

# Eccellenza momentum™



## Service Manual





**Carefully read this instruction manual before proceeding with the installation and operation of this equipment. Keep this manual in a safe place for future reference.**

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# SECTION 1

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## Introduction, Safety Information & Equipment Specifications

### Introduction

This manual guides you through maintaining and servicing the equipment with step-by-step instructions. We understand that this is a fairly large machine and the working space around it and behind it may be limited. For this reason, we designed this equipment so that all servicing can be done from the front of the machine. While there may be some cases where servicing will be easier from the back, this same servicing is also possible from the front if no space is available.



**Disconnect the machine service cord from the wall outlet and disconnect the water supply prior to servicing.**

### Safety Symbols

Your safety is extremely important to us. To avoid personal injury or damage to the equipment and its surrounding areas, it is **imperative** that you read and understand the safety information outlined in this section before proceeding with the installation and operation of this equipment.

The following symbols are used throughout this publication:



**Indicates an electrical shock hazard.**



**Indicates a potential safety risk, or a risk of damage to equipment and/or its surroundings.**



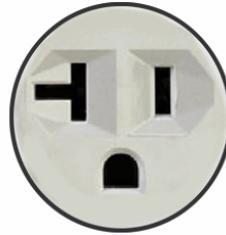
**Indicates important information that must be understood before proceeding.**



**Indicates an important note or useful tip.**

## Important Safeguards and Precautions

- This equipment is designed for indoor use **ONLY** and must **never** be installed outdoors.
- This equipment requires a 120-Volt 20-Amp wall outlet like the one shown below:



- The installation of this equipment **must** comply with **all** municipal, state/provincial, and federal electrical and plumbing codes.
- Installation and servicing of this equipment must **only be performed by qualified personnel**. Do not attempt to install or service this equipment if you are not qualified as it may result in personal injury. There are no user-serviceable parts inside the equipment.
- Do not use an electrical extension cord or power bar.
- This equipment must be installed in a location with an ambient temperature between 5°C-35°C (40°F-95°F).
- The main water supply pressure must be between a minimum of 20psi and a maximum of 100psi.
- The temperature of the main water supply entering the machine must not exceed 49°C (120°F)
- This equipment must be positioned so that the wall plug and the main power switch are both easily accessible.
- Do not connect this equipment to a voltage supply other than the voltage indicated on the serial number decal.
- Do not immerse this equipment, or any part of this equipment, in liquid.
- Do not install the equipment in an area where water spray is present.
- This equipment must be installed securely on a level surface. If it does not appear to be a stable location, select another installation location.
- Leave a **minimum of 2" (5cm)** of space all around this equipment for proper ventilation.
- Keep hands clear of the dispensing area at the front of this equipment. Liquids being dispensed are extremely hot and can cause severe burns.
- **Never** disconnect this equipment from the wall outlet by pulling on the service cord, and never use this equipment if the service cord is damaged.

- If the service cord is damaged, **it must be replaced with a new service cord** that is available from your distributor or the manufacturer of this equipment.
- **Never** circumvent the safety features incorporated into the equipment. They are there for your protection and **should never be disabled or bypassed under any circumstances**.
- **Always** switch the power off and disconnect the service cord when cleaning the interior of this equipment. Components inside this equipment can cause electrical shock resulting in personal injury.
- Use caution when servicing the water tank or any of its components - the water in the tank and the tank components may be extremely hot and can cause severe burns.
- Use caution when working inside this equipment as there may be sharp edges on some components that can cause cuts.
- To prevent electrical shock, remove all jewelry (rings, watches, etc.) when servicing this equipment.
- **Use only original equipment manufacturer replacement parts**. Unapproved replacement parts can result in personal injury, fire and/or further damage to the equipment.
- **Do not** allow children to access this equipment. They are not aware of the potential dangers that exist.
- The **Urnex TABZ Z61, Urnex SuperGrindz A01** and **Urnex RINZA** products are the **only** cleaning products approved by VKI Technologies for cleaning the brewer, the grinder and the whipper components. These products have been thoroughly tested and will not damage machine components. The use of other products may damage components and will void any remaining warranty on the damaged components.
- **Never** use ammonia-based cleaners on the surfaces of this equipment as they will become discolored and/or damaged permanently. Use mild cleaning products, such as dish soap.
- **Do not** lean on, push or shake the equipment as there is a risk that it can tip or fall, or cause water to overflow and contact electrical components creating a shock hazard.
- **Do not** operate the equipment with the rear panel removed.



**Unauthorized modifications made to this equipment can result in serious personal injury and/or damage to the equipment and its surroundings (including a risk of fire), and voids all warranties and safety certifications/listings.**

## Specifications

<b>Voltage Rating</b>	120 Volts AC @ 60hz (120 Volt Model) – 20 Amp Plug		
<b>Plug/Outlet</b>	Nema 5 – 20P		
<b>Heater Wattage</b>	1700 Watts		
<b>Total Wattage</b>	1800 Watts		
<b>Weight</b>	138 lbs (62.6 kg)		
<b>Cup Sizes</b>	3 cup sizes (from 10-oz to 24-oz), plus Carafe Option (64-oz)		
<b>Temperature Control</b>	Electronic Probe		
<b>Heating Time</b>	30 minutes after power up		
<b>Brew Temperature</b>	198°F (92°C)		
<b>Heater Protection</b>	Yes		
<b>Overflow Protection</b>	Yes		
<b>Backflow Prevention</b>	Yes		
<b>Circuit Protection</b>	Yes		
<b>Screen Size</b>	18.5"		
<b>Certifications &amp; Listings</b>			

## Capacities

<b>Coffee Hopper 1</b>	6 lbs (2.72 kg)	<b>Position 1:</b> 1 lb (0.45 kg)	<b>Position 2:</b> 2 lbs (0.9 kg)
<b>Coffee Hopper 3</b>	3 lbs (1.36 kg)	<b>Position 1:</b> 0.5 lb (0.22 kg)	<b>Position 2:</b> 1 lb (0.45 kg)
<b>Coffee Hopper 2</b>	6 lbs (2.72 kg)	<b>Position 1:</b> 1 lb (0.45 kg)	<b>Position 2:</b> 2 lbs (0.9 kg)
<b>Powder Hopper 1</b>	4 lbs (1.8 kg)		
<b>Powder Hopper 2</b>	4 lbs (1.8 kg)		
<b>Powder Hopper 3</b>	3.5 lbs (1.6 kg)		
<b>Water Tank</b>	2 gallons (7.6 litres)		
<b>Waste Bin</b>	Approximately 50 cups (12-oz)		

## Equipment Dimensions

<b>Height:</b>	35.0" (89 cm)
<b>Width:</b>	20.5" (52 cm) with door closed 24.0" (61 cm) with door open
<b>Depth:</b>	27.0" (69 cm) with drip tray 24.5" (62 cm) without drip tray

## Installation Dimensions

<b>Height:</b>	42.0" (107 cm)
<b>Width:</b>	26.0" (66 cm)
<b>Depth:</b>	29.0" (74 cm)



Any references made in this manual to coffee blends, powder products and beverages are for example purposes only. The actual products used in the equipment may differ from the examples used in this manual.

## SECTION 2

### Care and Maintenance

To keep the Eccellenza Momentum™ running efficiently and at peak performance, the following maintenance procedures must be performed at their specified intervals. It is recommended that equipment maintenance be scheduled at a time that would be the least disruptive to your customers. Whenever possible, replace the components requiring maintenance with new or refurbished ones, and then refurbish the older components at your shop.



**Failure to perform the required care and maintenance will result in poor beverage quality and will lead to equipment malfunctions. It may also void any remaining warranty on the equipment and its components.**

#### Daily Care

- ▶ **Empty the Cup Stand** – empty the contents of the cup stand and rinse the stand and grill under clean running water.
- ▶ **Empty the Waste Bin** – empty the contents of the waste bin.
- ▶ **Refill the Coffee Dispensers and Powder Dispensers** – top off the coffee and powder dispensers. **Do not pack the products into the dispensers!**
- ▶ **Wipe Exterior and Countertop** – using a clean towel, wipe any coffee grounds and spills from the exterior of the machine and the countertop.

#### Every 1-2 Weeks

- ▶ **Clean the whipper components** - for detailed information about disassembling and cleaning the whipper components, go to [page 44](#).
- ▶ **Inspect Water Hoses and Tubing** - inspect all plumbing connections, water hoses, tubing, clamps, fittings and water related components (valves, water tank, etc.) for signs of wear or damage. Replace them, if required.

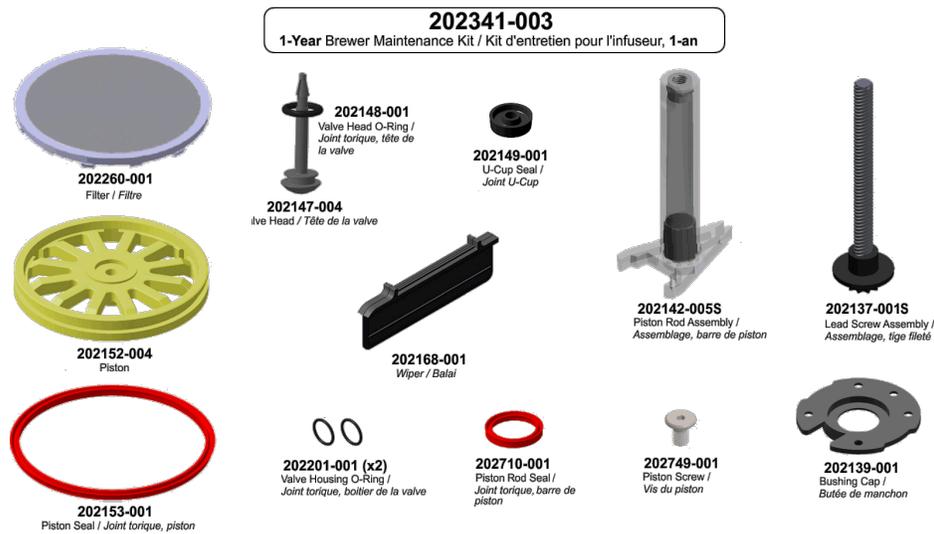
#### Every 15,000 Cycles or 12 Months

- ▶ **Clean the brewer components.** For detailed information about disassembling the brewer, go to [page 25](#).
- ▶ **Clean the whipper hoses** - remove all three whipper outlet hoses and thoroughly clean the exterior and the interior of each of the hoses. A plastic bristled brush (VKI P/N - 202477-001) must be used to clean the interior of the hoses.



- ▶ **Replace whipper seals** - replace the rubber seals on all three whipper bases.

- ▶ **Replace Brewer Seals and Gaskets** - there are several seals and gaskets located throughout the brewer assembly that need to be replaced every 12 months or 15,000 cycles. The brewer **'Yearly Maintenance Kit'** (p/n - 202341-003) contains everything required.



- ▶ **Inspect Electrical Wiring and Components** - inspect all of the equipment wiring, terminals, connectors and electrical components (valves, motors, relays, element, etc.) for signs of wear, damage or overheating at connection points. Replace them, if required.

### Every 3 Years - Technician

- ▶ **Replace the following:** heater element, thermal cut-off switch and external relay, all seals and gaskets and o-rings.

### Miscellaneous

- ▶ Run the **Brewer Rinse and/or Mixers Rinse Cycles** when prompted by the machine (a message appears on the touch screen).
- ▶ Run the **Brewer Cleaning** cycle using the Urnex TABZ Z61 cleaning tablets – see the Momentum™ Operation Manual (VKI Publication #202377-001) for more details.
- ▶ Run the **Grinder Cleaning** cycle using the Urnex SuperGrindz A01 cleaning pellets – see the Momentum™ Operation Manual (VKI Publication #202377-001) for more details.
- ▶ **Verify Water Tank Components** - dependent on the local water condition - inspect, clean or replace components, as required.
- ▶ **Clean the Side Exhaust Fan** - over time, dust will accumulate on the exhaust fan on the right side wall and it must be cleaned to maintain the fan's performance.
- ▶ **Cleaning the Coffee Dispenser** - empty, remove, and clean the coffee dispenser with warm water and dish soap. Thoroughly dry the dispenser before re-installing it. For detailed information about removing the coffee dispenser, go to [page 37](#).
- ▶ **Cleaning the Powder Dispensers** - empty, remove, and clean the powder dispensers with warm water and dish soap. Thoroughly dry the dispensers before re-installing them. For detailed information about removing the powder dispensers, go to [page 39](#).
- ▶ **Inspect the grinder** – to prevent the grinder from jamming, re-adjust the grinder heads if the coffee grounds are too fine, and keep the grinder chute clean – [page 38](#).



**Failure to perform the required care and maintenance will result in poor beverage quality and will lead to equipment malfunctions. It may also void any remaining warranty on the equipment and its components.**

## Sanitizing Procedure

Eccellenza Momentum™ components that come into direct contact with the beverage ingredients must also be sanitized when necessary to conform to the FDA Food Code. This process must be performed as required by local health authorities and health regulations.

The following components require a thorough cleaning and sanitization:

- Brewer
- Coffee dispenser
- Powder dispensers (3)
- Whipper steam traps (3)
- Whipper chambers/mixing bowls (3)
- Whipper impellers (3)
- Whipper elbows and hoses
- Dispensing spouts (coffee and powders)
- Cup Stand & Grill

1. Prepare a sanitizing bath consisting of solution of clean water and **Diversey/SC Johnson J-512 sanitizer** (2ml of J-512 sanitizer per liter of water). Fill a spray bottle with this same solution – it will be used to sanitize the brewer and dispensers.



**When ready for use, the end-use concentration of all quaternary sanitizers in the solution is not to exceed 200ppm of active quaternary compound. Consult the product label for more details.**

2. Remove the filter screen from the brewer.
3. Wash the other components (including the brewer filter screen) with water and dish detergent. To clean the brewer, wash the inside of the cylinder as well as the brewer piston rod.
4. Rinse the components thoroughly under clean running water.
5. Set the brewer, coffee dispenser and three powder dispensers aside, for the moment.
6. Place the remaining components into the sanitizing bath for about 5 minutes.
7. While the components soak, use the spray bottle and spray the sanitizing solution to the inside and outside of the brewer cylinder, and to the piston rod. These parts must be completely soaked by the solution.
8. Spray the sanitizing solution to the inside and outside of the coffee and powder dispensers and allow the solution to dry naturally - **do not wipe away the solution.**
9. Rinse the components that were in the sanitizing bath under clean running water.
10. Rinse the inside and outside of the brewer thoroughly under clean running water.
11. Set all of the components aside and allow them to dry completely before using them.
12. Lightly spray sanitizing solution to the exterior of the machine, the interior walls, the interior of the front door, the whipper bases, and to the counter-top on which the machine is installed. **Do not wipe away the solution** – let it dry naturally.



# SECTION 3

## Error and Reminder Messages

### System Status Screen

Code	Message Displayed	Condition	Action(s) Required
--	<b>Electronic Board Communication Lost Please Call for Service or Press Acknowledge to Retry</b>	Communication between the control board and HMI is lost.	1 - Press "Acknowledge" to reset 2 - Reboot the machine. 3 - If message persists, check the HMI, Control Board and wiring.
B1	<b>Blower &amp; Fan current is over safety level</b>	Blower & Fan current is above the recommended safety level. Fan may be drawing too much power.	1 - Check wiring and connections for the powder system blower. 2 - Clean the blower. 3 - If it persists, replace blower.
	<b>Blower &amp; Fan current is under minimum operation level</b>	Blower & Fan current is below the minimum operating level. Fan may not be drawing enough power.	1 - Check wiring and connections for the powder system blower. 2 - If message persists, replace the powder system blower.
D1	<b>Tank Overflow Detection</b>	The water tank has overfilled.	Clean the overflow. If problem persists, check the following: 1 - Machine may have been moved. 2 - If it overflows with the power off, replace the inlet valve. 3 - May be boiling - lower the tank temperature or replace thermistor. 4 - Descale tank components.
D2	<b>LED in Waste Bin detector has a fault</b>	The IR LED of the waste bin sensor voltage is over the configured maximum operation level.	1 - Clear the message. 2 - Execute the manual test from the Maintenance menu. 3 - Clean the sensor. 4 - Reboot the machine. 5 - Check wiring and connections 6 - Replace the waste bin sensor.
D3	<b>Machine's door is open.</b>	The front door of the machine is open.	1 - Close the front door. 2 - If message persists, check or replace the front door sensor.
D6	<b>Cup is present in dispensing area.</b>	A cup has been detected in the dispensing area.	If no cup is present, clean the cup detection LEDs.
G1	<b>Coffee Grinder Over Current Standby</b>	The grinder current was over the stand by operation level.	1 - Clear the message. 2 - Reboot the machine.
	<b>Grinder Fuse Fault</b>	Grinder fuse has triggered a fault.	1 - Clear the message. 2 - Reboot the machine. 3 - Grinder may be jammed. Unclog chute, clear jam and clear the error. 4 - Grinder blades need adjustment. 5 - Check fuse on the control board. 6 - Grinder may be damaged - replace the grinder.
	<b>Grinder's current is close to critical level</b>	Grinder current is close to maximum operating level. Grinder may be drawing too much power.	1 - Check if the grinder is jammed. 2 - Check blade adjustment (0.017") 3 - Reboot the machine. 4 - If it persists, replace grinder.
	<b>Grinder's current is close to minimum operation level</b>	Grinder current is close to minimum operating level. Grinder may not be drawing enough power.	1 - Reboot the machine. 2 - If it persists, replace the grinder.
	<b>Grinder's current is over safety level</b>	Grinder current has exceeded the maximum operating level.	1 - Check to see if the grinder is jammed. 2 - Check blade adjustment (0.017") 3 - Reboot the machine. 4 - Replace the grinder.
	<b>Grinder's current is under minimum operation level</b>	Grinder current is below the minimum operating level.	1 - Check condition of grinder belt. 2 - Check grinder wiring and connections. 3 - Replace the grinder.

Code	Message Displayed	Condition	Action(s) Required
H1	<b>Heater's current is close to critical level</b>	Heater current is close to maximum operating level. Heater may be drawing too much power.	1 - Inspect wiring and connections to the heater relay and heater element. 2 - Heater element may be drawing too much power. Ensure resistance of the element is 7.8Ω to 9.3Ω. 3 - If message persists, replace the heater element.
	<b>Heater's current is close to minimum operation level</b>	Heater current is close to minimum operating level. Heater may not be drawing enough power.	1 - Reboot the machine. 2 - Ensure resistance of the heater element is 7.8Ω to 9.3Ω. 3 - Check voltage at heater element (should be 120VAC when heating). 4 - Check the continuity of the thermal cut-off on the heater relay. 5 - If message persists, replace the heater element.
	<b>Heater's current is over safety level</b>	Heater current has exceeded the maximum operating level.	1 - Inspect wiring and connections to the heater relay and heater element. 2 - Ensure resistance of the heater element is 7.8Ω to 9.3Ω. If not, heater element may need to be replaced. 3 - Heater relay may need to be replaced.
	<b>Heater's current is under minimum operation level</b>	Heater current is below the minimum operating level.	1 - Check wiring and connections to the heater relay. 2 - Check the continuity of the thermal cut-off on the relay. If open, heater relay kit must be replaced. 3 - Check wiring and connections to the heater element. 4 - Replace heater element.
	<b>Water Tank Default Critical Min Temp</b>	Water temperature went below the configured minimum critical temperature (Default 0 C).	1 - Clear the message. 2 - Reboot the machine. 3 - Check the range of the resistance of the temp probe.
	<b>Water Tank Default Fill Heating Time</b>	Inlet valve and heater were both activated for a period of time longer than the configured timeout.	1 - Clear the message. 2 - Reboot the machine.
	<b>Water Tank Heating Timeout</b>	Reaching the water set point (Default 95°C) took longer than the maximum configured heating timeout (Default: 30 min.)	1 - Clear the message. 2 - Reboot the machine. 3 - Check the range of the resistance of the temp probe. 4 - If message persists, replace the heater element.
	<b>Water Tank Heating Probe Error</b>	Heater bad connection count has exceeded the configured limit.	1 - Clear the message. 2 - Reboot the machine.
	<b>Water temperature is over the maximum level</b>	Water temperature has exceeded configured temperature setting.	1 - Check the range of the resistance of the temp probe. 2 - Heater relay may need to be replaced. 3 - Control board may need to be replaced.
	<b>Fan is not present or has abnormal operation</b>	Fan is not present or operating abnormally.	1 - Check fan wiring and connection to the control board. 2 - Make sure that the software version is 2.6.3 or higher. 3 - Clean any accumulation from fan. 4 - If message persists, replace the exhaust fan. 5 - If message persists, replace the control board.

Code	Message Displayed	Condition	Action(s) Required
K1	Water Tank Level Error	Safety level probe is detected while the normal level probe is not.	1 - Check wiring and connections to the level probes (cross connection). 2 - Clean level probes.
L4	The water level is reaching the safety level probes	The water tank has overfilled and the water level is reaching the safety level probe.	1 - If this occurs during initial heating, it may be due to water expansion. Empty some water from tank. 2 - The machine may have been moved causing tank to overflow. Empty some water from tank. 3 - Level probes require cleaning. 4 - Inlet valve may be leaking – replace inlet valve. 5 - Check wiring and connections to the level probes (cross connection).
L5	The water level is reaching the safety level probes	The water tank has overfilled and the water level is reaching the safety level probe.	1 - If this occurs during initial heating, it may be due to water expansion. Empty some water from tank. 2 - The machine may have been moved causing tank to overflow. Empty some water from tank. 3 - Level probes require cleaning.
L9	Waste Bin Level Sensor	Sensor is open or shorted.	1 – Make sure there is nothing obstructing the sensor. 2 - Do the manual test from the maintenance menu - it should show 500 to 600mV = empty, 650mV to 2500mV = full
MDB1	Cash Box Full	The cash box in the changer housing is full.	1 – Empty the cash box. 2 – Reset the Cash Box counter.
	Coin Changer...(various messages)	Miscellaneous Coin Changer-related issues.	Consult the coin changer manufacturer's documentation.
MDB3	Card Reader...(various messages)	Miscellaneous Card Reader-related issues	Consult the card reader manufacturer's documentation.
M1, M2, M3	Powder Dispensers current is close to critical level	Powder Dispenser current is close to maximum operating level. Powder motor may be drawing too much power.	1 - The powder product in the dispenser may be packed or compressed. Empty the dispenser. 2 - The dispenser may be jammed. 3 - The dispenser motor may be seized. Try to unseize the motor. 4 - If message persists, replace the powder dispenser motor.
	Powder Dispensers current is close to minimum operation level	Powder Dispenser current is close to minimum operating level. Powder motor may not be drawing enough power.	1 - Check the wiring and connections to the powder dispenser motor. 2 - The powder dispenser may not be engaged properly with the powder dispenser motor. 3 - The powder dispenser motor coupling may need to be replaced. 4 - If message persists, replace the powder dispenser motor.
	Powder Dispensers current is over safety level	Powder Dispenser current has exceeded the maximum operating level.	1 - The powder in the dispenser may be packed or compressed. Empty the powder dispenser. 2 - Powder dispenser may be jammed. 3 - The powder dispenser motor may be seized. Try to free the motor. 4 - If message persists, replace the powder dispenser motor.
	Powder Dispensers current is under minimum operation level	Powder Dispenser current is below the minimum operating level.	1 - Check the wiring and connections to the powder dispenser motor. 2 - If message persists, replace the powder dispenser motor.

Code	Message Displayed	Condition	Action(s) Required
M4, M5, M11	<b>Whippers current is close to critical level</b>	Powder Whipper current is close to maximum operating level.	1 - Check for clogging in the mixing bowls. 2 - Make sure the Impellers are properly installed and not touching the mixing bowls. 3 - If message persists, replace the faulty whipper motor.
	<b>Whippers current is close to minimum operation level</b>	Powder Whipper current is close to minimum operating level.	1 - Check wiring and connections to the whipper motor. 2 - If message persists, replace the faulty whipper motor.
	<b>Whippers current is over safety level</b>	Powder Whipper current has exceeded the maximum operating level.	1 - Check for clogging in the mixing bowls. 2 - Make sure the Impellers are properly installed and not touching the mixing bowls. 3 - If message persists, replace the faulty whipper motor
	<b>Whippers current is under minimum operation level</b>	Powder Whipper current is below the minimum operating level.	1 - Check the wiring and connections to the whipper motor. 2 - If message persists, replace the faulty whipper motor.
M6, M7	<b>Coffee Dispensers current is close to critical level</b>	Coffee Dispenser current is close to maximum operating level.	1 - The dispenser may be jammed. 2 - The coffee dispenser motor may be seized. 3 - If message persists, replace the coffee dispenser motor.
	<b>Coffee Dispensers current is close to minimum operation level</b>	Coffee Dispenser current is close to minimum operating level.	1 - Check the wiring and connections to the dispenser motor. 2 - The coffee dispenser may not be engaged with the dispenser motor. 3 - The coffee dispenser motor coupling may need to be replaced. 4 - If message persists, replace the coffee dispenser motor.
	<b>Coffee Dispensers current is over safety level</b>	Coffee dispenser motor current has exceeded the maximum operating level.	1 - Check to see if the coffee dispenser motor is jammed. 2 - The coffee dispenser motor may be seized. 3 - Reboot the machine. 4 - If message persists, replace the coffee dispenser motor.
	<b>Coffee Dispensers current is under minimum operation level</b>	Coffee dispenser motor current is below the minimum operating level.	1 - Check wiring and connections to the coffee dispenser motor. 2 - The coffee dispenser may not be engaged with the dispenser motor. 3 - The coffee dispenser motor coupling may need to be replaced. 4 - If message persists, replace the coffee dispenser motor.

Code	Message Displayed	Condition	Action(s) Required
M9	<b>Brewer current is over safety level</b>	Brewer current has exceeded the maximum operating level.	1 - The brewer may be seized/jammed. 2 - The brewer motor may need to be replaced.
	<b>Brewer current is under minimum operation level</b>	Brewer current is below the minimum operating level.	1 - Check the wiring and connections to the brewer motor. 2 - The brewer motor may need to be replaced.
	<b>Brewer Inversion</b>	Brewer is going in the wrong direction. <i>or</i> Wiper is going in the wrong direction (detected by the activation of the wrong switch).	1 - Check the wiring and connections to the brewer motor. 2 - Check wiring and connections to the wiper motor switches. 3 - One, or both, of the wiper motor switches needs to be replaced.
	<b>Brewer Not Counting</b>	The brewer quadrature encoder is not returning any count.	1 - Clear the message. 2 - Reboot the machine. 3 - Check the brewer motor harness connection 4 - If message persists, replace the brewer motor.
	<b>Brewer Not Initialized</b>	A brewer sequence was started while the brewer was not initialized.	1 - Reboot the machine to initialize the brewer. 2 - Ensure the brewer engine is properly installed and locked onto the motor base.
	<b>Brewer Over Current Standby</b>	The brewer current was over the configured stand by operation level.	1 - Clear the message. 2 - Reboot the machine.
	<b>Brewer Safety Fault</b>	The IC of the brewer driver is in fault.	1 - Clear the message. 2 - Reboot the machine. 3 - If message persists, replace the brewer motor.
	<b>Brewer Timeout</b>	Brewer motion is timed out: brewer is moving too slow, and unable to reach required position in the allotted period of time.	1 - Ensure the brewer engine is properly installed and locked onto the motor base. 2 - Check the brewer engine retaining ring. If the coupling at the bottom of the brewer engine can be turned by hand, the retaining ring is damaged. Repair or replace brewer engine. 3 - Check wiring and connections to the brewer motor. 4 - Brewer engine may be jammed – repair or replace brewer engine. 5 - The brewer motor may need to be replaced.
	<b>Brewer Unexpected Item Received</b>	A brewer sequence step was received while a wiper sequence was already in progress.	1 - Clear the message. 2 - Reboot the machine. 3 - If message persists, replace the brewer motor.

Code	Message Displayed	Condition	Action(s) Required
M10	Wiper current is over safety level	The wiper motor current was over the configured maximum operation level.	1 - The wiper may be jammed or binding. 2 - The wiper motor may need to be replaced.
	Wiper current is under minimum operation level	The wiper motor current was under the configured minimum operation level.	1 - The wiper may be missing or improperly installed. 2 - Check wiper motor connections. 3 - The motor may need to be replaced
	Wiper Inversion	The wiper limit switches are inverted.	1 - Reverse the wiring connections to the wiper switches.
	Wiper Not Initialized	A wiper sequence was started while the wiper was not initialized (homed).	1 - Clear the message. 2 - Reboot the machine. 3 - If message persists, check wiper motor switches and connections. 4 - If message persists, a wiper motor switch needs to be replaced.
	Wiper Over Current Standby	The wiper current was over the configured stand by operation level.	1 - Clear the message. 2 - Reboot the machine.
	Wiper Safety Fault	The IC of the wiper driver is in fault mode.	1 - Reboot the machine. 2 - If message persists, the control board may need to be replaced.
	Wiper Timeout	Wiper motion is timed out: brewer is moving too slow (or stopped), unable to reach required position in the allotted period of time.	1 - The wiper may be jammed/binding. 2 - Check wiper motor connections. 3 - Wiper motor may need to be replaced.
	Wiper Unexpected Item Received	A wiper sequence step was received while a wiper was already in progress.	1 - Clear the message. 2 - Reboot the machine.
S1, S2	CUP LIGHT LED #1 is not detected/ CUP LIGHT LED #2 is not detected	Cup Light LED #1 or #2 is not connected.	1- Connect the LEDs 2- Replace LED/Harness.
	Machine No Cup Light 1 Short / Machine No Cup Light 2 Short	Cup Light LED #1 or #2 is shorted.	1 - Replace LED/harness.
T1	Impossible temperature (greater than over heat or below 0)	Invalid temperature being reported.	1 - Inaccurate temperature reading - replace the temperature probe.
	Water Tank Temperature Probe Short	Temperature probe is shorted	1 - Check the wiring and connection to the temperature probe. 2 - Replace the temperature probe.
	Water Tank Temperature Probe Not Present	Temp probe is open.	1 - Check the wiring and connection to the temperature probe. 2 - Replace the temperature probe.
	Water temperature is not rising	Water temperature is not increasing while in heating mode.	1 - Check wiring and connections to heater relay, heater element and control board. 2 - If water is heating, replace the temperature probe. 3 - Check continuity of thermal cut-off on relay kit. If cut-off is open, heater relay kit needs to be replaced. 4 - Check resistance of the heater element (7.8Ω to 9.3Ω) and replace element if required. 5 - Control board may need to be replaced.

Code	Message Displayed	Condition	Action(s) Required
V1-V6	Valves & Relay current is under minimum operation level	Valves & Relay current is below the minimum operating level.	1 - Clear the message. 2 - Check wiring and connections to inlet and outlet valves. 3 - If message persists, the inlet valve or one of the outlet valves may need to be replaced.
	Valves & Relay current is over safety level.	Valves & Relay current has exceeded the maximum operating level.	1 - Clear the message. 2 - If message persists, the inlet valve or one of the outlet valves may need to be replaced.
Z99	Coffee Dispensers Over Current Standby	The coffee dispensers current sum was over the configured stand by operation level.	1 - Clear the message. 2 - Reboot the machine.
	Machine Fan Blower Over Current Standby	The fan or blower current sum was over the configured stand by operation level	1 - Clear the message. 2 - Reboot the machine.
	Powder Dispensers Over Current StandBy	The powder dispensers current sum was over the configured stand by operation level.	1 - Clear the message. 2 - Reboot the machine.
	Powder Whippers Over Current StandBy	Powder whippers current sum was over the configured stand by operation level	1 - Clear the message. 2 - Reboot the machine.
	Water Tank Coil Valves Over Current StandBy	Valve(s) current has exceeded the configured stand by operation level.	1 - Clears automatically. If not, reboot the machine.
	Water Tank Detectors Power Failure	Fault signal triggered due to a failure of the level probes and overflow detector power supply.	1 - Clear the message. 2 - Reboot the machine. 3 - If message persists, replace the control board.
	Water Tank Heater Over Current StandBy	Heater current has exceeded the configured stand by operation level.	1 - Clears automatically. If not, reboot the machine.



The following symbol is used to identify a "touch" location on the machine's touch screen.

### Clearing Error and Reminder Messages

Should an error or reminder message be triggered, the error or message is displayed at the lower left of the screen. In the example below, the message reads "Please reinsert waste bin". However, in our example, there are three messages present, as indicated by the number "3" in the upper right corner of the screen. Messages are stacked in the order in which they occur.



In this case, the waste bin has been removed and its presence is not detected. The waste bin must be replaced to clear this message.

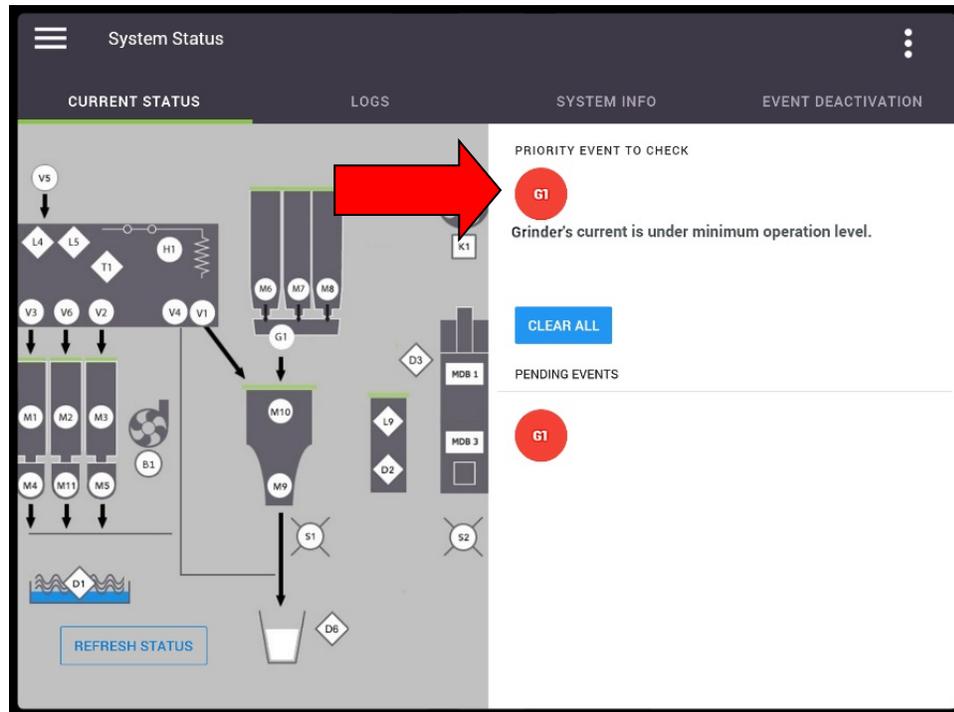
*In a case where multiple messages are present, after clearing the first message, any subsequent messages are displayed (one at a time) until they are all cleared.*



If a "Call for Service" error is displayed, you need to go to the "System Status" menu to get more details about the error.

## Fault Codes

Should a fault be present, it is identified in the "Current Status" tab, under the "System Status" menu, using one of the codes from the list below. The right section of the screen shows the component code (and pending component codes) and a brief description of the fault.



CODE	COMPONENT
B1	Blower (Powders)
D1	Tank Overflow Detection
D2	Waste Bin Presence Detection
D6	Cup Detection
G1	Grinder
H1	Heating Element
K1	Exhaust Fan
L4	Normal Water Level Detection
L5	Safety Water Level Detection
L9	Waste Bin Level Detection
M1	Powder 1 Motor
M2	Powder 2 Motor
M3	Powder 3 Motor
M4	Powder 1 Whipper Motor
M5	Powder 3 Whipper Motor
M6	Coffee 1 Motor

CODE	COMPONENT
M7	Coffee 2 Motor
M8	Coffee 3 Motor
M9	Brewer Motor
M10	Brewer Wiper Motor
M11	Powder 2 Whipper Motor
S1	Cup Lighting
S2	Esthetic Lighting
T1	Temperature Probe
V1	Outlet Valve - Coffee
V2	Outlet Valve - Powder 3
V3	Outlet Valve - Powder 1
V4	Outlet Valve - Hot Water
V5	Inlet Valve
V6	Outlet Valve - Powder 2
MBD1	Coin Acceptor
MDB3	Card Reader

In the example above, a fault has been detected with "G1", which is the grinder. After correcting the error, tap the "Clear All" button. The screen then displays a green checkmark with the "System is running perfectly" message beneath it. In some cases, the error may re-appear when the machine is placed back in normal operation, at which point a more thorough troubleshooting is required.



**Fault codes must be manually cleared (in this menu) after the fault has been corrected, otherwise the error message will continue to appear on the main screen.**

## Logs

The 'Logs' tab shows the fault history of the equipment in list form (from newest to oldest). Codes marked in Red identify that servicing was required. Yellow-marked codes warn of potential faults. Codes in green identify that the fault was corrected, and when it was corrected.

CODE	DATE	DESCRIPTION
Z99	34 minutes ago	All errors cleared
H1	36 minutes ago	Heater's current is under minimum operation level.
Z99	36 minutes ago	All errors cleared
H1	40 minutes ago	Heater's current is under minimum operation level.
D3	21 days ago	The machine door is open.
D3	21 days ago	The machine door is open.
D3	21 days ago	The machine door is open.
D3	21 days ago	The machine door is open.
D3	21 days ago	The machine door is open.

## System Info

Information about the equipment, such as serial number, firmware versions, network address, etc., can be found in this menu.

**\*NOTE: The "Vending Devices" option is only visible when "Vending" is set to 'ON'.**

 The "Machine Name" field can be changed. To do so, simply tap on the machine name and the keyboard appears, allowing you to rename the machine.

## Event Deactivation

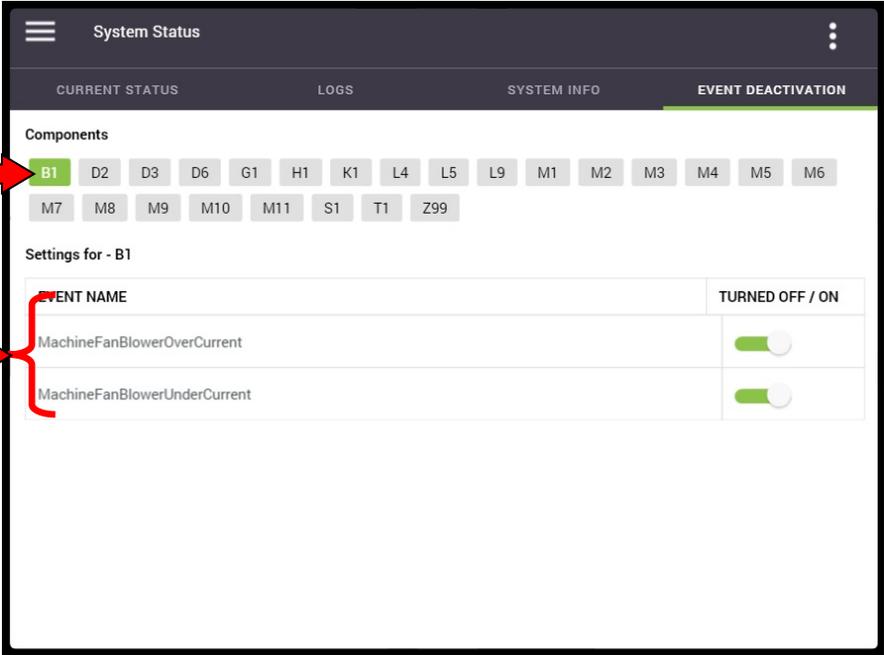
The Event Deactivation tab allows you to deactivate any of the error messages that can potentially appear should the system detect a fault.



**Deactivating error messages allows the equipment to continue to operate with a defective component, as a fault notification is not displayed. This, in turn, may cause further damage to the equipment and/or its surroundings.**

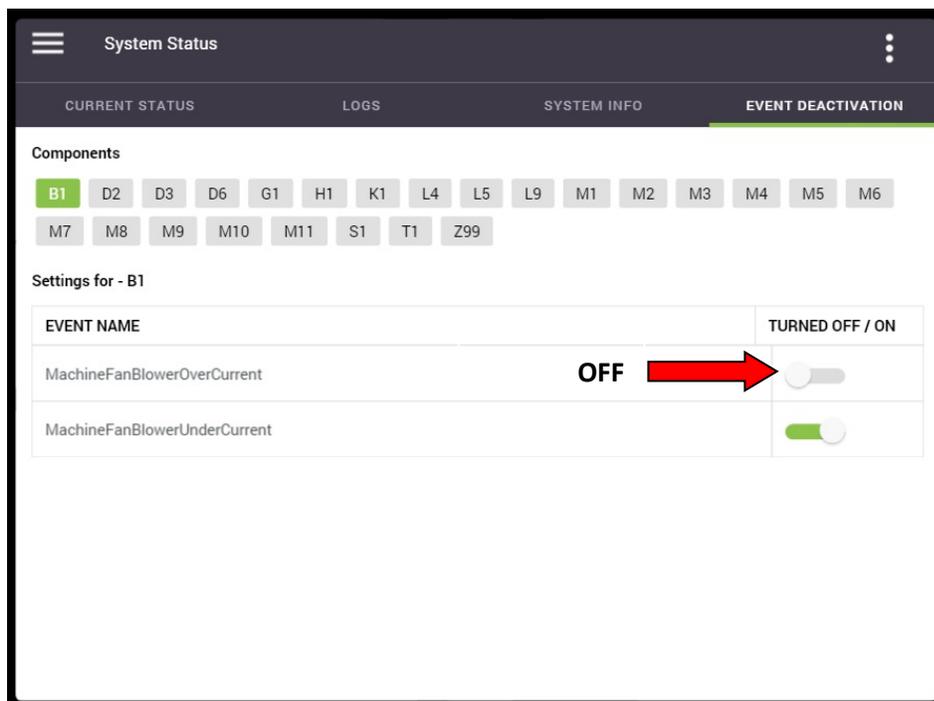
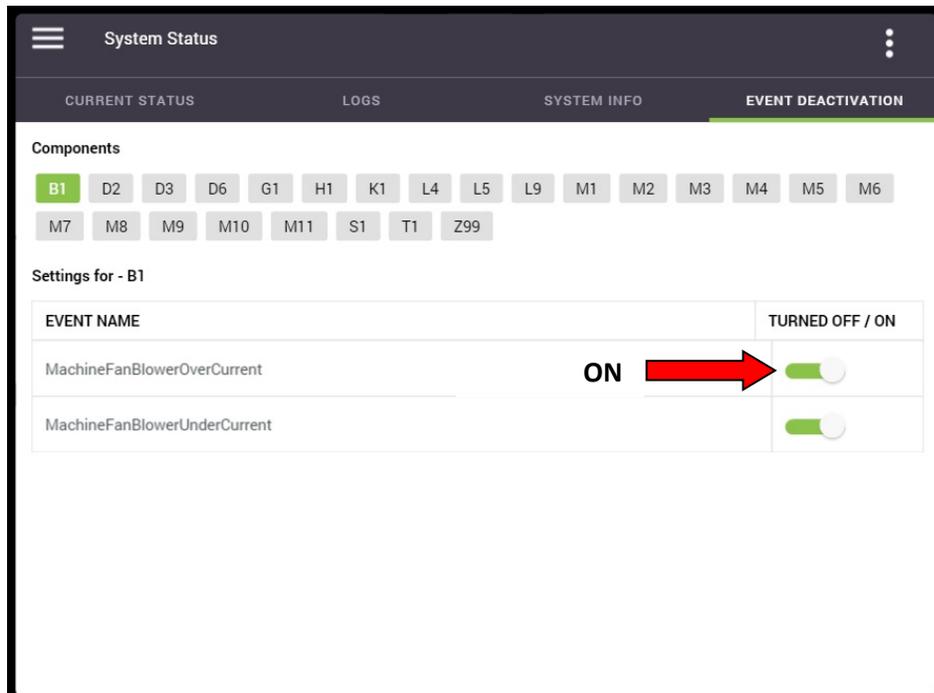
To deactivate a particular error message:

1. Select the required component from the list of components. The table below identifies the component code.
  - a. Once a component is selected, the list of related error messages for this component is displayed under the "Event Name" heading.



CODE	COMPONENT	CODE	COMPONENT
<b>B1</b>	Blower (Powders)	<b>M3</b>	Powder 3 Motor
<b>D2</b>	Waste Bin Detection	<b>M4</b>	Powder 1 Whipper Motor
<b>D3</b>	Door Open Detection	<b>M5</b>	Powder 3 Whipper Motor
<b>D6</b>	Cup Detection	<b>M6</b>	Coffee 1 Motor
<b>G1</b>	Grinder	<b>M7</b>	Coffee 2 Motor
<b>H1</b>	Heating Element	<b>M8</b>	Coffee 3 Motor
<b>K1</b>	Exhaust Fan	<b>M9</b>	Brewer Motor
<b>L4</b>	Normal Water Level Detection	<b>M10</b>	Brewer Wiper Motor
<b>L5</b>	Safety Water Level Detection	<b>M11</b>	Powder 2 Whipper Motor
<b>L9</b>	Waste Bin Full Detection	<b>S1</b>	Cup Lighting
<b>MDB1</b>	Vending Devices	<b>T1</b>	Temperature Probe
<b>M1</b>	Powder 1 Motor	<b>Z99</b>	Various Components
<b>M2</b>	Powder 2 Motor		

- Under the "**Turned Off / On**" heading at the right, turn off the error to be deactivated using the slider (green slider = ON, gray slider = OFF).



- Repeat the procedure for any other components, if necessary.

## SECTION 4

### Brewer System

#### Replacing the Brewer Assembly



1. Remove the waste bin and open the front door.
2. Remove the brewer spout assembly.
3. Press on the bottom of the red release latch, and rotate the brewer towards the left (clockwise) to release it.
4. Lift the brewer off the brewer motor to remove it.



**If you are performing the annual maintenance on the brewer, continue with this section of the manual for instructions to completely disassemble the brewer.**

*To install the brewer, follow these same instructions in the reverse order.*



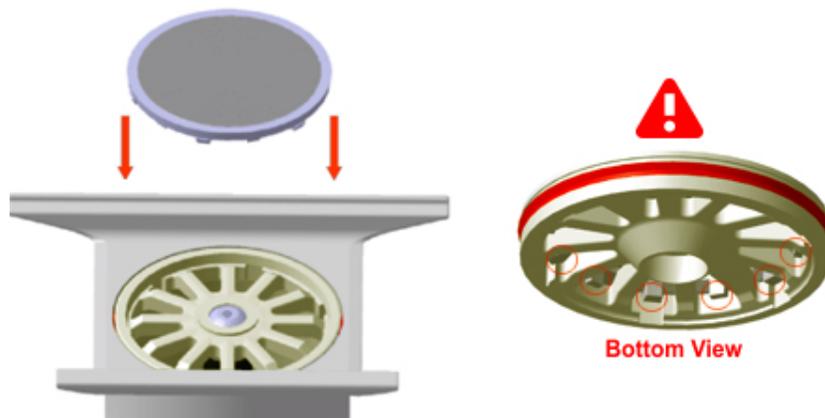
**When re-installing the brewer, make certain the wiper is properly installed inside of the wiper arm.**

## Replacing the Filter Screen

1. Remove the waste bin, open the front door, and re-install the waste bin. Allow the machine to complete its initialization.
2. Access the equipment programming, and navigate to the 'Maintenance' menu.
3. In the 'Operations' tab, tap the 'Remove Filter' option.



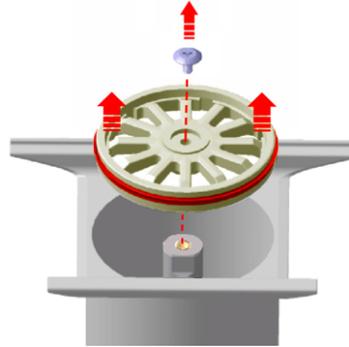
4. The brewer lowers the piston all the way to the bottom of the cylinder, which will subsequently unclip the filter screen from the piston.
5. The piston then moves to the top of the cylinder, allowing for easy retrieval of the filter screen.
6. Install the new filter screen into the top of the piston by clipping it in place - **make certain it is properly clipped all the way around.**



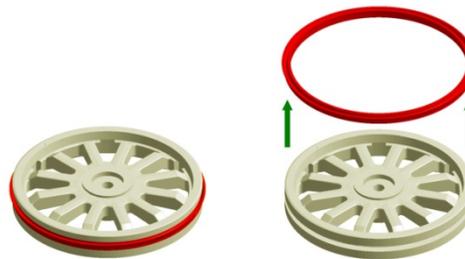
7. Remove the waste bin.
8. Close the door and re-install the waste bin, and allow the machine to complete its initialization.

## Removing the Brewer Piston & Seal

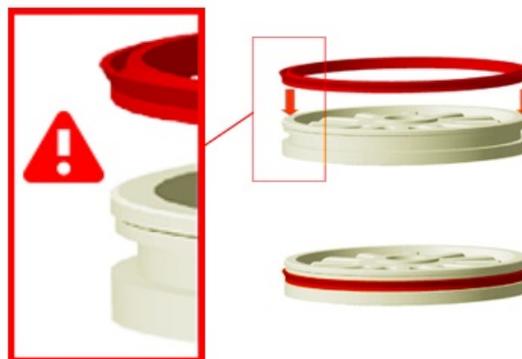
1. Remove the filter screen ([see page 26](#)).
2. Remove the brewer from the machine, and remove the wiper from the brewer.
3. Remove the screw securing the piston to the piston rod, and then remove the piston.



4. Using a small flat head screwdriver, carefully pry the seal from the piston to remove it. **Avoid damage to the piston as it will then need to be replaced as well.**



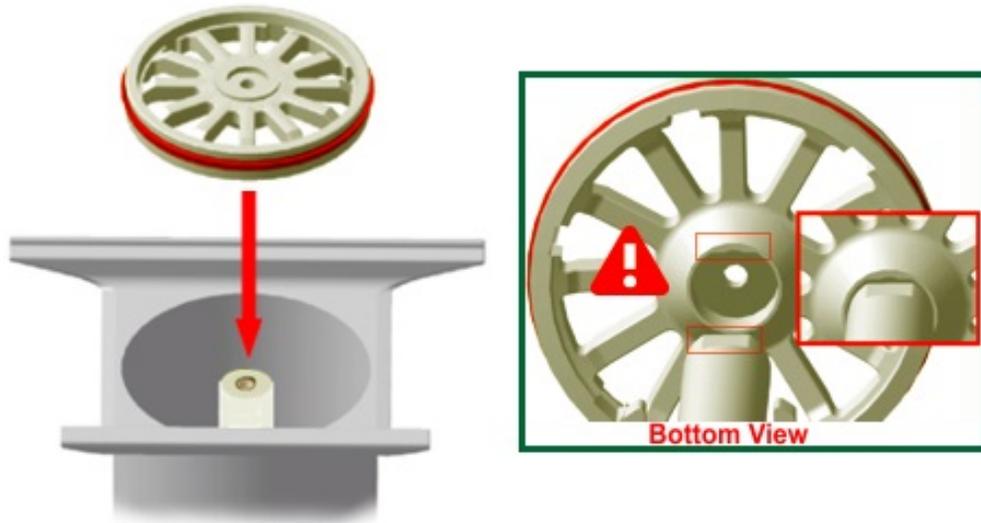
5. Install the new seal onto the piston. **To avoid installing the seal upside down onto the piston, note the orientation of both** (*see image below*).



Prior to reassembling the brewer, make absolutely certain that the seal is completely inserted into its seat all the way around the piston.

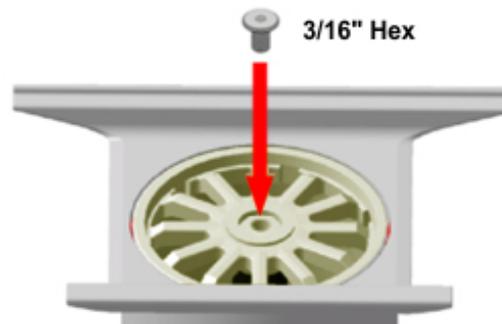


- The piston can only be installed in a specific direction onto the piston rod (the piston rod has a flat spot, as does the piston). Align the piston onto the piston rod and press it down into position.

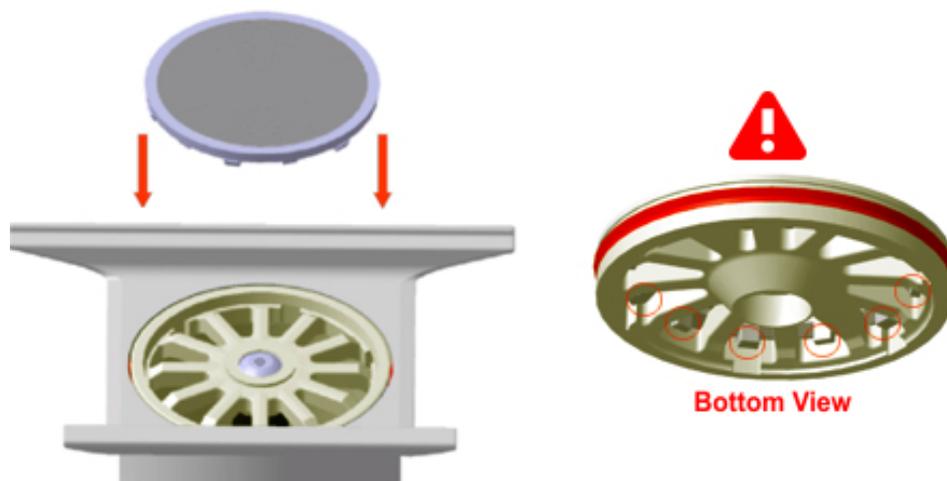


- Secure the piston to the piston rod using the large sidewalk screw.

**NOTE: When re-installing this screw, the torque must be 30 in/lbs.**

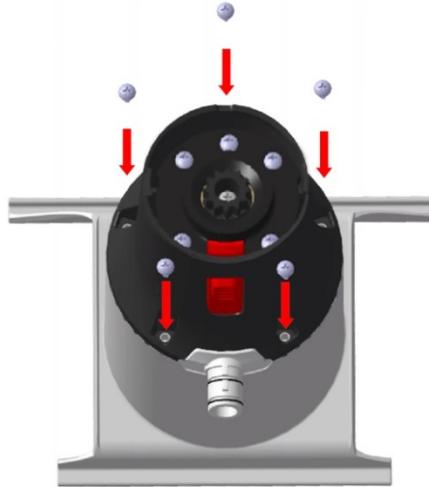


- Install the filter screen by pressing it onto the piston until it clips into position all the way around.

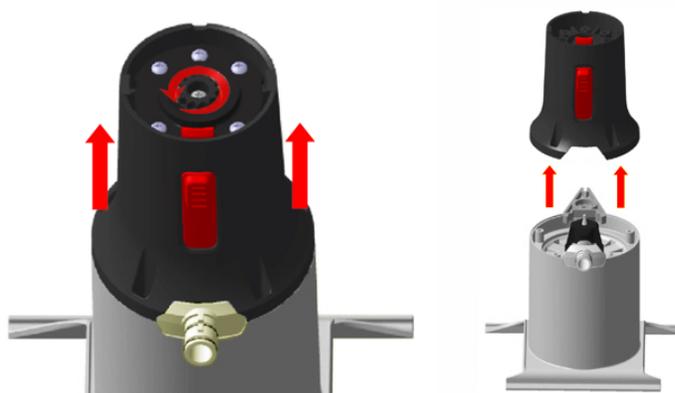


## Removing the Brewer Cylinder

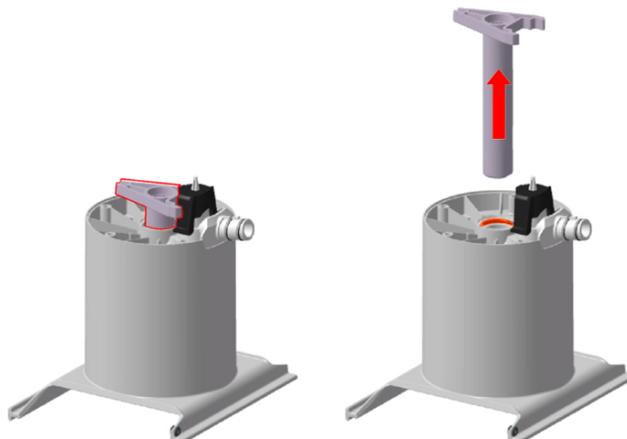
1. Remove the brewer piston ([see page 27](#)).
2. Remove the five screws securing the brewer cylinder assembly to the cylinder base and set them aside for now.



3. Turn the drive gear at the bottom of the brewer counter-clockwise while, at the same time, lifting the base away from the cylinder until it is free, and then remove and discard the old cylinder assembly.



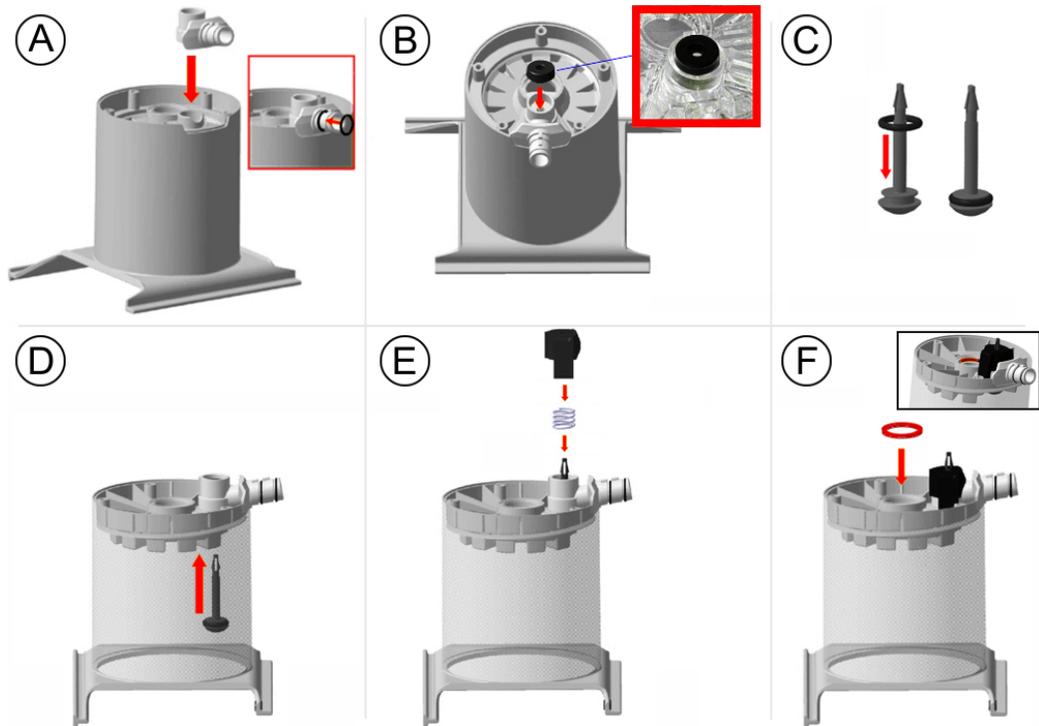
4. Remove the piston rod assembly from the piston, and set it aside as you will be re-installing it later in this procedure.



- Compress the clips on the tip of the valve body and lift the valve activator to remove it and the other brew valve components.

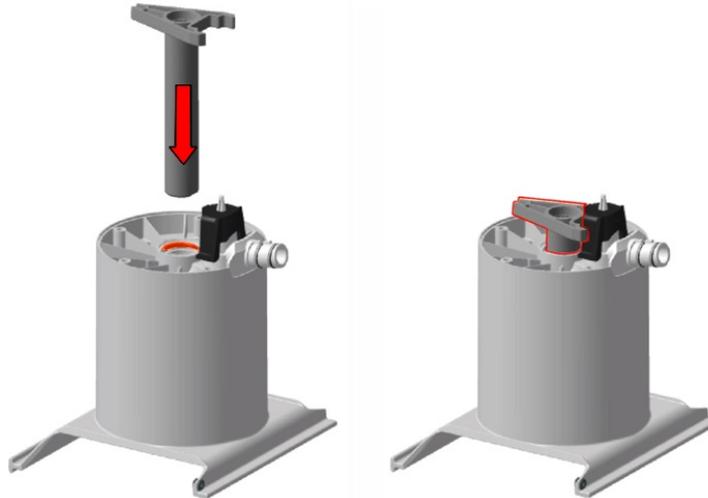


- Assemble the new cylinder (consult VKI Publication #100310-001 for the required parts and their part numbers).



- Install the valve housing onto the cylinder (making certain it is pushed down completely), and then install the two o-rings onto the valve housing.
- Install the U-cup seal into the valve housing (flat side up).
- Install the thick o-ring onto the valve head.
- Pass the valve head through the valve housing from the inside of the cylinder. You need to hold the valve head in this position to perform the next step.
- Place the spring into the U-Cup seal (with the valve head in the middle of the spring) and then install the valve activator over the spring (flatter side towards the front). While holding the valve body in place inside the cylinder, press firmly on the valve activator until the tip of the valve body passes through the activator, locking everything in place.
- Install the seal into the recession in the bottom center of the cylinder.

- Slide the piston rod assembly all the way down into the cylinder.



- Apply food grade lubricant (Lubrifilm) onto both sides of the piston track inside the cylinder base.

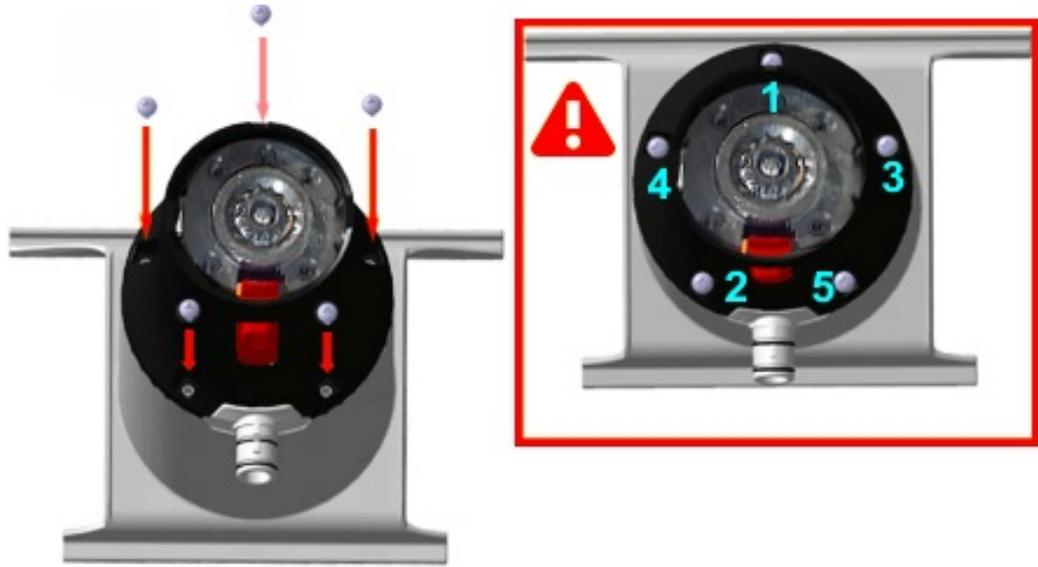


- Turn the drive gear at the bottom of the brewer clockwise while, at the same time, pushing the base onto the cylinder until it is fully seated.



10. Insert the five screws into the cylinder base and tighten them in the sequence shown.

**NOTE:** When re-installing these screws, the torque must be 30 in/lbs.

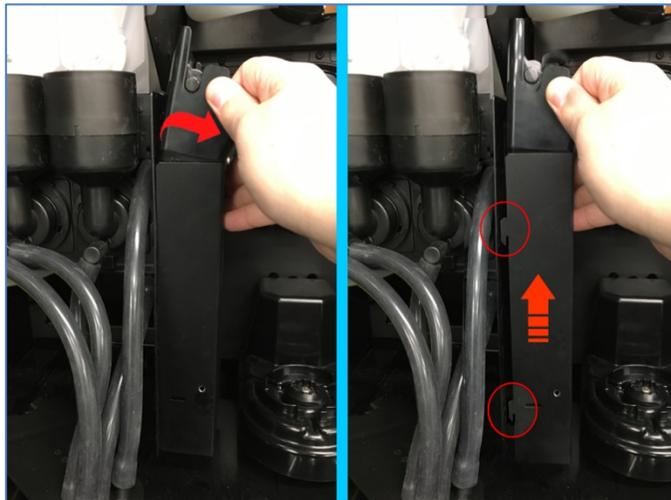


## Removing the Brewer Motor & Wiper Motor

1. Remove the brewer assembly.
2. Remove the spouts support.



3. Remove the residue chute by pulling the top section outwards while lifting the chute.



4. Loosen the four screws securing the brewer motor and wiper motor support bracket and lift the bracket up and out of the machine.



5. Turn the support bracket around to access the rear of the bracket.
6. Disconnect the wiring from the motor to be replaced, and then remove the screws securing the motor to the support bracket.



Green = Wiper Motor

Red = Brewer Motor



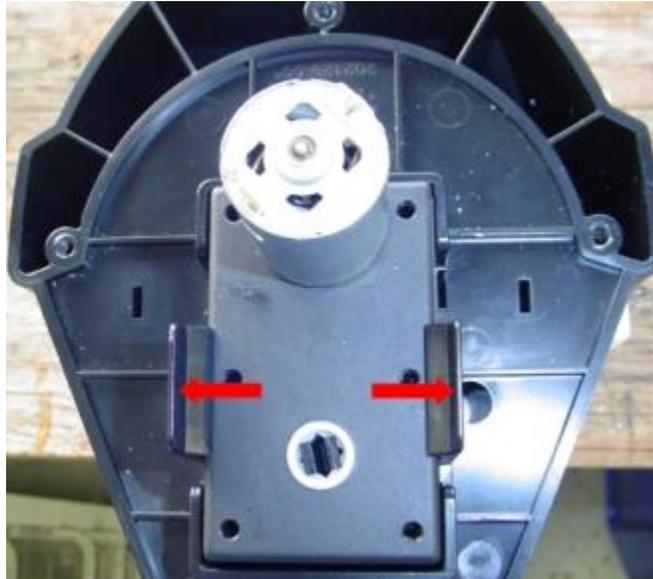
The brewer motor comes as a complete assembly. There are no spare parts available therefore this motor cannot be serviced.

***To install the brewer motor or wiper motor, follow these same instructions in the reverse order.***

***NOTE: When re-installing the connector to the brewer motor, turn it clockwise until it clicks and locks.***

## Removing the Motor from the Wiper Motor Assembly

1. Remove the wiper motor assembly.
2. Spread the motor clips outwards to release the motor from its support.



3. Pull the wiper motor from its support.

## Removing the Wiper Motor Pinion/Coupling

1. Remove the wiper motor from the wiper assembly.
2. Compress the two pinion clips at the rear of the motor.
3. Pull the pinion out from the front of the motor.



After replacing the pinion, you'll need to apply a liberal amount of food-grade grease to the center of it.



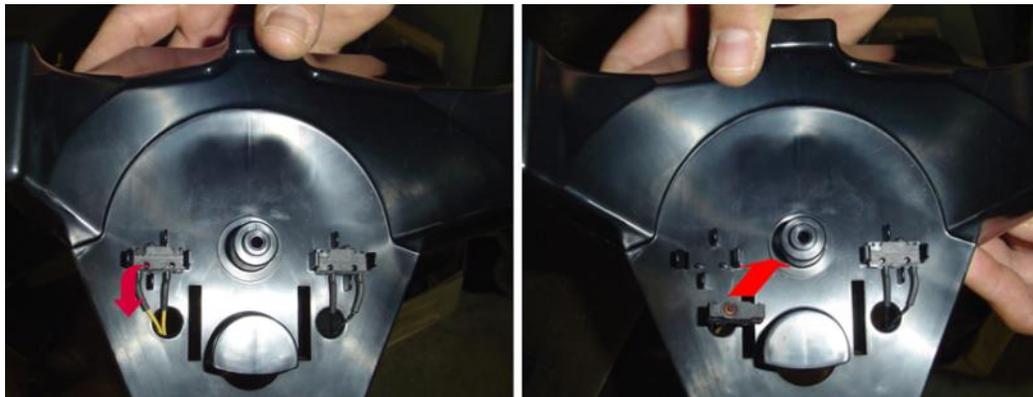
## Removing a Wiper Motor Switch

1. Remove the wiper motor assembly.
2. Remove the screw and washer securing the wiper arm to the wiper motor assembly.

**NOTE:** When re-installing this screw, the torque must be 22 in/lbs.



3. Remove the wiper arm.
4. Unclip the switch to be replaced from its support, and pull the wiring through the hole in the support to remove it.



**To install the wiper motor switch, follow these same instructions in the reverse order.**



Prior to replacing the wiper arm, apply a liberal amount of food-grade grease to the center of it.



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## SECTION 5

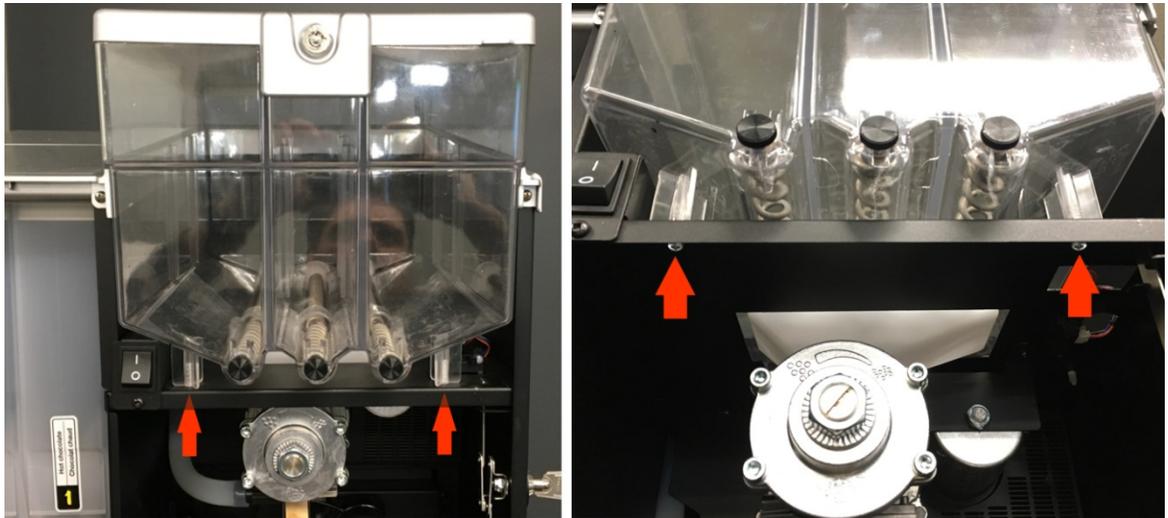
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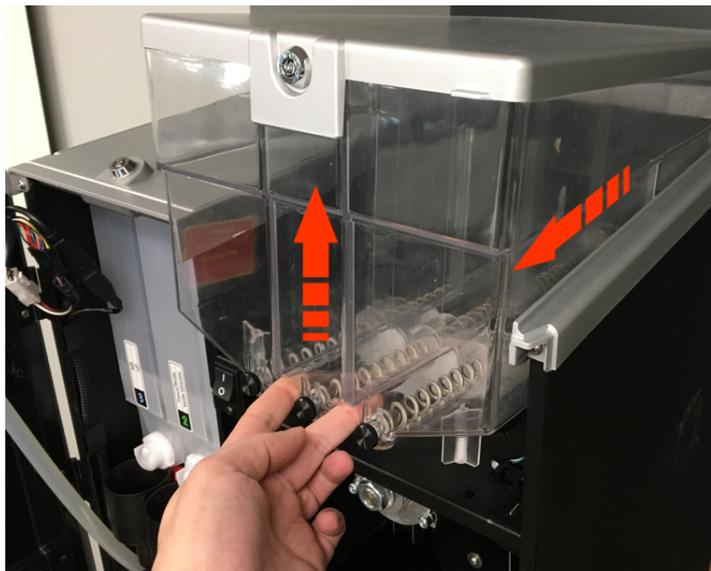
### Coffee and Powder Dispensing Systems

#### Coffee Dispenser Removal

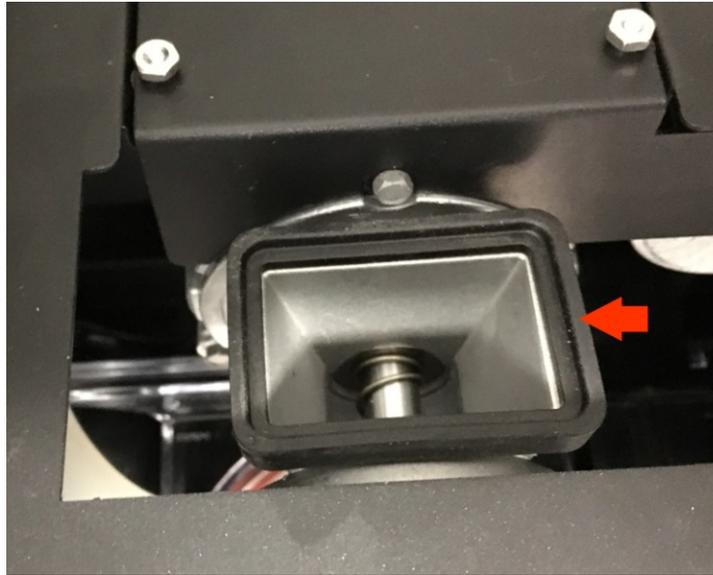
1. Open the front door.
2. Remove the two screws securing the coffee dispenser to its support.



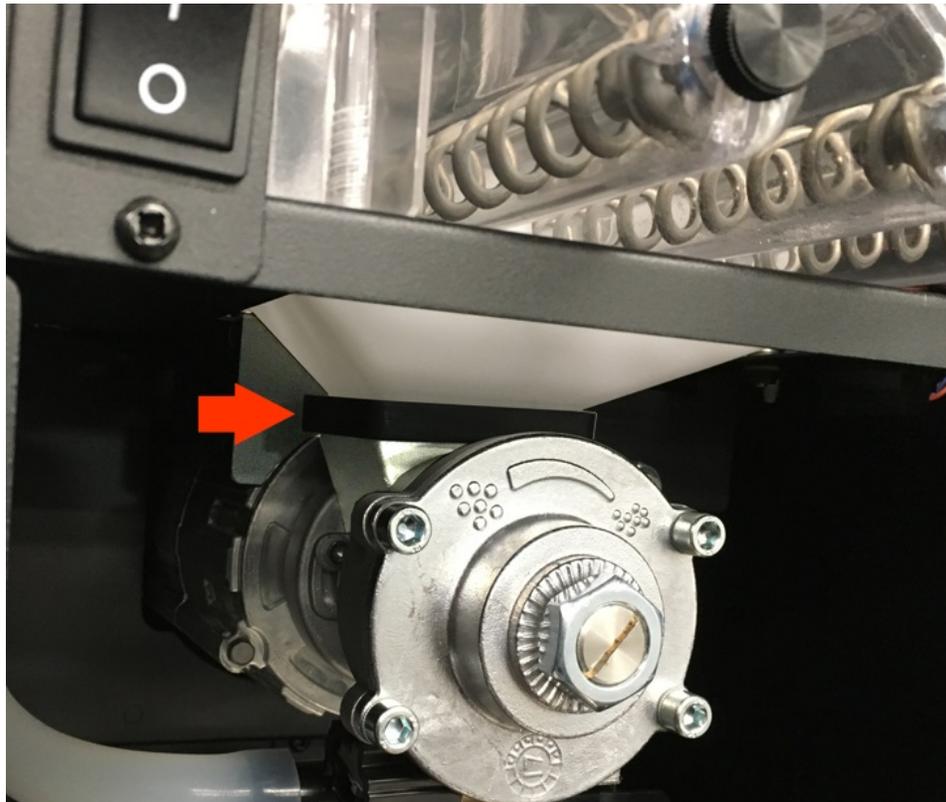
3. Lift the front of the coffee dispenser and pull it away from the motors at the rear to remove it from the machine.



4. Ensure that the hard rubber seal on top of the grinder remains in place and does not fall off.

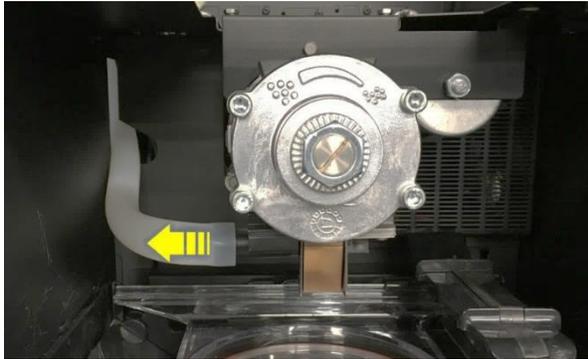


5. When installing the coffee dispenser into the machine, make certain that the hard rubber seal is properly positioned between the bottom of the coffee dispenser and the top of the grinder.

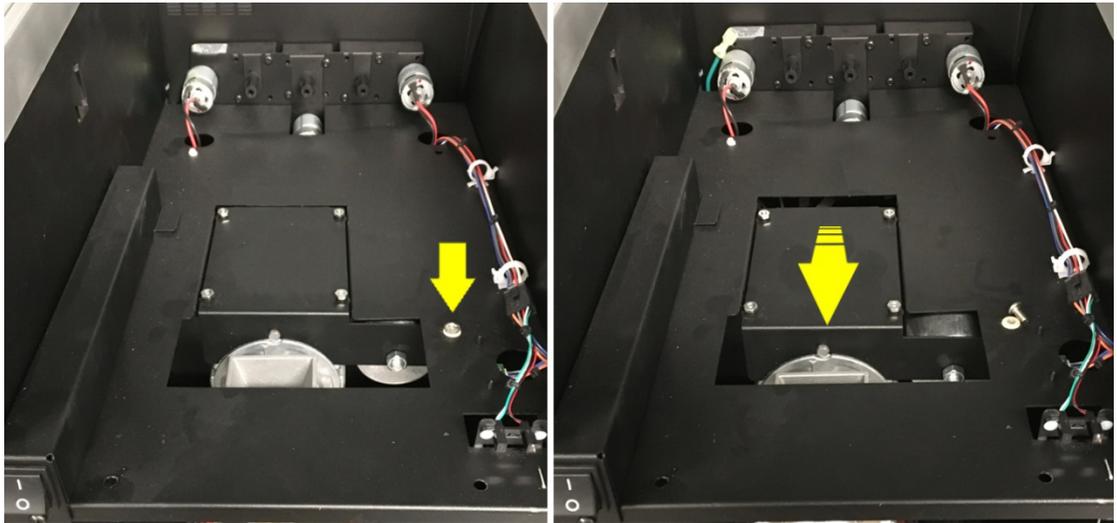


## Removing the Grinder

1. Remove the coffee dispenser ([see page 37](#)).
2. Disconnect the hose from the coffee spout and remove the brewer.



3. Remove the screw securing the grinder to the coffee dispenser support and pull the grinder forward to remove it.



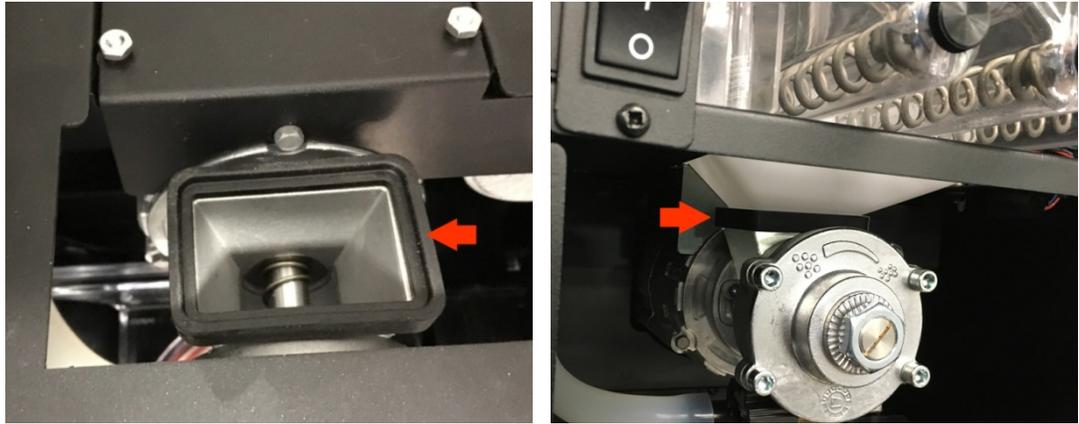
4. Disconnect the grinder wiring from the main wiring harness, and remove the grinder.



*To install a grinder, follow these same instructions in the reverse order, but please note the following:*



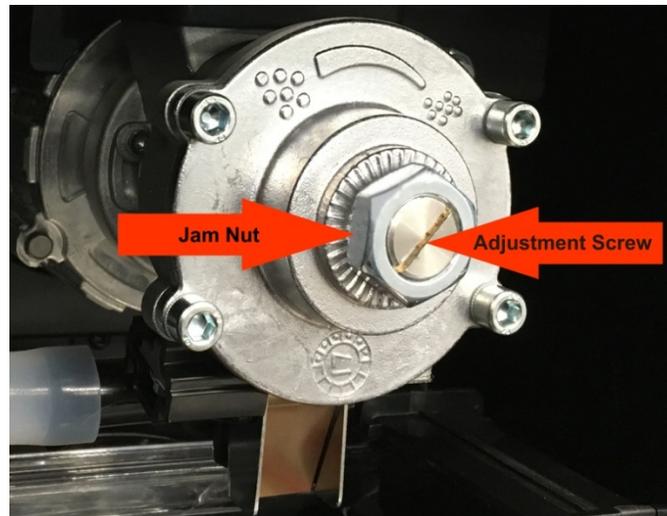
Make certain that the hard rubber seal is properly positioned between the bottom of the coffee dispenser and the top of the grinder.



### Adjusting the Grinder

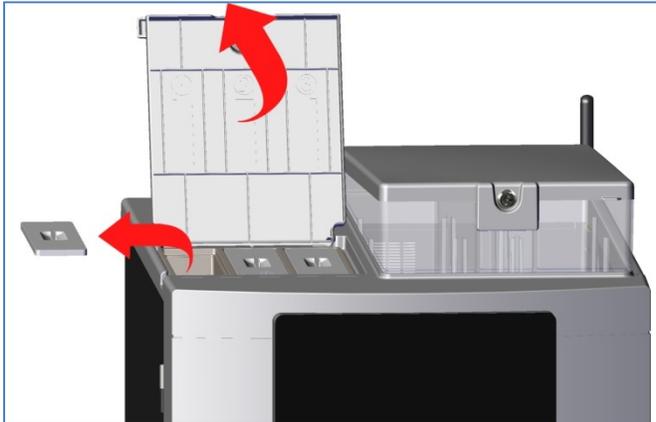
The grinder may need to be readjusted periodically. To adjust the grind heads:

1. Using a wrench, loosen the jam nut by turning it counter-clockwise.
2. Turn the adjustment screw clockwise to make the grind finer, or counter-clockwise to make the grind coarser.
3. Once set, re-tighten the jam nut.



## Powder Dispenser Removal

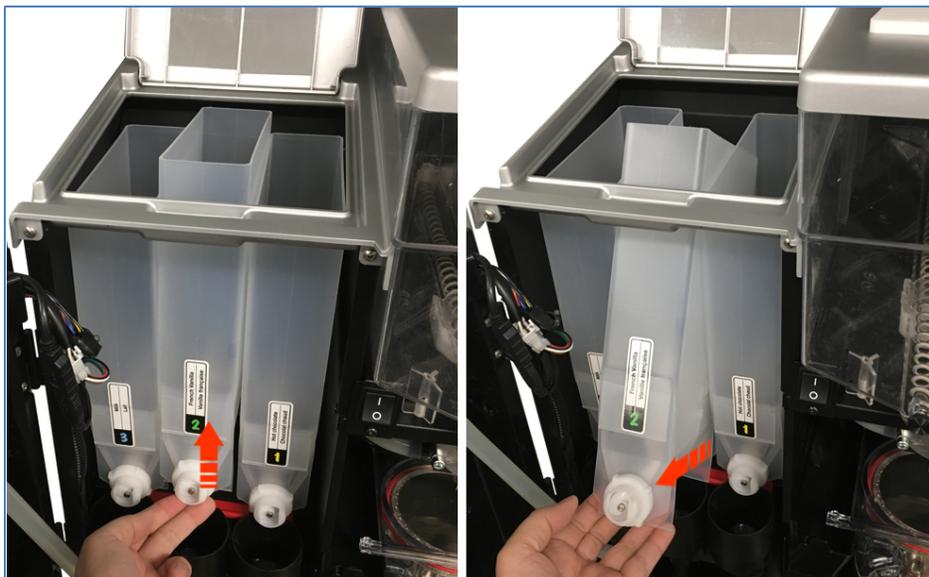
1. Unlock and open the main powder lid, and then remove the three individual dispenser lids.



2. Lift the front of the powder liner and remove it.



3. Lift the front of the dispenser and pull it forwards and out of the machine.



***To install a powder dispenser, follow these same instructions in the reverse order.***

## Removing Dispenser Motors



The coffee and the powder dispenser motors are the same component, with the motor coupling configured differently. The coupling can be easily pushed out of the motor housing with a 9/32 nut driver.

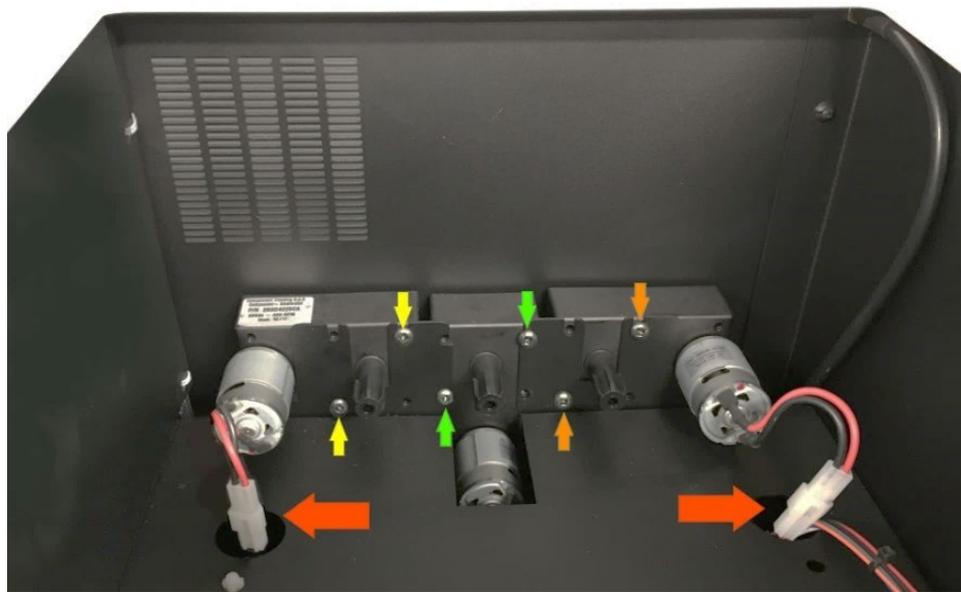
*Coffee Motor Configuration*



*Powder Motor Configuration (default)*



### Coffee Motor

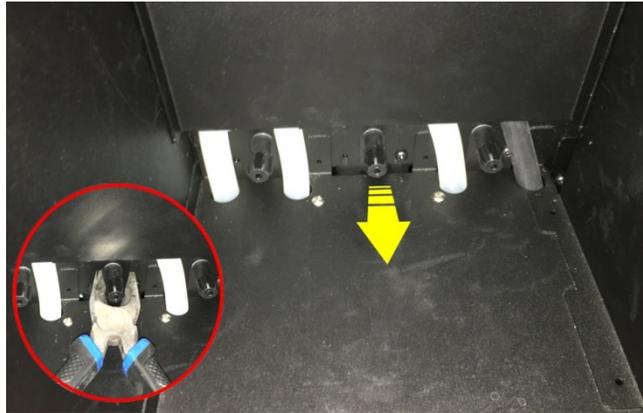


1. Remove the two screws securing the motor to be replaced to the machine.  
***NOTE: When re-installing the coffee motor screws, the torque must be 7 in/lbs.***
2. Pull the motor wiring through the hole in the hopper base, and then disconnect the inline wiring connector for the motor to be removed (red arrow).
3. Remove the motor(s).

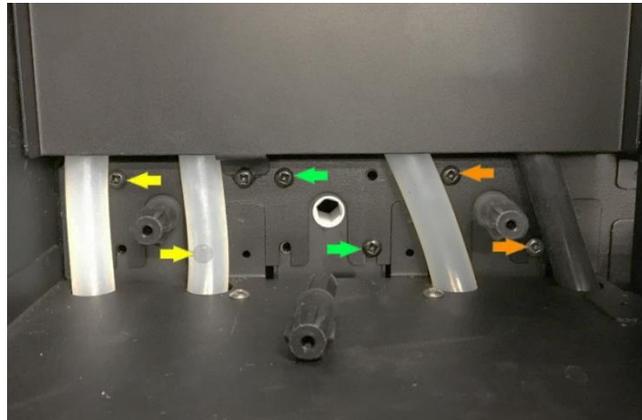
***To install a coffee dispenser motor, follow these same instructions in the reverse order.***

### Powder Motor

1. Remove the motor coupling by pulling it with a pair of pliers.



2. Remove the two screws securing the motor to be replaced to the machine.



**NOTE: When re-installing the powder motor screws, the torque must be 7 in/lbs.**

3. Pull the motor down from behind the whippers.



4. Disconnect the inline wiring connector for the motor to be removed (yellow arrow).
5. Remove the motor(s).

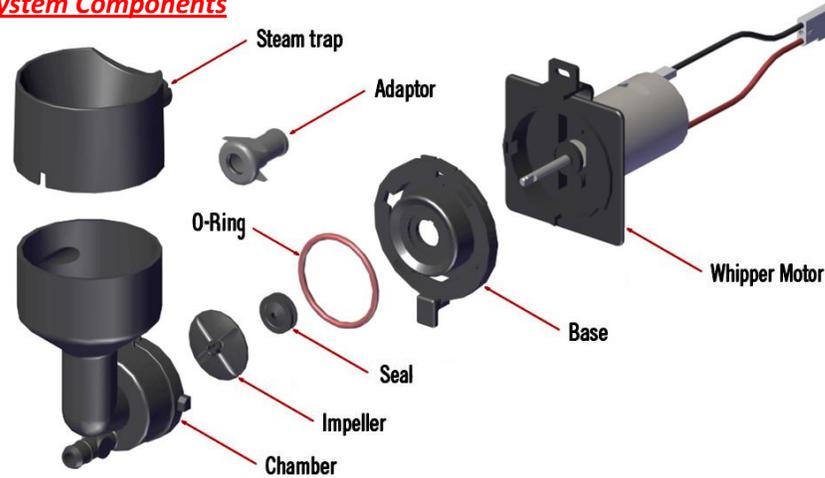
**To install a dispenser motor, follow these same instructions in the reverse order.**

## Whipper System Removal, Manual Cleaning and Installation



The same disassembly and cleaning procedure applies for all three of the whipper systems.

### ***Whipper System Components***



### ***Removing the whipper system components***

1. Disconnect the outlet hose(s).



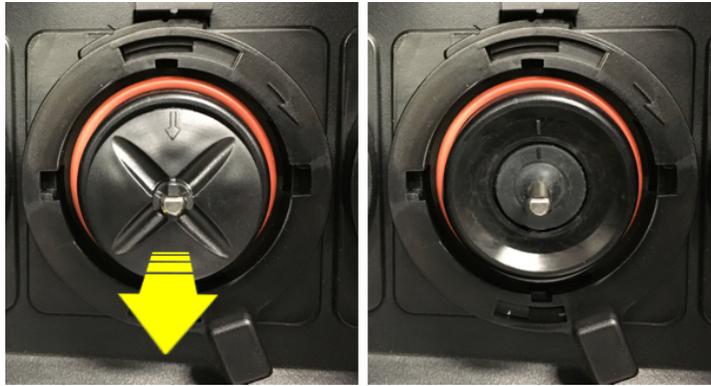
2. Turn the small handle on the locking ring (on the whipper base) to the right until it stops. This unlocks the whipper chamber from the whipper base, allowing it to be pulled off.



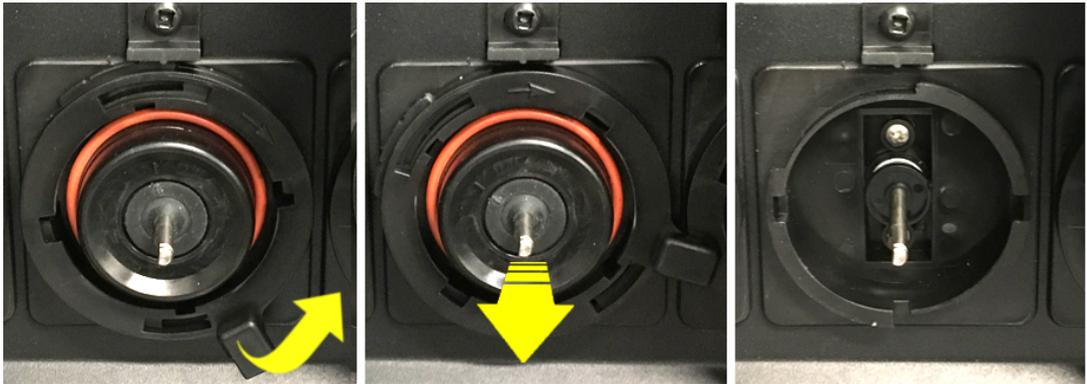
3. Remove the whipper chamber and the steam trap from the whipper base, disengaging it from the powder drawer and inlet fitting.



4. Remove the impeller from the motor shaft.



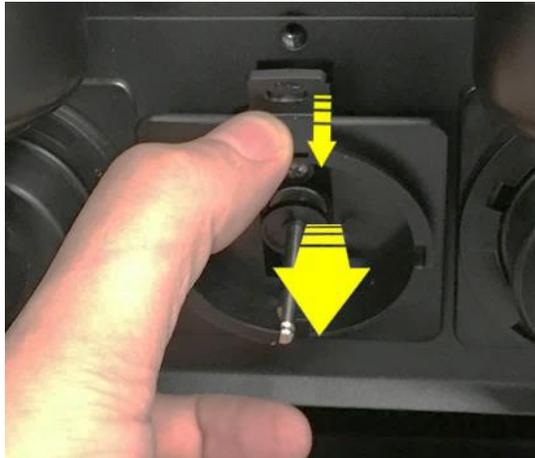
5. Turn the handle to the right and remove the whipper base from the whipper motor.



6. Remove the screw securing the top of the whipper mount.



7. Push down on the locking clip at the front of the base, and pull the base and motor out through the front of the support.



8. Disconnect the inline wiring connector that supplies power to the whipper motor.



### ***Cleaning the Powder Drawer***

With all of the whipper components removed, pull the red powder drawer to remove it. It can now be rinsed under warm water to remove powder that has accumulated inside the drawer. Thoroughly dry the red powder drawer after rinsing and re-install it.



### ***Cleaning the Whipper Components***

At this point, all of the **plastic** components have been removed. Prepare a diluted solution of **Urnex Rinza** (30ml per 500ml of warm water) in a tub or basin, and soak all of the plastic whipper parts in this solution for 30 minutes.

Once done, thoroughly rinse the components under warm running water for several minutes to remove any remaining residues. Once dry, reinstall the components into the machine.

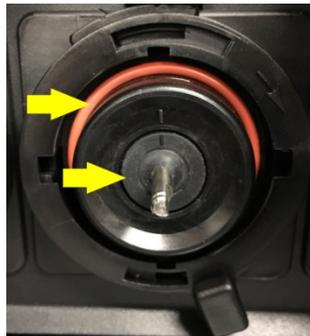


**Do not submerge the whipper motor in water.**

**Do not rinse the whipper motor with water.**

**Do not use any type of cleaner or detergent on the whipper motor.**

Prior to reassembling the whipper system, we recommend that you replace the whipper seal and the large whipper base o-ring.



### ***Clean the whipper hoses***

Remove all three whipper outlet hoses and thoroughly clean the exterior and the interior of each of the hoses. A plastic bristled brush (VKI P/N - 202477-001) must be used to clean the interior of the hoses.



### ***Installing the whipper system components***

1. Connect the inline wiring connector that supplies power to the whipper motor.

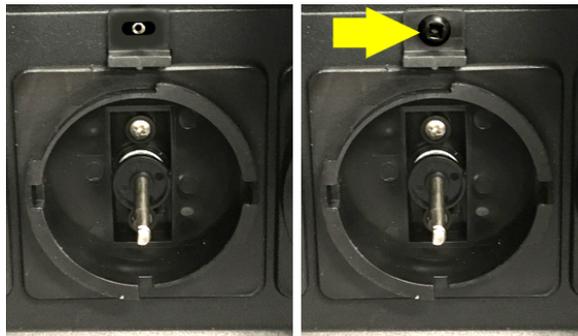


2. Install the new motor into the cutout in the machine wall. Install the bottom of the assembly first, and then push the top of the assembly into the cutout until the plastic clip locks it in place.



3. Secure the mount to the wall with a screw, and then install the base onto the mount.

**NOTE: When re-installing the screw, the torque must be 15 in/lbs.**



4. Install the impeller onto the shaft (line up the arrow on the impeller with the flat side of the shaft).



5. Insert the whipper chamber into the base (**making sure to also insert the chamber's inlet into the adaptor and the steam trap correctly into the powder drawer**), and turn the handle on the locking ring to the center position to secure the chamber.



- Reconnect the whipper outlet hose(s).



- Perform a “**Powder Rinse**” cycle to flush any powder that may have fallen into the whipper chamber ([see page 52](#)).

### ***Installing the Gasket (Seal) and the Impeller***

When replacing the **gasket**, make certain that the small alignment line on the gasket lines up with the alignment line on the base. If the gasket is not aligned properly, it will take on an oval shape, causing an improper seal around the shaft resulting in a major leak.

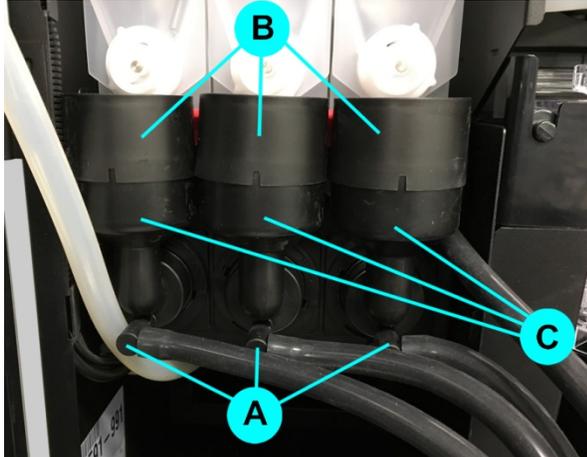


When replacing the **impeller**, align the small arrow on the impeller with the flat side of the whipper shaft. Push the impeller until it clicks in place.



## Replacing the Powder Blower

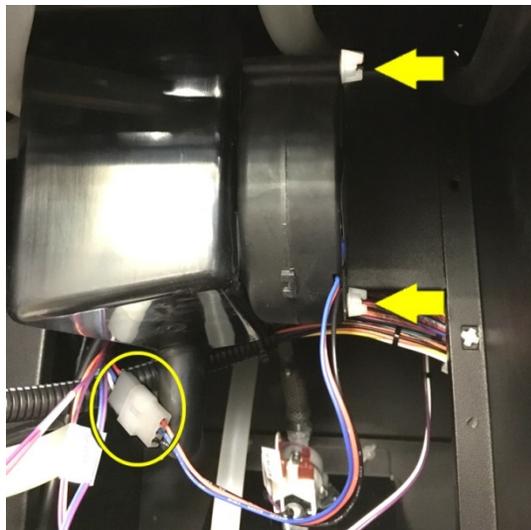
1. Remove the following whipper components:
  - a) Disconnect the three powder hoses.
  - b) Remove the three whipper steam traps.
  - c) Remove the three mixing chambers.



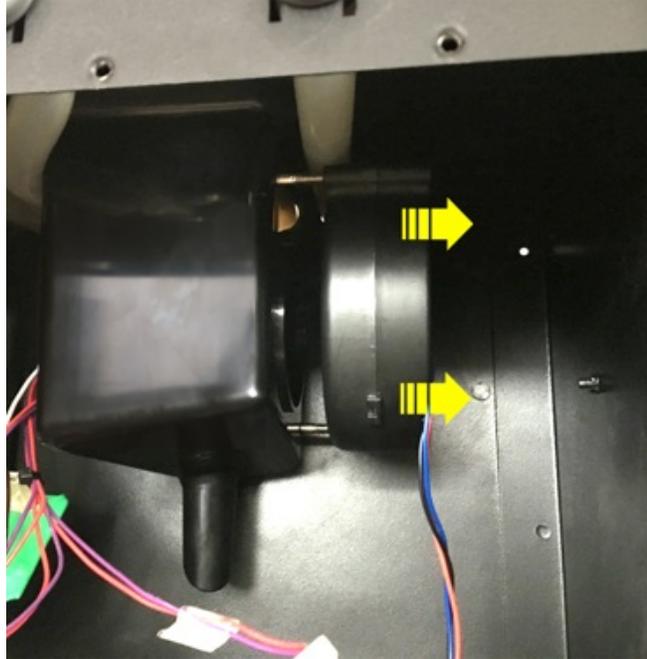
2. Remove the three screws securing the whipper support, and then place the bracket on the floor of the machine.



3. Disconnect the inline power connector to the blower, and remove the two plastic wing nuts securing the blower to its support.



4. Remove the blower.

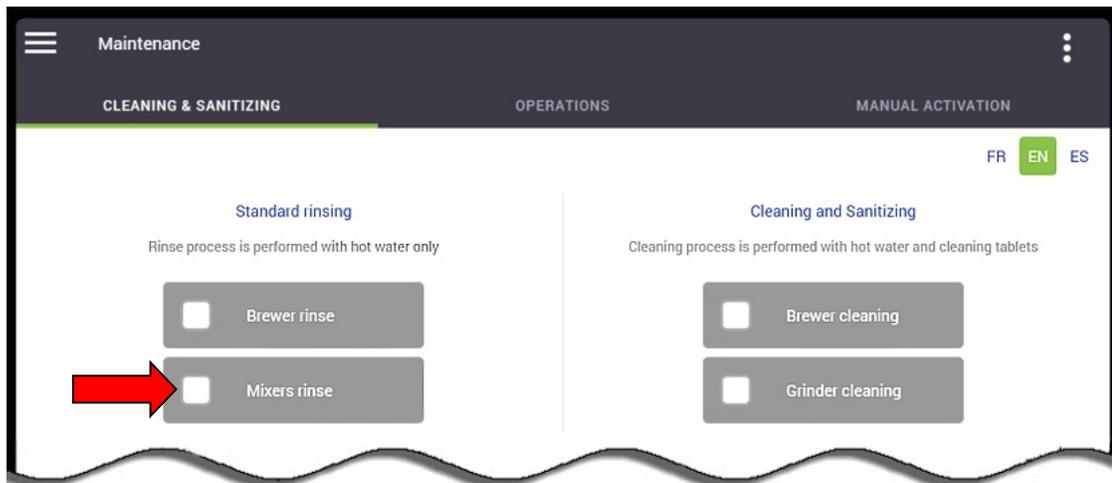


5. Install the new blower onto the support and secure it in place with two plastic wing nuts.
6. Connect the blower power connector to the main wiring harness.
7. Reinstall the whipper support and secure it in place with three screws.
8. Reinstall the whipper components and whipper hoses.

## Powder Rinse

After servicing the whipper system, you'll need to perform a 'Powder Rinse' to flush powder that may have fallen into any of the three whippers.

1. Go to the '**Maintenance**' screen and select the '**Cleaning & Sanitizing**' tab.
2. Tap the '**Mixers Rinse**' option to activate it.



This option runs a rinse cycle (to clean all three of the powder whipper systems) by sending hot water through each of the whipper units, while at the same time activating each of the whipper motors.



**Place a cup on the cup stand prior to running this cycle as up to 12-oz of water will be dispensed once the cycle is activated.**

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## SECTION 6

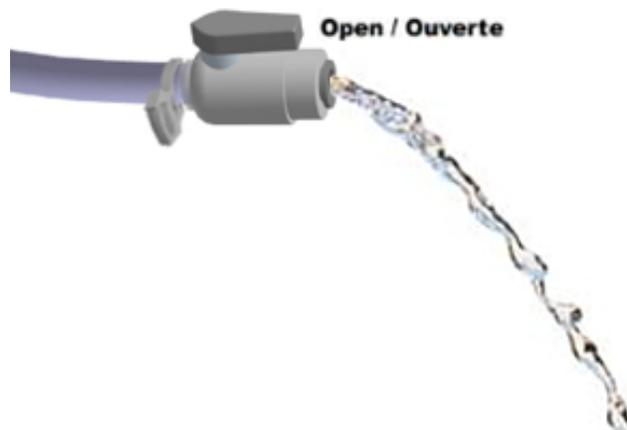
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### Water System

#### Draining the Water Tank

1. Switch off the machine power, disconnect the service cord from the wall outlet, and turn off the water supply going to the machine.
2. Open the front door.
3. Remove the drain hose from its clips on the inside of the front door.
4. Place the hose inside a waterproof container and open the valve at the end of the hose. Water will start draining into the container.

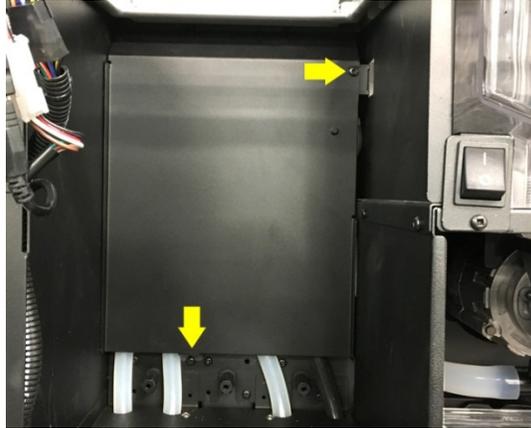


**Caution:** The water draining from the tank may be extremely hot and has the potential to cause severe burns!

5. Once emptied, close the valve at the end of the hose.
6. If you are not removing the water tank, re-install the drain hose onto its clips on the interior wall of the machine.
7. If you are servicing or removing the water tank, proceed to the next sections.

## Replacing the Outlet Valve(s)

1. With the water tank drained and the service cord disconnected, remove the three powder dispensers (see [page 41](#)).
2. Loosen the lower screw and remove the upper screw securing the valve cover in place. Once done, lift the valve cover to remove it.



3. Disconnect the outlet hose and disconnect the wiring from the valve(s) to be removed.
4. To remove a valve, grasp the valve body and pull it straight out. You may need to twist it slightly to loosen it. **Caution: There may be a small amount of very hot water that spills when a valve is removed!**



- ❶ = Powder 1
- ❷ = Powder 2
- ❸ = Powder 3
- ❹ = Hot Water
- ❺ = Coffee\*

\* has a larger diameter opening than the other four valves

5. Install the new valve by sliding it into its respective port on the water tank.

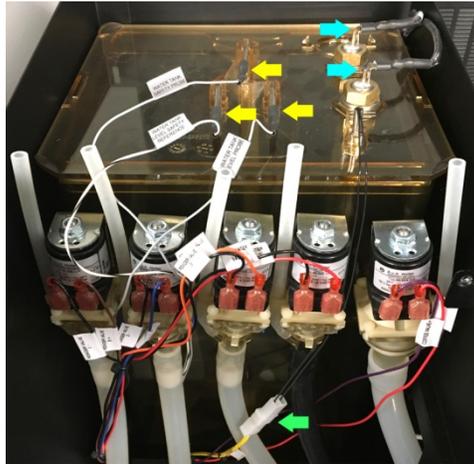


**Verify that the o-ring is present on the valve before installing it into the tank. Also make sure that the valve is completely seated into the water tank.**

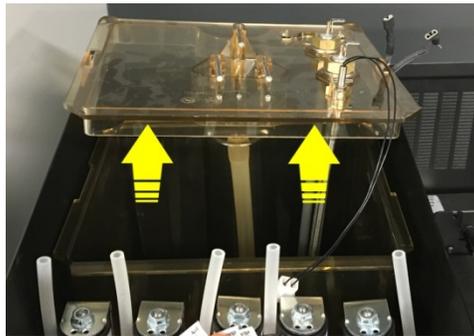
6. Connect the outlet hose and connect the power wires onto the replacement valve.
7. Re-install the valve cover, the powder dispensers, trim and individual covers.
8. Reconnect the service cord, turn on the water supply, and switch the machine power on.
9. Allow the water tank to fill and inspect the machine for leaks. Also inspect the outlet valve for any signs of dripping. **If any leaks or dripping is present, the problem must be corrected immediately.**

## Removing the Water Tank Lid

1. With the water tank drained and the service cord disconnected, disconnect the wiring to the heater element, water level probes and the temperature probe.

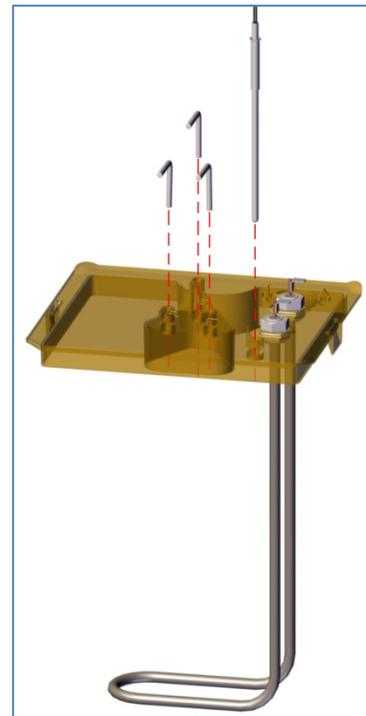


2. Lift the tank lid up and out of the water tank body.



## Replacing the Temperature Probe and Water Level Probes

1. Pull the temperature probe and/or the water level probes out through the top of the tank lid.
2. Slide the new temperature probe and/or water level probes completely into the tank lid until they are securely in position.

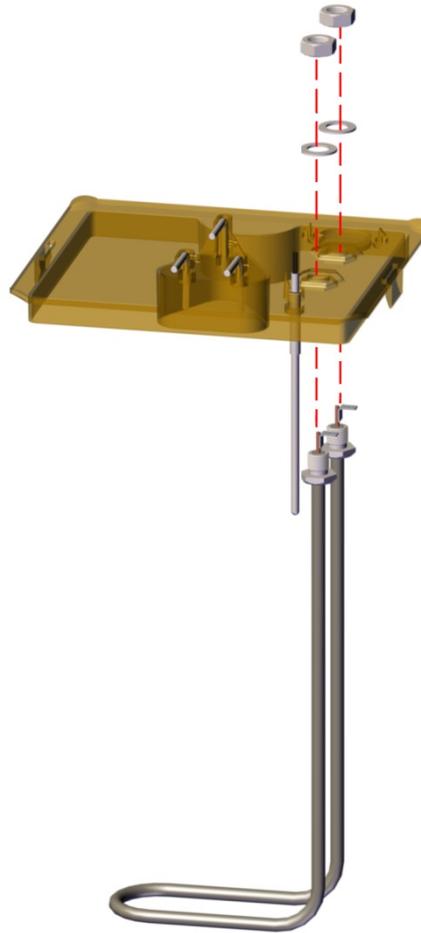


## Replacing the Heating Element



**Caution:** The heating element may be extremely hot! Make sure the element has cooled to a safe temperature before attempting to remove it.

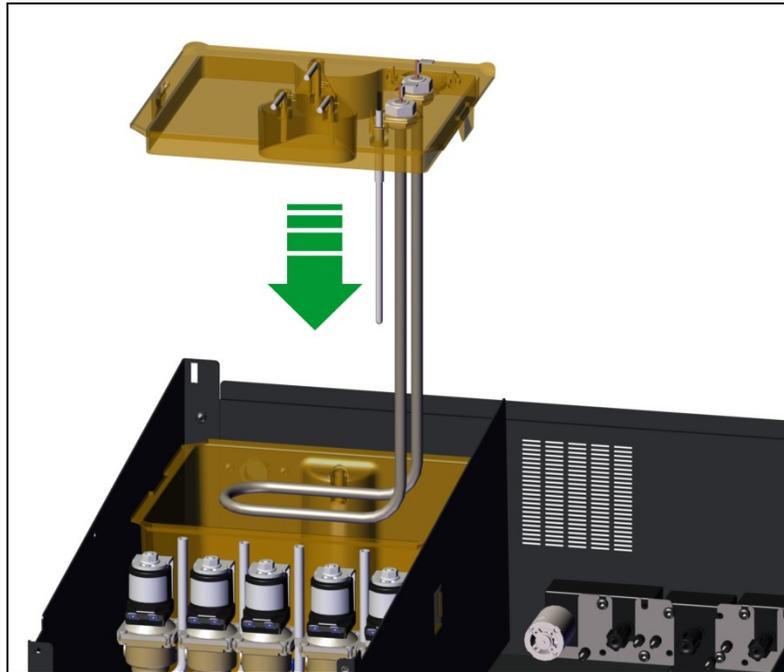
1. With the water tank lid removed, remove the hex nuts (and washers) used to secure the heating element to the tank lid.



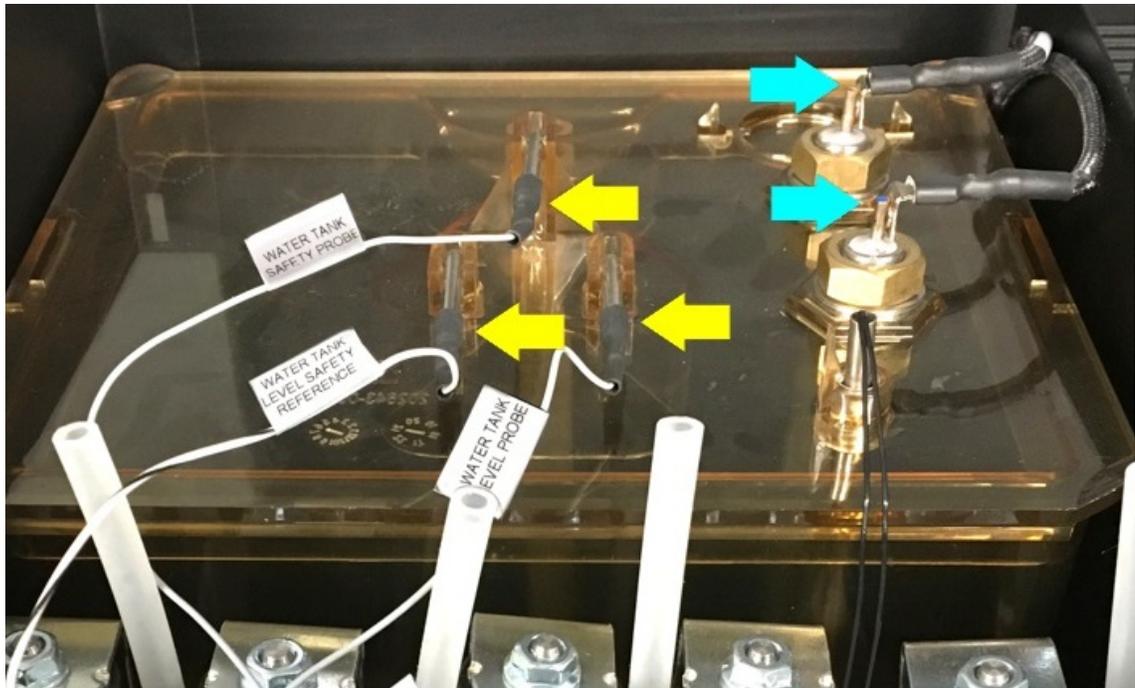
2. Insert the new heating element through the bottom of the tank lid, and secure it to the top using the large hex nuts and washers.
3. Re-install the tank lid by pushing it onto the water tank body until it is securely in place.
4. Reconnect the wiring to the components on the tank lid.

## Installing the Water Tank Lid

1. Install the tank lid into the top of the water tank body.

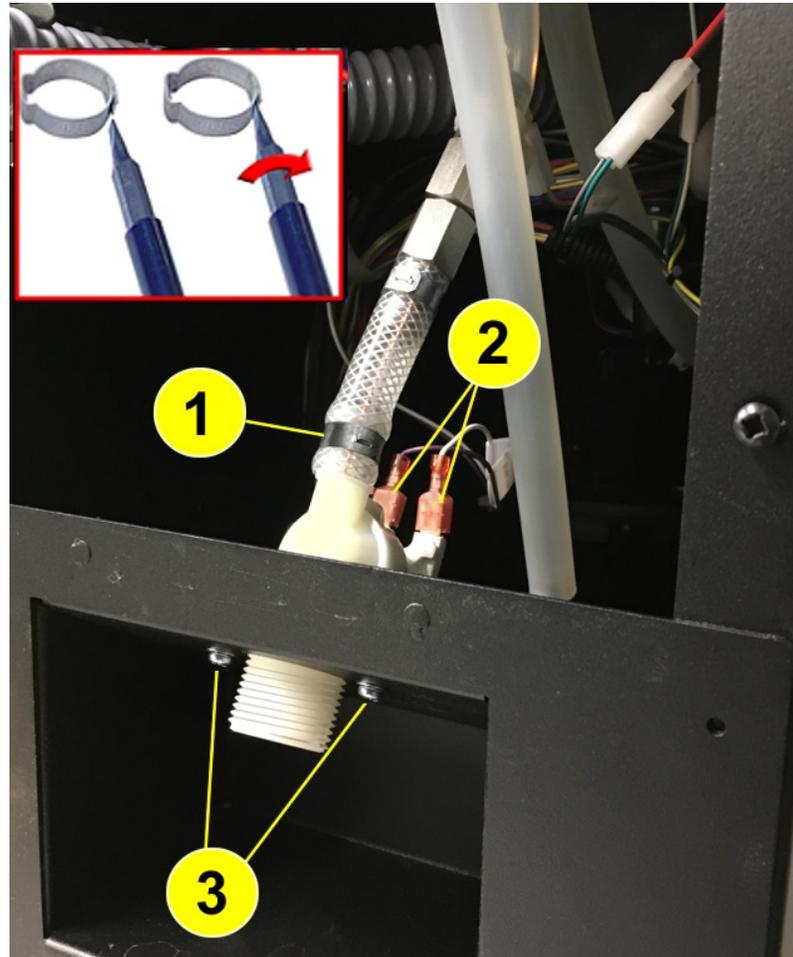


2. Connect the wiring to the heater element and to the water level probes (as illustrated below).



3. Connect the inline connector of the temperature probe to the main harness.

## Removing Inlet Valve



1. With the water source disconnected and the rear panel removed, remove the circle clamp by twisting it open with a flat head screwdriver, and then remove the hose from the inlet valve.
2. Disconnect the wiring from the inlet valve.
3. Remove the two screws securing the inlet valve to the rear of the machine and then remove the valve.

***To install an inlet valve, follow these same instructions in the reverse order.***



**When installing a new inlet valve, always secure the hose to the valve with a properly installed circle clamp.**

# SECTION 7

## Electrical and Electronic Systems



Disconnect the service cord from the wall outlet prior to attempting to replace any of the components in this section. Failure to do so can result in an electrical shock!

### Service Cord

1. Remove the two screws securing the switch plate at the rear of the machine, and then remove the plate.
2. Disconnect the black and white service cord wires from the power switch at the rear of the machine.
3. Disconnect the green service cord wire from the ground post at the rear of the machine.
4. Compress the strain relief and pull the service cord from its opening on the support plate.
5. Insert the new service cord into the opening on the support plate and secure it with the strain relief.
6. Reconnect the service cord wiring.
  - i. **Black wire** (hot) → connects to the **switch tab #2**.
  - ii. **White wire** (neutral) → connects to the **switch tab #1**.
  - iii. **Green wire** (ground) → connects to the **ground terminal at the inside rear of the machine cabinet**.



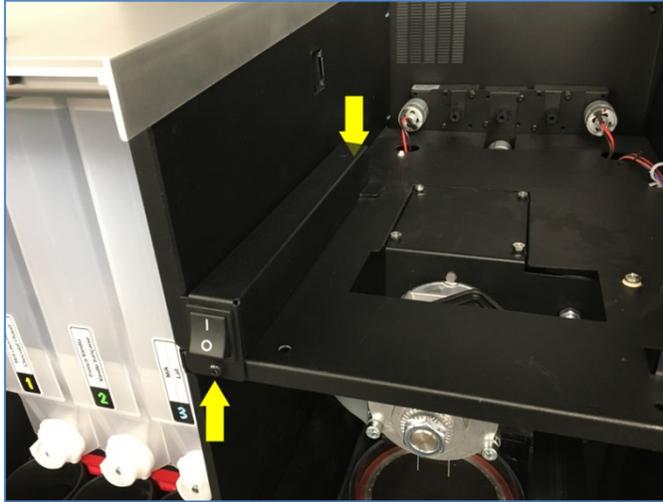
## Main Power Switch

1. Remove the two screws securing the switch plate at the rear of the machine, and then remove the plate.
2. Disconnect the wiring from the main power switch.
3. Compress the clips on each side of the switch, and push it through the opening in the metal plate (towards the outside).
4. Insert the new switch into the metal plate, and snap it in place to secure it - make sure the 'O' is towards the left and the '—' is towards the right.
5. Connect the wiring to the new power switch.
  - i. **Tab #2 on switch - black wire from service cord (hot).**
  - ii. **Tab #1 on switch - white wire from service cord (neutral).**
  - iii. **Tab #2a on switch - wire from main harness**
  - iv. **Tab #1a on switch - wire from main harness**



## Secondary Power Switch (Service Switch)

1. Remove the coffee dispenser (see [page 37](#)).
2. Remove the two screws securing the secondary switch plate to the machine.



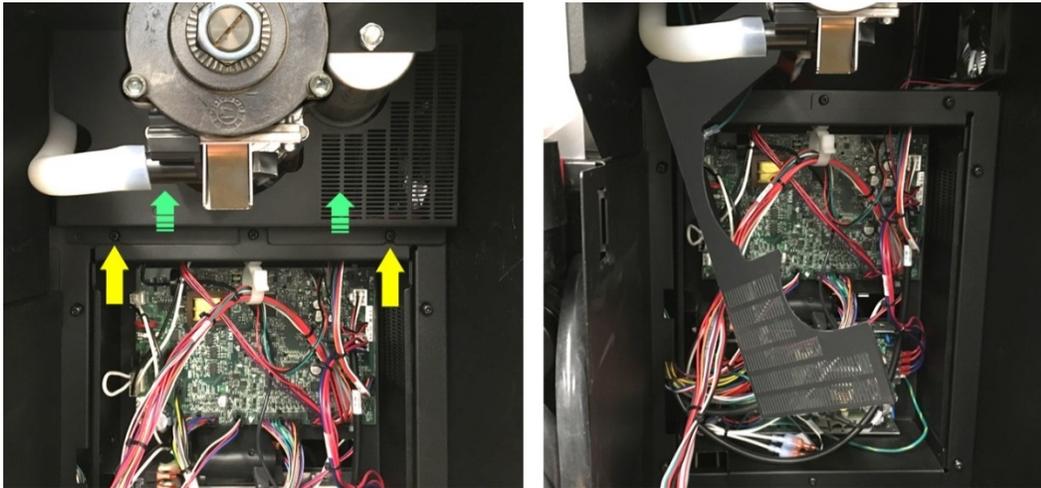
3. Disconnect the wiring from the power switch.
4. Compress the clips on each side of the switch, and push it through the opening in the metal plate (towards the outside).
5. Insert the new switch into the cut-out of the metal plate, and snap it in place to secure it - make sure the 'O' is towards the bottom and the '—' is towards the top.
6. Connect the wiring to the new power switch.
  - i. **Tab #2 on switch - black wire (hot).**
  - ii. **Tab #1 on switch - white wire (neutral).**
  - iii. **Tab #2a on switch - black wire with yellow insulator**
  - iv. **Tab #1a on switch - black wire with yellow insulator**



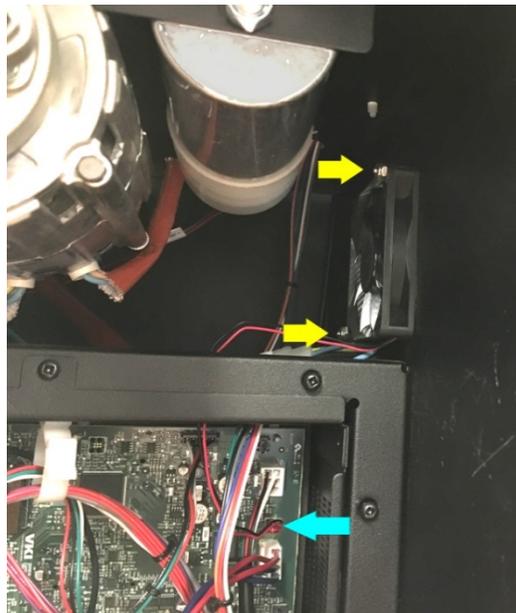
7. Re-install the secondary switch plate and secure it in place with two screws.

## Exhaust Fan

1. Remove the waste bin and the floor tray, and open the front door.
2. Remove the brewer and the grounds chute.
3. Remove the brewer motor and brewer wiper motor support (see [page 33](#)).
4. Remove the two screws securing the panel beneath the grinder, and move the panel off to the side (leave the ground wires connected to the inside of the panel).



5. Disconnect the exhaust fan wiring from the control board.
6. Using a 7/16 nut driver, remove the hex nuts securing the exhaust fan to the right side wall of the machine, and remove the fan.



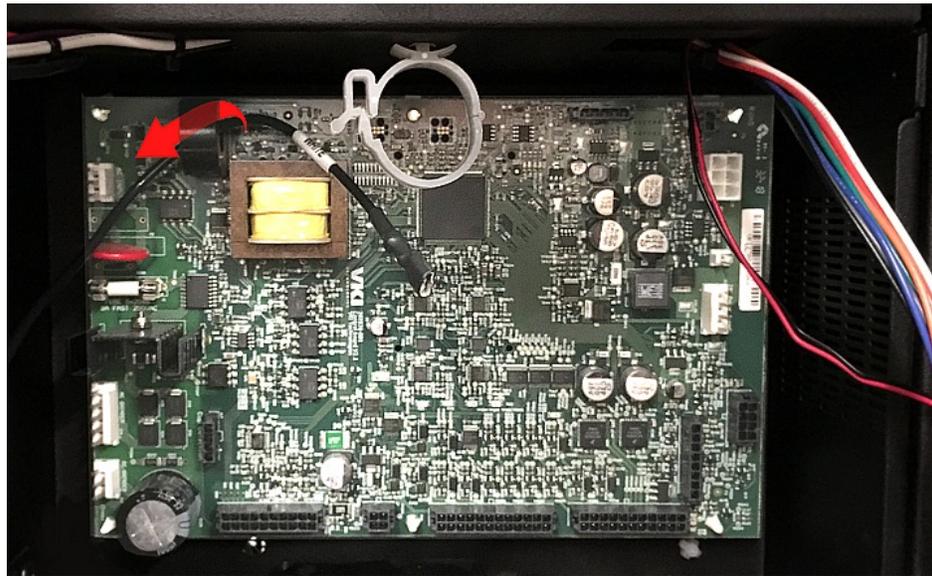
***To install an exhaust fan, follow these same instructions in the reverse order.***

## Control Board

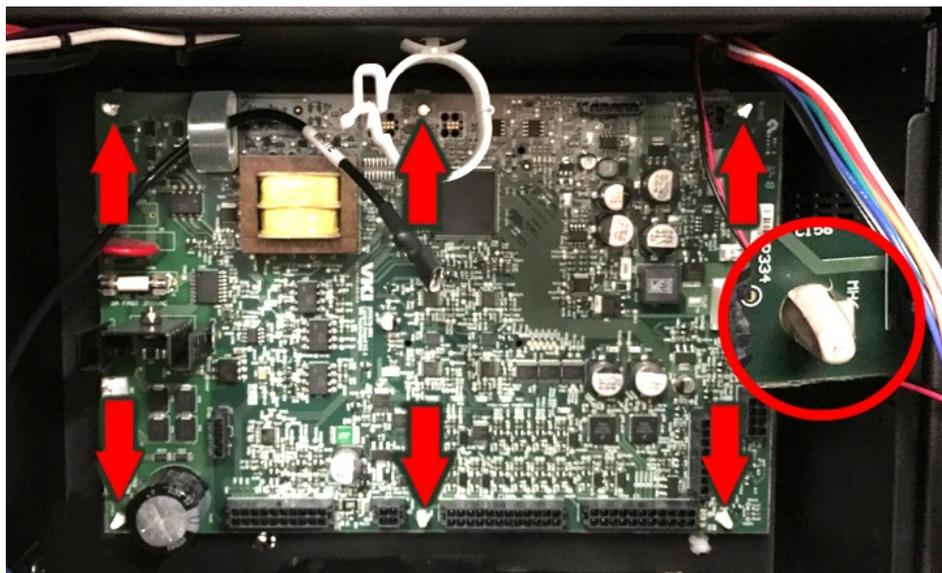


**Disconnect the service cord from the wall outlet prior to attempting to replace any of the components in this section. Failure to do so can result in an electrical shock!**

1. Remove the waste bin and the floor tray, and open the front door.
2. Remove the brewer and the grounds chute.
3. Remove the brewer motor and brewer wiper motor support (see [page 33](#)).
4. Disconnect all of the wiring harnesses from the control board connectors.
5. Pass the heater wire through the current detector on the control board.

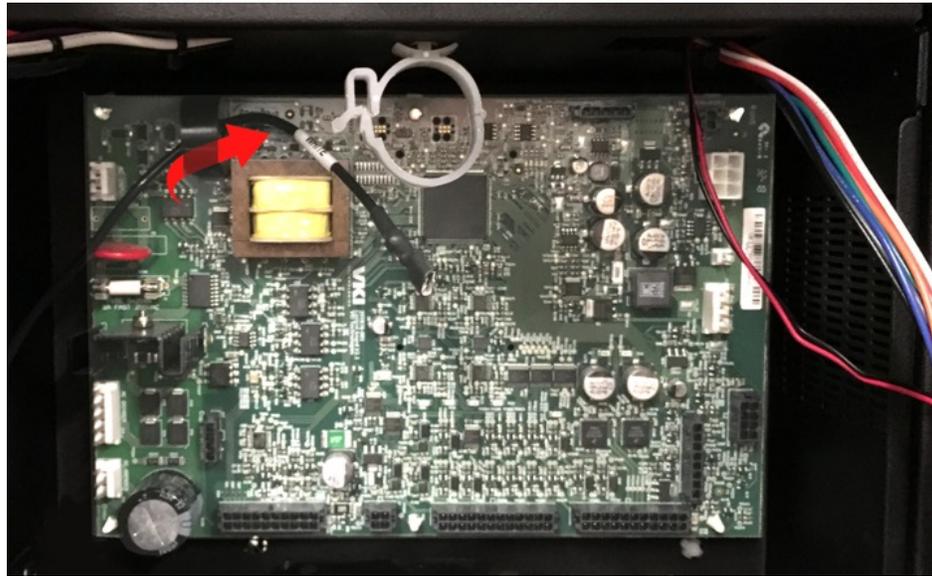


6. Compress the six clips on the board mounting posts to remove the control board from its support.



7. Align the replacement control board with the six clips on the board mounting posts.
8. Gently push the control board down onto all of the clips until the board is securely mounted to them.
9. Pass the heater wire through the current detector on the control board.

***If this is not done, the machine will constantly display an "H1" error as the power going to the heater will not be detected.***



10. Connect all of the wiring harnesses onto the control board.



Each harness only fits on its respective connector on the control board. However, note that there are two 3-pin connectors on the control board. The 3-pin wiring harness **must be connected to the 3-pin connector at the top of the board** or the customer's 20-amp circuit breaker may trip.



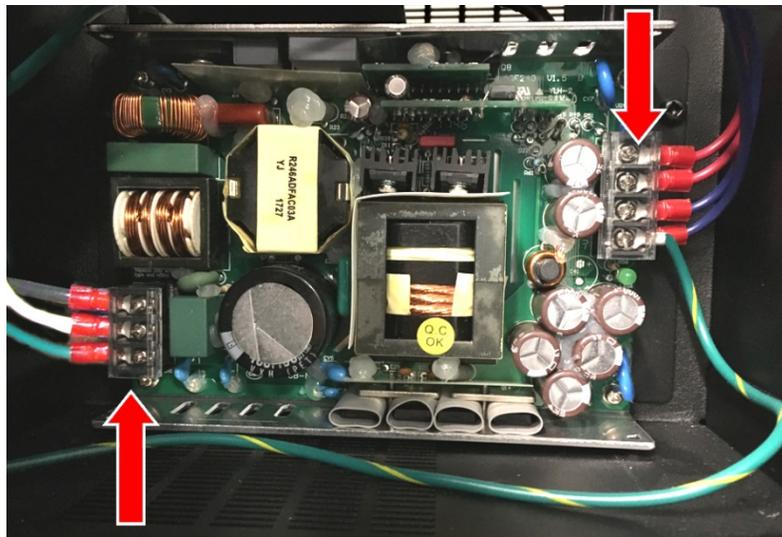
After replacing the control board, the firmware must be loaded when the machine is first powered up. **Do not power up the machine** until the USB Flash drive with the proper firmware is connected to the machine.

## Power Supply



**Disconnect the service cord from the wall outlet prior to attempting to replace any of the components in this section. Failure to do so can result in an electrical shock!**

1. Remove the rear panel of the machine (this is the easiest way to access the power supply mounting screws).
2. Remove the waste bin and the floor tray, and open the front door.
3. Remove the brewer and the grounds chute.
4. Remove the brewer motor and brewer wiper motor support (see [page 33](#)).
5. Disconnect the wires from the terminal blocks (on both sides of the power supply) by removing the plastic cap, and then removing the screws securing the individual wires.

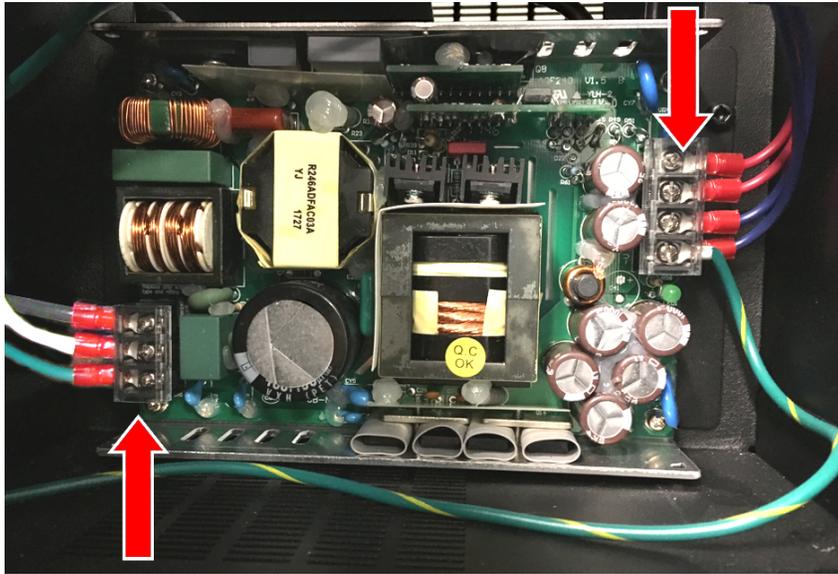


**Do not lose the small screws and square washers when removing the wiring terminals from the power supply as these are not available as service parts.**

6. From the rear of the machine, loosen (but do not remove) the four power supply mounting screws.



7. From the front of the machine, lift and pull out the power supply.
8. Partially install the four screws at the rear of the replacement power supply, slide the power supply into position and tighten the four screws.
9. Connect the wiring to the power supply as shown below.



10. To test the new power supply, reconnect the service cord to the wall outlet and power up the machine.

**If the machine powers up, the power supply is working properly and the machine can then be re-assembled.**

**If the machine does not power up, switch off the machine and disconnect the service cord from the wall outlet. Once done, verify the connections to the power supply and the power supply.**

## Replacing the HMI (Touch Panel)

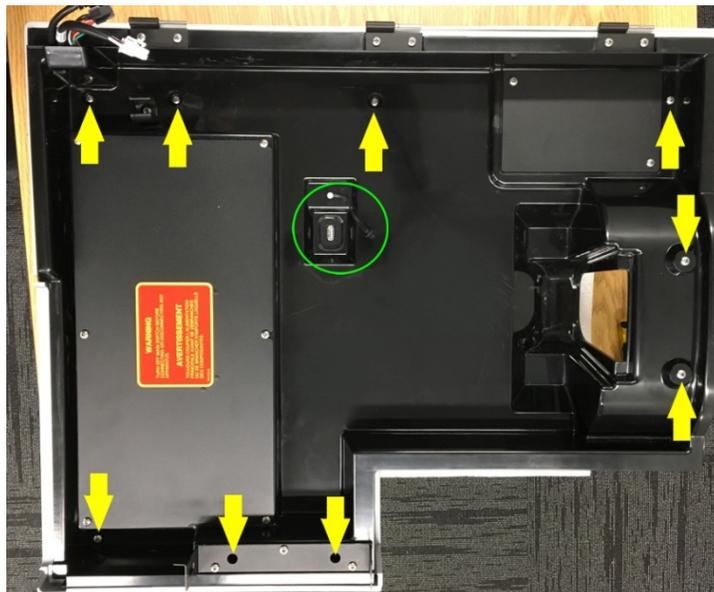
1. With the waste bin removed, install the protective foam onto the HMI, open the front door and disconnect the door wiring, and then lift the door off its hinges to remove it.



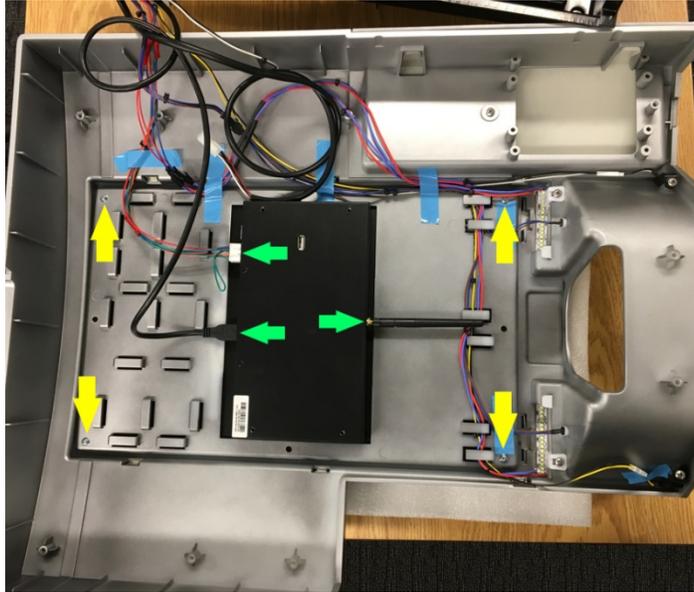
2. Lay the door (with the protective foam) flat on a table.



3. Disconnect the plug from the USB port and remove the nine screws securing the inner door to the outer door.



4. Lift the inner door off the outer door and place it off to the side – **take care not to damage or pull on the wiring harnesses.**
5. Remove the Wi-Fi antenna and disconnect the wiring connectors from the HMI. Once done, remove the four screws securing the HMI to the outer door.

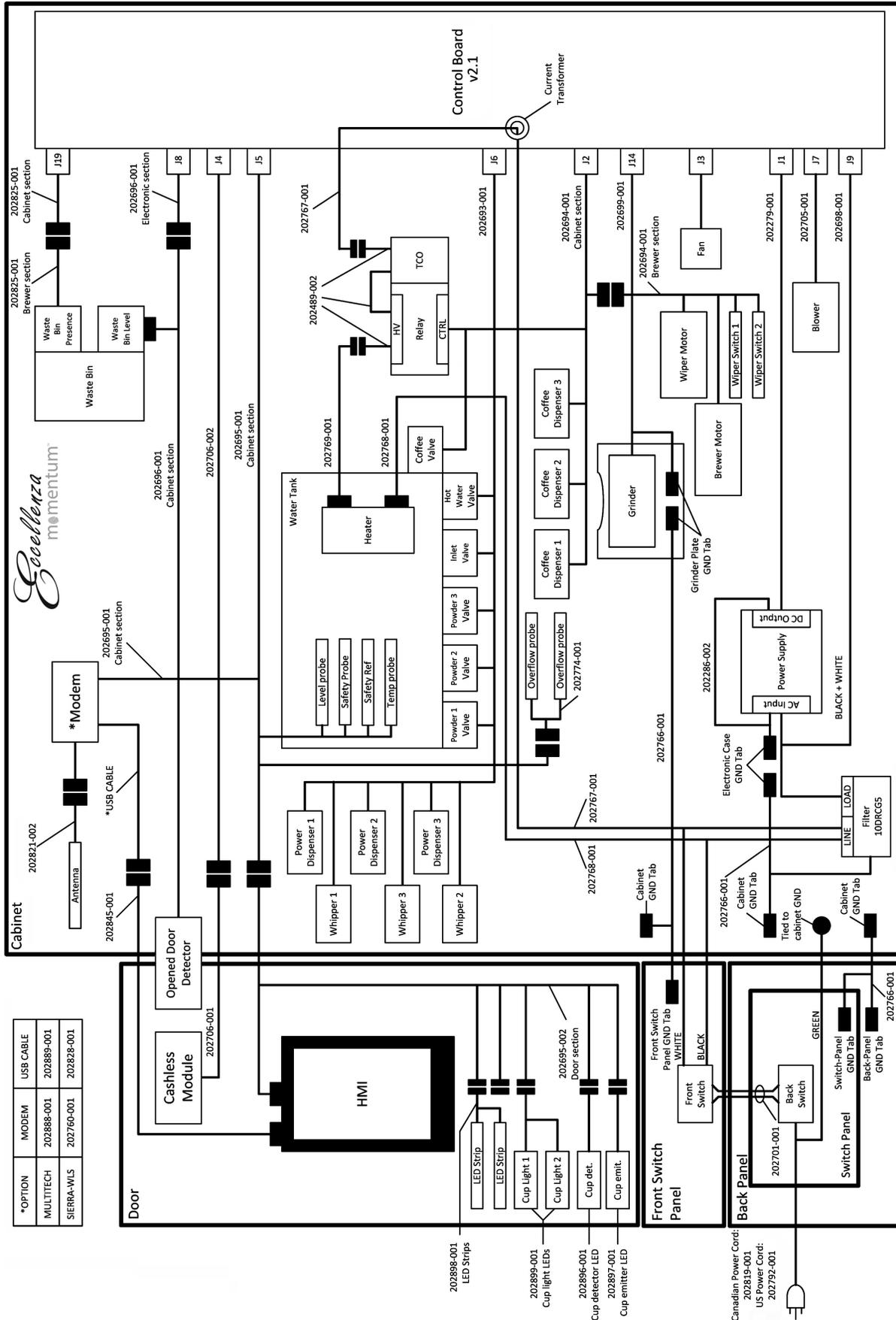


6. Lift the outer door off the HMI. The HMI will be safely seated onto the foam support.



7. Remove the old HMI from the foam support and place the new HMI onto the support.
8. Place the outer door on top of the HMI and secure it in place with four screws.
9. Install the Wi-Fi antenna and connect the two wiring harnesses to the HMI.
10. Align the inner door onto the outer door.
11. Ensure that no wiring is visible in the screw holes, and then secure the inner door in place with nine screws.
12. Install the door onto the machine hinges, and reconnect the door wiring.
13. Switch the machine power on.
14. If necessary load the latest firmware into the HMI ([see page 71](#)).
15. Test the equipment to ensure that it is functioning properly.

# Wiring Diagram



*OPTION	MODEM	USB CABLE
MULTITECH	202888-001	202889-001
SIERRA-WIS	202760-001	202828-001

Canadian Power Cord:  
202819-001  
US Power Cord:  
202792-001



# SECTION 8

## Updating Firmware



**Never attempt to install an older version of software than the version currently installed in your equipment as it is not backwards compatible! This may result in a failure of the HMI (touch screen) and void its warranty.**

Firmware updates may be released periodically for the Eccellenza Momentum™. These updates may consist of fixes, new options and features, customizations, etc. This section guides you through the simple process of updating your equipment to the latest firmware.



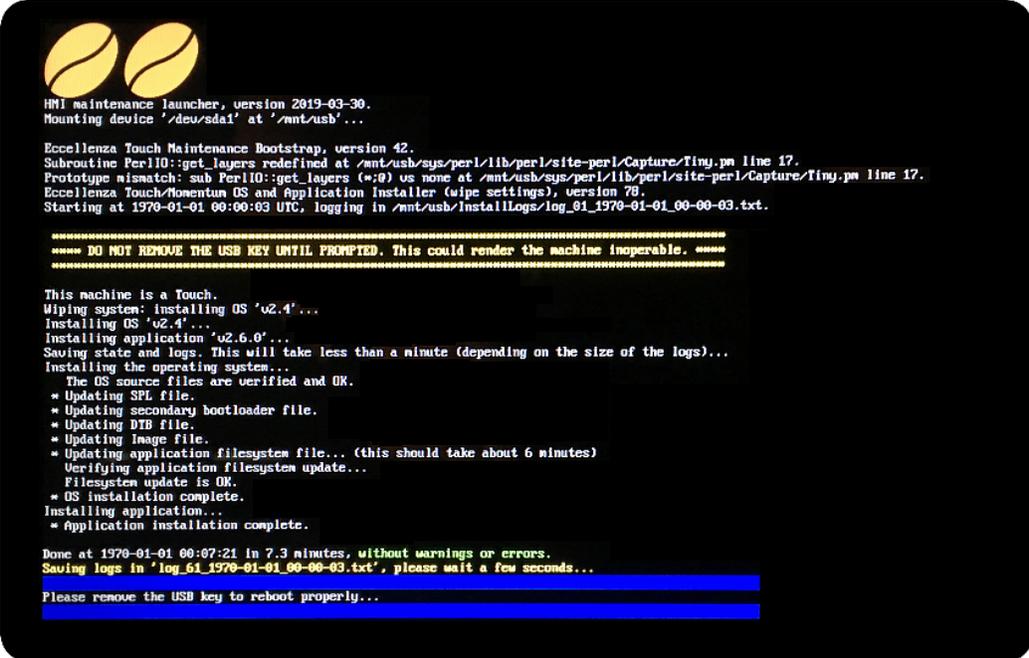
**After replacing the control board, the firmware must be loaded when the machine is first powered up. Do not power up the machine until the USB Flash drive with the proper firmware is connected to the machine.**

1. Load the latest firmware files onto an **empty** USB flash drive (minimum **8GB**).
2. Open the front door.
3. Remove the plug from the USB connector and insert your USB flash drive into it. **Make sure to push the USB flash drive into the USB connector as far as it can go.**



4. Reboot the machine using the main power switch (switch the power off for 5 seconds and then on again).

- The updating process is automated and requires no user input. The screen reverts to command-style prompts that provide progress information on the update.



```


HMI maintenance launcher, version 2019-03-30.
Mounting device '/dev/sda1' at '/mnt/usb'...

Eccellenza Touch Maintenance Bootstrap, version 42.
Subroutine PerlIO::get_layers redefined at /mnt/usb/sys/perl/lib/perl/site-perl/Capture/Tiny.pm line 17.
Prototype mismatch: sub PerlIO::get_layers (*:0) vs none at /mnt/usb/sys/perl/lib/perl/site-perl/Capture/Tiny.pm line 17.
Eccellenza Touch/Momentum OS and Application Installer (wipe settings), version 78.
Starting at 1970-01-01 00:00:03 UTC, logging in /mnt/usb/InstallLogs/log_01_1970-01-01_00-00-03.txt.

===== DO NOT REMOVE THE USB KEY UNTIL PROMPTED. This could render the machine inoperable. =====

This machine is a Touch.
Wiping system: installing OS 'v2.4'...
Installing OS 'v2.4'...
Installing application 'v2.6.0'...
Saving state and logs. This will take less than a minute (depending on the size of the logs)...
Installing the operating system...
The OS source files are verified and OK.
* Updating SPL file.
* Updating secondary bootloader file.
* Updating DTB file.
* Updating image file.
* Updating application filesystem file... (this should take about 6 minutes)
Verifying application filesystem update...
Filesystem update is OK.
* OS installation complete.
Installing application...
* Application installation complete.

Done at 1970-01-01 00:07:21 in 7.3 minutes, without warnings or errors.
Saving logs in 'log_01_1970-01-01_00-00-03.txt', please wait a few seconds...

Please remove the USB key to reboot properly...

```

- Once the update is complete (it may take up to 30 minutes), you are prompted to remove the USB flash drive to reboot the machine.

Remove the flash drive and the Eccellenza Momentum™ will reboot itself twice. While it is rebooting, re-install the plug onto the USB connector and re-install the waste bin.



If the screen remains black with a “log-in” prompt, allow the machine sit undisturbed for 15 minutes or so as the upgrade may still be in progress in the background.

- It is possible that an error may be displayed on the screen after the reboot. If this is the case, simply clear the error.



If the update process was interrupted prior to completion, you must connect the USB flash drive to a computer, and delete the “Backup” folder that was created, otherwise further updates will not be possible with this flash drive.



Updating the Eccellenza Momentum™ firmware will not overwrite or change any existing settings or customizations you may have made in the programming. These settings will be maintained.