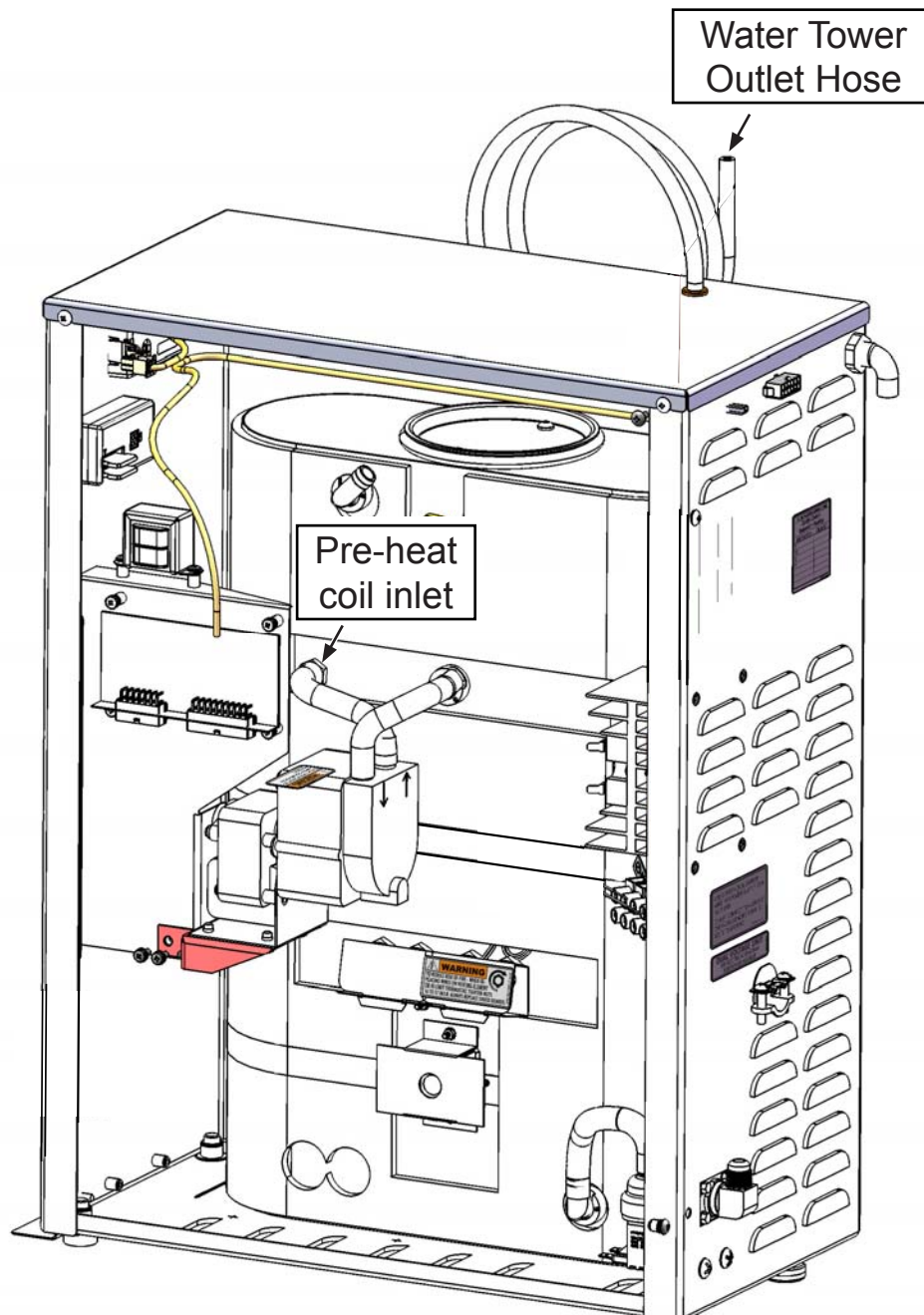


IMPORTANT: No water or low water in the tank can cause the tank to overheat, resulting in the thermostat reset switch opening. If after correcting a tank fill problem there is no power to the control panel, wait for the water tank to cool and push the reset switch button to reset.

- 1 Check to make sure the water supply is turned on. Check for a plugged water supply line, water filter or inlet valve.
- 2 If there are no plugs in the water supply line, check for power across the inlet valve terminals. If power is being supplied, but there is no water flow, replace the inlet valve.
- 3 If power is not being supplied to the inlet valve, check the wires between the universal power module (UPM) and the inlet valve. Check for corroded connections.
- 4 If the wiring between the UPM and the inlet valve is OK, but there is no power to the inlet valve, remove the orange wire from the water tank probe. If the water tank starts to fill, check the water probe to see if it is shorted. If the water tank does not start to fill, replace the UPM.

Pre-Heat Coil Flushing Procedure

- 1 Once the tank has cooled for 30 minutes, remove the side access cover from the water tower.
- 2 Disconnect the water tower outlet hose from the dispensing head and put the end in an empty pail.
- 3 Disconnect the hose that runs from the pump to the pre-heat coil inlet on the side of the water tank.
- 4 Connect a water or air line to the pre-heat coil inlet on the side of the tank and flush any sentiment from the line.
- 5 Reassemble the water tower in reverse order.



System Fault Messages

The display and the buttons on top of the dispensing head will flash on and off when the unit is heating up to the operating temperature or when reheating after a large amount of water is dispensed. Under the following conditions, the display and/or buttons will flash an error code:

- 1 Water level overflow. This error indicates that either there is not enough incoming water flow/pressure or a water overflow condition (unit will stop functioning).
- 2 Break in temperature control circuit.
- 3 Break in the communication wires between the two control boards.

If the unit is flashing an error code, turn off the main power toggle switch and call for service.

ERROR MESSAGE	DESCRIPTION	CAUSE
Water Level Error	Fill run error/overflow; indicated by (3) long flashes and (1) short flash in the push button switches	The water inlet valve has either been open for more than 10 minutes on the initial tank fill or has been open for more than 90 seconds in normal operation.
Sensor Error	Open sensor, indicated by (3) long flashes and (2) short flashes in the push button switches	Break in the temperature thermistor circuit.
Communication Error	Communication error between the UCM and the UPM, Indicated by (3) long flashes and (3) short flashes in the push button switches	Break in the communication wires between the two control boards.

Wilbur Curtis Co., Inc. certifies that its products are free from defects in material and workmanship under normal use. The following limited warranties and conditions apply:

- 3 years, parts and labor, from original date of purchase on digital control boards
- 2 years, parts, from original date of purchase on all other electrical components, fittings and tubing
- 1 year, labor, from original date of purchase on all other electrical components, fittings and tubing

Additionally, Wilbur Curtis Co., Inc. warrants its grinding burrs for four (4) years from the date of purchase. Stainless steel components are warranted for two (2) years from the date of purchase against leaking or pitting. Replacement parts are warranted for ninety (90) days from the date of purchase or for the remainder of the limited warranty period of the equipment in which the component is installed.

All in-warranty service calls must have prior authorization. For authorization, call the Technical Support Department at 800-995-0417. Additional conditions may apply. Go to www.wilburcurtis.com to view the full product warranty information.

CONDITIONS & EXCEPTIONS

The warranty covers original equipment at time of purchase only. Wilbur Curtis Co., Inc., assumes no responsibility for substitute replacement parts installed on Curtis equipment that have not been purchased from Wilbur Curtis Co., Inc. Wilbur Curtis Co., Inc. will not accept any responsibility if the following conditions are not met. The warranty does not cover:

- **Adjustments and cleaning:** *The resetting of safety thermostats and circuit breakers, programming and temperature adjustments are the responsibility of the equipment owner. The owner is responsible for proper cleaning and regular maintenance of this equipment.*
- **Replacement of items subject to normal use and wear:** *This shall include, but is not limited to, spray heads, faucets, light bulbs, shear disks, "O" rings, gaskets, silicone tubing, silicone elbows, canister assemblies, whipper chambers and plates, mixing bowls, agitation assemblies and whipper propellers.*

The warranty is void under the following circumstances:

- **Improper operation of equipment:** *The equipment must be used for its designed and intended purpose and function.*
- **Improper installation of equipment:** *This equipment must be installed by a professional technician and must comply with all local electrical, mechanical and plumbing codes.*
- **Improper voltage:** *Equipment must be installed at the voltage stated on the serial plate supplied with this equipment.*
- **Improper water supply:** *This includes, but is not limited to, excessive or low water pressure and inadequate or fluctuating water flow rate.*
- **Damaged in transit:** *Equipment damaged in transit is the responsibility of the freight company and a claim should be made with the carrier.*
- **Abuse or neglect (including failure to periodically clean or remove lime accumulations):** *The manufacturer is not responsible for variation in equipment operation due to excessive lime or local water conditions. The equipment must be maintained according to the manufacturer's recommendations.*
- **Unauthorized repair or modification:** *This equipment must be serviced only by qualified service technicians, using factory specified parts to factory specifications.*
- **Modified/Missing Serial Tag:** *The serial number label (tag) must not be defaced or removed.*

Repairs and/or Replacements are subject to Curtis' decision that the workmanship or parts were faulty and the defects showed up under normal use. All labor shall be performed during regular working hours. Overtime charges are the responsibility of the owner. Charges incurred by delays, waiting time, or operating restrictions that hinder the service technician's ability to perform service is the responsibility of the owner of the equipment. This includes institutional and correctional facilities. Wilbur Curtis Co., Inc. will allow up to 100 miles, round trip, per in-warranty service call.

Return Merchandise Authorization (RMA): All claims under this warranty must be submitted to the Wilbur Curtis Technical Support Department prior to performing any repair work or return of this equipment to the factory. **All returned equipment must be properly re-packaged in the original carton and received by Curtis within 45 days following the issuance of a RMA.** No units will be accepted if they are damaged in transit due to improper packaging. **NO UNITS OR PARTS WILL BE ACCEPTED WITHOUT A RETURN MERCHANDISE AUTHORIZATION (RMA). THE RMA NUMBER MUST BE MARKED ON THE CARTON OR SHIPPING LABEL. All warranty claims must be submitted within 60 days of service. Invoices will not be processed or accepted without a RMA number. Any defective parts must be returned in order for warranty invoices to be processed and approved.** All in-warranty service calls must be performed by an authorized service agent. Call the Wilbur Curtis Technical Support Department to find an agent near you.