Section 1 ::

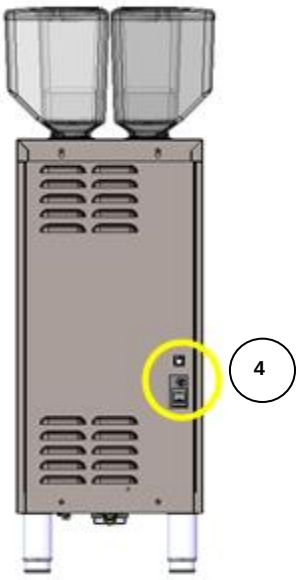
Ascent Touch Overview – External

1. External Machine Overview 99712
2. Front Panel
3. Bean Hoppers

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS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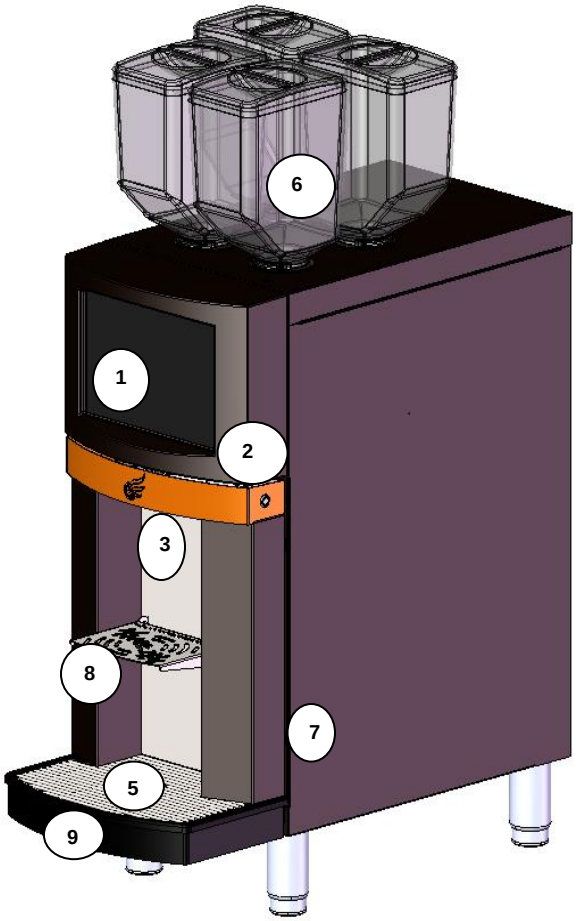
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9

External Machine Components

1. **Touch Screen**
   Touch screen provides a user-friendly interface for selecting and pouring beverages. It also provides access to brew system statistics and service functions.

2. **Front Door**
   The front door opens to access the mechanical enclosure, for cleaning, maintenance, and service.

3. **Product Outlet**
   Finished beverages are poured through the product nozzle and into the cup or bulk-fill container.

4. **Power Switch**
   The power switch is located on the back left side of the machine.

5. **Drain Grate and Drain Tray**
   The metal drain grate and drain tray direct excess liquid into the drain.

6. **Bean Hoppers**
   Each bean hopper holds approximately two pounds of beans.

7. **Grounds Bin located behind door**
   The grounds bin is in the front of the machine and behind the door. It holds used coffee grounds.

8. **Cup Shelf**
   Used when pouring a small individual beverage. The cup shelf folds up for use when a carafe or larger drink is being filled.

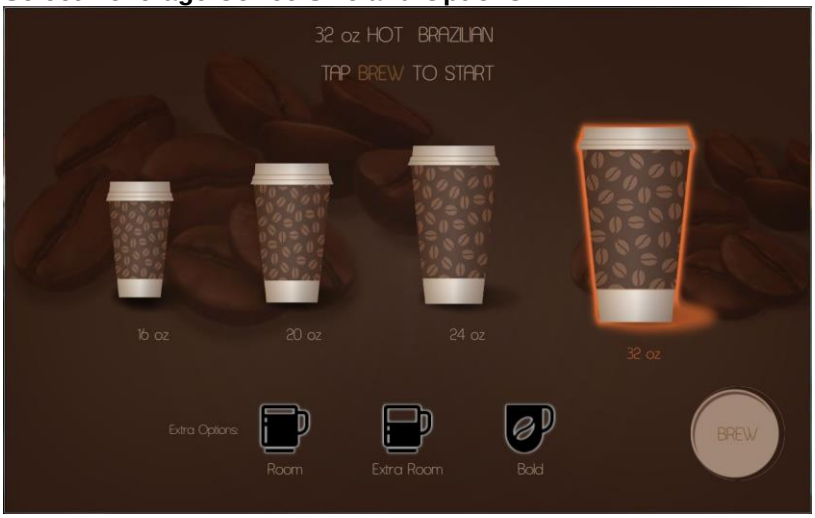
9. **ADA Touch Pad (Optional)**
   Additional machine control pad used when ADA compliance is required.

Pouring a Beverage

Selecting Brew Coffee Type (Images may vary)

Select Bean Type

Select Beverage Coffee Size and Options



***NOTE**: These drink sizes reflect the factory settings. They can be customized to accommodate a customer's preferences for drink size(s) and display type.*

SMALL	12oz. beverage will be poured.
MEDIUM	16oz. beverage will be poured.
LARGE	20oz. beverage will be poured.
EXTRA LARGE	24oz. beverage will be poured.

Select Beverage Options

SELECT BEV

SELECTING EXTRA ROOM WILL PROVIDE SPACE FOR ADDING AN ADDITIONAL PRODUCT WHEN DESIRED. (E.g., HOT WATER, CREAM, OTHER)

WITH ROOM

A cup of coffee with room for milk or sugar is poured. This option reduces the coffee volume by approximately 1oz. (30mL).

EXTRA ROOM

A cup of coffee with extra room for milk or sugar is poured. This option reduces the coffee volume by approximately 2oz. (60mL).

BOLD

A stronger cup of coffee is poured, by adding one second of grind time to the coffee dose.

ICED

A cup of coffee with reduced water will be poured. A cup with ice must be placed under the product outlet, first.

1. **BREW COFFEE**
   PRESSING THIS BUTTON BEGINS BREWING THE SELECTED BEVERAGE.

2. **PAUSE CARAFE BUTTON**
   COFFEE BEING DISPENSED INTO A CARAFE WILL BE SUSPENDED. PRESS ONCE TO PAUSE, THE POUR PROCESS. ONCE A CARAFE POUR IS SUSPENDED, A REGULAR DRINK CAN BE POURED. TO RESUME THE CARAFE POUR PROCESS, PRESS PAUSE A SECOND TIME.

3. **CARAFE**
   Press **SMALL** and **CARAFE** to fill a 32oz. carafe.
   Press **MEDIUM** and **CARAFE** to fill a 64oz. carafe.
   Press **LARGE** and **CARAFE,** to fill a 96oz. carafe.

4. **HOT WATER BUTTON**
   PRESS AND HOLD TO DISPENSE HOT WATER ONLY.

5. **CANCEL BUTTON**
   CLEAR CURRENT SELECTION(S) OR STOP THE POURING OF A BEVERAGE.

6. **CLEAN BUTTON**
   FOR INFORMATION ABOUT CLEANING PROCEDURES, PLEASE SEE SECTION 8: CLEANING.

7. **ENTER BUTTON**

FOR COMPLETE PROGRAMMING AND SOFTWARE MENU NAVIGATION INSTRUCTIONS, PLEASE SEE SECTION 7: SOFTWARE*.*

8. **DISPLAY**
   THE DISPLAY PROVIDES MESSAGING ABOUT THE STATE OF THE MACHINE. FOR MORE INFORMATION ON THE MESSAGES DISPLAYED, PLEASE SEE SECTION 9: TROUBLESHOOTING*.*

Filling a Bean Hopper

1. Remove the bean hopper lid
2. Pour fresh, whole coffee beans into the bean hopper
3. Replace the bean hopper lid

USE FRESH, WHOLE, COFFEE-ROASTED BEANS

DO NOT put ground coffee into the bean hopper.

DO NOT place foreign materials in the bean hopper.

DO NOT feed beans into the grinder by hand.

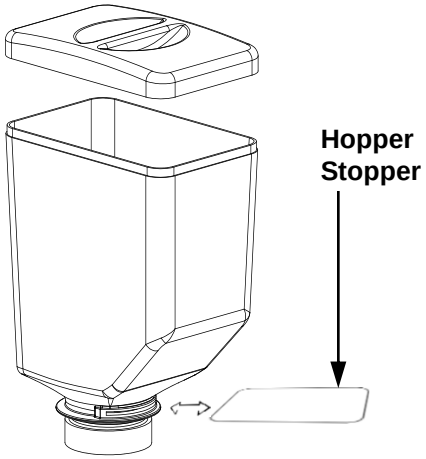
Removing a Bean Hopper

ALWAYS INSERT THE HOPPER STOPPER FIRST BEFORE REMOVING THE BEAN HOPPER ASSEMBLY.

Inserting a Hopper Stopper

The hopper stopper blocks the beans from pouring out of the bottom when removing a full bean hopper.

1. Place the hopper stopper in the slot at the base of the bean hopper and push it into the bean hopper.
2. With the hopper stopper in place, you can remove a full hopper from the machine.



Removing the Bean Hopper Stopper

Once the bean hopper is firmly placed back on top of its position, pull the hopper stopper out of the bean hopper.

Section 2 ::

Ascent Touch Overview – Interior

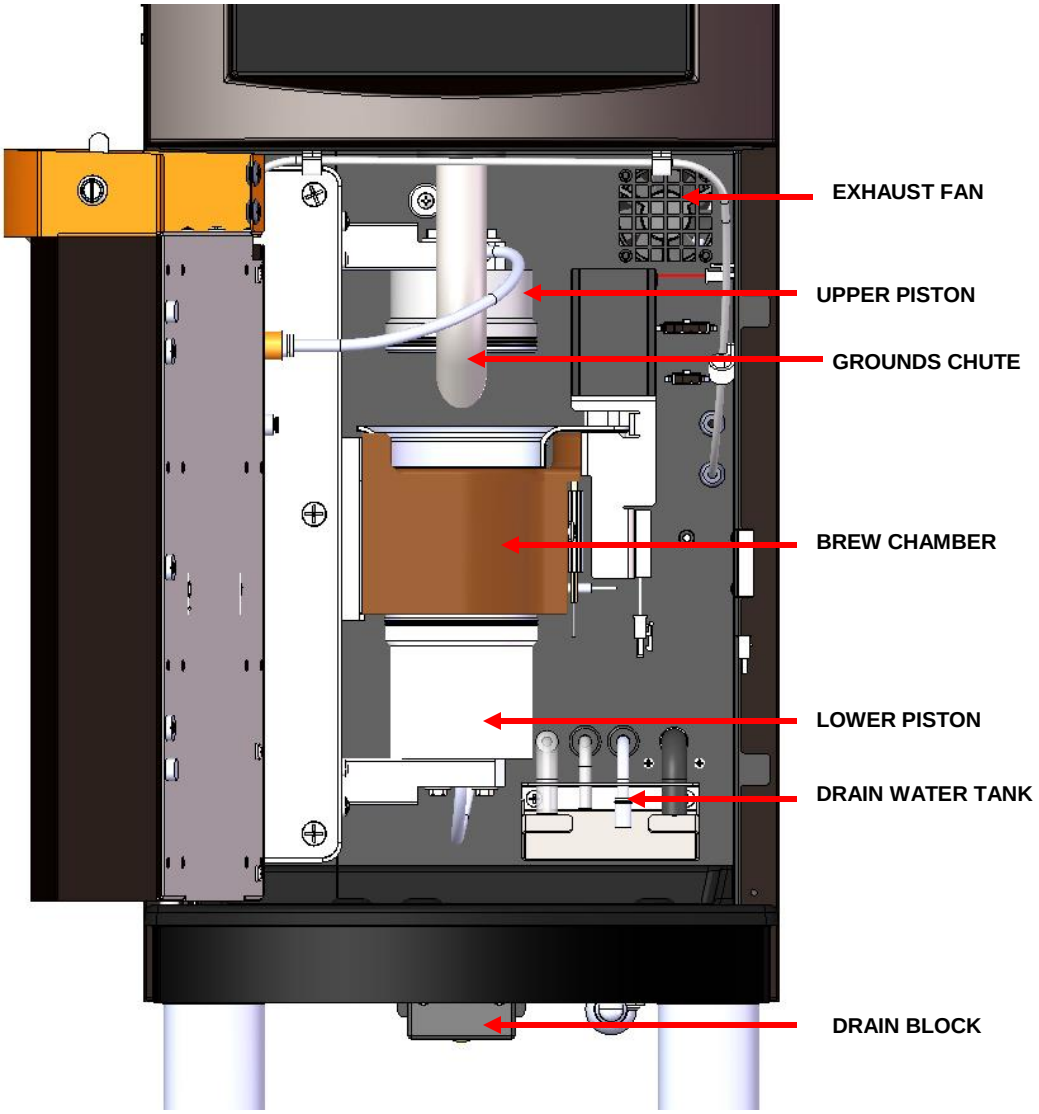
1. Internal Machine Overview – Front View
2. Removing a Side Panel
3. Removing the Back Panel
4. Removing the Top Panel
5. Internal Machine Overview – Rear View

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Internal Machine Overview – Front View



Internal Machine Components – Front

EXHAUST FAN
Removes heat and humidity from interior of machine.

UPPER PISTON
Once the coffee is brewed in the brew chamber, the brewed coffee passes through the upper piston micro screen, through the dispense valve, and then to the product nozzle.

GROUNDS CHUTE
Ground chutes are located in front and back of the brew group they are accessible through the front door.
Ground coffee beans, are directed down the ground chutes into the brew chamber.

BREW CHAMBER
The brew group collects ground coffee from the grinders, water compresses, brews and dispenses coffee, then discards the used coffee grounds into the grounds bin.

LOWER PISTON
During a beverage pour, hot water passes up and through the lower piston, into the brew chamber.

TUBING BLOCK
Water drain, over flow, purge tubing.

DRAIN BLOCK
The drain block transports water away from the machine, and ensures its appropriate disposal

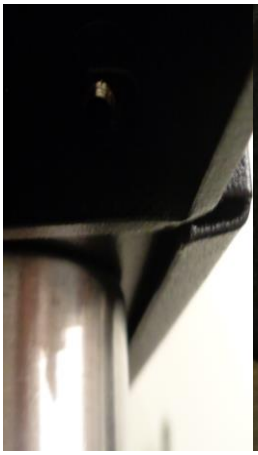
Removing a Side Panel

This procedure describes how to remove the right side panel. This procedure can be applied to both the right and left side panels.

NOTE: The right and left side panels are not interchangeable.

1. Loosen screws on the bottom of machine one is under the drain tray, and next by the right front leg. *See photos below.*
2. Pull the bottom of the panel away and then down from the machine. *See photo # 3*

Reverse to reinstall.



Removing the Back Panel

1. Remove the right and left side panels.
2. Remove four screws on the back panel.
3. Remove the 2 bottom panel screws, lift the edge of the top panel, and then lift the bottom of the back panel towards you. *See photo below.*
4. Remove the back panel.

Reverse to reinstall.

Removing the Top Panel

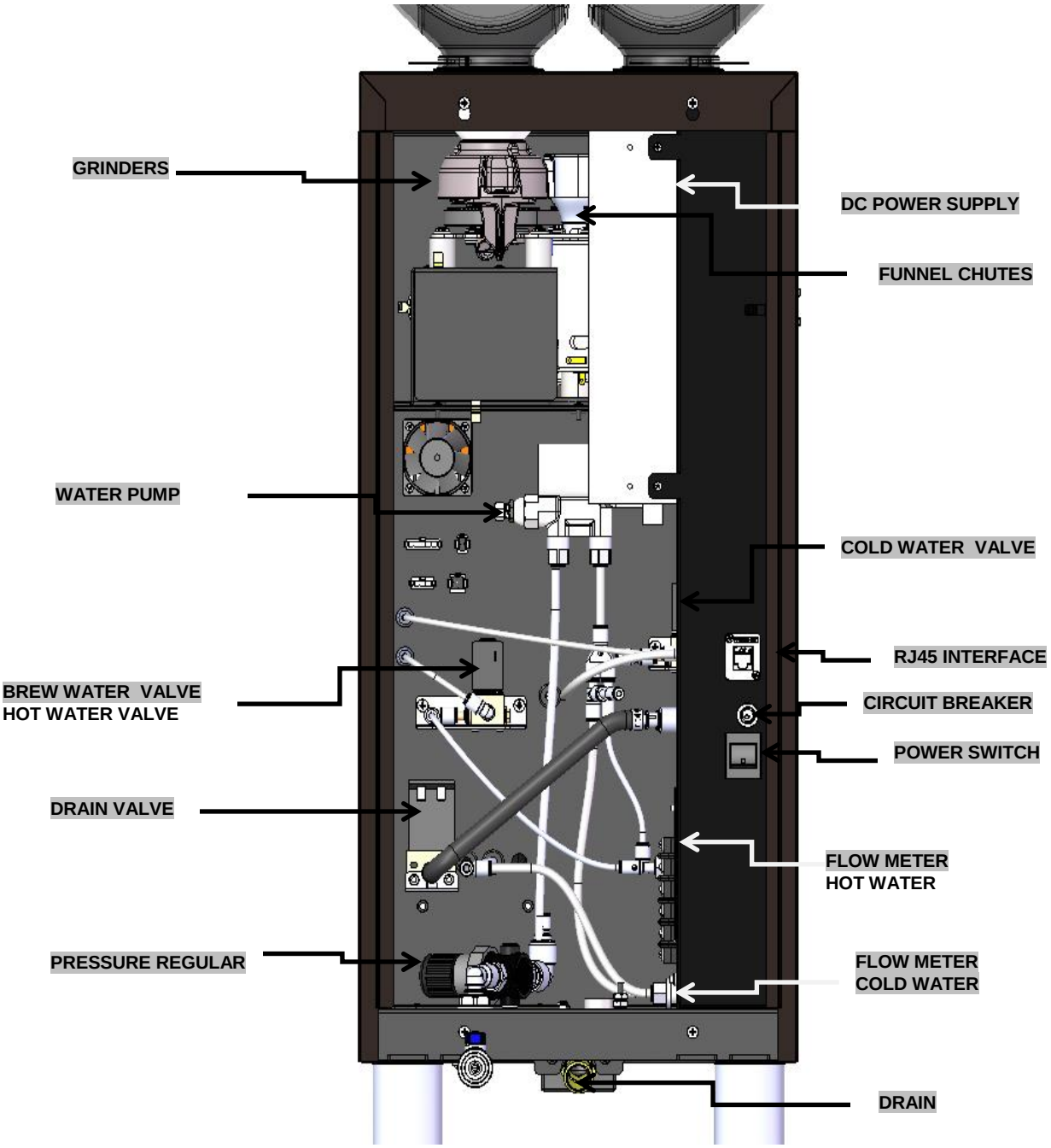
1. Install hopper stoppers, remove the bean hoppers.
2. Remove two screws on the top of the back panel. *See photo below.*
3. Remove the 2 screws on the front of the machine. *See photo below.*
4. Lift and remove the front panel.

Reverse to reinstall.

Back Panel

Top of machine front left and right side.

Internal Machine Overview – Rear View



Internal Machine Components – Rear

Hot Water Tank
NOT SHOWN
The hot water tank stores and heats the water used to brew the coffee.

Main Power Circuit Breaker
The main power circuit breaker protects the machine if there is an electrical malfunction (i.e. overload) or a short circuit.

Power Switch
The power switch controls power to the machine.

DC Power Supply
The DC power area houses all the components that supply DC voltage for the machine.

Water Pump
The water pump increases flow of the water fed to the brew chamber during the brewing process. The water pump includes a pump and a motor in a single assembly.

RJ45 Interface
The AC control system houses all the components that provide AC voltage for the machine.

Flowmeters
There are two flow meters the bottom one flows to the tank. The upper one is used for a bypass to dispense cold beverages.

Drain
The drain transports water away from the machine, and ensures its appropriate disposal.

Pressure Regulator
The pressure regulator regulates the water pressure to the brew chamber during brew cycle, the regulator can be adjusted to obtain a 30 psi for optimum brewing.

Drain Valve
The drain valve controls the flow of waste water to the drain.

Cold Water Valve
The cold water valve provides water used for iced coffee beverages.

Brew and Hot Water Valves
The brew valve controls the water flow to the brew group.
The hot water valve is used for dispensing hot water into the cup from the hot water tank.

Dispense Valve
The dispense valve controls the flow of coffee to the product nozzle.

Section 3 ::
The Plumbing System

1. Plumbing Overview
2. Water System
3. Water Dosing
4. Water Heating
5. Safety Features of the Hot Water Tank Assembly
6. Water Flow Control

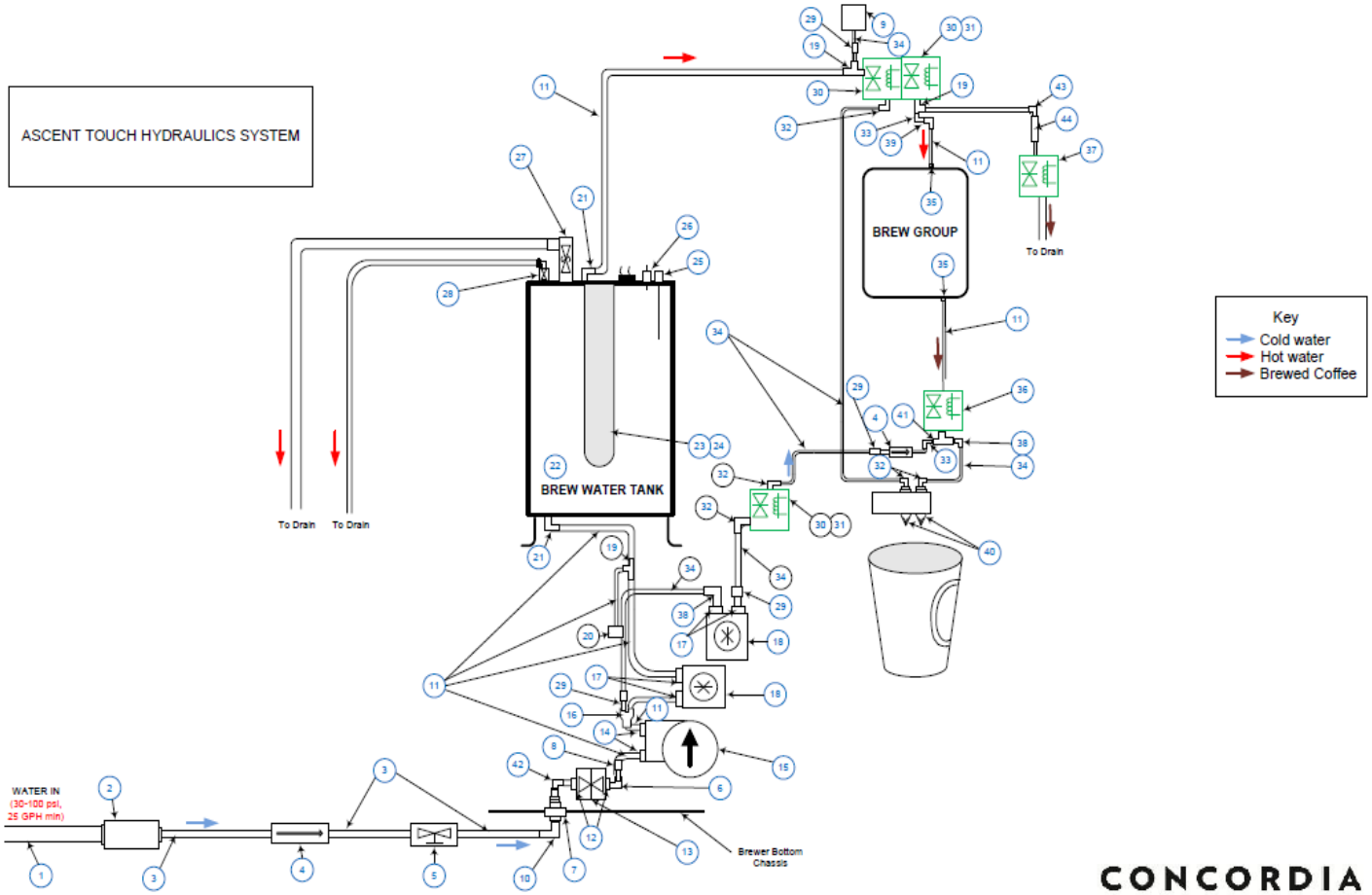
TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Plumbing Overview

Hydraulics Diagram



CONCORDIA
BEVERAGE SYSTEMS

ITEM #	PART #	DESCRIPTION
1	1250-012	TUBE PFA 1/4ID X 3/8OD
2	1232-136	UNION 1/4T X 3/8 QUICK
3	1250-006	TUBE PFA 5/32 ID X 1/4 OD
4	1210-047	VALVE CHECK 1/4" X 1/4"
5	1210-059	VLV MANUAL SHUT-OFF 1/4"
6	1232-179	ELBOW SWIV 5.16FX1.4NPT M
7	1232-156	CONN BULKHEAD LEGRIS 3/8F
8	1232-154	CONN LEGRIS 6MM F X 8MM M
9	2660-063	TRANSDUCER PRESS BRD MNT
10	1232-153	ELBOW LEGRIS 3/8M X 1/4F
11	1250-029	TUBE PTFE 6MM X 4MM
12	1232-178	CONN 3/8M X 1/4NPT M
13	1220-010	REGULATOR PRESS H2O
14	2790-282	ASSY 1/8BSPPX6MMT FITTING
15	2710-030	PUMP WATER ASCENT
16	1232-145	DIVIDER LEGRIS 2WAY 6MM F
17	2790-283	ASSY 1/4BSPPX6MMT FITTING
18	2660-059	FLOWMETER DIGMESA 2.5MM
19	1232-159	TEE LEGRIS 6MM
20	1232-175	CONN LG 6MM TUBE CAP
21	1233-041	ELBOW SXL 1/8NPT X 6MM T
22	1140-026	TANK BREW WATER ASCENT
23	2650-028	ELEMENT HTG 4200W 208VAC
24	1260-163	O-RING 2-015 EPDM
25	2660-037	PROBE TEMP & LVL WATER
26	1451-080	ROD 1/8OD SS
27	1210-057	PRV 125PSI ASCENT
28	1210-058	VLV SS EXPANSION 80PSI
29	1232-143	CONN LEGRIS 4MM F X 6MM M
30	1210-061	VALVE 16BAR BUSCHJOST
31	1240-067	PLUG VLV BUSCHJOST
32	1232-147	ELBOW LGRS 6MM F X 4MM F
33	1232-146	ELBOW LGRS 6MM M X 6MM F
34	1250-020	TUBE PFA 3/32ID X 5/32OD
35	1232-157	HALF CARTRIDGE 6MM
36	1210-060	VLV ISOLATION RPE
37	1210-070	VLV DIENER ISO 180DEG
38	1232-126	ELBOW LEGRIS 4MM FX6MM M
39	1232-148	ELBOW LEGRIS UNION 6MM F
40	1120-553	NOZZLE DISPENSE AT
41	1232-187	TEE PLUG-IN LEGRIS 6MM
42	1232-177	ELBOW 3/8M X 3/8F
43	1232-172	ELBOW LEGRIS 6MM FX8MM M
44	1232-139	UNION LEGRIS 3.8 X 5.16

Water System

Primary Water Pressure Components

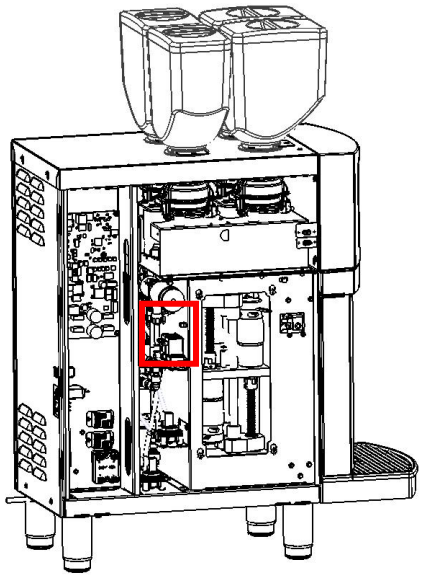
Since the water pressure supplied by a facility is unregulated as it enters the Ascent Touch, the machine must be able to produce the necessary pressures required for proper coffee extraction. The components utilized for this process are outlined in the following section.
24Vdc
25gph

Water pump
The water supply is fed via a1/4IDX3/8OD 6 inch tubing a union quick connect, 7 feet off tubing with a check valve connected to the bulkhead. From there it travels to the regulator then the water pump. The water pump output has a tee that flows to the top bypass flowmeter and one to the lower flowmeter.
The lower flowmeter runs to a tee that feeds the Tank and an output tube to the front for draining the tank.

The upper flow meter outputs to the brew/hot water manifold assembly. The pressure is preset at the factory. The water pump includes a pump and a motor in a single assembly.

The pump is activated by the control board, only when coffee is being brewed. Line pressure must be between 25-100psi at 25gph. Adequate line pressure is needed to fill the hot water tank.

If the water pump is damaged, replace the entire assembly.

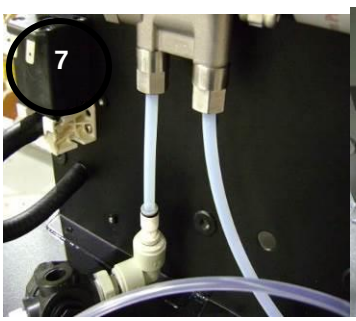


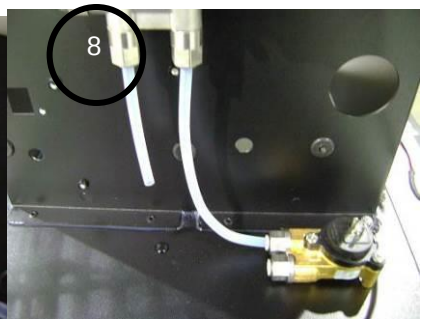
Water pump location

Removing the Water Pump Assembly

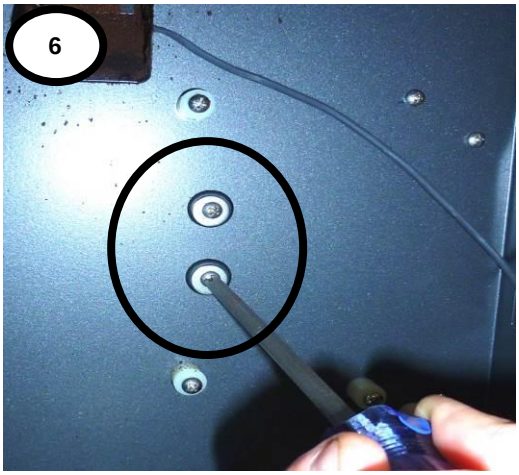
1. Turn off the water supply to the machine.
2. Press the **HOT WATER** button, to relieve the water pressure in the hot water tank.
3. Turn machine power off.
4. Remove the left side panel.
5. Remove the brew group. (see section 4 page 16)
6. Remove the two Phillips mounting screws for the water pump. *See photo below.*

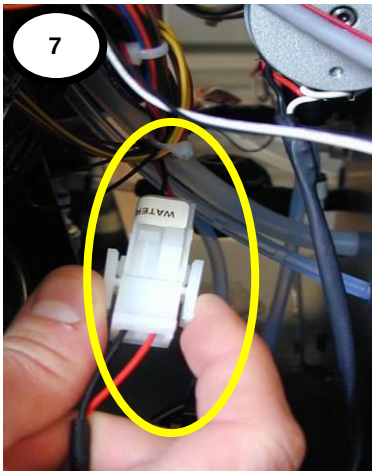
   NOTE: When removing the second screw, hold the water pump in one hand, so that it doesn't fall and become damaged.
7. Unplug the water pump motor. *See photo below*.
8. Disconnect the water input and output lines, by pressing down on the collar of the quick release connector. See below.





9. Remove the water pump from the machine.

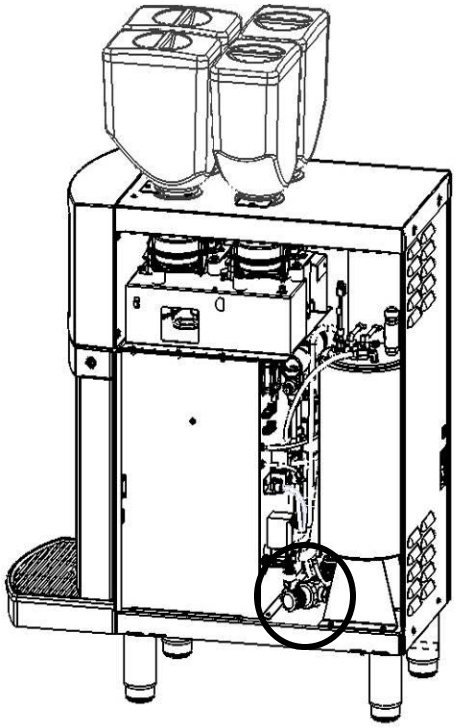




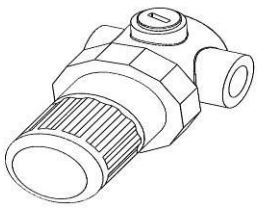
To reinstall this component, reverse the removal instructions.

Pressure Regulator

30psi

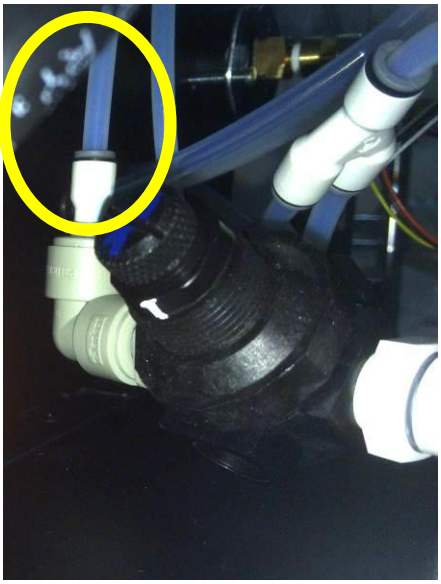


The pressure regulator regulates the water pressure to the machine. The pressure regulator can be adjusted to ensure proper input pressure. The pressure is preset to 30psi for optimum machine performance.



Removing the Pressure Regulator

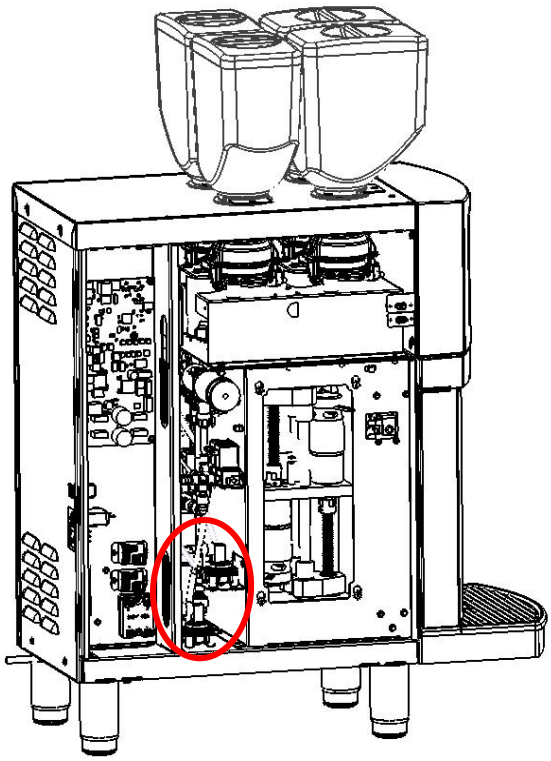
1. Turn off the water supply to the machine.
2. Press the **HOT WATER** button, to relieve the water pressure in the hot water tank.
3. Turn the power to the machine off.
4. Remove the right side panel.
5. On the left side of the pressure regulator, press the collar of the quick release fitting and remove the water input tube. *See photo below.*
6. On the opposite side of the pressure regulator, press the collar of the quick release fitting and remove the water output tube.



To reinstall this component, reverse the removal instructions.

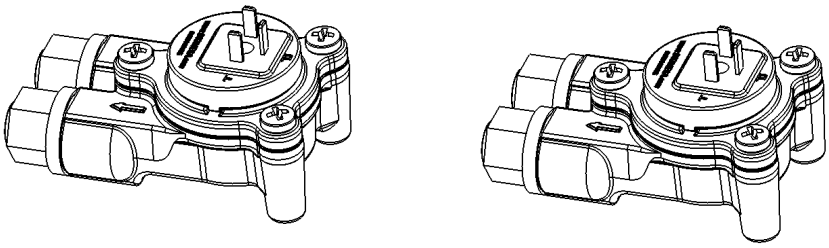
Water Dosing

Primary Water Dosing Component –Flowmeters

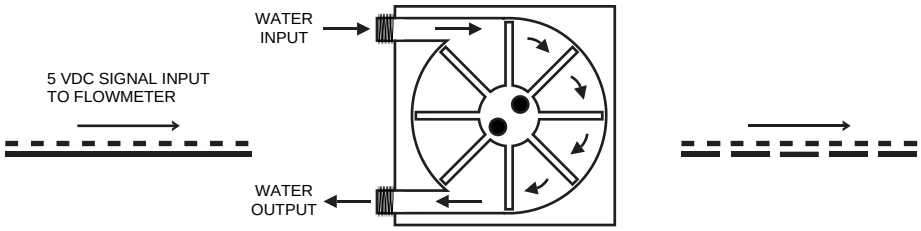


Flowmeters

There are two flow meters one measures the water flowing throughout the system the other is used as a bypass for cold water brewing,



The flowmeter contains a Hall-Effect Sensor. As the internal paddle spins, a fixed sensor located on the top of the flowmeter detects the passing of the magnets which interrupts (pulses) the DC signal flowing to the control board. The control board correlates 1.3mL of water per pulse to determine the total volume of water passing through the flowmeter. Water passing through the flowmeter is displayed in milliliters.

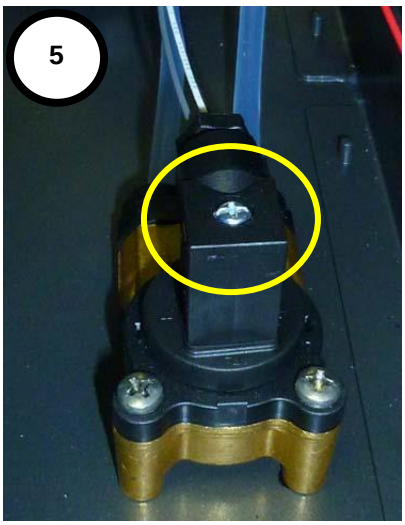


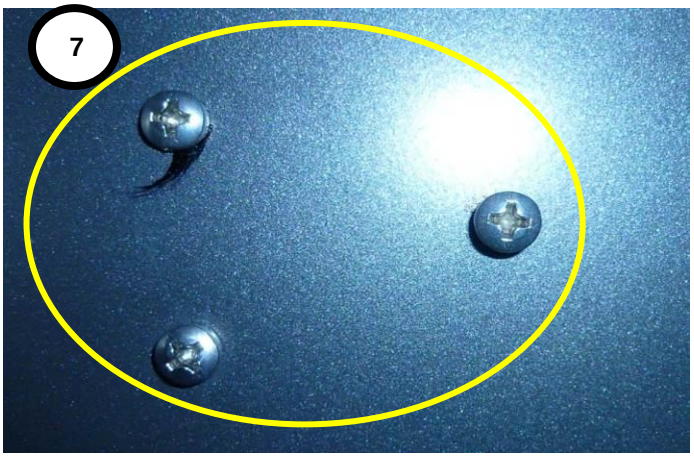
Removing the Flowmeters

1. Turn off the water supply to the machine.
2. Press the **HOT WATER** button, to relieve the water pressure in the hot water tank.
3. Turn the power to the machine off.
4. Remove the left side panel.
5. Remove the top screw on the flowmeter assembly. Use a small flathead screwdriver or a #1 Phillips screwdriver. *See photo below.*
6. Remove the connector on the top of the flowmeter plate. *See photo below.*
7. Remove the three screws attaching the flowmeter assembly to the machine frame. Use a short #2 Philip's screwdriver. *See photo below.*
8. For each water tube, press the collar of the quick release fitting and remove the tube.

CAUTION: When replacing a flowmeter, ensure that the sticker on the side indicates the flowmeter is 2.5mm.

To reinstall this component, reverse the removal instructions.

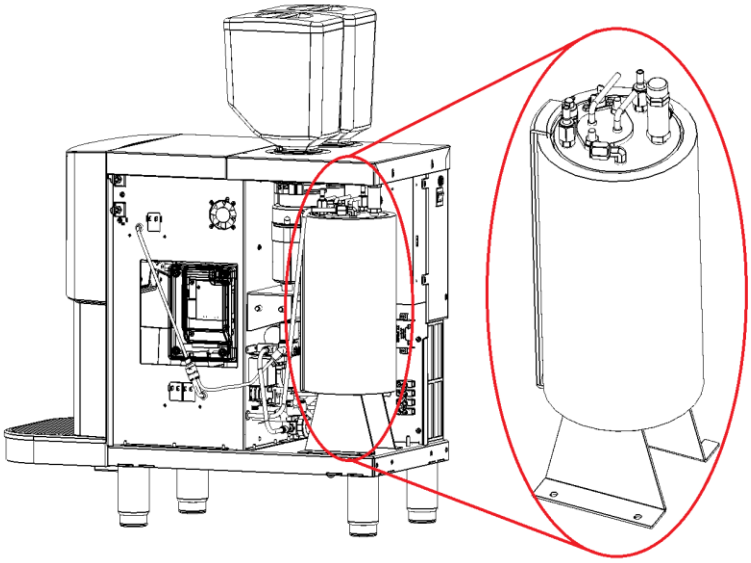




Water Heating

Though coffee can be brewed with cold water, the extraction process would take many hours. Heating the water prior to the brewing process accelerates the extraction of flavors exponentially. The Ascent Touch is equipped with a heating system that takes incoming water and prepares it for interaction with the coffee. The operational protocols and components used in this system are described in the following section. Images vary depending on options customers have selected.

Primary Heating Component – Hot Water Tank

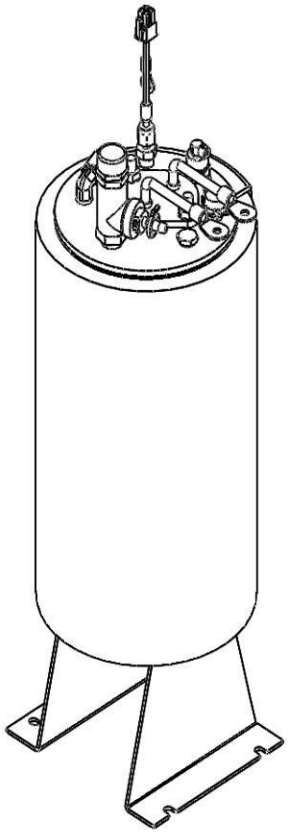


Hot Water Tank
220Vac

The hot water tank contains one 4200 watt – 10.5Ω (ohm) heating element.

The hot water tank can be programmed to heat water to a temperature between 185°-205°F (85°-96°C), in increments of .10.

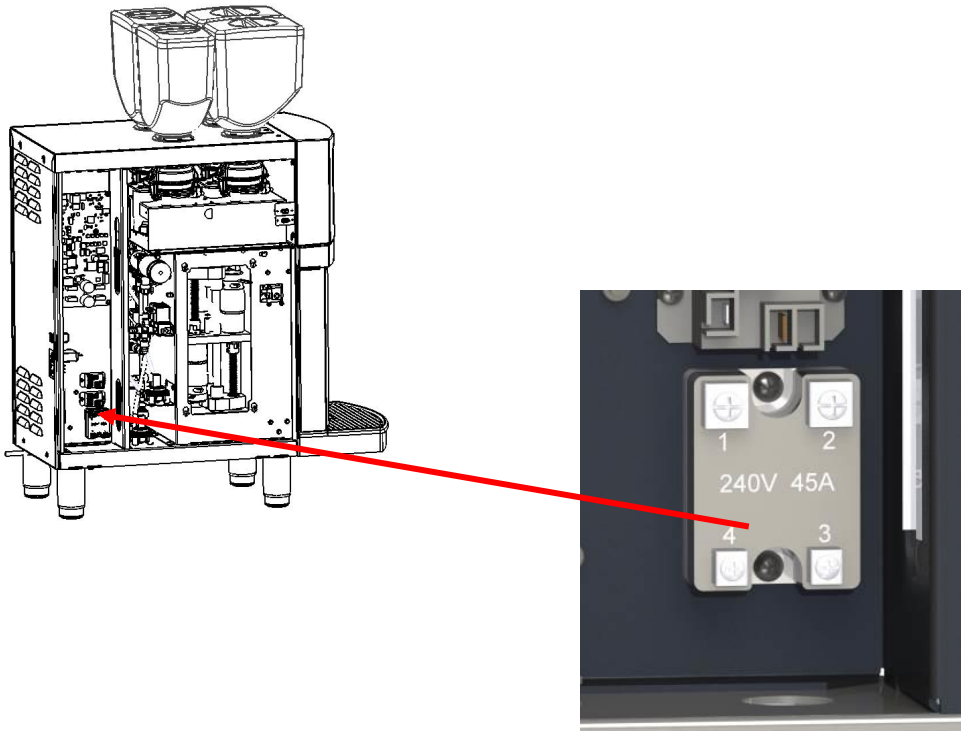
IMPORTANT: Turn off the machine and disconnect power from the element prior to performing a resistance check.



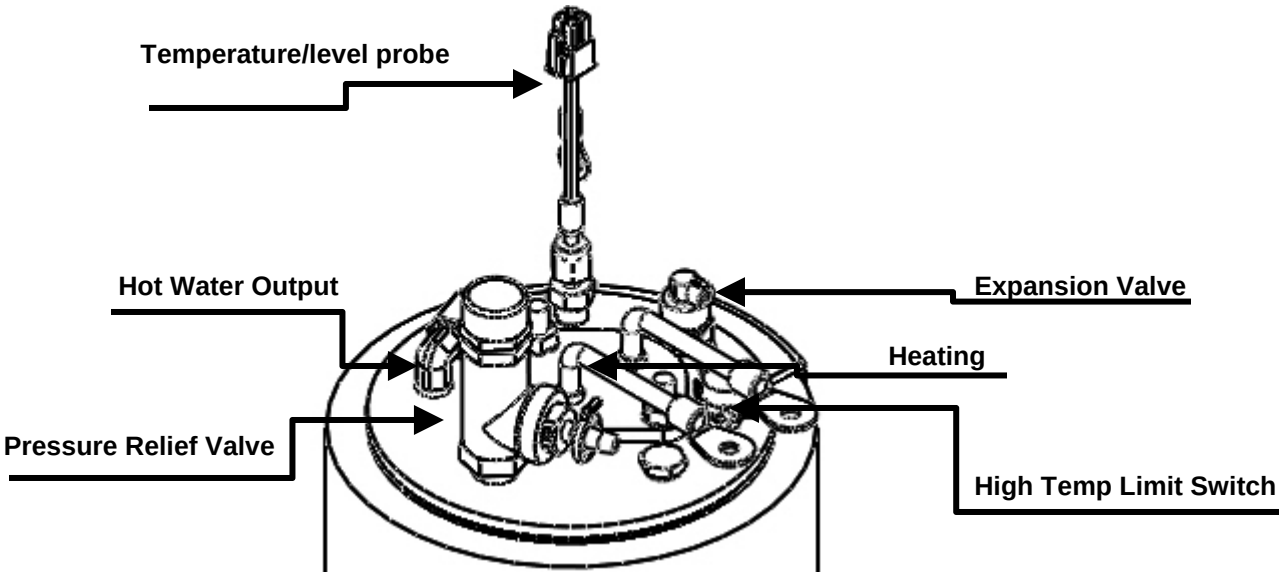
Heating Component – Hot Water Tank

240Vac Solid State Relay

The water tank heater is controlled via a 45amp Solid State Relay. Voltage for these relays is 3Vdc and is supplied by the control board (see below).



Safety Features of the Hot Water Tank Assembly



Hi Temperature Limit Switch

The Hi Temperature Limit Switch terminates power to the element if the temperature exceeds 210˚F.

Pressure Relief Valve

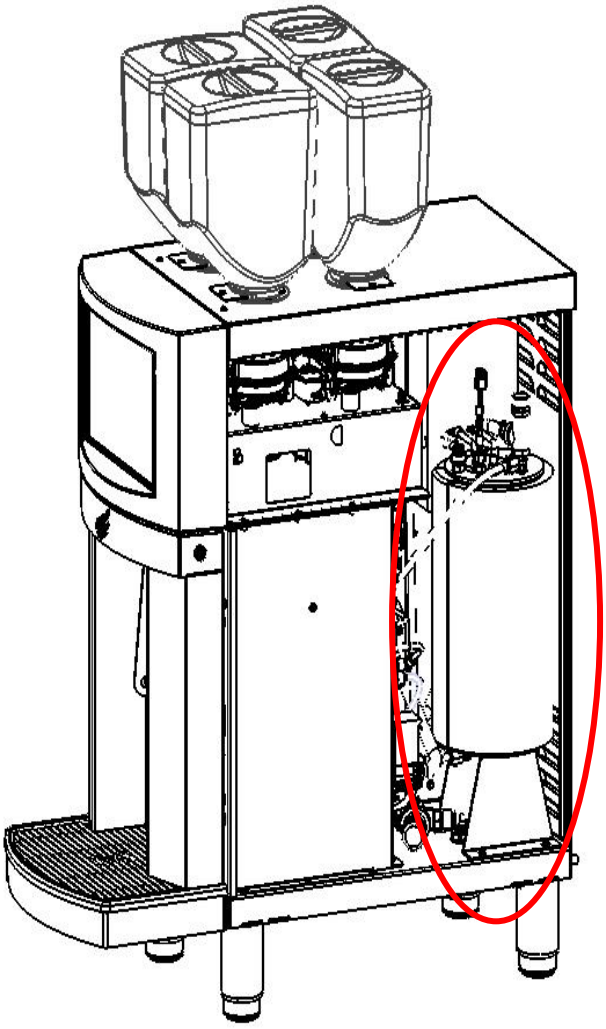
125psi
If the pressure in the water tank exceeds 125psi, the pressure relief valve opens to release excess pressure. A drain hose is routed from the pressure relief valve to the drain tray.

Expansion Valve

The expansion valve, located on top of the hot water tank, allows water to be released when the pressure within the water tank exceeds approximately 80psi, due to thermal expansion, when the heating element is on. This provides a 45psi buffer between the expansion valve and the 125psi pressure relief valve.

Level / Temperature Probe

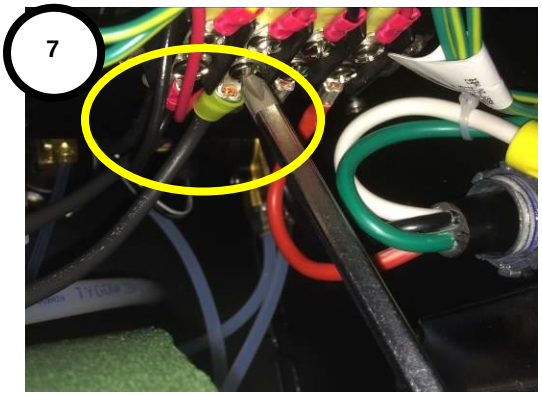
The AT uses the level / temperature probe to ensure that there is water in the tank and to monitor the temperature of the tank can be set to between 185°- 205°F. To verify the presence of water, a pulsed 300mv signal is sent to the probe. The presence of water in the tank will cause the signal to shunt to ground. When the signal is grounded the control board knows the tank has water and this allows the control board to activate the heater (if needed).



Removing the Hot Water Tank

1. **TURN OF WATER SUPPLY TO MACHINE.**
2. Press the **HOT WATER** button, to relieve the water pressure in the hot water tank.
3. **TURN OFF THE MACHINE AND UNPLUG FROM WALL.**
4. Remove the right, back, and top panels.
5. Disconnect the wiring connector for the level/temp probe. *See photo below*.
6. Disconnect the high limit switch.
7. Disconnect the two heating element power lines (black) from the terminal block and relay. See photo below.
8. Cut the Ty Wrap connecting the drain tube for the pressure relief valve. See photo below.
9. Disconnect the drain tube from the pressure relief valve.
10. Remove the right-side mounting screws for the hot water tank. Use a Philip's screwdriver. *See photo below*.
11. Loosen two screws on the inside mounting bracket for the hot water tank.
12. Drain the hot water tank. Remove the hot water output line from the top of the tank. Use a 14mm wrench *See photo below*.
    WARNING: The water will still be very hot. Avoid direct contact to avoid being burned.
13. Remove the drain line cap. *See photo below*
14. Remove the water input line from the hot water tank. Use a 14mm wrench. *See photo below*.
15. Disconnect the drain tube from the bottom of the machine and cover the water output line.
16. Remove the hot water tank from the machine.

To reinstall this component, reverse the removal instructions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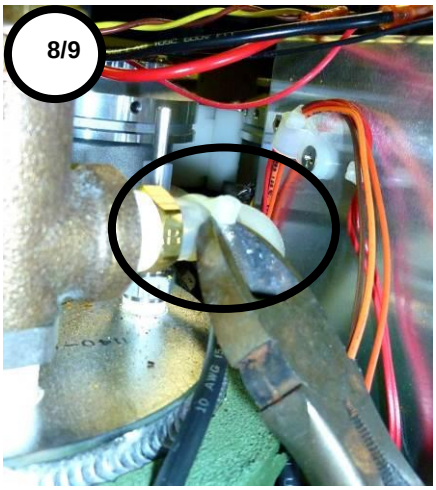
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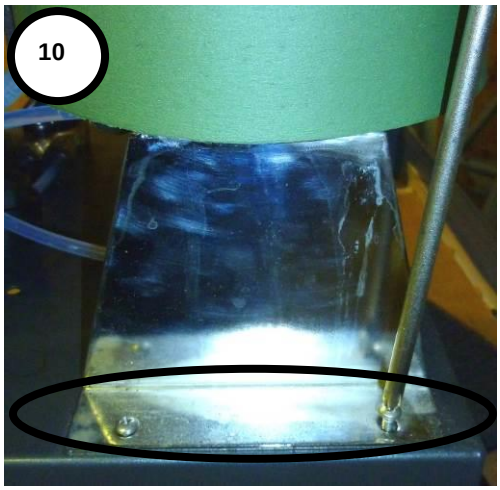
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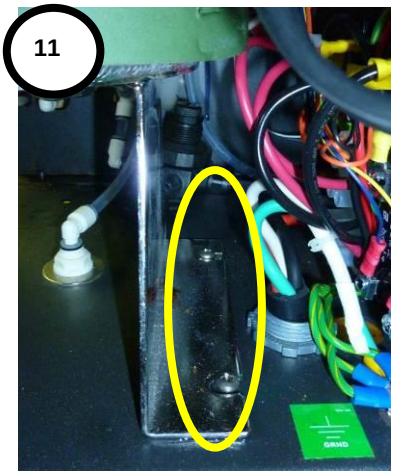
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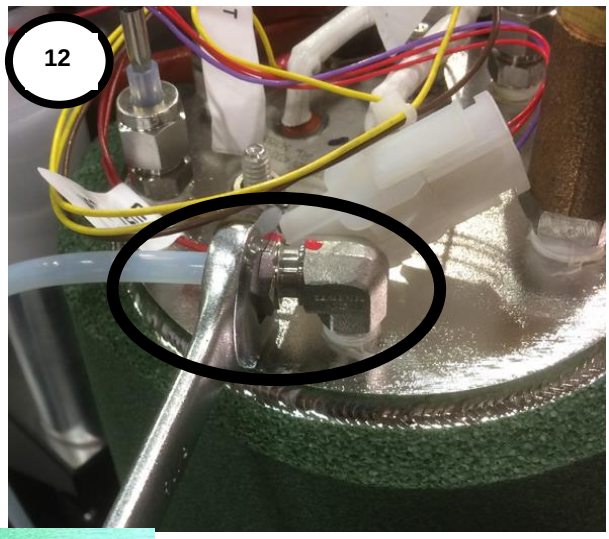
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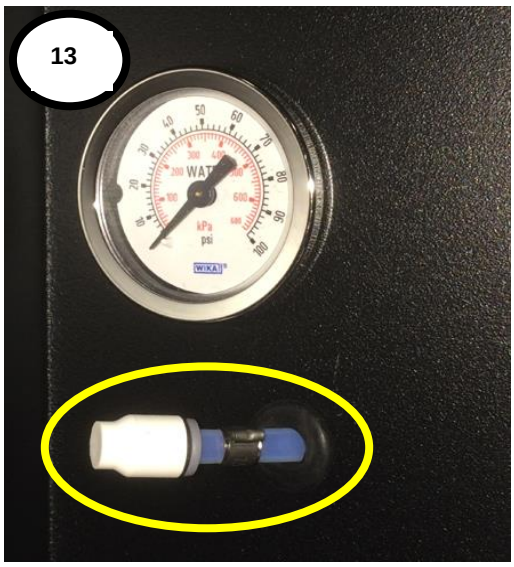
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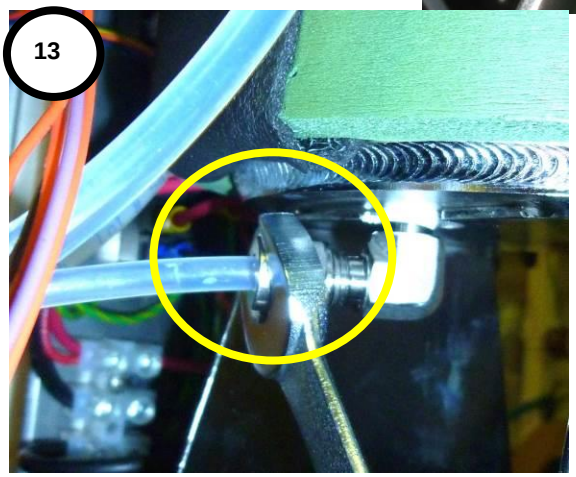
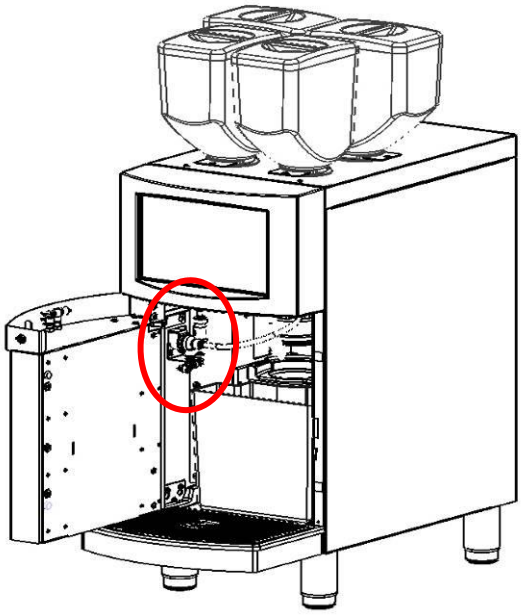
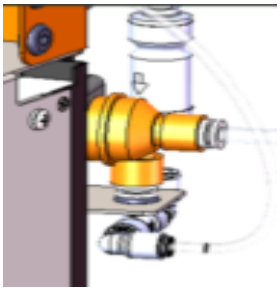
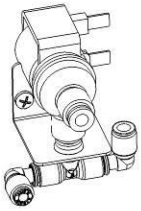

13

Dispense Valve

Valve operates on 24Vdc and operates using a positive switching circuit. The drives for the valves are located on the control board.

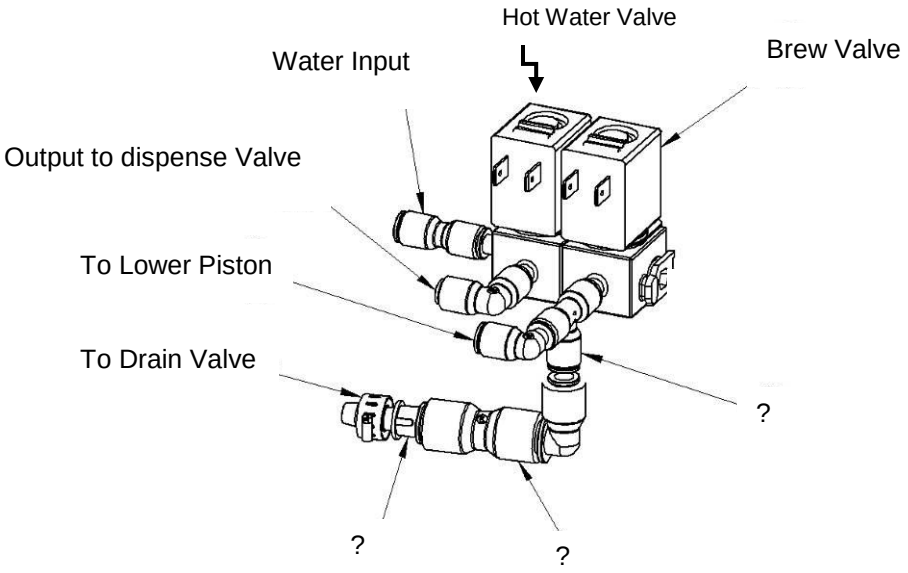






Dispense Valve Assembly

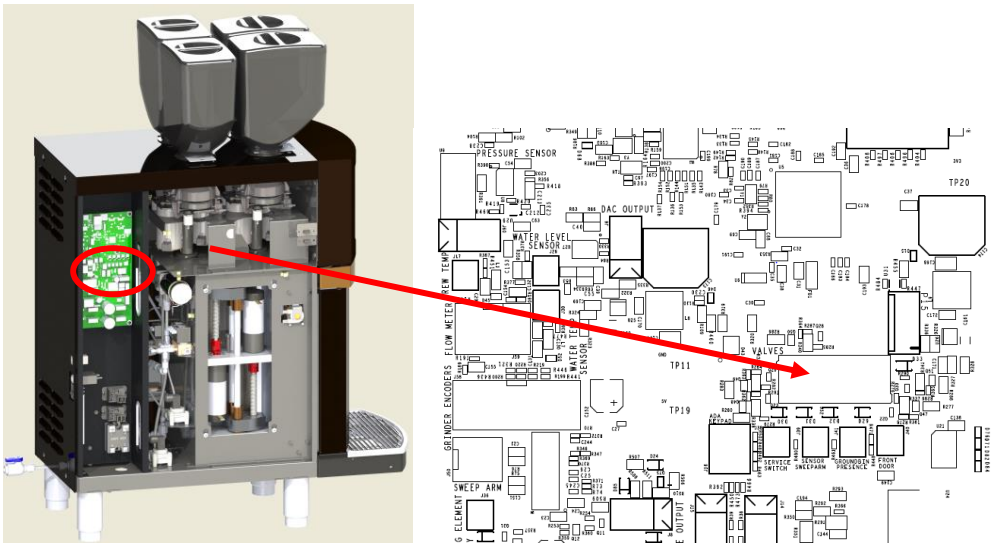
The dispense valve is located above the grounds bin, on the left hand side of the interior of the machine. It controls the flow of coffee to the product nozzle.



Brew Valve and Hot Water Valve
The brew valve controls the water flow to the brew group, which is used to extract coffee.

The hot water valve controls the delivery of hot water from the hot water tank, to dispense hot water.

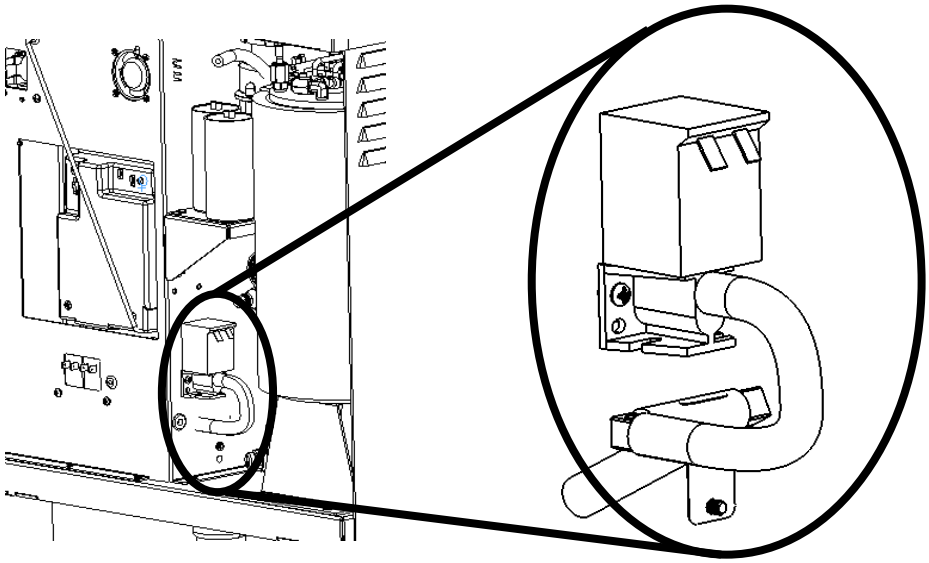
Brew, Hot Water, Cold Water, Drain and Dispense Valve Control Board Connections



24VDC Valve Connections

Drain Valve

The drain valve is located next to the hot water tank, on the wall separating the front of the interior from the back of the interior. It controls the flow of waste water to the drain.



For removal instructions, see page 3-25.

Removing a Hot Water or Brew Valve

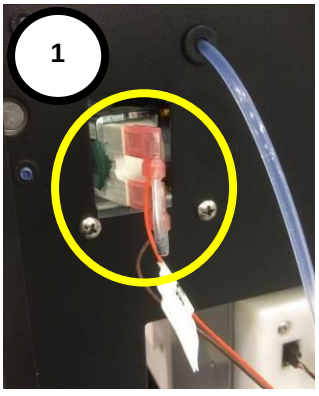
1. Turn off the water supply to the machine.
2. Press the **HOT WATER** button, to relieve the water pressure in the hot water tank.
3. Turn off the machine.
4. Remove the right side panel. *See page 2-4*
5. Disconnect the wire connectors (power supply) for the valve(s).
6. Press the collar of the quick disconnect fitting and remove the fitting from the valve.
7. Remove the valve.

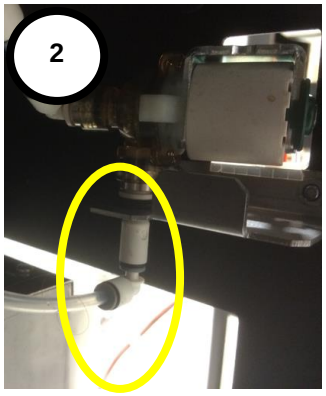
NOTE: The dispense valve is located towards on the top left side of the interior wall and the hot water and brew valves are located at the bottom of the interior wall.

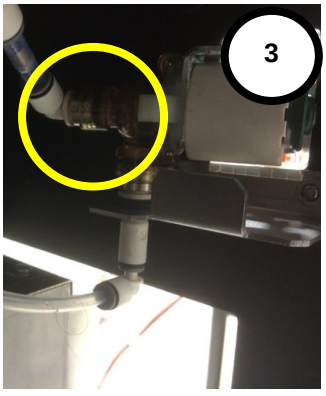
Removing the Dispense Valve

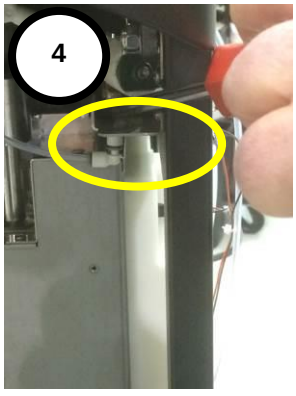
1. Turn off the water supply to the machine.
2. Press the **HOT WATER** button, to relieve the water pressure in the hot water tank.
3. Turn off the machine.
4. Remove the electrical connections on the outside. *See photo below.*
5. Remove the input line (on the bottom). *See photo below.*
6. Remove the output line (in the back). *See photo below.*
7. Remove the fitting. *See photo below.*

To reinstall this component, reverse the removal instructions.





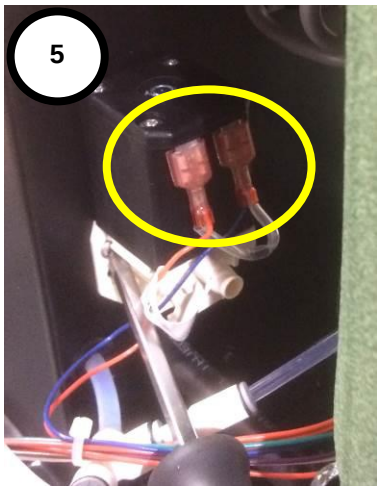


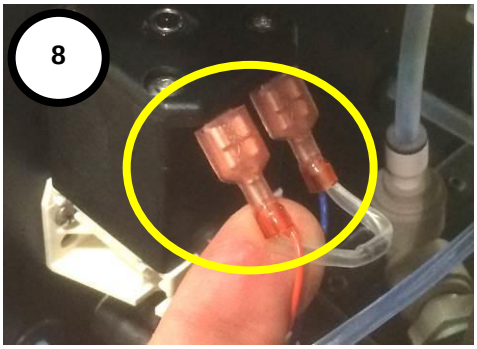


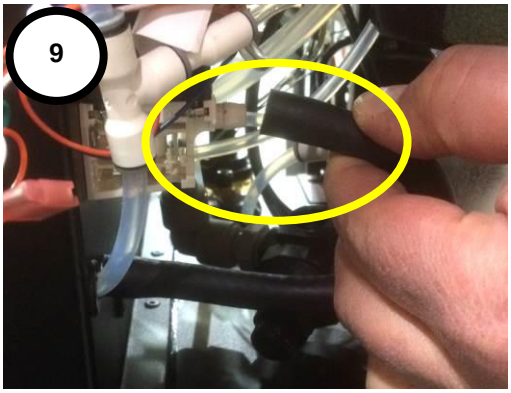
Removing the Drain Valve

1. **TURN OFF WATER TO MACHINE**.
2. Press the **HOT WATER** button, to relieve the water pressure in water tank.
3. **TURN OFF MACHINE.**
4. Remove the right panel.
5. Remove the electrical connections. *See photo # 5.*
6. Loosen the clamp on the input side (by the brew group) and slide it towards the other clamp. *See photo below*.
7. Remove the drain tube from the input side of the valve. It should pull off.
8. Remove the drain tube from the output side of the valve. It should pull off. *See photo below*.
9. Remove the two screws connecting the valve to the chassis. *See photo below*.

   NOTE: Only one screw is shown in the photo. There is one screw on each side of the valve.
10. Lift and remove the valve from the chassis.







NOTE: When replacing a drain valve, make sure that the drain outlet tubing faces the back of the grounds bin, to ensure that waste water is directed at the drain tray. If the drain outlet tubing is not facing the grounds bin, the interior of the machine will flood with waste water.

Section 4 ::
The Brew System

1. Coffee System – Grinding
2. Coffee System – Brewing

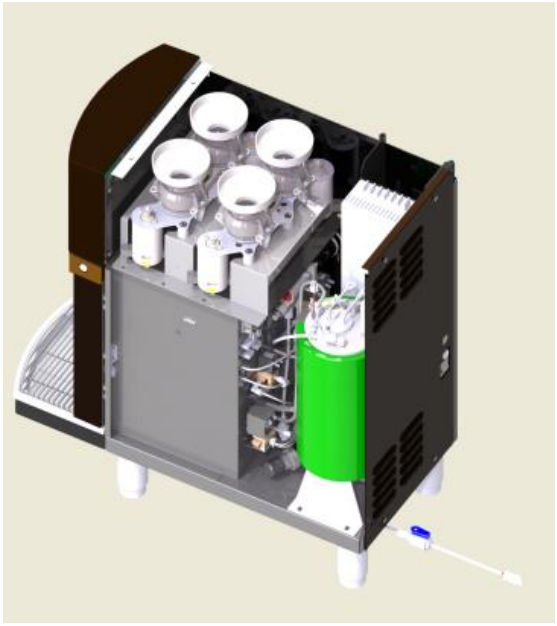
TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Grinding

Grinders
Operating Voltage: Approximately 250Vdc
There are 4 options available



Beans are gravity fed to the grinders from the bean hoppers.

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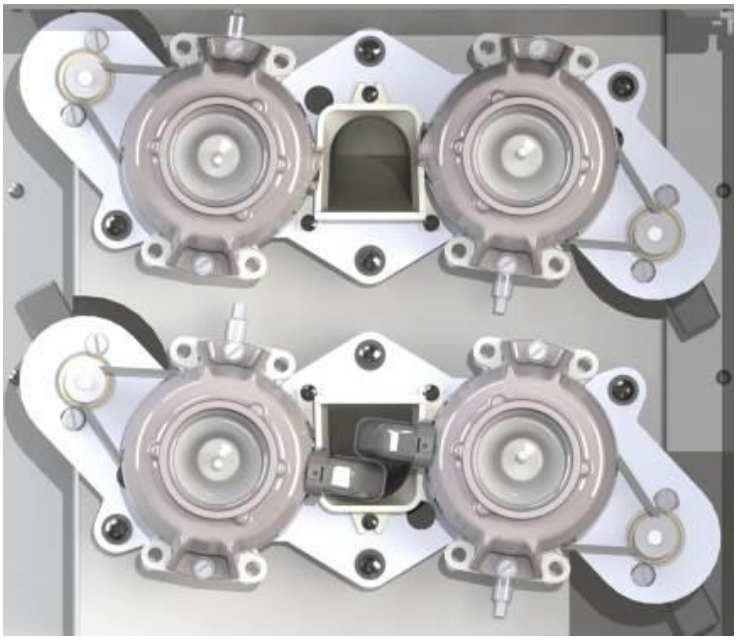
The blades (burrs) are the components which actually grind the whole beans to the desired particle size. The upper burr remains stationary as the lower burr spins to grind the coffee beans.



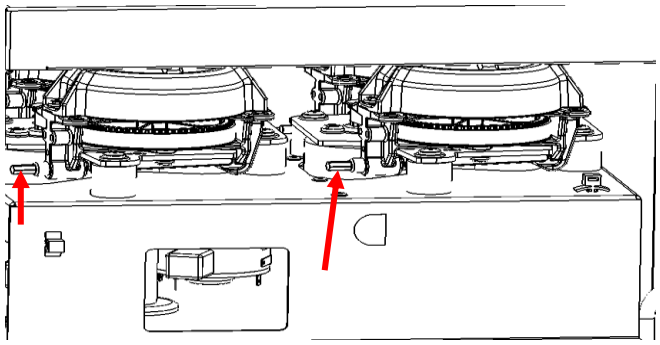
Grinder Control Circuit

220Vac/10amp Solid State Relay

The voltage for the grinders is supplied by the control board.

Adjusting the Grinders:

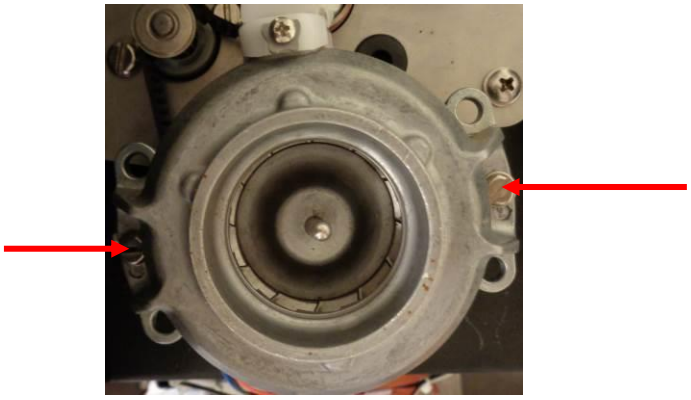
Grinders are not normally adjusted, shown here for factory adjustment. They are preset from the factory and do not need adjustment.



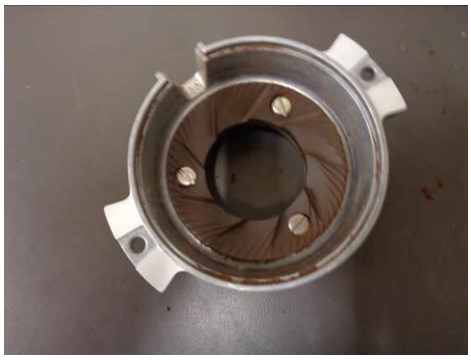
Replacing Bean Grinder Burrs/Blades

1. Turn Off Machine >Insert Hopper Stoppers / Remove Hoppers.
2. Remove Top Panel. You do not have to remove grinder to replace blades.

3. Remove the housing from the top of grinder. Be careful not to loose and washers or clips.



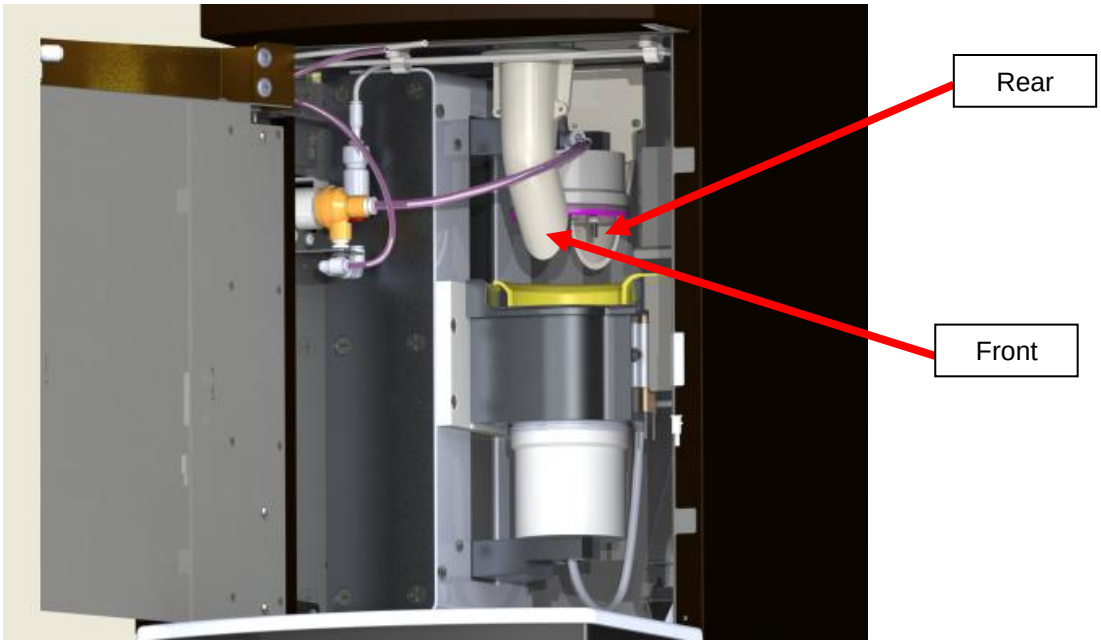
4. Flip over housing and remove top burr/blade from housing replace with a new burr/blade.



5. Remove the bottom burr/blade from bottom of the grinder and replace with a new burr/blade.
6. Re-install the housing.

Grounds Chute

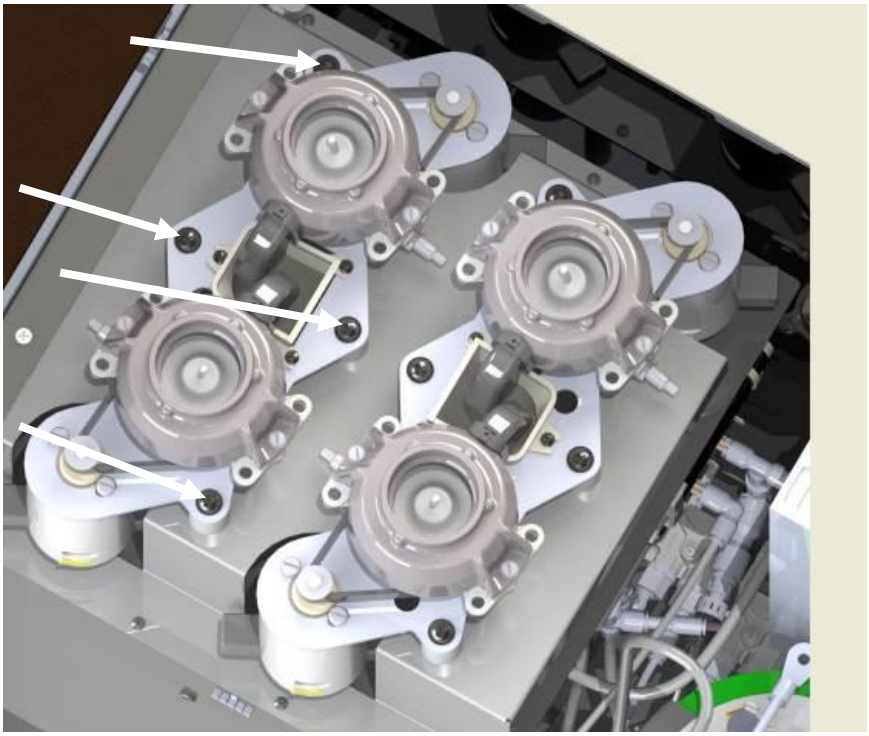
There are two grinder chutes in the Ascent Touch. One is located in the front of the piston and one is located behind the upper piston. They should be cleaned at every service call..



Removing a Bean Grinder

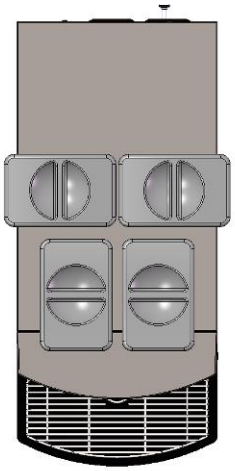
1. Turn the power to the machine off.
2. Remove the right and top panels.
3. Disconnect the power cable to the grinder.
   NOTE: Disconnect the appropriate cable.
4. Remove the 4 screws shown in the image below.
   NOTE: There are 4 screws per dual grinder assembly.
5. Remove the grinder from the machine.

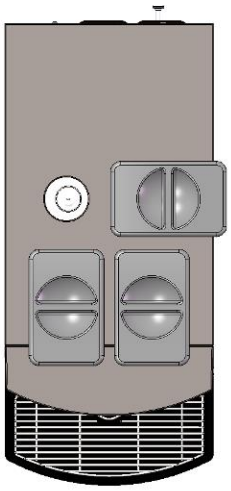
To reinstall this component, reverse the removal instructions.



Coffee System – Brewing

This system brings together the ground coffee from the grinder system and the processed water from the pressure, dosing, heating and flow control systems, and transforms the two separate ingredients into a single finished product.



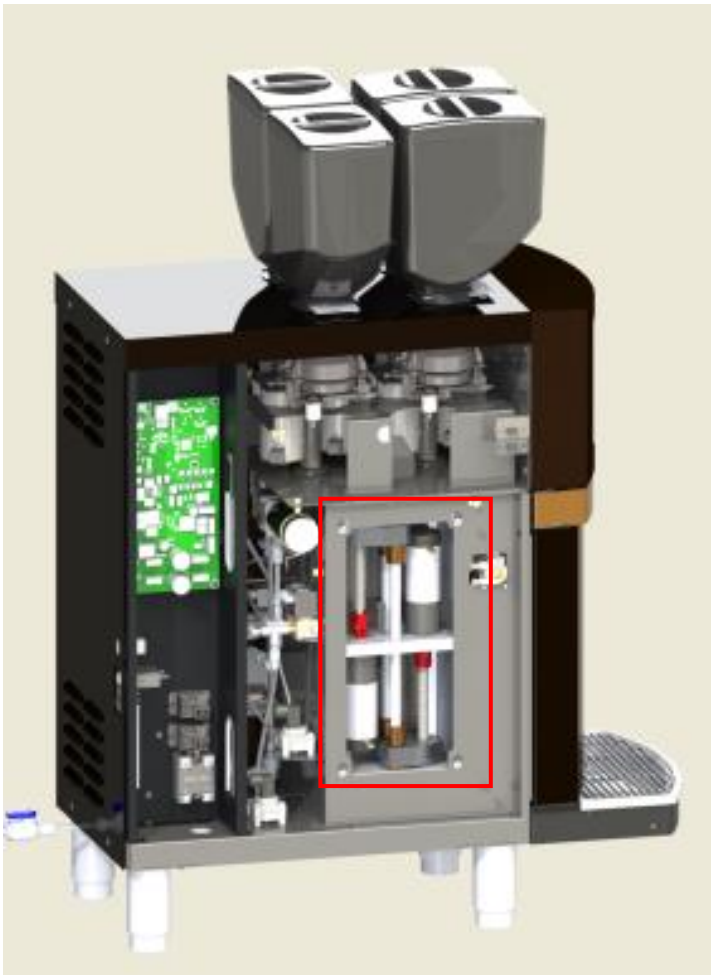


Primary Water and Coffee Brewing Component

In the brew group, ground coffee beans are introduced and hot water is forced through the ground coffee. This action creates brewed coffee, which is then transferred through a product nozzle and into a cup or bulk coffee container.

The brew group assembly consists of two 24Vdc group motors, upper and lower piston assemblies, the group body (brew block and brew chamber), brew chamber heater, 170°F (76°C) thermal switch, and the sweep arm assembly.

After the coffee is extracted, the used grounds are directed into the grounds bin.



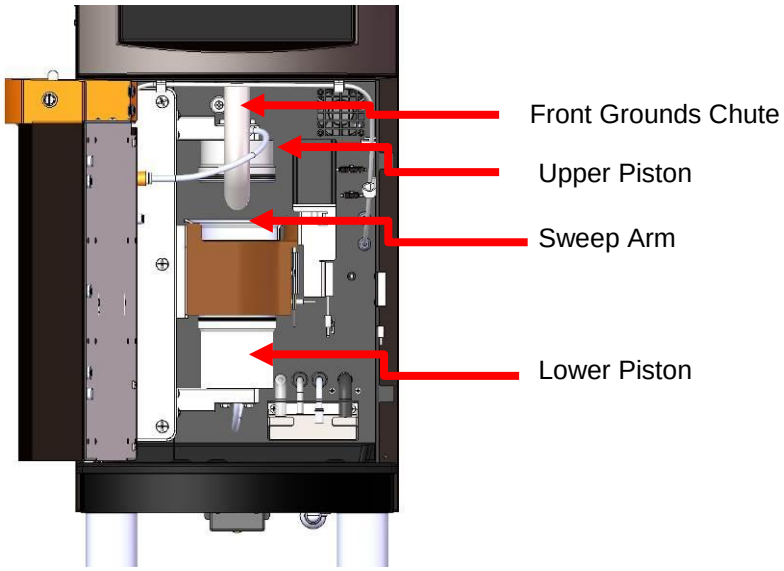
Brew Group Location in Machine

Brew Group:

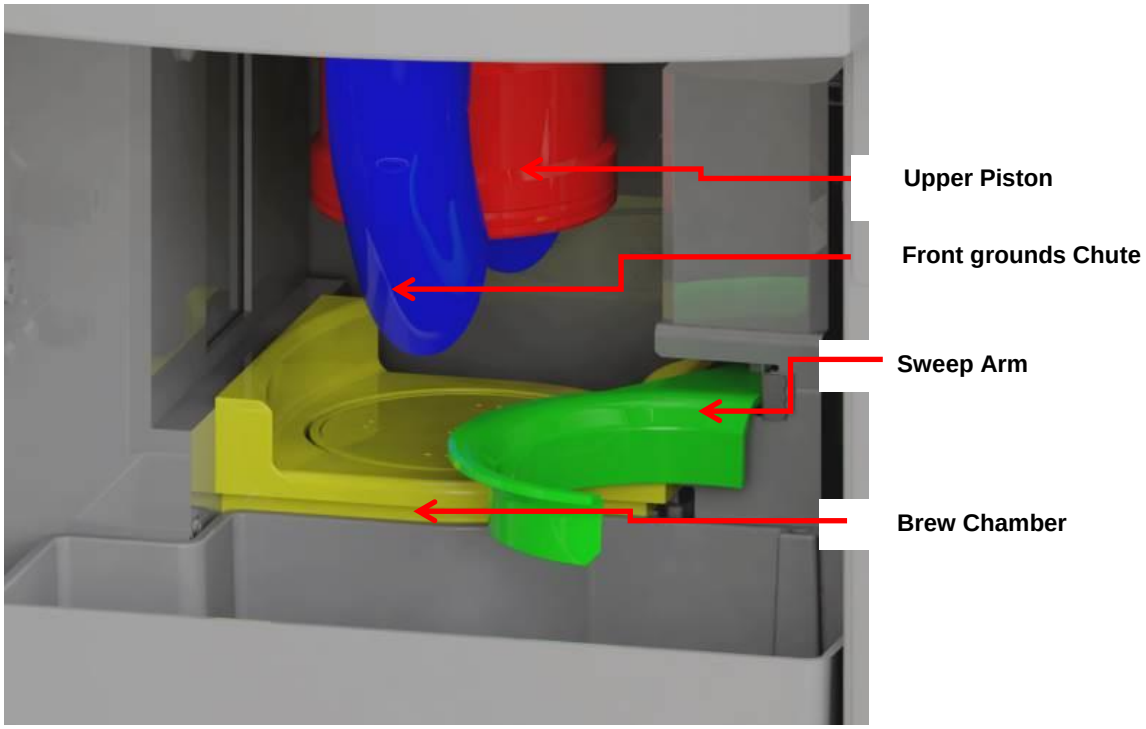
Lower Piston
Hot water passes through the lower piston, into the brew chamber, and through the ground coffee during a beverage pour.

Upper Piston
Once the coffee is brewed in the brew chamber, the brewed coffee passes through the upper piston micro screen, through the dispense valve, and then to the product nozzle.

Sweep Arm
After the coffee brewing process, the sweep arm directs the used coffee grounds into the grounds chute and into the grounds bin.



Front View



Removing the Upper Piston

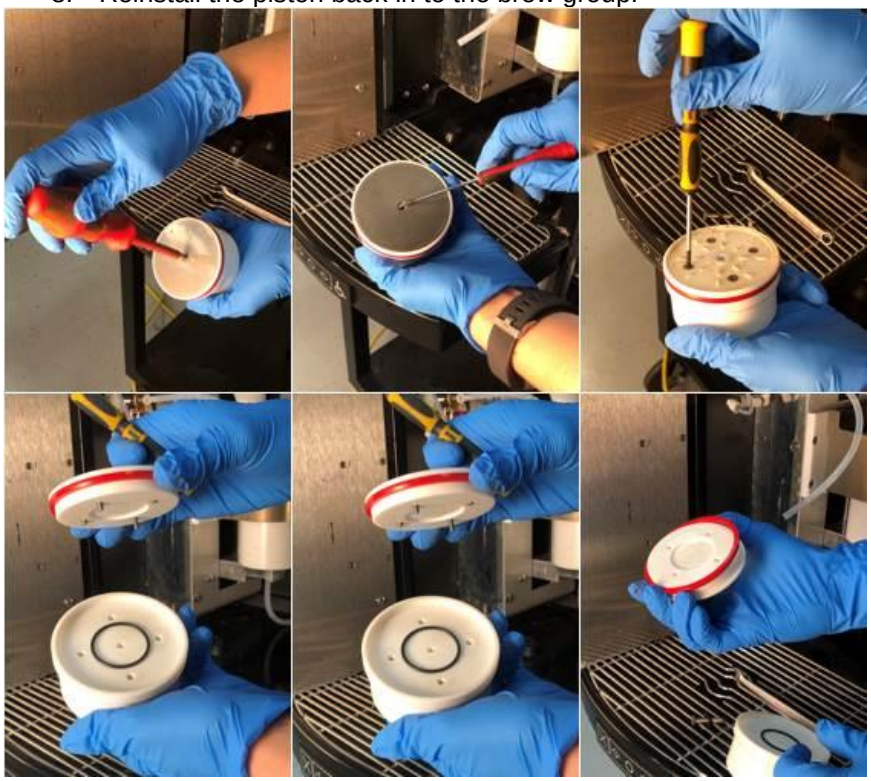
1. Open the front panel.
2. Disconnect tubing attached to upper piston
3. Remove two screws attaching piston to arm
4. Turn to shown orientation and slide out (drive arm must be moved to upper limit to remove piston)

Removing the Upper Piston Seal

1. Remove the piston.
2. Remove the center screw and piston screen. *See photos below.*
3. Remove the four screws that secure the piston body and screen plate together and separate the two pieces. *See photos below.*
4. Remove the o-rings/seals from the piston and clean any coffee residue from the piston body. *See photos below.*
5. Install new o-rings/seals**.**
6. Align the screw ports with the threaded holes and insert the four screws. *See photos below.*

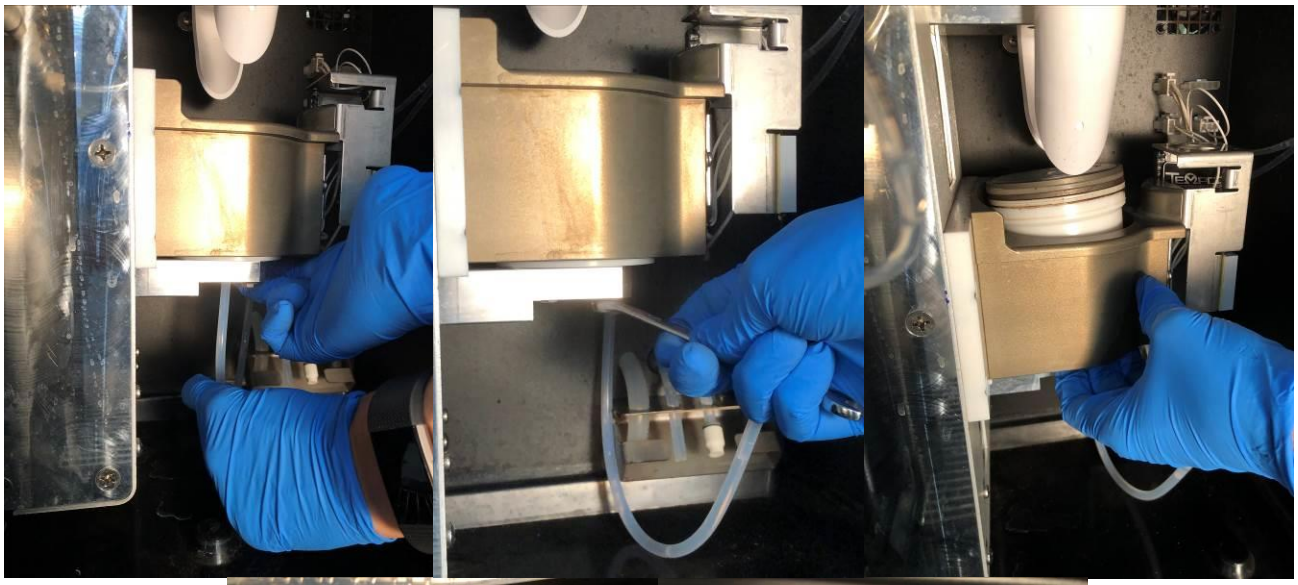
   IMPORTANT: DO NOT OVERTIGHTEN.
7. Insert the piston screen and mounting screw. Tighten screw.

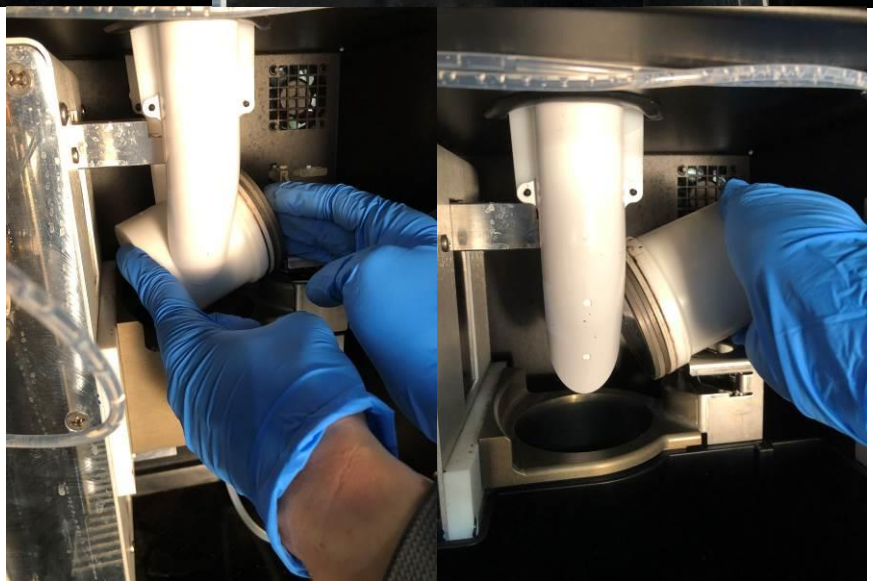
   IMPORTANT: The lower piston screen must be mounted with the diffusion plates aligned with the water ports, as shown.
8. Reinstall the piston back in to the brew group.



Removing the Lower Piston

1. Remove grounds bin to access lower piston
2. Remove sweep arm and sweep arm stepper motor (make sure to unplug the motor from the back of the chamber.)
3. Jog both upper and lower pistons to their upper limits
4. Disconnect tubing attached to lower piston
5. Unscrew the two screws attaching lower piston to drive arm
6. Use fingers to push piston out the top of the brew chamber
7. Rotate piston to orientation shown and slide out to the top right

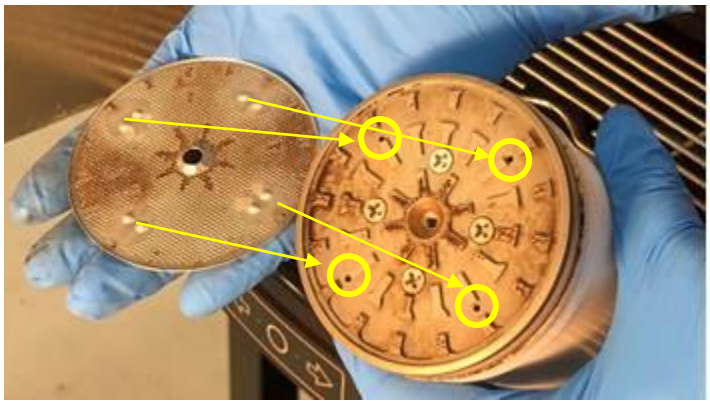




Removing the Upper Piston Seal

1. Remove the piston.
2. Remove the center screw and piston screen. *See photos below.*
3. Remove the four screws that secure the piston body and screen plate together and separate the two pieces. *See photos below.*
4. Remove the o-rings/seals from the piston and clean any coffee residue from the piston body.
5. Install new o-rings/seals**.**
6. Align the screw ports with the threaded holes and insert the four screws. *See photos below.*
   IMPORTANT: DO NOT OVERTIGHTEN.
7. Insert the piston screen and mounting screw. Tighten screw.

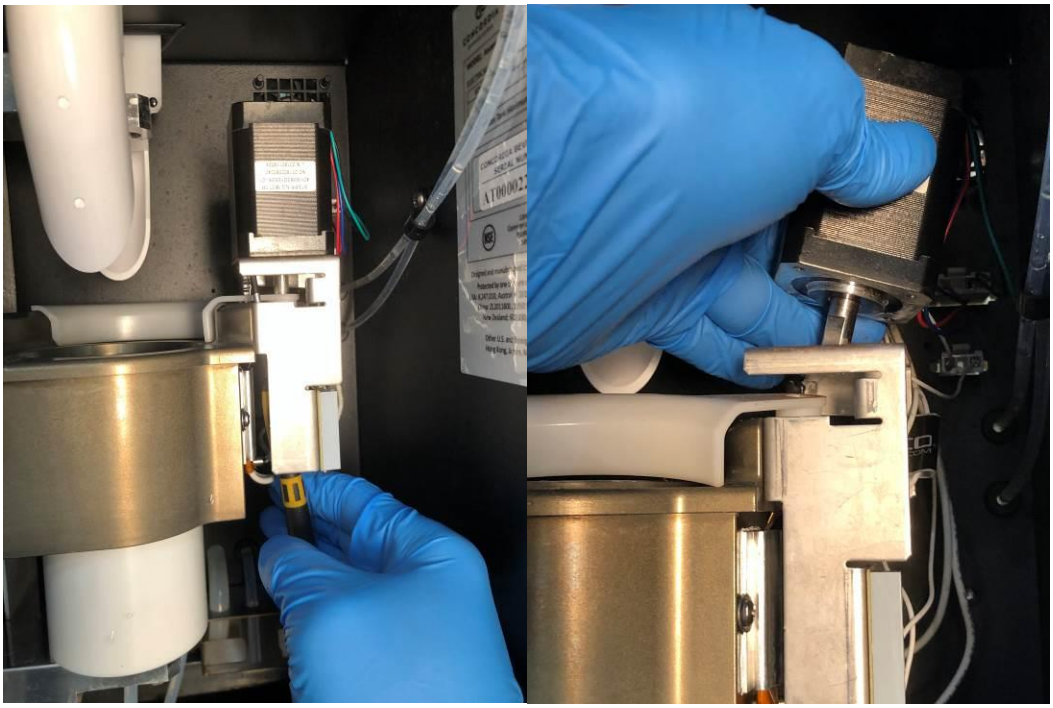
IMPORTANT: The lower piston screen must be mounted with the diffusion plates aligned with the water ports, as shown in the image below.



Removing the Sweep Arm Assembly

1. Turn off the machine.
2. Remove mounting screws of sweep arm stepper motor (if this can't be done in the machine, then the entire brew group may need to be removed for better access) (see section 4 page 16
3. Remove sweep arm mounting screw
4. Lift motor out of sweep arm and bracket
5. Remove sweep arm

To reinstall this component, reverse the removal instructions. Make sure to align the flat end of the motor shaft with the flat side of the sweep arm cutout.



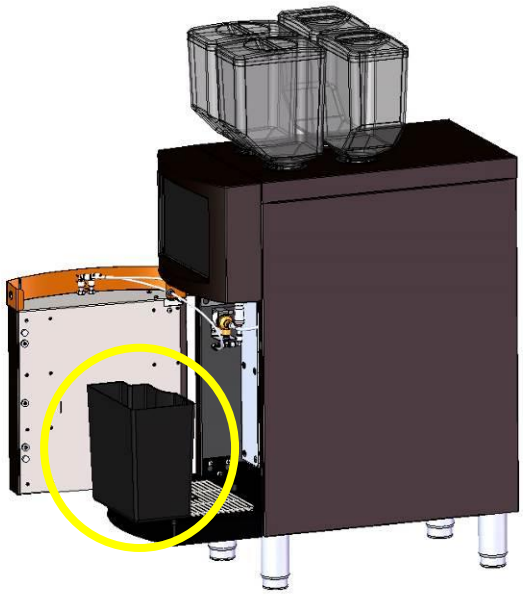
Removing the Brew Group

1. Turn off the power to the machine.
2. Turn off the water supply to the machine.
3. Open the front door.
4. Remove the grounds bin.
5. Remove the left side panel.
6. Disconnect the piston motors from the harness, the dispense valve connectors and unplug all components from the back of the chamber
7. Make sure that the piston motor wires are free from any zipties.
8. On the upper piston, press the collar of the quick release connector and remove the coffee output lines
9. On the lower piston, press the collar of the quick release connector and remove the coffee input line
10. Remove/Loosen six screws, as described below. *See photo below*.
    NOTE: Screws to be removed are indicated by circles; screws to be loosened are indicated by triangles.
    a. Remove two screws for the dispense valve
    b. Loosen: four brew group screws
11. Remove valve in front of brew group and pull out of the way
12. Lift the brew group up, until the screws slide up in their slots and can be pulled through slotted holes. *See photo below*.
13. Once the brew group is free of the frame, rotate down and out as shown below

To reinstall this component, reverse the removal instructions.

Coffee Grounds Management

- The Ascent Touch incorporates a large grounds bin, easily accessed by the user for emptying as required. A message is displayed when the grounds bin is in need of emptying. The grounds bin will capture spent grounds from up to 150 total seconds of grinder operation (this represents approximately 30 16oz hot coffee pours).
- An optional “Pass through chute” to allow spent grounds to drop into a waste bin below the machine. A method for enabling and disabling the spent grounds tracking is included in the software.



Section 5 ::
Electrical

1. Electrical System Overview
2. Electrical Block Diagram
3. I/O Harness Board Schematic
4. Removing the Front Panel
5. Removing the Touch Screen
6. Control PCA Connections

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Electrical System Overview

Machine Operating Voltage

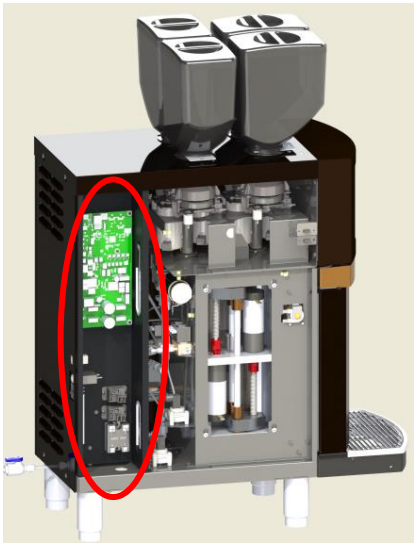
The minimum electrical requirements must be met to ensure proper operation of machine:

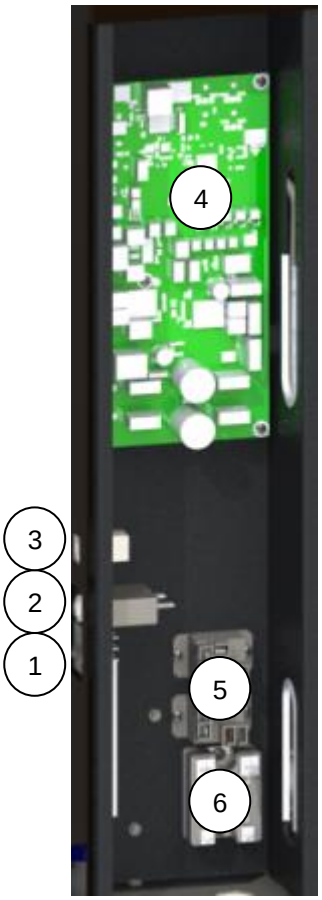
- 208Vac
- Single Phase: 30amp dedicated circuit
- NEMA L6-30/30amp three-prong 250Vac plug

Electrical Tower

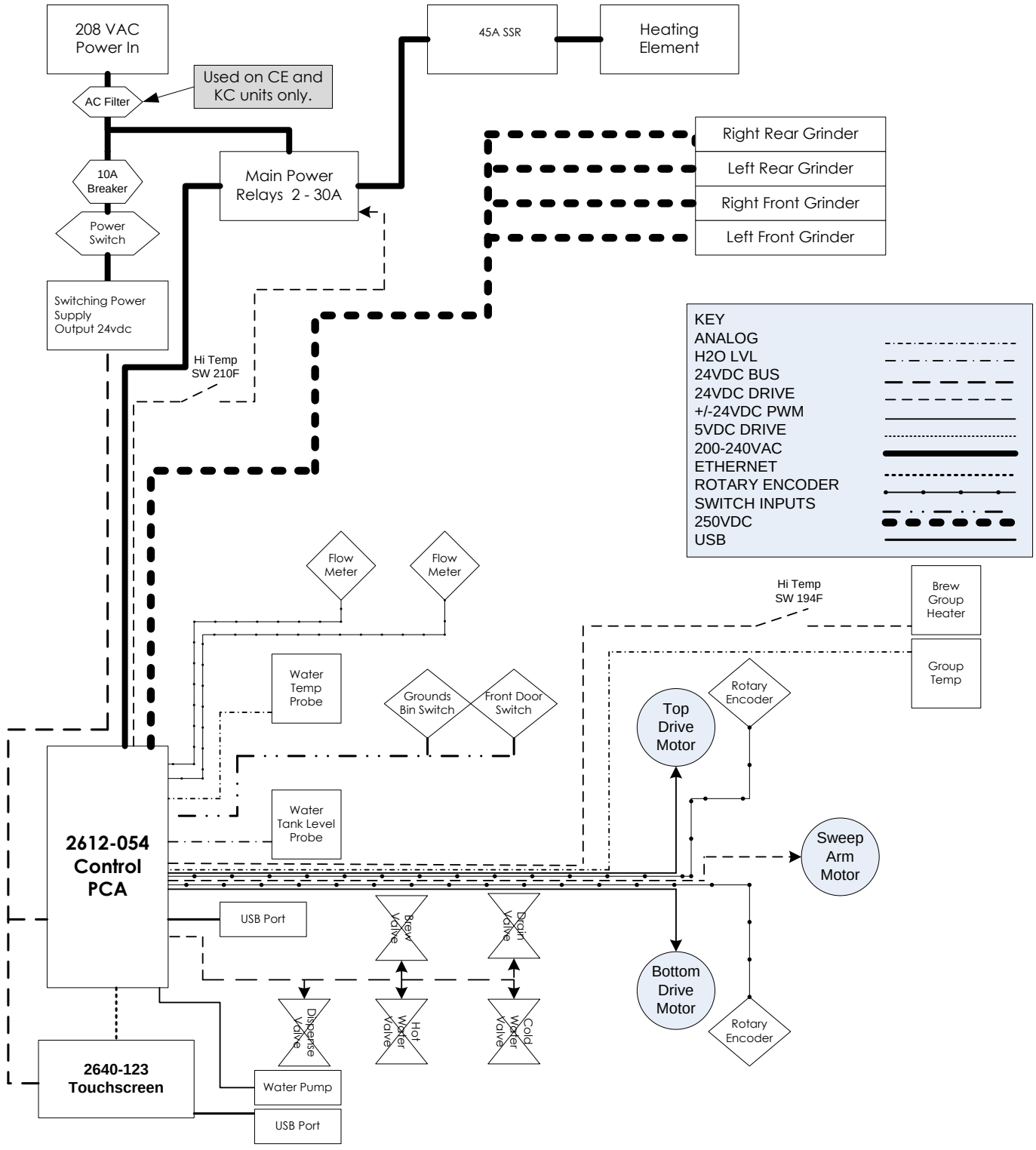
Located in the back of the machine behind the left grinder, the electrical tower houses:

1. Power Switch
2. Circuit Breaker
3. Ethernet Connection
4. Control PCA
5. A/C Power Relays
6. Water Heater Solid State Relay



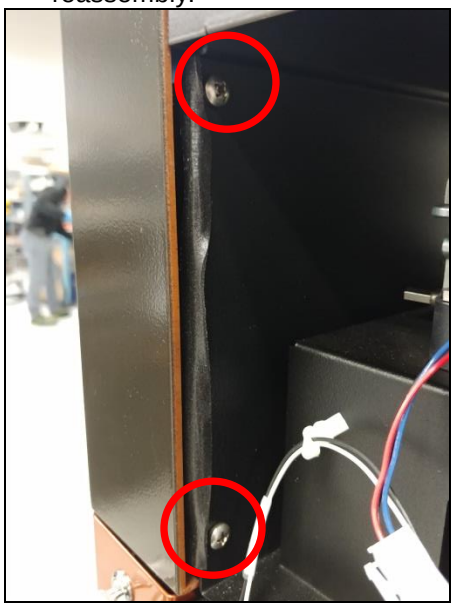


Ascent Touch Electrical Block Diagram

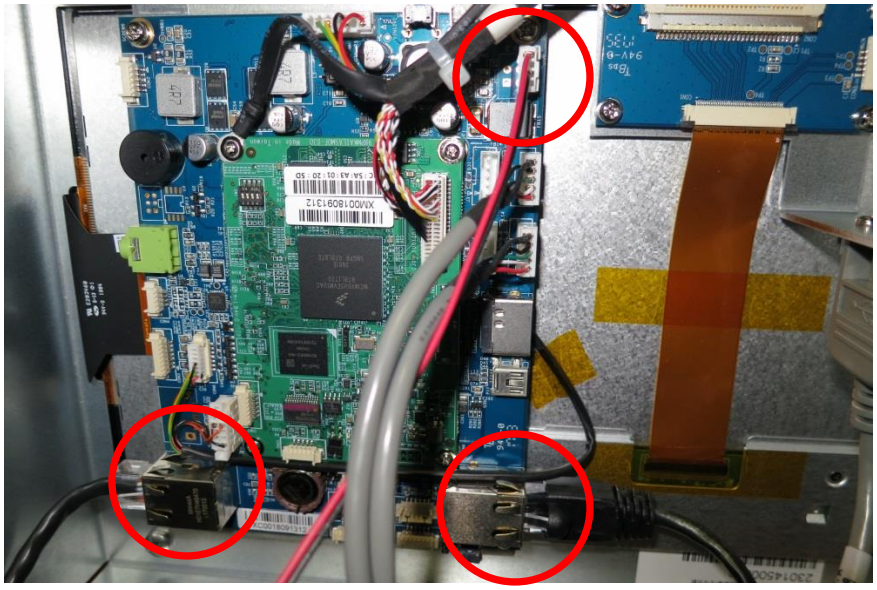


Removing / Replacing the Front Panel

1. Remove left and right side panels from the system.
2. Using the Phillips head screwdriver remove the 4 screws in locations shown. Hold touchscreen in place when removing the last screw as touchscreen will be loose. Save screws for reassembly.



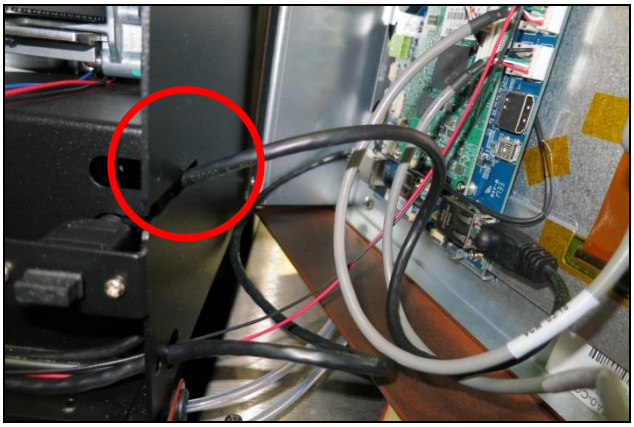
3. Disconnect the 2 Ethernet cables and red/black cable from highlighted locations. Remember orientation of black/red cable for reassembly.



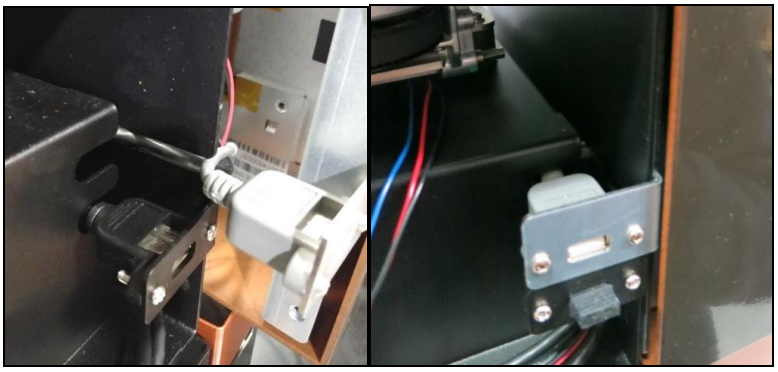
4. Reconnect the 3 cables to the touchscreen PCBA.

5. Mount touchscreen onto the system. Use door to help hold touchscreen if necessary.

Note: When mounting the touchscreen onto the system ensure the Ethernet cable is slotted into the mounting plate and tucked inward as shown.



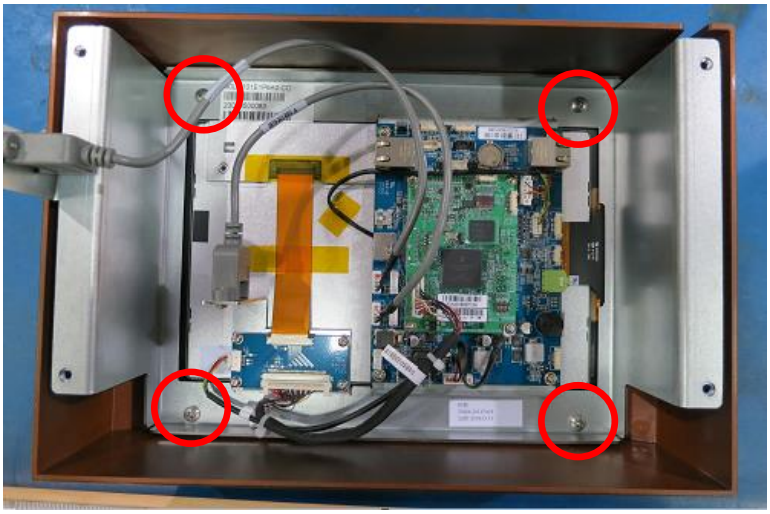
Ensure gray cable is also slotted into mounting plate.



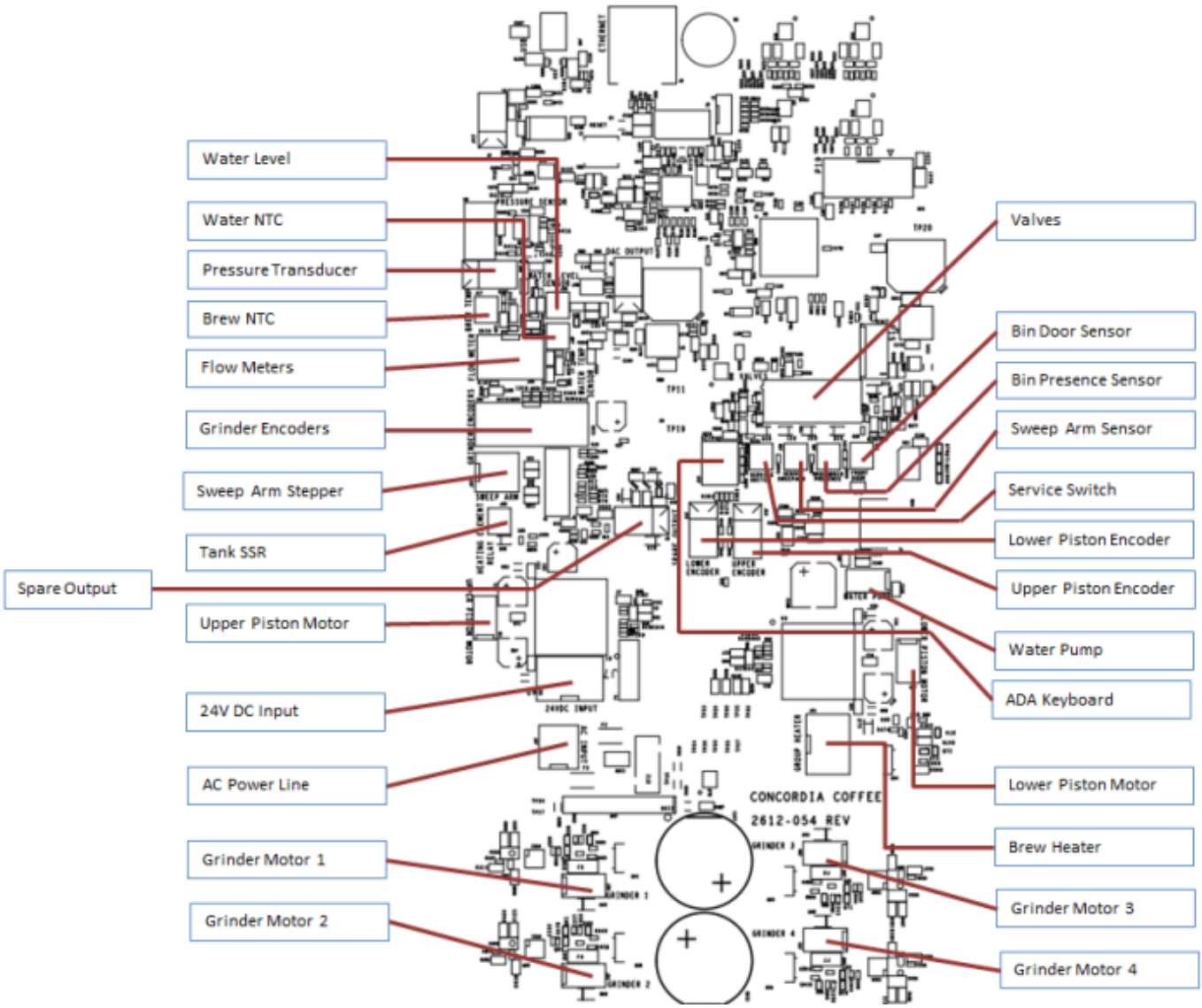
6. Slide touchscreen into place and reinstall the 4 screws removed during step 2.2. Fasten until hand tight then turn another ¼ turn.
7. Reinstall the left and right side panels.

Removing / Replacing the Touchscreen

1. Follow front panel removal instructions.
2. Remove the 4 screws shown in the image below.



2612-054 Control PCA Connections



Section 6 ::
Installation

1. Installation
2. Calibration

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Installation

Technical Specifications and Site Requirements

To ensure the site is ready, the customer is required to **complete** and **return** a pre-installation checklist. The customer is required to have dedicated electrical, water, and drain located within a specified distance from the machine.

Technical Specifications

Weight:	125lbs/57kg
Operating Environment:	40-90°F/13-29°C
Compliance:	
UL Listed	Yes
NSF Certified	Yes
CSA Compliant	Yes

Location Requirements
Locate indoors only

Overall Space
14” W x 30” D x 68” H
33cm W x 69cm D x 104cm H

Drain
Connection for 3/4” ID drain dose
Indirect drain required
Located within five feet (1.5 meters) of machine

Power and Water Requirements

Power
Located within five feet (1.5 meters) of machine
208Vac, 30amp

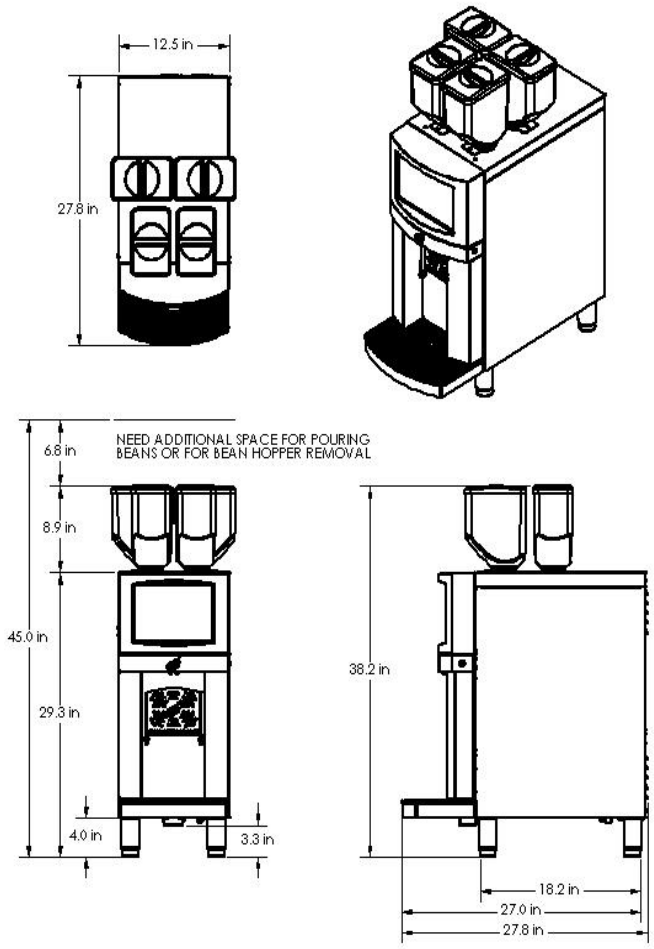
Water
Dedecatied cold water source with a female 3/8” or 1/4" tube fitting and a shut-off valve located behind the machine.

Water Pressure
Minimum: 25psi; Maximum: 100psi
25 gallons per hour (95 liters per hour)

A fresh water bypass is required for sites with a reverse osmosis filter system.

Water Treatment System
A water treatment system must be used with the Ascent if the water hardness exceeds 3 grains per gallon (51ppm)

25 gallons per hour (95 liters per hour)



Machine Dimensions

Unpack Machine

Remove the top panel of the shipping box, first. On top of the machine, you will find the following:

- Bean hoppers
- Hopper stoppers
- Drain hose
- Water supply line
- Quick Reference Guide
- Cleaning tablets
- Cleaning brush
- Water and drainage connection hardware

Remove each of these items and put them in a safe place while you unpack the machine and place it at the designated installation location.

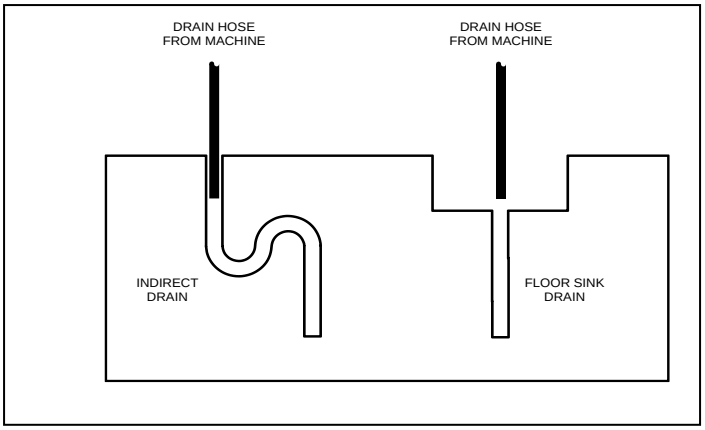
Plumbing

Only a qualified plumber complying with all local codes and requirements can install the drain at the site. You are responsible for connecting the machine to the drain.

The following requirements must be met:

- Drain accommodating a 3/4" (1.9cm) ID drain hose
- Drain must be located within five feet (1.5 meters) of machine

Approved Drain Configurations



The minimum rate of fall required is 1” (2.54cm) per foot, and the drain hose must have a continuous rate of fall. Ensure the drain hose is connected to the machine drain port.

If the drain has any low spots or any horizontal runs as it travels from the machine to the drain, water and other waste from the machine will back up and cause the drain hose and/or the drain tray to clog.

NOTE: When water and drain lines are connected, check for leaks.

Water Supply

For proper operation of the machine, the following requirements must be met:

- Dedicated cold water source with a shut-off valve and female 1/4" or 3/8” fitting
- Water pressure: minimum 25psi; maximum 100psi
- Water source must be located within five feet (1.5 meters) of machine
- A water filtration system must be used

Problems with Reverse Osmosis Water System

A fresh water bypass is required for sites with a reverse osmosis filter system. The machine water level sensors are inoperative when used with this system.

Install Bean Hoppers

1. Install bean hoppers.
2. Fill each bean hopper with the coffee beans associated with that bean hopper selection on the touch screen.

   NOTE: The machine as an option of up to 4 different types of beans and hoppers.

IMPORTANT: Ensure the hopper stoppers are removed, so that the beans are delivered to the grinder.

Before Powering Up the Machine

1. Check voltage at the wall should be between 200-240Vac.
2. Check electrical cord is plugged in.
3. Water is on to unit and the water inlet valve is open.
4. Unit connected to a drain.
5. Grounds bin is in place and hopper stoppers are removed.
6. Turn on the main power switch located on back, left side of the machine and that all doors are shut.
7. Warm-up takes approximately 10 minutes.

NOTE: The grounds bin must be fully pushed into the machine.

Stabilize Water Temperature

1. Press and hold the **HOT WATER** button for 20 seconds. This will ensure that the temperature of all the water in the hot water tank is uniform.

Calibration

Calibration must be checked with fresh coffee beans. Stale beans are dry and brittle and will grind more quickly than fresh beans. Do not use frozen beans.

The items in the table below must be calibrated in the order listed.

Default Settings

Water Volume	Small 12oz. Medium 16oz. Large 20oz. Extra Large 24oz. Large Carafe / To Go Container 96oz. Medium Carafe 64oz.
Water Temperature	203°F (95°C)

Once the machine has been calibrated, Test drink pour duration and beverage temperatures to verify they are within operating parameters.

Beverage Temperatures

To ensure temperature readings are accurate, the temperatures of beverages must be taken in the center of a paper cup. The desired temperature is 175-185°F.

Verify Coffee Extraction

Verify the coffee profile (volume, temperature, and flavor) is set to customer expectations.

If adjustments are needed, the bean editor, can be adjusted for Hot / Cold, Small, Medium, Large, X-TRA Large, Bean ***Tuning.***

NOTE: When making adjustments to the grind, two coffee beverages must be poured to ensure the change of grind is fully implemented.

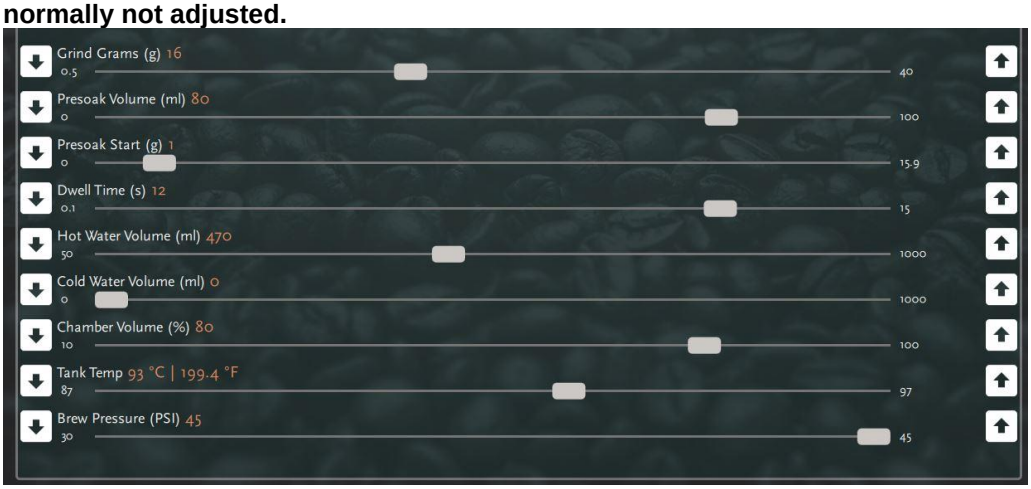
Recipe Verification

The drink quality must be checked, whether there is a specific customer recipe or if the customer is using the default drink settings.

1. Verify the Bean Tuning
2. Verify the Bean Info.
3. Verify Version.

Editing a Drink Recipe

Ascent Touch brewing processes are set by Customers recipe, and normally not adjusted.



Coffee Adjustments:

- Grind Grams – The amount of coffee (in grams) delivered to the chamber.
- Presoak Volume – The amount of water added to the brewing chamber while the grinder is running and before the brew chamber is closed.
- Presoak Start – The amount of coffee (in grams) introduced into the brew chamber prior to the start of the presoak volume.
- Dwell Time – The amount of time (in seconds) the ground coffee and presoak water is held in the chamber before the brew Hot Water Volume starts.
- Hot Water Volume – The amount of *hot* water (in milliliters) run through the brew chamber for a given beverage.
- Cold Water Volume – The amount of *cold* water (in milliliters) that is delivered with the hot coffee pour to create an iced beverage. (This setting is only used for iced beverages. The cold water volume should be set at least 40mls less than the hot water volume)
- Chamber Volume – This setting is used to *tailor* the size of the brew chamber to the amount of coffee being used.
  (See Brew Chamber Sizing Chart Below)
- Tank Temp – The temperature of the brew water for a given beverage. Typically set between 91 and 95 degrees Celsius.
- Brew Pressure – The maximum amount of pressure achieved in the brew chamber during a brew cycle.

Brew Chamber Size Chart		
Grind Grams		Chamber Volume
10 to 15		75
15 to 20		80
20 to 25		85
25 to 30		90
30 to 35		95
35 to 40		100

Recipe Tuning:

Grind Grams has the greatest impact on coffee strength, body and flavor. However, to maintain material costs when compared to a pour over brewer the Ascent incorporates other factors to achieve the same “in the cup” results.

Increasing or decreasing the presoak volume, dwell time and brew pressure will also have a major impact on the brewed coffee.

If available, start with the same coffee to water ratio as the pour over brewer currently in use. Or start with a typical pour over coffee to water ratio such as 3oz or ground coffee/ frac pack to brew one half gallon (64oz) of coffee or 1.33 grams of coffee per ounce of water. The equivalent settings for the Ascent are;

12oz drink = 16.0 grams of coffee
16oz drink = 21.3 grams of coffee
20oz drink = 26.6 grams of coffee
24oz drink = 32.0 grams of coffee

Note: 1oz = 28.35grams

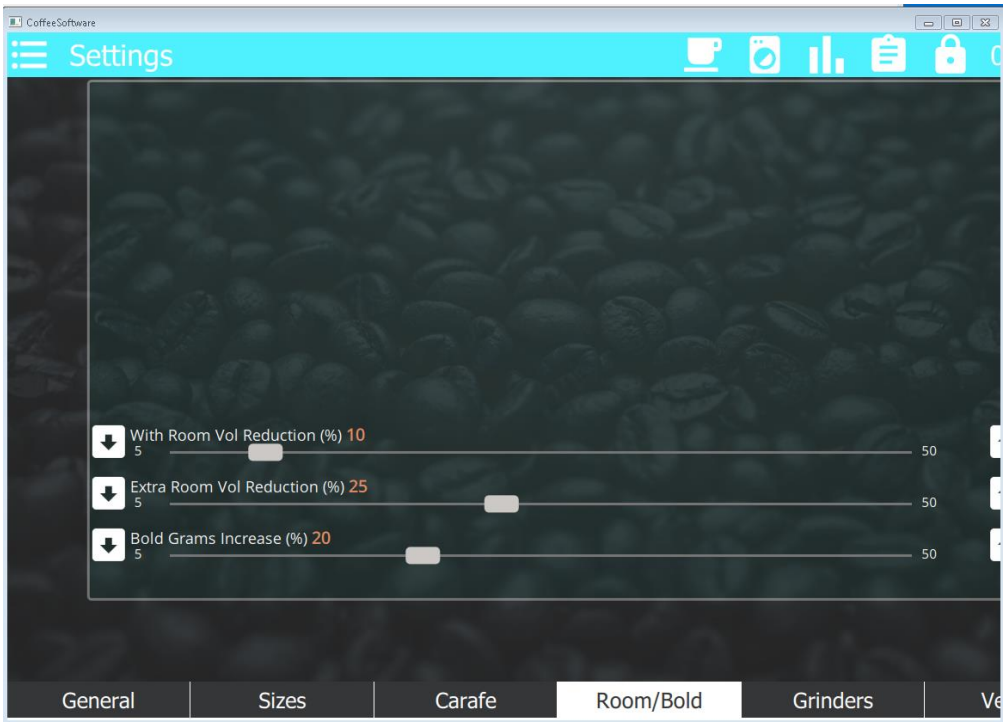
Then increase / decrease the presoak volume, dwell time and brew pressure to achieve the desired flavor profile.

If you find you can get close to the desired profile but “somethings missing” try increasing or decreasing the brew temperature. I’ve found this can often have a profound impact on the coffee flavor.

When dialing in multiple sizes – Start with a middle size i.e. 16oz and then use the same settings, apart from water volume, grind grams and chamber size, on the other sizes. They will often be the same.

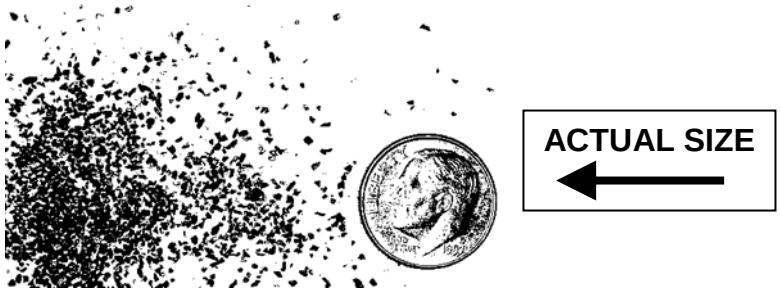
When dialing in multiple coffee types – Dial in one coffee type and then use those settings as a baseline for the additional coffee types. However, use the established coffee to water ratio of each coffee type. For example; House Blend uses 3oz frac pack for a half gallon (64oz) but Decaf uses 2.75oz frac pack for a half gallon. Use the information above to determine the grams of coffee to be used for each drink size.

Room/Bold:



Other adjustments:

Ground Coffee Particle Size:
The coffee can be made coarser or finer by utilizing grinder adjustment on the side of the grinder (Grinders are preset from factory and normally do not need to be adjusted)
The proper consistency of the coffee will vary depending on the type of roast and desired flavor of the finished product. As a general rule, the coffee particles should have a consistency similar to ground pepper.



Customer Training

Demonstrate the following for the customer:

1. How to turn the machine on and off.
2. How to refill bean hoppers.
3. How to remove bean hoppers.
4. How to remove the grounds bin (be sure to emphasize that the grounds bin must be emptied each time it is removed and that it must be out of the machine for 15 seconds, in order for the grounds bin counter to reset).
5. How to make drinks.
6. How to use the cup stand.
7. How to clean the machine.
8. Show the location of the serial number.
9. Demonstrate how to shut off the water supply for the machine.

Section 7 ::
Software

TECHNICAL SUPPORT

CONCORDIA

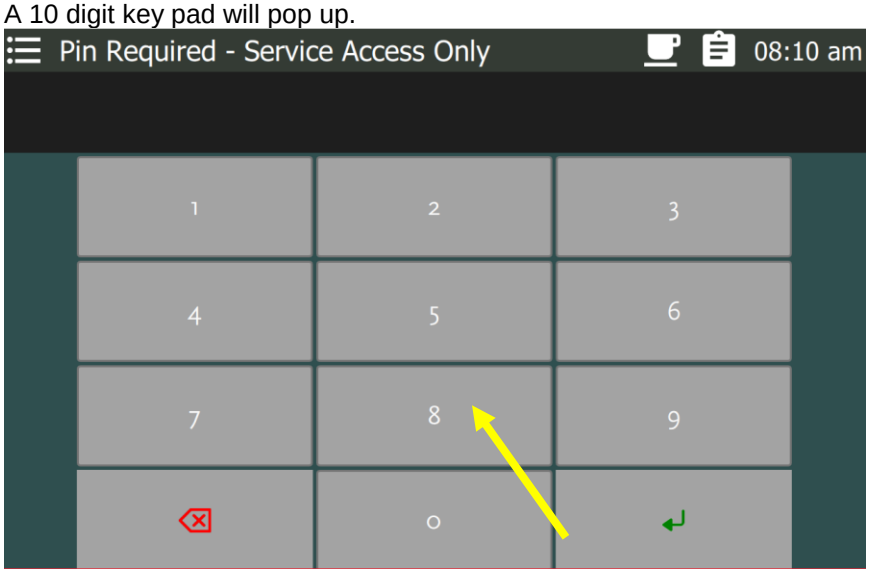
BEVERAGE SYSTEMS

Software Overview

The Ascent Touch screen interface contains beverage statistics, programming access, and diagnostic service information.

Accessing the Service Menu

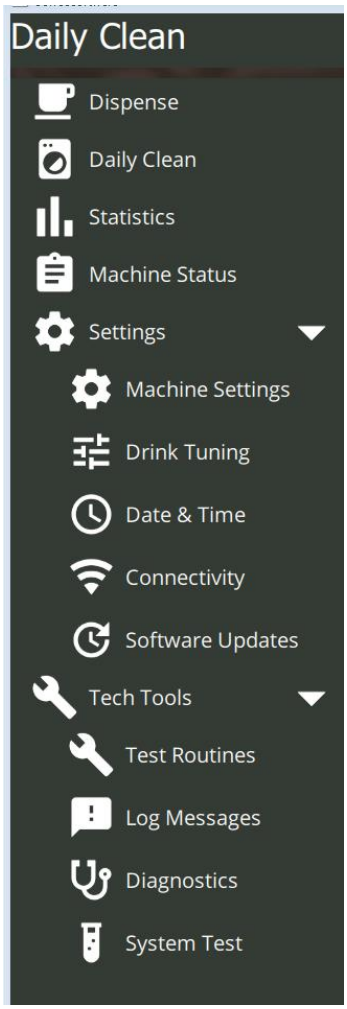
Open the door and select in the upper left corner of the display.
A 10 digit key pad will pop up.



ENTER Access Code 6812 and press the GREEN enter key.

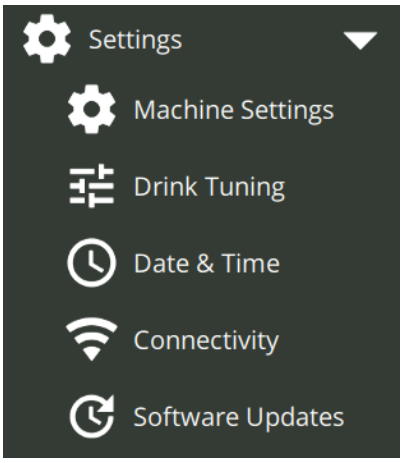
Menu Categories

INFORMATION



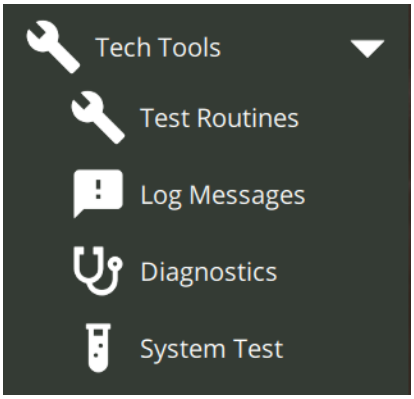
Provides information about the machine, Daily Clean, Statistics, Machine Status, Settings, and Tech Tools.

SETTINGS



Settings: Machine Settings, Drink Tuning, Date and Time, Connectivity, Software Updates.

TESTS



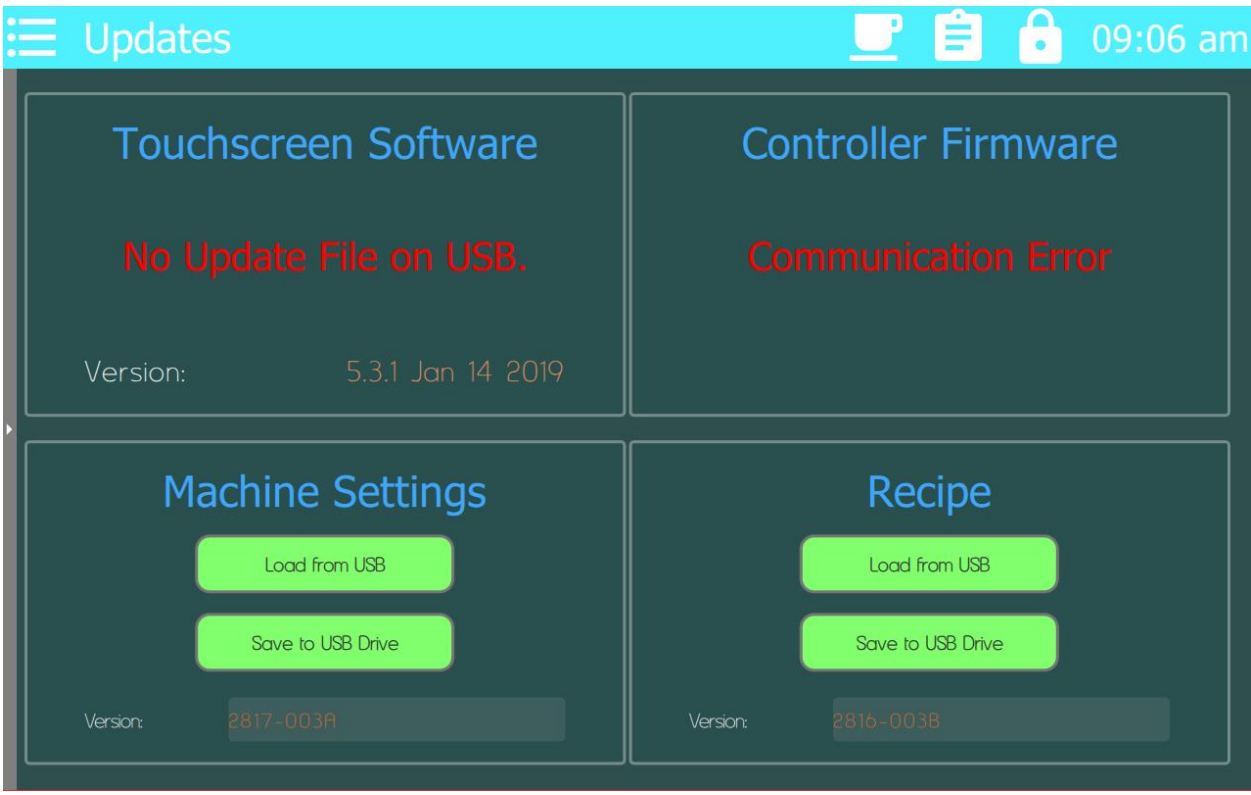
Used for diagnostic testing of all major components on the Ascent Touch.

Updating Software on the Ascent Touch Brewer

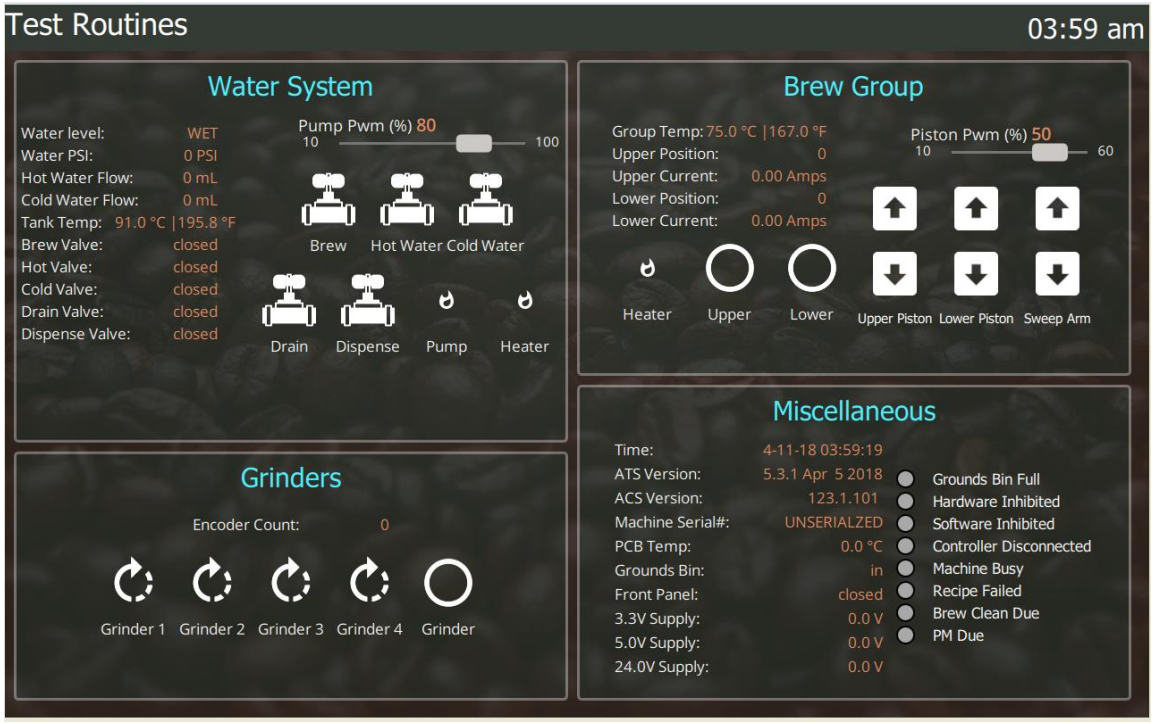
The software on the Ascent Touch can be updated in the field by using a USB flash (or "thumb") drive.

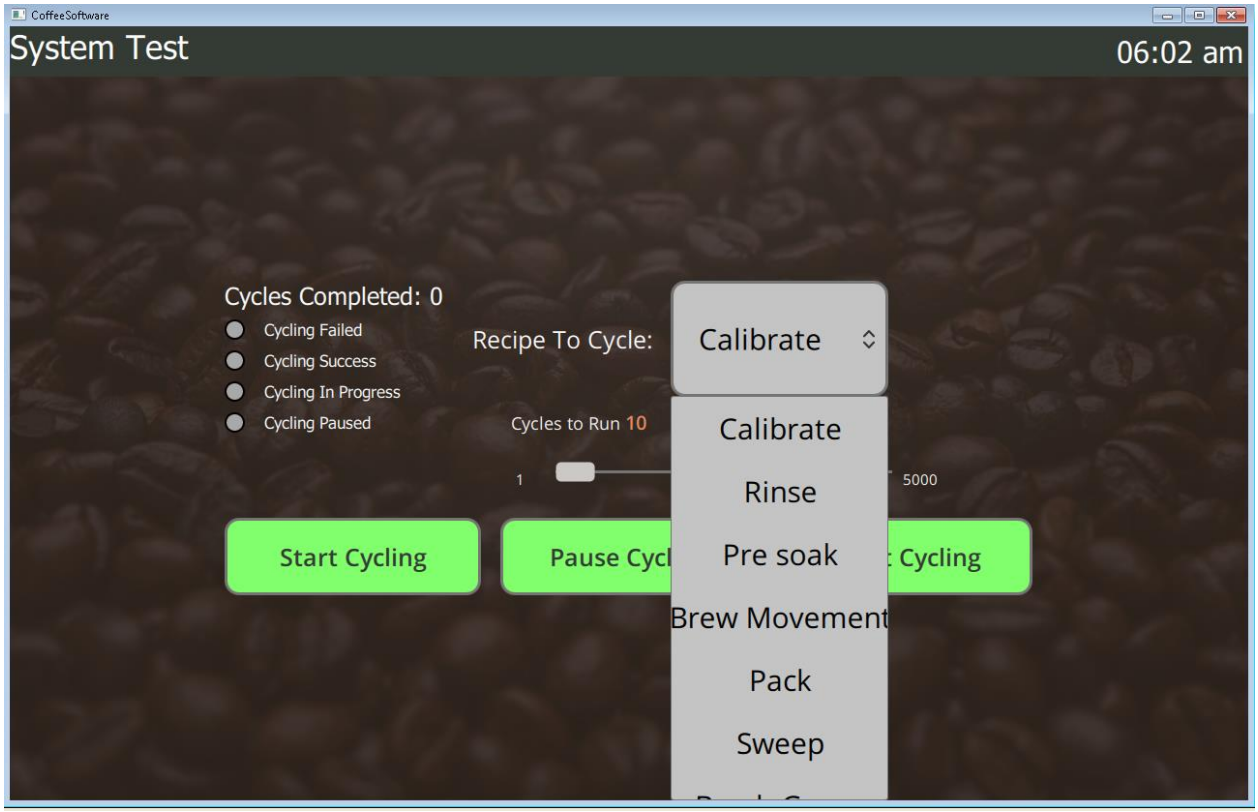
1. Copy the firmware files on to the flash drive.
2. Make sure the machine is turned off.
3. Insert the flash drive into the top USB port on the left side of the machine. **NOTE**: Depending on the type of USB flash drive being used it may be necessary to remove the left side panel to allow the drive to fully seat in the USB port.

4. Turn the machine ON and wait for it to finish the initialization sequence.
5. Open the door to display the options at the top of the screen.
6. Click the list button in the upper left corner and the 10-key image will be displayed.
7. Enter 6812 and press the *green* return key.
8. Select “Settings” to expand the drop down menu.
9. Select “Updates” near the bottom of the drop down menu.



10. Select Update Touchscreen and wait for the process to finish.
11. Select Load from USB in the “Recipe” box. Wait 5 seconds
12. Select Load from USB in the “Machine Settings” box. Wait 5 seconds.
13. Turn the machine OFF and remove the USB flash drive.


Test Routines
03:59 am
Water System
Water level: WET
Water PSI: 0 PSI
Hot Water Flow: 0 mL
Cold Water Flow: 0 mL
Tank Temp: 91.0 °C | 195.8 °F
Brew Valve: closed
Hot Valve: closed
Cold Valve: closed
Drain Valve: closed
Dispense Valve: closed
Pump Pwm (%) 80
10
100
Brew
Hot Water
Cold Water
Drain
Dispense
Pump
Heater
Brew Group
Group Temp: 75.0 °C | 167.0 °F
Upper Position: 0
Upper Current: 0.00 Amps
Lower Position: 0
Lower Current: 0.00 Amps
Piston Pwm (%) 50
10
60
Heater
Upper
Lower
Upper Piston
Lower Piston
Sweep Arm
Grinders
Encoder Count: 0
Grinder 1
Grinder 2
Grinder 3
Grinder 4
Grinder
Miscellaneous
Time: 4-11-18 03:59:19
ATS Version: 5.3.1 Apr 5 2018
ACS Version: 123.1.101
Machine Serial#: UNSERIALZED
PCB Temp: 0.0 °C
Grounds Bin: in
Front Panel: closed
3.3V Supply: 0.0 V
5.0V Supply: 0.0 V
24.0V Supply: 0.0 V
Grounds Bin Full
Hardware Inhibited
Software Inhibited
Controller Disconnected
Machine Busy
Recipe Failed
Brew Clean Due
PM Due


CoffeeSoftware
System Test
06:02 am
Cycles Completed: 0
Cycling Failed
Cycling Success
Cycling In Progress
Cycling Paused
Recipe To Cycle:
Calibrate
Cycles to Run 10
1
5000
Start Cycling
Pause Cycl
Cycling
Calibrate
Rinse
Pre soak
Brew Movement
Pack
Sweep

Software Quick Reference Table

The following table displays all minimum and maximum values and adjustable intervals for the software menu system.

NOTE:

INFORMATION	**Function**				
Dispense	Displays Fresh Brewed Coffee choice.				
Daily Clean Information	Displays Clean Information, Last Clean, PM Due, Start of clean cycle				
Machine Statistics	Displays Total drinks, size, type, history. Last brew clean, PM reset.				
Machine Status	Displays Water System< Brew Group, Grinder, Misc info for machine error.				
SETTINGS	**Access Level**	**Default**	**Min**	**Max**	**Adjustable by**
MACHINE SETTINGS					
General Settings	User	Concordia			Drop down menu
Sizes	User	4	single	carafe	Drop down menu
Carafe	User	Variable	0	10	Right, Left scroll
Room Bold	User	Variable	5	50	%
Grinders	Factory	Optional	2	4	Drop down Menu
Version	Factory	Default			Load/Save
BEAN EDITOR	**Access Level**		**Function**		
Bean Tuning	Service		Adjusts coffee settings Hot/Cold/Sizes/Beans.		
Bean Info	Service		Bean Data Base, Type and Description.		
Version	Service		Resets to factory default if not altered from factory.		
DATE & TIME	**Access Level**		**Function**		
Time Zone	Service		Changes Time Zone / NTP Enabled		

CONNECTIVITY	Access Level	Default	Min	Max	Function
IOT	Service	Disabled	NA	NA	Enables IOT Functionality
SOFTWARE UPDATES					
Touchscreen	Service	NA	NA	NA	Updates the Touch Screen Firmware
Controller	Service	NA	NA	NA	Updates the Controller Firmware
Machine Settings	Service	NA	NA	NA	Updates the Machine Settings
Recipe	Service	NA	NA	NA	Updates the Recipe (Customer Specific)
TECH TOOLS					
TEST ROUTINES					
Water System	Service				Error and Testing Components
Brew Group	Service				Error and Testing Group
Grinders	Service				Encoder Count, Grinder Test.
Miscellaneous	Service				Errors Machine Status
LOG MESSAGES					
Load Demo	Factory				Factory use
Dump Diag	Factory				Factory use
Open Diag	Factory				Factory use
Clear Log	Factory				Clears error log
DIAGOSTIC					
Touch Screen Test	Service				
Self-test	Service				
Factory Reset	Service				
SYSTEM TEST					
Calibrate					Start>Pause>Reset> Cycling
Rinse					
Pre-soak					
Brew movement					
Pack					
Sweep					
Brush Group					
Brew Carafe					
Loosen Solids					
Go Home					
Brew Coffee					
Repeated Rinse					
Drain Dispense					
Cleanup					
Tablet Clean					

Section 8 ::
Cleaning

1. Machine Maintenance
2. Daily and Monthly Cleaning
3. Daily Cleaning Procedures
7. Cleaning Using
8. Preventive Maintenance

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Machine Maintenance

In order to avoid mechanical failure and maintain cleanliness, the Ascent Touch must be cleaned and maintained daily.

Daily Maintenance includes:

1. Clean the brew system.
2. Empty the grounds bin.
3. Clean the drain grate and drain tray.
4. Clean the exterior surfaces.
5. Clean the product outlet.
6. Refill the bean supply.

Monthly Maintenance

- Clean the bean hoppers.
- Clean exterior of machine.

Concordia Cleaning Products

Concordia cleaning products must be used.
The cleaning kit includes the following items:

- 120 Brew Group Cleaning Tablets (PN 3400-036)

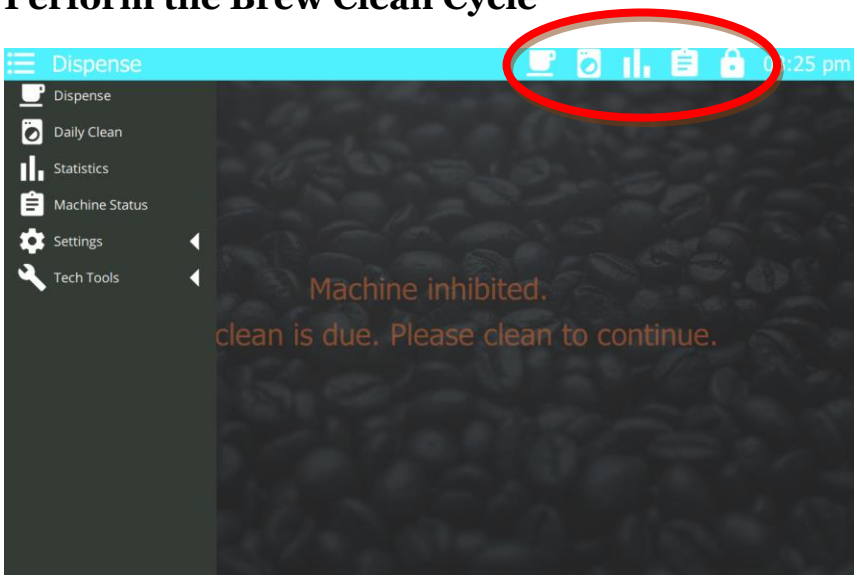
Cleaning Timer

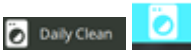
The brew group must be cleaned every 24 hours. After 24 hours, the machine's display will read **(Machine Inhibited Brew clean is due, press clean to continue).**

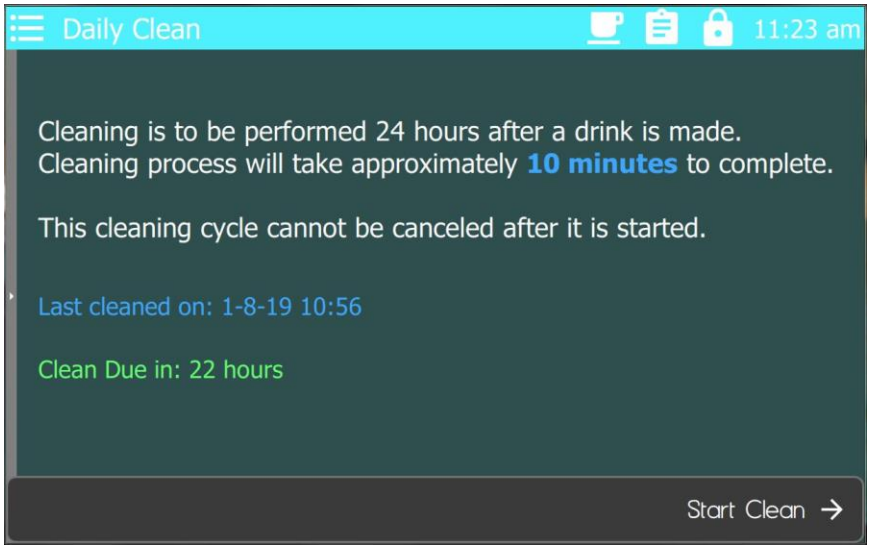
All timers start after the first beverage is poured following a cleaning. For example, if the machine is cleaned on Friday night, and it is idle Saturday and Sunday, the timers are not started until the first beverage is poured Monday morning.

Daily Cleaning Procedures

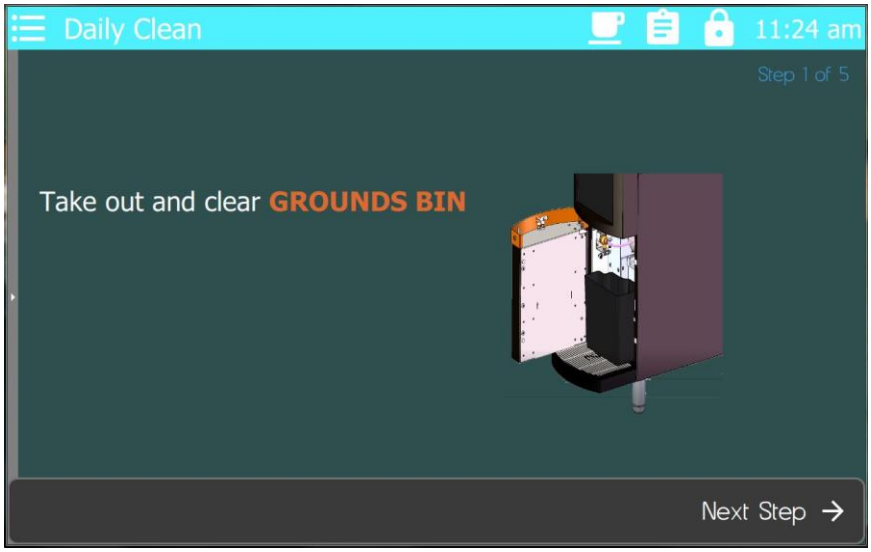
Perform the Brew Clean Cycle



1. Open the door to show the option icons
2. Press the **DAILY CLEAN** icon. 

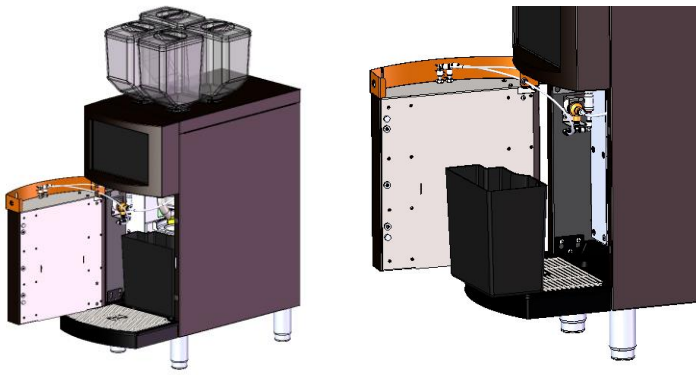


3. Press **START CLEAN**.
4. The display will show:



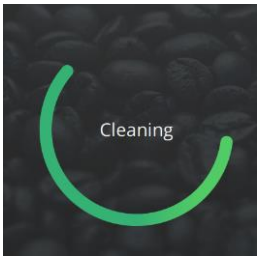
5. Open the front door and remove the grounds bin drawer. Once the grounds bin has been emptied and placed back in the system press.

NEXT STEP

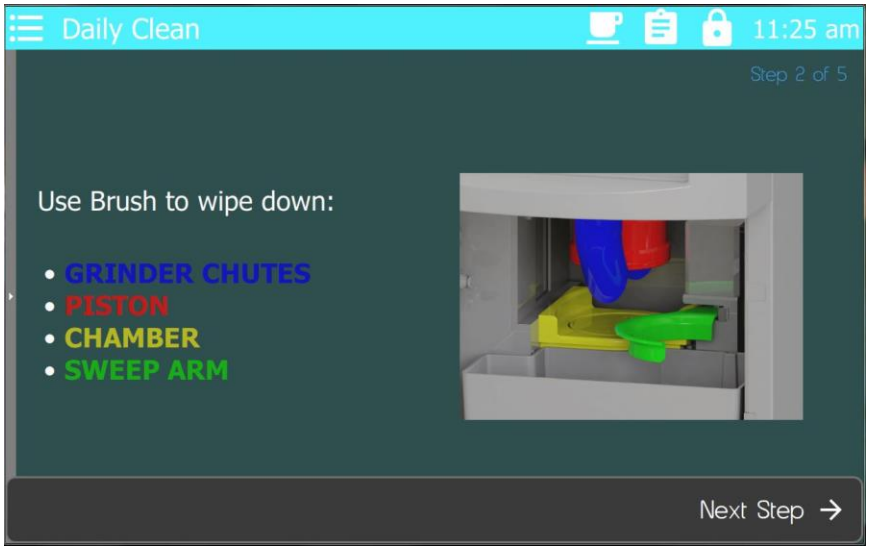


6. The display will show:

CLEANING

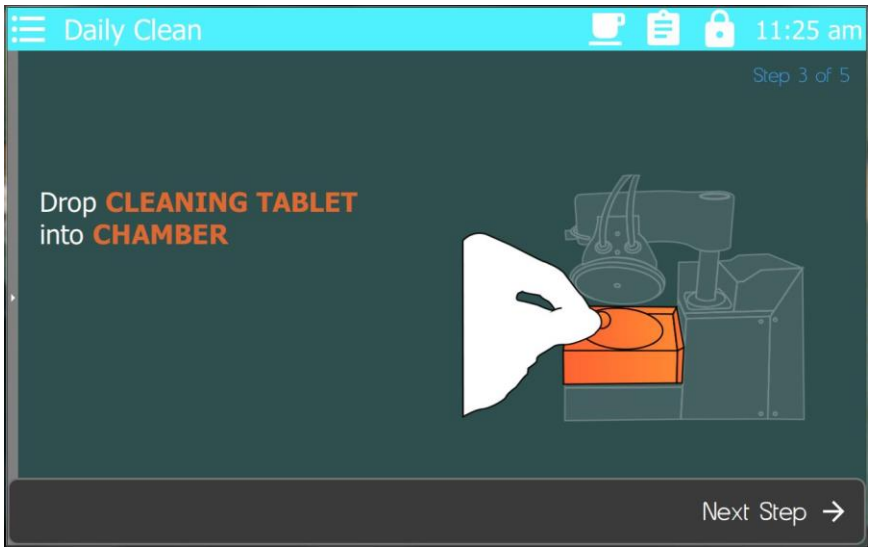


7. Wait until the rinse cycle finishes and the display shows:



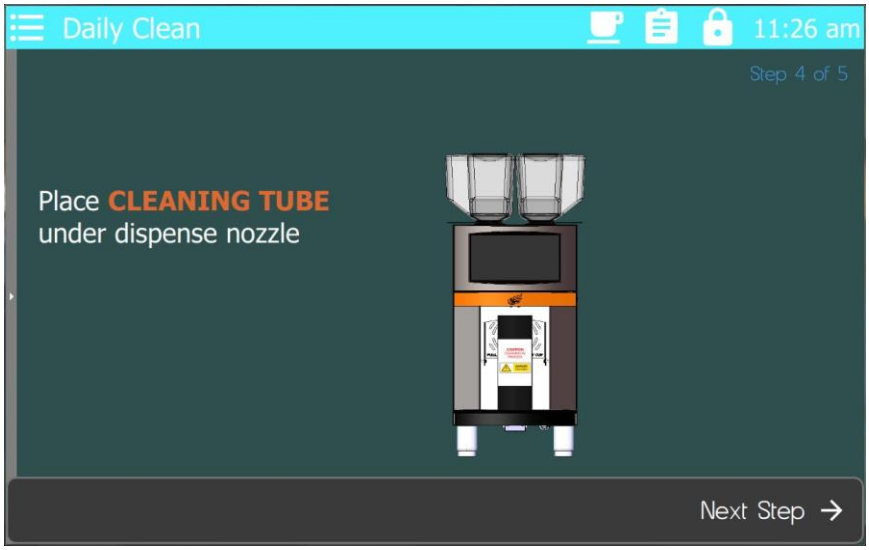
NOTE: THOROUGHLY CLEAN COFFEE DEBRIS FROM THE TOP AND BENEATH THE BREW GROUP AREA.

8. Use the dry cleaning brush to sweep away all coffee debris from the brew group and sweep arm. Wipe the outer edge of the upper piston and the micro screen thoroughly with a damp cloth removing any remaining coffee debris.
9. **Press Next Step**
10. The display will show:



PRESS NEXT STEP

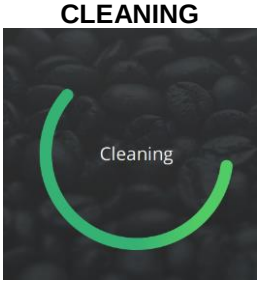
11. The display will show:



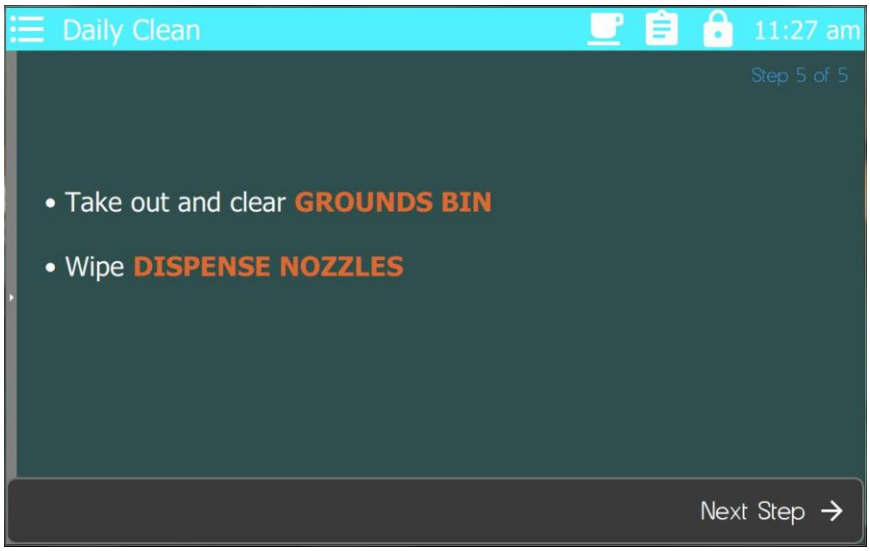
12. Place the cleaning tube under the product outlet and press **NEXT STEP**.

13. The display will show:

CLEANING

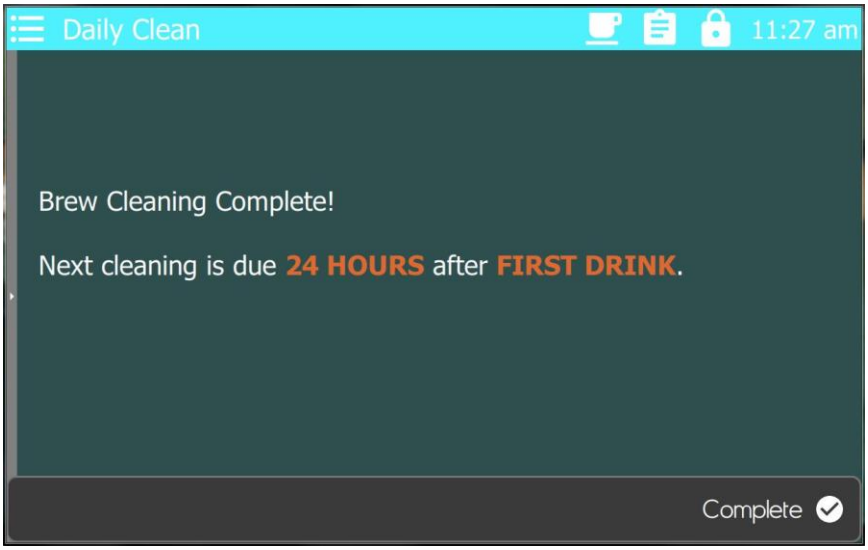


14. Wait until the cleaning cycle finishes and the display shows:



15. Clean the product outlet area thoroughly, and then press **NEXT STEP**.

16. The display will show:



Press Complete

Clean Drain Grate and Drain Tray

1. Remove the drain grate and clean with sanitizer.
   NOTE: The drain grate can be placed in a dishwasher, if desired.
2. Clean the black plastic drain tray with towel moistened with soap and water. Do NOT use bleach or any other chemical cleaner, or wash in a dishwasher.

Clean Exterior Surfaces

1. Clean the exterior of the machine area using a towel moistened with sanitizer.
2. Clean the front panel of the machine.
3. Thoroughly clean around the beverage dispensing area. Wipe with a wet towel.
4. If further cleaning is necessary, clean using mild dish soap mixed with warm water.
   WARNING: To avoid contact with chemicals and hot water, do not clean the beverage dispensing area during the brew system clean process.

Refill Consumables

Refill all beans, as needed.

Clean Product Outlet

In order to ensure no cleaning chemicals remain, wipe down the product outlet with a moistened towel.

Preventive Maintenance

A Preventive Maintenance (PM) call is performed in order to service critical equipment functions and to minimize potential problems in the future.

A PM Service call must be performed every six months, in order to maintain the warranty and to extende the life of the product.

Any repairs or replacement of parts after warranty can be serviced by you the **local service agent**. A PM Service call will be scheduled as part of the **FIRST YEAR WARRANTY**, when the customer receives the PM kit they call 800-778-0900 for confirmation of delivery and to schedule a service. If the customer purchases a PM PLAN PM calls will also be done through CONCORDIA.

PM Plans cover Preventive Maintenance. They do not cover Service Calls between scheduled PM intervals.

PM Kits

The PM kit contains a document with step-by-step instructions for performing the PM Service call.

Each PM kit contains the following:

- All necessary parts
- **Preventive Maintenance Instructions**
- **Preventive Maintenance Checklist**

The PM Checklist must be returned to Concordia Beverage Systems upon completion of the PM call.

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Section 9 :: Troubleshooting

1. Troubleshooting Quick Reference Guide
2. Software Messages
3. Test Routines
4. System Self Test

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Troubleshooting Quick Reference Guide

Machine Failure

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION NEEDED
Brewer will not operate		
	An access sensor is triggered.	Ensure the front panel is closed.
		Ensure the grounds bin drawer is correctly positioned or reset properly.
		Ensure the power cord is plugged into the power source.
		Ensure the power switch is turned ON.
		Ensure the building main circuit breaker is not tripped
		Run a clean cycle.
Display is blank	Power not on.	Ensure the power switch is turned ON.
		Ensure the power cord is plugged into the power source.
		Verify the 10amp circuit breaker, located above the power switch, is pushed in.

Brewing System

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION NEEDED
Coffee delivery is slow	Coffee dispenser is plugged. Pump is not operating.	Run a clean cycle, and then re-test.
Coffee is bitter	The machine may need to be cleaned.	Run a clean cycle, and then re-test.
	The coffee beans are stale.	Place fresh beans in the bean hoppers.
Grounds bin is overflowing	Grounds bin was not emptied when it was removed from the machine.	Remove and empty the grounds bin. NOTE: The bin must be removed for at least 6 seconds.
Only hot water is dispensed	No coffee beans are being ground.	Ensure the hopper stopper is removed from the bean hopper.
		Ensure that the grounds chutes are not clogged.
		Ensure there are beans in the bean hoppers.

Software Messages

Warning messages appear on the machine control panel display.

DISPLAY MESSAGE	CORRECTIVE ACTION NEEDED
BREW CLEAN IS DUE	The daily clean cycle must be performed.
CALIBRATING	The machine is initializing the brew group. Wait for the process to complete.
MACHINE IS UNCALIBRATED	Ensure the grounds bin is installed and the door is closed.
GROUNDS BIN IS FULL	Empty the grounds bin. Ensure the display shows **GROUNDS BIN IS OUT**, and then reinsert the grounds bin into the machine.
WATER TANK IS WARMING UP / GROUP IS WARMING UP	The hot water tank and or the brew group are heating up to reach operating temperature.
TANK PURGE IN PROGRESS	The machine is attempting to release air from the water tank. Wait for the process to complete.
PURGE FAILED / CHECK WATER SUPPLY	The tank purge process failed. Ensure the water supply to the machine has not been turned off.
GROUNDS BIN OUT	Please ensure the grounds bin is installed to continue.
DOOR OPEN	Please close the front door to continue.

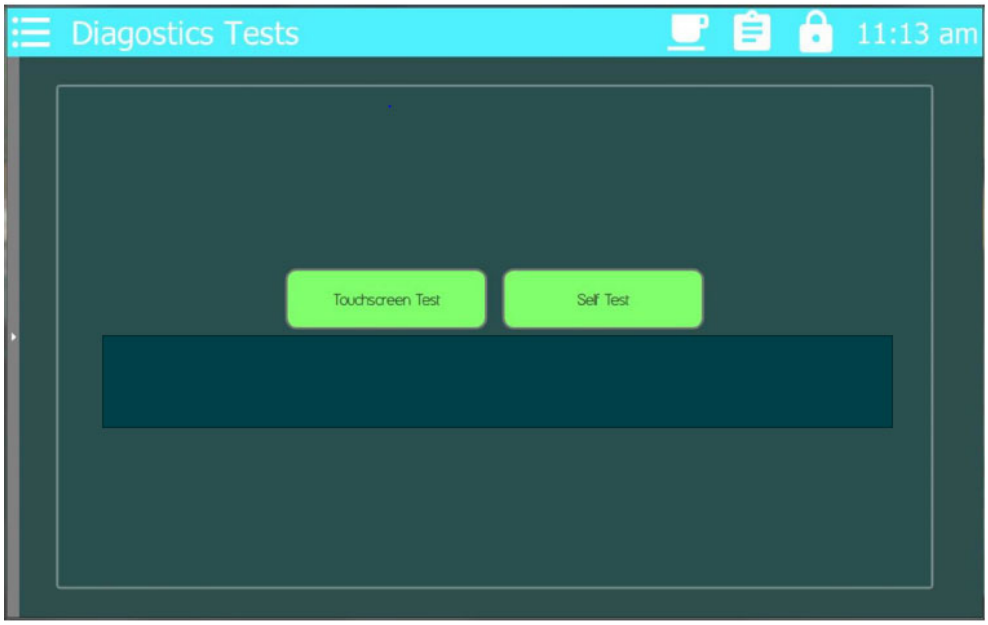
Test Routines

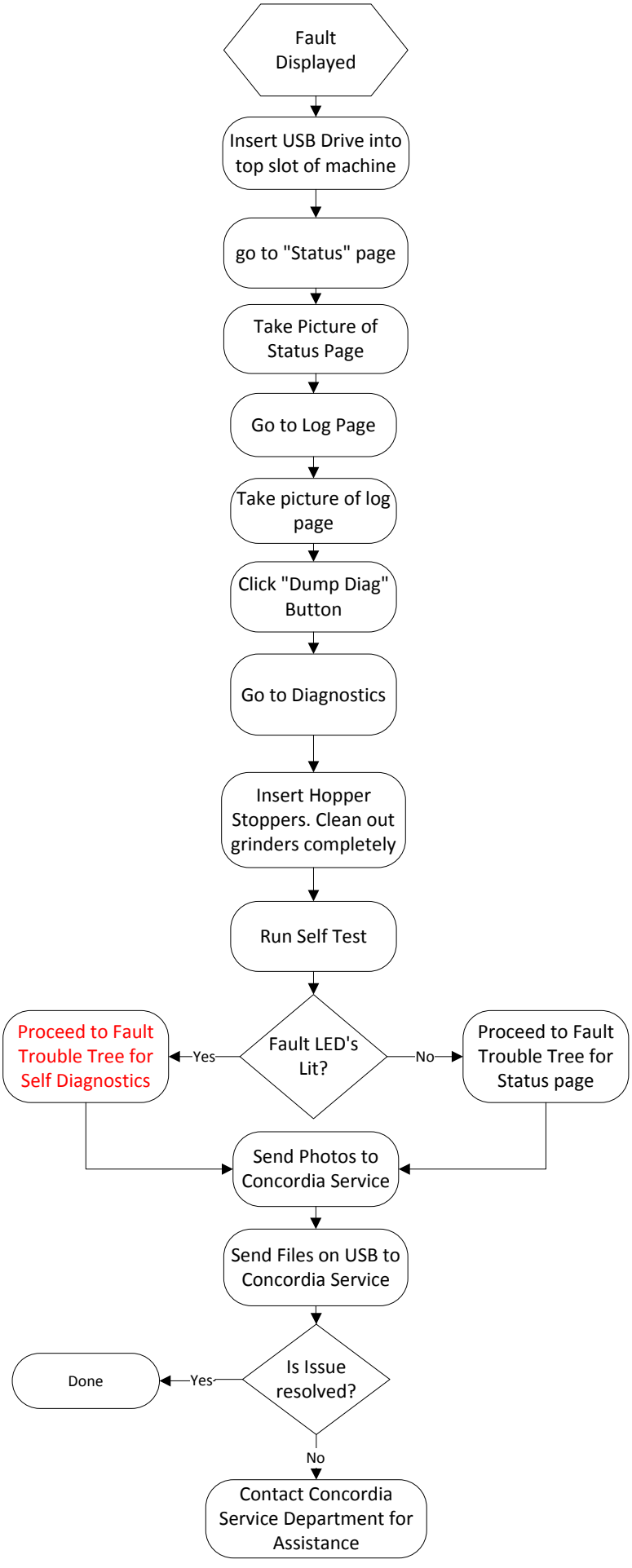
This system gives the operator the ability to test individual subsystems or components to ensure they are working properly.

Diagnostics Test

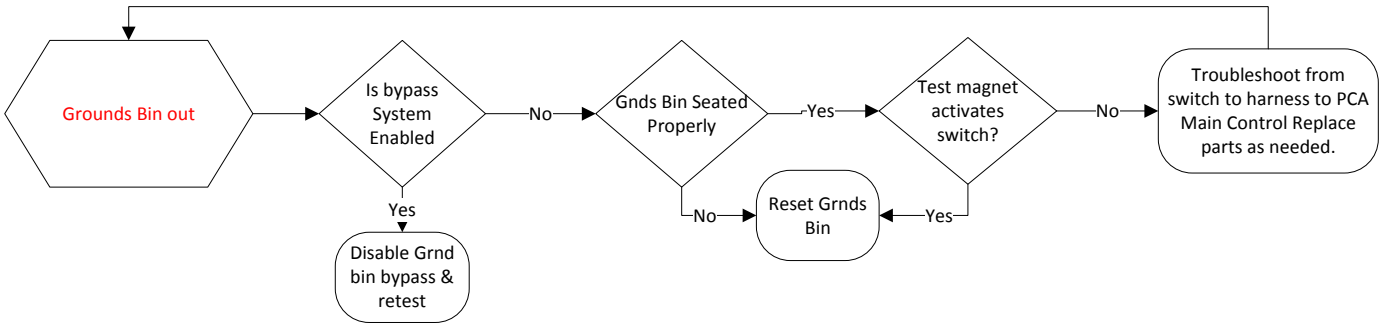
This system gives the operator the ability to start a machine "self-

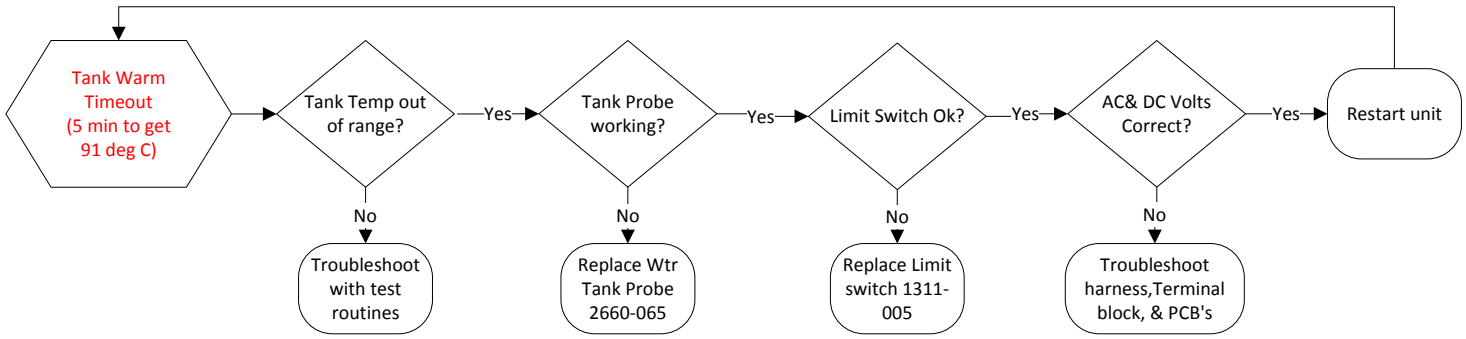
test". The machine will operate each subsystem and indicate if any failures occur. There is also an option to run a touchscreen test. The touchscreen test walks the user through verifying all segments of the touchscreen are operational.

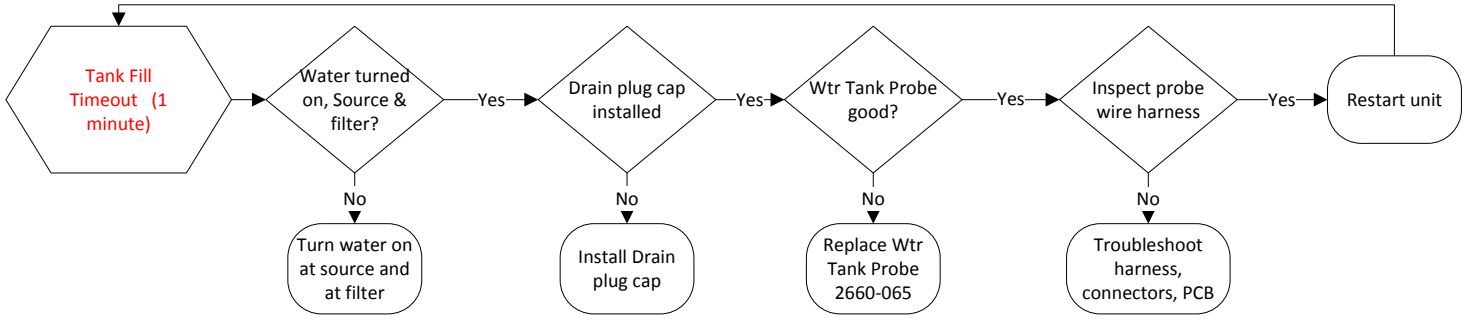


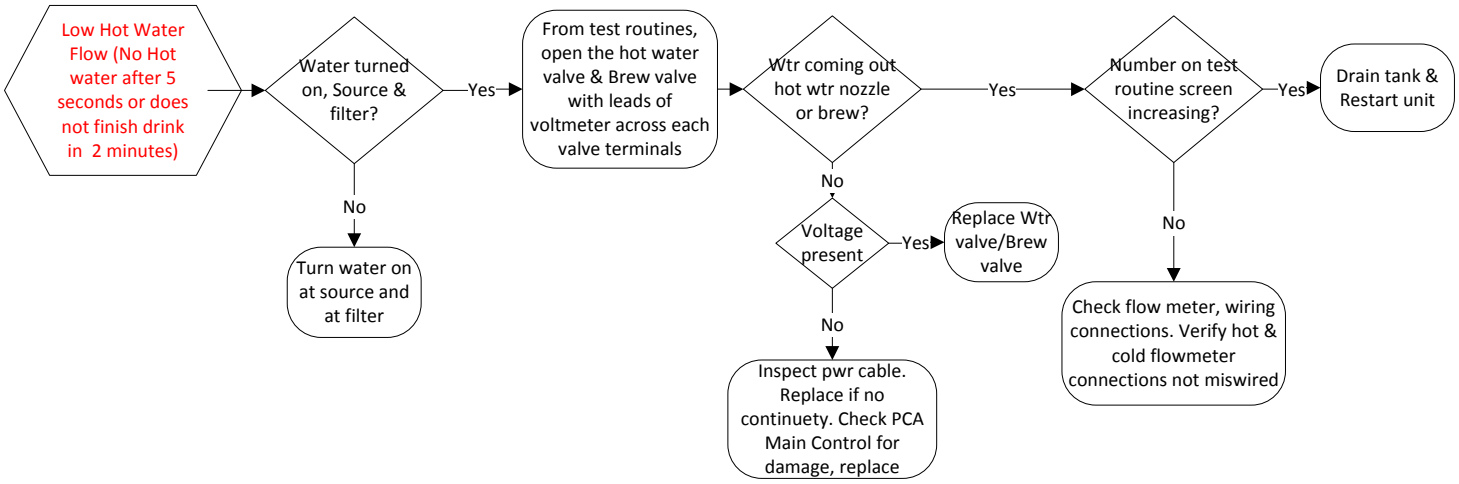

Fault Displayed
Insert USB Drive into top slot of machine
go to "Status" page
Take Picture of Status Page
Go to Log Page
Take picture of log page
Click "Dump Diag" Button
Go to Diagnostics
Insert Hopper Stoppers. Clean out grinders completely
Run Self Test
Fault LED's Lit?
Yes
Proceed to Fault Trouble Tree for Self Diagnostics
No
Proceed to Fault Trouble Tree for Status page
Send Photos to Concordia Service
Send Files on USB to Concordia Service
Is Issue resolved?
Yes
Done
No
Contact Concordia Service Department for Assistance

Diagnostic Troubleshooting Trees

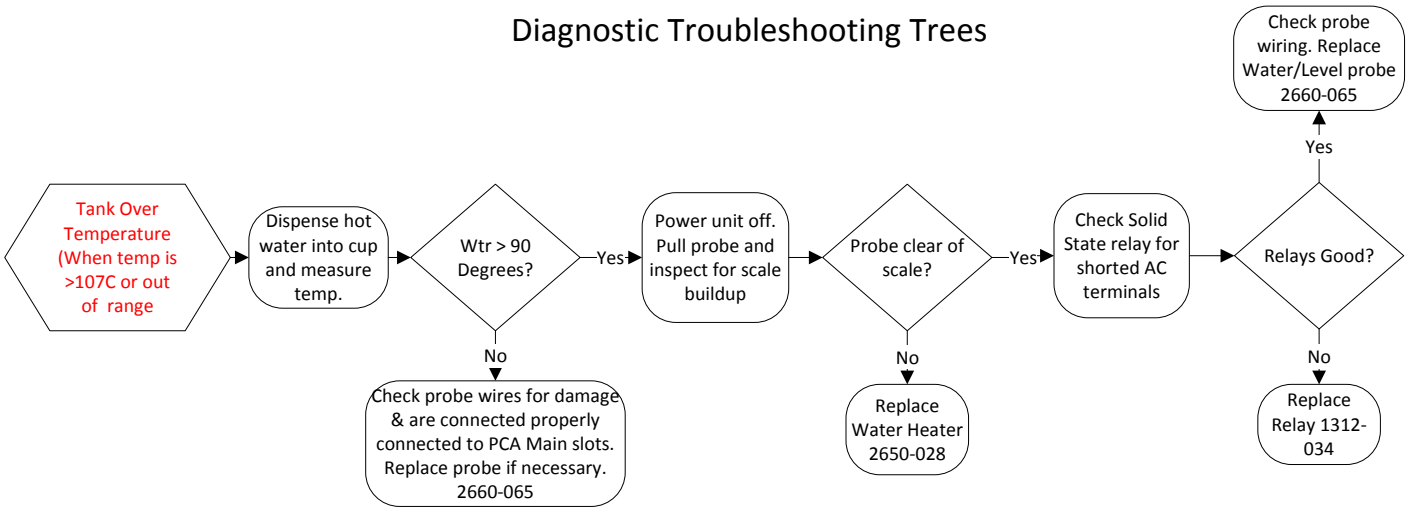


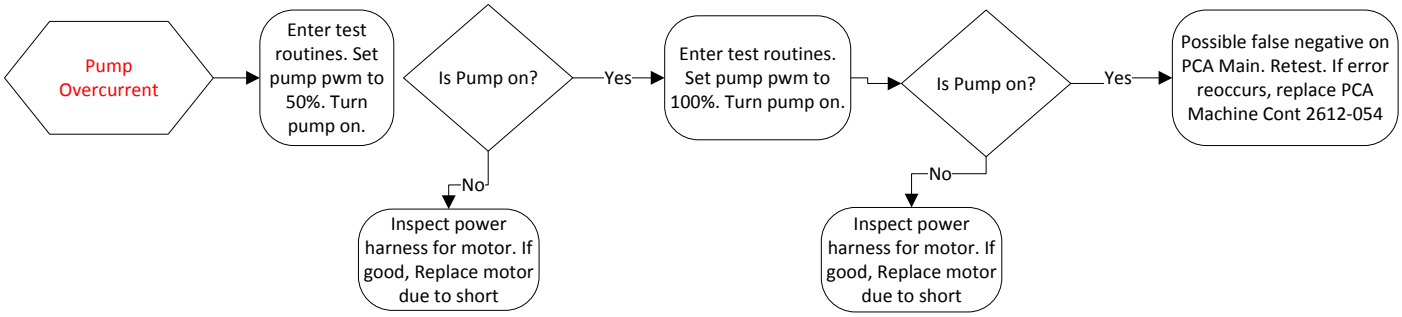


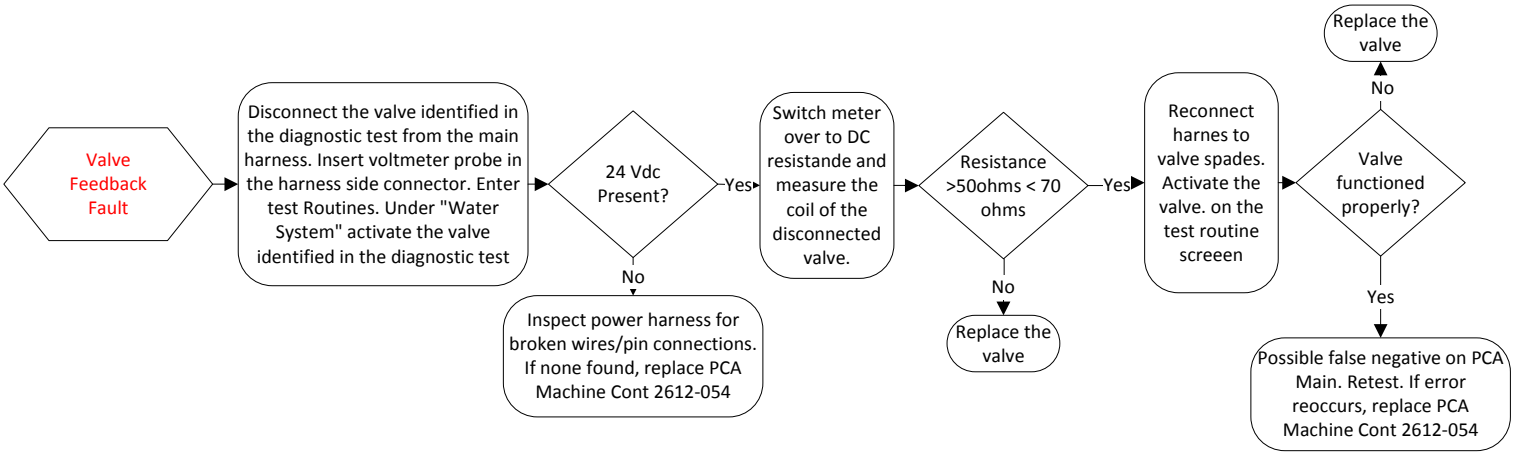


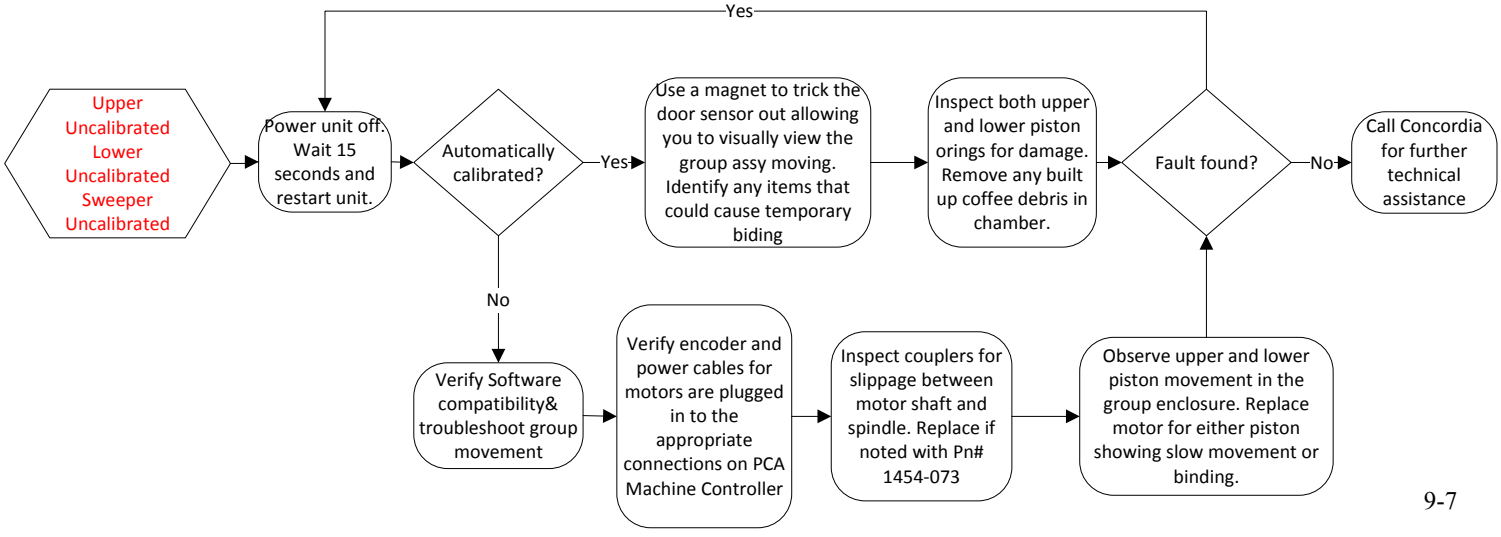


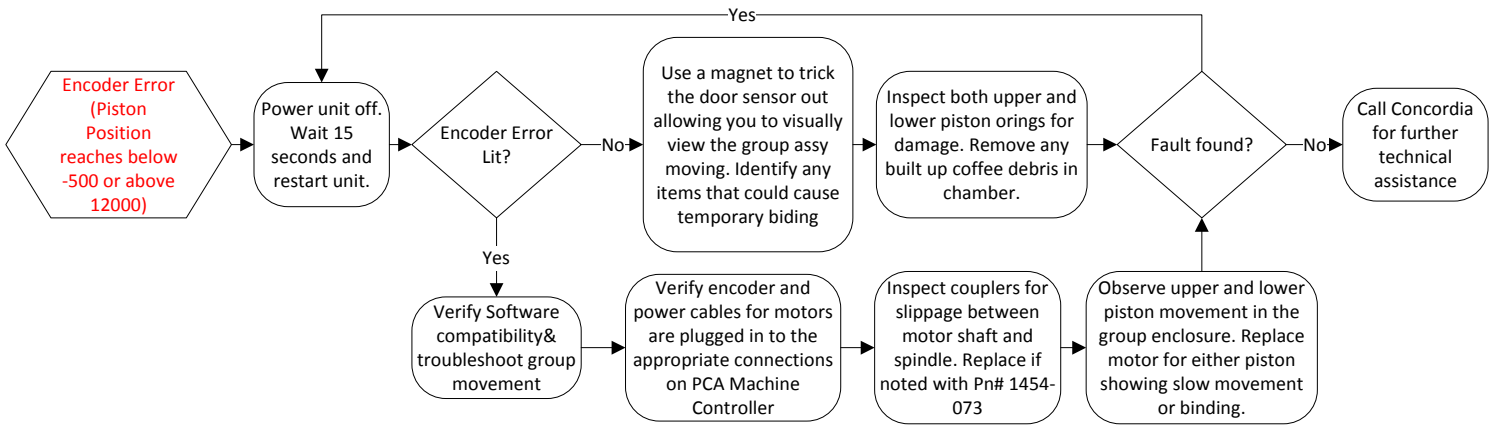
Diagnostic Troubleshooting Trees

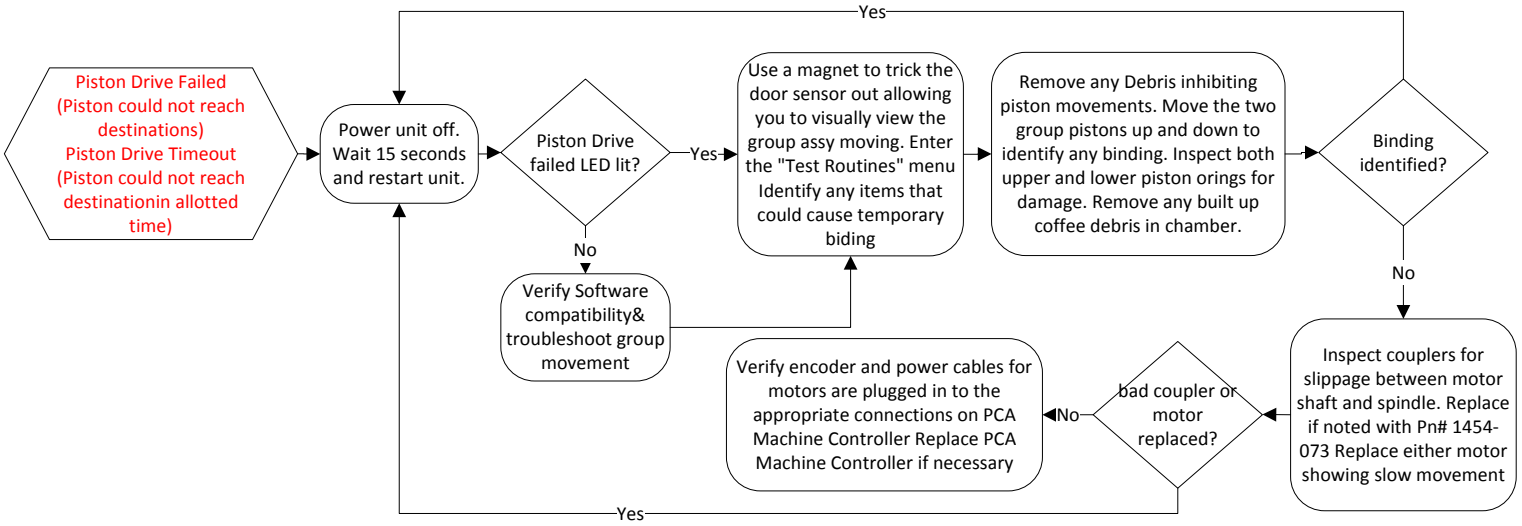


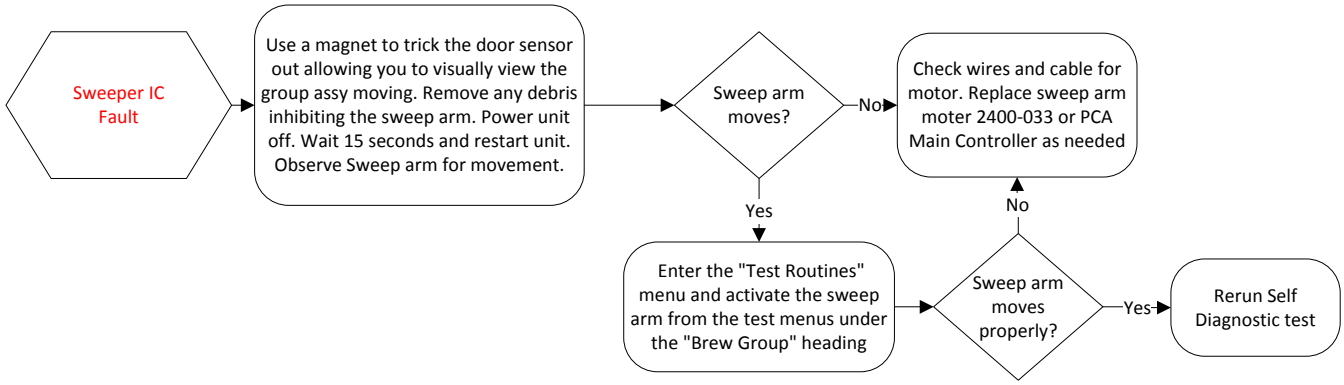


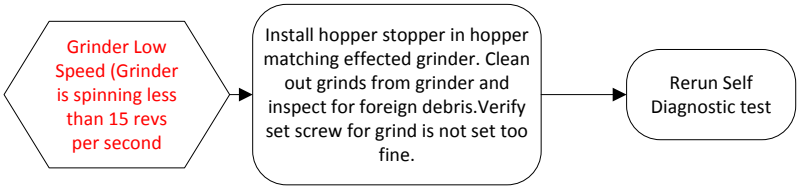


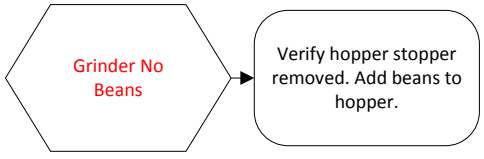


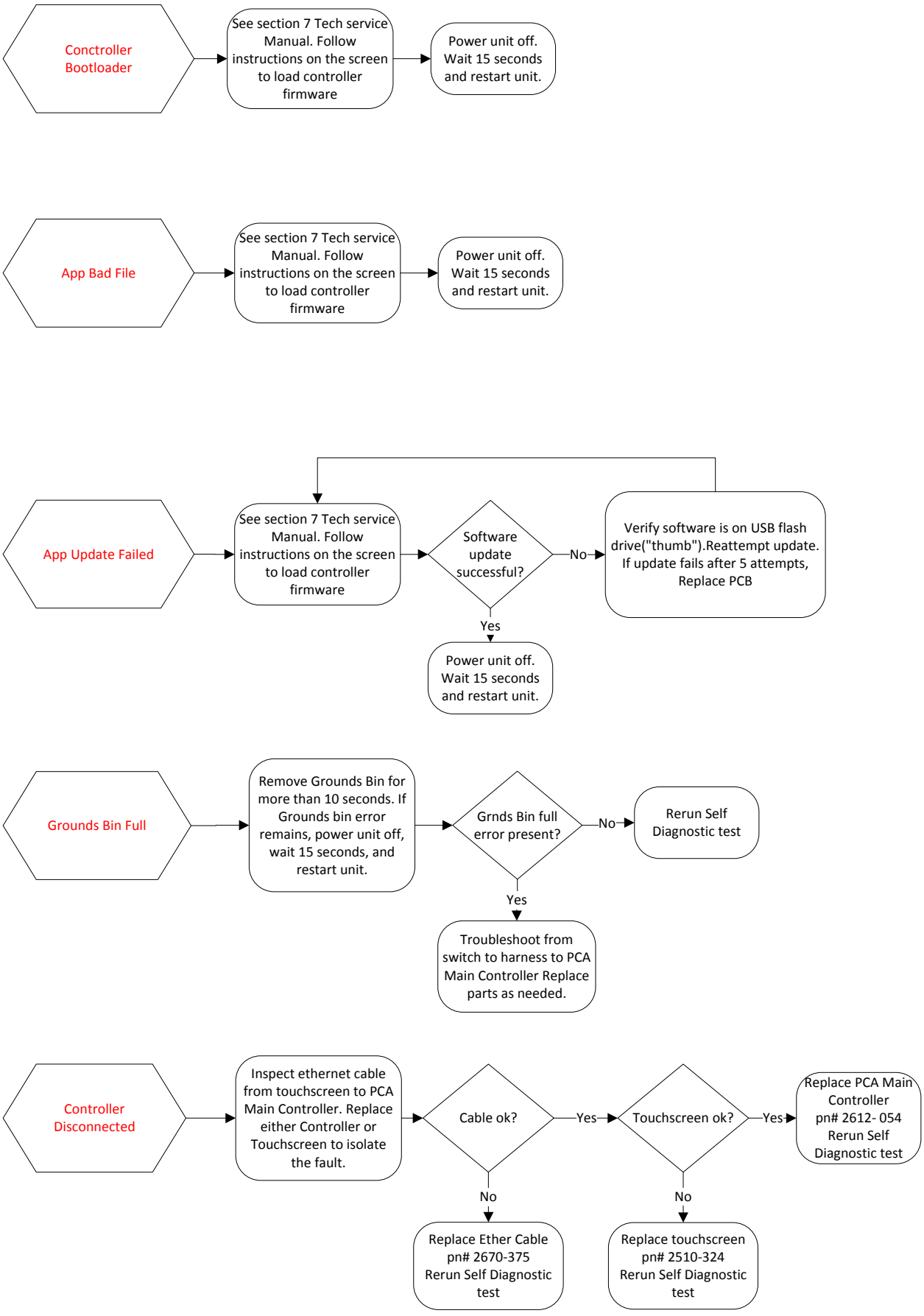

Encoder Error (Piston Position reaches below -500 or above 12000)
Power unit off. Wait 15 seconds and restart unit.
Encoder Error Lit?
No
Use a magnet to trick the door sensor out allowing you to visually view the group assy moving. Identify any items that could cause temporary biding
Inspect both upper and lower piston orings for damage. Remove any built up coffee debris in chamber.
Fault found?
No
Call Concordia for further technical assistance
Yes
Yes
Verify Software compatibility& troubleshoot group movement
Verify encoder and power cables for motors are plugged in to the appropriate connections on PCA Machine Controller
Inspect couplers for slippage between motor shaft and spindle. Replace if noted with Pn# 1454-073
Observe upper and lower piston movement in the group enclosure. Replace motor for either piston showing slow movement or binding.

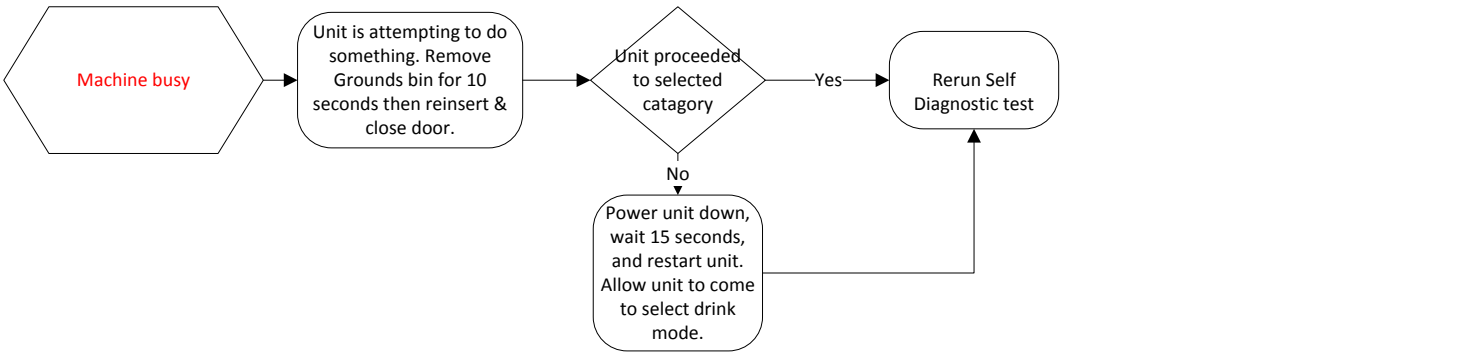

Piston Drive Failed (Piston could not reach destinations) Piston Drive Timeout (Piston could not reach destinationin allotted time)
Power unit off. Wait 15 seconds and restart unit.
Piston Drive failed LED lit?
Yes
Use a magnet to trick the door sensor out allowing you to visually view the group assy moving. Enter the "Test Routines" menu Identify any items that could cause temporary biding
Remove any Debris inhibiting piston movements. Move the two group pistons up and down to identify any binding. Inspect both upper and lower piston orings for damage. Remove any built up coffee debris in chamber.
Binding identified?
Yes
No
Verify Software compatibility& troubleshoot group movement
No
Inspect couplers for slippage between motor shaft and spindle. Replace if noted with Pn# 1454-073 Replace either motor showing slow movement
bad coupler or motor replaced?
No
Verify encoder and power cables for motors are plugged in to the appropriate connections on PCA Machine Controller Replace PCA Machine Controller if necessary
Yes

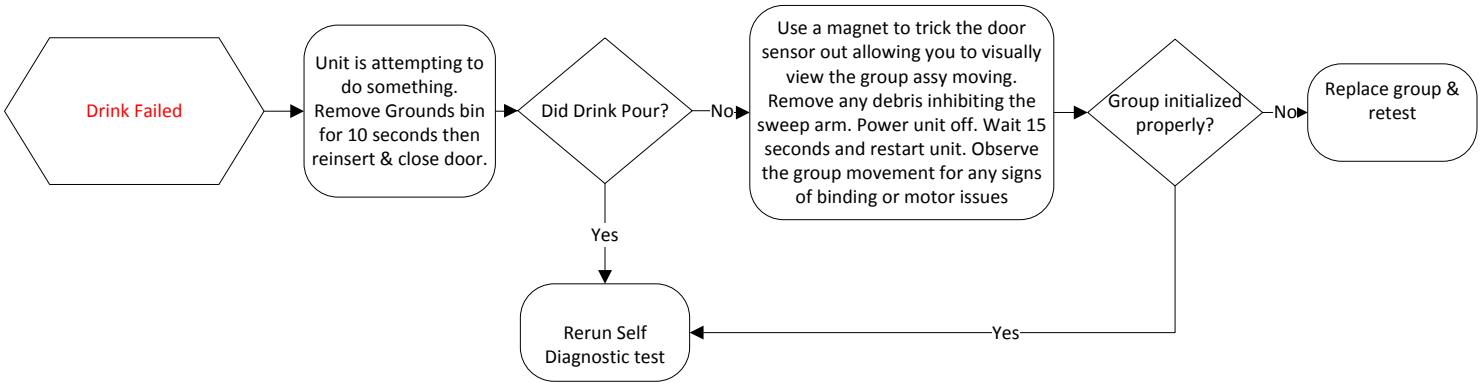

Sweeper IC Fault
Use a magnet to trick the door sensor out allowing you to visually view the group assy moving. Remove any debris inhibiting the sweep arm. Power unit off. Wait 15 seconds and restart unit. Observe Sweep arm for movement.
Sweep arm moves?
No
Check wires and cable for motor. Replace sweep arm moter 2400-033 or PCA Main Controller as needed
Yes
No
Enter the "Test Routines" menu and activate the sweep arm from the test menus under the "Brew Group" heading
Sweep arm moves properly?
Yes
Rerun Self Diagnostic test

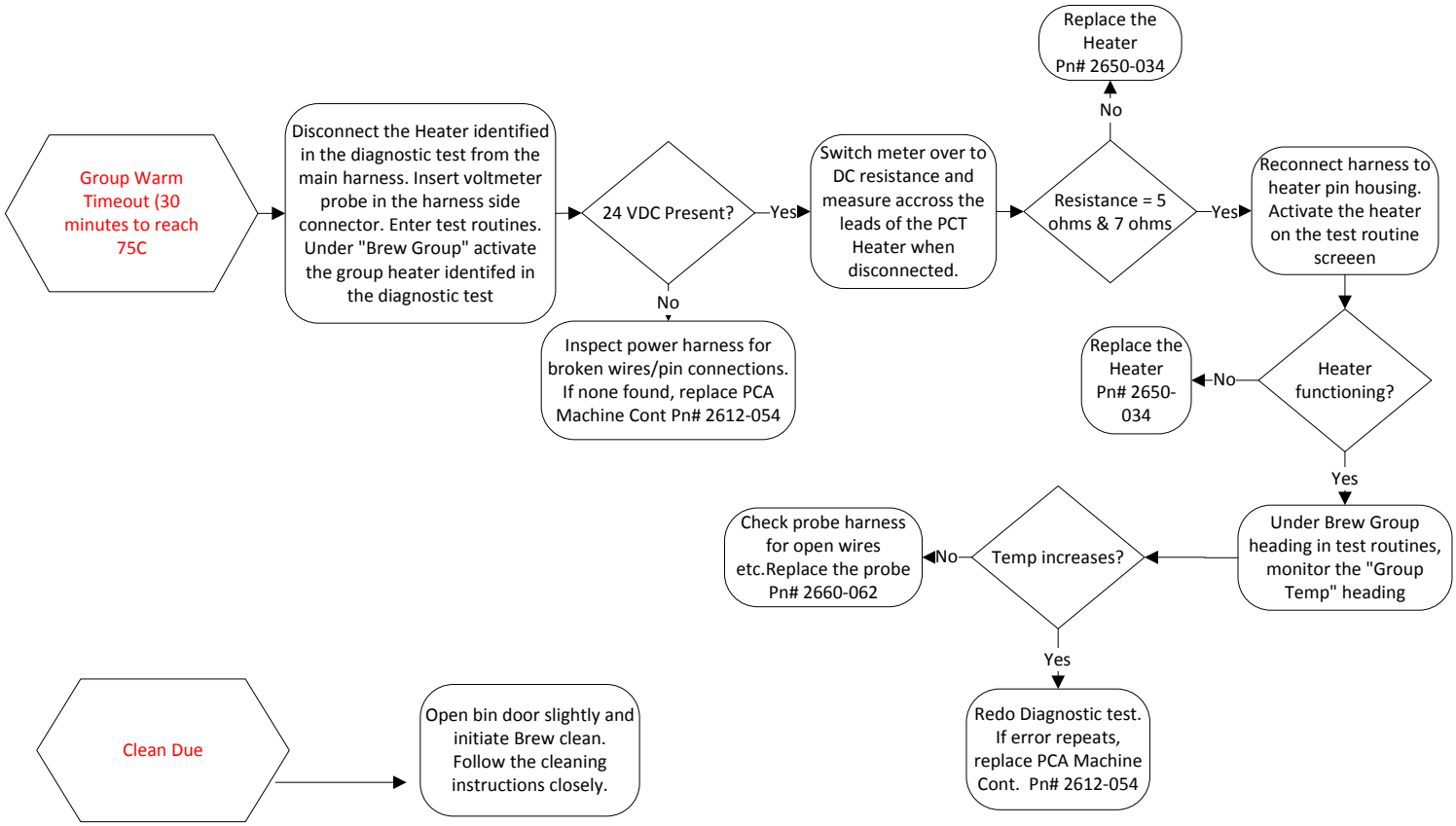

Grinder Low Speed (Grinder is spinning less than 15 revs per second
Install hopper stopper in hopper matching effected grinder. Clean out grinds from grinder and inspect for foreign debris.Verify set screw for grind is not set too fine.
Rerun Self Diagnostic test


Grinder No Beans
Verify hopper stopper removed. Add beans to hopper.

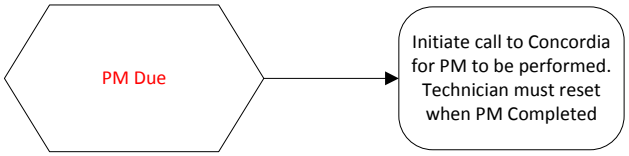

Conctroller Bootloader
See section 7 Tech service Manual. Follow instructions on the screen to load controller firmware
Power unit off. Wait 15 seconds and restart unit.
App Bad File
See section 7 Tech service Manual. Follow instructions on the screen to load controller firmware
Power unit off. Wait 15 seconds and restart unit.
App Update Failed
See section 7 Tech service Manual. Follow instructions on the screen to load controller firmware
Software update successful?
No
Verify software is on USB flash drive("thumb").Reattempt update. If update fails after 5 attempts, Replace PCB
Yes
Power unit off. Wait 15 seconds and restart unit.
Grounds Bin Full
Remove Grounds Bin for more than 10 seconds. If Grounds bin error remains, power unit off, wait 15 seconds, and restart unit.
Grnds Bin full error present?
No
Rerun Self Diagnostic test
Yes
Troubleshoot from switch to harness to PCA Main Controller Replace parts as needed.
Controller Disconnected
Inspect ethernet cable from touchscreen to PCA Main Controller. Replace either Controller or Touchscreen to isolate the fault.
Cable ok?
Yes
Touchscreen ok?
Yes
Replace PCA Main Controller pn# 2612- 054 Rerun Self Diagnostic test
No
Replace Ether Cable pn# 2670-375 Rerun Self Diagnostic test
No
Replace touchscreen pn# 2510-324 Rerun Self Diagnostic test

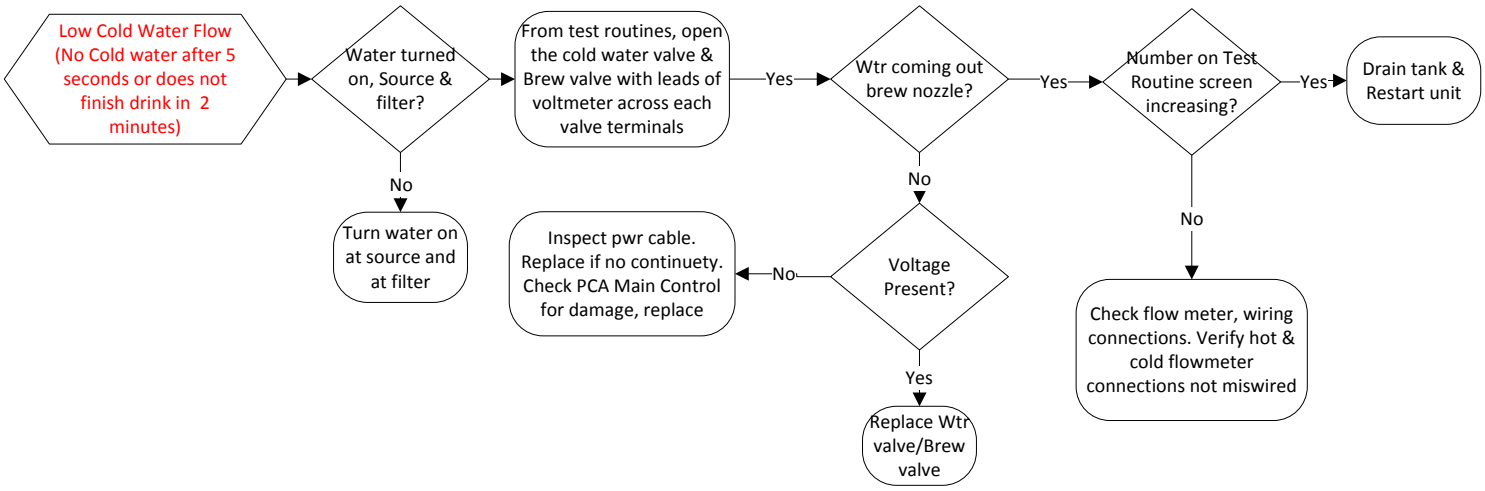

Machine busy
Unit is attempting to do something. Remove Grounds bin for 10 seconds then reinsert & close door.
Unit proceeded to selected catagory
Yes
Rerun Self Diagnostic test
No
Power unit down, wait 15 seconds, and restart unit. Allow unit to come to select drink mode.


Drink Failed
Unit is attempting to do something. Remove Grounds bin for 10 seconds then reinsert & close door.
Did Drink Pour?
No
Use a magnet to trick the door sensor out allowing you to visually view the group assy moving. Remove any debris inhibiting the sweep arm. Power unit off. Wait 15 seconds and restart unit. Observe the group movement for any signs of binding or motor issues
Group initialized properly?
No
Replace group & retest
Yes
Rerun Self Diagnostic test
Yes


Group Warm Timeout (30 minutes to reach 75C
Disconnect the Heater identified in the diagnostic test from the main harness. Insert voltmeter probe in the harness side connector. Enter test routines. Under "Brew Group" activate the group heater identifed in the diagnostic test
24 VDC Present?
Yes
Switch meter over to DC resistance and measure accross the leads of the PCT Heater when disconnected.
Resistance = 5 ohms & 7 ohms
Yes
Reconnect harness to heater pin housing. Activate the heater on the test routine screeen
Heater functioning?
Yes
Under Brew Group heading in test routines, monitor the "Group Temp" heading
Temp increases?
Yes
Redo Diagnostic test. If error repeats, replace PCA Machine Cont. Pn# 2612-054
No
Check probe harness for open wires etc.Replace the probe Pn# 2660-062
No
Replace the Heater Pn# 2650-034
No
Replace the Heater Pn# 2650-034
No
Inspect power harness for broken wires/pin connections. If none found, replace PCA Machine Cont Pn# 2612-054
No

Clean Due
Open bin door slightly and initiate Brew clean. Follow the cleaning instructions closely.


PM Due
Initiate call to Concordia for PM to be performed. Technician must reset when PM Completed


Low Cold Water Flow (No Cold water after 5 seconds or does not finish drink in 2 minutes)
Water turned on, Source & filter?
No
Turn water on at source and at filter
From test routines, open the cold water valve & Brew valve with leads of voltmeter across each valve terminals
Yes
Wtr coming out brew nozzle?
No
Voltage Present?
No
Inspect pwr cable. Replace if no continuety. Check PCA Main Control for damage, replace
Yes
Replace Wtr valve/Brew valve
Yes
Number on Test Routine screen increasing?
No
Check flow meter, wiring connections. Verify hot & cold flowmeter connections not miswired
Yes
Drain tank & Restart unit

Section 10 ::
Service Bulletins

TECHNICAL SUPPORT

CONCORDIA

BEVERAGE SYSTEMS

Service Bulletins